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Effect of Technological Insecurity on Performance Through Emotional Exhaustion:
A Moderated Mediation Approach

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ABSTRACT

The new digital age introduces a continuous stream of technological innovations. Yet, little is known about how these technological innovations influence workplace behavior. Drawing on the stressor-strain model, this study examined the possibility that emotional exhaustion would explain the effect of technological insecurity on individual performance. This study further posited that leader-member exchange would interact with technological insecurity to influence emotional exhaustion and, through it, individual performance. This study found that technological insecurity negatively associates with individual performance. Results also indicated that emotional exhaustion carries the negative consequences of technological insecurity. This study further found that the effects of technological insecurity attenuate at high levels of leader-member exchange. Finally, this study discussed implications for theory and practices as well as offered future research directions.

KEYWORDS

Emotional Exhaustion, Leader-Member Exchange, Moderated Mediation, Performance, Technological Insecurity

INTRODUCTION

The new digital age introduces new challenges for employees, because, through the increased use of technology, work is becoming more complex and cognitively demanding (Tarafdar, DArcy, Turel, & Gupta, 2015). One important challenge for employees is technological insecurity, which Tarafdar, Tu, Ragu-Nathan, and Ragu-Nathan (2007) defined as "a situation in which individuals feel threatened about losing their jobs as a result of new information technology replacing them, or of other individuals who have a better understanding of information technology" (p. 315). Earlier work examining technological insecurity showed negative effects on employee innovation (Chandra, Shirish, & Srivastava, 2019), employee engagement (Srivastava, Chandra, & Shirish, 2015), and employee retention (Maier, Laumer, & Eckhardt, 2015).

Although these and other previous studies have been valuable in helping to establish an initial association between technological insecurity and individual work outcomes, they are limited because they overlook a theoretical explanatory mechanism. By drawing on the stressor-strain model (Jex,

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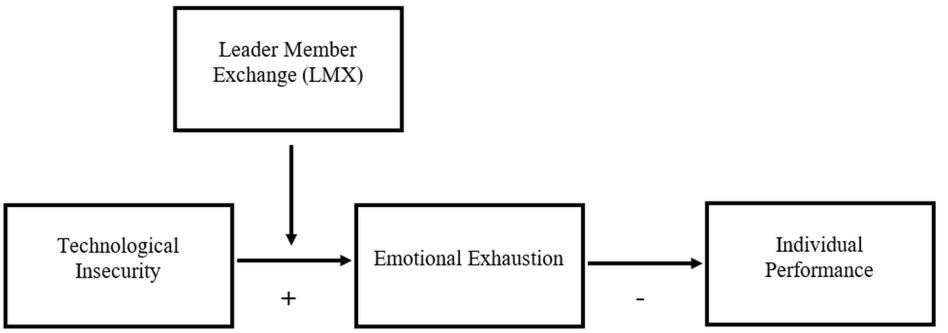
Bliese, Buzzell, & Primeau, 2001), one purpose of this study was to extend previous research on the association between technological insecurity and individual performance by examining the mediating role of emotional exhaustion. Emotional exhaustion refers to a chronic state of physical and emotional depletion (Maslach, Schaufeli, & Leiter, 2001). While scholars have a strong understanding of the consequences of technological insecurity (for a meta-analytical review, see La Torre, Esposito, Sciarra, & Chiappetta, 2019), much less is known about the psychological mechanism linking technological insecurity to individual performance. It is important to study the processes underlying the association between technological insecurity and individual performance, because it provides direction as to how to reduce the negative consequences of technological insecurity at the workplace.

Despite recent calls for future research on potential contextual factors moderating the consequences of technological stressors (Ragu-Nathan, Tarafdar, Ragu-Nathan, & Tu, 2008; Srivastava et al., 2015), surprisingly little is known about these contextual factors. Specifically, social and interpersonal resources have been suggested as contextual factors that might moderate the association between technological insecurity and individual performance outcomes; yet, to the best of the authors' knowledge, this idea has never been empirically tested (Tarafdar, Cooper, & Stich, 2019). Particularly important social and interpersonal resources might be provided by leaders. Whereas leadership refers to a process whereby an individual influences (a group of) individuals to achieve a common goal, those who exercise leadership are referred to as leaders (Yukl, 2013). Contemporary positive leadership theories, such as transformational, servant, or authentic leadership theories, focus on a leadership approach that inspires individuals to rise above themselves (Koh, Lee, & Joshi, 2019). Although these leadership theories have their practical appeal in management, they might be based on an idealized ideology only limitedly offering a qualified understanding of organizational life (Alvesson & Einola, 2019). On the contrary, the leader–member exchange (LMX) theory is a specific type of leadership suggesting that the quality of exchanges between leaders and followers plays a central role in organizational life (Martin, Guillaume, Thomas, Lee, & Epitropaki, 2016). Indeed, the LMX perspective argues that employees who experience high quality relationships with their leader might have access to additional instrumental and expressive resources (Goodwin, Bowler, & Whittington, 2009; Martin et al., 2016; Sparrowe & Liden, 1997). As such, the authors propose that individuals who have access to high quality LMX might be able to cope with the negative consequences associated with technological insecurity. In this study, the authors tested the hypotheses through a conditional indirect modeling approach.

The following section details the theoretical framework for the hypotheses. The third section illustrates the methods the researchers used, and the fourth section provides a discussion of the findings. Finally, the fifth section highlights the limitations of this research and future research opportunities.

Figure 1. Proposed conceptual framework



THEORETICAL FRAMEWORK

The authors' theorizing draws on the LMX theory, which suggests that the quality of exchanges between leaders and followers plays a central role in individuals' performance at work (Martin et al., 2016). This approach posits that leaders develop differential relationships with followers (Erdogan & Bauer, 2014) and is rooted in the assumption that interpersonal relationships are based on reciprocity (Liden, Erdogan, Wayne, & Sparrowe, 2006). For example, leaders offer reputational advantages to followers through sponsorship in exchange for higher levels of task performance and organizational citizenship behavior (Erdogan & Enders, 2007; Henderson, Liden, Glibkowski, & Chaudhry, 2009). This work implicitly implies that leaders and followers apply a transactional exchange perspective while developing their unique relationship (Lin, 2002). Yet, there are compelling reasons to conceptualize LMX in relational terms, in which both instrumental and expressive resources are available, moving beyond a transactional exchange (Carter, DeChurch, Braun, & Contractor, 2015; Goodwin et al., 2009; Lin, 2002). High quality LMX might provide instrumental resources to the followers in the form of personal and job resources, such as employability (Van der Heijden & Spurk, 2019). Expressive resources are affect-laden, because the LMX is characterized by high levels of trust (Erdogan & Bauer, 2014). As such, employees who have access to high quality LMX might benefit from enhanced instrumental and expressive resources to deal with stressors such as technological insecurity (Bakker & Demerouti, 2007; Tarafdar et al., 2019).

The Association Between Technological Insecurity, Emotional Exhaustion, and Performance

The idea that technological insecurity associates negatively with individual performance is based on theoretical arguments and empirical evidence that technological insecurity entails a chronic stressor, which could result in a decrease of individual performance (Ayyagari, Grover, & Purvis, 2011). Notably, technological insecurity is harmful to individual performance, because the introduction of new information technology creates psychological discomfort for the individual, who detracts attention towards successful task completion (Ragu-Nathan et al., 2008). Individuals experience psychological discomfort because they suffer from a chronic fear of becoming redundant within the organization (Tarafdar et al., 2019). Individuals perceive the potential threat of losing employment as the loss of an important resource, because it reduces access to important personal and job resources, such as self-efficacy (Tomas, Maslić Seršić, & De Witte, 2019). As such, technological insecurity is harmful for individual performance, because individuals continuously deplete their resources to keep up with fast-pacing technological changes, rather than investing in additional resources to deliver high performance at work (Hobfoll, Halbesleben, Neveu, & Westman, 2018).

Further, the authors go beyond previous research to hypothesize that technological insecurity influences performance indirectly through emotional exhaustion. As the stressor-strain model underscores, individuals experience an increased level of strain when they perceive a threat or actual loss of resources at work (Jex et al., 2001). Indeed, individuals might consider technological insecurity as a threat because they are less secure about their job (Tarafdar, Tu, Ragu-Nathan, & Ragu-Nathan, 2007). Importantly, within occupational research the focus lies on an energy depletion process in which individuals experience emotional exhaustion when they are faced with chronic stressors (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Schaufeli & Bakker, 2004). Individuals who perceive technological insecurity might experience a chronic state of physical and emotional depletion, because the introduction of new technology creates a cognitive overload of information and a feeling of despair among individuals (Korunka & Vitouch, 1999; Tarafdar et al., 2015; Tarafdar et al., 2007). Relatedly, in a lab experiment among 140 students, Salanova, Llorens, Cifre, Martínez, and Schaufeli (2003) showed a negative relationship between the use of technology and well-being. Thus, this paper argues that emotional exhaustion results from the chronic stressor of technological insecurity.

Bakker and Demerouti (2007) argued that high levels of emotional exhaustion associate with lower levels of performance. Emotional exhaustion is negatively related to performance, because individuals experience a disconnection with the performed work or service (Taris, 2006). Individual detachment could lead to a decrease in performance (Harms, Credé, Tynan, Leon, & Jeung, 2017; Maslach et al., 2001). Relatedly, emotional exhaustion reflects a high level of fatigue (Demerouti, Bakker, & Leiter, 2014). Individuals experiencing fatigue are both unable and unwilling to perform their job, which leads to lower performance levels (Taris, 2006).

Based on this literature review, the authors expect that emotional exhaustion mediates the association between technological insecurity and performance. Building on the stressor-strain model (Jex et al., 2001), the authors argue for an energy-depletion process in which individuals experience higher levels of emotional exhaustion, when technological insecurity increases, subsequently influencing individual performance. Therefore, they hypothesize the following:

Hypothesis 1: Emotional exhaustion mediates the negative association between technological insecurity and performance.

The Moderating Role of Leader-Member Exchange

Since perceived technological insecurity increases emotional exhaustion among individuals, leaders need to offset the experienced emotional exhaustion to prevent a negative influence on individual performance. From an LMX perspective, leaders develop different types of relationships with their followers, depending on the degree of interaction (Erdogan & Bauer, 2014). Followers who have high quality relationships with their leaders have access to high levels of instrumental and expressive resources (Goodwin et al., 2009; Martin et al., 2016; Sparrowe & Liden, 1997). Instrumental resources offer work-related advice to accomplish a task, and expressive resources involve interpersonal affect, including high levels of emotional support (Balkundi & Harrison, 2006; Ibarra, 1995). Conversely, individuals who experience low quality relationships with their leaders do not have access to these "privileged" instrumental and expressive resources (Martin et al., 2016; Sparrowe & Liden, 1997). As such, high quality LMX relationships between leader and follower might be used to offset the psychological discomfort individuals experience with technological insecurity.

The authors hypothesize LMX to buffer the negative psychological responses of technological insecurity. As they stated earlier, LMX can attenuate or prevent a negative response, because a high-quality LMX might provide additional information which potentially increases the knowledge a follower needs to deal with complex technologies (Hill, Kang, & Seo, 2014). Relatedly, one critical dimension of high quality LMX is trust (Erdogan & Bauer, 2014). Trust provides "the condition under which cooperation, higher performance, and/or more positive attitudes and perceptions are likely to occur" (Dirks & Ferrin, 2002, p. 455). Followers who perceive that their leader trusts them might be more confident in mastering new technologies, despite potential adversaries (Hill et al., 2014). Conversely, followers who experience low-quality LMX might not have access to these instrumental and expressive resources. Also, they might suffer from a lack of advice on how to deal with complex technology and the insecurities related to the introduction of new technologies (Salanova, Llorens, & Cifre, 2013; Turel & Gaudioso, 2018).

In sum, the degree to which followers have access to high-quality LMX might influence how individuals react to technological insecurity. Indeed, individuals might experience different psychological states towards the introduction of new technologies at the workplace, because leaders provide additional instrumental and expressive resources to the follower to cope with the chronic stressor of technological insecurity. Therefore, the authors hypothesize the following:

Hypothesis Two: LMX will moderate the negative and indirect effect of technological insecurity on performance (through emotional exhaustion). Specifically, emotional exhaustion will mediate the indirect effect when LMX is low, but not when it is high.

RESEARCH METHOD

Sample and Procedure

The authors recruited the participants while using the online platform Amazon Mechanical Turk. Previous studies showed that online crowdsourcing platforms are a reliable source of high quality and representative data (Peer, Brandimarte, Samat, & Acquisti, 2017). Still, the researchers implemented several procedures to reduce the risk of response biases (Podsakoff, MacKenzie, & Podsakoff, 2012). For example, the authors attached a cover letter to the questionnaire to explain the purpose of the research and reassure confidentiality. Relatedly, the authors embedded two attention checks within the questionnaire to ensure response quality. In total, 216 questionnaires were returned. After removing participants who failed an attention check or completed the survey in an unrealistically short or long time (Ferris, Reb, Lian, Sim, & Ang, 2018), the final sample included 158 participants. Thirty-six percent of the respondents were female, with an average age of 37.50 years (SD = 8.82). The average organizational tenure was 9.57 years (SD = 7.88) and, on average, the respondents had known their current manager for a period of 5.75 years (SD = 4.41). Fifty-five percent of the respondents had a bachelor's degree, 26% of the respondents had a high school degree, 15% had a master's degree, and the remaining respondents had professional degrees.

Measures

- **Emotional Exhaustion:** Emotional exhaustion is considered to be the core dimension of burnout (Maslach, Schaufeli, & Leiter, 2001). In order to measure emotional exhaustion, the researchers used Maslach, Jackson, Leiter, Schaufeli, and Schwab's (1986) nine-item scale. This scale has been extensively used in research, supporting its convergent, divergent, and predictive validity (Bakker, Demerouti, & Schaufeli, 2002; Maslach et al., 2001; Schaffran et al., 2019). A sample item reads: "I feel emotionally drained by my work." The authors measured the items on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). Cronbach's alpha for this measurement was $\alpha = .94$.
- **Technological Insecurity:** In order to measure technological insecurity, the authors used Tarafdar, Tu, Ragu-Nathan, and Ragu-Nathan's (2007) three-item scale. In their seminal work, Tarafdar et al. (2007) determined the instrument validity of technological security by measuring four measures of construct validity (i.e., content validity, reliability, convergent validity, and discriminant validity). A sample items reads: "I feel constant threat to my job security due to new technologies." The researchers measured the items on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). Cronbach's alpha for this measurement was $\alpha = .81$.
- **Performance:** In order to measure performance, the authors relied on Goodman and Svyantek's (1999) four-item scale. Consistent with previous research, Goodman and Svyantek (1999) determined construct validity among 221 individuals. Relatedly, the performance measure is used often in the field of occupational psychology (Bakker & Bal, 2010; Du, Derks, Bakker, & Lu, 2018; Dubbelt, Demerouti, & Rispens, 2019; Schreurs, Van Emmerik, Günter, & Germeys, 2012; Xanthopoulou, Baker, Heuven, Demerouti, & Schaufeli, 2008). A sample item reads "I fulfill the responsibilities specified at work." The authors measured all the items in this construct on a five-point Likert scale (1 = strongly disagree; 5 = strongly agree). Cronbach's alpha for this measurement was $\alpha = .87$.
- **Leader-Member Exchange:** Several different instruments have been used to measure LMX, for example the LMX-7 (Graen & Uhl-Bien, 1995) and the LMX-MDM (Liden & Maslyn, 1998).

Although the LMX-7 is perhaps the most often used instrument to capture LMX quality, the LMX-MDM provides a more accurate measurement of followers having either a high- or low-quality relationship with their leader (Erdogan & Bauer, 2014). As such, in order to measure LMX, the authors used Liden and Maslyn's (1998) LMX-MDM instrument. A sample item reads: "My supervisor is the kind of person one would like to have as a friend." The researchers measured the items on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). Cronbach's alpha for this measurement was $\alpha = .95$.

- **Organizational and Management Tenure:** This paper includes organizational and management tenure as a control variable, because previous research suggests that employee tenure and how long an employee works for his/her manager may influence the LMX relationship (Liden et al., 2006).
- **Gender:** This paper includes gender as a control variable, because previous research suggests that gender may influence the LMX relationship (Bauer & Green, 1996).

Data Analysis

The authors used the SPSS macro PROCESS (available at www.processmacro.org) to test the conditional indirect model (Hayes, 2018). PROCESS is a tool to test mediation, moderation, and conditional indirect research models with observed variables, based on ordinary least squares (OLS) regression (Hayes, 2018; Hayes, Montoya, & Rockwood, 2017). Although the use of OLS is common within the field of organizational behavior, there are claims that structural equation modeling (SEM) is more appropriate (Iacobucci, Saldanha, & Deng, 2007; Pek & Hoyle, 2016). SEM offers some advantages, such as the ability to include latent variables to reduce measurement error, but there are also some myths surrounding its application (Bollen & Pearl, 2013). First, the bias in effect estimation due to random measurement error is only partially solved through SEM (Hayes, 2018). Indeed, the estimation bias is also contingent on other factors, such as research model complexity, the degree of unreliability in measurement, and the correlation between variables (Cole & Preacher, 2014; Hayes et al., 2017). Second, Hayes (2012) showed that, for observed variable models, the results actually do not significantly differ between OLS and SEM. Instead, the differences in results between OLS and SEM might be caused by the specific SEM program in use (Hayes, 2018). Third, SEM might be slightly in error while determining standard errors in smaller samples, because SEM programs build on large sample asymptotic theory (Hayes, 2018; Hayes et al., 2017). Finally, the estimation of interactions between latent variables within SEM remains controversial, because the different methods available build on different assumptions (Hayes, 2018; Hayes et al., 2017). This increases the risk of assumption violation. In sum, the decision to use either OLS or SEM needs to be carefully evaluated within the research context, because SEM is not a "one size fits all" solution.

In this paper, the authors are confident to use the tool PROCESS to investigate the proposed conditional indirect research model. The PROCESS tool includes a set of preprogrammed conceptual and statistical diagrams defined by a model number from which the researcher can choose (Hayes et al., 2017). After identifying the variables in the model, the authors followed the necessary steps to test the research model. First, they tested the mediation hypothesis by using model 4 within the PROCESS tool Hayes (2018) developed. Second, they tested the moderation effect by using model 1 within the PROCESS tool to determine the first-stage moderation. Third, they tested the conditional indirect effects by using model 7 within the PROCESS tool to determine the role of LMX. Following Aiken, West, and Reno's (1991) guidelines, the authors grand-mean centered the independent, mediator, and moderator variables to facilitate the interpretation of the results. They also applied Hayes's (2018) bootstrapping procedure and reported 95% confidence intervals of the bootstrapping results. Bootstrapping is a robust procedure with high statistical power and free of data-distributional assumptions (Hayes et al., 2017).

RESULTS

Descriptive Statistics

Table 1 provides an overview of the means, standard deviations, and correlations for all the study variables. The table shows that technological insecurity is positively correlated to emotional exhaustion ($r = .25$, $p < .00$) and negatively correlated to both performance ($r = -.34$, $p < .00$) and LMX ($r = -.47$, $p < .00$). Relatedly, LMX is positively correlated to performance ($r = .41$, $p < .00$). There was also a significant correlation between technological insecurity and performance ($r = -.24$, $p < .00$).

Measurement Models

The researchers performed a series of confirmatory factor analyses to test the hypothesized five-factor model structure, including emotional exhaustion, LMX, performance, and technological insecurity. They used the root mean square error of approximation (RMSEA), comparative fit index (CFI), Tucker-Lewis index (TLI), and standardized root mean square residual (SRMR) to test the model fit (Vandenberg & Lance, 2000). In order to examine the influence of common method bias, the authors conducted a confirmatory factor analysis in which all items loaded on a single latent factor. The one-factor model provided poor fit, $\chi 2$ of 2093.98 ($df = 324$), $p < .01$, RMSEA of .18, SRMR of .16, CFI of .52, and TLI of .48; yet, the full measurement model provided acceptable fit, $\chi 2$ of 508.76 ($df = 306$), $p < .01$, with an RMSEA of .06, SRMR of .06, CFI of .95, and TLI of .94. As the hypothesized measurement model demonstrated superior fit to comparison models (results of the other nested models are available upon request from the first author), the researchers feel confident that common method bias is not a major concern in this study.

Test of Hypotheses

Table 2 presents the results of hypothesis 1, testing the mediating role of emotional exhaustion between technological insecurity and performance. The results support hypothesis 1, as the bootstrap results show a mediating effect of emotional exhaustion ($b = -.03$, *Boot SE* = .01, *Boot CI* = [-.07; -.01]).

Table 3 presents the results for hypothesis 2, which states that the indirect and negative effect of technological insecurity on performance through emotional exhaustion is contingent on the quality level of LMX.

This study examined the conditional indirect effect of LMX (through emotional exhaustion) at three values (mean, 1 SD above the mean [i.e., high], and 1 SD below the mean [i.e., low]). The results in Table 3 indicate a significant interval for low levels of LMX (*low* = [-.07; -.01]) and medium

Table 1. Means. standard deviations and correlations among the study variables

	Variables	Mean	SD	1	2	3	4	5	6	7
1	Gender	0.36	0.48							
2	Organizational Tenure	9.57	7.88	.07						
3	Management Tenure	5.75	4.41	-.01	.36**					
4	Emotional Exhaustion	2.43	1.01	-.03	-.11	-.12	*(.94)*			
5	Technological Insecurity	2.41	1.09	-.21**	-.05	.03	.25**	*(.81)*		
6	Leader Member Exchange	3.89	0.87	-.04	.09	.16*	-.47**	-.06	*(.95)*	
7	Performance	4.60	0.46	-.12	-.11	.01	-.34**	-.24**	.41**	*(.87)*

N=158, * $p < .05$, ** $p < .01$. Reliabilities are on the diagonal. SD = standard deviation.

Table 2. Regression results for mediation

	b	SE	*p*	
Performance regressed on Technological Insecurity (Step 1)	-.12	.03	.00***	
Emotional Exhaustion regressed on Technological Insecurity (Step 2)	.24	.07	.01**	
Performance regressed on Emotional Exhaustion (Step 3)	-.21	.07	.01**	
Performance regressed on Technological Insecurity controlling for Emotional Exhaustion (Step 4)	-.08	.03	.01*	
Bootstrap results for Indirect effects	**Effect**	**SE**		**Boot 95% CI**
Indirect effect of Technological Insecurity on Performance	-.03	.01		[-.07;-.01]*

N=158, * $p < .05$, ** $p < .01$, and *** $p < .001$.
Note. Unstandardized regression coefficients are reported. Bootstrap sample size=10,000, CI = confidence interval. SE = standard error.

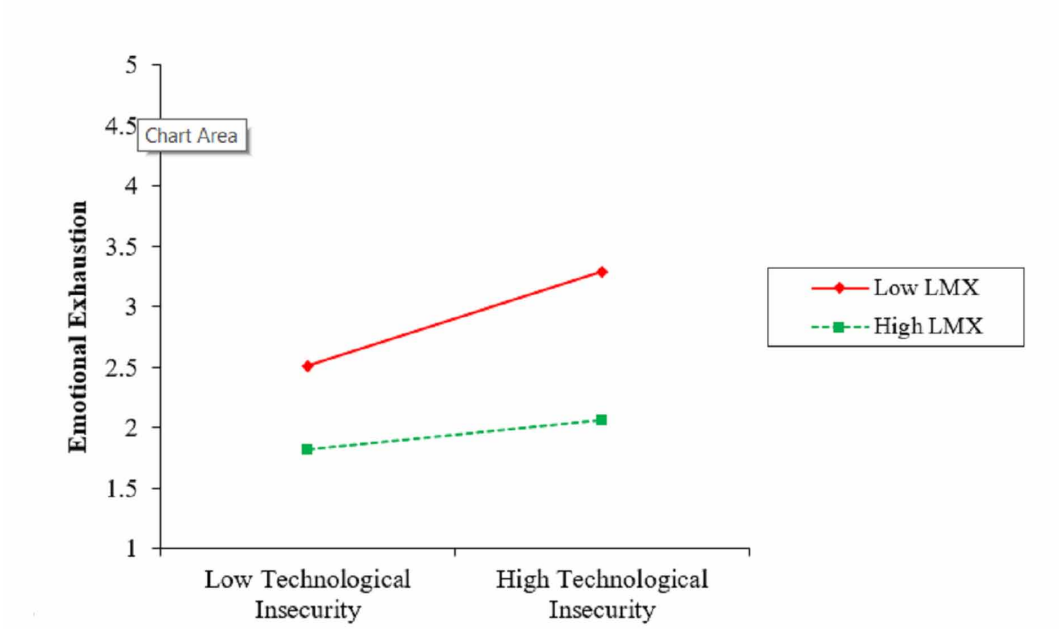
Table 3. Results of multiple regressions for conditional indirect effect

Predictor	*b*	SE	*p*	
Emotional exhaustion				
Constant	-.01	.07	.90	
Gender	-.01	.15	.95	
Management Tenure	-.01	.02	.68	
Organizational Tenure	-.01	.01	.46	
Technological Insecurity	.23	.07	.00***	
LMX	-.55	.08	.00***	
Technological Insecurity * LMX	-.14	.09	.11	
Performance				
Constant	3.49	.07	.00***	
Gender	-.15	.07	.03	
Management Tenure	.01	.01	.74	
Organizational Tenure	-.01	.01	.05*	
Emotional Exhaustion	-.14	.03	.00***	
Technological Insecurity	-.08	.03	.01*	
Conditional Indirect Effect Emotional exhaustion	**Boot indirect effect**	**Boot SE**		**Boot 95% CI**
Mean (LMX)	-.05	.03		[-.11;-.01]*
-1 SD (low LMX)	-.03	.01		[-.07;-.01]*
+1 SD (high LMX)	-.01	.02		[-.04;.01]

N=158, * $p < .05$, ** $p < .01$, and *** $p < .001$.
Note. Unstandardized regression coefficients are reported. Bootstrap sample size=10,000, CI = confidence interval. SE = standard error.

levels of LMX (*medium* = [-.11; -.01]), but not for high levels of LMX (high = [-.04; .01]) (Figure 2). Thus, hypothesis 2 is supported, as the indirect and negative effect of technological insecurity on performance through emotional exhaustion is observed, when levels of LMX are low and moderate, but not when LMX is high. Hence, hypothesis 2 was supported.

Figure 2.



DISCUSSION

Two primary findings emerge from this study. First, the study found that emotional exhaustion mediates the negative association between technological insecurity and individual performance. This result supports the idea that the continuous introduction of new technologies increases the likelihood that individuals experience a chronic state of physical and emotional depletion, because individuals are afraid of losing their job. Second, this study also found persistent evidence that the quality of LMX affects the association between technological insecurity and individual performance, through emotional exhaustion. These results support the idea that a high-quality LMX offers instrumental and expressive resources to cope with the negative consequences associated with technological insecurity. Indeed, high-quality LMX can attenuate or prevent a negative response because a high-quality LMX might provide additional information which potentially increases the knowledge a follower needs to deal with complex technologies. Relatedly, followers who believe that their leader trusts them might be more confident in mastering new technologies, despite potential adversaries (Hill et al., 2014).

Theoretical Implications

The primary theoretical contribution rests on the exploration of individuals' social and interpersonal resources while they cope with technological insecurity, answering the call to investigate relational contextual factors which previous studies frequently overlooked (Tarafdar et al., 2019; Turel & Gaudioso, 2018). This is an important contribution to the literature on technological insecurity, which has predominantly focused on technological inhibitors, such as technical support, literacy facilitation, and involvement facilitation (Ragu-Nathan et al., 2008; Tarafdar et al., 2015). Undeniably, the new digital age is introducing a continuous stream of technological innovations which make the implementation of extensive support programs (e.g., technical support and literacy facilitation) challenging and costly for organizations. Therefore, this study draws on the LMX theory to test the possibility that individuals who have high-quality LMX have access to instrumental and expressive resources to cope with technological insecurity. For example, followers who have access to high-

quality LMX might perceive and react less negatively to technological insecurity, because they can rely on their leaders' support. This research is one of the first attempts to investigate the role of social and interpersonal resources, in the form of LMX, to mitigate the negative consequences which are associated with technological insecurity.

Second, while the authors' findings are consistent with past studies that found a negative relationship between technological insecurity and performance (Tarafdar et al., 2007), this study goes beyond past research by uncovering that the effect of technological insecurity on performance is mediated by emotional exhaustion. This finding is in line with previous occupational studies which investigate the energy depletion process, in which individuals experience burnout when they are faced with chronic stressors (Demerouti et al., 2001; Schaufeli & Bakker, 2004). Yet, the energy depletion process has been frequently overlooked in the techno-stress literature (e.g., Ayyagari et al., 2011; Barber & Santuzzi, 2015; for an exception, Turel & Gaudioso, 2018). This contribution provides new ideas on how to reduce the negative consequences of technological insecurity at the workplace.

As a whole, the authors' broad contribution consists of their integration of the literature on technological insecurity and LMX, with the proposal that the association between technological insecurity and performance is mediated by emotional exhaustion, and the conclusion that high-quality LMX can mitigate this energy depletion process.

Practical Implications

This research provides a novel perspective on the role of high-quality LMX in attenuating the negative consequences of technological insecurity on individual performance. Indeed, high-quality LMX provides the additional instrumental and expressive resources an individual needs to cope with the challenges associated with technological innovation. Considering the negative consequences of technological insecurity, human resource managers need to be mindful when they implement human resource policies within their organization, in order to prevent individuals from experiencing a chronic state of physical and emotional depletion. Previous research on technostress showed that human resource managers should invest in technostress inhibitors, such as technical support, literacy facilitation, and involvement facilitation (Ragu-Nathan et al., 2008; Tarafdar et al., 2015). Yet, the investment in these tangible inhibitors might create a situation in which an individual is reminded about the perceived gap in competencies and skills he/she needs to perform his/her work. As a result, the authors believe that it might be more beneficial for human resource managers to implement policies that create opportunities for meaningful interpersonal relationships to develop between leaders and followers, but also among peers. Social resources, in the form of instrumental and expressive resources, might provide the necessary support to cope with the continuous stream of technological innovations at the workplace.

Limitations and Future Research

As with all empirical research, certain limitations need to be mentioned. One limitation has to do with the cross-sectional research design, which limits the possibility to test causal relations. In this paper, technological insecurity acts as an antecedent of emotional exhaustion and individual performance. Although, this is in line with the stressor-strain model (Jex et al., 2001), it is possible that the opposite also holds (e.g., lower individual performance increases emotional exhaustion, or emotional exhaustion increases technological insecurity). Future research is needed to test the causal relationship between the constructs. A second limitation arises from the fact that all constructs rested on the respondent's perception. Although the concepts used are highly subjective, it does suggest a potential source of common-method bias. However, this paper followed Podsakoff et al.'s (2012) recommendations to diminish the possibility of common method variance. For example, the authors attached a cover letter to the questionnaire to explain the purpose of the research and reassure confidentiality, and embedded two attention checks within the questionnaire to ensure response quality.

CONCLUSION

This study highlights the importance of technological insecurity in understanding individual performance. Technological insecurity refers to the feeling of job insecurity due to the continuous introduction of new technologies. Individuals who perceive technological insecurity are likely to suffer from lower levels of individual performance, because individuals invest their personal and job resources to keep up with the rapid technological changes, rather than to deliver high levels of individual performance. It appears that the rapid technological advances during the new digital age come with a cost (Ragu-Nathan et al., 2008; Tarafdar et al., 2019; Tarafdar et al., 2015).

The finding that emotional exhaustion acts as a psychological mechanism explaining the negative association between technological insecurity and individual performance provides new insights on how to cope with technological insecurity. The idea that technological insecurity triggers an energy-depletion process (Bakker & Demerouti, 2007) highlights that technological insecurity increases the level of physical and emotional depletion. Individuals who are disconnected and show high levels of fatigue are unable and unwilling to deliver high performance levels (Taris, 2006). Therefore, organizations are faced with the dilemma of how to maintain low levels of emotional exhaustion associated with technological insecurity in an era of continuous technological change.

This study explored the idea that leaders are essential for organizations to cope with this dilemma. Individuals who have high-quality LMX with their leaders receive both instrumental and expressive resources to cope with technological insecurity. Leaders might provide instrumental resources in the form of additional information which potentially increases the knowledge a follower needs to deal with complex technologies. Relatedly, followers who believe that their leader trusts them might be more confident in mastering new technologies, despite potential adversaries.

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