

ORGANIZATIONAL CULTURE: AN EXAMINATION OF THE ROLE OF LEADERSHIP
IN NEUTRALIZING THE NEGATIVE EFFECTS OF TECHNOSTRESS DURING
OPERATIONAL SHIFTS

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ABSTRACT

COVID-19 created a support problem for public universities across the United States and required that IT departments and professionals alter how they performed in 2020, and perhaps beyond. IT professionals tasked with safeguarding large amounts of data were required to shift to a teleworking posture to continue offering a similar level of service as previously expected. In addition to the technological shift that organizations experienced because of COVID-19, leadership challenges also impacted IT departments across the United States. The rapid shift of operational duties has the propensity to increase technology-related stress, due to employee perception of being successful in their role. The purpose of this quantitative, non-experimental, correlational pilot study was to examine the relationship between technostress, job satisfaction, burnout, and demographic characteristics of age, gender, and years of experience of an IT professional working in higher education. This pilot study included a convenience sample of IT professionals from a single public university in the United States and an online survey was administered to discover the impact operational shifts have on levels of technostress, job satisfaction, and job burnout. To be considered, the respondent had to meet specific criteria: (a) be an adult of at least 18 years of age, (b) work as an IT professional within the university, and (c) work for a minimum of one year as an IT professional. The sample of 116 potential respondents were emailed to request participation in the study. There were 46 survey submissions received (roughly 40% of likely respondents). Of those surveys received, there were 31 completed cases (approximately 27%), which were analyzed using multiple linear regression.

Results of this study suggested there was no predictive relationship of technostress on job satisfaction. However, results did show decreased job satisfaction for demographic characteristics, such as age. Additionally, there was no overall predictive relationship of technostress on job burnout, however, results suggest that compared with people over 55, people who were between 35-44 experienced increased burnout overall.

Keywords: Technostress, Organizational Culture, Job Satisfaction, Burnout

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TABLE OF CONTENTS

COMMITTEE MEMBERS	iii
ABSTRACT.....	iv
ACKNOWLEDGMENTS	vi
LIST OF TABLES.....	xii
LIST OF FIGURES	xiii
INTRODUCTION	1
Background.....	3
Statement of the Problem.....	6
Statement of the Purpose	6
Statement of the Need.....	7
Definitions.....	8
Assumptions.....	10
Limitations	10
Delimitations.....	11

Significance.....	11
Summary.....	12
LITERATURE REVIEW	14
Database Query Strategy.....	17
Organizational Culture and Technostress	17
Leadership Styles and Technostress	19
Technostress, Job Design, and Employee Performance	20
Technostress and Job satisfaction	22
Adverse Effects of Technostress on Performance	23
Technostress and Cyberslacking: A Coping Mechanism	24
Organizational Approaches to Manage Cyberslacking.....	26
Summary.....	27
METHODOLOGY	28
Research Design.....	28
Organizational Culture & Leadership at the Test Site	30
Population	32
Sample.....	33

Procedural Methods for Recruitment, Participation, and Data Collection.....	33
Operationalization of Study Variables	34
Data Analysis	35
Hypotheses	37
Potential Threats to Validity	38
Ethical Procedures	39
Summary	39
RESULTS	41
Data Collection	43
Findings	58
Summary	66
DISCUSSION AND RECOMMENDATIONS.....	67
Technostress and Job Satisfaction.....	69
Technostress and Burnout	70
Age and Gender Influences	70
Implications for HRD Practice.....	71
Limitations of Study	72

Recommendations for Further Research.....	72
Summary and Conclusions	75
REFERENCES	76
APPENDIX A: INFORMED CONSENT	97
APPENDIX B: IRB APPROVAL	98
APPENDIX C: RECRUITMENT EMAIL TO IT PROFESSIONALS	99
APPENDIX D: INSTRUMENTS.....	100
Introduction of Instruments.....	100
The Technostress Creators Inventory.....	100
The Job Satisfaction Survey	103
Maslach Burnout Inventory.....	106
APPENDIX E: RELIABILITY AND VALIDITY.....	107
The Technostress Creators Inventory.....	107
The Job Satisfaction Survey	107
Maslach Burnout Inventory.....	108
APPENDIX F: INTRODUCTION OF THE SURVEY	109
Introduction of the Survey	109
Demographic Questions	109

Technology-related stress creators' questions.....	110
Job Satisfaction Questions	111
Job Burnout Questions	113

LIST OF TABLES

Table 1. Gender.....	44
Table 2. Age.....	45
Table 3. Years Employed at the University	46
Table 4. Cronbach's Alphas of Scales	47
Table 5. Descriptive Statistics of Job Satisfaction, Burnout, and Dimensions of Technostress...	48
Table 6. Variance Inflation Factors (VIF)	53
Table 7. Ranges of Standardized Regression Residuals	54
Table 8. Regression Model for RQ1a	59
Table 9. Regression Coefficient for RQ1a.....	60
Table 10. Regression Model for RQ2a	62
Table 11. Regression Coefficients for RQ2a	63
Table 12. Regression Model for RQ3a	64
Table 13. Regression Coefficients for RQ3a	65

LIST OF FIGURES

Figure 1. Gender 44

Figure 2. Age 45

Figure 3. Years Employed at the University..... 46

Figure 4. Scatter Plot of Regression Standardized Predicted Residuals vs. Standardized Residuals (RQ1) 50

Figure 5. Scatter Plot of Regression Standardized Predicted Residuals vs. Standardized Residuals (RQ2) 51

Figure 6. Scatter Plot of Regression Standardized Predicted Residuals vs. Standardized Residuals (RQ3) 52

Figure 7. Histogram of Regression Standardized Residuals (RQ1) 55

Figure 8. Histogram of Regression Standardized Residuals (RQ2) 56

Figure 9. Histogram of Regression Standardized Residuals (RQ3) 57

CHAPTER 1

INTRODUCTION

The onset of COVID-19 presented organizations of every type, and at every level, with a substantial dilemma: adapt or fail. COVID-19, a highly contagious respiratory illness, is easily spread from human to human. Although there are a variety of human coronaviruses (including some that commonly cause mild upper-respiratory tract illnesses), COVID-19 is a novel (or new) coronavirus that has not been prevalent in humans (U.S. Food and Drug Administration, 2020).

Due to the increase in potential exposure and the rapidity at which this virus spreads, national policies have enforced lockdowns and distancing protocols. As part of this protective measure, many universities moved their employee base to remote work to curb the viral spread. In the wake of this powerful (and novel) shift in operations, many employees experienced mental health issues commonly associated with forms of work-related trauma, grief, and loss (Chick et al., 2020). This change in working conditions has also contributed to a radical shift in work-life balance, one of the determinants of decreased employee productivity, organizational commitment, and job satisfaction (Lee, 2020).

In 2020, organizations nationwide found themselves needing to change their infrastructure and communication channels to continue operations, and to fit the changing landscape of labor that has shifted from face-to-face to virtual work. The strain of this shift is felt by employees who are now expected to communicate synchronously and asynchronously

through email, instant messaging, teleconferencing, and various other channels to maintain efficiency. Nationwide lockdowns and distancing protocols have created a climate of continuous information load on employees, resulting in their disengagement, decreased satisfaction, and a failure to cope (Pandey & Pal, 2020). The rapid move to telework has led to an increase in technology-related stress or "technostress" attributed to workplace anxiety (Brod, 1984). This type of stress is induced by the increased usage of information and communication technologies or "ICTs" (Nimrod, 2018).

In addition to the technological shift that organizations experienced in 2020, and because of COVID-19, leadership challenges prevail in many IT departments across the United States due to the uncertain terrain in which these departments now find themselves. The impact of technostress on organizations is substantial and targets all levels of administration. Research suggests that leadership may even experience more technostress than non-managers do (Stadin et al., 2021). While there is extensive research on leadership in planned organizational change (Oreg & Berson, 2019; Norris, 2018), and case studies focused on specific types of organizational change (Ñkaña, 2020), there is limited research on unplanned organizational change and the impact this change has on IT professionals in universities. This study intends to discover the level of impact that operational shifts have on technostress levels, job satisfaction, and burnout among IT professionals in a public university in the United States.

Chapter 1 will provide an overview of the pilot study and discuss the relevant literature. Next, the problem statement will explore gaps in the knowledge base regarding the relationship between technostress, burnout, and job satisfaction during the COVID-19 pandemic. Chapter 1 will include a description of the study background, a statement of the problem, purpose, and need

for the study, a definition of terms, a description of the theoretical foundation and the significance of the study, then conclude with a chapter summary.

Background

Institutions across the United States have moved their IT operations, either partially or entirely, to telework due to COVID-19 and nationwide lockdowns. According to the Telework Enhancement Act, telework refers to “a work arrangement under which an employee performs the duties and responsibilities of their position and other authorized activities from an approved worksite other than the employee's operational location for work” (Telework.Gov, 2010). This rapid, necessary, and systemic shift to telework has made it possible for organizations to continue normal operations during the pandemic. However, there may be implications that impact employee mental health, job performance, job satisfaction, and commitment intention due to the cultural and operational change. According to research by Weinert et al. (2014), teleworking-induced stressors create a higher level of mental exhaustion due to increased workload, work-home conflict, information overload, and additional social factors. Technostress can lead to substantial issues and potentially illness, although there are no real accommodations afforded by the courts (Farrish & Edwards, 2019). The increase in stress stems from a continued perceived need for employees to maintain a modicum of efficiency like previous periods when disruption did not affect job performance. In addition, maintaining a high level of performance and continual interconnectedness with work via the Internet has also been linked to negative impacts on well-being (Haque, 2020; Molino et al., 2020).

Due to the propensity of technology in the modern organization, technostress has increased over the past ten years, so understanding the implications is crucial (Ye, 2018). Research by Tarafdar et al. (2014) investigated the conditions that create technostress and factors

contributing to technological innovation and overall employee performance. The authors examined the role of technology self-efficacy and organizational mechanisms that inhibit technostress. Their research suggests training explicitly related to technological role-competence can act as a possible mitigating factor to the effects of technostress creators. The findings describe a negative association between technostress creators and performance. Additionally, Tarafdar et al. (2014) posits that, “while traditional, effort-based mechanisms such as developing technology competence reduced the impact of technostress creators on technology-enabled innovation and performance, more empowering mechanisms, such as developing technology self-efficacy and information systems (IS), literacy enhancement, and involvement in IS initiatives are required to counter the decrease in overall performance because of technostress creators” (p. 103). These findings are congruent with research by Vinita et al. (2019) that suggests organizations may be able to lessen negative stress by improving organizational training.

Okolo (2018) explored the association of job design with technostress and employee engagement in the banking sector. The study's findings showed a positive relationship between job design and technostress, stating that technostress does not necessarily reduce employee engagement (and can act as a motivator), but extreme stress can have a damaging impact on employees and the organization. This finding is interesting, since it poses technostress in terms of the potential mediating effect it has on job design and employee engagement. However, if the employee lacks the necessary skills to adapt to change, there is a potential increase in work-family conflict and overload, which can negate the mediating effects.

Molino et al. (2020) tested the psychometric characteristics of the brief version of the technostress creators scale and applied the scale to investigate technostress during the COVID-19

pandemic. Findings suggested a positive relationship between remote working and workload. Main findings supported the need to use technology for work, with potentially negative consequences to the employee. The study also indicated that the amount of work and the type of work (e.g., remote work) were in-fact technostress creators, and suggested interventions developed by human resources management to prevent the potential “negative consequences of heavy technology-use, and to foster a positive transition to remote working” (p.15).

However, there has been no study to date measuring the effect of organizational culture on technostress as it applies to IT professionals in public universities during the COVID-19 pandemic or any other sudden and inescapable shift in a typical day to day operations. Nevertheless, it can be assumed that the population of IT professionals within a public university to be a representation of organizations in the local, regional, and national communities, and research by Davies (2010) suggests higher education institutions have a specific set of norms and values at the foundational level of its organizational culture. Additionally, IT professionals working in higher education are governed by stringent municipal, state, and national mandates that require more technological stewardship than most private organizations. This additional oversight may contribute to further work/life imbalance, even without the onset of unplanned operational shifts, as experienced due to the COVID-19 pandemic.

There is a need to address this gap in the literature and further understand the impact that organizational culture has on promoting, neutralizing, or inhibiting technology-related stress that may or may not lead to job dissatisfaction and burnout. This pilot study seeks to contribute to the growing body of knowledge and offer insight into the influence of organizational culture on technostress, employee perception of productivity, and overall employee job satisfaction.

Statement of the Problem

Due to the novel nature of COVID-19 and the ensuing necessary response within communities and organizations, many universities in the United States transitioned partially or fully to a teleworking posture in 2020. This unexpected shift has the propensity to create issues with life imbalance, technostress, and job satisfaction. IT departments are now required to manage data and information in real-time and communicate synchronously and asynchronously via email, instant message, teleconference, and other electronic channels. Organizational culture may promote techno stressors, neutralize, or inhibit them, based on employee perception, expectations, and training.

Previous research has been conducted on technostress relative to job satisfaction, work performance, and mental health among IT professionals (Kumar et al., 2017), on the adverse effects of technostress on employee performance (Tarafdar et al., 2014), on human-technology interaction (Sellberg & Susi, 2014), the implications of technostress creators on burnout (Mahapatra, 2018), and on technostress among specific university populations, such as international students (Rolon, 2014), administrative employees (Zainun, et al., 2019), and library services (Karimi & Nazari, 2018; Rabaeka & Mini Devi, 2019; Sohail, 2019). However, there has not been a study measuring the impact of organizational culture on technostress, job satisfaction, and burnout on IT professionals in higher education during COVID-19, or a similar phenomenon.

Statement of the Purpose

The purpose of this pilot study will be to determine the relationship between organizational culture and the Technostress Creators Inventory, comprised of techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty. A secondary purpose

of this pilot study will be to understand which techno-stressors contribute to teleworkers' perception of job satisfaction and burnout, and to identify whether the organization's culture influences these techno-stressors. This pilot study will observe the various communication channels that influence employee perception of technology distress within a division of a public university in the United States. However, this study will not assess the effectiveness of any university's teleworking policies or strategic training. The independent variables will include the technostress creators described by Ragu-Nathan et al. (2008), and the dependent variables will consist of the level of employee job satisfaction or job dissatisfaction as described by Specter (1994), and burnout, as defined by Maslach (1981). Demographic variables will include age, gender, and the number of years working as an IT professional in the university.

Statement of the Need

The research proposed for this pilot study will employ a quantitative, non-experimental, correlational design to determine whether there are significant relationships between technostress, job satisfaction, and burnout of IT professionals in a single public university in the United States. Additionally, the research proposed will generate and test hypotheses that describe and predict potential identified relationships. The non-experimental, correlational research design will be utilized to assess whether two or more variables are related to each other (McCusker & Gunaydin, 2014). Numerical data will be collected and analyzed using the Technostress Creators Inventory, the Job Satisfaction Survey (JSS), and the Maslach Burnout Inventory (MBI).

The researcher will use a quantitative research design for several reasons. First, deploying a quantitative method allows respondents to speak candidly while maintaining anonymity. Second, quantitative techniques are economical when dealing with a large population and are

less time-consuming (McCusker & Gunaydin, 2014). Third, the researcher will not conduct experimental research but rather a quantitative, non-experimental, correlational research design. Empirical research attempts to establish a cause-and-effect relationship among the respondents based on an intervention or treatment. No treatment is involved in this research. Therefore, experimental research is not appropriate for this study (McCusker & Gunaydin, 2014). By choosing the correlational design, the researcher will examine how a relationship exists between two variables and the magnitude of the relationship between the variables (Field et al., 2012).

Additionally, this pilot study is being conducted to test the feasibility of the research protocol and the instruments involved. According to Van Teijlingen & Hundley (2002), pilot studies are helpful when a small-scale version is conducted before larger-scale dissemination, and it's also beneficial for identifying points of failure before developing a more robust methodology and design. This study intends to lay the foundation for scaling the recruitment method, research design, and protocols to other public universities in the future. Organizational culture and leadership practices concurrent with this pilot study at the test site will be observed and discussed but will not be practically assessed by the researcher.

Definitions

Burnout. O'Leary et al. (2015) defines burnout as "a state of physical, emotional, and mental exhaustion that is caused by long-term involvement in situations that are emotionally demanding" (p. 66). An alternative definition describes burnout as an emerging and prolonged response to job stress (Maslach et al., 2001; Maslach & Leiter, 2016).

Job satisfaction. Employees' state of mind (concerning their beliefs, values, and dispositions) constitutes the way people feel about their jobs and the different aspects of the job,

such as pay and promotion. Thus, job satisfaction is the feeling that employees have about their jobs (Spector, 1994).

Technostress. Technostress is described as stress faced by end-users in organizations due to their use of information and communication technologies (Nimrod, 2018; Al-Ansari & Alshare, 2019).

Technostress Creators Inventory. A self-report instrument based in the transaction of stress theory and introduced by (Ragu-Nathan et al., 2008).

- **Techno overload:** Constant bombardment with information all at once through email, phone calls, text messages, interruptions, and several others.
- **Techno invasion:** Continuous connectivity refers to new technologies' invasion of the user's non-working hours (Kakabadse et al., 2007).
- **Techno insecurity:** The implied need to respond to work-related issues in real-time because of the perceived threat of replacement by a more suited person for the role (Oh & Park, 2016).
- **Techno complexity:** An inability to learn, adapt or deal with new technological complexities in the workplace.
- **Techno uncertainty:** The inability to use new hardware or software that is required for ones' assigned job role.

Organizational Culture. The combination of managerial studies, social and educational psychology, human resource development, and anthropology (Schein, 1985; Eisenberg & Riley, 2001; Swanson, 2001). Organizational culture can also be perceived

as a social science with symbolic interactions throughout the structure (Ouchi & Wilkins, 1985; Schein, 1990).

Assumptions

According to Berenson (2013), assumptions are facts considered to be accurate or unexamined beliefs. This study describes several assumptions. The first assumption of the study is the efficiency and effectiveness of data collection, specifically whether the data is reliable and accurate. Although anonymity will be protected, and subjects will be informed that their responses will not be individually reported publicly, issues may still alter their responses to protect themselves against sensitive topics. This analysis cannot identify this, and it will be assumed that the measures to protect subjects will ensure valid and reliable responses.

There is the opportunity to impart systematic bias in the individuals who consent to participate in this analysis. This would then create a systematic bias in the study results. It will be assumed that the data used for the study is an accurate representation of the overall population. It is also assumed that all the data collected and analyzed is an accurate representation of the intended data set. Finally, it will be assumed that the validity of data is accurately analyzed.

Limitations

A limitation of a study includes the characteristics that may potentially influence the methodology and analysis. Quantitative analysis assumes there will be no manipulation of the study data. Limitations may also include lag, which refers to the time needed to collect, analyze, and publish research findings for dissemination. This pilot study will be conducted between 2020 and 2021, with data acquisition, analysis, and publication planned by the end of 2021.

This study is limited because it is a non-experimental design and cannot determine a causal relationship between technostress, job satisfaction, and burnout of IT professionals. This

study can only identify correlations between said variables. Additionally, this pilot study is limited to exploring United States IT professionals in a single university setting. There could potentially be unexplored factors located outside of the region, state, or country that are not assessed in this analysis and perhaps alternative populations, such as teachers in higher education (Li & Wang, 2021). Another limitation is that quantitative research includes little information on contextual factors contributing to the study's findings, such as specific leadership styles and individual training observations. While the current research focuses on technostress, job satisfaction, and burnout, other variables that could impact are excluded.

Delimitations

The study focuses on the relationship between technostress, job satisfaction, and burnout in IT professionals working in the educational sector. The scope of the study is limited to data collected from respondents at a public university in the southeastern United States of America. The IRB will approve additional criteria for respondents before compiling any data. These criteria for participating in this pilot study are: (a) respondents must be over the age of 18, (b) must identify as an IT professional (by role, responsibilities, job duties, or self-identification), and (c) must have been employed at the pilot study university for a minimum of one year.

Significance

This research is significant because operational shifts and organizational culture have the propensity to dually promote, inhibit, or neutralize technology-related stressors on IT professionals working in higher education. This study will contribute to the body of literature on human resource development and offer insight into an organizational culture's influence on employee perception of technostress and the positive and negative results exhibited in corporate culture (Posner et al., 1985). Human resource development is considered "any process or activity

that, either initially or over the long term, has the potential to develop adults' work-based knowledge, expertise, productivity, and satisfaction, whether for personal or group/team gain, or the benefit of an organization, community, nation or, ultimately, the whole of humanity" (McLean & McLean, 2001, p. 322). Gilley & Maycunich (2000) propose an alternate definition as "the process of facilitating organizational learning, performance, and change through organized [formal and informal] interventions, initiatives, and management actions for the purpose of enhancing an organization's performance capacity, capability, competitive readiness, and renewal" (p. 6). While these definitions may be interchangeable, it is important to understand that the activity within HRD is *learning*. The basis of learning within learning cultures has been explored in recent studies (Shives, 2020). The hope is that the current research may build on the growing body of literature to empower HRD practitioners with tools to develop interventions focused on mitigating negative manifestations of technostress in the work environment and to create opportunities for learning and employee engagement. Additionally, there have been no studies to measure the impact of technostress during the COVID-19 pandemic on IT professionals in public universities. This study seeks to fill that gap in the literature and to better prepare higher education administrators, HRD practitioners, and current or future IT leaders to develop policies and training resources that address technology-related stress during operational shifts.

Summary

The purpose of this quantitative, non-experimental, correlational pilot study is to determine the relationship between job satisfaction, burnout, and technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty). Numerical data will be collected and analyzed using a combination of instruments, including the Technostress

Creators Inventory, the Job Satisfaction Survey (JSS), and the Maslach Burnout Inventory (MBI). The sample size will be drawn from IT professionals in a single public university in the United States (Berger et al., 2014; Haas, 2012).

Chapter 2 will include the literature review and describe the methods used in searching for relevant literature in the field. A theoretical foundation for the study will be established, and finally, a comprehensive review of the literature will be discussed. Any gaps in the relevant literature will be identified to illustrate the need for additional academic inquiry and the chapter will conclude with a summary.

Chapter 3 will present the research methodology, research questions, design overview, the target population, and the convenience sample. The methodology section also describes the procedure in selecting participants, the technique used in protecting participants, data collection, and information regarding data analysis. Next, chapter 3 will discuss the instruments used for the study, ethical considerations and will conclude with a summary.

Chapter 4 will describe the study purpose and outline the research questions and hypotheses used in the study. A description of the data collection methods will be provided as well as a discussion of the population and sample and subsequent findings; to include relevant numerical tables and illustrative charts. The chapter will conclude with an explanatory summary.

Chapter 5 will include a discussion on the findings in the research. It will begin by restating the purpose of the pilot study and the findings, then describe the limitations to the overall study, and describe how these findings fit within the current body of literature. Implications for the practice of human resource development will be discussed as well as recommendations for further research to inform new potential inquiry into the subject matter. The chapter will conclude with a summary.

CHAPTER 2

LITERATURE REVIEW

The term *technostress* was initially coined in Craig Brod's seminal work on the impact of computer technology on human development. Technostress is defined as a "modern disease of adaptation caused by the inability to cope with new computer technologies healthily" (Brod, 1984, p.12). Since his original research, there have been decades worth of technological advances, but technostress persists in the modern workplace.

Since early research conducted on human-computer interaction, social scientists have postulated that increased technology usage can be detrimental to an individual's health and well-being over time (Chiappetta, 2017; Choudrie & Rodriguez, 2020). Theories have been developed to explain the interaction and/or adaptation to stress borne from the overuse of technological tools and suggest that one's perception of stress is an ongoing process of negotiating external forces with internal dialogue (Zielonka & Rothlauf, 2021). Symptoms of technostress often range from headache and irritability to depression and overall apathy (Chiappetta, 2017).

The 21st-Century workplace has witnessed an increase in the number of Information Communication Technologies (ICTs) necessary to perform daily functions, ranging from mobile and cellular devices to cloud-based ERP software and organizational Intranet (Chen et al., 2019; García-González et al., 2020; Khedhaouria & Cucchi, 2019). In the COVID-era however, ICTs have provided a survival mechanism for some organizations to continue operating necessary

functions by decentralizing many of the organizational work practices (Agba et al., 2020; Slabe- Erker & Primc, 2021). It is important to better understand whether the shift to telework influences ICT-usage, and to what extent organizational culture promotes or inhibits technostress on the IT professional. One perspective is that even though ICT-usage might increase due to telework, social distancing protocols have the propensity to alleviate some of the perceived stress IT professionals feel. The alternate perspective would suggest that there is no significant increase and/or influence of ICT-usage on the employee due to a shift in operationalization and work environment due to the pandemic.

While telework may offer a means for operational continuity, there are potential social and organizational influences which can contribute to burnout (Yener, et al., 2020), and emotional exhaustion for some employees (Hamaideh, 2011). Research by de Klerk et al. (2021) suggests that telework presents paradoxical outcomes due to work-life imbalances. However, a recent Gartner survey states 82% of corporate leaders will continue to allow some of their employees to work from home after the pandemic (Baker, 2020). Research by Arneson (2021) posits that, for some companies, a continued work-from-home strategy improves employee productivity. Choudhury (2021) also attributes organizational benefits for telework to productivity gains, geographic flexibility, and recruitment potential. However, while some employees experience an increase in personal productivity due to telework, concerns persist regarding organizational knowledge-sharing, problem solving, and overall morale as well as more federated aspects of data security and regulation (Choudhury, 2021; Gurchiek, 2021).

There is no simple solution for continuity in the wake of a global pandemic, however. From an employee perspective, there may be a growing number of reasons to maintain a teleworking posture for personal reasons. According to White (2021), employees are

experiencing more reluctance to return to formal office spaces, which creates an operational dilemma for leadership. A recent study by Wakefield Research of 1000 full and part-time employees in the United States resulted in 66% of respondents communicating a concern for returning to the office, desiring hybrid work instead (Smith, 2021), and research by the Society for Human Resource Management (SHRM) suggests that some employees who were forced to move to telework due to COVID-19 found benefits in doing so.

The perceived benefits of telework often range from a nonexistent morning commute and spending more time with family, to an increased flexibility with employee daily routines or work schedules, or more comfortable working conditions. Psychological benefits have also been researched and suggest that technology-related stress may not always be perceived as negative manifestations but instead challenges which promote innovative practices. This antithesis of technostress is often referred to as techno-eustress and has contributed to developing techno-eustress recommendations (Hargrove et al., 2015; Tarafdar et al., 2017).

Chapter 2 will describe the strategy employed for querying relevant databases and theories which define the relationship between technological advancements and technostress among employees. Organizational culture and the influence leadership has on technostress will then be discussed, as well as the relationships between technostress, job design, employee performance, and the various ways employees engage in non-business practices to cope with technostress. Finally, theoretical, and conceptual approaches will establish a foundation for exploring how technology affects employee behavior and overall satisfaction (Lee & Lee, 2018; Dirani et al., 2020).

Database Query Strategy

The literature review employs various database search queries through a combination of subject headings, search terms, and modifiers to discover potential theoretical and conceptual approaches for examining the research outcomes. Research databases including EBSCOhost, ProQuest, and Google Scholar narrowed the gap of literature associated with technostress and any linkage to HRD and leadership concepts. Keywords were used to identify relevant literature across a wide range of fields, and the time frame of inquiry was between 1985 and 2020. The researcher selected this timeframe to identify seminal research regarding organizational culture, leadership, technology-related stress, job satisfaction, and burnout, and to ensure that relevant resources were included in the literature review. Current literature regarding the impact of COVID-19 on organizations and the shift in operations to accommodate social distancing was critical to this research.

Organizational Culture and Technostress

The culture within an organization can act as a catalyst or inhibitor for technostress (Chiappetta, 2017). Cultural studies scholars define culture as "the set of habitual and traditional ways of thinking, feeling, and reacting that are characteristic of the ways a particular society meets its problems at a particular point in time" (Ogbonna, E. 1988, p.42). In the organizational context, culture refers to the set of values, rules, expectations, and activities that inform all employees' behavior in an organization (Elhai et al., 2016). It is assumed that variables that negatively influence the organizational culture may also become setbacks to the organization's overall success and limit the diffusion of innovation (Sahin, 2006). Additionally, Moore's Law (1965) suggests that technology increases exponentially with each passing year, so the organizational culture must quickly adapt to a changing environment. However, it is essential to

understand the distinction between the corporate mission and the culture that drives employees to fulfill the core mission (Posner et al., 1985). Culture is formed through an interaction of positive affirmations and behaviors, while the organization's mission is realized through policy and direction (Elhai et al., 2016).

If the organizational culture rewards behaviors like extended working hours, rapid response, and tight project timelines, employees have the propensity to develop technostress as requirements become increasingly more demanding (Elhai et al., 2016). It is not only how the organization rewards their employee base, but also the usability of technology that employees are expected to use that influences technostress. According to Sellberg & Susi (2014), technology lacking in usability contributes to a fragmentation of job tasks, which extends workdays and increases the pace at which employees must acquire new knowledge. This increased pace at which learning must occur can lead to anxiety and technostress, job burnout, and ultimately, leaving the organization (Bakker & Costa, 2014; Gaudio et al., 2017). However, organizational culture can equally provide coping mechanisms that inhibit technostress and technostress creators (Lee & Ashforth, 1996). If the employee perceives technology advancement and the implementation of new technologies as a risk-reward motivator, they are more likely to be motivated by new opportunities.

Brooks & Cailiff (2017) defined technostress as a harmful syndrome that happens when an employee is subjected to an overload of technology and loses touch with the world. Technostress may be caused using computers, tablets, PDAs, and smartphones. According to Fischer and Riedl (2017), technostress is reportedly higher in older males, but other factors may also be responsible. However, research by Cummins and Writer (2006) suggests that mothers may offset technostress since the benefits of working at home offset the challenges experienced

by a change in the working environment. Beyond age and gender, cultural differences, level of education, and years of employment have been studied to discern the level of impact that technology has on creating stress in the workplace. Unfortunately, there is a lack of literature focused on specific cultural gaps or ethics that may tease out the reasons for this claim. Cultures that involve innovative practices such as telecommunications promote more technostress than alternative cultures.

Leadership Styles and Technostress

Modern organizations often require ICT-usage to maintain employee engagement and to ensure efficiency. However, Boyer-Davis (2018) posited that technostress due to increased ICT-usage inhibits both performance and productivity and weakens employee commitment due to decreased job satisfaction. ICT-usage and technostress has also been associated with an increase in role-stress (Pullins et al., 2020) and subsequent loss of organizational revenue (Alleyne, 2012). However, research by Sumiyana & Sriwidharmanely (2019) suggests that the impact of technostress can be inhibited based on proactive personality types.

Apart from increased ICT-usage, the leading creator of stress is organizational culture, or the symbolic phenomena (Alvesson, 2002), and the leader-employee relationship. Research by Nivedhitha & Manzoor (2020) focused on full-range leadership theory and demographic factors, including education, gender, age, and years of experience, to analyze the relationship between leadership style and technostress. Findings suggest a significant relationship between laissez-faire leadership, transactional leadership, and technostress.

Prolonged technostress has an overwhelming effect and increases employee fatigue (Volpi, 2012), and job burnout. Leadership style can inhibit some of the negative aspects of stress, provided the technique employed is predictable and corresponds with the employee's

understanding of their assigned job tasks (Brooks & Califf, 2017; Atanasoff & Venable, 2017). However, the leadership style can negatively influence employee perception and subsequent performance if there is a misalignment that lowers employee morale, productivity, performance, organizational commitment, job satisfaction, customer service, retention, turnover, and quantity of profitability (Molino et al., 2020). Recent studies have focused on the authoritarian leadership style as one of the enhancing effects or determinants of workaholism and technostress in organizations (Spagnoli et al., 2020).

In the COVID-era, leadership competencies and HRD response can have positive implications on future reactions. Arora & Suri (2020) discuss a model which focuses on “redefining, relooking, redesigning, and reincorporating HRD practices” in a post-COVID world. This 4R model provides a framework that HRD practitioners may use to manage the organization during an operational shift as experienced during the onset of COVID-19 (Arora & Suri, 2020).

Technostress, Job Design, and Employee Performance

According to Ye (2018), technostress has increased over the past decade. A recent study on technostress in organizations posits that increased ICT-usage in professional and banking sectors has been beneficial, contributing to improved efficiency and reliability (Okolo, 2018). The study examined Nigerian banking from the employees' perspective and described the lack of knowledge and “stress-coping mechanisms” (Lazarus & Folkman, 1984) that contributed to stress among employees in the national sector. Okolo (2018) identified a negative relationship between ICT technostress and employee engagement since technostress often stems from poor job design or person-fit within the organization. Similar research on technostress creators in the financial technology sector suggest there is a positive impact on using fintech (Sanjaya et al., 2018).

According to Armstrong & Taylor (2020), job design is the process of deciding the duties and the methods to carry out any given task. Okolo (2018) used the Job Characteristics Model (JCM) to evaluate the level of fit between the employee and specific jobs within the organization. Findings suggested that appropriate job design does not negate technostress within the organization. However, there is a relationship between technostress and low employee engagement.

It is assumed that employees who are less engaged with their work environments will also experience decreased performance levels. According to Okolo (2018), specific technostressors, like techno-overload, harm employees' performance due to increased expectations to be available during and after regular work hours. Okolo (2018) recommends cross-examining other sectors that may experience technology saturation since there has not been a previous association between technostress, employee engagement, and employee job design.

Florkowski (2019) suggests that leadership plays a significant role in inappropriate job design, based on organizational policies concerning: job design management policies, supervision, technological pace, working hours, the requirement to use multimodal technologies and ICTs, often complicating communication channels that exceed employee capacity and make it difficult for employees to adapt to new job requirements. Any change can potentially lead to technostress and lower employee performance, job satisfaction, and commitment to the organization. (Park et al., 2020; Brooks & Califf, 2017; Howard, 2019). Research suggests poor job design is also a primary contributor to employee burnout syndrome.

In similar studies, stress resulting from technological advancement challenges human resource departments that focus on interventions that protect employees from specific outcomes, such as work overload, role overload, work-family conflict, and rampant multitasking (Pandita,

2017; Lee & Lee, 2018). Research by Suh and Lee (2017) asserted that today's business atmosphere challenges job design in the 21st Century. Suh and Lee (2017) also suggested that employee capacity accomplish additional work in lower time frames increases anxiety and the potential for work overload.

According to Jacobs (2017), there is a need to analyze technostress and the intersection between job design and employee engagement relative to stress and organizational change. Although some work stress can have positive outcomes, in terms of motivating factors, employees suffer from disengagement if they feel techno overload or techno invasion. Research by Kuuttila et al. (2020) supports this claim based on Yerkes-Dodson's law, which describes low to moderate job stress as a trigger for improved performance.

Technostress and Job satisfaction

Suh and Lee's (2017) research on technostress focused on predicting teleworkers' job satisfaction concerning technostress. The theoretical basis for their study was Job Characteristics Theory to understand which characteristics determine employee attitude and performance among 258 teleworkers surveyed worldwide. The research design found a cooperative relationship between job characteristics and technology, depending upon the intensity of telework (IOT). Suh and Lee (2017) concluded that teleworkers who have extensive experience in face-to-face environments experience higher IOT levels due to the shift in the working environment.

Karimi and Nazari (2018) studied the impact that technostress has on librarians in the United States and found that librarians experience a high level of technostress based on the rapid advancement of technologies. The consistent flow of new software made it difficult for librarians to remain current, which added to their work-related stress. Librarians are forced to acquire contemporary knowledge that should align with the logical competence for their duties' effective

performance (Hauk et al., 2019). However, most human resource practitioners pay little attention to enhancing the employees' capability to maneuver in the organizational duties with appropriate training (Chandra et al., 2019). In addition, the onset of new technology would often come in the form of informal emails, which increased anxiety related to standard communication channels.

Lorrain (2020) explored how the appraisal of email affected employee perception of specific types of stress known as 'eustress' and 'distress' within a support organization, suggesting that overall job satisfaction is impacted by constant email. Additionally, Khan et al. (2013) made an empirical analysis to determine the correlation between job satisfaction and technostress. They linked the results to human resource management approaches in limiting technostress and boosting employee morale at work.

A primary contributor to technostress in organizations comes from techno-invasion, the perceived invasion of the employee's non-working time (Kakabadse et al., 2007). Techno-invasion is associated with the pervasive use of technology and is often a byproduct of perceived expectations, job design, and organizational culture. According to Triberti et al. (2018), the effect of IT and the specific culture that the organization has developed may cause the workers to develop anxiety related to technostress and decreased productivity and seek escapes such as social media (Brooks et al., 2017).

Adverse Effects of Technostress on Performance

Research by Hwang and Cha (2018) suggests the adverse effects of technostress on performance are also associated with potential threats to employees' information security compliance. In the modern workplace, and especially within IT departments, threats to information security are becoming more sophisticated. This survey of 346 employees proposes that as employees' technostress increases, their IT compliance intention decreases, resulting in

compromised cybersecurity defense within the organization. A secondary finding was that technostress impacts regulatory focus, subjecting the organization to lowered desire to comply with organizational policy on security awareness.

Research by Zhao et al. (2020) examined technostress through the Transactional Theory of Stress framework and at the application level, where the demand for information and communication technologies acted as a trigger to induce technostress. The results of this study that problem and emotional coping strategies may act as mediators for the overarching influence of technostress beyond the technology level. However, causal models were not tested, and future recommendations for study included an exploration of cultural norms in the appraisal process (Zhao et al., 2020).

Castillo et al. (2020) summarized the literature on technostress and its impacts on mental work overload. The research viewed employee mental health through the lens of person-technology fit, socio-technical fit, and task-technology fit theories, identifying the need to apply new theoretical models to improve employee mental health and subvert the adverse impacts of technostress on employee behavior. Fuglseth & Sorebo (2014) further reinforced that increased reliance on ICTs in the modern workplace has a negative psychological effect on employee performance that technostress inhibitors like mindfulness can only combat to alleviate adverse effects of technostress by using self-centering techniques and meditation to ease the pressures associated with technology adoption and usage (Pflügner et al., 2021).

Technostress and Cyberslacking: A Coping Mechanism

Cyberslacking, a form of stress-coping in which employees use the Internet, email, and social media as a coping mechanism, is often associated with decreased job performance and job satisfaction (Labban & Bizzi, 2020). Research by Güğərçin (2019) describes the difficulty of

managing work-related stress and employee engagement in nonwork-related functions. While employees may view cyberslacking as multi-tasking, many employers view it as a pervasive issue (Naughton et al., 1999). A link is made between neutralization theory and organizational behavior, which suggests deviant behaviors will be pursued when there is an increase in employee work-related stress. Another aspect of technostress, known as techno-invasion, is considered the most significant catalyst for employees in pursuing cyberslacking behaviors (Nivedhitha & Manzoor, 2020). This “dark side” of technology can be a problematic distraction and become a subsequent addiction for certain employees (Ma & Turel, 2019). However, the research showed that cyberslacking could be dissuaded when there is a focus on lowering the organizational levels of techno-invasion.

Technology-related stress can be temporarily alleviated by engaging in non-business activities on the Internet (Upadhyaya, 2020; Khan et al., 2013). However, employers will occasionally allow minor cyberslacking behaviors to occur to act as a neutralizing factor for increased stress in the workplace (Molino et al., 2020). Technostress can increase cyberslacking behaviors due to continuous connection known as techno-invasion and the perceived need to work faster and be available for assignments or new tasks at a moment's notice (Nivedhitha & Manzoor, 2020). According to Molino et al. (2020), these pressures occur both during work hours and after. Employees often feel pressured to remain 'always on' and are reluctant to switch off, so they rely on cyberslacking behaviors to reduce perceived workload stress (Brooks & Califf, 2017; Upadhyaya, 2020).

Castillo et al. (2020) also mentioned that technostress is a source of deterioration in psychological and physiological processes as it results in undesired consequences in the workplace. These undesired effects are also discussed as a catalyst for employees' intention to

leave the organization, be less committed to organizational change, be dissatisfied with their job, or be less productive. It is proposed that workplace stress resulting from ICT advancement has the propensity to undermine organizational policy on social media usage and lower employee performance resulting from web-surfing and other cyberslacking behaviors.

Organizational Approaches to Manage Cyberslacking

Nivedhitha and Manzoor (2020) describe the need for an organizational focus on efforts that relieve employees' workplace stress due to techno-overload and techno-invasion. The study incorporated a cross-sectional research design and used information from each participant at a single point in time. The gaps in the literature elucidate the need to analyze smartphone usage as a source of technostress and seek alternatives to employee connectedness, such as deploying artificial intelligence and chatbots to accomplish time-sensitive, low-stakes work tasks.

Nivedhitha and Manzoor (2020) asserted that employees should be provided an established enterprise social media source to reduce cyberslacking. Incorporating a social media source, like a company Intranet, would give a moderated mediation approach to align with employees' needs to lower workplace stress resulting from techno overload. The study examined the behavioral dynamics of enterprise social media to enhance social bonding in a workplace and provide a self-expressive method for employee recognition via 'microblogging,' which refers to making short posts to a blog (Ebner, 2008). This practice is affiliated with the perception that coworker involvement requires breaks during working hours. Findings from this research suggest that Intranet-style ESMs were more successful in lowering cyberslacking in medium-sized organizations. This research is corroborated by (Molino et al., 2020).

According to Nattar (2020), there is a close correlation between technostress and cyberslacking. The research focused on employee interconnectedness, communication channels,

and social bonding theory. Findings suggest that as techno invasion increases and fatigue increases, there is an increase in cyberslacking behaviors to reduce the negative impacts. To resolve cyberslacking, managers need to establish a central social media platform for employees to engage.

Summary

Chapter 2 described the relevant literature in the field of study and offered the rationale for the database query used to identify relevant works. A theoretical foundation for the study was discussed as well as influences for the line of inquiry. Finally, a comprehensive review of literature was conducted and gaps in the relevant literature were identified to illustrate the need for additional academic inquiry.

CHAPTER 3

METHODOLOGY

The purpose of this quantitative study is to determine the relationship between organizational culture and the Technostress Creators Inventory (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty). Additionally, the purpose of this study is to understand which techno-stressors contribute to teleworkers' job satisfaction and to identify whether these techno-stressors can be inhibited or negatively impacted based on organizational culture. The following research questions will be addressed:

RQ₁: What is the relationship between technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty) and job satisfaction?

RQ₂: What is the relationship between technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty) and burnout?

RQ₃: What is the relationship between technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty) and the demographic variables age, gender, and years working as an IT employee?

Research Design

This research employs a pilot study framework that leverages three instruments to evaluate the impact of shifts in operation and organizational culture on managing technology-related stress, job satisfaction, and job burnout. According to Janghorban et al. (2014), pilot

studies can be qualitative, quantitative, or mixed methods in nature and are a valuable pretest for a particular research instrument such as a questionnaire. To this end, the researcher is pretesting the tools and survey on a specific sample of IT professionals in a public university to qualify whether it can be replicated in the future in similar environments and on similar populations.

The independent variables of this pilot study will include technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty), while the dependent variables will include job satisfaction and burnout. In addition, demographic variables, including age, gender, and years working as an IT professional, will be examined to evaluate which factors contribute to increased technostress in employees.

The researcher will employ a quantitative, non-experimental pilot study with a correlational design to determine relationships between technostress, job satisfaction, burnout, and the demographic variables of age, gender, and years working as an IT professional. The non-experimental quantitative methodology with a correlational design is selected because of the type of data to be analyzed. A quantitative research methodology relies on gathering numerical data that can be generalized across a population to explain a particular phenomenon (Creswell, 2013). An example of quantitative research would be to determine whether a relationship exists between the independent variable(s) and the dependent variable among a specific data set. A qualitative methodology would be more appropriate if the research explored a particular phenomenon to establish a new theoretical model or definition (Allwood, 2011).

Due to the nature of the research questions and the types of data being analyzed, multiple linear regression is a proper fit for data analysis in this study. Multiple linear regression is used to predict a continuous dependent variable based on more than one independent variables. According to Mertler & Reinhart (2016), multiple regression analysis is appropriate to determine

the strength of the relationship between the outcome variable and multiple predictor variables. Therefore, the approach for this research includes multiple regression analysis to test for the effects of the independent variable on the dependent variables using two dependent variables, job satisfaction and burnout, and the independent variables, technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty), and the demographic variables of age, gender, and years working as an IT professional.

Organizational Culture & Leadership at the Test Site

It is important to note that this pilot study be conducted in a public university when COVID-19 restrictions require a systemic shift in operations that impacts all aspects of campus business. The data will be collected using three separate instruments. Still, they will not include any experimental program or control. Instead, a survey will be deployed to measure technology-related stress, job satisfaction, and job burnout among IT professionals tasked with carrying out university business while working under constraints that have not been experienced to date. The 2020 year was historic and unprecedented in universities nationwide. At the test site, university departments rolled out individualized support sessions to help faculty, staff, and students to adapt to the *new normal*. These sessions ranged from workshops focused on improving your home office environment to improving cybersecurity measures while teleworking. Many of these workshops could be seen on other campuses and newly created websites that began with the URL "KeepTeaching" followed by the university name. These shifts in operationalization also came with new human resource policies and Town Hall's dedicated to promoting leadership initiatives and improved teamwork.

It is equally important to note that social dynamics in universities vary from campus to campus. Some institutions have a more centralized IT department that manages the technology

and the human resources tasked with supporting it. At the same time, other universities are more decentralized and have embedded IT professionals within each department. The decentralization of a workforce can create a substantial difference in the way culture influences personnel from university to university, so the data and subsequent findings of this study, by nature, will not be replicated elsewhere. The organizational culture and leadership practices are a signature of the individual university, based on policy and practice, so for this reason, a pilot study is being conducted at a single public university. However, the instruments being used may be applied to other universities, with different outcomes, based on the practices observed at any specific institution.

The organizational culture and leadership at the pilot test location emphasize high-touch practices and communication, with daily staff contact via the teleconferencing platform, Zoom©. At the same time as the onset of COVID-19, a teleworking policy was developed to allow continued operations for IT professionals from the safety of their homes. However, certain employees were identified as 'mandatory' and required to continue to work from campus offices. These employees were responsible for critical on-premises systems that could not be maintained remotely. These mandatory employees were a minimal subset of the campus population and provided additional training and safety protocols. However, these employees received no specific training, apart from health & wellness training for dealing with hazardous materials or locations.

The teleworking policy that was rolled out in 2020 at the test site was complete with human resource materials and training resources to help manage daily work/life balance during operational shifts. These materials and resources included access to a Canvas© course for teleworking, a website devoted to best practices for working from home, weekly workshops and

drop-in sessions, and supplemental technology tailored for working in home offices (i.e., headsets, dual monitors for laptops, and web cameras for teleconferencing).

While resources were provided to help stabilize the abrupt transition to remote work, the overall culture was not observed to change significantly. IT professionals were still required to maintain and manage meetings, standard working hours were enforced, and real-time contact via instant messaging or other means was promoted. In addition, organizational units were needed to maintain similar levels of support as they were pre-COVID, and in some cases, an increased level of support based on specific IT functions and duties. These functions and responsibilities perhaps more significantly impacted personnel responsible for maintaining data warehouses and infrastructure, providing service-desk support, and maintaining telecommunications infrastructure on campus. However, it is safe to say that all IT professionals were impacted to some extent by the operational shift, which could also increase technology-related stress and job burnout.

Population

The population of this study is Information Technology (IT) professionals that work in a single public university in the United States. The number of information technology (IT) professionals is approximately 4.6 million, according to a new report from the U.S. Census Bureaus' American Community Survey (U.S. Census Bureau, 2020). Thus, IT professionals represent 2.9 percent of the U.S. labor force (U.S. Census Bureau, 2020). Using a single public university for this pilot study will provide microcosmic data associated with the larger region, state, and federal data sets. In addition, data from this pilot study can potentially be helpful for other universities experiencing a shift in operations due to unforeseen circumstances.

Sample

This pilot study will utilize a sample of IT professionals that work in a single public university in the United States. A public university in the United States can be viewed as a microcosm of local or regional membership since university staff members typically live in or near the physical university campus. Convenience sampling is a type of non-probability sampling that does not randomly select respondents but selects the sample from that part of the population in proximity (Cochran, 2007). The sample used for this pilot study will be IT professionals; to discover the impact that operational shifts have on levels of technostress, job satisfaction, and job burnout.

Upon IRB approval, IT professionals that work in a single public university in the United States will be contacted via email regarding this study. The email invitation will include a description of the study, why it is being done, its purpose, and any potential risks involved. The email will also contain a link to the survey, which will be hosted on Qualtrics®, a third-party survey hosting site. Qualtrics will not collect any identifying information of the participants, such as names, email addresses, or IP addresses.

Procedural Methods for Recruitment, Participation, and Data Collection

Data collection will begin once IRB approval has been received. IT professionals that work in a single public university in the United States will be contacted via email regarding this study. The researcher will use the online survey tool, Qualtrics, to facilitate data collection. Prospective respondents will participate in the survey via an email invitation link. Participants will be asked to access a Qualtrics link and to submit the informed consent form along with the survey instruments. The Qualtrics survey begins with a page describing the research, any ethical concerns or risks to participants, any dangers to anonymity, and contact information for the

researcher. Consent will be sought a second time before continuing to the rest of the survey. Next, the subjects will be screened for eligibility electronically online. To be eligible, the individual must (a) be an adult of at least 18 years of age, (b) work as an IT professional within the university, and (c) work for a minimum of one year as an IT professional. Respondents that do not meet the above criteria will not be included in this study, and the questionnaire data will be deleted within 30 days of submission.

The second page of the survey will contain the questions for the four survey instruments. The first survey instrument will include a demographic section that will consist of three questions that ask the participant's age, gender, and the number of years working as an IT professional. The second survey instrument is the Technostress Creators Inventory (Ragu-Nathan et al., 2008), which will consist of 23 items that will measure techno-overload (6 items), techno-invasion (3 items), techno-insecurity (5 items), techno-complexity (5 items), and techno-uncertainty (4 items). The third survey instrument is the Job Satisfaction Survey (Spector, 1994) which consists of 36 questions measuring overall job satisfaction. The fourth survey instrument is the 16-item Maslach Burnout Inventory (MBI) Survey to measure prevalent burnout. The final page of the survey will thank the participants for their time. After an established period, a prompt email will be sent to participants as a reminder to complete the study if they have not already and to encourage all potential respondents to participate. After every participant has completed the online survey, data will be retrieved from Qualtrics for analysis.

Operationalization of Study Variables

The independent variable technostress, with the instrument consisting of 23 items, will measure five dimensions: techno-overload (6 items), techno-invasion (3 items), techno-insecurity (5 items), techno-complexity (5 items), and techno-uncertainty (4 items). These five dimensions

will be measured by taking the mean responses of the items for each respective size. The potential range of responses will be from 1 to 5, where higher responses correspond to higher stress levels. Technostress will be measured at the interval level.

The independent demographic variables include age, gender, and years of experience as an IT professional. Age and the number of years' experience will be measured at the interval level. Gender will be calculated at the nominal level of size and coded as 0 for males and 1 for females.

The dependent variable: job satisfaction will be measured at the interval level using the JSS survey. The mean responses of the 36 items on the JSS will be calculated and serve as an overall measure of job satisfaction. Possible ranges of the JSS are from 1 to 6, with higher scores indicating higher levels of job satisfaction.

The dependent variable burnout will be measured at the interval level using the MBI. The mean of the 16-items comprising the MBI will be computed and serve as an overall measure of burnout. Burnout possible ranges are from 0 to 6, with higher scores indicating higher levels of burnout.

Data Analysis

The quantitative data analysis will be conducted using the Statistical Package for the Social Sciences (SPSS) version 27, a popular statistical software suite. The data will be examined for any missing data entries (Field et al., 2012). Missing values within the dataset will be treated like empty cases. In other words, the entire case will be removed from the analysis based on the listwise deletion and not randomly (Pepinsky, 2018). Listwise deletion is removing missing values of any portion from the dataset in any specified variable. The analysis will only be run for cases that have a complete set of data (Cohen, 2013). Categorical variables will be

coded for linear regression (Field et al., 2012). For instance, the nominal variable gender has two categories: Male and Female. Therefore, the variable will be coded such that a value of "0" signifies male and "1" signifies female.

Descriptive statistics for the independent variable and the dependent variables will be reported for the data set, and a summary of variable frequencies will be provided. In addition, standard deviations will be measured, and the appropriate minimum and maximum values will be provided. Finally, demographic data with frequencies and percentages will be described.

Multiple regression will be conducted to answer the previously mentioned research questions. Petchko (2018) states, "multiple regression analysis allows researchers to assess the strength of the relationship between an outcome (the dependent variable) and several predictor variables as well as the importance of each of the predictors to the relationship, often with the effect of other predictors statistically eliminated" (p. 241). Before conducting multiple regression, the parametric assumptions will be tested. These parametric assumptions are standard statistical tests conducted to determine if there are characteristics of normality through a process of comparison between data sets.

Mertler & Reinhart (2016) state that multiple regression analysis includes linearity, normality, homoscedasticity, and multicollinearity. Standardized residuals will be plotted to measure the strength of the difference between values and to determine the subsequent pattern. If the model fits, then there should be no discernable pattern to observe. A Shapiro-Wilk test of normality will be used to determine if there is a normal distribution and to identify any outliers or departures (Field et al., 2012). Kurtosis will be generated to inspect the *tailedness* of the distribution, or how heavily tailed the distribution is, and skewness will be generated to assess the whether the mean is positive or negative. Finally, the variable inflation factor (VIF) will be

calculated for each variable to identify whether a violation of multicollinearity occurs. Provided the VIF score falls below 10 then no significant violation of multicollinearity is present (Field et al., 2012; Tabachnick & Fidell, 2014).

Multiple regression will be used to address the following research questions:

RQ₁: What is the relationship between technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty) and job satisfaction?

RQ₂: What is the relationship between technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty) and burnout?

RQ₃: What is the relationship between technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty), and the demographic variables age, gender, and years working as an IT employee?

Hypotheses

H₀₁: There is no significant relationship between technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty) and job satisfaction.

H₁₁: There is a significant relationship between technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty) and job satisfaction.

H₀₂: There is no significant relationship between technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty) and burnout.

H₁₂: There is a significant relationship between technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty) and burnout.

H0₃: There is no significant relationship between technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty) and the demographic variables age, gender, and years working as an IT employee.

H1₃: There is a significant relationship between technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty) and the demographic variables age, gender, and years working an IT employee.

The following three regression models will be tested using SPSS software:

- Job satisfaction = $b_0 + b_1 \text{ Techno-overload} + b_2 \text{ Techno-invasion} + b_3 \text{ Techno-insecurity} + b_4 \text{ Techno-complexity} + b_5 \text{ Techno-uncertainty}$
- Burnout = $b_0 + b_1 \text{ Techno-overload} + b_2 \text{ Techno-invasion} + b_3 \text{ Techno-insecurity} + b_4 \text{ Techno-complexity} + b_5 \text{ Techno-uncertainty}$
- Technostress = $b_0 + \text{Age} + b_1 \text{ Gender} + b_2 \text{ Years' Experience}$

In the third model, technostress will be treated as overall mean responses to all items comprising technostress. For this reason, technostress will be treated as a dependent variable in the third research question. The significance of each independent (predictor) variable will be assessed at the 5% level. Thus, a p-value less than 0.05 will indicate that the predictor is significant. If, on the other hand, the p-value is greater than 0.05, the predictor is not substantial.

Potential Threats to Validity

Validity is required that a test measures what it intends to measure (Kelley, 1927). There are two identified types of validity: internal and external. Internal validity relates to the cause-effect relationship between a particular treatment and the subsequent outcome. Factors that positively influence internal validity include random sampling and study protocol.

Threats to internal validity include researcher bias, which refers to the imparting of researcher influence into the study protocol, and confounding variables that refer to any change in outcome due to any variable that was not intended to be studied. External validity refers to how well the study can be applied to other settings. Several factors might contribute to positive external validity, ranging from scientific calibration to field experimentation. Threats to external validity range from selection bias, such as demographics of a population being more willing to take a survey online and situational factors, or the test environment and research characteristics. According to Etikan (2016), testing a convenience sample can unintentionally threaten external validity (Etikan, 2016).

Ethical Procedures

Ethical considerations are an integral part of all research. The Belmont Report describes the ethical considerations researchers must address (U.S. Department of Health and Human Services, 1979). Researchers must protect vulnerable participants and adhere to respect for persons, autonomy, justice, and beneficence. This study will employ convenience nonprobability sampling, and the data collected will not include any personally identifying information. The data that will be collected in Qualtrics and no identifying variables will be included. This means the data collected will not be associated with any names, IP addresses, or participants' emails. The data will be downloaded to a secure, password-protected personal computer. The ethical considerations identified in the Belmont Report are essential for the protection of all participants in the current study.

Summary

The purpose of this quantitative, non-experimental, correlational study was to examine the relationship between technostress, job satisfaction, burnout, and demographic characteristics

of age, gender, and years of experience of an IT professional. A convenience sample of IT professionals from a single public university in the United States will be utilized and multiple regression to address the research questions. This chapter included a description of the study design and associated research questions to be examined and the hypotheses, method of data analysis, ethical implications, and potential threats to validity. The next chapter will discuss the results of the proposed study.

CHAPTER 4

RESULTS

The purpose of this quantitative pilot study was to investigate the relationship between organizational culture and the Technostress Creators Inventory (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty) at a single university. A secondary purpose of this pilot study was to understand which techno-stressors contribute to teleworkers' perception of productivity and satisfaction and to identify whether these techno stressors can be inhibited or reversed based on organizational culture. The following research questions and hypotheses were tested:

- RQ₁: What is the relationship between technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty) and job satisfaction?
- H₀₁: There is no significant relationship between technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty) and job satisfaction.
- H₁₁: There is a significant relationship between technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty, and job satisfaction.

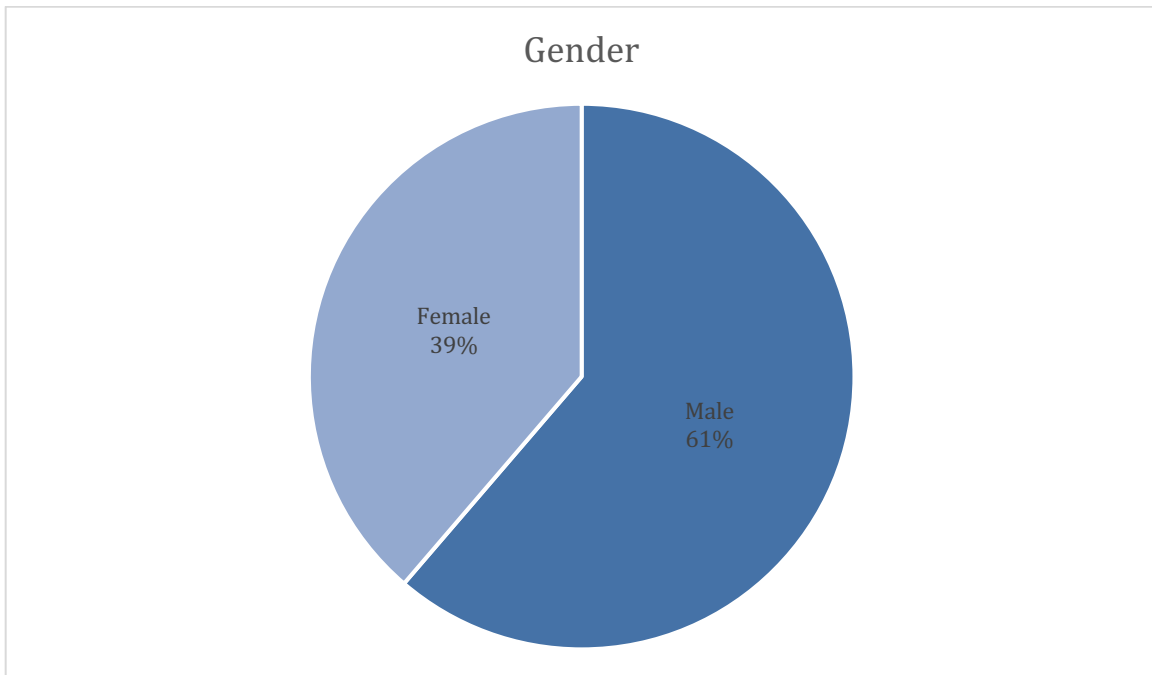
- RQ₂: What is the relationship between technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty) and burnout?
- H0₂: There is no significant relationship between technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty) and burnout.
- H1₂: There is a significant relationship between technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty) and burnout.
- RQ₃: What is the relationship between technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty, and the demographic variables age, gender, and years working as an IT employee)?
- H0₃: There is no significant relationship between technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty) and the demographic variables age, gender, and years working as an IT employee.
- H1₃: There is a significant relationship between technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty) and the demographic variables age, gender, and years working an IT employee.

The following information provides a description of the method used for collecting data and identification of the population used in the pilot study. Demographic frequencies and years employed at the study site are illustrated by tables and figures below, as well as information regarding the internal consistency measures, descriptive statistics, variances, scatterplots, regression models, histograms, and findings.

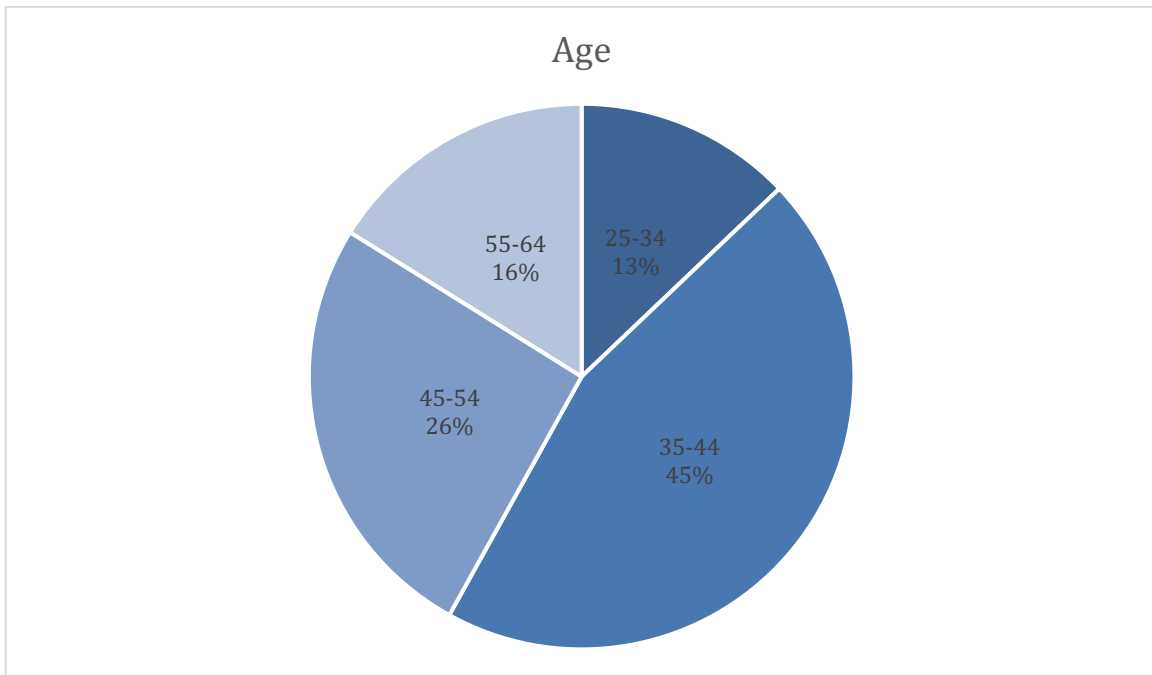
Data Collection

This quantitative pilot study utilized a convenience sample of employees that worked in a single public university in the United States. The sample used for this pilot study included IT professionals to discover the impact that operational shifts have on levels of technostress, job satisfaction, and job burnout. Upon IRB approval, IT professionals that worked in a single public university in the United States were contacted via email regarding this study. The email invitation included a description of the study, why it was being done, its purpose, and any potential risks involved. The email also contained a direct link to the survey hosted on Qualtrics, a third-party survey hosting site. Qualtrics did not collect any identifying information of the participants, such as names, email addresses, or IP addresses, to protect anonymity. The sample of 116 potential respondents were emailed to request participation in the study. There were 46 survey submissions received (roughly 40% of likely respondents). Of those surveys received, were 31 complete cases (approximately 27%). Therefore, 31 total cases answered all 86 questions and met the minimum criteria to be included: (a) 18 or older, (b) work as an IT professional, (c) being employed for a minimum of 1 year in the university.

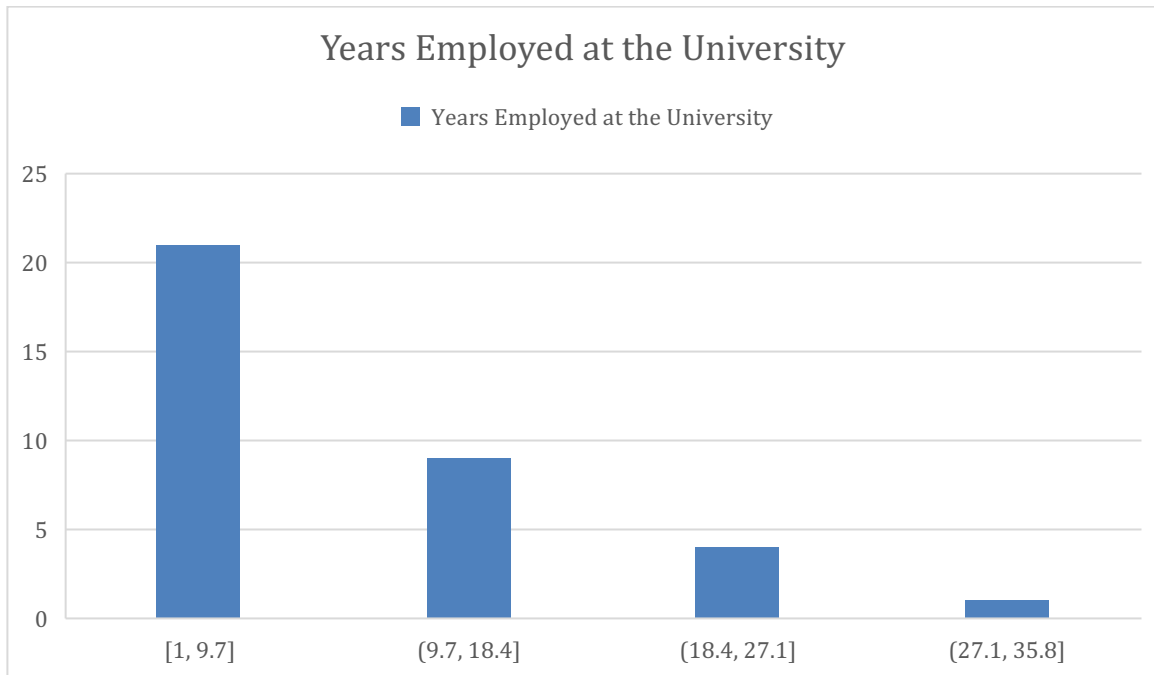
The pilot study's sample consisted of 19 (61.3%) males and 12 (38.7%) females. Most respondents were in the 35–44-year age range, 14 (45.2%). This was followed by 45-54, 8 (25.8%); 55-64, 5 (16.1%); and the 25–34-year age range, 4 (12.9%). The number of years that employers worked at the university ranged from 1 to 34 years ($M = 9.32$, $SD = 8.13$). This information is depicted in the following figures and tables.

Figure 1*Gender***Table 1***Gender*

	Frequency	Percent
male	19	61.3
female	12	38.7
Total	31	100.0

Figure 2*Age***Table 2***Age*

	Frequency	Percent
25-34 years old	4	12.9
35-44 years old	14	45.2
45-54 years old	8	25.8
55-64 years old	5	16.1
Total	31	100.0

Figure 3*Years Employed at the University***Table 3***Years Employed at the University*

	<i>N</i>	Min	Max	<i>M</i>	<i>SD</i>
How many years have you been employed at the university?	3	1	34	9.32	8.1
	1				30

The study's independent variables included the dimensions of technostress as measured by the Technostress Creators Inventory, which included techno-overload, techno-invasion, techno-insecurity, techno-complexity, and techno-uncertainty. The dependent variables included employee job satisfaction measured by the Job Satisfaction Survey (JSS) and burnout as

measured by the Maslach Burnout Inventory (MBI). Cronbach's alphas were computed to calculate the reliability of the scales used in this pilot study. A generally accepted rule is that α of 0.6-0.7 indicates an acceptable level of reliability, and 0.8 or greater is an excellent level (Ursachi et al., 2015). Nunnally (1978) recommends a minimum level of .7. All scales had acceptable reliability, with Cronbach's alphas ranging from .695 to .908. The information relevant to Cronbach's Alpha's of Scales is depicted in Table 4.

Table 4

Cronbach's Alphas of Scales

Scale	# Items	Cronbach's Alpha
Job Satisfaction	36	.908
Burnout	15	.892
Techno Overload	6	.841
Techno Invasion	3	.725
Techno Complexity	5	.695
Techno Insecurity	5	.755
Techno Uncertainty	4	.827

Possible ranges for all scales (except burnout) were from 1 to 5 with higher scores representing more of that attribute. Burnout was measured on a 6-point Likert scale. The mean of the scale items that pertained to that variable were computed. Job satisfaction ranged from 1.86

to 4.78 ($M = 3.92$); burnout ranged from 1.56 to 5.38 ($M = 2.89$, $SD = .83$); techno-overload ranged from 1.50 to 5.00 ($M = 3.23$, $SD = .92$); techno-invasion ranged from 1.00 to 4.67 ($M = 3.14$, $SD = 1.16$); techno-complexity ranged from 1.00 to 3.40 ($M = 1.91$, $SD = 0.76$); techno-insecurity ranged from 1.00 to 4.00 ($M = 2.23$, $SD = 0.83$); techno-uncertainty ranged from 2.00 to 5.00 ($M = 4.15$, $SD = 0.78$); and technostress overall ranged from 1.87 to 4.04 ($M = 2.87$, $SD = 0.55$). This information relevant to descriptive statistics of job satisfaction is provided below in Table 5.

Table 5

Descriptive Statistics of Job Satisfaction, Burnout, and Dimensions of Technostress

	Min	Max	M	SD	Skewness	Kurtosis
Job Satisfaction	1.86	4.78	3.92	.61	-1.478	3.273
Burnout	1.56	5.38	2.89	.83	.855	1.306
Overload	1.50	5.00	3.23	.92	-.307	-.718
Invasion	1.00	4.67	3.14	1.16	-.787	-.567
Complexity	1.00	3.40	1.91	.76	.456	-.911
Insecurity	1.00	4.00	2.23	.83	.378	-.716
Uncertainty	2.00	5.00	4.15	.78	-.854	.485
Technostress Overall	1.87	4.04	2.87	.55	-.191	-.635

Additionally, the normality of the study variables was assessed by the computation of skewness and kurtosis values. The results suggested there was no significant deviation of data from normality, since the skewness and kurtosis index were below 3 and 10, respectively (Kline, 2011).

Three regression models were tested in this pilot study which appear below:

- Job satisfaction = $b_0 + b_1$ Techno-overload + b_2 Techno-invasion + b_3 Techno-insecurity + b_4 Techno-complexity + b_5 Techno-uncertainty
- Burnout = $b_0 + b_1$ Techno-overload + b_2 Techno-invasion + b_3 Techno-insecurity + b_4 Techno-complexity + b_5 Techno-uncertainty
- Technostress = $b_0 +$ Age + b_1 Gender + b_2 Years' Experience

Before performing the multiple regression, the parametric assumptions had to be tested for each model, including the assumptions of linearity, homoscedasticity, multicollinearity, outliers, and normality. There was linearity and homoscedasticity as assessed by the plots of standardized residuals against the predicted values, and data points formed a random pattern with no apparent curvilinear shape. These plots are depicted in Figures 4, 5, and 6.

Figure 4

Scatter Plot of Regression Standardized Predicted Residuals vs. Standardized Residuals (RQ1)

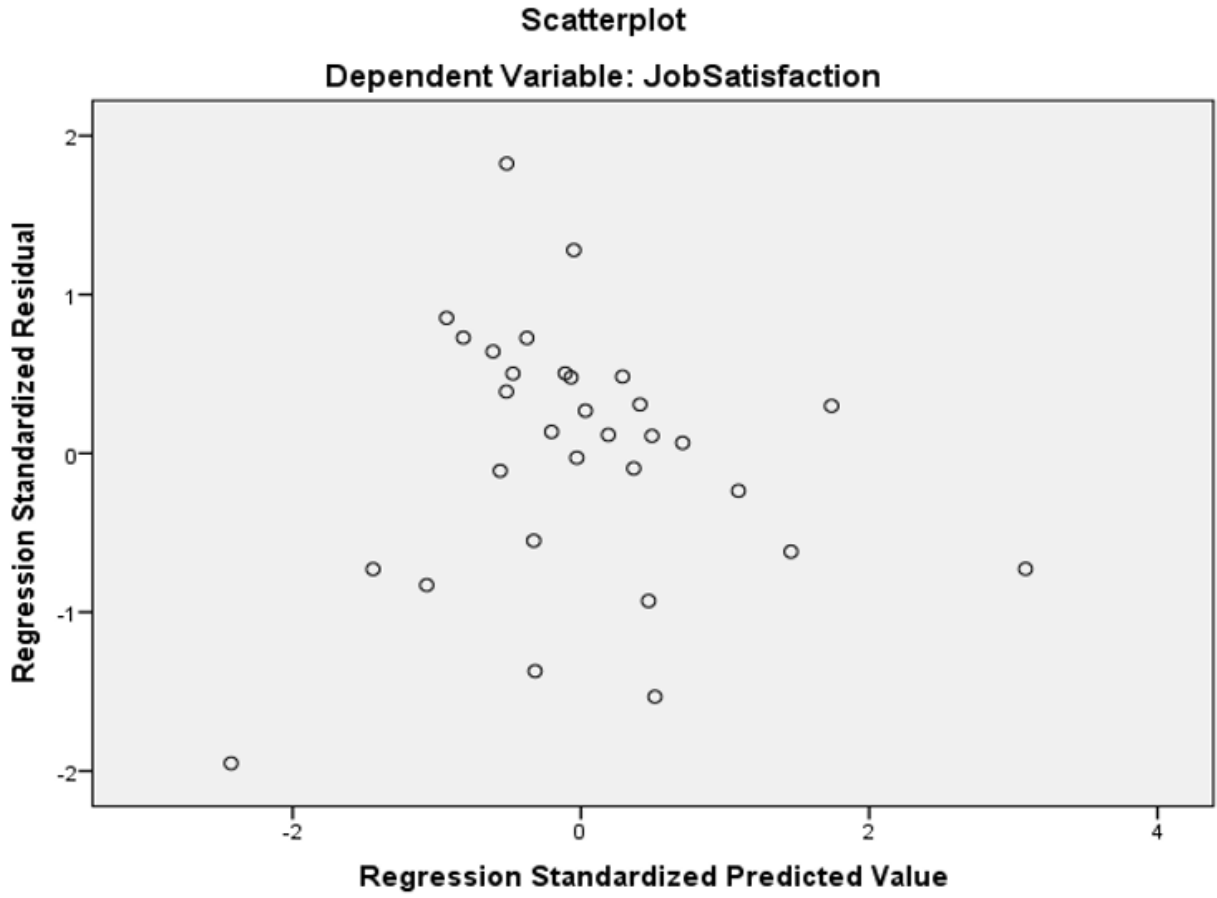


Figure 5

Scatter Plot of Regression Standardized Predicted Residuals vs. Standardized Residuals (RQ2)

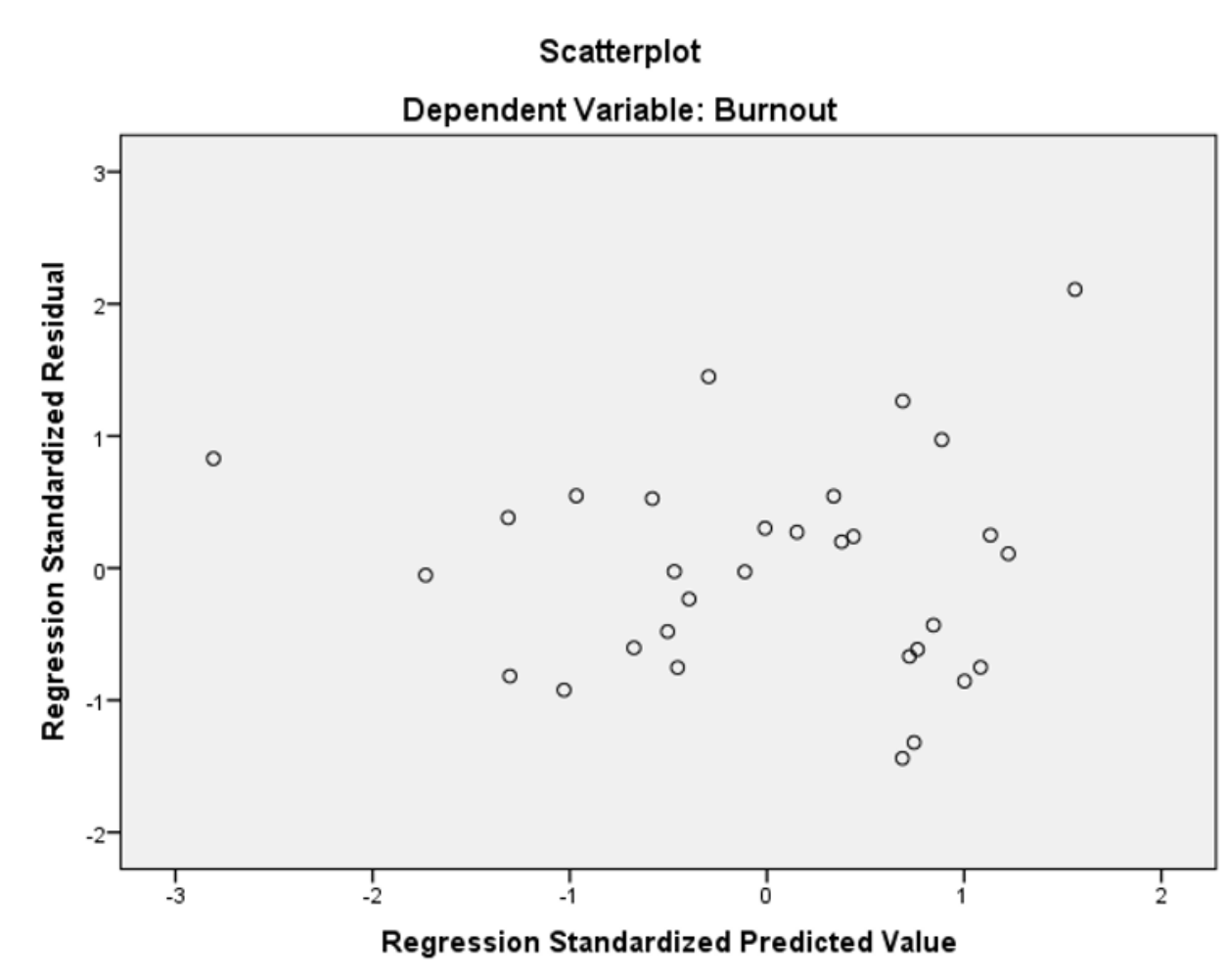
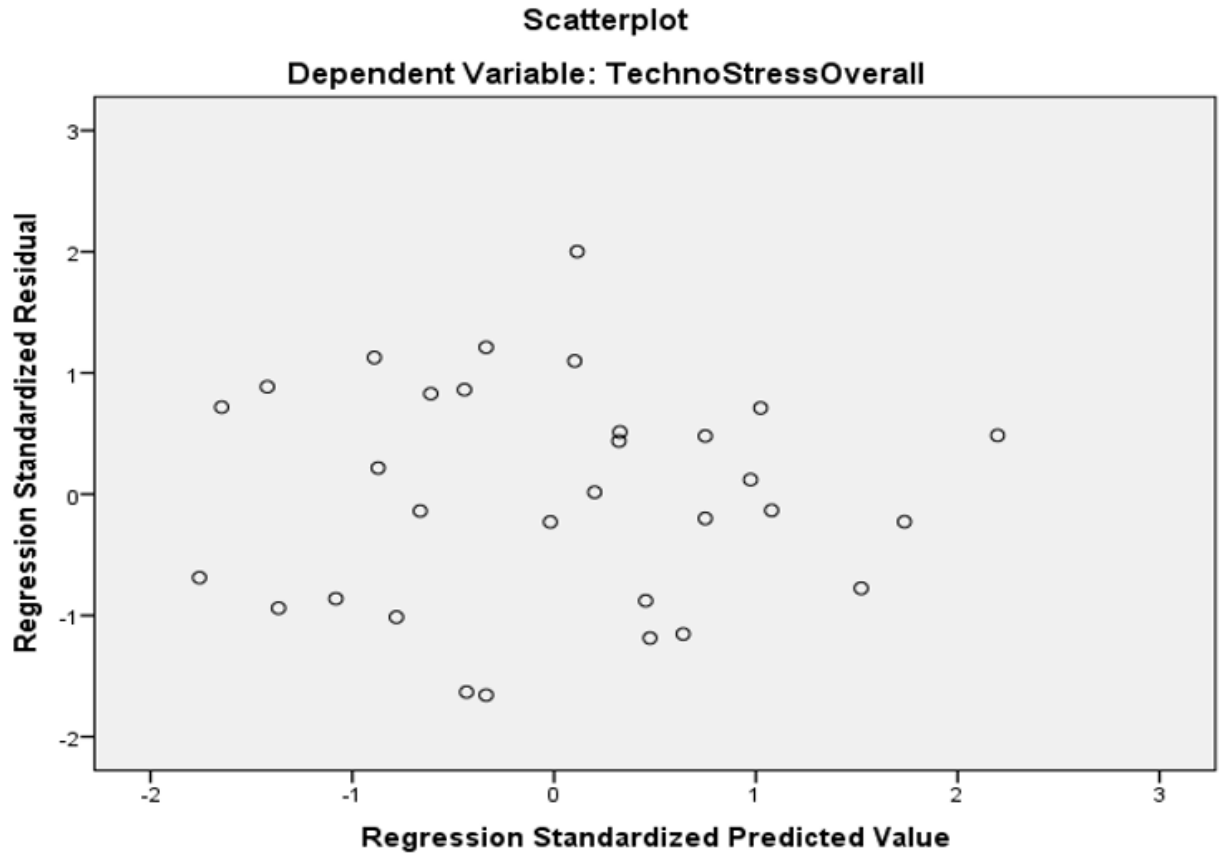


Figure 6

Scatter Plot of Regression Standardized Predicted Residuals vs. Standardized Residuals (RQ3)



There was no evidence of multicollinearity, as assessed by tolerance values less than 10, depicted in Table 6.

Table 6

Variance Inflation Factors (VIF)

Variable	VIF
Age25_34	2.254
Age_35_44	2.728
Age_45_54	1.929
Gender	1.703
How many years have you been employed at the university?	1.624
Overload	1.709
Invasion	2.062
Insecurity	2.000
Complexity	2.368
Uncertainty	1.634

There were no standardized residuals greater than ± 3 standard deviations, indicating no outliers as depicted in Table 7.

Table 7

Ranges of Standardized Regression Residuals

	N	Min	Max
Standardized Residual	31	-1.95	1.82
Standardized Residual	31	-1.44	2.11
Standardized Residual	31	-1.66	2.00

The assumption of normality of regression residuals was assessed by examination of histograms. The residuals were approximately normally distributed. These results are depicted in Figures 7, 8, and 9 below.

Figure 7

Histogram of Regression Standardized Residuals (RQ1)

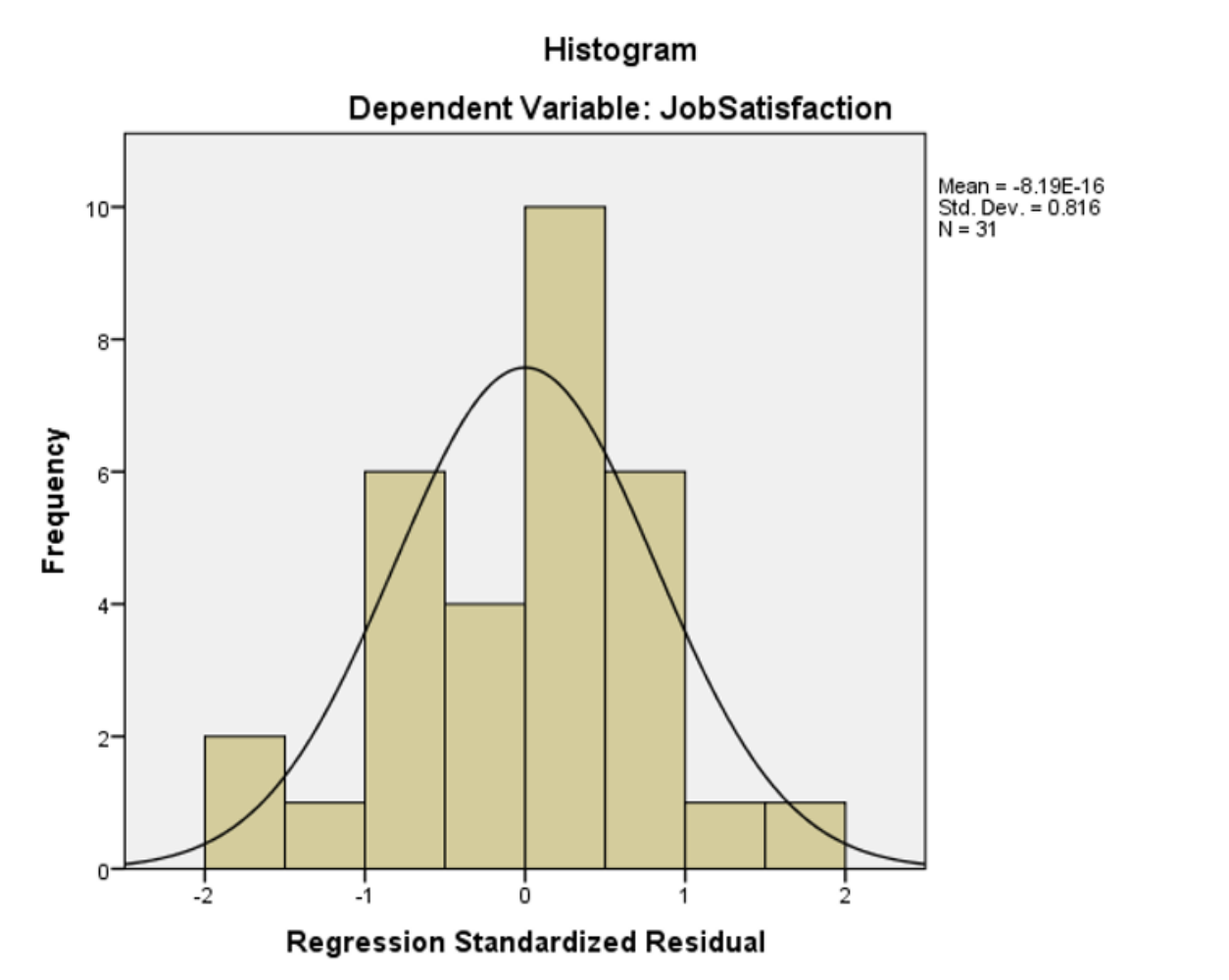


Figure 8

Histogram of Regression Standardized Residuals (RQ2)

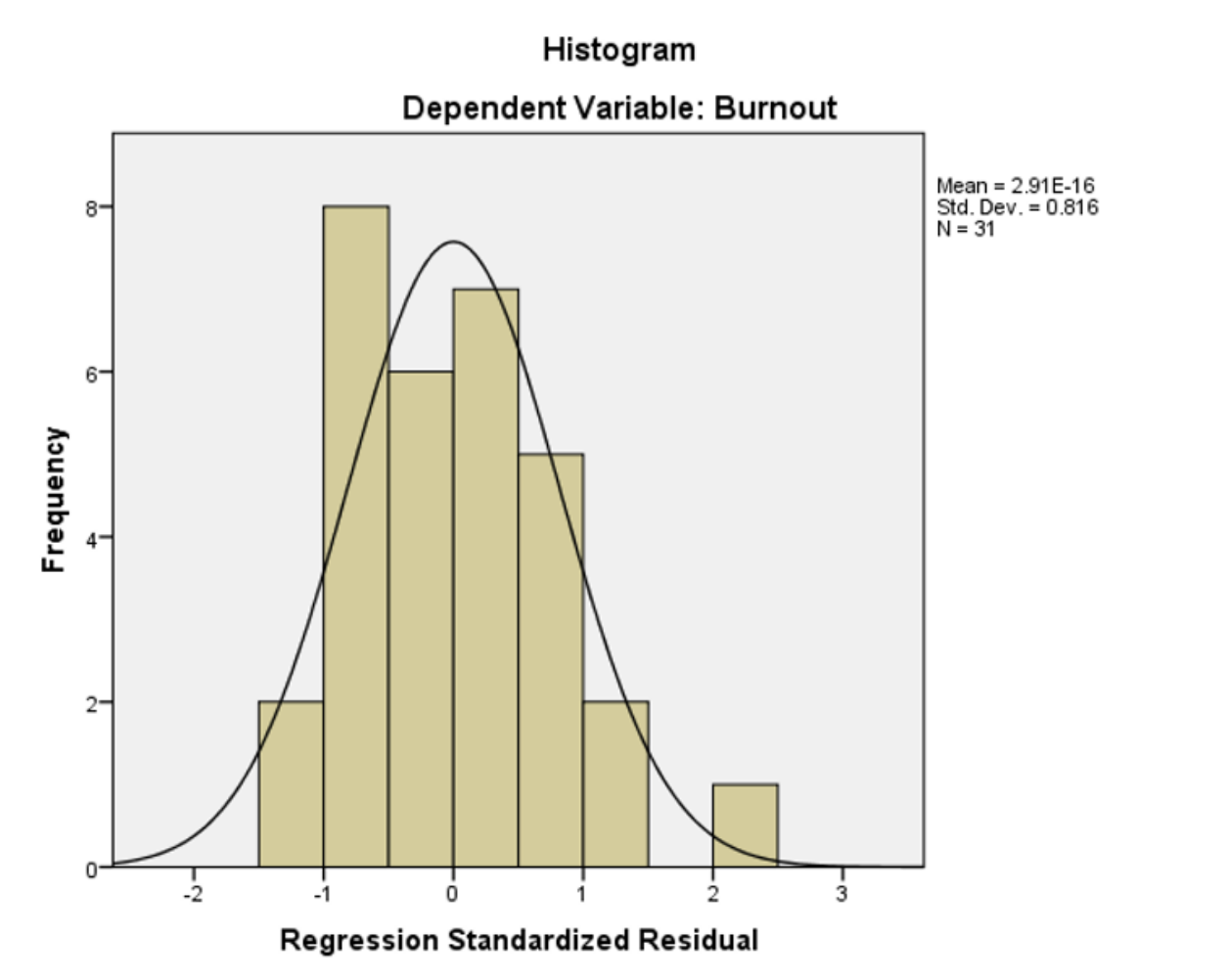
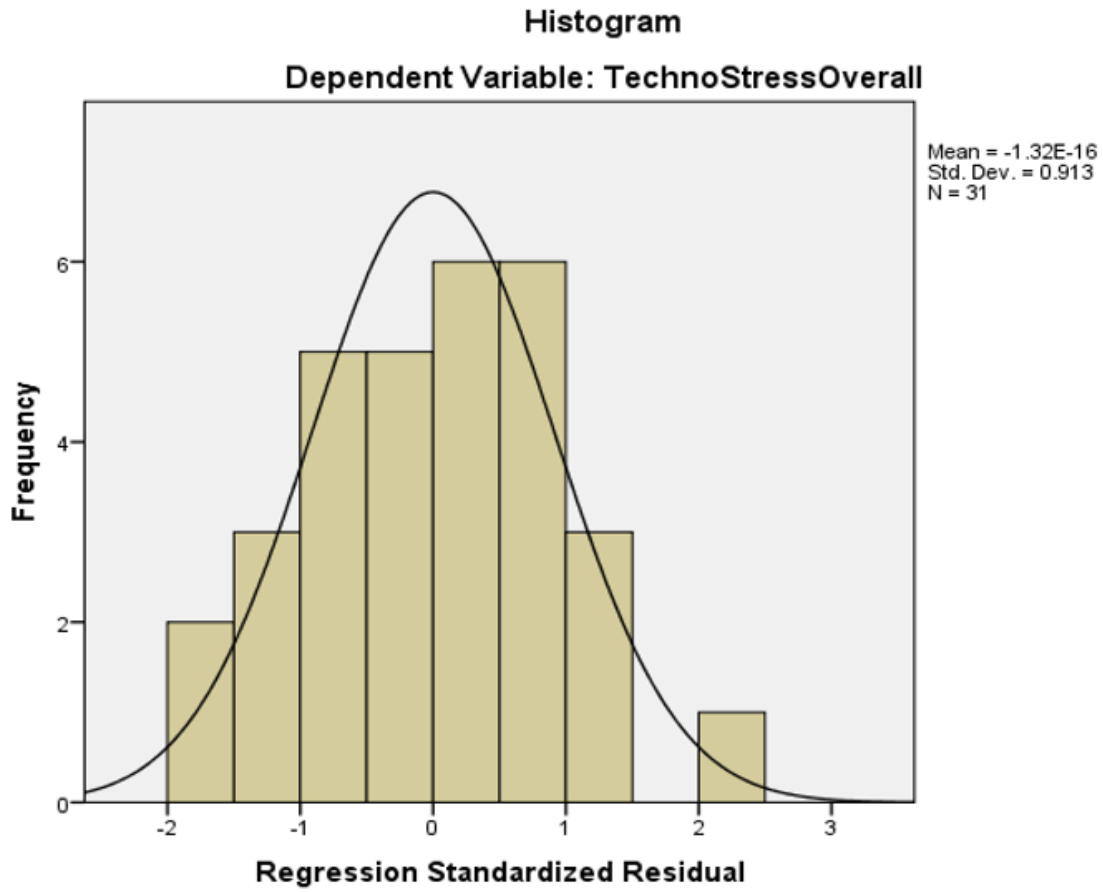


Figure 9

Histogram of Regression Standardized Residuals (RQ3)



Findings

Multiple regression was performed to assess this first research question and hypothesis:

- RQ₁: What is the relationship between technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty) and job satisfaction?
- H₀₁: There is no significant relationship between technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty) and job satisfaction.
- H₁₁: There is a significant relationship between technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty) and job satisfaction.

The first model of the regression consisted of the demographic variables controlled for, including age, gender, and the number of years working at the university. The second model included the demographic variables and the dimensions of technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty). After controlling for age, gender, and the number of years working at the university, the model was not statistically significant in predicting job satisfaction, $F(10, 20) = 1.290, p = .300$. Age was found to be a significant predictor of job satisfaction. Compared with people over 55, people who were between 35-44 ($b = -.940, p = .013$) and between 45-54 ($b = -.807, p = .030$), had decreased job satisfaction. Tables 8 and 9 depict this information.

Table 8*Regression Model for RQ 1a*

Model		<i>SS</i>	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
1 ^b	Regression	2.038	5	.408	1.129	.371
	Residual	9.024	25	.361		
	Total	11.062	30			
2 ^c	Regression	4.338	10	.434	1.290	.300
	Residual	6.724	20	.336		
	Total	11.062	30			

a. Dependent Variable: Job Satisfaction

b. Predictors: (Constant), How many years have you been employed at the university?

Age_45_54, Gender, Age25_34, Age_35_44

c. Predictors: (Constant), How many years have you been employed at the university?

Age_45_54, Gender, Age25_34, Age_35_44, Insecurity, Uncertainty, Overload, Invasion, Complexity

Table 9*Regression Coefficients for RQ 1a*

	Unstandardized		<i>t</i>	<i>p</i>
	Coefficients			
	<i>B</i>	Std. Error		
(Constant)	4.037	.766	5.273	.000
Age25_34	-.325	.466	-.696	.495
Age_35_44	-.940	.346	-2.721	.013
Age_45_54	-.807	.346	-2.333	.030
Gender	.253	.279	.907	.375
How many years have you been employed at the university?	-.004	.017	-.230	.820
Overload	.239	.150	1.599	.126
Invasion	.171	.131	1.305	.207
Insecurity	.092	.180	.512	.614
Complexity	-.204	.216	-.944	.356
Uncertainty	-.160	.173	-.925	.366

Multiple regression was performed to address this second research question and hypotheses:

- RQ₂: What is the relationship between technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty) and burnout
- H₀₂: There is no significant relationship between technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty) and burnout
- H₁₂: There is a significant relationship between technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty), and burnout

The first model of regression consisted of the demographic variables controlled for, including age, gender, and the number of years working at the university. The second model included the demographic variables and the dimensions of technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty). After controlling for age, gender, and the number of years working at the university, the model was not statistically significant in predicting burnout, $F(10, 20) = 1.355, p = .269$. Age was found to be a significant predictor of burnout. Compared with people over 55, people who were between 35-44 ($b = 1.098, p = .029$) had increased burnout. Additionally, a one-unit increase in techno-uncertainty results in an average increase in burnout by 0.528 ($b = .528, p = .036$). This information is depicted in Table 10 and 11 below.

Table 10*Regression Model for RQ 2a*

Model		<i>SS</i>	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
1 ^b	Regression	3.237	5	.647	.927	.480
	Residual	17.467	25	.699		
	Total	20.705	30			
2 ^c	Regression	8.363	10	.836	1.355	.269
	Residual	12.341	20	.617		
	Total	20.705	30			

a. Dependent Variable: Burnout

b. Predictors: (Constant), How many years have you been employed at the university?

Age_45_54, Gender, Age25_34, Age_35_44

c. Predictors: (Constant), How many years have you been employed at the university?

Age_45_54, Gender, Age25_34, Age_35_44, Insecurity, Uncertainty, Overload,

Invasion, Complexity

Table 11*Regression Coefficients for RQ 2a*

	Unstandardized Coefficients		<i>t</i>	<i>p</i>
	<i>B</i>	Std. Error		
(Constant)	.700	1.037	.675	.507
Age25_34	.505	.632	.799	.433
Age_35_44	1.098	.468	2.346	.029
Age_45_54	.958	.469	2.045	.054
Gender	-.631	.378	-1.670	.110
Years employed at the University	.008	.022	.366	.718
Overload	-.162	.203	-.800	.433
Invasion	-.243	.178	-1.368	.186
Insecurity	-.208	.245	-.852	.404
Complexity	.602	.292	2.060	.053
Uncertainty	.528	.234	2.250	.036

a. Dependent Variable: Burnout

Multiple regression was performed to address this third research question and hypotheses:

- RQ₃: What is the relationship between technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty) and the demographic variables age, gender, and years working as an IT employee?

- H0₃: There is no significant relationship between technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty) and the demographic variables age, gender, and years working as an IT employee.
- H1₃: There is a significant relationship between technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty) and the demographic variables age, gender, and years working as an IT employee.

The model did not significantly predict overall technostress, $F(5, 30) = 0.396, p = .847$.

None of the predictors of age, gender, and years working at the university were significant predictors of overall technostress. Tables 12 and 13 depict this information.

Table 12

Regression Model for RQ 3a

	<i>SS</i>	<i>df</i>	Mean Square	<i>F</i>	<i>p</i>
Regression	.657	5	.131	.396	.847 ^b
Residual	8.293	25	.332		
Total	8.950	30			

a. Dependent Variable: Technostress Overall

b. Predictors: (Constant), How many years have you been employed at the university? Age_45_54, Gender, Age25_34, Age_35_44

Table 13*Regression Coefficients for RQ 3a*

	Unstandardized		<i>t</i>	<i>p</i>
	Coefficients			
	B	Std. Error		
(Constant)	2.647	.341	7.757	.000
Age25_34	.063	.401	.158	.876
Age_35_44	.208	.308	.675	.506
Age_45_54	.046	.329	.140	.890
Gender	-.096	.215	-.445	.660
How many years have you been employed at the university?	.016	.015	1.116	.275

a. Dependent Variable: Technostress Overall

Summary

The purpose of this quantitative pilot study was to determine the relationship between organizational culture and the Technostress Creators Inventory (techno overload, techno-invasion, techno-insecurity, techno-complexity, techno uncertainty). A secondary purpose of this pilot study was to understand which techno stressors contributed to teleworkers' perception of productivity and satisfaction and to identify whether these techno stressors can be inhibited or reversed based on organizational culture. The following research questions were addressed:

- RQ₁: What is the relationship between technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty) and job satisfaction?
- RQ₂: What is the relationship between technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty) and burnout?
- RQ₃: What is the relationship between overall technostress and the demographic variables age, gender, and years working as an IT employee?

For the first research question, there was no predictive relationship of technostress on job satisfaction. However, results showed that compared to people over the age of 55, people between 35-44 and between 45-54 had decreased job satisfaction. Regarding the second research question, there was no overall predictive relationship of technostress on burnout. However, results were that, compared with people over 55, people who were between 35-44 had increased burnout. Additionally, an increase in techno-uncertainty resulted in an average increase in burnout. Lastly, there was no overall predictive relationship between age, gender, and years working as an IT employee on overall technostress.

CHAPTER 5

DISCUSSION AND RECOMMENDATIONS

The purpose of this quantitative, non-experimental, correlational pilot study was to determine the relationship between organizational culture and the Technostress Creators Inventory, comprised of techno overload, techno-invasion, techno-insecurity, techno-complexity, techno uncertainty in a single university setting. A secondary purpose of this pilot study was to understand which techno stressors contribute to teleworkers' perception of job satisfaction and burnout and to identify whether the organization's culture impacts these techno stressors. This pilot study observed the various communication channels that influence employee perception of technology-related stress within a division of a public university in the United States. However, it did not assess the effectiveness of any university's teleworking policies or strategic training.

The independent variables included the technostress creators described by Ragu-Nathan et al. (2008), and the dependent variables will consist of the level of employee job satisfaction and job dissatisfaction as described by Paul Specter (1994), and burnout, as defined by Christina Maslach (1981). Demographic variables will include age, gender, and the number of years working as an IT professional. Three regression models were tested in this pilot study which appear below:

- Job satisfaction = $b_0 + b_1$ techno-overload + b_2 techno-invasion + b_3 techno-insecurity + b_4 techno-complexity + b_5 techno-uncertainty

- $\text{Burnout} = b_0 + b_1 \text{ techno-overload} + b_2 \text{ techno-invasion} + b_3 \text{ techno-insecurity} + b_4 \text{ techno-complexity} + b_5 \text{ techno-uncertainty}$
- $\text{Technostress} = b_0 + \text{age} + b_1 \text{ gender} + b_2 \text{ years of experience}$

What follows is a list of the research questions provided in this study and their test results.

Research Question 1 asked: What is the relationship between technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty) and job satisfaction?

The test results of Research Question 1 indicated there was no predictive relationship of technostress on job satisfaction. However, results did show decreased job satisfaction for demographic characteristics, such as age. For example, results suggest that people between 35 years of age and 44 years of age experienced a decrease in job satisfaction compared to IT professionals over the age of 55. The findings here are particularly revealing, and results could not reject the null hypothesis.

Research Question 2 asked: What is the relationship between technostress (techno-overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty) and burnout?

The test results of Research Question 2 indicated there was no overall predictive relationship of technostress on job burnout. However, results suggest that compared with people over 55, people who were between 35-44 experienced increased burnout overall. Additionally, an increase in techno-uncertainty results in an average increase in burnout.

Research Question 3 asked: What is the relationship between overall technostress and the demographic variables age, gender, and years working as an IT employee?

The test results of Research Question 3 indicated there was no overall predictive relationship of the demographic variables age, gender, and years working as an IT employee on overall technostress.

This study investigated the impact that technology-related stress has on IT professional's perception of job satisfaction and burnout during organizational shifts. To that end, the study concluded the null hypotheses could not be rejected, indicating there is no statistically significant relationship between the independent variables: techno overload, techno-invasion, techno-insecurity, techno-complexity, techno-uncertainty, and the dependent variables, which include the level of employee job satisfaction and job dissatisfaction as described by Specter (1994), and burnout, as defined by Maslach (1981). While some findings of this study were consistent with prior studies, there were discoveries made that may influence future research on the topics of job satisfaction, burnout, the relationship of technostress on age and gender.

Technostress and Job Satisfaction

The results of Research Question 1 did not show a negative relationship between technostress creators on job satisfaction. This finding is inconsistent with research by Jena (2015) conducted using a population of academicians. One reason could be a difference in the study group and/or cultural inconsistencies. Findings were, however, consistent with research conducted by Bellmann & Hübler (2020), which related to job satisfaction and work-life balance. Other research focused on teleworker job characteristics as technostress creators corroborated the negative relationship between technostress and job satisfaction (Suh & Lee, 2017). This could potentially be due to the focus of intensity of telework (IOT) and job satisfaction.

Technostress and Burnout

The results of Research Question 2 did not show a predictive relationship of technostress on job burnout. Burnout, as defined here, is a symptomatic form of physical, emotional, or mental exhaustion brought on by factors outside of one's perceived control. Technostress and the onset of technology-related fatigue has been researched for several decades, however, there is very little research devoted to technostress creators and the correlation to burnout. Current research is focused on personality traits and technostress creators on burnout.

Findings in a recent study suggest there are different paths that may lead to overall burnout, based on individualized personalities and thus, require personalized interventions to prevent increased levels of technostress and burnout (Khedhaouria & Cucchi, 2019). A continuation of this line of inquiry would benefit the existing knowledge base and perhaps tease out whether there is a causal relationship between personality traits on technostress perception, and what personality types experience increased job burnout based on technology-related stimuli.

Age and Gender Influences

The results for technostress on demographic characteristics showed a decrease in job satisfaction for the age group of people between 35 and 44 years of age, when compared to IT professionals over the age of 55. The findings are consistent with research suggesting work-life imbalance may lead to an increase in overall burnout of employees for respondents as young as 32 (Reporter, 2020). However, other studies focused on gender and age suggest that there is a non-linear relationship between age and burnout and specific interventions should be conducted to prevent an increase in burnout (Marchand et al., 2018).

Implications for HRD Practice

The global shift in 2020 has implications that may be felt for years to come. As we continue to reflect on how we operate in the ‘new normal’, we must also be prepared for a future that is still uncertain. Organizational culture is the collection of values and beliefs shared by those within the institution (Swanson, 2001). It is also the accumulation of the knowledge-sharing practices, expectations, and leadership within the organization (Elhai et al., 2016). Practical implications for better understanding the impact and influence of organizational culture on potential stressors and those implications on competitive advantage (Harrison & Bazzzy, 2017) is a next step in the adaptation to the current landscape that we find ourselves in.

A global pandemic was the impetus for the operational shift experienced at the study site, however, less seismic shifts in operations should be expected in terms of cost reduction and employee recruitment and retention practices in the future. To prepare for these types of transitions, interventions should be designed to meet specific employee work-life needs. In essence, the rules must change in terms of policy and practice (Eversole & Crowder, 2020).

This pilot study examined the influence of organizational culture on determinant factors: technostress, job satisfaction, and burnout. Findings suggest future HRD interventions at the study site should be tailored for specific demographic groups to improve job satisfaction, and interventions focused on neutralizing employee burnout should be extended across the population. There is the potential to include a comprehensive system redesign based on what has been learned during the pandemic (Arora & Suri, 2020). While this research sought to identify the of organizational culture on specific outcomes, it also discovered a target group for a prescribed intervention. Transitional interventions aligned with adapting to work-from-anywhere

locations should be developed to improve the job satisfaction for the target demographic (Choudhury, 2021).

Limitations of Study

There were several limitations relevant to this study. One limitation is that this pilot study followed a non-experimental design that could not determine any causal relationship between technostress, job satisfaction, and burnout of IT professionals. This study was only able to identify correlations between the variables mentioned above. Another limitation of this pilot study was that it was only conducted in a single public university in the United States. This might limit the societal implications that impact employee perception due to local or regional guidelines that differ from state to state. Another limitation is that quantitative research includes little information on contextual factors that could contribute to the study's findings, such as specific leadership styles and individual training observations. For this study, observations were made regarding the influence of organizational culture on predictive outcomes, but extensive research on leadership style and specific organizational influence was not assessed. Finally, additional factors may or may not contribute to technostress, job satisfaction, and job burnout amongst IT professionals in public universities in the United States. This research was conducted at the height of COVID-19 when many organizations were experiencing a widespread impact on HR practices, institutional performance, and stringent governmental regulations. It is possible that these additional factors could impact the levels of technostress, job satisfaction, and job burnout.

Recommendations for Further Research

This pilot study presented several compelling findings. However, there are recommendations for further research based on the research design, methodology, and the

sample studied herein. Future studies should be conducted to measure specific interventions administered by the organization on outcomes relevant to technostress, job satisfaction, and job burnout among IT professionals. This would provide the researcher an opportunity to A/B test interventions to discover whether training neutralizes, inhibits, or promotes specific techno stressors indicated in this study.

Organizational culture is specific to each university and, as such, requires an objective eye to determine which variables may influence job satisfaction based on independent factors observed. Research on the systems within the university that impact IT departments would provide a macro-level view of the ecosystem and offer new opportunities to researching technology-related stress based on policy. Additionally, the topic of technostress among IT professionals in public universities should be studied further and tested at other institutions to develop training and policies targeted at improving work/life balance. When operational shifts do occur, whether due to seismic interruptions as experienced with the onset of a pandemic, a local weather event, or even due to a reduction in costs, it would be beneficial to better understand how the work/life components influence technostress for IT professionals. This might be accomplished by using alternative instruments to measure work-life impact as opposed to overall job satisfaction or burnout, and potentially discover whether there are additional factors that contribute to technostress on specific demographic populations. For instance, an investigation to ascertain whether participants in the 35-44 age group are parents, and of what age group children, to see if there were work/life factors that might contribute to decreased job satisfaction and increased burnout amongst that age group. Another recommendation would be to employ a case study approach in a university, paying more attention to contextual factors that might

contribute to technostress among IT professionals like perceived productivity during operational shifts.

Future studies could measure employee perceived productivity during operational shifts, alongside the instruments used in this survey. This could provide an additional level of understanding relative to satisfaction based on performance. For instance, surveys delivered during the early months of 2021 suggest that some employees prefer working from home since they are not impacted by influential factors such as work commute, office distractions, and child-care limitations. These factors may improve productivity and perceived satisfaction overall.

The survey could be tailored to accommodate additional determinant influences such as pay-scale (Esakkimuthu, 2014), and leadership-level to identify whether increased pay or responsibility contributes to increased technology-related stress, job satisfaction, and job burnout during operational shifts in public universities. It can be assumed that with increased responsibility comes increased stress. However, this may or may not be relegated to technological indicators as researched in this study. This may also provide an opportunity to extend the current research and instruments to alternative populations or samples in other public universities.

Lastly, this pilot study observed organizational culture within a single university and examined the influence of that culture upon technostress among IT professionals. Future contributions to this line of inquiry might focus on work-family conflict as a potential proponent for technostress among working parents in the university. This could offer insight into why burnout occurs among IT professionals in specific age groups.

Summary and Conclusions

This pilot study sought to determine relationships between technostress, job satisfaction, and job burnout based on organizational culture in a single public university. Participant recruitment came from a population of IT professionals employed during a time of operational shift due to the onset of COVID-19. Data analysis determined no significant correlation between increased levels of technology-related stress identified by the Technostress Creators Inventory on job satisfaction. However, results showed people who were between 35-54 had decreased job satisfaction than people over the age of 55. Results also suggest there was no overall predictive relationship between technostress and job burnout among participants in the study sample. However, results indicate that respondents between the ages of 35 and 44 experienced increased job burnout in the test location. Additionally, an increase in techno uncertainty resulted in an average increase in burnout among all respondents. Finally, there was no overall predictive relationship of the demographic variables age, gender, and years working as an IT employee on the overall levels of technostress.

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APPENDIX A: INFORMED CONSENT

Copy of Consent Form

Indiana State University

TITLE OF RESEARCH STUDY

Organizational Culture: An Examination of the Role of Leadership in Neutralizing the Negative Effects of Technostress During Operational Shifts

MESSAGE

You are being invited to participate in a research study. This study aims to examine technology-related stress and the role of leadership in neutralizing its negative effects during operational shifts. The way you can help me is by answering the questions in this anonymous survey, which should take no more than 10 minutes of your time.

You might want to participate in this research, because the study endeavors to contribute to the growing body of literature on the impact organizational culture has on promoting or inhibiting technology-related stress associated with operational shifts, such as the onset of COVID-19. You might not want to participate in this research if you do not feel impacted by technology-related stress, diminished job satisfaction, or perceived burnout.

The choice to participate or not to participate is yours, and participation is entirely voluntary. You also can choose to answer or not answer any question you like, and to exit the survey if you wish to stop participating. No one will know whether you participated or not.

The survey asks demographic questions as well as questions regarding technology-related stress, job satisfaction, and potential burnout. You have been asked to participate in this research because you are an employee at UNCG and may identify as an IT professional (by job classification, responsibilities, or daily function).

Although every effort will be made to protect your answers, complete anonymity cannot be guaranteed over the Internet.

There are no anticipated risks or discomforts associated with this study.

It is unlikely that you will benefit directly by participating in this study, but the research results may benefit organizations by better understanding the impact that organizational culture has on promoting, neutralizing, or inhibiting technology-related stress during operational shifts that may occur due to unforeseen circumstances. This information should also help researchers and administrators develop policies and procedures to combat psychological stress that comes from change in the way IT professionals conduct business in a university setting.

If you have any questions, please contact David Kirkland at dkirkland2@sycamores.indstate.edu or by phone at 678-357-0446 or Carroll Graham, EdD at Carroll.Graham@indstate.edu or by phone at 812-237-2652.

If you have any questions about your rights as a research subject or if you feel you have been placed at risk, you may contact the Indiana State University Institutional Review Board (IRB) by mail at Indiana State University, Office of Sponsored Programs, Terre Haute, IN 47809, by phone at (812) 237-3088 or by email at irb@indstate.edu.

IRBNet #: 1690881-1

Exempt Date: February 24, 2021

Indiana State University Institutional Review Board

APPENDIX B: IRB APPROVAL

Copy of IRB Approval Letter



Institutional Review Board

*Terre Haute,
Indiana 47809
812-237-3088
Fax 812-237-3092*

DATE: February 24, 2021
TO: David Kirkland, MS
FROM: Indiana State University Institutional Review Board

STUDY TITLE: [1690881-1] Organizational Culture: An Examination of the Role of Leadership in Neutralizing the Negative Effects of Technostress During Operational Shifts

SUBMISSION TYPE: New Project

ACTION: DETERMINATION OF EXEMPT STATUS

DECISION DATE: February 24, 2021

Thank you for your submission of New Project materials for this research study. The Indiana State University Institutional Review Board has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations (45 CFR 46). You do not need to submit continuation requests or a completion report. Should you need to make modifications to your protocol or informed consent forms that do not fall within the exempt categories, you will have to reapply to the IRB for review of your modified study.

Internet Research: If you are using an internet platform to collect data on human subjects, although your study is exempt from IRB review, ISU has specific policies about internet research that you should follow to the best of your ability and capability. Please review Section L. on Internet Research in the IRB Policy Manual.

Informed Consent: All ISU faculty, staff, and students conducting human subjects research within the "exempt" category are still ethically bound to follow the basic ethical principles of the Belmont Report: 1) respect for persons; 2) beneficence; and 3) justice. These three principles are best reflected in the practice of obtaining informed consent.

If you have any questions, please contact Lindsey Eberman within IRBNet by clicking on the study title on the "My Projects" screen and the "Send Project Mail" button on the left side of the "New Project Message" screen. I wish you well in completing your study.

APPENDIX C: RECRUITMENT EMAIL TO IT PROFESSIONALS

Copy of Recruitment Email

Hello,

My name is David Kirkland, and I am a Ph.D. student in the College of Technology at Indiana State University. I am reaching out to invite you to participate in a research study. Involvement in the study is completely voluntary, so you may choose to participate at your own discretion. Below you will find specifics regarding the study purpose. Please feel free to ask any questions that you may have about the research, and I will be happy to explain anything in greater detail.

Title of the Research Study

Organizational Culture: An Examination of the Role of Leadership in Neutralizing the Negative Effects of Technostress During Operational Shifts

I am interested in learning more about technology-related stress and the role of leadership in neutralizing its negative effects during operational shifts. You will be asked to complete a 10-minute survey about technology-related stress and how it impacts your job satisfaction and/or burnout.

All information will be kept anonymous. This means that your name will not appear anywhere and no one except me will know your specific answers. I will not reveal any identifying personal details in any articles I write or presentations that I make.

The benefit of this research is that you will be helping others understand the impact that organizational culture has on promoting, neutralizing, or inhibiting technology-related stress during operational shifts that may occur due to unforeseen circumstances. This information should help researchers and administrators develop policies and procedures to combat psychological stress that comes from any change in the way IT professionals conduct business in a university setting. There are no anticipated risks or discomforts associated with this study. If you do not wish to continue, you have the right to withdraw from the study, without penalty, at any time.

Survey Link: https://indstate.qualtrics.com/jfe/form/SV_dcJl9TpQ7OTgr0G

David Kirkland, Ph.D. Candidate
dkirkland2@sycamores.indstate.edu

Carroll M. Graham, Ed.D.
Carroll.Graham@indstate.edu

APPENDIX D: INSTRUMENTS

Introduction of Instruments

Appendix I includes the three instruments used in developing the survey for this pilot study. The survey was distributed to IT professionals at a single public university in the United States. Appendix I begins with a title of each instrument, followed by a brief description of the associated questions and a Likert-scale.

The Technostress Creators Inventory

The Technostress Creators Inventory consists of 23 items that will measure techno overload (6 items), techno-invasion (3 items), techno-insecurity (5 items), techno-complexity (5 items), and techno uncertainty (4 items). These items are measured on a 5-point Likert scale ranging from disagreements to agreement. Specifically, 1 = Disagree, 2 = Somewhat disagree, 3 = Neutral, 4 = Somewhat agree, 5 = Agree (Ragu-Nathan et al., 2008). These items are as follows:

Technostress Items

Dimension	Item
Techno-Overload	
TS1	I am forced by this technology to work much faster
TS2	I am forced by this technology to do more work than I can handle
TS3	I am forced by this technology to work with very tight time schedules.

Dimension	Item
Techno-Overload (continued)	
TS4	I am forced to change my work habits to adapt to new technologies.
TS5	I have a higher workload because of increased technology complexity.
TS6	I spend less time with my family due to this technology.
Techno-Invasion	
TS7	I have to be in touch with my work even during my vacation due to this technology.
TS8	I have to sacrifice my vacation and weekend time to keep current on new technologies.
TS9	I feel my personal life is being invaded by this technology.
Techno-Complexity	
TS10	I do not know enough about this technology to handle my job satisfactorily.
TS11	I need a long time to understand and use new technologies.
TS12	I do not have enough time to study and upgrade my technology skills.

Dimension	Item
Techno-Complexity (continued)	
TS13	I find new employees to this organization know more about computer technology than I do.
TS14	I often find it too complex for me to understand and use new technologies.
Techno-Insecurity	
TS15	I feel a constant threat to my job security due to new technologies.
TS16	I have to constantly update my technology skills to avoid being replaced.
TS17	I am threatened by co-workers with newer technology skills.
TS18	I do not share my knowledge with my coworkers for fear of being replaced.
TS19	I feel there is less sharing of knowledge among co-workers for fear of being replaced.
Techno-Uncertainty	
TS20	There are always new developments in the technologies we use in our organization.
TS21	There are constant changes in computer software in our organization.
TS22	There are constant changes in computer hardware in our organization.

Dimension	Item
Techno-Uncertainty (continued)	
TS23	There are frequent upgrades in computer networks in our organization.

The Job Satisfaction Survey

The Job Satisfaction Survey© is a 36-question instrument used to measure overall job satisfaction. Responses are 1= disagree very much, 2 = disagree moderately, 3 = Disagree slightly, 4 = Agree slightly, 5 = Agree moderately, 6 = Agree very much (Spector, 1994). The items are presented in the table below. Copyright Paul E. Spector 1994, All rights reserved.

Job Satisfaction Survey Items

1	I feel I am being paid a fair amount for the work I do.	1 4	2 5	3 6
2	There is really too little chance for promotion at my job.	1 4	2 5	3 6
3	My supervisor is quite competent in doing his/her job.	1 4	2 5	3 6
4	I am not satisfied with the benefits I receive.	1 4	2 5	3 6
5	When I do a good job, I receive the recognition for it that I should receive.	1 4	2 5	3 6
6	Many of our rules and procedures make doing a good job difficult.	1 4	2 5	3 6
7	I like the people I work with.	1 4	2 5	3 6
8	I sometimes feel my job is meaningless.	1 4	2 5	3 6

Job Satisfaction Survey Items (continued)

9	Communications seem good within this organization.	1 4	2 5	3 6
10	Raises are too few and far between.	1 4	2 5	3 6
11	Those who do well on the job stand a fair chance of being promoted.	1 4	2 5	3 6
12	My supervisor is unfair to me.	1 4	2 5	3 6
13	The benefits we receive are as good as most other organizations offer.	1 4	2 5	3 6
14	I do not feel that the work I do is appreciated.	1 4	2 5	3 6
15	My efforts to do a good job are seldom blocked by red tape.	1 4	2 5	3 6
16	I find I have to work harder at my job because of the incompetence of people I work with.	1 4	2 5	3 6
17	I like doing the things I do at work.	1 4	2 5	3 6
18	The goals of this organization are not clear to me.	1 4	2 5	3 6
19	I feel unappreciated by the organization when I think about what they pay me.	1 4	2 5	3 6
20	People get ahead as fast here as they do in other places.	1 4	2 5	3 6
21	My supervisor shows too little interest in the feelings of subordinates.	1 4	2 5	3 6
22	The benefit package we have is equitable.	1 4	2 5	3 6

Job Satisfaction Survey Items (continued)

23	There are few rewards for those who work here.	1 4	2 5	3 6
24	I have too much to do at work.	1 4	2 5	3 6
25	I enjoy my coworkers.	1 4	2 5	3 6
26	I often feel that I do not know what is going on with the organization.	1 4	2 5	3 6
27	I feel a sense of pride in doing my job.	1 4	2 5	3 6
28	I feel satisfied with my chances for salary increases.	1 4	2 5	3 6
29	There are benefits we do not have which we should have.	1 4	2 5	3 6
30	I like my supervisor.	1 4	2 5	3 6
31	I have too much paperwork.	1 4	2 5	3 6
32	I don't feel my efforts are rewarded the way they should be.	1 4	2 5	3 6
33	I am satisfied with my chances for promotion.	1 4	2 5	3 6
34	There is too much bickering and fighting at work.	1 4	2 5	3 6
35	My job is enjoyable.	1 4	2 5	3 6
36	Work assignments are not fully explained.	1 4	2 5	3 6

Maslach Burnout Inventory

The Maslach Burnout Inventory™ (MBI) is an instrument for measuring employee burnout and consists of a 16-item inventory used to measure overall burnout. The items are based on a 7-point Likert scale ranging from 0 to 6. Specifically, 0 = Never, 1 = A few times a year or less, 2 = Once a month, 3 = A few times a month, 4 = Once a week, 5 = A few times a week, 6 = Every day (Maslach, 2016). The items appear in the following table.

Maslach Burnout Inventory Items

1. _____ I feel emotionally drained from my work.
2. _____ I feel used up at the end of the workday.
3. _____ I feel tired when I get up in the morning and have another day on the job.
4. _____ Working all day is a strain for me.
5. _____ I can effectively solve the problems that arise in my work.
6. _____ I feel burned out from my work.
7. _____ I feel I am making an effective contribution to what this organization does.
8. _____ I've become less interested in my work since I started this job.
9. _____ I've become less enthusiastic about my work.
10. _____ In my opinion, I am good at my job.
11. _____ I feel exhilarated when I accomplish something at work.
12. _____ I have accomplished many worthwhile things in this job.
13. _____ I just want to do my job and not be bothered.
14. _____ I have become more cynical about whether my work contributes anything.
15. _____ I doubt the significance of my work.
16. _____ At my work, I feel confident that I am effective at getting things done

APPENDIX E: RELIABILITY AND VALIDITY

Appendix B describes the internal reliability and the validity of each instrument used as the basis of the distributed survey. Reliability describes the dependability of an instrument, otherwise defined as the probability that an instrument will perform as intended for a specific time in the environment for which it was created. Validity describes the accuracy of the instrument which is used in the specific measurement.

The Technostress Creators Inventory

The reliability of the instrument was originally measured by Chen (2015) by conducting Cronbach's alpha. All dimensions demonstrated good reliability as demonstrated by alphas greater than 0.80: Techno overload (alpha = 0.83), Techno invasion (alpha = 0.83), Techno complexity (0.84), Techno insecurity (alpha = 0.83), and Techno-uncertainty (alpha = 0.80). Regarding validity, the Average Variance Extracted (AVE) values for all factors are higher than the threshold of 0.5, indicating that adequate discriminant validity exists (Chen, 2015).

The Job Satisfaction Survey

The JSS has been established as a valid and reliable survey instrument, based on Spector's (1994) reliability data which suggests that the total scale has acceptable internal consistency. Creswell et al. (2016) suggests an optimal Cronbach's alpha value between .7 and .9 to establish excellent internal consistency. The coefficient alpha for the JSS items was .91 (Spector, 1994). The scale has been shown to exhibit acceptable levels of reliability (internal consistency reliability and test-retest reliability, and good evidence of construct validity (Spector, 1994). The JSS has been validated against the Job Descriptive Index, which was the most carefully validated scale of job satisfaction (Spector, 1994).

Maslach Burnout Inventory

The Internal consistency in the MBI scale is high, with a Cronbach alpha of 0.90 for the overall MBI scale (Maslach et al., 2016). The test-retest reliability of the MBI was high, with a reliability coefficient of 0.82 (Maslach et al., 2016). Additionally, Empirical studies on burnout showed the utilization of validated survey instruments, predominantly, the MBI (Hardiman & Simmonds, 2013).

APPENDIX F: INTRODUCTION OF THE SURVEY

Introduction of the Survey

Appendix C describes the survey that will be presented to potential respondents at a public university in the United States. It is important to note that the following survey will be delivered using a third-party surveying platform, Qualtrics. In addition to the instrument questions previously described in the appendices, there are supplementary demographic questions associated with age, gender, and years of experience as an IT professional.

Demographic Questions

1. How would you describe your gender?

- Response Options
 - Male
 - Female
 - Non-binary / third gender
 - Prefer not to say

2. What is your age?

- Response Options
 - 18-24 years old
 - 25-34 years old
 - 35-44 years old
 - 45-54 years old
 - 55-64 years old
 - 65-74 years old
 - 75 years or older

Demographic Questions (continued)

3. How many years have you been employed at UNCG?
 - Response Options
 - Open text entry field.

Technology-Related Stress Creators Questions

- Response Options
 - Disagree
 - Somewhat disagree
 - Neutral
 - Somewhat agree
 - Agree
1. I am forced by technology to work much faster
 2. I am forced by technology to do more work than I can handle.
 3. I am forced by technology to work with very tight time schedules
 4. I am forced to change my work habits to adapt to new technologies
 5. I have a higher workload because of increased technology complexity.
 6. I spend less time with my family due to this technology.
 7. I have to be in touch with my work even during my vacation due to technology.
 8. I have to sacrifice my vacation and weekend time to keep current on new technologies.
 9. I feel my personal life is being invaded by technology.
 10. I do not know enough about technology to handle my job satisfactorily.
 11. I need a long time to understand and use new technologies.
 12. I do not have enough time to study and upgrade my technology skills.

Technology-Related Stress Creators Questions (continued)

13. I find new employees to this organization know more about computer technology than I do.
14. I often find it too complex for me to understand and use new technologies.
15. I feel constant threat to my job security due to new technologies.
16. I have to constantly update my technology skills to avoid being replaced.
17. I am threatened by co-workers with newer technology skills
18. I do not share my knowledge with my coworkers for fear of being replaced.
19. I feel there is less sharing of knowledge among co-workers for fear of being replaced.
20. There are always new developments in the technologies we use in our organization.
21. There are constant changes in computer software in our organization.
22. There are constant changes in computer hardware in our organization.
23. There are frequent upgrades in computer networks in our organization.

Job Satisfaction Questions

- Response Options
 - Disagree very much
 - Disagree moderately
 - Disagree slightly
 - Agree slightly
 - Agree moderately
 - Agree very much
1. I feel I am being paid a fair amount for the work I do.
 2. There is really too little chance for a promotion at my job.

Job Satisfaction Questions (continued)

3. My supervisor is quite competent in doing his/her job.
4. I am not satisfied with the benefits I receive.
5. When I do a good job, I receive the recognition for it that I should
6. Many of our rules and procedures make doing a good job difficult.
7. I like the people I work with.
8. I sometimes feel my job is meaningless.
9. Communications seem good within this organization.
10. Raises are too few and far between.
11. Those who do well on the job stand a fair chance of being promoted.
12. My supervisor is unfair to me.
13. The benefits we receive are as good as most other organizations offer.
14. I do not feel that the work I do is appreciated.
15. I find I have to work harder at my job because of the incompetence of people I work with.
16. My efforts to do a good job are seldom blocked by red tape.
17. I like doing the things I do at work.
18. The goals of this organization are not clear to me.
19. I feel unappreciated by the organization when I think about what they pay me.
20. People get ahead as fast here as they do in other places.
21. My supervisor shows too little interest in the feelings of subordinates.
22. The benefits package we have is equitable.
23. There are few rewards for those who work here.

Job Satisfaction Questions (continued)

24. I have too much to do at work.
25. I enjoy my coworkers.
26. I often feel that I do not know what is going on with the organization.
27. I feel a sense of pride in doing my job.
28. I feel satisfied with my chances for salary increases.
29. There are benefits we do not have which we should have.
30. I like my supervisor.
31. I have too much paperwork.
32. I don't feel my efforts are rewarded the way they should be.
33. I am satisfied with my chances for promotion.
34. There is too much bickering and fighting at work.
35. My job is enjoyable.
36. Work assignments are not fully explained.

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Job Burnout Questions

- Response Options
 - Never
 - A few times a year or less
 - Once a month
 - Once a week
 - A few times a week
 - Every day

Job Burnout Questions (continued)

1. I feel emotionally drained from my work.
2. I feel used up at the end of the workday.
3. I feel tired when I get up in the morning and have another day on the job.
4. Working all day is really a strain for me.
5. I can effectively solve the problems that arise in my work.
6. I feel burned out from my work.
7. I feel I am making an effective contribution to what this organization does.
8. I've become less interested in my work since I started this job.
9. I've become less enthusiastic about my work.
10. In my opinion, I am good at my job.
11. I feel exhilarated when I accomplish something at work.
12. I have accomplished many worthwhile things in this job.
13. I just want to do my job and not be bothered.
14. I have become more cynical about whether my work contributes anything.
15. I doubt the significance of my work.
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