

Exploring employee well-being during the COVID-19 remote work: evidence from South Africa

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Abstract

Purpose – The COVID-19 pandemic has rapidly accelerated a shift to remote working for previously office-based employees in South Africa, impacting employee outcomes such as well-being. The remote work trend is expected to continue even post the pandemic, necessitating for organizational understanding of the factors impacting employee well-being. Using the Job Demands–Resources model as the theoretical framework, this study aims to understand the role of job demands and resources as predictors of employee well-being in the pandemic context.

Design/methodology/approach – A self-administered online survey questionnaire was used to gather quantitative data about remote workers' ($n = 204$) perceptions of specifically identified demands, resources and employee well-being. Descriptive statistics, Pearson's correlation and moderated hierarchical regression were used to analyse the data.

Findings – This study found that job demands in the form of work–home conflict were associated with reduced employee well-being. Resources, namely, job autonomy, effective communication and social support were associated with increased employee well-being. Job autonomy was positively correlated to remote work frequency, and gender had a significant positive association to work–home conflict. Social support was found to moderate the relationship between work–home conflict and employee well-being. Findings suggest that organizations looking to enhance the well-being of their remote workforce should implement policies and practices that reduce the demands and increase the resources of their employees. The significant association of gender to work–home conflict suggests that greater interventions are required particularly for women. This study advances knowledge on the role of demands and resources as predictors of employee well-being of remote workforces during COVID-19 and beyond.

Originality/value – This paper provides insight on employee well-being during COVID-19 remote work. Further, the findings suggest that organizations looking to enhance the well-being of their remote workforce should implement policies and practices that reduce the demands and increase the resources of their employees. The significant association of gender to work–home conflict suggests that greater interventions are required particularly for women. To the best of the authors' knowledge, this is the first study carried out to explore the employee well-being during COVID-19 pandemic and will be beneficial to stakeholders for understanding the factors impacting employee well-being.

Keywords Remote work, COVID-19, Employee well-being, JD-R model, Social isolation, Work–home conflict, Job autonomy, Effective communication, Social support, South Africa

Paper type Research paper

1. Introduction

The advent of the COVID-19 pandemic has accelerated a shift to remote work arrangements, forcing the transition away from office-based jobs almost overnight. This remote work trend



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is anticipated to continue, with a Boston Consulting Group (BCG) study reporting that 89% of people expect to work remotely at least some of the time post the pandemic, and South Africans in particular reflect a higher-than-average desire for full-time flexible working models (BCG, 2021). Extant research on the advantages and disadvantages of remote work has revealed inconsistent findings. Some cite benefits such as increased job satisfaction (McCloskey and Igbaria, 1998; Pinsonneault and Boisvert, 2001) and improved productivity (McCloskey and Igbaria, 2003), whereas others report negative outcomes such as intensified work–family conflict (Igbaria and Guimaraes, 1999; Knight *et al.*, 2020) and relational impoverishment (Mann *et al.*, 2000; Nardi and Whittaker, 2002). However, much of the existing literature related to remote-working has been based on a pre-pandemic environment, where the application of remote working was by choice, for small numbers of workers and only occasionally practised (Wang *et al.*, 2020). As criticized in Bailey and Kurland (2002), “[the] occasional, infrequent manner in which telework is practiced, likely has rendered mute many suspected individual-level outcomes for the bulk of the teleworking population.” The individual outcomes of remote work could therefore be markedly different for the current workforce whose frequency of remote work practice is higher. In addition, previous research findings may have suffered from selection bias due to the largely voluntary nature of remote work (Lapierre *et al.*, 2016). COVID-19 has resulted in remote-working being implemented in unprecedented scale, across a broader range of jobs and as a mandatory requirement over more pro-longed periods of time. The forced transition and rapid change brought about by the pandemic may result in both challenges and benefits to employee outcomes that at this stage remain under-explored. This study aims to contribute towards understanding how the well-being of South African employees has been impacted in the COVID-19 remote work context, drawing on the theoretical perspective of job demands and resources as conceptualized in the Job Demands–Resources (JD-R) model (Demerouti *et al.*, 2001). The JD-R model posits that the interaction between job demands and resources play a role in the development of job-related strain and motivation, and this interaction is ultimately able to predict important organizational outcomes. Remote work challenges could be regarded as job demands, whereas remote work benefits could be understood to be the result of specific job resources. These demands and resources are expected to impact employee’s experiences of remote work in the COVID-19 context and, consequently, their well-being. Specifically, this study aims to focus on two job demands identified in the literature as pertinent to the remote work environment, namely, work–home conflict and social isolation. From a resource perspective, three key enablers to successful remote working as outlined in literature are effective communication, social support and job autonomy. The JD-R model is used as the basis for understanding how these salient demands and resources of remote work in the COVID-19 context impact employee well-being; whether resources could act as a moderator to buffer the expected negative impact of demands on employee well-being.

2. Literature review

A challenge in reviewing scientific findings on remote work has been the various conceptualizations and definitions of remote work employed within the existing literature. Whilst “remote work” in this study has been conceptualized as a broad term, used interchangeably with concepts such as telecommuting, work-from-home and flexible work arrangements, its definition has been aligned to the work of Allen *et al.* (2015). Specifically, remote work has been defined as work performed by an employee away from their primary office (i.e. outside of the employee’s organization worksite). The literature focus is to deepen the understanding of the well-being of the COVID-19 remote workforce, using a demands and resources perspective. The concept of “well-being” is multidimensional and its definitions in the literature suggest two separate but complementary perspectives: hedonic and eudaimonic (Ryan and Deci, 2001). The hedonic view

refers to well-being as “pleasant feelings and evaluations”, whereas the eudaimonic view suggests that well-being involves “engaging in behaviour that is self-actualizing, meaningful, and growth producing” (Fisher, 2014). The most widely researched construct in the hedonic path is subjective well-being (SWB), which is a term used to measure a person’s self-described happiness and overall life experience (De Simone, 2014). SWB in the workplace is often conceptualized as job satisfaction (Krekel *et al.*, 2019), a positive emotional state arising from the appraisal of one’s work or work experience (Bowling *et al.*, 2010). The eudaimonic view is typically referred to as general psychological well-being (PWB), which is centred on individual growth and fulfilment (Ryff and Keyes, 1995). Eudaimonic well-being in the workplace is often conceptualized from general PWB as employee engagement (Schaufeli and Bakker, 2004), a motivational process whereby employees harness their cognitive, physical and emotional energies into their job performance (Bartels *et al.*, 2019). However more recent research has attempted to define eudaimonic well-being specific to the workplace context, by incorporating the measures of general PWB together with social context theory to arrive at two broad dimensions: interpersonal and intrapersonal workplace well-being (Bartels *et al.*, 2019). These dimensions together form a two-dimensional eudaimonic workplace well-being scale (EWWWS) (Bartels *et al.*, 2019). The relationship between remote work and employee well-being in the pre-pandemic context has revealed inconsistent findings (T.D. Golden and Veiga, 2016). Often-cited benefits of this work arrangement include increased job satisfaction due to enhanced flexibility and autonomy (Lee and Sirgy, 2019; Virick *et al.*, 2010), as well as greater control through the use of technologies that enables the efficient access to and exchange of information, not restricted to location or time (Cavazotte *et al.*, 2014). However other studies have reported that remote work results in higher work–home conflict (Delanoeije *et al.*, 2019), difficulties in “switching off” and detaching from work after hours (Felstead and Henseke, 2017) and higher levels of professional isolation (Harrington and Santiago, 2006). Other studies report the possibility of relational impoverishment in the remote work context (Gajendran and Harrison, 2007) due to weakened interpersonal bonds as a result of reduced physical interaction and lower frequency and richness of communication.

These remote work challenges and benefits could be regarded as demands and resources, which together impact employee well-being. Accordingly, this study uses the JD-R model as the theoretical basis by which to unpack employee well-being of the COVID-19 remote workforce. The JD-R model classifies job characteristics into two general categories, namely, job demands and job resources. Job demands can be defined as “physical, psychological, social, or organisational aspects of the job that require sustained physical and/or psychological (cognitive and emotional) effort or skills” (Demerouti and Bakker, 2011). Job resources on the other hand refer to those aspects of a job that are either functional in achieving work goals, reducing job demands or stimulating personal growth and development (Demerouti and Bakker, 2011). The JD-R model proposes that the exertion required to meet persistent job demands could lead to strain, whereas the availability of job resources triggers a motivation process which could lead to engagement (Bakker and Demerouti, 2007). In addition to these separate primary effects, studies have also found that there are interaction effects between demands and resources, such that job resources could buffer the impact of job demands on strain (Bakker *et al.*, 2005). The JD-R model could therefore be used as a tool to interpret and explain the standalone and interaction effects of demands and resources on employee well-being, as well as understand whether specific resources can be provided by organizations to buffer the expected negative impact of remote work demands on employee well-being.

3. Hypothesis development

This study explores two key challenges highlighted in the pre-pandemic literature as pertinent to the remote work environment, namely, work–home conflict (Igarria and Guimaraes, 1999;

Delanoëje *et al.*, 2019; Knight *et al.*, 2020) and social isolation (Gajendran and Harrison, 2007; Harrington and Santiago, 2006). These demands are expected to have been exacerbated in the current context due to the involuntary nature and intensity of remote work, and the concurrent staying-at-home of many members of the household (Sandoval-Reyes *et al.*, 2021).

3.1 Work-home conflict

Work-home conflict can be defined as “a form of inter-role conflict in which the role pressures from the work and family domains are mutually incompatible in some respect” (Greenhaus and Beutell, 1985). Work-home conflict is expected to increase in a remote work environment as employees are simultaneously having to attend to both professional and personal responsibilities. Previous studies have found that increased work-home conflict is related to lower job satisfaction (Serenko *et al.*, 2017).

Therefore, it is hypothesized as:

H1a. The work-home conflict is negatively associated to employee well-being.

3.2 Social isolation

Isolation can be understood as the feeling of being socially or professionally disconnected or out of touch in the workplace (T. D. Golden *et al.*, 2008). In the remote work context, perceptions of social isolation are expected to be higher due to the reduced opportunity for social and emotional interactions amongst colleagues. Feelings of loneliness and lack of connection could also be exacerbated by social distancing measures impacting personal relationships. Research shows that isolation is associated with decreased job satisfaction (Orhan *et al.*, 2016; Toscano and Zappalà, 2020):

H1b. Social isolation is negatively associated to employee well-being.

From a resource perspective, this study explores three key elements that have been outlined in the literature as beneficial to employee outcomes in the remote work environment. Technological tools in particular are at the forefront as an enabler of effective remote work, with employees requiring not just the infrastructure, but also support to address constant connectivity and availability. Social support could be particularly relevant in the COVID-19 context, as it has been found to act as a “negativity buffer”, assisting employees in coping with stress and overcoming loneliness (Wang *et al.*, 2020). In a qualitative study done during the pandemic, Wang *et al.* (2020) found that job autonomy influenced remote workers job effectiveness and well-being, as it results in greater flexibility and consequently the ability to manage one’s work-life balance. This study summarises these resources identified in the literature into three key job resources, namely, effective communication, social support and job autonomy.

3.3 Effective communication

Communication and support are likely to have become even more important due to employees having to rapidly adapt to the changed social norms and work routines brought about by COVID-19 remote work context. Remote work is facilitated by communication technologies that “enable employees to communicate more efficiently over temporal and spatial boundaries” (Ter Hoeven and Van Zoonen, 2015). Effective communication in this study is seen to be the result of both instrumental and informational support. Aligned to the meanings used by Smit (2020), instrumental support relates to the provision of adequate information and communications technology (ICT) materials and related technical support required to

communicate in the remote work environment (such as laptops, virtual meeting platforms, e-mail), whereas informational support is assistance through advice, information and training that helps employees cope with challenges. A study by Ilozor *et al.* (2001) found a positive association between clarity of communication and continuing training support and remote worker satisfaction:

H2a. Effective communication is positively associated to employee well-being.

3.4 Social support

Social support is defined in work design literature as “the degree to which a job provides opportunities for advice and assistance from others” (Morgeson and Humphrey, 2006). Whilst social support could be provided through communication technologies, the physical separation between co-workers in the remote work environment could result in a perceived reduction of social support. Social support has been identified as a necessary resource to effective completion of tasks by remote workers (Wang *et al.*, 2020). Research has found that social support has a negative association to workplace stress (Foy *et al.*, 2019) and a positive association to PWB (Rehman *et al.*, 2020):

H2c. Social support is positively associated to employee well-being.

3.5 Job autonomy

Job autonomy refers to an employee’s choice over when and how they perform their work. Remote work is seen to enhance autonomy due to increased control over work scheduling, location and the means by which work is performed (Gajendran and Harrison, 2007). This increased flexibility and high decision latitude is associated with greater work–life balance (Lehmann, 2016) and job satisfaction (Federici, 2013):

H2c. Job autonomy is positively associated to employee well-being.

3.6 Effective communication, social isolation and employee well-being

Access to communication enhancing technology has been found to reduce the negative impact of professional isolation on job performance (T. D. Golden *et al.*, 2008). Effective communication is expected to enable the availability of colleagues and supervisors, thus facilitating for help and support to be provided to employees in the remote work environment, reducing feelings of disconnectedness and loneliness:

H3a. The relationship between social isolation and employee well-being is moderated by effective communication.

3.7 Social support, social isolation and employee well-being

Bentley *et al.* (2016) found that workplace isolation is lower when perceived organizational and social support is high, and isolation further mediates the relationship between perceived support and job satisfaction. Social support is expected to buffer feelings of isolation, as it enables individuals to feel connected, helps them cope, strengthens self-esteem and reduces strain (Bliese and Britt, 2001):

H3b. The relationship between social isolation and employee well-being is moderated by social support.

3.8 Job autonomy, work-home conflict and employee well-being

Job autonomy has been found to buffer the relationship between work-life conflict and job satisfaction (Brauchli *et al.*, 2014). Job autonomy enables employees to reduce the conflicts caused by competing work and home responsibilities (Korunka and Kubicek, 2017) and allows for better flexibility and control, thereby enabling employees to manage exhaustion caused by work-home conflict (Wu and Zhou, 2020):

H3c. The relationship between work-home conflict and employee well-being is moderated by job autonomy.

3.9 Social support, work-home conflict and employee well-being

A study by Pluut *et al.* (2018) found that social support in the work and home environments acted as a buffer for work-family conflict. Social support is expected to assist in the conservation of resources by enabling better balance of work and family, thereby reducing stress from job demands (Grandey and Cropanzano, 1999):

H3d. The relationship between work-home conflict and employee well-being is moderated by social support.

4. Research methodology

A quantitative, descriptive method was followed, with a cross-sectional survey design. This research falls within the positivist research paradigm, which asserts that “genuine, real and factual happenings could be studied and observed scientifically and empirically” (Aliyu *et al.*, 2014).

4.1 Research procedure and ethical considerations

A self-administered survey was used to gather quantitative data. The survey was available online from 6 December 2021 to 4 January 2022 on Google Forms and required approximately 5 min to complete. All questions were marked as mandatory in the questionnaire, and surveys could not be submitted unless completed in full. Participation in the survey was voluntary, anonymous and without payment. Respondents confirmed informed consent prior to participation. This research was conducted in accordance with the ethical guidelines as stipulated by the University of Witwatersrand.

4.2 Sampling approach and participants

The population of interest in this study is employees of companies in South Africa, who were previously office-based and have subsequently had to work remotely due to COVID-19. The size of this population cannot be determined with certainty, and non-probability sampling was therefore used. Purposive sampling was used to identify suitably qualified individuals from family, friends and colleague’s professional networks. Participants received an electronic link to the survey via e-mail or social media platforms. Purposive sampling does not require a stipulated number of participants (Etikan *et al.*, 2016). However, this study aimed to obtain a sample size of at least 200 respondents in order to achieve adequate statistical power for data analysis, in line with traditional sampling “rules of thumb” as summarised in Kyriazos (2018).

4.3 Data collection

A total of 231 survey responses were obtained, with a final sample size of 204 ($n = 204$). A total of 27 responses were removed from the initial listing due to respondents either not working remotely or not living in South Africa. Table 1 reflects the descriptive statistics of the final data sample.

4.4 Research instrument

All constructs, except for control and socio-demographic variables, were measured using a seven-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). Each scale was tested for reliability, and items were averaged to produce an overall rating per construct. Scales were selected based on the relevance of the items to this study. Composite reliability and Cronbach’s alphas of the final scale constructs have been presented in results Tables 2 and 3, respectively.

4.4.1 Employee well-being. The eight-item EWWS scale was used to measure workplace eudaimonic well-being (Bartels *et al.*, 2019). This was integrated with job satisfaction, representing the hedonic perspective of workplace well-being. Job satisfaction was measured

Variables	Frequency	Percent	Mean	SD	Median	Min	Max
<i>Gender</i>							
Male	99	48.5					
Female	102	50.0					
Prefer not to say	3	1.5					
Age			37.87	10.51	35.00	22	65
<i>Work experience</i>							
Less than 1 year	0	0					
1 year or more	204	100.0					
<i>Remote work frequency^a</i>							
Up to 25%	22	10.8					
26%–50%	19	9.3					
51%–75%	31	15.2					
76%–100%	132	64.7					
<i>Caring responsibility</i>							
None	94	46.1					
Living with children	110	53.9					

Table 1.
Descriptive statistics
($n = 204$)

Note: ^aRepresented as average percentage of the work-week spent working remotely

Measured variables	CR	AVE	MSV	Composite reliability (CR), average variance extracted (AVE) and maximum shared variance (MSV) of the study constructs
Employee well-being	0.925	0.612	0.578	
Work-home conflict	0.951	0.796	0.184	
Social isolation	0.866	0.624	0.184	
Effective communication	0.920	0.628	0.372	
Social support	0.871	0.582	0.578	
Job autonomy	0.969	0.837	0.261	

Table 2.

using the three-item Michigan Organizational Assessment Questionnaire job satisfaction subscale (Cammann *et al.*, 1979).

4.4.2 Work-home conflict. Work-home conflict was measured using the Netemeyer *et al.* (1996) five-item work-family conflict scale. Aligned to the modifications to this scale in Kreiner (2006), this study applied a broader conceptualization of the home domain by referring to the household rather than just family in the scale items.

4.4.3 Social isolation. Social isolation was assessed through five items of the workplace isolation scale by T. D. Golden *et al.* (2008).

4.4.4 Effective communication. Instrumental support, in the form of sufficient technological resources, was measured using an adapted scale originally developed by Amabile *et al.* (1996), whereas technical support was measured using a scale adapted from Day *et al.* (2012). Informational support was measured by adapting an item used by Smit (2020).

4.4.5 Social support. Social support was measured using five items of the Morgeson and Humphrey (2006) work design questionnaire.

4.4.6 Job autonomy. Job autonomy was measured using six items developed by Morgeson and Humphrey (2006), covering autonomy in scheduling, decision-making and methods.

4.4.7 Control and socio-demographic variables. Participants were required to disclose their age, gender, caring responsibility and remote work experience as previous literature recognizes that these variables can influence the relationships under study (Gajendran and Harrison, 2007; Kossek *et al.*, 2006).

4.5 Data analysis

There were no instances of incomplete surveys or surveys with missing responses in the final data sample. One item of the job satisfaction scale, “In general, I don’t like my job”, was reverse coded. All other items retained their initial coding. Statistical tests were run in SPSS and AMOS version 27. Confirmatory factor analyses were conducted to assess the dimensionality of the scales, using Gaskin’s confirmatory factor analysis (CFA) Auto Modeler plugin for AMOS. Results were assessed against the typically accepted cut-off criteria as indicated in Hair (2009). Once acceptable model fit was established, reliability and convergent validity of the measures were evaluated using the master validity tool for AMOS. Descriptive statistics and Cronbach’s alpha were computed using the final scale constructs. Common-method variance was empirically tested using Harman’s single factor test (Podsakoff and Organ, 1986).

H1a, H1b, H2a, H2b and H2c were tested using Pearson’s Product Moment Correlation Coefficient (i.e. Pearson’s *r*). *H3a, H3b, H3c and H3d* were tested using Haye’s PROCESS plugin for moderated hierarchical regression analysis.

Table 3.
Inter-correlations,
descriptive statistics
and Cronbach’s
alphas

Constructs	Mean	SD	1	2	3	4	5	6
1. Employee well-being	4.85	1.32	(0.93)					
2. Work-home conflict	3.97	1.72	-0.28**	(0.95)				
3. Social isolation	4.31	1.70	-0.04	0.39**	(0.88)			
4. Effective communication	5.44	1.25	0.51**	-0.25**	-0.24**	(0.93)		
5. Social support	4.77	1.33	0.74**	-0.15*	-0.06	0.63**	(0.86)	
6. Job autonomy	5.13	1.59	0.53**	-0.20**	-0.05	0.33**	0.48**	(0.97)

Notes: *N* = 204; In the main diagonal, within parentheses, the Cronbach’s alphas, **p* < 0.05. ***p* < 0.01

5. Results

5.1 Exploratory factor analysis

Exploratory factor analysis was subsequently performed to identify variables with low communalities, low factor loadings, or cross-loadings between factors. Based on this analysis, three variables in the employee well-being construct (EWB7, EWB10 and EWB11) and one variable in the social isolation construct (ISO1) were removed. This resulted in the final employee well-being construct consisting of eight items and social isolation consisting of four items.

5.2 Confirmatory factor analysis

The second CFA was run using a six-factor scale excluding the above variables and covarying certain error terms within the same factors based on the computed modification indices. Figure 1 presents the final model which achieved acceptable model fit (CMIN = 1165.15; $df = 536$; $p = 0.000$; CMIN/ $df = 2.174$; CFI = 0.912; RMSEA = 0.076). Table 2 reports the CR, AVE and MSV, with no validity or reliability concerns noted. The square root of the AVE exceeded any cross-factor correlations, AVE exceeded 0.5 and CR exceeded 0.7.

5.3 Common method bias

Harman's single factor test was run by using the maximum likelihood method in SPSS and setting the extraction factors to 1. The resulting variance explained by the single factor was 35.32%. A single measure therefore did not account for a majority of the variance, minimizing concerns of common method bias.

Descriptive statistics, inter-correlations and Cronbach's alphas were calculated using the SPSS-computed average of the final variables per construct. The results of these tests are presented in Table 3. Internal reliability of all scales was confirmed, with Cronbach's alphas exceeding 0.7.

5.4 Hypothesis testing

The hypotheses predicting a negative relationship between job demands and employee well-being were partially supported. Table 3 confirms that *H1a*, which predicted a negative relationship between work-home conflict and employee well-being, was supported ($r = -0.28$, $p < 0.01$). However, the negative relationship between social isolation and employee well-being, as predicted by *H1b*, was found not to be statistically significant. All three hypotheses predicting a positive relationship between job resources and employee well-being were supported. Effective communication was significantly related to employee well-being ($r = 0.51$, $p < 0.01$) thus confirming *H2a*; social support was significantly related to employee well-being ($r = 0.74$, $p < 0.01$), thus confirming *H2b*; and job autonomy was significantly related to employee well-being ($r = 0.53$, $p < 0.01$) thus confirming *H2c*. Correlations were computed to determine any significant relationships between the constructs under study and the control variables of age, gender, caring responsibility and frequency of remote work. Age had a positive relationship to employee well-being and job autonomy ($r = 0.19$, $p < 0.01$ and $r = 0.18$, $p < 0.01$ respectively), while a positive relationship was found between gender and work-home conflict ($r = 0.18$, $p < 0.01$). Remote work frequency had a positive relationship to job autonomy ($r = 0.24$, $p < 0.01$). Caring responsibility reflected no significant relationships to any of the study constructs. The variables of age, gender and frequency of remote work were therefore included as controls in the moderation analysis.

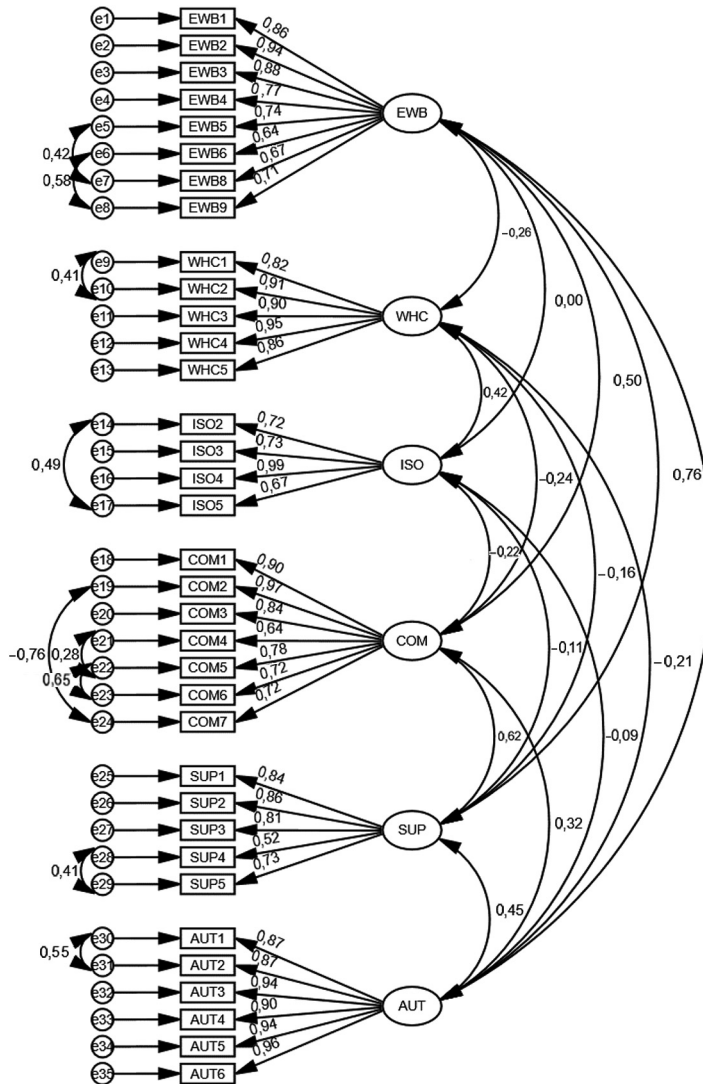


Figure 1.
Final CFA model
with standardized
estimates

5.5 Testing for moderation

Moderating hypotheses were each separately tested using regression model 1 of Haye's PROCESS plug-in for SPSS. Age, gender and frequency of remote work were included as covariates for all moderation tests. Confidence levels were set to 0.95 and predictor variables were mean centred prior to the analysis. Interaction terms were created as the product of the predictor and moderator variables. Results from the hierarchical regression analyses are presented in [Table 4](#).

H3a and *H3b*, predicting that effective communication and social support respectively moderated the relationship between social isolation and employee well-being, were both not

Variables	H3a	H3b	H3c	H3d
<i>Covariates:</i>				
Age	0.02*	0.02*	0.02	0.02
Gender	-0.01	0.06	-0.02	0.10
Remote work frequency	-0.03	-0.00	-0.02	-0.00
<i>Predictors:</i>				
Social isolation (ISO)	-0.17	0.14		
Effective communication (COM)	0.37			
Social support (SUP)		0.88		0.70*
Work-home conflict (WHC)			-0.32*	-0.13*
Autonomy (AUT)			0.25*	
<i>Interaction terms:</i>				
ISO × COM	0.04			
ISO × SUP		-0.03		
WHC × AUT			0.04	
WHC × SUP				0.01*
R^2	0.30*	0.58*	0.33*	0.62*
Change in R^2	0.004	0.004	0.007	0.011*
F	1.13	2.05	1.97	5.46

Note: * $p < 0.05$

Table 4.
Hierarchical
regression analysis –
dependent variable:
employee well-being

supported. The interaction terms between effective communication and social isolation ($F(1,197) = 1.13, p = 0.29, R^2$ change = 0.004) and between social support and social isolation ($F(1,197) = 2.05, p = 0.15, R^2$ change = 0.004) were found not to account for a significant proportion of the variance in employee well-being. Support was also not found for the significance of autonomy as a moderator in the relationship between work-home conflict and employee well-being, as per H3c. The interaction term between autonomy and work-home conflict was found not to account for a significant proportion of the variance in employee well-being ($F(1,197) = 1.97, p = 0.16, R^2$ change = 0.007).

H3d predicting that social support moderated the relationship between work-home conflict and employee well-being was supported. The interaction term between social support and work-home conflict was found to account for a small but significant proportion of the variance in employee well-being ($F(1,197) = 5.46, p = <0.05, R^2$ change = 0.01). A scatterplot was used to visualize the conditional effect of work-home conflict at different levels of social support (± 1 SD from the mean). As shown in Figure 2, work-home conflict has less of a detrimental impact on employee well-being when employees report higher levels of social support.

6. Discussion

As theorized, a negative association was found between work-home conflict and employee well-being. Work-home conflict is consistent with role theory, which posits that conflict is often created due to the demands placed on individuals from the multiple roles they play in their work and home domains (Kahn *et al.*, 1964; Michel *et al.*, 2010). This is detrimental to employee well-being as employees become less satisfied with their jobs due to spill-over effects from the conflict created between irreconcilable work and home demands (Serenko *et al.*, 2017). Results of the current study suggest that work-home conflict is exacerbated for females. This supports the theoretical model of work-family relationships by Tenbrunsel *et al.* (1995), which argues that female's experiences of the work and family domain is likely to be one of fixed resources, with

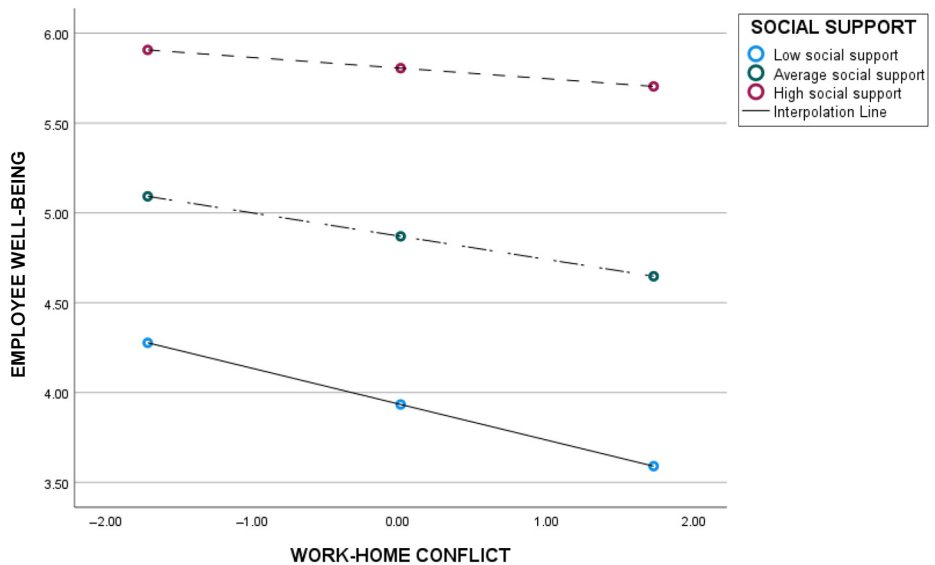


Figure 2.
Social support
moderation effect

family being dominant. In contrast, males have a dynamic system, allowing for easier adjustment of one domain to meet the demands of the other (Tenbrunsel *et al.*, 1995). This suggests that female employees are less able to make changes in the family domain to accommodate work demands, resulting in greater work-home conflict brought about by remote work arrangements. Despite this finding, it is interesting to note that no significant correlation was found between caring responsibility and work-home conflict, for both genders. It follows then that the higher levels of work-home conflict reported by women, while possibly resulting from demands in the family domain, are not necessarily related to their traditional roles as caregivers to children.

Contrary to expectations, social isolation was found not to have a significant negative association to employee well-being. This could be due to the research survey being conducted almost two years into the pandemic, resulting in employees having adequately adapted to their changed environments and benefiting from greater support of members of their households and organizations. The survey was also distributed at a time when COVID-19 cases were reducing in South Africa and lockdown restrictions were eased, allowing for increased movement and in-person social interaction outside of the household. A study by Toscano and Zappalà (2020) found that the negative impact of work isolation on remote worker satisfaction is weaker in employees who reported lower levels of concern about COVID-19. Support has also been found in various studies for the role of face-to-face interactions in minimizing feelings of isolation (Bentley *et al.*, 2016; Even, 2020). These findings would align to the JD-R model which suggests that job demands in and of themselves are not necessarily negative, but strain emerges as a response to imbalances between demands placed on a person and the resources available for that individual to cope with those demands (Demerouti *et al.*, 2001). Consequently, in the presence of adequate resources, employees can better manage feelings of social isolation, resulting in less of a detrimental impact to their well-being.

Support was found for all the hypotheses predicting a positive correlation between resources and employee well-being in the current remote work context. Social support was most highly associated with positive employee well-being, followed by job autonomy and

effective communication. The positive impact of social support on employee outcomes has been widely researched, with studies indicating that it is able to mitigate strain and reduce perceived stressors (Viswesvaran *et al.*, 1999), while also functioning as a source of resilience, enabling people to better cope with challenges (Layous and Nelson-Coffey, 2021). The positive association of job autonomy to employee well-being is supported by research guided by self-determination theory, where job autonomy is identified as an innate psychological need that leads to enhanced motivation and well-being (Ryan and Deci, 2000). Job autonomy was also found to be positively correlated to remote work frequency, with greater perceptions of job autonomy reported by respondents who spent higher percentages of their week working remotely. This result contradicts a study by Gajendran and Harrison (2007), which found that similar levels of autonomy were experienced by both low and high-intensity telecommuters. A possible explanation may be that their study was performed at a time when remote working was a planned arrangement, for specific employees, many of whom were likely bound by agreements setting out required performance levels and activities in even greater detail than for office-based work (Harrison *et al.*, 2000). In contrast, COVID-19 remote work arrangements were unplanned, mandatory across a wide range of jobs and with largely informal policies and rules. Current employees appear to associate autonomy with the ability to work remotely, and these higher levels of autonomy are correlated to higher levels of well-being.

Effective communication, consisting of instrumental and informational organization support, was also found to positively impact employee well-being. This is aligned to socio-technical theory which posits that “telework effectiveness is impacted by the fit between teleworkers, their technology, environment, and organisation” (Bentley *et al.*, 2016). Teleworker support, including ICT technical support, has been found to have a significant association with reduced psychological strain and increased job satisfaction of the remote workforce (Bentley *et al.*, 2016). Other studies note that management support, together with adequate technology and tools, are critical to the success of remote work arrangements (Kowalski and Swanson, 2005).

The hypotheses predicting that job resources act as a buffer to moderate the expected negative impact of job demands on employee well-being were found to be partially supported. Contrary to initial predictions, no significance was found for effective communication and social support as moderators in the relationship between social isolation and employee well-being. The JD-R model’s buffer hypothesis suggests that specific resources could compensate for the *adverse effects* of job demands on well-being. As this study was not able to find significance for the adverse effects of social isolation, it was expected that the role of resources as mitigators for the negative outcomes of social isolation would likewise be weak.

Autonomy was also found not to act as a moderator in the relationship between work–home conflict and employee well-being. Put differently, flexibility in decision-making, scheduling and methods did not play a significant buffering role in mitigating the negative impact of work–home conflict on employee well-being. This finding may lend support to the “autonomy paradox” and “telecommuting paradox” mentioned in the remote work literature. The autonomy paradox suggests that the enhancement of autonomy through individuals being able to work anywhere and anytime results in a “collective dynamic” of these individuals working everywhere and all the time, which in-turn diminishes their autonomy (Mazmanian *et al.*, 2013). Similarly, the telecommuting paradox discusses mutually incompatible consequences on the work family interface, where the flexibility of remote work allows for better integration of the family and work domains but also potentially intensifies conflict by reducing the boundaries between these environments (Gajendran and Harrison, 2007).

Social support was found to moderate the relationship between work–home conflict and employee well-being. Work–home conflict therefore has less of a detrimental impact on employee well-being when employees report higher levels of social support. This finding aligns to the buffering model of social support, which posits that:

Psychosocial stress will have deleterious effects on the health and well-being of those with little or no social support, while these effects will be lessened or eliminated for those with stronger support systems (Cohen and McKay, 2020).

The role of social support is also explained through the conservation of resources theory, which proposes that people are motivated to maintain or build resources, and stress occurs when these resources are lost or diminished (Hobfoll, 1989). This theory extends to suggest that individuals with more resources, such as social support, are buffered against stress associated with work–home conflict and are more capable of gaining additional resources compared to those with fewer resources, who are more vulnerable to the stresses caused by conflicting demands.

7. Implications for practice

The advent of the COVID-19 pandemic has brought about rapid change and uncertainty to organizations and employees alike. Office-based employees were quickly thrust into work-from-home arrangements, which changed their work environments and increased reliance on technologies to facilitate the transition. This fundamentally different context necessitated research into remote worker outcomes, with this study advancing knowledge on the role of demands and resources as predictors of employee well-being.

Employee well-being, while beneficial to the employee themselves, also makes business sense. Page and Vella-Brodrick (2009) argue that employee well-being is linked to both turnover and performance and is therefore an important antecedent of organizational well-being. Employees who report low levels of well-being are more likely to leave their organizations due to job dissatisfaction (Wright and Bonett, 2007), while higher levels of well-being have been significantly associated with positive financial and non-financial organizational performance (Zakaria *et al.*, 2014). This study sheds light on several practical recommendations that can enhance employee well-being.

Firstly, the results suggest that it is imperative for organizations to actively manage work–home boundaries. Conflict between home and work demands, and spill-over from either of these domains, has a significant negative impact on reported well-being. Whilst this relationship is true for all genders, the significant association of gender to work–home conflict suggests that greater interventions are required particularly for women. One such intervention may be the provision of social support, which was found in this study to lessen the negative impact of work–home conflict on employee well-being. Organizations should provide their employees with the opportunity and channels through which to seek and receive advice, assistance and emotional support from colleagues. Steps should also be taken to develop and promote a work–family organizational culture: one where there is managerial buy-in for balancing work and family, and lower perceived negative career repercussions for employees who choose to utilise family-friendly policies (Premeaux *et al.*, 2007). Research has found that work–family cultures are associated with reduced work–family conflict, as it helps employees better balance their roles in the work and home domains (Premeaux *et al.*, 2007). In addition, organizations should develop supportive work environments, as this is perceived by employees as care by the organization for their well-being, which positively influences important job attitudes such as job satisfaction and commitment (Premeaux *et al.*, 2007).

Secondly, the results of this study suggest that autonomy, effective communication and social support are necessary resources that promote employee well-being. Practical recommendations for enhancing workplace autonomy include allowing employees flexibility in the scheduling of their work, their decision-making and work methods. Aligned to the findings of [Cañibano et al. \(2020\)](#), greater flexibility reinforces autonomy as a job resource in the remote work context by allowing employees to create their own temporal boundaries and manage their own pace and work demands. Respondents in this study appear to associate autonomy with remote work frequency, and as such organizations should consider that permitting employees to work remotely for greater portions of their workweek may increase perceptions of autonomy, which in-turn is associated with greater employee well-being. Another vital enabler to successful remote working and employee well-being is effective communication, consisting of both instrumental and informational support. Organizations should ensure that the tools, technologies and systems necessary for remote work are provided to employees, and technical support is timeously available. Informational support is increasingly necessary in the current COVID-19 context, and this should be promoted by organizations through keeping their employees updated on company policies and decisions in relation to remote work. A recent study undertaken by McKinsey found that detailed communication about organizations' remote-relevant policies allows for employees to feel supported and included, improving both employee well-being and productivity ([Alexander et al., 2021](#)). Organizations should also consider other forms of personal support through interventions such as physical and mental health initiatives and self-development opportunities which can assist employees to adapt to change and manage their health and well-being whilst working remotely.

Finally, further to these formal communications and interventions, it is also necessary that a social context be maintained that reinforces feelings of belonging and allows for informal connection with colleagues and supervisors. Social support was a significant predictor of employee well-being of the remote workforce in this study, and practical measures that can be implemented to promote connection include workplace social networking and instant messaging platforms. Engaging in informal communication with colleagues in a high-intensity remote work environment has been found to be positively associated to organizational commitment and job satisfaction, highlighting the need for organizations to consider novel approaches to facilitate interpersonal communication ([Fay and Kline, 2011](#)).

8. Limitations and directions for future research

Although this study offers insights into the relationships between job demands, resources and employee well-being, causality cannot be inferred due to the correlational study design. The cross-sectional, descriptive nature of this study allows for understanding of the variables only at a point in time, and thus potential interplay of the variables over time was not be examined. Future research should use longitudinal designs to provide more robust causal evidence about the impact of job demands and resources on employee well-being. The study participants have been selected using purposive sampling and are only employees who previously were office-based, in South Africa, who are working remotely due to the extraordinary COVID-19 context. This may limit the generalizability of the findings to other geographies, industries or work contexts. Moreover, respondents were primarily older adults, averaging 37.87 years of age, which may reduce the representativeness of the sample when compared to the remote working population.

Notwithstanding these limitations, this research has provided valuable insights into employee well-being in the COVID-19 remote work context and beyond. Future research

may build on these results by providing a more detailed understanding of *how* demands and resources impact employee outcomes, perhaps with a greater focus on the strain and motivation mechanisms of the JD-R model and both positive and negative outcomes (such as engagement and burnout). This study assessed specifically identified dependent variables. However, other job demands and resources may also be significant predictors of remote worker well-being. In addition, demographics and gender were found to be highly associated to certain of the variables under study. Future research is needed to investigate the reasons for these findings, such as whether and why social isolation and work-home conflict are more prevalent in employees of particular age groups or genders. Lastly, literature suggests that personal resources and the nature of the employee's job may be influential factors. Aligned to the views of Van Veldhoven *et al.* (2020), this indicates that further research is required to provide a more nuanced perspective on the role and effects of job demands and resources and why, when and for whom they are most detrimental or beneficial.

9. Conclusion

This study has added to the body of literature exploring employee well-being of South African remote workers in the unique COVID-19 context. Work-home conflict was a demand found to negatively influence employee well-being, whereas job autonomy, effective communication and social support were found to be necessary resources that promote employee well-being. Social support was found to act as a moderator, with work-home conflict having less of a detrimental impact on employee well-being when employees reported higher levels of social support. These findings, underpinned by the theoretical framework of the JD-R model, suggest that organizations looking to enhance the well-being of their remote workforce should implement policies and practices that reduce the demands and increase the resources of their employees. Such practical interventions may include actively managing work-home boundaries, developing and promoting a work-family organizational culture and supportive work environment, allowing employees flexibility in the scheduling of their work, their decision-making and work methods, providing adequate instrumental, informational and personal support and maintaining a workplace social context with both formal and informal communication channels.

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