

THE EXTENT OF REMOTE WORKING AND THE ROLE OF WORK CHARACTERISTICS
AND PERSONAL FACTORS IN CONTRIBUTING TO BOREOUT.



Remote working and Boreout during Covid-19: The extent of remote working and the role of work characteristics and personal factors in contributing to Boreout.

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Abstract

The sudden increase in remote working following the outbreak of Covid-19 provides a unique context to explore the relationship between remote working and employee well-being. An accumulating body of research suggests that remote working alters work characteristics which themselves may explain the relationship between remote working and employee outcomes. The present study aims to explore the association between the extent of remote working and boreout, as well as to test whether certain job characteristics (i.e. job autonomy and motivational demands) and personal characteristics (i.e. self-regulation) act as explanatory mechanisms underlying this relationship. A sample of 195 currently employed individuals ($M = 37.8$ years) completed the online questionnaire. Boreout was measured by combining the individual scores for exhaustion and boredom. Multiple regression analyses and mediation analyses were conducted to test the hypotheses. Job autonomy and motivational demands were shown to be predictors of boreout, but the degree to which an employee works remotely was not shown to be a predictor. The extent of remote working was, however, both negatively and positively indirectly related to boreout through job autonomy and motivational demands. Demonstrating how the extent of remote working contributes to employee outcomes through these mediators not only helps researchers in recognising the complexities of remote working but also educates workers and others looking to make informed choices about the trend of increased remote working. Organisations can safeguard the well-being of their employees by designing working models which manage the extent of remote working, promote greater job autonomy and limit motivational demands. These findings on remote working during Covid-19 can, beyond the immediate context of the pandemic, guide flexible work practices after the pandemic.

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Introduction

While early research linked the experience of boredom at work to higher employee levels of qualification and the monotony of tasks, more recently boredom has been shown to (i) manifest itself in a wide range of professions (Reijseger et al., 2013) and (ii) be more widespread throughout the workforce. Research suggests that boredom in the workplace is experienced by 87% of employees at some point in their working career (van der Heijden et al., 2012). While boredom at work is an experiential phenomenon, it also has an important contextual basis. The prevalence of boredom may therefore reflect certain trends and characteristics of the contemporaneous labour market and work context, as well as those of the organisations themselves. Boredom has been shown to negatively affect employees' experiences, and thus be detrimental to their well-being and performance (Toscanelli et al., 2021).

Boredom at work is defined as a negative psychological state of low work-related arousal and dissatisfaction (Reijseger et al. 2013). Boredom can develop into a phenomenon called "Boreout". This is defined as the syndrome of professional exhaustion that arises from intense boredom (Gino, 2016). High levels of boredom and exhaustion may therefore be representative of boreout. As well as exhaustion, boreout has been linked to numerous other employee outcomes, including demotivation, depression, and anxiety (Jones et al., 2018). Some researchers argue that the use of technology, typical in today's knowledge-intensive work environment can diminish the perceived value of the work itself and subsequently accelerate boredom (Wang et al., 2020a). The present study will examine how the extent of remote working (EORW) contributes to boreout. This study will also investigate the mediating and moderating factors that impact the relationship.

Remote working in times of COVID-19

Remote working is defined as a flexible work arrangement whereby employees perform their regular work tasks at a location remote from central offices, supported by the use of new technological connections (Fonner & Roloff, 2010). Before the pandemic, remote working was not a widely used practice. Following the outbreak of COVID-19 in 2020, millions of workers across the world were forced to work remotely to a considerable extent. This change was reflected in research with an estimated 50% of American workers working remotely some, or all, of the time since the outbreak (Brynjolfsson et al., 2020).

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While a large body of research exists identifying the psychological challenges and benefits of remote working (Grant et al., 2013), many of these studies predated Covid-19. Remote working pre-Covid-19 was a very different experience to now, in two significant respects. Firstly, many organisations were not ready to support the practice of working from home. Secondly, those employees who worked remotely opted to do so voluntarily despite having little prior remote working experience (Wang et al., 2020a). The development of the remote working experience during Covid-19 has been profound and has been adopted at an unprecedented scale. Now, remote work is characterised by (i) more effective and efficient use of information communication technologies (ICT), (ii) employees' familiarity with the remote working experience, and (iii) work-home interference (Wang et al., 2020b). Therefore, it would seem possible that the majority of the previously collected knowledge on remote working lacks current contextual relevance, and therefore the findings may have limited use in arriving at conclusions for the present environment.

The extent of remote working (EORW)

Pre-Covid research associates remote working with higher organisational commitment, job satisfaction, and job-related well-being (Felstead & Henseke, 2017). However, the disadvantages may outweigh these benefits, when employees engage in remote work for the majority of the working week (Golden & Veiga, 2005; Virick et al., 2010). Golden and Veiga (2005) observed an inverted U-shaped relationship between remote working and job satisfaction, indicating that extensive levels of remote working can prove dysfunctional and result in lower job satisfaction. Hence, EORW may be a significant indicator of the level of employee boreout.

Remote working and job autonomy

The “new way of working”, following the outbreak of Covid-19, means that managers and employees are regularly out of each other's physical proximity, thereby hindering traditional forms of supervision, and requiring employees to work with a greater degree of independence (Van Steenbergen et al., 2018). Due to reduced managerial oversight, remote workers can exercise greater control in conducting their job activities, and thus enjoy higher levels of job autonomy. With greater job autonomy, individuals are better able to determine the when, the how and the what concerning their tasks, imbuing them with more freedom to perform their work according to their preferences (Sardeshmukh et al., 2012). The JD-R model claims that

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higher levels of job autonomy are associated with reduced burnout and stress (Bakker et al., 2014). Employees with greater autonomy may be apt to more favourable work-related outcomes as it mitigates energy depletion and increases feelings of invigoration.

Research suggests that the higher EORW, the more autonomy that the worker experiences (Sardeshmukh et al., 2012). Job autonomy has been shown to relate positively to individual-level employee outcomes including well-being and job satisfaction, while also reducing the risk of burnout and boreout (Humphrey et al., 2007). Research has indicated that job autonomy is one of many significant mediating job characteristics that explain how remote working may be indirectly related to work-related well-being and performance (Vander Elst et al., 2017). The indication is that at lower levels of remote working, individuals may not experience as many benefits of remote working in terms of autonomy. In addition, work autonomy may reduce boredom, where increased autonomy creates a perception of growth and meaning in one's work, and allows employees to evade monotonous tasks (Abubakar et al., 2021).

Remote working and self-regulation

Previous research indicates that employee personality factors can play a crucial role in employee experiences of remote working. Specific personality factors have been shown to foster favourable job-related outcomes, including work engagement and job satisfaction, while also mitigating some negative effects (Smith et al., 2015). Self-regulation is defined as a person's ability to regulate and manage their thoughts and feelings, and adjust these to the demands of certain situations (Forgas et al., 2009). "Self-regulation" is an important personality factor in determining how employees experience remote working because workers are responsible for independently organising activities, following through with goals, and managing job tasks (Geldart, 2022). Successfully managing the new demanding environment of remote work may require employees to enact behavioural regulation strategies that structure and direct their work behaviour.

Research supports the theory that job autonomy is a work characteristic that increases the opportunity for self-regulation (Taris & Kompier, 2005). Boekaerts and Cascallar (2006) found that even the perception of job autonomy can play a central role in the regulation of work processes, as it impacts the extent to which an individual is empowered to regulate their

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work activities. Deci and Ryan (2000) proposed that an organisation with autonomy-supportive structures such as flexible work arrangements will promote employees' well-being and productivity through this enhanced offering for self-regulation. The benefits of high levels of self-regulatory skills, therefore, become more important in remote working environments that can afford employees a greater level of job autonomy. In the absence of a supervisor who contributes to the ability of employees to maintain morale and motivation on the job, employees themselves must assume greater responsibility for ensuring that their performance remains adequate, without allowing themselves to be distracted by less relevant activities (Metin et al., 2016).

Changes in work characteristics

Although researchers have long studied job autonomy as a work characteristic, some among them have begun arguing that the work characteristics typically included in traditional models should be supplemented by new additional job characteristics that have emerged since the development of these models (Väänänen & Toivanen, 2018). Recent research suggests that early models, including the Job Characteristics Model (Hackman & Oldham, 1980) are insufficient in addressing all the demands of work in the 21st century. These models focus on a limited number of specific work characteristics such as job autonomy, variety, and supportive supervision and assume that these are related to work outcomes such as well-being and performance. More recently, research has emphasised the importance of other work characteristics such as emotional, motivational and cognitive demands (Korunka & Kubicek, 2017). Given the significant shift towards remote working in recent times and the associated increase in the use of ICT, it should be recognised that job demands have been impacted. New models must consider the new altered work demands and patterns arising from these recent developments.

Motivational job demands

The concept of motivational job demands was introduced by Taris (2019), as a job characteristic important in today's work. Motivational job demands have been largely omitted in previous models. Motivational job demands refer to the degree to which performance expectations of employees are based on (i) their ability to regulate their efforts in work by setting goals to be achieved, (ii) how much effort they exert in completing a task, and (iii) how persistently they work on the task.

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Self-regulatory skills play a critical role in meeting the motivational demands of a job because achieving adequate employee performance necessitates a degree of self-regulation. Individuals with higher self-regulatory skills will manage motivational demands more effectively, thus resulting in more positive outcomes (e.g. lower levels of boreout) (Taris & Hu, 2020). Therefore, self-regulatory skills may strengthen the effect of motivational demands on employee outcomes. Given the surge in remote working due to Covid-19, there is a greater need for employees to motivate themselves while at work. Self-regulatory skills are important in modern jobs due to the increasing emphasis on personal initiative, and self-management, placing a greater burden on workers to manage their goal-directed tasks (Lord et al., 2010). Therefore, the present study will examine motivational demands as a mediator of the relationship between EORW and boreout, and whether self-regulation moderates the relationship.

The present study

The present study aims to examine the relationship between EORW and boreout and to test whether job characteristics (i.e. motivational demands and job autonomy) may explain this relationship. The role of self-regulation in moderating these relationships will also be investigated. This analysis will further contribute to the existing body of research on the effect of remote working on employee outcomes, whilst also addressing the subject in an extraordinary context where remote working is operating at an unprecedented level.

It was recently suggested by Copková (2021) that the excessive stress workers have experienced during Covid-19 means that understanding the factors leading to boreout has a greater significance. Research findings on remote working during Covid-19 can, beyond the current context of Covid-19, assist flexible work practices after the crisis. Sytch and Greer (2020) claim that post-pandemic work will largely be “hybrid”(i.e. working remotely to an extent), meaning understanding the effect of EORW and the mechanisms through which it impacts employee outcomes will have important implications for developing remote/hybrid working models. Although research indicates that the impact of remote working on employee well-being depends on work characteristics few researchers have examined the potential mediators and moderators of remote work. This study aims to contribute to the limited literature on this topic, specifically focusing on the mediators and moderators mentioned above and their impact on the current, largely hybrid, work environment.

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Research questions

In seeking to explore this topic some key issues will be addressed. Specific questions relating to motivational demands, job autonomy, self-regulation, and boreout are discussed below.

Does EORW have a negative direct effect on boreout? Further, is this effect moderated by self-regulation, such that greater self-regulation may reduce levels of boreout?

Do motivational demands and job autonomy mediate the relationship between EORW and boreout? And to what extent does self-regulation moderate the relationship between both motivational demands and job autonomy, in terms of their impact on boreout? (See Figure 1).

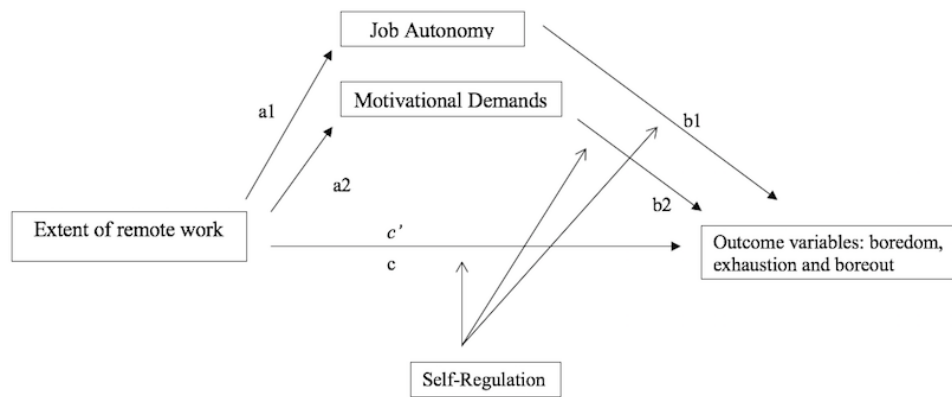
The following **hypotheses** will be tested:

1. (a) Motivational demands mediate the relationship between the extent of remote working and boreout, such that greater remote working will result in higher motivational demands, which in turn will be associated with less boreout;
(b) Self-regulation will moderate the relationship between motivational demands and boreout, such that greater self-regulation will strengthen the effect of motivational demands on boreout;
2. (a) Job autonomy will mediate the relationship between the extent of remote working and boreout, such that greater remote working will result in higher job autonomy, which in turn will be associated with less boreout;
(b) Self-regulation will moderate the relationship between job autonomy and boreout, such that greater self-regulation will strengthen the effect of job autonomy on boreout.

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Figure 1

Conceptual Model Outcome variables (boreout, boredom, and exhaustion)



Methodology

Participants and Design

To study the research questions we conducted an online cross-sectional study. The study plan was approved by the Faculty Ethics Review Board (Approval number: 22-0713) at Utrecht University (Appendix A). Participants were recruited by word of mouth, LinkedIn, and Survey Swap (<https://surveyswap.io>). The study was delivered through Qualtrics, an online survey software (<https://www.qualtrics.com/>). Participants were informed, through an information sheet, of the study's purpose to investigate the relationship between EORW and boreout, and the mediating and moderating factors in the relationship (Appendix B). The information sheet detailed the procedures of the study and provided contact information. Next, a consent form was presented to the participants which guaranteed participants anonymity and confidentiality (Appendix C). To progress with the study, participants were required to give informed consent. Finally, each participant was asked to complete a series of questionnaires (Appendix D). On average, the survey took 10-15 minutes to complete. The responses were collected once the participant completed the survey. The sample consists of individuals who are currently employed (internship/part-time/full-time). Participants came from a variety of job positions and organisations.

The required sample size was determined by a power analysis using G-power program (G*Power 3.1.9.6; Faul et al., 2009). A prior power analysis detected that a total sample size of 196 would provide 80% power to detect the interaction between the independent variables and outcome variables. A total of 195 participants (123 females; $M = 37.8$ years, $SD = 15.6$ years) completed the study. Of the demographic variables as shown in Table 1, the majority of the participants worked remotely occasionally (82.6%); with 8.2% working remotes less than one day a week; 7.2% working remotely one day a week; 14.4% two days a week; 17.9% three days a week; 14.4% four days a week; 20.5% always working remotely. Most participants worked remotely voluntarily (85.7%). 38.5% of participants' organisational tenure was less than a year.

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Table 1

Demographic and Characteristics of Participants (N = 195)

	Variable	n	%
Gender	Male	71	36.4
	Female	123	63.1
	Prefer not to say	1	0.5
Education level	Secondary school or equivalent	24	12.3
	Bachelor's Degree	94	48.2
	Master's Degree	74	37.9
	PhD/Doctorate	3	1.5
Organisational tenure	Less than a year	75	38.5
	1-4 years	52	26.7
	5-10 years	24	12.3
	More than 10 years	44	22.6
EORW	I never work from home	34	17.4
	Less than 1 day a week	16	8.2
	1 day a week	14	7.2
	2 days a week	28	14.4
	3 days a week	35	17.9
	4 days a week	28	14.4
	5 days a week	40	20.5
Reason for remote working	Voluntary	138	85.7
	Involuntary	23	14.3

Measures

Boreout was operationalised by summing the score of boredom and exhaustion. The score for exhaustion and boredom showed a high and significant correlation ($r = .65, p < .01$). Boredom was measured using the 8-item Dutch Boredom Scale (DUBS) developed by Reijseger et al. (2013), in which a five-point scale was included with “1(*Never*) to 5(*Always*)”. A sample item for the DUBS is “I feel bored at my job”. The Cronbach’s alpha for this scale was .86. The exhaustion subscale of Maslach’s Burnout Inventory-General (MBI) Survey (Schaufeli et al., 1996) was used to measure exhaustion. A sample item for the subscale is “I feel emotionally drained from my work”. These items were rated on a 7-point Likert scale ranging from “0(*Never*) to 6(*Every day*)”. The items of the exhaustion subscale of the MBI had high internal reliability ($\alpha = .90$).

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The extent of remote working (EORW). Based on previous research (Virick et al., 2010), EORW was measured with a single item: “How many days a week do you on average work from home?” (1= *I never work from home*; 2= *Less than 1 day a week*; 3= *1 day a week*; 4= *2 days a week*; 5= *3 days a week*; 6= *4 days a week*; 7= *5 days a week*).

Motivational job demands were measured using the 11-item Dutch Mind@Work scale (Taris, 2019). Items such as “My job requires me to set my own goals” were rated on a 5-point Likert scale with “1(*Never*) to 5(*Always*)”, and a final score was calculated by computing the mean. The scale has high internal reliability ($\alpha = .93$).

Job autonomy. The Work Design Questionnaire (Morgeson & Humphrey, 2006) is a nine-item scale that measures job autonomy. Items were rated on a 5-point Likert scale “1(*Strongly disagree*) to 5(*Strongly agree*)” and averaged to calculate the final score. A sample item of the scale is “The job allows me to plan how I do my work”. The scale demonstrates excellent internal reliability ($\alpha = .93$).

Self-regulation was measured using the 10-item Self-Regulation Scale (SRS; Schwarzer et al., 1999). Items such as “When I worry about something, I cannot concentrate on an activity” were rated on a four-point scale with “1(*Not at all true*) to 4(*Completely true*)”. The final score was calculated by averaging the individual scores on each item ($\alpha = .80$).

Control variables. Several demographic variables were included in the survey based on their potential link to study variables. Participants were asked their background information, including questions regarding age, gender, and education. Organisational tenure and the voluntariness of remote working was controlled. Previous research linked these variables to remote workers’ well-being and productivity (Gajendran & Harrison, 2007).

Statistical analysis

IBM’s Statistical Program for Social Sciences (SPSS) Version 26 was used for descriptive statistics, correlations, and regression analyses. The macro PROCESS (Hayes, 2017), from SPSS, was used to analyse the mediation model shown in Figure 1. Before testing the hypothesised conceptual model, we evaluated the factor structure of our measurements through factor analysis. Preliminary analyses were performed to ensure that there was no

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violation of the assumption of normality, multicollinearity, and linearity. The analysis found no violations of these assumptions. Preliminary factor analyses showed that the items for each scale had high loadings onto Factor 1, and thus the one-factor model was accepted for these items. High Cronbach's alphas for each scale further support the finding that the items of each concept constitute one scale (See Table 2).

Table 2

Means, standard deviations, reliabilities (on the diagonal), and bivariate correlations for the extent of remote working, employee outcomes, work characteristics, and personal factors.

Study Variable	Scale	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1. EORW	1-7	4.32	2.12	(na)	-0.03	-.13	-.11	-.27**	.28**	.01
2. Boredom	1-5	1.92	0.64		(.86)	.65**	.82**	-0.12	-.25**	-.46**
3. Exhaustion	0-6	3.00	1.46			(.90)	.97**	-.14*	-.29**	-.36**
4. Boreout		2.46	0.97				(.65) ^a	-.15*	-.30**	-.42**
5. Motivational Demands	1-5	3.25	1.00					(.93)	.70**	0.06
6. Job Autonomy	1-5	3.84	0.87						(.93)	.16*
7. Self-Regulation	1-4	2.86	0.46							(.80)

^aCorrelation between boredom and exhaustion

na, not applicable (single item)

* $p < 0.05$

** $p < 0.01$

** $p < 0.001$

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Results

Regression analysis

Five separate multiple linear regressions were carried out to investigate whether the covariates and independent variables predict work characteristics and employee outcomes.

Job autonomy and motivational demands. Two multiple regressions were conducted to determine whether the covariates and EORW predict work characteristics (See Table 3). Based on the R^2 change tests, the results of model 2 for both analyses will be discussed. Of the covariates only age predicted both job autonomy ($\beta = .23, p = .03$) and motivational demands ($\beta = .28, p = .01$). EORW significantly predicted job autonomy ($\beta = .25, p < .001$) and motivational demands ($\beta = .21, p = .003$), where more remote working was associated with greater job autonomy and motivational demands.

Table 3

Results of multiple regression for job autonomy and motivational demands (standardised beta's)

	Job autonomy		Motivational demands	
	Model 1	Model 2	Model 1	Model 2
Age	.28*	.23*	.32**	.28*
Gender	-.04	-.05	-.06	-.07
Education level	-.02	-.07	.14	.10
Organisational tenure	.02	.04	-.04	-.02
EORW		.25***		.21**
R^2	.09**	.15***	.12***	.16**
R^2 Change	.09**	.06***	.12***	.04**

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$

Boredom. The results of the second regression, with boredom as the outcome variable, are presented in Table 4. The model summary indicated that Model 1 including the covariates, and Model 2 which included both the covariates and the predictor variables significantly predicted a significant additional part of the variance in boredom; the more complex models 3-5 did not. Thus, we will focus on Model 2 as the findings address our hypotheses. The

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results of the regression indicated that model 2 explained 36.5% of the variance and that the model was a significant predictor of boredom ($R^2 = .365$, $F(7, 153) = 12.59$, $p < .001$). Firstly, among the covariates age ($\beta = -.45$, $p < .001$) significantly predicted boredom, whereby the older the participant the less boredom experienced. Secondly, self-regulation ($\beta = -.31$, $p < .001$) and job autonomy ($\beta = -.22$, $p = .02$) added statistically significantly to the prediction of boredom. Individuals who perceived more job autonomy in their work and practiced self-regulation reported lower levels of boredom. Finally, the latter models in the multiple regression (i.e. Model 3 and 4), including EORW and the interaction effects between self-regulation and the independent variables were insignificant. Therefore, hypotheses 1b and 2b were unsupported.

Table 4

Results of the multiple regression for boredom (standardised beta's)

	Model 1	Model 2	Model 3	Model 4	Model 5
	Block 1	Block 1+2	Block 1+2+3	Block 1+2+3+4	Block 1+2+3+4+5
Age	-.54***	-.45***	-.44***	-.42***	-.41***
Gender	-.09	-.11	-.11	-.11	-.11
Education level	.02	-.02	-.02	-.02	-.02
Organisational tenure	.09	.09	.08	.05	.05
Job autonomy (JA)		-.22*	-.22*	-.27**	-.28**
Motivational Demands (MD)		.15	.15	.11	.12
Self-regulation (SR)		-.31***	-.32***	-.32***	-.30***
EORW			-.04	-.05	-.07
JA*SR				.12	.12
MD*SR				.12	.11
RW*SR				.03	.03
Voluntariness of RW					-.13*
R^2	.23***	.37***	.37	.40	.41*
R^2 Change	.23***	.14***	.00	.03	.02*

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$

Exhaustion. A third multiple regression analysis was conducted and the results are displayed in Table 5. The model summary showed Model 1 and Model 2 added significantly to the prediction of exhaustion. We will focus on Model 2 as the model includes both the covariates and the variables important to our hypotheses. The model was statistically significant ($R^2 =$

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.213, $F(7, 153) = 5.910$, $p < .001$) and accounted for 21.3% of the variance in exhaustion.

Firstly, of the covariates, age was a significant predictor of exhaustion ($\beta = -.031$, $p = .003$), whereby older age was associated with less exhaustion. Secondly, self-regulation ($\beta = -.76$, $p = .002$) and job autonomy ($\beta = -.40$, $p = .036$) added statistically significantly to the prediction of exhaustion. Individuals who perceived more job autonomy in their work and engaged in more self-regulatory behaviours reported lower levels of exhaustion. Finally, the latter models (i.e. Model 3 and 4) in the multiple regression, including EORW and the interaction effects between self-regulation and the independent variables were not significant. Therefore, hypothesis 1b and 2b were not supported.

Table 5

Results of the multiple regression for exhaustion (standardised beta's)

	Model 1 Block 1	Model 2 Block 1+2	Model 3 Block 1+2+3	Model 4 Block 1+2+3+4	Model 5 Block 1+2+3+4+5
Age	-.42***	-.35**	-.34**	-.33**	-.32**
Gender	-.09	-.11	-.10	-.11	-.11
Education level	-.05	-.09	-.09	-.08	-.08
Organisational tenure	.13	.13	.12	.12	.12
Job autonomy (JA)		-.21*	-.21*	-.19	-.20
Motivational Demands (MD)		.17	.17	.16	.17
Self-regulation (SR)		-.24**	-.25**	-.25**	-.23**
EORW			-.06	-.04	-.06
JA*SR				-.05	-.05
MD*SR				.01	.00
RW*SR				-.06	-.06
Voluntariness of RW					-.13
R^2	.12**	.21**	.22	.22	.24
R^2 Change	.12**	.09**	.00	.00	.02

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$

Boreout. The results for the final regression, with boreout as the outcome variable, are shown in Table 6. The model summary indicated that Model 1 including the covariates, and Model 2 which included both the covariates and the predictor variables significantly predicted an additional part of the variance in boreout; the more complex models 3-5 did not. We will

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focus on Model 2 as the model includes both the covariates and the variables addressed in our hypotheses. The results of the regression indicated that the model explained 29.8% of the variance and that the model was a significant predictor of boreout ($R^2 = .298$, $F(7, 153) = 9.27$, $p < .001$). Firstly, among the covariates, age was a significant predictor of boreout ($\beta = -.025$, $p < .001$), whereby older age was associated with reduced boreout. Secondly, self-regulation ($\beta = -.29$, $p < .001$) and job autonomy ($\beta = -.23$, $p = .015$) added statistically significantly to the prediction of boreout. Participants who perceived more job autonomy in their work and practiced more self-regulation reported lower levels of boreout. Finally, the latter models (i.e. Model 3 and 4) in the multiple regression, including EORW and the interaction effects between self-regulation and the independent variables were not significant. Therefore, hypotheses 1b and 2b were unsupported.

Table 6

Results of the multiple regression for boreout (standardised beta's)

	Model 1	Model 2	Model 3	Model 4	Model 5
	Block 1	Block 1+2	Block 1+2+3	Block 1+2+3+4	Block 1+2+3+4+5
Age	-.49***	-.41***	-.40***	-.39**	-.38**
Gender	-.10	-.12	-.12	-.12	-.12
Education level	-.03	-.08	-.07	-.07	-.07
Organisational tenure	.13	.13	.12	.11	.11
Job autonomy (JA)		-.23*	-.23*	-.23*	-.24*
Motivational Demands (MD)		.18	.18	.16	.17
Self-regulation (SR)		-.29***	-.29***	-.30***	-.27***
EORW			-.06	-.05	-.07
JA*SR				.01	.01
MD*SR				.04	.04
RW*SR				-.03	-.04
Voluntariness of RW					-.15*
R^2	.17***	.30***	.30	.30	.32*
R^2 Change	.17***	.12***	.00	.00	.02*

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$

Given that autonomy and motivational demands were affected by the extent of remote working, and autonomy predicted the outcome variables, further analysis was conducted to see whether the indirect/mediating effects were significant.

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Mediation analyses

A bootstrap analysis (5000 samples) was used in PROCESS v4.1 Model 4 (Hayes, 2017) to assess the indirect effect of EORW on boreout, boredom, and exhaustion, through job autonomy and motivational demands. The results of the analysis are presented in Figure 2. The index of mediation indicated that *job autonomy* mediated the indirect effect of EORW on both boredom ($b = -.021$, $SE = .009$, 95% CI $[-.041, -.005]$), exhaustion ($b = -.060$, $SE = .026$, 95% CI $[-.116, -.016]$) and boreout ($b = -.04$, $SE = 0.017$, 95% CI $[-.075, -.012]$). The results suggest that more remote working is associated with higher reported job autonomy, subsequently associated with lower levels of boreout, boredom and exhaustion. Therefore, hypothesis 2a was supported.

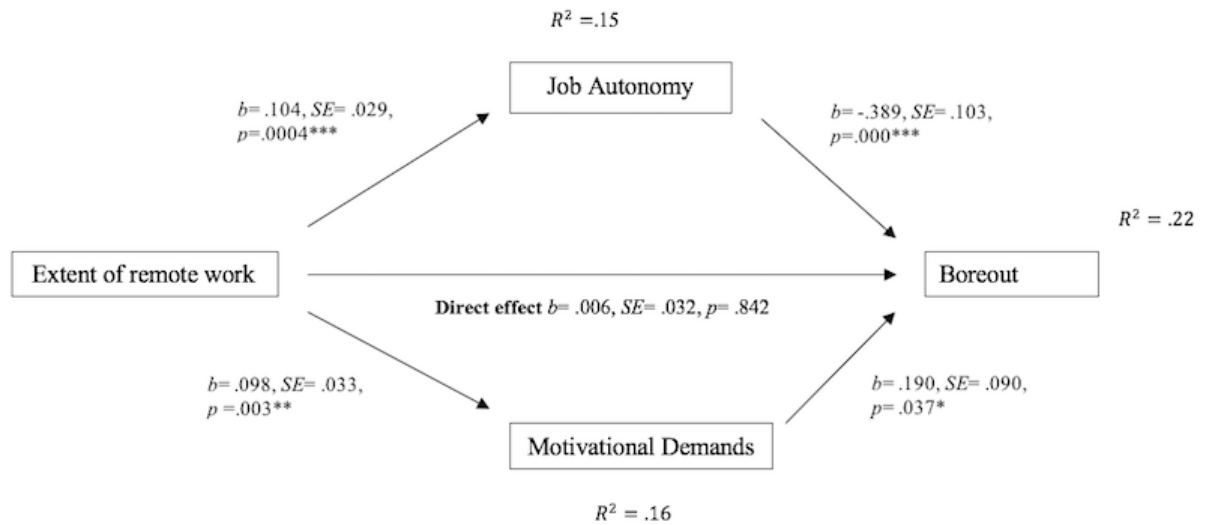
The indirect effect of *motivational demands* in the relationship between EORW, and boredom ($b = .011$, $SE = .006$, 95% CI $[-.0002, .024]$) and exhaustion ($b = .027$, $SE = .016$, 95% CI $[-.0004, .062]$) was not significant. However, motivational demands was found to mediate the relationship between EORW and boreout ($b = .019$, $SE = .010$, 95% CI $[-.002, .042]$). Higher motivational demands are associated with increased boreout. Therefore, hypothesis 1a was not supported as motivational demands appear to mediate the relationship between EORW, and boreout, except where higher motivational demands were associated with higher boreout. This finding was further supported by the results of the regression which found near significant results for the relationship between motivational demands and boreout. Furthermore, motivational demands were not significant mediators in the relationship between EORW and the separate scores of exhaustion and boredom.

There was no direct effect of EORW on the outcome variables, i.e. this association is fully mediated by job autonomy and in the case of boreout, motivational demands.

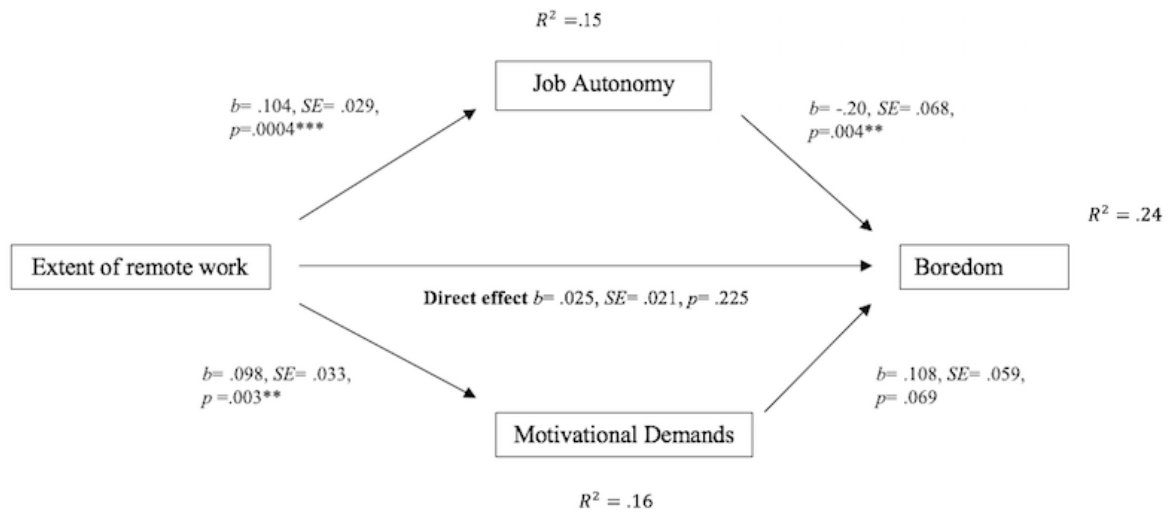
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Figure 2

a) *Results of the PROCESS model 4 analysis of boreout*

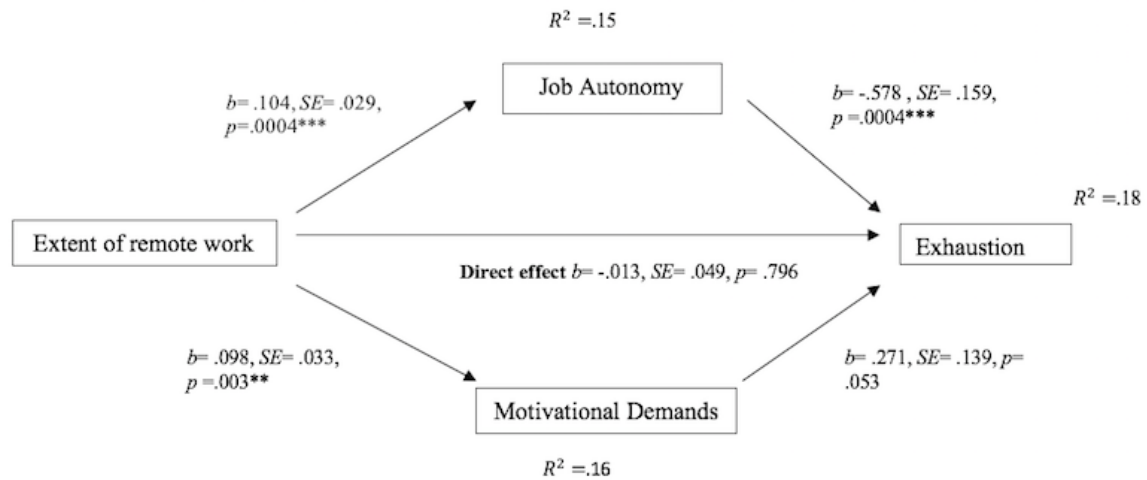


b) *Results of the PROCESS model 4 analysis of boredom*



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c) Results of the PROCESS model 4 analysis of exhaustion



Exploratory analyses: voluntariness of remote working

In the preceding analyses, the degree to which employees worked remotely voluntarily was not taken into account. Yet, it seems possible that this concept would predict the outcomes as well, possibly affecting the estimates of the other study concepts on the outcomes. Therefore, an exploratory analysis was conducted to determine whether the voluntariness of remote working is a predictor of the outcome variables. Although voluntariness of remote working was a significant predictor of boredom and boreout (See Table 6), the addition of the variable in the model only accounted for an additional 2% of the variance. Moreover, the effects on boredom ($\beta = -.13$, $p = .04$) and boreout ($\beta = -.15$, $p = .04$) were small. In summary, the analysis indicated that including voluntariness of remote working does not improve on model 4 and does not alter the main conclusions of the analysis.

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Table 7

*Results of exploratory regression analysis including voluntariness of remote working
(standardised beta's)*

	Boredom		Exhaustion		Boreout	
	Model 4	Model 5	Model 4	Model 5	Model 4	Model 5
Age	-.42***	-.41***	-.33	-.32**	-.39**	-.38**
Gender	-.11	-.11	-.11	-.11	-.12	-.12
Education level	-.02	-.02	-.08	-.08	-.07	-.07
Organisational tenure	.05	.05	.12	.12	.11	.11
Job Autonomy (JA)	-.27**	-.28**	-.19	-.20	-.23*	-.24*
Motivational Demands (MD)	.11	.12	.16	.17	.16	.17
Self-regulation (SR)	-.32***	-.30***	-.25**	-.23**	-.30***	-.27***
EORW	-.05	-.07	-.04	-.06	-.05	-.07
JA*SR	.12	.12	-.05	-.05	.01	.01
MD*SR	.12	.11	.01	.00	.04	.04
RW*SR	.03	.03	-.06	-.06	-.03	-.04
Voluntariness of RW		-.13*		-.13		-.15*
R^2	.40	.41*	.22	.24	.30	.32*
R^2 Change	.03	.02*	.00	.02	.00	.02*

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$

Discussion

The COVID-19 outbreak created a unique context in which many employees were working extensively from home. The value of the early knowledge on remote working may now be reduced due to the less widespread nature of remote working before the pandemic. To have a better understanding of the subject, it is necessary to conduct research so as to examine the relationship between EORW and employee outcomes during the COVID-19 period.

Specifically, the purpose was to address (i) the mediating effects of job autonomy and motivational demands, and (ii) the moderating effect of self-regulation on the relationship between EORW, and the outcome variables (i.e. exhaustion, boredom, and boreout). The five most important findings are discussed below.

Remote working and employee outcomes

Unexpectedly, EORW (operationalised as the number of days working from home a week) did not directly relate to boreout, exhaustion, and boredom. Previous research on the impact of remote working on employee functioning/output is largely inconsistent (Golden & Veiga, 2005). One stream of research found that EORW was associated with greater job satisfaction, while another stream found that extensive levels of remote working can be dysfunctional and result in lower satisfaction (Golden & Veiga, 2005). Our results contradict the studies which demonstrate a direct relationship between EORW and both lower levels of exhaustion and greater levels of work engagement (Sardeshmukh et al., 2012). The reason for these differing outcomes may stem from the underlying explanatory mechanisms that likely hold contrasting indirect effects of EORW on employee outcomes. As an example, remote working while reducing employees' boreout through greater job autonomy may also increase it through motivational demands.

Mediating effects of job autonomy

The assumption that job characteristics are the underlying explanatory mechanisms in the relationship between remote working and employee outcomes was largely supported by our results. In contrast to EORW, the tests of the mediation effects found that job autonomy did predict employee outcomes. Higher levels of job autonomy translated to lower levels of boreout, boredom, and exhaustion. This finding is consistent with the Job Demands-Resources model (JD-R), (Bakker et al., 2014), in which job characteristics such as job autonomy stimulated work-related well-being, thereby reducing negative employee

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outcomes. Abubakar et al. (2022) offered further support that autonomy may negatively affect boreout. In the questionnaire, employees who worked remotely for a greater proportion of the week reported higher job autonomy, and reduced levels of boreout, boredom, and exhaustion. Our findings support previous research (e.g. Sardeshmukh et al., 2012) demonstrating that with greater autonomy from more remote working individuals can perform their work activities according to their preferences, which can reduce negative outcomes. In the present study, these negative outcomes included boreout, boredom and exhaustion. It also corresponds with other studies that highlight the positive relationship between remote work and job autonomy (Vander Elst et al., 2017).

Mediating effect of motivational demands

Unsurprisingly, EORW is positively correlated with motivational demands, whereby more remote working is associated with higher motivational demands. Few studies exist on the relationship between remote working and motivational demands. However, some researchers found that remote working alters job demands (Sardeshmukh et al., 2012). Employees' separation from the workplace changes the performance of their work and the nature of their job demands. Modern jobs, and the growing practice of remote working, place a heavier demand on employees to manage and motivate themselves when at work (Taris & Hu, 2020). Although more remote working was associated with higher motivational demands, motivational demands only mediated the relationship with boreout.

The present study is the first to examine the specific role of motivational demands in mediating the relationship between EORW and employee outcomes, including boredom, exhaustion, and most notably boreout. Taris and Hu (2020) suggest that motivational demands are a "challenging demand", linking high levels of motivational demands to positive outcomes, including work engagement and innovative behaviour. Taris and Hu (2020) found less evidence to indicate motivational demands to be a "hindering demand", i.e. finding high motivational demands only being associated only with the negative outcome, obsessive passion. We consider that our findings may shed more light on the issue of distinguishing motivational demands as a challenge or hindrance, providing evidence to suggest it is a hindrance. Therefore, remote working increases motivational demands, which act as a hindering rather than challenging demand, subsequently leading to higher levels of boreout. Interestingly, when boreout was separated into its two components (i.e. exhaustion and

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boredom) no evidence was found to support a mediating role. In summary, the high effort associated with meeting the motivational demands may lead to increased boreout.

Self-regulation as a moderator

Our results indicate that self-regulation was not a moderator of the relationship between EORW, job characteristics, and employee outcomes. While previous research has examined self-regulation in specific problem domains, including health and education, few studies have examined it in the workplace. Given the limited research in this area, no scale exists to measure self-regulation in the work environment. In this study, the Self-Regulation Scale (Schwarzer et al., 1999) was employed to measure self-regulation. However, it is important to note that SRS cannot assess all aspects of behavioural self-regulation (i.e. dispositional and situational components) (Carver, 2004), rather it was developed as a brief measure of one key component of self-regulation, namely, the dispositional component/ attention control. Consequently, from a psychometric perspective, it would be desirable to include more items to provide a broader assessment of self-regulation. The situational component (e.g. the environment and experiences) of self-regulation may play an important role in self-regulation in remote working during Covid-19 as this perspective posits that self-regulatory actions are processes that extend over time and across changing circumstances. Future research could use the Self-Regulation Questionnaire (which includes items to also measure the situational component) which may be more important in the context of Covid-19 rather than focusing on self-regulation only as a personality variable (Diehl et al., 2006).

The relevance of exhaustion/boredom and boreout

Boreout research is still in its early developmental stage, and consequently few validated tools exist to measure the construct in the workplace. However, the notion of boreout has gained more attention in recent research which aims to build on the work of previous researchers, for instance, Stock (2015). The present study introduces a new approach by measuring boreout using boredom and exhaustion as the two scale components. Boreout was first defined by Gino (2016) as a syndrome of professional exhaustion that arises from intense boredom. Earlier studies had not considered these concepts together. This study found a high correlation between the measures of boredom and exhaustion. The outcome variables (i.e. boreout, boredom, and exhaustion) appear to work largely in the same way, yet there is an added value to measuring all three outcomes. Although boredom is a sub-component of boreout, these concepts are both

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related and distinct at the same time (Abubakar et al., 2022). Due to the scarcity of research on the dimensions and measures of boreout, additional research should further examine these components and other possible components of boreout, and assess the psychometric properties of scales including these components.

Limitations

The importance of this study lies in the way it has answered several calls that have been made in previous literature regarding remote working. Firstly, the call to focus on how EORW working rather than on remote working as a “yes or no” construct contributes to employee well-being. Secondly, the hypotheses assessed the underlying mechanisms through which remote working contributes to employee outcomes (Sardeshmukh et al., 2012). Finally, the study examined largely under-researched topics, including (i) boreout, and (ii) boreout as an outcome of remote working.

Although this research offers new insights into the complex effect of remote work on employee outcomes, there are some limitations. These are the result of it being a cross-sectional study, which collected data using self-report questionnaires and an acknowledgment of the unknown impact of the voluntariness of remote working. The cross-sectional nature of this study prevents us from establishing causality for the relationships under investigation. Considering this limitation, future research using longitudinal designs will be necessary to investigate the direction of the relationships. The data was collected using self-report questionnaires. This increases the risk of (i) the common method bias, and (ii) inflating the magnitude of the relationships between the variables (Conway & Lance, 2010). To resolve this issue, future studies could incorporate additional objective measures (e.g. using official records to determine EORW), or the collection of data from multiple sources to evaluate employee outcomes (e.g. supervisors or physician’s evaluation). Exploratory analyses found that the voluntariness of remote working was relevant to the outcome variables. Voluntary remote working may support the perception of autonomy and motivate employees by giving them more control over their work, subsequently resulting in more positive outcomes. Therefore, future research should pay more attention to voluntariness of remote working and employ a larger sample.

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Theoretical implications

Overall, in the present study, the job characteristics, job autonomy, and motivational demands but not EORW, were found to be proximal predictors of work-related outcomes, specifically boreout. Our findings correspond with stress theories and previous research which propose that higher levels of job autonomy are linked to more favourable employee outcomes. Abubakar et al. (2022) suggested that autonomy negatively impacts boreout. Following the Job Demands-Resources model (Bakker et al., 2014), job resources such as job autonomy were found to stimulate work-related well-being (i.e. reduced boreout). In contrast, job demands, such as the newly introduced concept of motivational demands increase boreout. Using the JD-R (Bakker et al., 2014) framework and supported by Sardeshmukh et al. (2012), our findings suggest that EORW impacts boredom, exhaustion, and boreout through alterations in job demands and job resources.

Due to the changes (e.g. physical and cognitive) in how employees experience their work environment while working remotely, important job characteristics may be changed. This reflects work done by Taris and Hu (2020) who claimed that contemporary jobs, and the increased practice of remote working, required employees to motivate themselves in their job. Our findings suggest that employees who work remotely more extensively experience higher job autonomy and motivational demands. Therefore, similar to past research, the alterations (i.e. physical and cognitive) in how individuals experienced their work impacted employee outcomes, including exhaustion, boredom and boreout (Sardeshmukh et al., 2012). By examining the impact of EORW in terms of job demands and job resources, we can make inferences as to how EORW can alter some aspects of the job. One example is that we found a greater degree of remote working is associated with higher job autonomy and more positive employee outcomes.

Practical implications

The environment in which our research was conducted was unprecedented, namely the Covid-19 pandemic. This was to a large degree the purpose of our research, as it provided us with a unique opportunity to investigate theoretical gaps and advance existing theory relevant to remote working and employee outcomes. Despite the difference in context, insights from remote working arising during Covid-19 should provide important lessons for the future. In the post-pandemic era, organisations are moving toward/ adapting to hybrid working. The research

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findings can provide great assistance to organisations in managing remote work effectively. They provide a valuable update to the largely positive view of pre-Covid remote working literature, which otherwise might make organisations ignore the need to consider how flexible working models should be designed.

The current research highlights the importance of virtual work characteristics. Although further research is required, our findings suggest that how the job, and/or remote working is designed (i.e. the level of autonomy and motivational demands), is predictive of employee outcomes. Thus, to protect the work-related well-being of both remote workers and non-remote workers, organisations would benefit from creating a work environment that provides high levels of job autonomy. In addition, organisations should avoid practices that may provide high levels of motivational demands. The work design perspective suggests that employees may benefit from a hybrid working model, allowing them to make the most of greater job autonomy with the opportunity to partly engage in remote working, while supported by increased face-to-face supervision by their managers in the office. This study offers insights that will help contain boreout in remote workers by designing a working model which controls EORW and subsequently the level of job demands and resources. Ultimately, remote working in the post-Covid-19 era can be regarded as beneficial, if organisations pay attention to work design in developing their remote working model.

Conclusion

The present study found that EORW during Covid-19 was not a proximal predictor of boreout, but job autonomy and motivational demands were. These findings are important beyond the context of Covid-19 in guiding the design of flexible work arrangements. The positive effect of EORW is expressed through greater job autonomy. The negative effect of EORW revolves around increased motivational demands. Therefore, we suggest that, for organisations and employees to reap the benefits of remote working in terms of boreout, a work environment that includes high levels of autonomy, and perhaps lower levels of motivational demands should be created.

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Appendices

Appendix A

Email confirming ethical approval

P.O. Box 80140, 3508 TC Utrecht The Board of the Faculty of Social and Behavioural Sciences Utrecht University P.O. Box 80.140 3508 TC Utrecht		Faculty of Social and Behavioural Sciences Faculty Support Office Ethics Committee Visiting Address Padualaan 14 3584 CH Utrecht
Our Description	22-0713	
Telephone	030 253 46 33	
E-mail	FETC-fsw@uu.nl	
Date	04 March 2022	
Subject	Ethical approval	

ETHICAL APPROVAL

Study: Is remote work during COVID-19 increasing Bore-out among employees? On the extent of remote work and the role of work characteristics and personal factors in its effect on Bore-out.

Principal investigator: S. Maher

Supervisor: Toon Taris

The study is approved by the Ethical Review Board of the Faculty of Social and Behavioural Sciences of Utrecht University. The approval is based on the documents sent by the researchers as requested in the form of the Ethics committee and filed under number 22-0713. The approval is valid through 31 August 2022. The approval of the Ethical Review Board concerns ethical aspects, as well as data management and privacy issues (including the GDPR). It should be noticed that any changes in the research design oblige a renewed review by the Ethical Review Board.

Yours sincerely,

Peter van der Heijden, Ph.D.
Chair

This is an automatically generated document, therefore it is not signed

THE EXTENT OF REMOTE WORKING AND THE ROLE OF WORK CHARACTERISTICS
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Appendix B
Information sheet



Utrecht University Faculty of Social & Behavioural
Sciences

Heidelberglaan 1,
3584 CS Utrecht,
The Netherlands

T: +31 30 253 4700

Information Sheet

My name is Sarah Maher and I am currently completing my postgraduate research project in the Faculty of Social and Behavioural Sciences in Utrecht University, under the supervision of Prof. dr. Toon Taris (A.W.Taris@uu.nl). This study aims to explore the association between remote working and boreout and the role of work characteristics and personal factors in this relationship.

What is this research about?

This research aims to examine the relationship between the extent of remote working and boreout, and whether job autonomy and motivational demands are mediating factors in the relationship. The study will also examine the moderating role of the personal factor, self-regulation in the relationship.

What happens if I participate?

It is important to note that participation in this study is voluntary. It is possible to withdraw from this study, at any stage, without any consequences. To do so click the “End Study” button at the end of each webpage.

Should you consent to take part in this study you will be asked to provide some details about yourself (e.g. age, gender, education level, and remote working experience). Following the initial survey questions, you will be asked to complete a series of questionnaires relating to boreout, motivational demands, job autonomy, and self-regulation. After completing the questionnaires a debriefing sheet will appear on screen to conclude the study. This will provide

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you with a final opportunity to withdraw your participation should you decide to do so. We estimate that this study will take no more than 30 minutes.

How will the data be used?

The findings will be used in the write-up of my postgraduate thesis. The data being collected in the study is only for research purposes.

Benefits of taking part in this research:

While no compensation is given for participation in this study, taking part may contribute to the understanding of how people experience remote working and whether it contributes to boreout in work settings.

Where will my data be stored and what will happen to it?

The data collected from this study will be stored securely on a password-protected and encrypted device. It will not be possible for you to be identified from any of the data stored in this file. No IP addresses or location data are recorded during this study. The survey responses are anonymous, and each participant is assigned a participant identification number. At no stage in our analysis of the findings will we be reporting on one individual response.

Contact details:

Sarah Maher (postgraduate researcher)

Email: s.maher@students.uu.nl

Toon Taris (supervisor)

Email: A.W.Taris@uu.nl

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Appendix C
Consent form

If you would like to participate in this study, you must provide informed consent by selecting 'I agree' for the following statements:

- I am 18 years of age or older
- I have read and understood the Information Sheet for this study. I am satisfied that I understand the nature and purpose of the research, the study duration, what is required of me.
- I understand that my participation is entirely voluntary and that I will receive no compensation for my time. I am aware that I can withdraw from the study at any stage and there will be no negative consequences.
- I consent to the storage and usage of my data which is described in the Information Sheet.

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Appendix D Questionnaire

Boreout

	Never	Sometimes	Frequently	Often	Always
1. At work, time goes by very slowly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. I feel bored at my job	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. At work, I spend my time aimlessly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. At my job, I feel restless	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. During work time I daydream	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. It seems as if my working day never ends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. I tend to do other things during my work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. At my work, there is not so much to do	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Never	A few times a year or less	Once a month or less	A few times a month	Once a week	A few times a week	Every day
1. I have become less interested in my work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. I have become less enthusiastic about my work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. I just want to do my job and not be bothered.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. I have become more cynical about whether my work contributes anything.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. I doubt the significance of my work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. I feel emotionally drained from my work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. I feel used up at the end of the workday.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. I feel tired when I get up in the morning and have to face another day on the job.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Working all day is really a strain for me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. I feel burned out from my work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Motivational job demands

	Never	Sometimes	Frequently	Often	Always
1. My job requires me to decide for myself whether I want to achieve particular goals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. My work requires me to set long-term goals for myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. In my work it is necessary that I continually set my own goals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. My job requires me to set my own goals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. My job requires that I myself decide about my own work pace	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. My job requires me to determine for myself how hard I work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. In my work I must decide for myself whether I work hard enough	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. My job requires me to plan for myself how much time I need for a particular assignment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. My job requires that I myself decide whether I will persist with an activity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. My job requires me to decide whether I will stop or continue doing a particular task	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. My job requires me to decide for myself how much time I spend on a particular task	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Job Autonomy

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1. The job allows me to make my own decisions about how to schedule my work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. The job allows me to decide on the order in which things are done on the job.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. The job allows me to plan how I do my work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. The job gives me a chance to use my personal initiative or judgment in carrying out the work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. The job allows me to make a lot of decisions on my own.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. The job provides me with significant autonomy in making decisions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. The job allows me to make decisions about what methods I use to complete my work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. The job gives me considerable opportunity for independence and freedom in how I do the work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. The job allows me to decide on my own how to go about doing my work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Self-regulation

	Not at all true	Barely true	Somewhat true	Completely true
1. I can concentrate on one activity for a long time, if necessary.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. If I am distracted from an activity, I don't have any problem coming back to the topic quickly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. If an activity arouses my feelings too much, I can calm myself down so that I can continue with the activity soon.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. If an activity requires a problem-oriented attitude, I can control my feelings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. It is difficult for me to suppress thoughts that interfere with what I need to do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. I can control my thoughts from distracting me from the task at hand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. When I worry about something, I cannot concentrate on an activity.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. After an interruption, I don't have any problem resuming my concentrated style of working.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. I usually have a whole bunch of thoughts and feelings that interfere with my ability to work in a focused way.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. I stay focused on my goal and don't allow anything to distract me from my plan of action.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>