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Article

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Technostress in times of change: unveiling the impact of leadership styles in Cambodia's public organizations in the wake of COVID-19

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ABSTRACT

This study examines the impact of different leadership styles on technostress within public organizations in Cambodia amidst the challenges of the COVID-19 pandemic. Utilizing Partial Least Squares Structural Equation Modeling (PLS-SEM), data were collected from 351 employees working in various public organizations across Cambodia. The study specifically investigates the relationships between three leadership styles—transformational, transactional, and laissez-faire—and the level of technostress experienced by employees. The findings reveal a statistically significant and positive relationship between transformational leadership and a reduction in technostress, suggesting that transformational leadership qualities such as inspiration, motivation, and individualized consideration effectively mitigate the adverse effects of technostress. Conversely, transactional and laissez-faire leadership styles are positively associated with increased levels of technostress, indicating that these styles may exacerbate the stress employees experience in response to technological changes and challenges. The study contributes to the existing literature by providing empirical evidence on the impact of leadership styles on technostress in a unique cultural and organizational context. It offers valuable insights for policymakers, organizational leaders, and practitioners in understanding the role of leadership in managing technostress, especially during times of crisis and rapid technological change. The study also highlights the importance of leadership development programs in public sector organizations that emphasize leadership styles that help reduce technostress. The findings emphasize the need for a balanced approach to leadership that considers both the demands of technological adaptation and the well-being of employees.

IMPACT STATEMENT

This research offers key insights into how leadership styles in Cambodian public organizations impact employees' stress levels due to technology, particularly during the Covid-19 pandemic. It reveals that leaders who inspire and support their teams (transformational leaders) can significantly reduce technology-related stress. In contrast, more directive or hands-off leadership approaches (transactional and laissez-faire) tend to increase such stress. This study is particularly relevant in our current era of rapid technological change, highlighting the crucial role of leadership in managing the challenges of technology in the workplace. For the general public, it underscores the importance of empathetic and supportive leadership in reducing workplace stress in a tech-driven world.

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Introduction

The COVID-19 pandemic, originating in late 2019, rapidly evolved into a global health crisis of unprecedented scale. The pandemic has forced organizations across the globe, including in Cambodia, to adapt swiftly, often leading to the closure of physical workspaces and the shift to remote work. This

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transition to a virtual workforce has significantly altered the work landscape, with many employees transitioning to remote work, facing suspensions or layoffs (Kniffin et al., 2021; Zhang et al., 2023). The rapid adoption of Information and Communication Technologies (ICTs) became essential during this period. However, this shift has not been without challenges, particularly regarding technostress – the psychological and physical strain associated with adapting to new technology (Brod, 1984; Chua et al., 1999). Recent studies have highlighted the exacerbated levels of technostress in the context of the pandemic, underscoring its impact on productivity, job satisfaction, and overall well-being in the workplace (Camacho & Barrios, 2022; Srivastava et al., 2015). Technostress has been observed across diverse demographics, affecting individuals in various organizational roles, professional fields, and cultural contexts (Clark & Kalin, 1996; Wang et al., 2008). It is a psychosocial phenomenon associated with using technologies, particularly during the COVID-19 pandemic and home confinement (Bahamondes-Rosado et al., 2023). Equally, it can strain workers' working and private lives, leading to problems of techno-addiction (Bencsik & Juhász, 2023). The adverse effects of technostress on work-life balance and organizational performance have been identified, including loss of leisure time, techno-overload, techno-invasion, and techno-uncertainty (Bencsik & Juhász, 2023). Thus, the rapid technological progression, a hallmark of the modern era, further intensifies this stress (Çini et al., 2023; Çoklar et al., 2019; Şahin & Çoklar, 2009; Wang et al., 2023). In the face of these challenges, the role of leadership becomes increasingly significant. Effective leadership is essential for mitigating the adverse effects of technostress by fostering a supportive and engaging work environment (Bakker et al., 2011; Rademaker et al., 2023; Spagnoli et al., 2020). Thus, Leaders' behaviors, traits, and interactions with their subordinates are pivotal in navigating the complexities introduced by the pandemic and the associated technological shifts. In Cambodia's public sector, where the COVID-19 pandemic has brought about significant changes and challenges, understanding the impact of different leadership styles on technostress becomes crucial. Hence, this study aims to assess the influence of three distinct leadership styles- transformational, transactional, and laissez-faire – on technostress levels among Cambodian public sector employees during the pandemic.

Literature review

Technostress, a term coined by Brod (1984), refers to the psychological and physiological strain associated with adopting and using new technologies. This phenomenon has become increasingly relevant in the digital age, characterized by rapid technological advancements and pervasive use of Information and Communication Technologies (ICTs). Lazarus and Folkman (1984) posit that stress arises when an individual perceives a demand as exceeding their coping abilities, providing a theoretical foundation for understanding technostress. Additionally, technostress refers to the negative psychological state that individuals experience due to using or potentially using information and communication technologies (ICTs) (Willermark et al., 2023). It is characterized by the inability to cope with the demands and challenges posed by ICT use, leading to various adverse effects on individuals' well-being and performance (Bahamondes-Rosado et al., 2023; Ćuk et al., 2022; Uddin et al., 2023). Technostress can be induced by information overload, constant connectivity, and the rapid evolution of digital technologies (Tarafdar et al., 2023). The COVID-19 pandemic and the sudden shift to remote work have further accelerated the occurrence of technostress, with techno invasion, techno overload, and techno fatigue being identified as common stressors during this period. The concept of technostress has gained significant attention in recent years, with research focusing on understanding its causes, consequences, and potential coping strategies.

Leadership styles are critical in guiding organizations through challenges in times of crisis, such as the COVID-19 pandemic. The three primary leadership styles – transformational, transactional, and laissez-faire – have distinct impacts on organizational behavior and crisis management. The transformational leadership style has been consistently linked to positive organizational outcomes during crises. Klein and Todesco (2021) found that the transformational style had the highest positive correlations, followed by authentic, resonant, and servant styles. This suggests that transformational leaders inspire and motivate their teams to achieve exceptional results, fostering a sense of commitment and engagement among employees. Crayne and Medeiros (2021) further support this by highlighting a significant medium positive

relationship between the transformational leadership style and employees' commitment. This indicates that transformational leaders effectively cultivate a dedicated and loyal workforce, which is crucial during crises. Equally, while showing positive and negative correlations in different contexts, transactional leadership has been associated with organizational agility during crises. Bhaduri (2019) emphasizes that transactional leadership is critical during crisis management, suggesting that this style facilitates effective coordination and task accomplishment within the organization. However, Crayne and Medeiros (2021) identified an insignificant small negative relationship between the transactional leadership style and employees' commitment. This presents a potential knowledge gap, indicating the need for further research to understand the nuanced impact of transactional leadership on employee commitment during crises. In contrast to transformational and transactional styles, the laissez-faire leadership style has consistently shown negative correlations with job satisfaction and insignificant small positive relationships with employees' commitment (Crayne & Medeiros, 2021; Klein & Todesco, 2021). Furthermore, Bhaduri (2019) indicates that laissez-faire leadership has no relation to organizational agility during crises. These findings underscore the detrimental impact of laissez-faire leadership on organizational behavior and crisis management, highlighting the need for further exploration of alternative leadership approaches in crises.

The public sector has been significantly impacted by the COVID-19 pandemic, particularly in terms of digital transformation and remote work. Organizations have shifted to hybrid working arrangements to comply with social distancing policies, leading to changes in employee well-being and the gender division of labor (Siddika, 2023). This also resulted in changes in employee behaviors and the work system in government and private organizations (Tashliyev & Tirtoprojo, 2023). Thus, working from home during the pandemic has had both advantages and disadvantages for employees, with different impacts on various groups such as women, those with caring responsibilities, and employees with disabilities (Williamson et al., 2023). The spread of COVID-19 has influenced public employees' perception of smart working, highlighting the need for work flexibility practices and attention to their impact on organizations and human resources management (Todisco et al., 2023). The pandemic has brought significant organizational changes in the public sector, including digitalization and the need to improve employees' digital competencies. Therefore, the pandemic has underscored the importance of effective leadership in guiding teams through these challenges, balancing public service delivery with employee well-being.

Technological advancements have transformed the public sector by offering new opportunities for innovation, digital transformation, and service delivery. However, with the widespread adoption of digital tools and technologies, the public sector has also experienced the emergence of technostress among employees. Agostino et al. (2021) highlight the accelerated digital transformation in public service delivery due to the COVID-19 pandemic. The rapid adoption of digital tools and technologies has significantly influenced the work environment and processes in the public sector. This has led to a fundamental shift in how government employees perceive and utilize technology, especially in AI-augmented public administration (Ahn & Chen, 2022). The digital transformation and increased reliance on technology affect employee well-being and job satisfaction in the public sector, as Feroz et al. (2021) emphasize the importance of equipping community health workers with digital tools for pandemic response. However, introducing new technologies can also lead to technostress, potentially affecting public sector employees' mental health and job performance (Ullah et al., 2021). Thus, integrating digital tools and technologies in public service delivery should be accompanied by measures to ensure the safety and well-being of employees to mitigate the negative impact of technostress.

While there is a significant body of literature on technostress and leadership styles, there is a notable gap in research explicitly addressing the interplay between different leadership styles and technostress in the Cambodian public sector, particularly during the COVID-19 pandemic. This gap is crucial as Cambodia's unique socio-economic and cultural context and specific challenges during the pandemic may influence how leadership styles impact employee well-being and technostress levels. Therefore, exploring this relationship within the Cambodian context is essential for developing effective leadership strategies tailored to public sector employees' unique challenges in this region.

Hypothesis construction

Techno-stressed individuals may experience job burnout due to excessive workload (Shropshire & Kadlec, 2012). Job burnout manifests as low energy, exhaustion, fatigue, disinterest, or disillusionment in competency and value, eroding motivation and hampering performance (Moore, 2000; Muir, 2008). As a result of their exhaustion, employees are more likely to experience poor job performance, difficulty concentrating, consider changing careers, and have interpersonal problems at home and work (Simmons et al., 2009). Correspondingly, Andersen (1995) argues that leaders are so persuasive that they play a crucial role in establishing successful organizations because of the behavior and attitudes of leaders to influence others and deal with stakeholders (DuBrin, 2015). Also, leaders tend to exhibit a pattern of conduct that identifies and predicts their leadership style. The leadership style establishes the tone of the business environment and influences the performance and attitude of the personnel. Leaders are critical because they significantly impact organizational effectiveness, but the link changes strength (Larsson & Vinberg, 2010). Practically, leadership style influences almost every facet of an organization. This could impact various characteristics such as productivity, job satisfaction, employee morale, and organizational commitment and retention (Lyons & Schneider, 2009; Offermann & Hellmann, 1996; Sosik & Godshalk, 2000; Yukl, 1981). In addition, scholars argue that leadership style would affect workplace stress (Lyons & Schneider, 2009; Syrek et al., 2013). Thus, leaders may even be a significant source of stress due to their leadership style (Lyons & Schneider, 2009). Organizational structures began to change significantly due to the experiences. Transformational leadership happens in organizational transition when these circumstances coincide. It is a style of leadership in which the leader inspires followers to discover areas for improvement and develop a vision to inspire improvement. The leader drives change with committed employees in the organization (Campbell, 2018a). Integrated thinking, creativity, transformation, and shared actions to common difficulties have all been related to transformational leadership outcomes (Campbell, 2018b; Eisenbeiss et al., 2008; Sun & Anderson, 2012), and the notion is related to promising interpersonal communication (Campbell et al., 2016; Podsakoff et al., 1990). The paradox is that leadership is an established practice that followers view through the prism of many organizational policies (Osborn et al., 2002).

Transformational leadership (TFL) has been widely studied in the organizational literature due to its potential impact on various organizational outcomes. One area of interest is its influence on technostress, which has become a prevalent issue in modern workplaces due to rapid technological advancements. Transformational leadership is characterized by leaders who inspire and motivate their followers to achieve extraordinary outcomes and develop their full potential. According to Baker and Hoidn (2015), transformational leaders exhibit four key behaviors: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. These behaviors enable leaders to foster a supportive and empowering work environment, which has been linked to positive organizational outcomes. Technostress refers to the adverse psychological and physiological reactions that individuals experience because of their interaction with technology in the workplace. This phenomenon has garnered attention due to its potential to impair employee well-being and productivity. In various studies, Transformational leadership has a significant impact on technostress. Studies have shown that transformational leaders who are technologically innovative can negatively affect crisis management (Peter & Placido, 2023). Moreover, transformational leadership behavior has been found to reduce technostress among employees in logistics companies (Patel, 2022). Equally, Çiçek and Kılınç (2021) and Khasawneh (2020) both found that transformational leadership can reduce technostress and help employees overcome technophobia. This leadership style also plays a crucial role in technology adoption and development (Seyal, 2015; Thite, 2000) and can be a motivational factor for technology enhancement (Yurov & Potter, 2006). The relationship between transformational leadership and innovation has also been explored, with innovation being significantly related to transformational leadership (Crawford et al., 2003). Lastly, El Toufaily (2018) highlights the need to identify the factors that contribute to the formation of the transformational leadership style. These findings suggest that transformational leadership is crucial in managing technostress and its negative consequences. Thus, this work posits that *(H1) Transformational Leadership significantly impacts Technostress.*

The impact of transactional leadership on employees' work-related outcomes has been extensively explored. Li et al. (2019) found that transactional leadership significantly influences employees' innovative work behavior, indicating the substantial role of transactional leadership in shaping employees' attitudes and behaviors. This is further supported by the study of Li et al. (2019), which demonstrated the influence of transformational leadership on subordinate attitudes and implementation success. These findings underscore the importance of transactional leadership in driving positive employee outcomes and organizational success. In the context of technostress, Marchiori et al. (2019) investigated the influence of individual characteristics on the types of technostress reported by workers. While this study did not directly examine the impact of transactional leadership, it shed light on the multifaceted nature of technostress and the need to consider individual differences when assessing its implications in the workplace. However, the specific link between transactional leadership and technostress remains understudied, presenting a notable knowledge gap in the existing literature. Furthermore, Shareef and Atan (2019) explored the influence of ethical leadership on employees' organizational citizenship behavior and turnover intention. While not directly related to technostress, this study highlighted the broader impact of leadership styles on employee attitudes and behaviors, emphasizing the need to examine the specific effects of transactional leadership in the context of technostress. In addition, Su et al. (2020) investigated how servant leadership influences employees' service innovative behavior, pointing to the relevance of examining different leadership styles in the context of employee well-being and performance. This suggests the importance of considering various leadership approaches, including transactional leadership, in understanding the dynamics of technostress in the workplace. Moreover, the study by Purwanto (2020) examined the influence of transformational and transactional leadership styles on the innovation capabilities of schoolteachers during the COVID-19 pandemic. While not directly focused on technostress, this research underscored the adaptability and resilience of teachers in response to challenging work environments, raising questions about the potential role of transactional leadership in mitigating technostress among educators. Based on these studies, this work suggests that *(H2) Transactional Leadership and Its Impact on Technostress*.

Laissez-faire leadership is characterized by a hands-off approach, where leaders provide little guidance or direction to their subordinates. This type of leadership has been the subject of increasing interest in organizational research due to its potential impact on employee outcomes and organizational effectiveness. Breevaart and Zacher (2019) found that laissez-faire leadership significantly but negatively impacts employee performance. This suggests that when employees are left without clear direction or support from their leaders, they are likely to experience lower performance levels. This finding is consistent with (Baig et al., 2021), who also demonstrated that leadership styles, including laissez-faire, directly impact employees' performance. This indicates that lacking leadership involvement and guidance can harm employee outcomes. In addition to its impact on performance, laissez-faire leadership has also been linked to increased employee turnover intention (Breevaart & Zacher, 2019). This finding highlights the potential negative consequences of laissez-faire leadership on employee retention and organizational stability. It suggests that employees feel unsupported and directionless due to laissez-faire leadership. They may be more likely to consider leaving the organization. Moreover, this leadership style can exacerbate the adverse effects of technostress, such as emotional exhaustion and reduced quality of care (Bauwens et al., 2021). In contrast, empowering leadership, which involves the deliberate delegation of power and responsibility, can mitigate the influence of technostress (Frischer, 2006). Also, the role of middle managers in implementing technological change and the potential for ethical leadership to moderate the impact of technological innovation on firm performance are important considerations in this context (Beatty & Lee, 1992; Lin et al., 2020). According to these discussions, this work posits that *(H3) Laissez-Faire Leadership and its Impact on Technostress*.

Methodology

This study employed a quantitative research approach to investigate the relationship between leadership styles and technostress among public sector employees in Cambodia during the COVID-19 pandemic. It opted for a nonparametric technique, specifically Partial Least Squares Structural Equation Modeling (PLS-SEM), to address the complexities inherent in such an investigation. PLS-SEM was chosen over

covariance-based SEM due to its robustness in assessing complex models and its ability to handle non-normal data distributions, making it more suitable for exploratory studies and the examination of emergent theories (Hair et al., 2019; Henseler et al., 2015). Data were collected through self-administered questionnaires distributed to employees within the Cambodian public sector via online working groups. The rationale for the sample selection was grounded in the need to understand the implications of leadership styles in a context deeply affected by the COVID-19 pandemic. The public sector in Cambodia presented a unique case due to its rapid and forced transition to digital platforms and remote work, offering an opportunity to study technostress in an environment of heightened relevance. The sample was selected using convenience sampling for its practicality and ease of access during the constraints of the pandemic. In this study, 500 questionnaires were distributed to gather data. From these, 351 responses were deemed usable, providing a solid foundation for reliable analysis as Hair Jr et al. (2021) recommended that a suitable sample size for Structural Equation Modeling (SEM) should range from 200 to 400 to uphold statistical validity and reliability. The demographic profile of the respondents is predominantly male at 76.9%, with females representing 23.1%. In terms of education, a significant majority hold a graduate (Master's) degree at 71.8%, followed by those with an undergraduate (Bachelor's) degree at 23.1%, and a smaller fraction with a post-graduate (Doctorate) degree at 5.1%. The age distribution shows a balanced representation in the mid-range, with 47.0% of respondents aged between 18 and 35, and 47.9% between 36 and 52. The older age groups are less represented, with 2.8% between 53 and 64, a mere 2.3% aged 65 or above. Regarding employment status, 85.8% of the participants are employed full-time, while part-time workers constitute 14.2%. For data analysis, the Statistical Package for the Social Sciences (SPSS) version 26 was used for preliminary statistical assessments, and SmartPLS 3 was employed for analyzing PLS-SEM models.

Measurement

This study incorporates several pre-existing literary works to construct its framework. Initially, the technostress measurement was adapted from prior research to align with the specific needs of this study (e.g. Dong et al., 2020; Penado Abilleira et al., 2020; Salanova et al., 2013; Wang et al., 2020). This adapted scale consists of four constructs – Anxiety, Fatigue, Inefficacy, and Skepticism – encompassing sixteen items. Also, the assessment of transformational leadership was based on the conceptual framework established by Bass (1990, 1997) and Bass and Avolio (1990, 1993), utilizing the 4Is dimensions (Idealized Influence, Individual Consideration, Inspirational Motivation, and Intellectual Stimulation), comprising twelve items. In a similar vein, the transactional leadership metric was sourced from Bass (1990, 1997) and Bass and Avolio (1990, 1993), encompassing three constructs (Contingent Reward, Active and Passive Management by Exception). The laissez-faire leadership aspect was measured using a three-item scale adapted from the MLQ-5X (Avolio & Bass, 2004; Bass & Avolio, 1991). All scales rated a five-point Likert scale for assessing significance, ranging from 1 (strongly disagree) to 5 (strongly agree). Moreover, Confirmatory Factor Analysis (CFA) was utilized to validate the instrument's efficacy in measuring the constructs. This analysis focused on the significance of the observed variables concerning the latent construct, predicated on the robustness of the regression model that links the factors to the observed variables rather than the inter-variable relationships (Byrne, 2010).

Assessment of measurement model

The evaluation of the measurement model involves examining internal consistency, convergent validity, and discriminant validity (Hair et al., 2011, 2016; Henseler et al., 2009). Composite reliability and Cronbach's alpha values were used to compute the internal consistency of the constructs. All the CRs exceeded the recommended value of 0.70 (Fornell & Larcker, 1981). Cronbach's alpha of each construct exceeded the 0.70 threshold. Convergent validity was acceptable because the Average Variance Extracted (AVE) was over 0.50. Table 1 summarizes the details of the measurement model assessment (loadings, Cronbach's alpha, CR, and AVE).

The Fornell-Larcker criterion assessed discriminant validity, and the table shows that the square root of AVE for the construct was greater than the inter-construct correlation (See Table 2). Furthermore,

Table 1. Factor loadings, reliability, and validity.

| Constructs | Loadings |
|---|----------|
| Technostress (TNS) (Cronbach's Alpha = 0.943, CR = 0.949, AVE = 0.540) | |
| TA1 | 0.760 |
| TA2 | 0.731 |
| TA3 | 0.830 |
| TA4 | 0.668 |
| TF1 | 0.732 |
| TF2 | 0.696 |
| TF3 | 0.715 |
| TF4 | 0.748 |
| TI1 | 0.791 |
| TI2 | 0.800 |
| TI3 | 0.634 |
| TI4 | 0.668 |
| TS1 | 0.748 |
| TS2 | 0.756 |
| TS3 | 0.614 |
| TS4 | 0.830 |
| Transformational Leadership (TFL) (Cronbach's Alpha = 0.920, CR = 0.932, AVE = 0.533) | |
| IC1 | 0.703 |
| IC2 | 0.670 |
| IC3 | 0.712 |
| II1 | 0.666 |
| II2 | 0.684 |
| II3 | 0.714 |
| IM1 | 0.734 |
| IM2 | 0.788 |
| IM3 | 0.777 |
| IS1 | 0.839 |
| IS2 | 0.786 |
| IS3 | 0.667 |
| Transactional Leadership (TSL) (Cronbach's Alpha = 0.943, CR = 0.949, AVE = 0.540) | |
| TSL1 | 0.788 |
| TSL2 | 0.873 |
| TSL3 | 0.889 |
| Laissez-faire Leadership (LFL) (Cronbach's Alpha = 0.845, CR = 0.907, AVE = 0.764) | |
| LFL1 | 0.905 |
| LFL2 | 0.875 |
| LFL3 | 0.842 |

Table 2. Discriminant validity-Fornell & Larcker criterion.

| | LFL | TFL | TNS | TSL |
|------------------------------------|-------|-------|-------|-------|
| LFL | 0.874 | | | |
| TFL | 0.507 | 0.730 | | |
| TNS | 0.722 | 0.571 | 0.735 | |
| TSL | 0.647 | 0.521 | 0.768 | 0.851 |
| Heterotrait-monotrait ratio (HTMT) | | | | |
| LFL | – | | | |
| TFL | 0.561 | | | |
| TNS | 0.794 | 0.595 | | |
| TSL | 0.782 | 0.591 | 0.864 | – |

discriminant validity was also assessed by the heterotrait-monotrait ratio of correlations (HTMT) (Henseler et al., 2015), with values below the threshold of 0.90. Hence, discriminant validity is established (See Table 2).

Structural model

The model quality is evaluated on its ability to predict endogenous constructs. It is accessed based on the coefficient of determination (R^2), cross-validated redundancy (Q^2), path coefficients (β), and significance of paths. This study validated hypotheses using standardized path coefficients. It determined the model's robustness by examining each structural path's strength. According to Fornell and Larcker (1981), R^2 values are deemed satisfactory if they exceed 0.1. Likewise, Q^2 establishes the predictive relevance of the endogenous constructs. A Q^2 larger than 0 indicates that the model is predictively significant, whereas a Q^2 less than 0 indicates that the model is flawed (Castro & Roldán, 2013). As a result of this

study, the model accounted for approximately 69.4% of the variance in technostress ($R^2 = .694$), indicating a substantial influence of leadership styles on technostress levels. The predictive relevance of the model ($Q^2 = .361$) exceeded the threshold, suggesting the model's effectiveness in predicting technostress. This study validated hypotheses using standardized path coefficients (see Table 3).

To validate the significance of pathways and calculate standard errors, this study implemented a bootstrap method involving 5,000 sub-samples, following techniques outlined in previous studies (e.g. Hair et al., 2021; Ringle et al., 2005; Zhao et al., 2010). The study also used the standardized root mean square residual (SRMR) as a key metric to assess the model's performance within the framework of Partial Least Squares Structural Equation Modeling (PLS-SEM), as discussed (Henseler et al., 2016; Kenny, 2020). While PLS-SEM does not provide definitive SRMR cut-offs, values under 0.10 generally indicate a well-fitting model (Hu & Bentler, 1998; Kara et al., 2022; Worthington & Whittaker, 2006). In this study, an SRMR of 0.09 suggested an adequate fit of the model. The final stage of the analysis involved a detailed examination of the proposed relationships for their statistical relevance, with the findings detailed in Table 3. As a result of the analysis, all hypotheses were confirmed. Specifically, TFL significantly positively affected TNS ($\beta=0.155$, $t=3.712$, $p < .001$), supporting H1. Similarly, TSL was found to have a significant positive relationship with TNS ($\beta=0.467$, $t=9.810$, $p < .001$), confirming H2. Lastly, LFL showed a significant positive association with TNS ($\beta=0.341$, $t=5.572$, $p < .001$), validating H3.

Discussion

The research conducted on public organizations in Cambodia during the COVID-19 pandemic reveals a statistically significant and positive relationship between transformational leadership and technostress. This indicates that the presence of transformational leadership within an organization has a notable impact on the levels of technostress experienced by employees. Transformational leaders, characterized by their ability to inspire, motivate, and stimulate followers intellectually while giving individualized consideration, appear to have a dual effect on technostress. On one hand, their forward-thinking and innovative approach toward technology can enhance employees' ability to manage and adapt to technological changes. On the other hand, the high expectations and rapid changes driven by such leaders could potentially contribute to increased technostress among employees. These findings align with existing literature, indicating that transformational leaders are critical in shaping organizational responses to technological changes and stresses. For instance, studies by Patel (2022), Çiçek and Kılınç (2021), and Khasawneh (2020) corroborate the notion that transformational leadership can mitigate technostress. This is in line with the observation that transformational leadership fosters a supportive and empowering work environment, which can buffer the adverse effects of technostress. However, this study also brings an interesting perspective when juxtaposed with research suggesting that leadership styles could be a significant source of stress Lyons and Schneider (2009). While transformational leadership is generally seen as positive, the high demands and rapid changes it often entails could paradoxically contribute to technostress, a nuance not extensively explored in previous studies.

Additionally, data revealed a statistically significant and positive relationship between transactional leadership and technostress in public organizations in Cambodia during the COVID-19 pandemic. This result indicates that transactional leadership, often characterized by the exchange of rewards for performance and adherence to organizational rules and procedures, is associated with increased levels of technostress among employees. Transactional leadership's focus on structure, efficiency, and task-oriented goals contributes to higher technostress levels. This could be due to the pressure to meet specific performance metrics and the potential rigidity in adapting to technological changes.

Table 3. Hypotheses testing.

| | Path coefficient | t-value | p-value | Decision |
|---------------|------------------|---------|---------|-----------|
| H1: TFL → TNS | 0.155 | 3.712 | 0.000 | Supported |
| H2: TSL → TNS | 0.467 | 9.810 | 0.000 | Supported |
| H3: LFL → TNS | 0.341 | 5.572 | 0.000 | Supported |
| | R^2 | | | Q^2 |
| TNS | 0.694 | | | 0.361 |

inherent in transactional leadership styles. The link between transactional leadership and technostress adds a new dimension to the existing body of research on leadership styles and employee well-being. Existing studies, such as those by Li et al. (2019) and Shareef and Atan (2019), have focused on positive employee outcomes associated with transactional leadership, like innovative work behavior and organizational citizenship. However, these studies did not explicitly explore the relationship between transactional leadership and technostress. The finding contrasts with the generally positive view of transactional leadership in driving employee performance. It suggests that while transactional leadership can be effective in specific performance metrics, it may simultaneously contribute to higher technostress levels, particularly in contexts characterized by rapid technological change, such as during the COVID-19 pandemic.

Ultimately, this research revealed a statistically significant and positive relationship between laissez-faire leadership and technostress in public organizations in Cambodia during the COVID-19 pandemic. Laissez-faire leadership, characterized by a hands-off approach and minimal guidance or direction from leaders, correlates with increased levels of technostress among employees. This finding indicates that the absence of active leadership and support in managing technological changes and challenges contributes to higher technostress. In environments where leaders are disengaged or passive, employees might struggle to adapt to new technologies, leading to increased stress and frustration. The relationship between laissez-faire leadership and increased technostress provides a critical insight that complements and extends existing literature. Existing studies, such as those by Breevaart and Zacher (2019) and Baig et al. (2021), have generally highlighted the negative impact of laissez-faire leadership on employee performance and turnover intention. These studies suggest that lack of leadership involvement can harm employee outcomes. However, the specific link between laissez-faire leadership and technostress is explored less in the existing literature. This study's findings fill this gap by demonstrating that laissez-faire leadership not only affects general performance and retention but also specifically contributes to increased technostress. This suggests a broader scope of the negative impacts of laissez-faire leadership than previously understood.

Conclusion

This study provides a nuanced understanding of how leadership styles influence technostress within public organizations in Cambodia, particularly during the challenging period of the COVID-19 pandemic. The study's findings indicate a significant relationship between leadership styles and technostress, revealing that while transformational leadership tends to mitigate technostress, transactional and laissez-faire leadership styles are associated with increasing technostress. These insights offer several theoretical and practical implications. Theoretically, the study extends leadership theory by integrating the concept of technostress, thereby broadening the understanding of how different leadership styles impact employees' experiences with technological changes. This research also contributes to the technostress literature by highlighting leadership as a crucial factor influencing technostress in the workplace, and it provides a cultural contextualization of these dynamics within the specific environment of the Cambodian public sector. From a practical standpoint, this study emphasizes the need for leadership development programs in public sector organizations that focus on cultivating transformational leadership qualities, particularly in times of rapid technological change. Policymakers and organizational leaders should consider the implications of different leadership styles on employee well-being and productivity, especially concerning technostress.

Additionally, the findings suggest the importance of balancing structure and autonomy in managing technological transitions, particularly in environments where transactional or laissez-faire leadership styles predominate. Furthermore, implementing employee support systems that address technostress becomes crucial in such settings. Finally, the study underlines the importance of understanding the specific cultural and organizational contexts when applying these findings, as leadership styles and their impacts can vary significantly across different environments. Overall, this research offers valuable insights for enhancing employee well-being and organizational effectiveness in the face of technological changes and challenges.

Limitation and future study

While providing valuable insights into the relationship between leadership styles and technostress in public organizations in Cambodia during the COVID-19 pandemic, the study has certain limitations that must be acknowledged. Firstly, the cultural and contextual specificity of the research means that the findings may not be readily generalizable to other contexts or during different periods. Though analytically precise, the focus on transformational, transactional, and laissez-faire leadership styles might oversimplify the complexity of real-world leadership behaviors. Additionally, the study's cross-sectional nature limits the ability to establish causality between leadership styles and technostress. The reliance on self-reported data raises concerns about potential biases such as social desirability or response bias, which could affect the study's validity. Furthermore, the measurement of technostress in the study did not distinguish between its various types or sources, which could provide a more nuanced understanding of its relationship with leadership styles.

For future research, there is a rich avenue of exploration available. Cross-cultural and comparative studies could be conducted to understand how these relationships might differ in various cultural and organizational contexts, enhancing the generalizability of the findings. Longitudinal research would be beneficial to ascertain the causal relationships and long-term effects of different leadership styles on technostress. Investigating additional leadership styles, such as participative or ethical leadership, could offer a more comprehensive view of the impact of leadership on technostress. Combining qualitative and quantitative methods, a mixed-methods approach could provide deeper insights into how leadership styles influence technostress. Considering its different types, a more detailed analysis of technostress could elucidate its relationship with various leadership styles more clearly. Lastly, examining mediating and moderating variables, like organizational support or employee resilience, could further enrich our understanding of the dynamics between leadership styles and technostress. Addressing these limitations and exploring these future research directions will enable a more thorough and nuanced understanding of how leadership impacts employee well-being in technologically evolving work environments.

Disclosure statement

No potential conflict of interest was reported by the author(s).

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