Social media-induced technostress: Its impact on the job performance of it professionals and the moderating role of job characteristics

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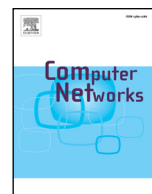**12** PUBLICATIONS   **65** CITATIONS

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Social media-induced technostress: Its impact on the job performance of it professionals and the moderating role of job characteristics

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ABSTRACT

Using social media during work hours for non-work-related reasons is becoming commonplace. Organizations are therefore challenged with identifying and overcoming the consequences of such use. Social media-induced technostress has been identified as an important unintended consequence of using social media at work, as it could negatively impact job performance. This study draws on Person-Environment Fit to investigate the relationship between social media-induced technostress and job performance in IT professionals, and the moderating effect of job characteristics on this relationship. The results indicate that social media-induced technostress is negatively related to job performance and the negative impact of social media-induced technostress is intensified when the job characteristics are low. This work extends the literature on job-stress, social media, technostress, and job characteristics.

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1. Introduction

The rise and increasing popularity of social media has led to the widespread usage of social media during business hours for non-work-related reasons [11].[1] A recent survey found that 59% of U.S. employees admit to accessing social media for personal use more than once a day, and that 15% of employees access social media for personal use once a day [60]. Such rife usage of social media at work has influenced many organizations to permit employees to access social media throughout the workday. Notably, a 2012 Gartner report indicates that less than 30% of large organizations block access to social media, and that the "number of organizations blocking access to all social media is dropping by around 10% a year" [21].

Despite the valuable benefits of using social media at work for *work-related* reasons, such as collaborating with colleagues to solve work problems [32], organizations are beginning to recognize the need to understand the potentially harmful and unintended consequences of the personal use of social media during work hours [11,53]. One detrimental unintended consequence of using social media at work has been identified as the stress induced by social media, or social media-induced technostress [8]. This stress could arise for several reasons. For example, employees may become overloaded by accessing and mentally processing information related to both work and personal life during work hours [4,8]. Similarly, checking social media at work for personal reasons may blur the line between work and home life and lead to the invasion of personal life into the workplace [54,68].

While social media-induced technostress has been said to exist in a business context [8,41], it remains understudied, and its impact on job performance, an important consequence of technostress, remains overlooked. For example, several empirical studies suggest that technostress can have highly detrimental effects on an employee and his or her performance and productivity [67–69]. However, this valuable research stream has treated the technological component of technostress essentially context-free (i.e., studying technology in a wide range of domains). In the context of social media in the workplace, technostress associated with using social media has been studied primarily through an adoption lens (e.g. [40,67]), and the potential work-related consequences of social media-induced technostress, such as job performance, has received little attention to date. It should be noted that prior research has identified that using social media at work is linked to lowering individual job performance and productivity [3,7]. However, this research does not consider the underlying reasons about why job performance could be hindered by using social media at work, such as being related to social media-induced technostress.

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[1] Work-related usage of social media (e.g., enterprise social media) involves addressing a primary work task such that social media is the tool to collaborate, communicate, or gather information towards completing the task. Personal social media usage involves using the platforms for non-work-related reasons, such as watching entertaining videos on YouTube or reading friends' posts on Facebook.

Therefore, given that the use of social media at work for personal reasons is becoming the norm, and that using social media has the potential to induce technostress in its users and thereby hinder performance, understanding the impact of technostress induced by personal social media usage on job performance warrants investigation, and leads to research question one:

RQ1: How does technostress induced by the personal use of social media impact job performance?

Nowadays, organizations are continuously crafting and implementing social media policies. Unfortunately, such policies are often ill-guided and/or ineffective [14]. This is often because organizations lack the knowledge to recognize, manage, and help employees cope with technostress [8]. In this sense, contemporary organizations, especially those with "open-access" social media policies, need to realize that social media-induced stress may exist in employees, and need to understand how to combat social media-induced technostress so that it does not become a problem.

In order to help organizations and managers overcome this challenge, we argue that it is critical to study how the relationship of social media-induced technostress on job performance varies by the characteristics associated with an employee's job. This is motivated by research which underscores that in the context of stress and technology, several job characteristics curb the influence of stress on several outcome variables, including job performance [16]. Of these job characteristics, five widely studied job characteristics in organizational stress research have been found to directly [20] and indirectly [52] affect job performance. Specifically, these five job characteristics are task variety, identity, job significance, feedback, and autonomy. Guided by this research, we feel that it is not sufficient to study only the direct impact of social media-induced technostress on job performance (research question #1). Rather, we aim to investigate two additional problems: (1) how task variety, identity, job significance, feedback, and autonomy may curb the impact of social-media induced technostress on job performance, and (2) how task variety, identity, job significance, feedback, and autonomy directly impact job performance. This leads to research question two:

RQ2: How do task variety, identity, job significance, feedback, and autonomy play a role in the relationship between technostress induced by the personal use of social media and job performance?

Overall, there are two goals of this study. First, we seek to investigate technostress in the context of personal social media usage, and how such social media-induced technostress impacts the job performance of IT professionals. Second, we seek to understand how several job characteristics play a role in the relationship between social media-induced technostress and job performance. Results of this investigation can be useful for organizations and managers that wish to understand technostress associated with personal social media usage and to mitigate any negative effects of personal social media usage in the workplace.

The remainder of this paper is organized as follows. First, a review of social media in the workplace, technostress, job characteristics, and the theoretical lens is given. Then, we present the hypotheses. Next, we discuss the methodology and the results. The article concludes with the findings, contribution and limitations, directions for future research, and managerial implications.

2. Background

2.1. Social media: an overview

Social media networks have been defined as "a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0 and that allow the creation and exchange of user generated content" ([33], p. 61). Using social media has become the most popular activity on the Internet [63],

and has drastically altered the way employees work [49]. For example, a 2010 study of over 1000 business professionals indicates that in addition to checking personal and corporate e-mail, employees routinely check their Facebook, LinkedIn, and Twitter "inboxes" throughout their work day [49]. This could occur for a variety of reasons. For example, employees may check Facebook to keep in touch with and chat with friends, to browse through photographs, to 'virtual people-watch', and/or to access a variety of information (e.g., news articles) [29].

In the context of social media in the workplace, there are several research streams (see [6]). Notably, several scholars study how enterprise social networks, defined as social media networks meant specifically for internal purposes, influence the workplace. For example, Von Krogh [74] investigates how enterprise social networks influence how employees collaborate, communicate, and share knowledge with one another. Moreover, Koch et al. [35], among others, study the challenges associated with introducing enterprise social networks into organizations. Other scholars investigate how enterprise social networks add value in a business context (e.g., [46]).

While this research on enterprise social networks is indeed valuable, the current study extends this research by focusing on using social media in the context of the workplace for personal reasons (i.e., not associated with work-related tasks, as many of the enterprise social networking research studies). Unfortunately, many scholars indicate that social media use in the workplace is not very well understood, often citing that "social media adoption in organizations is outpacing the empirical understanding of the use of these technologies" [72]. It follows then the potential harmful impacts of the use of social media in the workplace for personal reasons are also not very well understood, and are therefore worth investigating [11]. One important harmful effect that is understudied but has recently gained some traction in the literature is the impact of stress associated with social media usage in the workplace [8,39–41], or in other words, social media-induced technostress.

2.2. Technostress and social media-induced technostress research

Technostress has been defined as any negative impact on attitudes, thoughts, behaviors, or physiology that is caused either directly or indirectly by technology [75]. There are several streams of research in the context of stress and technology (see Table 1). One stream of research is conducted mostly in the context of IT professionals. Research in this stream typically investigates various workplace stressors and/or personality variables associated with stress, such as rapid technological changes, time pressures, workload, overload, and neuroticism, and their impacts on workplace variables such as job dissatisfaction, turnover intention, and work overload (e.g., [1,5,17,30,34,43,55,76]). Another research stream adopts a more technological approach to technostress, and has received considerable attention in the information systems discipline in recent years (e.g. [4,54,67–69,73]). In this research stream, more often than not, technostress has been operationalized in terms of five technostress creators, or stressful situations that are induced by using technology [54]. These technostress creators include overload, invasion, complexity, uncertainty, and insecurity [68]. Users then respond to these stressful situations in terms of psychological reactions, which are commonly referred to as "strain" [54]. For example, an employee could find technology incredibly complex. Such complex technology could induce stressful feelings in the user, who could consequently respond to this complexity by experiencing low job satisfaction [54].

In the context of technostress and social media, recent research has discovered that social media use in the workplace can be associated with technostress and the technostress creators [7]. For

Table 1

Overview of information systems literature on technology and stress.

Category of research	Summary of research	Examples
Stress in IT professionals	Stress research is conducted on IS managers or employees of technology companies. Investigates various workplace stressors or personality variables associated with stress and outcome variables. Could be in various contexts.	Ahuja et al. [1]; Baroudi [5]; Eckhardt [17]; Joseph [30]; King and Sethi [34]; Moore [43]; Rutner et al. [55]; Weiss [76]
Technostress creators	Research that takes a more technological approach to stress and technology. Technostress is operationalized in terms of five technostress creators, or situations that induce technostress in users of technology, and considers the strain, or outcomes of these creators. The technology is loosely defined and could be in multiple contexts.	Ayyagari et al. [4]; Ragu-Nathan et al. [54]; Tarafdar et al. [67–69]; Tu et al. [73]
Technostress and social media	A research stream characterized by the fact that social media use in the workplace can be associated with technostress and the technostress creators.	Bucher et al. [[8]3]; Brooks [7]; Maier et al. [39–41]

example, Maier et al. [39] identified that using social media is directly linked to several of the technostress creators, and can subsequently affect one's job satisfaction. Moreover, Maier et al. [41] found that technostress associated with using Facebook is a primary reason why employees may discontinue using Facebook. Similarly, Bucher et al. [8], based on a survey of 2579 marketing and communication professionals, found that social media in the workplace has the potential to be linked to technostress in its users. A review of this literature can be found in Table 1.

The current study takes inspiration from both research streams by studying IT professionals, but studying them in terms of technostress creators in the specific context of social media usage in the workplace (e.g., [68,69]). Based on previous research, we define *social media-induced technostress* as any negative impact on attitudes, thoughts, behaviors, or physiology that is engendered by using social media during work hours for non-work related reasons. Specifically, in the current study, we examine the psychological nature of social media-induced (SMI) technostress in terms of *SMI overload, SMI invasion*, and *SMI complexity* [68] in the context of IT professionals. *SMI overload* describes situations where social media force users to work faster and longer [54]. SMI overload can lead to multitasking with several applications and accomplishing different information-processing tasks simultaneously, and has been found to reduce performance since excessive multitasking leads to hurried, ineffective information processing [19]. *SMI invasion* describes the invasive effect of social media by creating situations where users can potentially be reached anytime, users feel the need to be constantly "connected," and there is blurring between work-related and personal states. Invasion may impair performance due to unnecessary interruptions to work. *SMI complexity* describes situations where the intricacy associated with social media makes users feel inadequate as far as their skills are concerned and forces them to spend time and effort in learning and understanding various aspects of social media. As they try to unsuccessfully apply existing solutions to the new technologies, initial errors get transmitted and their effects are magnified, leading to reduced performance on IT-mediated tasks [69]. The other two well-known technostress creators, insecurity and uncertainty, were not included because we argue that they are not applicable to the sample.[2]

2.3. IT professionals

The IT sector has grown considerably since the 1990's and will likely continue to expand. IT professionals are classified as knowledge workers [2]. Many IT jobs are characterized by uncertainty of daily operations and can be considered stressful [62]. For example, IT jobs require a significant amount of learning to maintain currency and perform expected activities [59]. Research in the IS discipline also indicates that IT professionals are likely to suffer from various components of workplace stress. For example, Ahuja et al. [1] reveal that work-family conflict is a major factor in inducing stress in IT professionals who travel a great deal for work. Moreover, Moore [43] discovered that work overload was the strongest predictor of exhaustion on IT professionals. Similarly, Rutner et al. [55] studied emotional dissonance in IT professionals, and found that emotional dissonance is strongly associated with work exhaustion and in turn with reducing job satisfaction. From the Help Desk staffer who searches for an answer online to the Database Administrator who is searching for new technologies, IT professionals have the capability to access social media throughout the workday. Many IT professionals utilize social media to collaborate with colleagues. Using social media this way is considered performing the primary job functions as it directly relates to completion of job tasks. However, when the usage changes from job-related to personal, the individual is no longer performing work-specific tasks, which is where our interest lies.

2.4. Person-Environment fit

Person-Environment fit (P-E fit) is one of the most widely used lenses through which to study stress. P-E fit is defined in terms of an equilibrium relationship between people and their environment [4,18]. In other words, a high congruence, or *fit*, between people and their environment yields positive outcomes, while a negative congruence, or *misfit*, yields negative ones, such as stress [48]. The literature identifies many sources of stress associated with fit and misfit, including the role of technology and job characteristics [1,4].

In the context of technostress, P-E fit has been discussed in terms of P-T fit, or person-technology fit [4]. In essence, P-T fit describes how characteristics of technology influence several technological stressors associated with misfit. In our study, we position

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[2] It should be noted that we did not consider two technostress creators: (1) insecurity and (2) uncertainty. First, insecurity is associated with situations where users feel threatened about losing their jobs as a result of a new social media technology replacing them, or to other people who have a better understanding of the social media technology [68]. In our study, the context is the *personal* use of social media at work, and not using social media at work for work-related tasks. In this sense, we reasoned that individuals would not be worried about losing their jobs to co-workers because of sub-par social media skills, or social media replacing them, because the individuals in our sample are not using social media for work

purposes. In other words, we reasoned that there would be no feeling of a threat of being replaced due to insufficient social media skills. Second, uncertainty refers to contexts where continuing changes and upgrades in using technology for organizational use unsettles users and creates uncertainty for them, in that they have to constantly learn and educate themselves about the new social media technologies. Again, in our specific context of the personal use of social media at work, we are not concerned with using social media for organizational purposes. The sample being investigated does not assume that social media is a primary part of an individual's job and therefore warrants omission from the study.
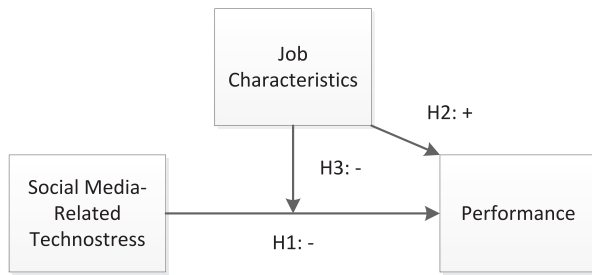
Fig. 1. Research model.

the technological environment as the three characteristics of the technology that induce social media technostress creators, which represent common stressors associated with P-T misfit [4,68]. The three technostress creators we study are SMI overload, SMI invasion, and SMI complexity. For example, an employee may feel overloaded with information when he or she is using social media at work for personal use, given that he or she has work responsibilities, but is also checking social media throughout the workday. In this sense, being overloaded by using technology may result in a P-T misfit and therefore may induce stress.

The job-stress literature also discusses P-E fit in terms of job characteristics. One frequently used framework to study job characteristics in organizational stress research is Person-Job fit (P-J fit), which refers to the compatibility between a person's characteristics and those of a specific job or tasks performed at work [36]. There are two basic conceptualizations of P-J fit [18]. The first is the demands-abilities fit in which employees' knowledge, skills, and abilities are commensurate with what the job requires. The second occurs when employees' needs, desires, or preferences are met by the jobs that they perform. This second form of P-J fit is of interest to this study. This is because a misfit, or an incongruence between the employees' job characteristics and the employees' needs, desires, or preferences for the job, could lead to an increased use of social media for non-work-related tasks and therefore indicate the presence of technostress. A proper fit may reduce such social media-induced technostress and this misfit. Below we use the two instantiations of P-E fit—P-T fit and P-J fit—to frame our hypotheses.

3. Hypotheses

Based on the above concepts and the guidance of P-E fit, we now discuss and motivate the hypotheses associated with the study. Fig. 1 shows the research model for this manuscript.

3.1. SMI technostress and performance

Social media-induced technostress can occur for several reasons. First, an individual may experience *overload* because he or she uses multiple technologies throughout the workday, such as a company computer or a mobile phone [14], and may therefore become engulfed with information that he or she cannot competently process, becoming stressed [54,75]. For example, an employee may interact with social media and complete work tasks simultaneously, which means he or she must manage multiple streams of information concurrently [54]. Prior research suggests that this may result in information overload and work overload [19]. This overload as induced by technology has been described as a P-T misfit associated with technostress, and may therefore reduce job performance [4]. Second, users may feel as though alternating among several technologies during work is highly *complex*, and as a result, experience technostress [68]. For example, users who associate technology with tasks that are not free of cognitive effort,

such as using multiple social media and switching communication patterns from one social medium to another (both technological and non-technological), while also managing work tasks and the technology and communication patterns expected at the office, experience stress [42]. Such cognitive effort has been associated with complexity and has been show to represent a P-T misfit [4]. Third, employees who use social media for non-work-related tasks may experience a softened line between work and personal life, a blurring which has been associated with increased technostress [4]. Such stress induced by technology, or the *invasion* of home life into work life, has been found to be negatively associated with an employee's performance [68]. This has been argued to spawn from "an individual's inability to disengage from work demands," and therefore represents a P-T misfit ([4], p. 838). Based on the above research, we hypothesize that social media-induced technostress, specifically overload, complexity, and invasion, will have a negative impact on performance.

H1: *Higher levels of social media-induced technostress will negatively influence performance.*

3.2. Job characteristics and performance

Scholars have long recognized that job performance depends heavily on how employees perceive their jobs [27]. Workers' productive behavior, as well as their satisfaction and attitudes, is dependent on certain psychological conditions known as perceived job characteristics [58], a core idea of job characteristics theory. In this theory, job characteristics are associated with higher levels of "internal motivation," which is defined in terms of a "self-perpetuating cycle of positive work motivation driven by self-generated (rather than external) rewards for good work" [25]. Likewise, according to the job characteristics model, intrinsic work characteristics positively affect job satisfaction [31], and job characteristics lead to positive psychological states such as feelings of meaningfulness and responsibility.

In the context of IT, perceived job characteristics are relevant for understanding IT workers' actions in the workplace [70] and are important for distinguishing intrinsic characteristics of IT jobs. Building on this core insight, extensive theory and research has focused on increasing job performance by changing employees' job perceptions. Table 2 lists the characteristics with their definitions. Below, we discuss the job characteristics and their impact on performance.

Autonomy: In highly autonomous jobs, job outcomes depend more on employees' efforts, initiatives, and decisions than on the adequacy of instructions from supervisors or adherence to standard operating procedures [51]. Research to date suggests that employees who have a say over how they do their jobs experience less stress [50] and less family-to-work conflict [71]. It follows that employees who have discretion over the way in which they perform their job are better able to integrate their work and family lives. Therefore, we hypothesize:

H2a: *Higher levels of autonomy will positively influence performance.*

Job feedback: People at work give feedback to reinforce others' good behaviors and correct the poor behaviors [38]. There are numerous positive benefits from feedback: it can direct behavior, influence future performance goals, educate employees on what they do well and how much better they can do if they try harder, and provides reinforcement [38]. Receiving feedback on one's performance is a critical element of feeling competent [13]; however, people may not react positively to feedback. Many people are anxious about being evaluated and worry about how others will respond to the feedback. Therefore, we hypothesize:

H2b: *Higher levels of job feedback will positively influence performance.*

Table 2
Job characteristics.

Job characteristic	Definition	Citation
Autonomy	The ability to decide when, where, and how the job is to be done	Clark [12]
Job feedback	Receiving information from staff members/management about performance on job expectations	Hillman et al. [28]
Task identity	The extent to which employees do an entire or whole piece of work and can clearly identify the results of their efforts	Hackman and Lawler [23]
Task significance	Judgments that one's job has a positive impact on other people	Grant [22]; Hackman and Oldham [24]
Task variety	The degree of nonrepetitiousness in a job	Lambert et al. [37]

Task identity: A job with high task identity allows employees to follow through the main stages to "provide a complete unit of product or service" [24] instead of just an indistinguishable part. Another way to conceptualize this is as the degree to which the job requires completion of a "whole" piece of work, or doing a task from beginning to end with a visible outcome [52]. Based on this literature, we hypothesize:

H2c: Higher levels of task identity will positively influence performance.

Task significance: Scholars have often argued that job performance can be enhanced through the cultivation of perceptions of task significance—judgments that one's job has a positive impact on other people, whether in the immediate organization or in the external environment [22,24,58]. Task significance thus allows employees to experience their job as being more meaningful. Task significance has been found to have a causal impact on job performance in multiple different professions [22]. Therefore, we hypothesize:

H2d: Higher levels of task significance will positively influence performance.

Task variety: Higher amounts of task variety have been found to increase job satisfaction [37], increase workplace participation [57], and influence on productivity [45]. The non-linear effect found is particularly interesting; too much task variety impedes performance. Based in this research, we hypothesize:

H2e: Higher levels of task variety will positively influence performance.

3.3. Moderating effect of job characteristics

Job characteristics have been empirically shown to significantly moderate the relationship between several variables that impact job performance [20], including ones with a cognitive independent variable such as job satisfaction [31]. In the context of stress and technology, the significant moderating effect of job characteristics holds true as well [16]. We make the hypotheses below based on the following logic and the guidance of P-T fit and P-J fit. First, research suggests that high levels of *autonomy* are generally associated with low levels of stress [66]. Workers are also more likely to view high autonomy with a higher level of fit between the job and their own preference for the job [61]. Autonomy in IT professionals has also been suggested to reduce stress given that autonomous professionals are given the flexibility to manage their own workloads [1]. It follows that employees with higher levels of autonomy are less likely to experience a P-J misfit and thus have a negative relationship between technostress and job performance. Second, *job feedback* has been highly correlated with job satisfaction, a variable generally associated with low stress levels [54]. IT professionals who receive regular job feedback are also more likely to know the requirements of their job and how to incorporate technology into their job routine. As such, employees with high levels of job feedback are less likely to experience technostress and have a negative relationship between technostress and performance. Third, a high level of *task identity* has been found to be associated with a lower level of stress [77]. With a higher

identity in one's tasks, employees, we reason, will have a higher level of fit and a lower level of technostress, and therefore will be less likely to have a negative relationship between technostress and job performance. Last, ta*sk significance* and *task variety* encompass variables around the everyday tasks that employees carry out [44]. Employees who perceive their tasks as highly significant and feel as though they have high variety in their work may have a higher job fit, and therefore feel less inclined to interact with social media for personal use. Likewise, it follows that those with low task significance and low task variety will be more inclined to interact with social media for personal use and are therefore more susceptible to technostress and its negative impact on performance. Overall, the above hypotheses and associated literature suggest that employees with low levels of any job characteristic are more likely to experience a P-J misfit and high levels of technostress. Thus, it is hypothesized that the negative effect of technostress will be compounded when levels of the job characteristics are low, providing a significant interaction effect.

H3a-e: The negative effect of social media-induced technostress will be greater for employees with lower levels of a) autonomy, b) job feedback, c) task identity, d) task significance, and e) task variety than those with higher levels of the specific job characteristic.

4. Methodology

4.1. Design

An online survey was used to test the proposed model. Subjects were solicited for participation via Amazon's Mechanical Turk. To be eligible, respondents were required to be both an IT professional and a social media user. To determine if a participant was an IT professional, all respondents were asked which company they worked for and what hardware and software platforms they used at their jobs. Those responses with inadequate answers were removed from the sample. The sample used for analysis (N = 750) consisted of individuals spanning 42 different IT job titles. The data were screened for incomplete responses, responses from individuals that did not match the sample criteria, and responses that incorrectly answered the filter question. Respondents were asked what hardware and software platforms they used as a part of their jobs. Responses that did not include a mention of hardware or software that would be used for IT careers were excluded. This resulted in a final usable data set of 415. Table 3 provides characteristics of the sample.

4.2. Measures

Social Media-Induced Technostress was measured using items from Tarafdar et al. [68]. Items from the original instrument, specifically from the Techno-Overload, Techno-Invasion, and Techno-Complexity aspects, were adapted for the social media-based nature of this study. IT Job Characteristics were measured using items from Thatcher et al. [70]. Following their study, the following constructs are included: Autonomy, Job Feedback, Task Variety, Task Significance, and Task Identity. Performance was

Table 3
Sample characteristics.

Characteristic		
Gender	M = 264, F = 130	67% Male
Age	Range: 19–56	Average: 29
Years in IT	Range: 1–15	Average: 3.5
Of all time spent using IT at work, how much is SM?	Range: 5%–95%	Average: 38%

Table 4
Composite reliability and discriminant validity.

	CR	SD	1	2	3
1. Social media-induced technostress	.90	.75	**.782**		
2. Job characteristics	.79	.66	−.127*** (.279)	**.768**	
3. Performance	.89	.79	−.184** (.161)	.482*** (.608)	**.824**

Note: Square-root of AVE bold in diagonal. HTMT in parentheses.
** $p < .01$.
*** $p < .001$.

measured using items from Dubinsky and Mattson [15]. This instrument has been previously used in workplace-related studies [56] and is suitable when performance ratings from supervisors are not available.

5. Analysis and results

Each of the constructs were analyzed to look for any poorly loading items or factors. During this analysis, a trend was noticed: each of the job characteristics scales had one reverse-coded item. Each of these items had a non-significant loading on its respective construct and were dropped from the analyses, leaving 2-item scales for each of the job characteristics. In addition, one item for technostress had a loading less than .5. This item was removed from the model [26]. Finally, neither of the remaining items for Job Autonomy had a significant loading to its construct. As such, Autonomy was also removed from further analysis, leaving Hypotheses 2a and 3a untested. Table 4 provides internal and discriminant validity statistics for the constructs. Both types of validity are met, given the composite reliability values above .7, showing internal validity, and both the Fornell–Larcker criterion, where the square-root of the AVE is larger than the associated correlations, and the Heterotrait-Monotrait Ratio (HTMT) is well below 9.

5.1. Direct effects

To test H1 and H2, path models were analyzed using Smart-PLS 3.0. The paths were analyzed using the bootstrapping method with 5000 resamples and the PLS algorithm [26]. Perceived enjoyment of social media usage was included as a control variable in the model, though no significant relationship was found. The analysis found significant paths for both social media-induced technostress ($\beta = -.17$, $p < .001$) and for job characteristics ($\beta = .50$, $p < .001$) (see Fig. 2). Once the direct paths were found to be significant, the interaction term was included in the model. This path was also found to be significant ($\beta = .10$, $p < .05$). With this significant finding, an analysis of the moderation provided by the individual job characteristics is the next step.

5.2. Linear regression moderation

To test the effects of the hypothesized interactions, linear regression was conducted. Interactional psychology includes numerous studies that assess P-E fit as a statistical interaction between the person and environment [36]. First, all constructs were averaged and standardized, resulting in z-scores. These standardized
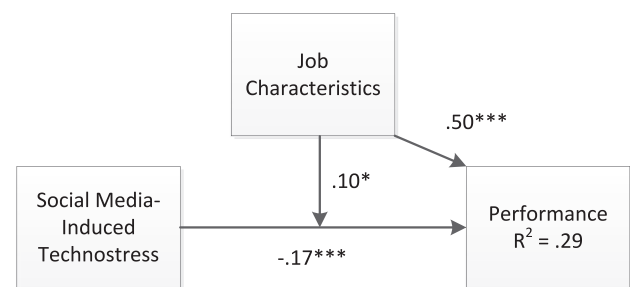

Fig. 2. Results for Hypotheses 1 and 2. *: $p < .05$; ***: $p < .001$.

scores are useful in interpretation of results since they are expressed in terms of standard deviations from their means (z-score of 1 means 1 standard deviation above the mean). Once standardized, the moderation analysis was completed using Interaction, a statistical tool from Soper [64]. Interaction is a software program specifically designed to draw and analyze statistical interactions. Each of the four job characteristics were analyzed separately in order to determine the relative significance of each. In these results, references to "technostress" are specifically referring to social media-induced technostress.

5.3. Results

5.3.1. SMI technostress, job characteristics, and performance

Before any results of the interactions can be presented, the direct effects must be significant. The analysis of the direct effect of social media-induced technostress shows a significant negative relationship with performance ($\beta = -.19$, $p < .05$), supporting H1. To test H2b-2e, the individual job characteristics' direct effects were analyzed. Each of the four tested has a significant positive relationship with performance, supporting H2b-2e: job feedback ($\beta = .45$, $p < .001$), task identity ($\beta = .34$, $p < .001$), task significance ($\beta = .34$, $p < .001$), and task variety ($\beta = .38$, $p < .001$). The combination of these significant direct effects allow for the results of the interactions to be interpreted appropriately.

5.3.2. SMI technostress and job feedback

The linear regression of performance on technostress has a significant interaction with job feedback ($\beta = .09$; $p < .05$). Fig. 3 shows that as technostress increases, performance decreases, and decreases faster with lower levels of job feedback.
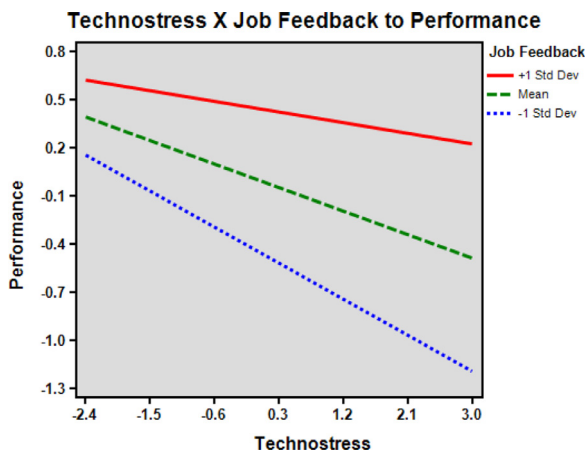
Fig. 3. Technostress interaction with job feedback on performance ($p < .05$).
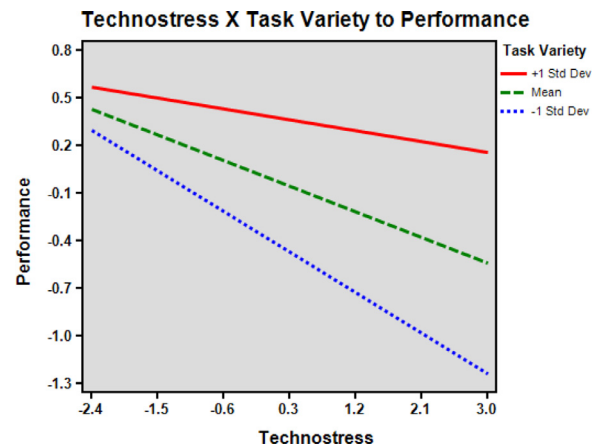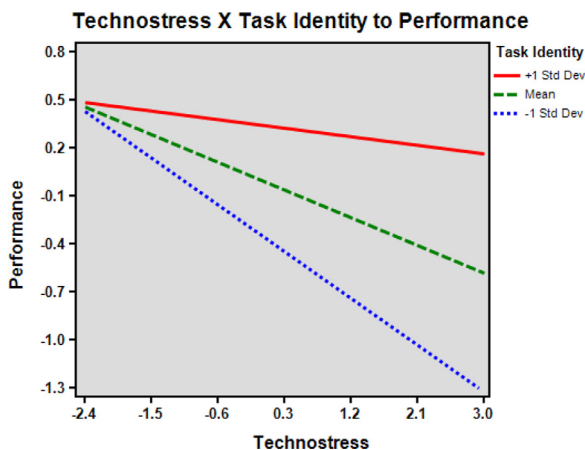

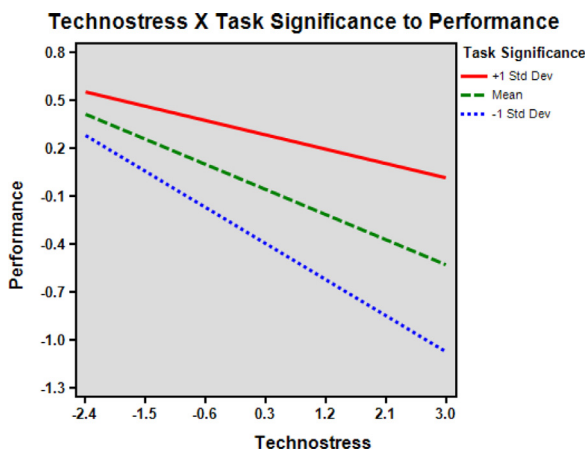**Fig. 4.** Technostress interaction with task identity on performance ($p < .01$).

Fig. 5. Technostress interaction with task significance on performance ($p < .10$).

5.3.3. SMI technostress and task identity

The linear regression of performance on technostress has a significant interaction with task identity ($\beta = .13$; $p < .01$). Fig. 4 shows that as technostress increases, performance decreases, and decreases faster with lower levels of task identity.

5.3.4. SMI technostress and task significance

The linear regression of performance on technostress has an interaction with task significance ($\beta = .08$; $p < .10$). Fig. 5 shows that as technostress increases, performance decreases, and decreases

Fig. 6. Technostress interaction with task variety on performance ($p < .05$).

faster with lower levels of task significance. It is noted that this interaction is significant at the $p < .10$ level, not at the $p < .05$ level.

5.3.5. SMI technostress and task variety

The linear regression of performance on technostress has a significant interaction with task variety ($\beta = .11$; $p < .05$). Fig. 6 shows that as technostress increases, performance decreases, and decreases faster with lower levels of task variety. Table 5 provides the results of the hypothesis tests.

6. Discussion

The evolving relationship between technology and organizations has been the subject of much study [47], primarily due to the insights on technology management that can be gained from such investigation [68]. In this study, we developed and tested a model of how social media-induced technostress associated with personal use of social media during work hours impacts job performance, and how several job characteristics can moderate this relationship. Based on two instantiations of P-E fit, we theorized that there would be a negative relationship between technostress and job performance, and that a fit between the job characteristics and the employees' preferences for the job, as indicated by high levels of the job characteristics, would significantly reduce this negative relationship. Overall, our investigation indicated that social media-induced technostress associated with using personal social media at work had a direct negative effect on job performance. Moreover, high levels of three of the job characteristics significantly reduced this negative relationship, with one characteristic – task significance – marginally reducing this effect. There are several contributions to both research and practice.

This research builds on the tradition of stress and technostress research in organizational and information systems research (e.g., [18,40,54,67,67–69]) and extends such concepts into an understudied context, that is, personal social media use during work hours. Most contemporary research on social media in the workplace often examines social media use and its effects from a general perspective. For example, Andreassen et al., [3] found that using online social networking sites during work hours hinders work performance. Like Anreassen et al.'s [3] study, the current study corroborates these findings. However, the current study extends this research by diving deeper into what is happening to an employee when he or she is using social media at work, and why such use could lower job performance. The current study finds that using social media is likely to be associated with social media-induced technostress, which represents a critical factor in lowering job performance.

Table 5
Hypotheses and results. SMTSTR: Social Media-Induced Technostress.

Hypothesis	Path	Largest discrepancy	Supported?
H1	SMTSTR → Performance		Yes
H2b	Job feedback → Performance		Yes
H2c	Task identity → Performance		Yes
H2d	Task significance → Performance		Yes
H2e	Task variety → Performance Interaction		Yes
H3b	SMTSTR x job feedback	Low feedback	Yes
H3c	SMTSTR x task identity	Low identity	Yes
H3d	SMTSTR x task significance	Low significance	Marginally, $p < .10$
H3e	SMTSTR x task variety	Low variety	Yes

Our current study also extends recent research findings which suggest that technostress itself has negative effects in the context of social media. For example, Maier et al. [41] found that technostress associated with using social media could contribute to the discontinued usage intention of Facebook. The current study builds on these findings to conclude that technostress in the context of social media can significantly affect a critical organizational outcome: job performance.

The findings of this study also help to extend previous and contemporary research by highlighting the potential buffers of technostress. Although early influential organizational research on technostress overlooked the potential buffers (e.g., [69]), more current research is beginning to examine the moderators of technostress on outcome variables (e.g., [41]). Our results indicate that job characteristics can play an important role reducing how the stress induced by technology affects job performance. Specifically, our results suggest that job feedback, task identity, task significance, and task variety can significantly reduce the impact of social media-induced technostress on job performance. This implies that social media-induced technostress can be managed.

The results of the study also confirm one of the central predictions of job characteristics theory – that job characteristics are associated with higher levels of "internal motivation" [25]. In other words, employees who are intrinsically motivated engage in higher levels of task performance because performing well creates positive affect. Staw [65] made a similar argument, suggesting that intrinsically motivated individuals derive satisfaction from task accomplishment and therefore work harder to excel. From the results of this study, we can see that these arguments continue to hold true. IT employee performance is at the highest when the job characteristics are also at their highest, regardless of the negative social media-induced technostress. Interestingly, with the exception of autonomy, the linear moderation models show the same general effect across all job characteristics (see Table 5). Combined, the results give strong support for the importance of the job characteristics for maintaining high performance.

The current study highlights several important implications for managers. The study further confirms that technology used by employees may have a negative impact on organizational outcomes. This has been shown in multiple studies on technology-induced stress [4,54]. However, this study underscores that technostress may not be associated with technology supplied by or designed by the company (e.g., social media). In other words, the common mantra is that technology can be designed for organizations to make employees more productive. By contrast, this study highlights that technology available for employees not designed by the company or an approved third-party (e.g., Facebook) may have negative impacts on employees' mental well-being, and therefore lower an employee's job performance. An impact on job performance could be detrimental to an organization's bottom line and therefore an organization's profit.

Managers should also be aware that, as our results suggest, there are several ways to reduce social media-induced technostress, namely, by making sure that employee's perceive their job characteristics to be in-line with their needs and desires for their job. For example, managers could consider strategies to give employees more autonomy, given that employees perceiving their jobs as autonomous are less likely to be impacted by technostress. This may likely stem from the fact that employees with such autonomy are more in control of their own time and workloads, and therefore have the ability to allocate time to browse social media at work. Our results also suggest that task identity and task variety also significantly help to mitigate the impact of technostress on job performance. Managers may take these findings to find ways to give IT professionals tasks that align with their interests, as well as challenge IT professionals and give IT professionals the freedom to work on (and choose to work on) multiple projects and tasks, rather than on one continuous project.

An additional interesting finding is that, on average, 38% of time spent using IT in the workplace is being used for social media (see Table 3). Given an eight-hour workday, this translate to over 2.5 h being spent on social media. Managers need to be aware that many employees are choosing to use company time in this manner and develop strategies to curb this usage.

6.1. Limitations and future research

This study contributes to the literature on negative effects of technology use and opens up some interesting possibilities for future research. Specifically, this study empirically shows the moderating effects of job characteristics on social media-induced technostress. Future research should explore more variables that moderate technostress. Moreover, an overall assumption of this study is that technostress is always negative. However, recent research suggests that technostress can be both positive and negative and can have positive and negative effects [10]. Future research should explore these positive aspects of technostress induced by personal social media use during work. This study also has several limitations. One of the primary limitations arises from the sampling strategy. Utilizing Mechanical Turk is becoming commonplace for gathering diverse samples. Participants are more diverse than standard Internet samples (and much more so than college student samples), and the data obtained are at least as reliable as those obtained through traditional means [9]. While much care was taken in the verbiage of the survey description, the survey design, and when cleaning the data, it is possible that non-IT employees were able to respond. As of the time of the data collection, Mechanical Turk did not have a way to filter respondents by employment type. To address this issue, future research can be conducted through targeted sampling. Researchers could potentially contact firms' IT departments to solicit participants. Second, this study provides subjective measures of performance and other key variables

from the participant only. Hence, the results actually show the effects of the interaction on perceived performance. There is the potential for participants to overestimate their performance due to social desirability. To help alleviate this issue, future studies should gather secondary measures of performance. This should be either objective measures, such as annual reviews, or secondary subjective measures, such as supervisor or co-worker reviews. Third, this study focused on the moderating role of a single stress-related symptom. There are a number of symptoms and constructs that could be utilized in a similar study as the number of stress-related possibilities is large. By only examining the effects of social media-induced technostress, it is likely that other important and significant negatively effecting constructs were not included. Future studies should determine other important social media-induced constructs to test. Last, a great deal of research indicates that research on IT professionals may be characterized by heterogeneity [17,30], and that IT professionals may perceive stress differently than other professionals [40]. In this vein, future research should include more professions other than the IT profession in the sample.

7. Conclusion

Organizations must recognize that the use of social media at work for personal reasons could be highly detrimental to job performance. Therefore, organizations must learn not only how to recognize such stress, but how to combat it before it becomes a major problem. This study shows that there is potential of technostress to exist related to using social media at work for non-work related tasks, and that such stress can negatively affect job performance. Moreover, this study provides organizations with an insight into what situational factors may increase and decrease this negative relationship.

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