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Job demands, workplace anxiety and psychological capital: Moderation by gender and technology

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Orientation: Globally, employee workplace stress and anxiety are at an all-time high. Yet, we lack knowledge of work-from-home job demands that prompt it.

Research purpose: The study sought to determine the influence of work-from-home job demands on workplace anxiety and, in turn, how workplace anxiety affects psychological capital.

Motivation for the study: We propose a model that considers four job demands – role ambiguity, work overload, job insecurity and work-home conflict – as sources of workplace anxiety, and in turn the effects of workplace anxiety on psychological capital. Our model posits gender and technology as moderators of the associations among job demands, workplace anxiety and psychological capital.

Research approach/design and method: The study utilised partial least squares structural equation modelling to analyse cross-sectional data from a convenience sample of 162 South African employees working from home.

Main findings: We found positive effects of job insecurity on workplace anxiety and moderated effects of both job insecurity and work overload on workplace anxiety, with these associations being stronger for females. Workplace anxiety showed a negative but nonsignificant association with psychological capital. Additionally, the buffering effects of perceived ease of use of technology on psychological capital were evident only when workplace anxiety was low.

Practical/managerial implications: Organisations should address job insecurity and consider gender's moderating effects. Additionally, they should foster low-anxiety workplaces and provide proactive training on digital technologies.

Contribution/value-add: This study provides one of the first empirical tests of workplace anxiety theory, examining the associations among workplace anxiety, digital technology characteristics and psychological capital.

Keywords: digital technology characteristics; job demands; job insecurity; post-pandemic; psychological capital; work-from-home; workplace anxiety.

Introduction

The post-pandemic landscape has drastically reshaped the world of work by simultaneously accelerating the adoption of work-from-home (WFH) and impacting worker stress and anxiety. The 2023 Gallup workplace survey revealed that 42% of workers worldwide and 52% in the United States (US) and Canada report daily work-related stress (Gallup, 2023). The United Kingdom's (UK) Health and Safety Executive (HSE) noted a 14% increase in work-related stress, anxiety and depression since 2020 (HSE, 2023). Deloitte's findings also echoed these sentiments, particularly among Generation Z (Gen Z) and Millennial workers with nearly half of the members of Gen Z and 39% of the Millennials reporting feeling constantly anxious and stressed (Deloitte, 2023). The World Health Organization (WHO) estimates that this workplace stress and anxiety costs the global economy $1 trillion per year in lost productivity (World Health Organization, 2022). These statistics provide insights into the prevalence of workplace anxiety (WA), characterised by feelings of apprehension and nervousness related to the accomplishment of job tasks (McCarthy et al., 2016). However, it is important to also consider the rising prevalence of WFH. Work-from-home is also referred to as telecommuting, telework or remote work. It is broadly defined as a flexible employment arrangement where employees are not required to physically report to a central workplace but instead perform their work from their home using digital technologies (Rangarajan et al., 2022).

The varied experiences of employees reflect the complex nature of WFH. For instance, the Gallup (2023) poll reveals both positive and negative aspects of WFH. Some employees appreciate the improved work-life balance, citing more quality time with family and reduced commuting stress. However, others struggle with the challenge of separating work from personal life, finding it difficult to step away from work when it is at home. Additionally, some employees miss the social interactions and camaraderie that the office environment provides, feeling that their job becomes 'just work' without the fun and relationship-building aspects. These perspectives collectively paint a picture of the multifaceted implications of WFH on employees' work experiences and overall well-being.

The Global Survey of Working Arrangements (GSWA) was conducted between April 2023 and May 2023 among 42 426 respondents from 34 different countries. According to this survey, Aksoy et al. (2022) noted a significant and enduring transition toward WFH practices because of the coronavirus disease 2019 (COVID-19) pandemic. For instance, in nations like Australia, Canada, New Zealand, the UK and the US, full-time employees spent approximately 28% of their workdays working from home. In contrast, Asian countries reported an average of 14% of workdays being spent at home, European countries 16% and a combination of four Latin American countries (Argentina, Chile, Brazil, Mexico) plus South Africa averaged at 18%. A notable observation from the GSWA was that workers preferred more WFH days than employers typically offered.

With the increasing prevalence of WFH arrangements, organisations have responded by equipping their employees with digital technologies and infrastructure – such as Virtual Private Networks, Zoom, Microsoft Teams, webcams, monitors, reliable Wi-Fi connections and ergonomic seating options – to improve employee WFH experience and sustain productivity (Rangarajan et al., 2022). While the rollout of digital technologies to facilitate WFH is understandable, extant literature suggests that the use of these technologies can induce technostress, which is defined as stress arising from the use of digital technologies (Ayyagari et al., 2011). In addition to technostress, employees are experiencing increased daily work-related stress because of WFH arrangements, as reported by Gallup (2023). Given these factors, it is unsurprising that the increasing prevalence of WFH arrangements is associated with increased workplace anxiety. McCarthy et al. (2016) characterise workplace anxiety as feelings of apprehension and nervousness related to the accomplishment of job tasks. What is surprising, however, is how little is known about workplace anxiety in the context of WFH (Rangarajan et al., 2022). Specifically, there is a lack of knowledge about how working from home affects both job demands and job resources (Demerouti & Bakker, 2023; Jamal et al., 2021). Additionally, there is limited understanding of how these job demands influence WA and how job resources like technical support affect personal resources such as psychological capital (PsyCap). Moreover, little is known

about the influence of gender on job demands in the WFH environment (Demerouti & Bakker, 2023; Jamal et al., 2021). Yet, women are more vulnerable to the negative consequences of WFH. This is because of increased care demands at home, stemming from a combination of stronger normative pressures on mothers as caretakers and the blurring of boundaries between work and home (Lyttelton et al., 2022; Yavorsky et al., 2021). Given these complexities, and the mandatory nature of WFH considered in this study, we seek to address the following research questions: (1) What is the nature of the relationship between a WFH environment and workplace anxiety? and (2) Does gender influence the relationship between a WFH environment and workplace anxiety?

While much of the existing literature on WA tends to emphasise its detrimental effects (Cheng & McCarthy, 2018), recent research by Mao et al. (2021) and Cheng and McCarthy (2018) suggest a more nuanced view. The research indicated that WA can have both positive and negative outcomes. On the one hand, studies have linked WA to adverse impacts such as diminished job performance (McCarthy et al., 2016), unethical behaviours (Hillebrandt & Barclay, 2022) and increased turnover intentions (Haider et al., 2020). On the other hand, there is evidence to suggest that WA can also contribute positively by enhancing personal initiative and citizenship behaviours (Cheng et al., 2023), as well as fostering problem-prevention behaviours (Barclay & Kiefer, 2019). This dual perspective highlights the complex nature of WA. Adding to this complexity, Mao et al. (2021) contributed an interesting perspective on WA. They found that a moderate level of anxiety within a team could potentially stimulate creative processes, while too little or too much anxiety might hinder these outcomes. These findings highlight that WA has both adaptive and maladaptive effects. Therefore, understanding the factors that contribute to workplace anxiety is important for organisations. However, our extensive review of the literature revealed that only a few studies have explored these determinants (Wang et al. ,2023; Rangarajan et al., 2022; Fry et al., 1986 and Sparr & Sonnentag, 2008). This indicates a substantial gap in the research, highlighting the need for further investigation to enhance our understanding of what drives workplace anxiety.

Lazarus (2006) posits that anxiety is an emotional mechanism that triggers defensive actions in the face of perceived, non-specific threats. By integrating this definition of anxiety with the conservation of resources (COR) theory (Hobfoll, 1989), we get a different perspective on WA. The COR theory identifies stress as a reaction to the real or perceived threat of resource loss. The COR theory suggests that WA may not just be a psychological state but also a manifestation of resource depletion. This perspective implies that WA could be both a result of, and a response to, the dwindling of PsyCap, a personal resource necessary for managing workplace demands and challenges (Avey et al., 2011). This prompts two questions: (1) What is the nature of the relationship

between WA and PsyCap and (2) Do job resources such as characteristics of digital technologies that support WFH influence the WA–PsyCap relationship?

This study aimed to comprehensively address the above-stated two research questions. Our primary objective was to determine the influence of a WFH job demands on WA and, in turn, how WA affects PsyCap. Additionally, our research extended to analysing two moderating factors: (1) the influence of gender on the relationship between WFH job demands and WA and (2) the influence of digital technology characteristics (DTC) on the association between WA and PsyCap.

We aimed to make four key theoretical contributions. Firstly, by applying the theory of workplace anxiety (TWA) (Cheng & McCarthy, 2018), we illuminate how WFH job demands uniquely impact WA. This addresses a research gap identified by researchers such as Rangarajan et al. (2021). This investigation was enriched by examining gender as a key moderating factor. It provided deeper insights into the conditions under which a WFH job demands influence WA, and it answered the call by Cheng and McCarthy (2018) for research on moderators in the TWA. Secondly, in response to scholars (e.g. Barclay & Kiefer, 2019; Cheng & McCarthy, 2018; McCarthy et al., 2016), and given the pervasive and damaging effects of WA noted earlier, we investigated the downstream effects of WA. We particularly focussed on its impact on PsyCap, and we responded to the call by researchers (e.g. Avey et al., 2011) for more research on the predictors of PsyCap. Our argument posits WA as a state of resource depletion, a concept that aligns with Hobfoll's (1989) perspective on humans' evolutionary need to acquire and conserve resources. Furthermore, by identifying and analysing the role of DTC as moderators in the WA–PsyCap relationship, we provide a more nuanced understanding of this relationship.

Thirdly, our study heeded the call for empirical testing of the TWA by Cheng and McCarthy (2018). By employing a diverse South African sample, we extended the examination of TWA beyond the typical focus on Western, educated, industrialised, rich and democratic (WEIRD) populations (Henrich et al., 2010). This approach not only broadened the applicability of TWA, but it also marked a critical step in its empirical validation. Finally, and as a noteworthy aspect, this study sought to enhance existing knowledge by focussing on the examination of employees' WA in the context of working from home.

Collectively, these contributions offer novel insights and perspectives on the intersection of WFH job demands, DTC, PsyCap and WA in the post-pandemic work environment.

The structure of this article is as follows. Firstly, we present a brief literature review and develop hypotheses, leading to the study's conceptual model. Next, the conceptual model is empirically tested with a dataset (n = 162), using structural equation modelling. Finally, we discuss the main findings, limitations and implications of the study, before giving recommendations for future research.

Literature review and hypothesis development
Conceptual framework

Emotions are distinguished by dimensions such as valence (pleasantness), arousal (intensity) and cognitive appraisals (evaluations of control and certainty), according to scholars (e.g. Lazarus, 2006; Smith & Ellsworth, 1985). Anxiety, for instance, is marked by negative valence, high arousal and perceptions of uncertainty and low control. This reflects Spielberger's (1985, p. 173) definition of anxiety as 'feelings of tension, apprehension, and dread, and cognitions of impending danger'.

In addition, Spielberger (1972) distinguished anxiety from stress. He stated that stress should 'be used exclusively to denote environmental conditions or circumstances that are characterized by some degree of objective physical or psychological danger' (p. 488). According to him anxiety should 'be used to refer to the emotional reaction or pattern of response [to perceived threat]' (p. 488). Anxiety and stress are conceptually distinct from stressors. Podsakoff et al. (2007) defined stressors as challenging circumstances that can potentially lead to adverse effects on emotions, thoughts, behaviour, physiological health and overall well-being.

Within the TWA framework, WA is conceptualised as 'feelings of nervousness, uneasiness, and tension about job-related performance' (p. 537). Cheng and McCarthy (2018) posited that WA is influenced by both individual predispositions and environmental situations. Therefore, it manifests as both dispositional WA and situational WA. *Dispositional* WA is conceptualised as 'individual differences in feelings of nervousness, uneasiness, and tension about job performance' (p. 539). On the other hand, *situational* WA is conceptualised as a 'transient emotional state reflecting nervousness, uneasiness, and tension about specific job performance episodes' (p. 539). The TWA incorporates a dual-perspective approach to understanding the origins and manifestations of anxiety in the workplace. The *dispositional* aspect of this theory, grounded in trait-based perspectives, postulates that individual differences, such as demographics, core self-evaluations and physical health, contribute to dispositional WA. Conversely, the *situational* aspect of WA suggests that situational factors influence the immediate experience of situational WA. These situational factors include the emotional demands of labour, task requirements and broader organisational demands, together with job-specific characteristics such as job type, job demands and the degree of autonomy. This suggests that situational WA can fluctuate and is sensitive to the dynamic conditions of the work environment such as WFH. Finally, according to the TWA, both dispositional and situational WA 'can exert

negative *and* positive effects on job performance' (Cheng & McCarthy, 2018, p. 538). The current study is focussed on *situational* WA because it sought to explore employees' WA triggered by WFH job demands.

Work-from-home job demands and workplace anxiety

The TWA theorises that 'situational characteristics and job characteristics are the core antecedents of situational workplace anxiety' (Cheng & McCarthy, 2018, p. 546). Our study investigated the association between situational WA and four important aspects of a WFH environment: role ambiguity (RA), work overload (WO), job insecurity (JI) and work–home conflict (WHC). These were chosen because they are recognised as the most extensively examined job demands or stressors in the literature (Podsakoff et al., 2007). Within the framework of the job demands-resources (JD-R) model (Demerouti et al., 2001), they are defined as:

> [P]hysical, psychological, social, or organizational aspects of the job that require sustained physical and/or psychological (cognitive or emotional) effort or skills and are therefore associated with certain physiological and/or psychological costs. (Bakker & Demerouti, 2007, p. 312)

This can manifest in various forms of strain such as 'burnout, depression, emotional exhaustion, fatigue, frustration, mental, psychological, and physical symptoms, and tension' (Podsakoff et al., 2007, p. 442). Therefore, in the present study, WFH job demands encompass: (1) RA, which is uncertainty about required actions for role fulfilment; (2) WO, where time and resources are insufficient for meeting role obligations; (3) JI, the perceived probability of job loss based on one's interpretation of the work environment and (4) WHC, the perceived clash between work and family demands.

Podsakoff et al.'s (2007) meta-analytical study, which examined 183 independent samples, found that job demands significantly exacerbated strain. The TWA is relatively nascent with limited empirical testing. Only one extant study conducted by Wang et al. (2023) has corroborated the predicted strong positive associated between job demands, specifically informational overload, and WA. However, the extant job demands literature findings are that WO (Alnazly et al., 2023), RA (Pretorius & Padmanabhanunni, 2022), WHC (Sanz-Vergel et al., 2011) and JI (Cheng & Chang, 2008) significantly positively predict anxiety. Consistent with the TWA and the preceding discussion, we propose the following hypothesis:

> **H1:** Work-from-home job demands (i.e. WO, RA, JI, WHC) will each significantly positively predict WA.

Gender as a moderator

The TWA does not explicitly suggest moderation between situational and job characteristics (i.e., job demands) and WA. However, existing literature on job demands has identified potential moderators like gender, dependants, seniority, tenure, personality and leader–member exchange

(for a review see Kwon & Kim, 2020). In this context, we hypothesise that gender moderates the relationship between WFH job demands and WA. This is supported by various theories explaining gender differences in areas such as cognitive performance, personality, social behaviours and psychological well-being (Hyde, 2014). Evolutionary theories (e.g. Buss & Schmitt, 1993) suggest that psychological gender differences are evolutionary adaptations with varying behavioural benefits for males and females. Cognitive social learning theory (Bussey & Bandura, 1999) views these differences as outcomes of distinct social reinforcements and cognitive processes like attention and self-efficacy. Social role theory (Eagly & Wood, 1999) attributes contemporary psychological gender differences to historical divisions of labour, leading to the development of gender-specific psychological traits.

These theoretical perspectives provide a foundation for understanding the empirical findings of gender-related research. For example, regarding psychological well-being, Hyde (2014) noted that adult women are twice as likely to experience depression as men, which is influenced by affective, biological and cognitive factors. While research directly addressing gender's moderating role between WFH job demands and WA is scarce, Harlos et al. (2023) provided relevant insights. Their study, while not focussing on WA, examined gender as a moderator between job demands (i.e. role ambiguity, role conflict, role overload) and psychological strain (i.e. workplace bullying). They found a significant interaction between role conflict and gender, such that the effect of role conflict was stronger for women than men. Based on these discussions, we put forward the following hypothesis:

> **H2:** Gender moderates the association between WFH job demands (i.e. WO, RA, JI, WHC) and WA such that the effects of job demands will be stronger for women than men.

Workplace anxiety and psychological capital

In the current study, we explore PsyCap as a personal resource that can be depleted by high levels of WA. Hobfoll (1989) defined personal resources as flexible capacities that reflect an individual's perceived capability to impact and contribute positively to their work environment. Psychological capital 'plays a decisive role in employees' functioning at work' (Xanthopoulou et al., 2007, p. 124) and was described by Luthans and Youssef-Morgan (2017) as a developmental state where an individual exhibits four key traits: (1) a belief in their own abilities to successfully tackle difficult tasks (self-efficacy); (2) an optimistic outlook on achieving success both presently and in the future (optimism); (3) the persistence to continue striving towards goals or to find alternative strategies when necessary (hope) and (4) the capacity to recover from adversity (resilience).

Conservation of resources theory posits that resource loss is a major component of stressful encounters, such as those experienced with WFH job demands. Following the TWA,

we earlier hypothesised that WFH job demands positively influence WA, and from COR theory, we earlier argued that WA represents a state of resource loss. This implies that heightened WA could lead to resource depletion, diminishing PsyCap levels. Psychological capital, as a psychological resource, can also be understood through the broaden-and-build theory of positive emotions (Fredrickson, 2001). According to this theory, negative affect narrows an individual's thoughts and behaviours, depleting their personal resources, while positive emotions broaden thoughts and actions, thereby building enduring personal resources. Consequently, negative affect associated with WA depletes personal resources such as PsyCap (Fredrickson, 2001). This line of reasoning was empirically supported by Zeidner et al. (2011) and Zeidner and Ben-Zur (2014) whose experimental studies demonstrated that stressful encounters *cause* significantly high levels of negative affect, like anxiety, and reduce psychological resources. Additionally, Cao et al. (2022) observed a robust negative relationship between negative affect and PsyCap, while Xie et al. (2021) and Yao et al. (2022) found a strong negative relationship between workplace stress and PsyCap. Given that workplace anxiety is positively associated with workplace stress (De Clercq et al., 2020), these findings support the hypothesised negative association between workplace anxiety and PsyCap. In alignment with the COR theory and the broaden-and-build theory, as well as the preceding discussions, we propose the following hypothesis:

> **H3:** Workplace anxiety will be negatively associated with PsyCap.

Characteristics of digital technologies as moderators

Digital technologies are 'combinations of information, computing, communication, and connectivity technologies' (Bharadwaj et al., 2013, p. 471). These technologies have characteristics that reflect users' perceptions of the technologies' functional and non-functional features, such as perceived ease of use (PEU), perceived usefulness (PU) and technical support (TS) (Ayyagari et al., 2011). Perceived ease of use refers to the degree to which employees believe that digital technologies can be used without major effort, while PU refers to the degree to which employees believe that digital technologies support the accomplishment of tasks and enhance job performance (Ayyagari et al., 2011). Venkatesh et al.'s (2003) unified theory of acceptance and use of technology (UTAUT) suggests that functional characteristics such as PEU and PU influence how employees interact with digital technologies. When employees find digital technologies easy to use, their stress related to technology decreases, enhancing their psychological capital by raising their self-efficacy; additionally, when they perceive digital technologies as useful, they are more likely to see them as beneficial and integral to their work performance, thereby fostering optimism and hope (Venkatesh et al., 2003). Therefore, according to UTAUT, when employees perceive technologies as easy to use and useful, their beliefs in their ability to effectively use these technologies are strengthened, even in conditions of high WA associated with WFH.

Within an organisational setting, job resources play a critical role. Job resources encompass the physical, social and/or organisational elements of a job that serve one or more of the following functions: aid in accomplishing work objectives; alleviate job demands and their related physical and mental burdens and foster individual growth, learning and development (Bakker & Demerouti, 2007). Examples of job resources include career development opportunities, task variety, job autonomy, social support from co-workers and organisational support, such as the provision of material resources and supervisory support. In the context of WFH employees, TS for the digital technologies provided by the employer represents a non-functional characteristic of the technologies and an important job resource. Technical support refers to the assistance provided to employees to help them to effectively deal with technical issues related to digital technologies (Ayyagari et al., 2011). According to the COR theory, the provision of TS through training, assistance from experts and chatbots can mitigate the adverse influence of WA associated with WFH on PsyCap. In the literature, some evidence supports the buffering effect of DTC on workplace stress (Pullins et al., 2020; Tarafdar et al., 2014) and WA (Rangarajan et al., 2022). In alignment with the COR theory and the discussions above, we propose the following hypothesis:

> **H4:** Digital technology characteristics (i.e. PU, PEU, TS) will moderate the negative association between WA and PsyCap such that higher levels of PU, PEU, and TS will buffer the negative impact of WA on PsyCap.

Figure 1 represents the conceptual model developed for the study.

Research design
Participants and procedure

An online survey was created and pretested with 10 individuals to ensure that the questions were clear and appropriate. Subsequent minor revisions led to a final survey comprising an introduction; demographic details, WFH job demands, DTC, WA and PsyCap. The survey, designed to take between 20 min and 25 min, was specified as being for full-time employees who had transitioned to working entirely from home because of the COVID-19 pandemic. The survey was disseminated through personal contacts, social media platforms (WhatsApp, Facebook and LinkedIn) and snowballing techniques from 21 July 2022 to 05 September 2022, yielding 162 complete responses with no missing data. To determine the sample size required for this study, we used '10 times rule' for studies using the partial least squares structural equation modelling (PLS-SEM) approach, which states that the:

> PLS-SEM minimum sample size should be equal to the larger of the following: (1) ten times the largest number of formative
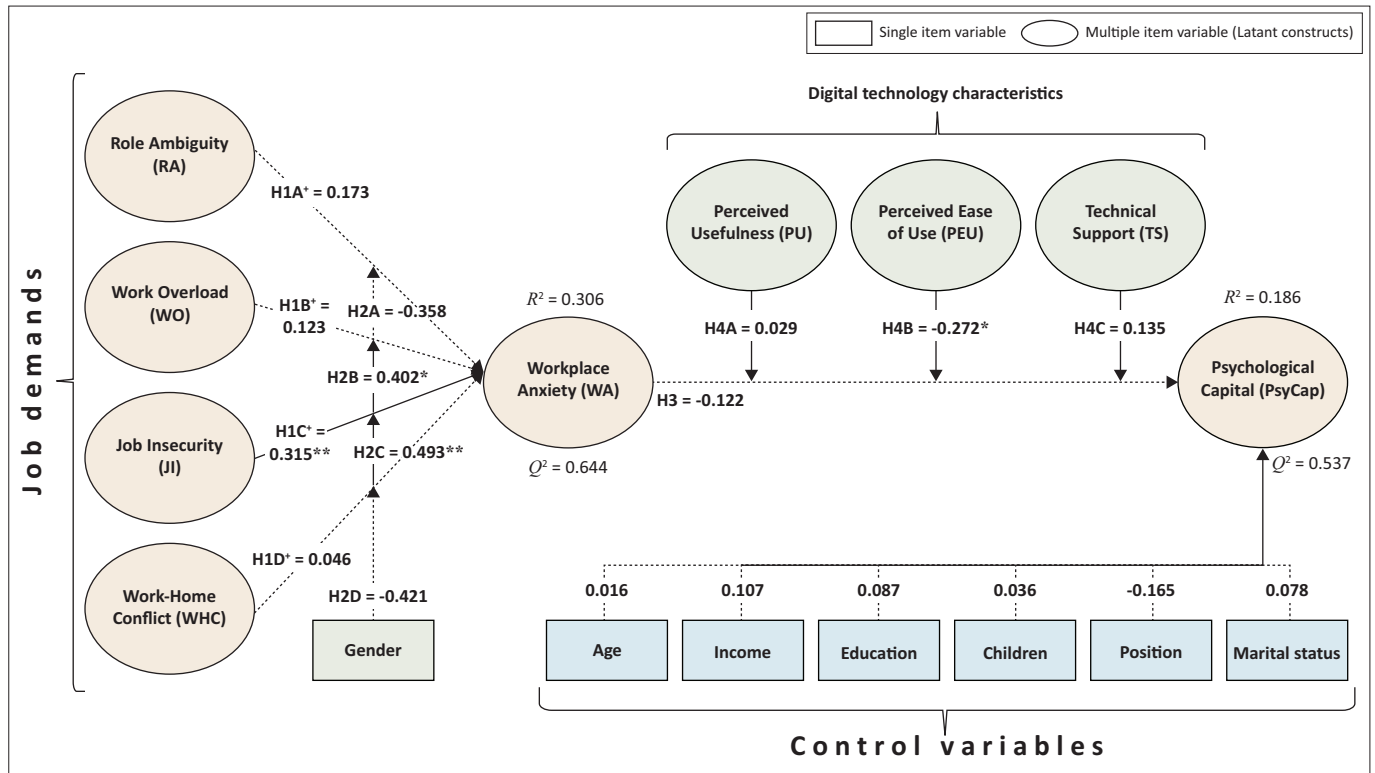
Note: Dotted lines denote non-significant paths.

RA, role ambiguity; WA, workplace anxiety; WO, work overload; JI, job insecurity; WHC, work–home conflict; PU, perceived usefulness; PEU, perceived ease of use; TS, technical support; PsyCap, psychological capital.

*, $p < 0.05$; **, $p < 0.01$; ***, $p < 0.001$.

FIGURE 1: Conceptual model with results.

indicators used to measure one construct or (2) ten times the largest number of structural paths directed at a particular latent construct in the structural model. (Hair et al., 2011, p. 144)

The analysis indicated that a minimum sample size of 80 participants is required. Our sample size of 162 exceeds this requirement. The data were analysed using Statistical Package for the Social Sciences (SPSS) 29 (IBM Corp., Armonk, New York, U.S.) and SmartPLS GmbH (Oststeinbek, Schleswig-Holstein, Germany) statistical packages, with no missing data across all variables.

Sample description

Table 1 illustrates the demographic profile of the participants. Two-thirds (66.67%) of the respondents were female, and most of the respondents were highly educated. Over half (55.56%) possessed postgraduate qualifications, were junior in their roles (58.64%), had dependent children (80.25%), were married (54.94%) and earned an annual income of between R700 000.00 and R1 500 000.00 (56.17%). Almost half (48.77%) of the respondents were aged 35 to 44 years old.

Study measures

The survey instrument for this study was carefully adapted from established measures found in existing literature. For all variables except demographic ones, we employed 7-point Likert-type scales. These scales allowed respondents to

TABLE 1: Summary of descriptive statistics (N = 162).

Variables	%
Gender	
Male	33.33
Female	66.67
Education	
Less than degree	18.52
Degree	25.93
Postgraduate	55.56
Organisational level	
Junior	58.64
Middle	25.31
Senior	12.96
Executive	3.09
Dependent children	
Yes	80.25
No	19.75
Age (years)	
18 to 34	22.22
35 to 44	48.77
45 to 54	24.69
55 to 64	4.32
Annual income	
Under R400 000.00	16.67
R400 000.00 to R700 000.00	19.14
R700 000.00 to R1 500 000.00	56.17
More than R1 500 000.00	6.79
Marital status	
Never married	29.63
Married	54.94
Divorced	11.11

express their level of agreement, ranging from 1 (strongly disagree) to 7 (strongly agree). The psychometric properties

of these scales have demonstrated robustness in previous studies. Moreover, in the current study, each scale displayed satisfactory internal consistency and reliability.

Work-from-home job demands: Participants evaluated four specific job demands, each measured by distinct items from the scale developed by Rangarajan et al. (2022). For WO, a representative item was, 'WFH creates many more requests, problems or complaints in my job than I would otherwise experience'. Role ambiguity was assessed with an item like, 'I am unsure whether I have to deal with my WFH problems or with my work activities'. Job insecurity was gauged through statements such as, 'Work from home will advance to an extent where my present job can be performed by a less skilled individual'. Lastly, WHC was measured by items including, 'I do not get everything done at home because I find myself completing job-related work because of WFH' The responses to these items were averaged to generate a single composite score for each job demand, with higher scores indicating greater job demands.

Workplace anxiety: We used the 8-item scale developed by McCarthy et al. (2016). Two sample items were: 'I often feel anxious that I will not be able to perform my job duties in the time allotted' and 'I feel nervous and apprehensive about not being able to meet performance targets'. The responses to these items were averaged to generate a single composite score, with higher scores indicating greater WA.

Digital technology characteristics: Participants evaluated three specific DTC, each measured by distinct items from the scale developed by Rangarajan et al. (2022). For PU, a representative item was, 'Use of DT enhances my job effectiveness when I WFH', while PEU was assessed with an item like, 'I find our digital technologies for WFH to be easy to use'. Lastly, TS was measured by items including, 'The training provided for digital technologies is complete and sufficient'. The responses to these items were averaged to generate a single composite score for each characteristic, with higher scores indicating greater satisfaction.

Psychological capital: We used six items from the scale created by Luthans and Youssef-Morgan (2017) to represent the four facets of PsyCap: hope, self-efficacy, resilience and optimism. Two sample items were: 'I believe that I can bounce back from any setbacks that have occurred' and 'I expect good things to happen in the future'. The responses to these items were averaged to generate a single composite score, with higher scores indicating greater PsyCap.

The following demographic information was also gathered and, in line with the literature, was used as control variables: gender (male, female), age in years (18 to 34, 35 to 44, 45 to 54, 55 to 64); education (less than degree, degree, postgraduate); marital status (never married, married, divorced); dependent children (yes or no); organisational level (junior, middle, senior, executive) and annual income (less than R400K, R400K to R700K, R700K to R1.5 million, more than R1.5 million).

Common method variance

We used several procedures to address potential common method bias because of self-reports from a single survey. Firstly, on the cover page of the survey, we reminded participants that their responses would remain anonymous and that there were no right or wrong answers. Secondly, we conducted two tests to check for the presence of common method bias. Harman's single-factor test found that 25% of the variance was attributable to a single factor, which is below the threshold value of 50%. Additionally, Kock's (2015) full collinearity test found that the largest variance inflation factor (VIF) for the latent variables in our study was 2.46, below the threshold value of 3.3. Taken together, these results suggest that common method bias was not a concern in our dataset.

Ethical considerations

An application for ethical approval was made to the Gordon Institute of Business Science, University of Pretoria and ethical approval was received on 19 July 2022. The study was conducted in accordance with the 1964 Helsinki Declaration. Informed consent was obtained from all subjects involved in the study.

Statistical analysis and results
Partial least squares structural equation modelling

We first checked the Mardia test for assessing multivariate normal distribution. The results were significant ($p < 0.001$), indicating that the assumption of multivariate normality was violated. Because of the complex structural model, relatively small sample size ($N = 162$) and non-normal data in our study, we followed Hair et al.'s (2019) recommendation and tested our conceptual model using the PLS-SEM method, which consists of the measurement and structural models. If the measurement model or confirmatory factor analysis (CFA) describes the relationships between the latent variables and their indicators within acceptable thresholds, the structural model can then be tested by assessing the hypothesised relationships between the latent variables using linear regression (Hair et al., 2019).

Measurement model

We used Cronbach's alpha values to assess internal reliability, the measure of consistency across items. Table 2 shows that all constructs had values that exceeded the 0.7 threshold, confirming internal reliability (Hair et al., 2019). We assessed convergent validity, the degree to which observed variables account for a latent construct using factor loading, average variance extracted (AVE) and composite reliability (CR). Convergent reliability is considered established when factor loadings exceed the 0.70 threshold (Hair et al., 2011). As shown in Table 2, all factor loadings met this criterion, except for JI3 (0.69), JI4 (0.68), WHC1 (0.65) and PsyCap1 (0.66). Although these specific loadings are slightly below

TABLE 2: Measurement items, factor loadings, construct validity and reliability.

Construct and items	FL	AVE	CR	α	Mean	SD
Work overload	-	0.70	0.90	0.86	2.75	1.50
WO1 – WFH creates many more requests, problems or complaints in my job than I would otherwise experience	0.86	-	-	-	-	-
WO2 – I feel that WFH interferes with fulfilling my work responsibilities	0.78	-	-	-	-	-
WO3 – I feel pressured because of WFH	0.87	-	-	-	-	-
WO4 – I feel busy or rushed because of WFH	0.83	-	-	-	-	-
Role ambiguity	-	0.76	0.93	0.89	2.25	1.30
RA1 – WFH causes constant interruptions, creating uncertainty in my workday	0.84	-	-	-	-	-
RA2 – I am unsure what to prioritise: dealing with WFH problems or my work	0.88	-	-	-	-	-
RA3 – I am unsure whether I have to deal with my WFH problems or with my work activities	0.92	-	-	-	-	-
RA4 – Time spent resolving WFH problems takes time away from fulfilling my work responsibilities	0.83	-	-	-	-	-
Job insecurity	-	0.54	0.86	0.79	2.63	1.29
JI1 – I am under pressure to WFH to keep my job	0.76	-	-	-	-	-
JI2 – I am worried that WFH may pose a threat to my job	0.76	-	-	-	-	-
JI3 – I believe that WFH will make it easier for other people to perform my work	0.69	-	-	-	-	-
JI4 – I believe WFH will affect how I would perform my job	0.68	-	-	-	-	-
JI5 – WFH will advance to an extent where my present job can be performed by a less skilled individual	0.80	-	-	-	-	-
Work-home conflict	-	0.53	0.85	0.79	3.03	1.43
WHC1 – WFH blurs boundaries between my job and my home life	0.65	-	-	-	-	-
WHC2 – WFH-related responsibilities create conflicts with my home responsibilities	0.79	-	-	-	-	-
WHC3 – I believe that WFH will make it easier for other people to perform my work activities	0.74	-	-	-	-	-
WHC4 – I believe WFH will affect how I would perform my job	0.71	-	-	-	-	-
WHC5 – I do not get everything done at home because I find myself completing job-related work because of WFH	0.76	-	-	-	-	-
Workplace anxiety	-	0.73	0.96	0.95	3.22	1.59
WA1 – I am overwhelmed by thoughts of doing poorly at work.	0.81	-	-	-	-	-
WA2 – I worry that my work performance will be lower than that of others at work	0.87	-	-	-	-	-
WA3 – I feel nervous and apprehensive about not being able to meet performance targets	0.85	-	-	-	-	-
WA4 – I worry about not receiving a positive job performance evaluation.	0.83	-	-	-	-	-
WA5 – I often feel anxious that I will not be able to perform my job duties in the time allotted	0.90	-	-	-	-	-
WA6 – I worry whether others consider me to be a good employee for the job	0.85	-	-	-	-	-
WA7 – I worry I will not be able to successfully manage the demands of my job	0.84	-	-	-	-	-
WA8 – Even when I try as hard as I can, I still worry about whether my job performance will be good enough.	0.86	-	-	-	-	-
Perceived usefulness	-	0.77	0.93	0.91	5.83	1.30
PU1 – Use of DT enables us to accomplish WFH tasks more quickly	0.84	-	-	-	-	-
PU2 – Use of DT improves the quality of WFH	0.86	-	-	-	-	-
PU3 – Use of DT makes it easier to WFH	0.89	-	-	-	-	-
PU4 – Use of DT enhances my job effectiveness when I WFH	0.92	-	-	-	-	-

TABLE 2 (Continues…): Measurement items, factor loadings, construct validity and reliability.

Construct and items	FL	AVE	CR	α	Mean	SD
Perceived ease of use	-	0.79	0.92	0.86	5.79	1.17
PEU1 – I find our DT for WFH to be easy to use	0.93	-	-	-	-	-
PEU2 – My interaction with our DT for WFH is clear and understandable	0.95	-	-	-	-	-
PEU3 – Using our DT for WFH does not require a lot of mental effort	0.77	-	-	-	-	-
Technical support	-	0.79	0.95	0.93	5.21	1.30
TS1 – The training provided for DT is complete and sufficient	0.85	-	-	-	-	-
TS2 – The available documentation for DT is complete and simple	0.87	-	-	-	-	-
TS3 – Technical assistance for DT is simple and adequate	0.93	-	-	-	-	-
TS4 – Troubleshooting provided for DT is complete and sufficient	0.93	-	-	-	-	-
TS5 – The advice and opinion provided for DT are relevant and rapid	0.86	-	-	-	-	-
Psychological capital	-	0.68	0.93	0.90	5.86	1.07
PsyCap1 – I usually expect the best	0.66	-	-	-	-	-
PsyCap2 – I believe that I can accomplish my goals	0.86	-	-	-	-	-
PsyCap3 – I expect good things to happen in the future	0.86	-	-	-	-	-
PsyCap4 – I feel satisfied with my life	0.78	-	-	-	-	-
PsyCap5 – I believe that I can bounce back from any setbacks that have occurred	0.86	-	-	-	-	-
PsyCap6 – I feel confident and self-assured in my ability	0.89	-	-	-	-	-

Note: All scales used a seven-point range from 1 ('strongly disagree') to 7 ('strongly agree').
SD, standard deviation; α, Cronbach's alpha; CR, composite reliability; FL, factor loading; AVE, average variance extracted; DT, digital technologies; WFH, work-from-home; PsyCap, psychological capital; WO, work overload; RA, role ambiguity; JI, job insecurity; WHC, work-home conflict; WA, workplace anxiety; PU, perceived usefulness; PEU, perceived ease of use; TS, technical support.

0.70, internal reliability is still supported because a threshold of 0.50 is also recognised as acceptable (Bagozzi & Yi, 1988). In addition, Table 2 indicates that for all constructs, the AVE values ranged from 0.50 to 0.79, while the CR values ranged from 0.85 to 0.96, both surpassing the recommended thresholds of 0.50 and 0.70 (Hair et al., 2019), respectively. Thus, all the study's constructs demonstrated satisfactory convergent validity.

Table 2 presents the descriptive statistics of the focal constructs of the study. In examining the descriptive statistics of our study, a nuanced understanding of the various facets of working from home emerged. Job demands or stressors, conceptualised as WO, RA, JI and WHC, presented relatively lower mean scores, suggesting low perceptions of the WFH job demands as stressors. On the other hand, WA showed a slightly higher mean score of 3.22 (standard deviation [SD] = 1.59), pointing to a moderate level of anxiety experienced by employees. In contrast, the characteristics of digital technology used for WFH – PU, PEU and TS – demonstrated high mean scores, suggesting strong perceptions of the efficacy and supportive nature of the WFH digital technology. Additionally, PsyCap had the highest mean score of 5.86 (SD = 1.07), suggesting very high levels of psychological resources among the respondents.

We assessed discriminant validity, the degree to which constructs are empirically distinct, in three ways. Firstly, individual items primarily loaded onto their corresponding constructs with minimal cross-loading, supporting discriminant validity. Secondly, all heterotrait-monotrait ratio (HTMT) values were below the threshold of 0.85 set by Henseler et al. (2015) and ranged from 0.10 to 0.76, confirming discriminant validity. Finally, as shown in Table 3, the square root of the AVEs is greater than the correlations for all latent constructs (Fornell & Larcker, 1981), providing further evidence of discriminant validity.

Structural model

We followed the recommendations of Hair et al. (2011) and Benitez et al. (2020) by using the bootstrapping function in SmartPLS to generate 5000 bootstrapped samples for model fit testing and structural model estimation. For the moderation hypotheses, we followed Matthews et al.'s (2018) recommendation for moderation analysis using SmartPLS, which suggests employing the product-indicator-method (PIM) for continuous moderators and multi-group analysis (MGA) for categorical moderators. Firstly, we confirmed the absence of multicollinearity by examining the VIF. All VIF values were below the threshold of 3.0, ranging from 1.28 to 2.46, thus supporting the absence of multicollinearity. Next, we assessed model fit using R^2 values, which were 0.36 for workplace anxiety and 0.19 for PsyCap, indicating adequate explanatory power. Additionally, we examined the standardised root mean squared residual (SRMR), and the model's SRMR value was 0.071, below the guideline of 0.08 (Benitez et al., 2020), suggesting an acceptable model fit. Lastly, we evaluated the predictive relevance of the model using the Q^2 values derived from the blindfolding procedure in SmartPLS. The Q^2 values for workplace anxiety and PsyCap were 0.644 and 0.537, respectively, providing further evidence of the path model's predictive relevance.

Table 4 shows the results of hypotheses testing. Surprisingly, while JI (β = 0.3154, t = 3.459, $p < 0.01$) is positively related to WA, other WFH job demands (RA, WO, WHC) were not

significantly associated with WA. Consequently, only H1C was supported whereas H1A, H1B, and H1D were not supported. Furthermore, Table 4 also indicates that among the interaction variables, the only significant predictor of PsyCap was PEU × WA (β = −0.272, t = 2.046, $p < 0.05$). The moderation effect, quantified at 0.039, is classified as small. Therefore, H4B was supported, while H4A and H4C were not.

Simple slope analysis was conducted to probe the nature of the significant PEU × WA interaction. The results indicate that at low levels of WA, individuals with high PEU exhibit significantly higher PsyCap compared to those with low PEU. However, as WA increases, the PsyCap for individuals with high PEU decreases to levels comparable to those with low PEU. These results suggest that while high PEU is associated with higher PsyCap at low levels of WA, the buffering effect of PEU diminishes as WA increases. Therefore, H4B is not fully supported because high PEU does not consistently buffer the negative impact of high WA on PsyCap. Figure 2 illustrates the slopes.

To examine the moderating effects of gender on the association between WFH job demands (i.e. RA, WO, JI,

TABLE 3: Discriminant validity.

Variable	1	2	3	4	5	6	7	8	9
1. Work overload	*0.84*	-	-	-	-	-	-	-	-
2. Role ambiguity	0.67	*0.87*	-	-	-	-	-	-	-
3. Job insecurity	0.44	0.60	*0.74*	-	-	-	-	-	-
4. Work-home conflict	0.51	0.62	0.60	*0.73*	-	-	-	-	-
5. Workplace anxiety	0.40	0.47	0.50	0.41	*0.83*	-	-	-	-
6. Perceived usefulness	-0.14	-0.13	-0.05	0.04	0.01	*0.88*	-	-	-
7. Perceived ease of use	-0.14	-0.25	-0.26	-0.14	-0.26	0.55	*0.88*	-	-
8. Technical support	-0.17	-0.17	-0.11	-0.02	-0.12	0.42	0.53	*0.89*	-
9. Psychological capital	-0.07	0.20	-0.04	-0.01	-0.20	0.18	0.33	0.25	*0.82*

Note: The diagonals in italics represent the square root of the average variance extracted (AVE) while the non-italic values represent the correlations of the latent constructs.

TABLE 4: Results of hypotheses tests.

Hypothesised relationships	β	t	Effect size f^2	Result
Work-from-home job demands				
H1A: Role ambiguity → Workplace anxiety	0.173	1.576	0.017 (N)	Not supported
H1B: Work overload → Workplace anxiety	0.123	1.287	0.012 (N)	Not supported
H1C: Job insecurity → Workplace anxiety	0.315	3.459**	0.080 (S)	Supported
H1D: Work-home conflict → Workplace anxiety	0.046	0.505	0.002 (N)	Not supported
Workplace anxiety				
H3: Workplace Anxiety → PsyCap	-0.122	1.126	0.014 (N)	Not supported
Interaction Effects				
H4A: Perceived Usefulness × Workplace Anxiety → PsyCap	0.029	0.277	0.000 (N)	Not supported
H4B: Perceived Ease of Use × Workplace Anxiety → PsyCap	-0.272	2.046*	0.039 (S)	Not fully supported
H4C: Technical Support × Workplace Anxiety → PsyCap	0.135	1.223	0.014 (N)	Not supported

Notes: β = standardised path coefficient. S and N represent interpretation of the effect size; S = small ≥ 0.02; M = small ≥ 0.15; N = none < 0.02. All controls are not statistically significant in the prediction of PsyCap.
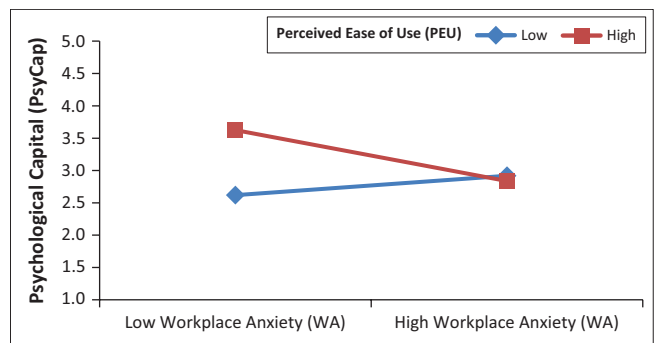PsyCap, psychological capital.
*, $p < 0.05$; **, $p < 0.01$.

FIGURE 2: Simple slopes of Perceived Ease of Use × Workplace Anxiety interaction on PsyCap.

TABLE 5: Results of moderation effects of gender.

Path	Standardised path coefficient (β)				p	Result
	Male[a]	vs.	Female[b]	Δ β[b–a]		
H2A: RA → WA	0.303	>	-0.055	-0.358	0.099	Not supported
H2B: WO → WA	-0.142	<	0.260*	0.402*	0.024	Supported
H2C: JI → WA	0.041	<	0.534***	0.493**	0.008	Supported
H2D: WHC → WA	0.383	>	-0.038	-0.421	0.086	Not supported

Note: Δ = Difference. The difference in beta is found by subtracting the beta coefficient for males from the beta coefficient for females.

RA, role ambiguity; WA, workplace anxiety; WO, work overload; JI, job insecurity; WHC, work-home conflict.

*, $p < 0.05$; **, $p < 0.01$; ***, $p < 0.001$.

WHC) and WA, we conducted MGA, given the categorical nature of our moderator (Matthews et al., 2018). Table 5 presents the results of this analysis. It is important to note that in MGA, a significant p-value represents a significant difference between the path coefficients for males and females in each of the investigated relationships (H2A to H2D). The MGA results show that gender moderated the association between WO and WA (Δβ = 0.402, $p < 0.05$) and JI and WA (Δβ = 0.493, $p < 0.01$). Therefore, H2B and H2C were supported, whereas H2A and H2D were not.

A simple slope analysis (Aiken & West, 1991) was conducted to probe the nature of the significant Male × WO interaction. The simple slope for females (β = 0.260, $p < 0.05$) was significant, while the simple slope for males (β = −0.142, $p > 0.05$) was not significant, showing that for females, an increase in WO is associated with an increase in WA. For the Male × JI interaction, the simple slope for females (β = 0.534, $p < 0.001$) was significant, while the simple slope for males (B = 0.041, $p > 0.05$) was not significant, showing that for females, an increase in JI is associated with an increase in WA. These findings underscore the conditional influence of gender on the WO–WA and JI–WA associations. Specifically, the impact of WO and JI on WA is stronger for females. Figure 3 and Figure 4 illustrate the slopes.

Discussion

The COVID-19 pandemic precipitated a global, involuntary shift to WFH. Despite a post-pandemic reduction in WFH, there is scholarly consensus that WFH represents an enduring transition in the post-pandemic work environment (Aksoy et al., 2022). Given this enduring nature, it is crucial to understand the stressors it introduces and their consequent impact on employee emotions. Therefore, this study set out to investigate how WFH job demands affect WA and, subsequently, the influence of WA on PsyCap. Our research specifically aimed to deepen the understanding of WFH job demands and WA within the context of developing nations, notably South Africa, where such research is scarce. Addressing calls for more research to 'understand how employees feel emotionally in organizational settings' (Yip et al., 2020, p. 3), this study contributes to the burgeoning scholarly focus, often termed the 'affective revolution' on how emotions influence workplace behaviour. Moreover, to the best of our knowledge,
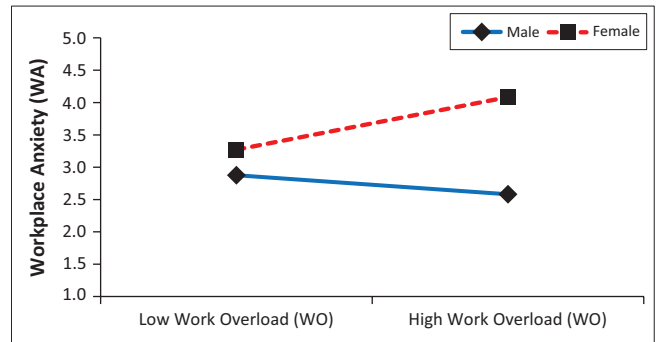

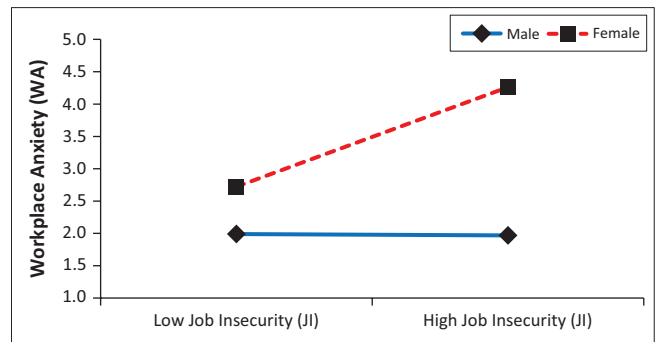**FIGURE 3:** Simple slopes of Male × Work Overload interaction on workplace anxiety.

FIGURE 4: Simple slopes of Male × Job Insecurity interaction on workplace anxiety.

our study is among the first empirical testing of the TWA, a theory still in its nascent stages of empirical validation.

Following the research questions outlined earlier, our study formulated and tested several research hypotheses. Firstly, we aimed to understand the nature of the relationship between WFH and WA, particularly the role of WFH job demands. Interestingly, our study found minimal evidence for the direct effects of WFH job demands on WA. Specifically, the findings indicated that only JI was directly associated with WA, with this relationship being notably stronger for females. Additionally, the positive association between WO and WA was significant only among females. Surprisingly, RA and WHC were found to have no direct or indirect effect on WA. A possible explanation for this finding is that our respondents might have adapted to a WFH environment where they leveraged the flexibility or autonomy inherent in such settings, rendering RA and WHC less impactful on their WA levels (Gajendran & Harrison, 2007; Jackson & Schuler, 1985; Spector, 1986).

Secondly, we aimed to understand the nature of the relationship between WA and PsyCap and whether DTC influences the WA–PsyCap relationship. Contrary to our initial expectations, there was a negative but non-significant association between WA and PsyCap. This finding diverges from the established body of literature that suggests that negative affect, such as anxiety, depletes psychological resources like PsyCap (e.g. Ciao et al., 2022; Fredrickson, 2001; Hobfoll, 1989; Luthans & Youssef-Morgan, 2017). However, our study sample consisted solely of employees working fully from home. Gajendran and Harrison (2007)

found that working from home could potentially buffer the negative effects of work-related stressors because of increased perceived autonomy and reduced WHC. It is possible that the home working environment in our study mitigated the impact of WA on PsyCap, offering a plausible explanation for our unexpected result.

Finally, we found that PEU buffers the negative effects of WA on PsyCap at low levels of WA; however, this buffering effect diminishes at high levels of WA. This suggests that individuals who perceive digital technology supporting WFH as easy to use benefit more from the buffering effect of PEU on PsyCap at low levels of WA, but this benefit diminishes as WA increases. This finding suggests that when employees find digital technology easy to use, low WA might be less likely to negatively impact their PsyCap. This is in line with Davis et al.'s (1989) technology acceptance model (TAM), which emphasises the importance of ease of use in determining technology adoption and user attitudes. If employees find technology user-friendly, it can mitigate the anxiety associated with its use, thereby preserving their psychological resources. Contrary to expectations, the association between WA and PsyCap was not conditional on either PU or TS. The lack of significant moderation by PU and TS could be explained by Tornatzky and Fleischer's (1990), technology–organisation–environment (TOE) framework. This suggests that the organisational and environmental context might play a more critical role than the perceived attributes of technology itself. It is possible that in our study's context, factors such as organisational culture, support and external environmental conditions overshadowed the influence of PU and TS.

Theoretical contribution

In the post-COVID-19 pandemic world, the prevalence of WFH has increased. However, our understanding of WA and the influence of job demands on WA in this context remains limited. Additionally, in the context of WFH, the downstream impact of WA on personal resources, such as PsyCap, is not well understood. This study makes several theoretical contributions by addressing these gaps and enhancing our comprehension of WA and its effects. Firstly, it contributes to the literature by offering support for the differential impact WFH job demands have on WA. Secondly, it is one of the few studies that offers empirical validation for TWA, marking a significant step in the theory's development, especially given the relative newness of the theory and the limited empirical evidence supporting it. Thirdly, by examining interactions within the TWA framework, the research uncovers nuanced understandings of how job demands associated with WFH relate to WA and how WA in turn influences PsyCap. Fourthly, our findings contribute to the limited understanding of the impact of WA (Cheng et al., 2023) by elucidating the WA–PsyCap relationship and its moderators in the context of working from home. It thereby broadens the scope of understanding of the predictors of PsyCap. Finally, by focussing on South Africa – a non-WEIRD context – this

research responds to the call for more diverse samples in behavioural research (Henrich et al., 2010), thereby adding valuable insights from the developing world's perspective.

Practical/managerial implications

Our study is among the few that provide valuable insights to managers and organisations with WFH employees regarding the role of job demands on WA. It also examines the influence of WA on PsyCap. It also explores the moderating effects of gender on the job demands–WA association and the moderating effects of DTC on the WA–PsyCap association. Firstly, our findings indicate that for employees working from home, job insecurity is a significant contributor to workplace anxiety. Therefore, managers should develop strategies to address this job demand to mitigate WA. To address job insecurity, managers should consistently communicate clear information about the organisation's WFH policies and its overall performance. Furthermore, the significant interactions between work overload, job insecurity and gender highlight the necessity for managers to develop targeted strategies to manage WA among female employees. This is because the association between job demands and WA was found to be stronger for females.

Secondly, our unexpected finding that WA did not significantly influence PsyCap in employees working from home underscores the importance of considering the context in which employees operate. Managers should recognise that the home working environment might buffer the negative effects of WA. This is particularly important as companies design and implement their WFH policies for a post-COVID-19 pandemic work environment.

Finally, our finding of a significant interaction between WA and PEU of digital technologies indicates that in low WA environments, when employees perceive digital technologies as easy to use, this buffers the negative effects of WA on PsyCap. This underscores the importance for managers and organisations to adopt a proactive approach in training employees on the use of new digital technologies. By enhancing employees' proficiency with these technologies and ensuring they are perceived as user-friendly, organisations can harness the buffering effects of PEU on the WA–PsyCap link.

Strengths, limitations and avenues for future research

This study has several strengths. Methodologically, the strength of our study lies in the use of PLS-SEM, which does not require data to follow a normal distribution and is well suited for analysing complex structural models even with relatively small sample sizes, enhancing the robustness and credibility of our findings (Benitez et al., 2020; Hair et al., 2011). Theoretically, our conceptual model (see Figure 1), which is firmly grounded in the TWA and JD-R models, elucidates the complex associations between WFH job demands, WA, DTC and PsyCap. Additionally, our study highlights the complex nature of WA by examining it in a

WFH context. Finally, this study contributes unique insights into WA from South Africa, a non-WEIRD (Henrich et al., 2010) setting, thereby enriching the understanding of WA.

Despite these strengths, limitations exist that suggest useful future research. Firstly, the study's cross-sectional design limits causal inference; therefore, future research should explore causal relationships using longitudinal or experimental designs. Secondly, reliance on self-reported data, while necessary, may introduce bias. However, it is also important to recognise that the constructs being investigated are inherently subjective, making self-reporting a necessary and valuable approach for capturing personal experiences and perceptions. Thirdly, this study, while comprehensive, did not account for several established predictors of WA (e.g. dispositional WA, emotional labour demands) and PsyCap (e.g. core self-evaluations, empowering leadership behaviours). Future research would benefit from incorporating these variables to provide a more holistic understanding of WA and PsyCap. Finally, we recognise that our research, conducted through surveys involving employees from various organisations, lends a degree of generalisability to our findings. Yet, it is important to note that concentrating on a single organisation could provide a more focussed empirical testing of the TWA through the conceptual model developed in this study.

Conclusion

In conclusion, this study offers a detailed examination of the effects of WFH job demands on WA and how WA, in turn, influences PsyCap. Our findings show that JI has direct effects on WA. Moreover, both WO and JI exhibit gender-specific influences on WA. While WA showed a negative but non-significant association with PsyCap, the PEU of digital technologies only mitigated the adverse effects of WA on PsyCap when WA levels were low. These insights offer a major contribution to the empirical validation of the TWA. We are optimistic that the conceptual model developed in this study will spark further scholarly inquiry into the dualistic nature of WA – unravelling both its adverse and beneficial facets. This research, therefore, extends the current research on WA. It also lays the groundwork for future studies to explore the complex interplay between environmental stressors, emotions and psychological resources in the evolving post-pandemic work environment.

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Competing interests

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Authors' contributions

F.M.M. functioned as the principal designer of the article, overseeing its overall writing and editing and bears the primary responsibility for its content and organisation. The foundational data for this research, which contributed significantly to the article, were gathered by S.S. for her MBA research. Both authors have read and agreed to the submitted version.

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Data availability

The data supporting the findings of this study are available at the Open Science Framework repository, accessible via the following link: https://osf.io/q8wtc/?view_only=30930ff9bbe940519256452e968d5030.

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