
Working from home, feeling bad? A panel analysis regarding the absence of work–family conflict, self-efficacy, and HR development practices

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Quote as: Höyng, M., & Bellmann, L. (2024). Working from home, feeling bad? A panel analysis regarding the absence of work–family conflict, self-efficacy, and HR development practices. *Argumenta Oeconomica*, 2(53), 217-233.

DOI: [10.15611/aoe.2024.2.15](https://doi.org/10.15611/aoe.2024.2.15)

JEL: I31, J28, M54, J16, M12

Abstract

Purpose: The purpose of this paper was to investigate the determinants of mental well-being among employees working from home. Therefore, the direct effects, as well as a three-way interaction effect – of the absence of work–family conflict (WFC), self-efficacy, and HR development practices – were investigated as key drivers of employees’ mental well-being.

Design/methodology/approach: The study used a large four-wave employee survey from the Linked Personnel Panel for Germany, and employed a linear mixed-effect regression analysis to examine the hypothesised relationships.

Findings: Support for the positive direct effects of the absence of WFC on mental well-being among women and men was found. While self-efficacy promoted mental well-being solely among men but not among women, HR development practices were a significant positive predictor of mental well-being among women but not among men. Empirical support for the three-way interaction effect of high self-efficacy and high HR development practices strengthening the corresponding relations among women and men was also found.

Originality: This study contributes to the subject literature by providing new empirical evidence of panel data regarding the determinants of mental well-being among employees working from home. Additionally, the study found a three-way interaction effect that links the absence of WFC, self-efficacy, and HR development practices with employees' mental well-being. In doing so, the author identified one specific resource gain spiral of employees working from home, and therefore extended the conservation of resources (COR) theory. Moreover, based on these findings, developing a gender role-COR theory is suggested to examine the varying impacts of resources on mental well-being among women and men.

Keywords: gender, HR development practices, mental well-being, self-efficacy, work–family conflict, work from home

1. Introduction

The digitalisation of the workplace and especially the COVID-19 pandemic have greatly promoted and expanded the possibilities of working from home (Meyer et al. 2021; OECD 2021). Although recent research and public discussion highlight the advantages of working from home, many employees are not willing to work from home or seek hybrid forms of work in the future (Bellmann and Hübler 2021; Shao et al. 2021; Zhang et al. 2021). This may be due to new and increasing challenges, as well as job-related and private demands employees face when working from home that negatively affect their mental well-being (Bellmann and Hübler 2022; Kapoor et al. 2021; Meyer et al. 2021). As, in line with the conservation of resources (COR) theory, those high demands threaten employees' resources and result in decreased mental well-being (Hobfoll 2001), an identification of the factors that increase mental well-being to successfully anticipate the negative consequences of working from home is of particular concern, for both employees and organizations.

When working from home, the blurring of boundaries between work and private life is of particular importance as it causes conflicting demands between these two domains in terms of work-family conflicts (WFC) (Carnevale and Hatak 2020; Kapoor et al. 2021) and depletes individual resources (Bettac and Probst 2021; Hammond et al. 2021; Murtaza et al. 2021). Therefore, the reduction or the absence of WFC is a crucial factor in promoting mental well-being among employees working from home. Additionally, self-efficacy is considered a key resource for employees in coping with their challenges and demands and in ensuring their mental well-being in this changing work environment (Barbieri et al. 2021; Bellmann and Hübler 2022; Shoji et al. 2016). Employees with high self-efficacy believe in their abilities (Bandura et al. 1977) and are expected to seek challenging tasks and higher goals, and to recover more quickly than employees with low levels of self-efficacy (Barbieri et al. 2021). Hence, the promotion of employees' self-efficacy may facilitate employees in balancing the increasing work and private demands, and enhance their resources while ensuring their mental well-being (Bellmann and Hübler 2022; Demerouti and Bakker 2011; Singh et al. 2019). Furthermore, HR development practices, such as training opportunities provided by the management, may be a key resource that helps employees in adapting to their rapidly changing work environment, and in coping with the challenges of working from home (OECD 2021). Thus, organizations, especially their management and leaders, may help their employees to deal effectively with the challenges of working from home to promote the desired organizational outcomes, such as employee mental well-being (Chung and Pak 2021; Kniffin et al. 2021; Nam and Lee 2018; Toniolo-Barrios and Pitt 2020).

Despite previous research investigating the heterogenous effects of working from home, the absence of WFC, self-efficacy, or HR development practices on mental well-being (Bellmann and Hübler 2022; Gupta and Srivastava 2021; Meyer et al. 2021; Plomp et al. 2016; Sarwar et al. 2022; Shoji et al. 2016), empirical research focusing on the key drivers as well as on the mutually reinforcing interaction effects between these key drivers on employees' mental well-being has been neglected so far. In this respect, Demerouti and Bakker (2011) stated the need to investigate a three-way-interaction effect that

considers the interplay of job demands, job resources, and personal resources. Besides, COR fails to consider the interplay of different resources as well as the interaction effects of resources in this regard.

To address these research gaps, based on COR theory, the author developed a double-moderation model that firstly examines whether the absence of WFC, self-efficacy, and HR development practices are the driving forces for mental well-being among employees working from home. Second, a three-way interaction effect of employees' self-efficacy and HR development practices regarding the relationship between the absence of WFC and their mental well-being was analysed.

Using an employee survey from the Linked Personnel Panel (LPP), a unique large and comprehensive panel data set for Germany 2012–2019, the study investigated the hypotheses for employees who (at least temporarily) work from home.

This paper contributes to the literature on working from home, as well as research on mental well-being as the interrelations between the absence of WFC, employees' self-efficacy, and HR development practices provided by organizations, are for the first time considered in this research. By focusing on self-efficacy as well as HR development practices and deriving effective approaches in this regard, management and leaders are able to implement a high-quality, satisfying, and sustainable work from a home environment, and increase employees' mental well-being.

2. Theoretical background and hypotheses development

To investigate the individual demands and resources encountered in their environment, how these factors reinforce each other and affect their mental well-being, the COR theory is of particular importance (Brummelhuis and Bakker 2012; Hobfoll 2001, 2002). According to this theory, resource loss is a key factor in the individuals' stress development process that reduces their energy resources even more and their individual mental well-being (Hobfoll, 2001, 2002). On the contrary, the successful conservation or an acquisition of new resources facilitates the likelihood of resource gain spirals that refers to the acquisition of even more resources, and in turn promote individual mental well-being (Hobfoll 2001; Llorens et al. 2007). Hence, to encourage mental well-being, individuals have to prevent their existing resources from diminishing and promote resource gain spirals (Hobfoll 2001; Hobfoll et al. 2018).

In reference purpose of this study, the author developed and investigated a specific resource gain spiral, assumed to increase employees' mental well-being. Therefore, the study derived the absence of WFC, self-efficacy, and HR development practices as resources and key promoting factors of employee mental well-being. In particular, the absence of WFC is assumed to encourage resource gain and thereby promote employee well-being. Moreover, two key resources, namely self-efficacy (personal resource) and HR development practices (job resource), are expected to prevent individuals' resource loss and thus foster resource gain spirals that strengthen employees' mental well-being (Hobfoll 2002; Llorens et al. 2007).

2.1. Direct effect of the absence of WFC on mental well-being

In the context of working from home, the reduction or absence of WFC is considered a crucial factor in promoting employees' mental well-being. While WFC refers to role pressures from work and family life that are controversial in some respects (Carnevale and Hatak 2020), the absence of WFC describes the perception of low controversial demands between work and family life.

Grounded on COR theory, past research emphasised the negative effects of WFC on individuals' mental well-being (e.g. Carnevale and Hatak 2020). In particular, it is argued that individuals who face WFC deplete their resources and, as a result, experience greater emotional exhaustion in terms of lower levels of mental well-being (Lee et al. 2021; Murtaza et al. 2021; Rubio et al. 2015). According to Kossek et al. (2011), the reduction of resources in work implies a lack of resources and a problem of meeting

family demands and thus reduces mental well-being. This assumption is further in line with the job demand-resources (JD-R) model (Demerouti et al. 2011) that, among others, argued that high demands, such as WFC, deplete mental and physical resources resulting in exhaustion and decreased mental well-being (Gupta and Srivastava 2021; Herr et al. 2021). While WFC may refer to a job demand, the absence of WFC may refer to a form of role accumulation that includes complementary resources of work and family roles (Yao et al. 2021). Consequently, in line with COR theory, especially through the absence of WFC, employees' resources may be maintained and more resources may be generated that increase their mental well-being (Agrawal and Mahajan 2021; Grandey and Cropanzano 1999). This study considered the absence of WFC as enabling resource gain processes of employees, and simultaneously preventing resource losses (Hobfoll 2001). As an empirical analysis investigating the relationship between the absence of WFC on mental well-being among employees working from home is lacking, the study addressed this research gap, by hypothesizing:

H1: The absence of work-family conflict increases employees' mental well-being.

2.2. Direct effect of self-efficacy on mental well-being

Especially when working from home, where the employees' work environment is characterised by increased flexibility and autonomy, self-efficacy is crucial for handling stressful situations and for achieving required individual and organizational goals (Murtaza et al. 2021; Yalalova et al. 2017). Self-efficacy refers to an individual's belief in their inherent abilities to successfully execute a behaviour required to realise a desired outcome (Bandura et al. 1977).

In line with COR theory, self-efficacy is investigated as a personal resource (e.g. Demerouti and Bakker 2011; Hobfoll et al. 2018) that prevents resource loss and is an important antecedent for mental well-being among employees (Shoji et al. 2016; Singh et al. 2019; Xanthopoulou et al. 2009). In particular, self-efficacy is assumed to promote employees' conviction in their own abilities to face and cope with the demands when working from home, and thereby increases their mental well-being (Shoji et al. 2016). This was confirmed by van Seggelen-Damen and van Dam (2016), who provided evidence that self-efficacy decreased employees' exhaustion, i.e. increased their well-being. Derived from COR theory, it was assumed that employees' self-efficacy may increase their confidence in their abilities and help them to maintain their resources, and this will then generate even more resources that positively affect their mental well-being. As research investigating the effect of self-efficacy on employees' mental well-being in the particular context of work from home is scarce, the author assumed:

H2: Employees' self-efficacy increases their mental well-being.

2.3. Direct effect of HR development practices on mental well-being

As working from home requires employees to adapt to and effectively cope with their rapidly changing work environment, HR development practices such as training opportunities are crucial for developing employees skills needed when working from home (OECD 2021). Hence, HR development practices refer to the employees' perception about the degree to which they are considered by the organization in terms of personal career development and promotion decisions (Kampkötter et al. 2016).

Derived from COR theory, HR development practices provided by the organization are assumed to be an important resource that may prevent employees' resource loss and promote their mental well-being by stimulating personal growth and development (Bakker et al. 2005; Halbesleben et al. 2014). HR development practices, in terms of the managements' and leaders' care about employees' individual problems and the articulation of HR development agendas, also promote their mental well-being (Demerouti et al. 2011; Trunk Širca et al. 2012). This was confirmed by research emphasising that HR development practices in terms of e.g. training to lessen employees' exhaustion, i.e., increase their well-being (Plomp et al. 2016). Furthermore, Kotzé (2021) confirmed that, by implementing HR development practices, management may avoid employees' emotional exhaustion in terms of burnout, i.e. ensuring their mental well-being. While past research focused on the effect of social support provided by leaders or organizations on employees' mental well-being or other work-related outcomes

(Gupta and Srivastava 2021; Hobfoll 2002; Xanthopoulou et al. 2009), there is a lack of knowledge regarding this effect in the particular context of work from home. Thus, the author posited:

H3: HR development practices increase employees' mental well-being.

2.4. Three-way interaction of self-efficacy and HR development practices

Besides the assumed direct effects (*H1–H3*), the study argues that the personal and job resources in terms of self-efficacy and HR development practices interact with and thereby reinforce each other. This assumption was derived from COR theory and past research arguing that different key resources mutually reinforce each other. In particular, the interaction of personal and job resources may encourage individuals' resource gain spirals and, consequently, promote their mental well-being (Hobfoll 2001, 2002; Llorens et al. 2007).

For the purpose of this study, an interaction effect was derived, which considers the mentioned interaction effects between personal and job resources and thus addresses a specific resource gain spiral of employees. Therefore, one can assume that self-efficacy and HR development practices are key resources that interact with each other and prevent individuals' resources loss and support preservation of individual resources. By aiming to increase employee mental well-being, one should emphasise the relevance of a situation in which both self-efficacy and HR development practices are high. If the degree of HR development practices is high, employees with a high self-efficacy are assumed to perceive the supportive measures of the organization as beneficial. Therefore, employees who perceive a high degree of HR development practices feel encouraged in their development which facilitates their individual self-efficacy. Thus, the interaction of high self-efficacy and high degrees of HR development practices is assumed to increase individuals' overall resource pool and facilitate their resource gain spirals that strengthen the corresponding relationship between the absence of WFC and employee mental well-being (Hobfoll 2001; Llorens et al. 2007). Consequently, the strongest effect of the absence of WFC on mental well-being would occur if both self-efficacy and HR development practices are high. Therefore, the study investigated a three-way interaction in which it was assumed that especially in a situation with high self-efficacy and high degree of HR development practices, the positive relationship between the absence of WFC and employee mental well-being is reinforced (Demerouti et al. 2011; Plomp et al. 2016), Hence:

H4: The positive relationship between the absence of WFC and mental well-being is strengthened when both self-efficacy and HR development practices are high.

Based on hypotheses 1 to 4, the following research model was developed:

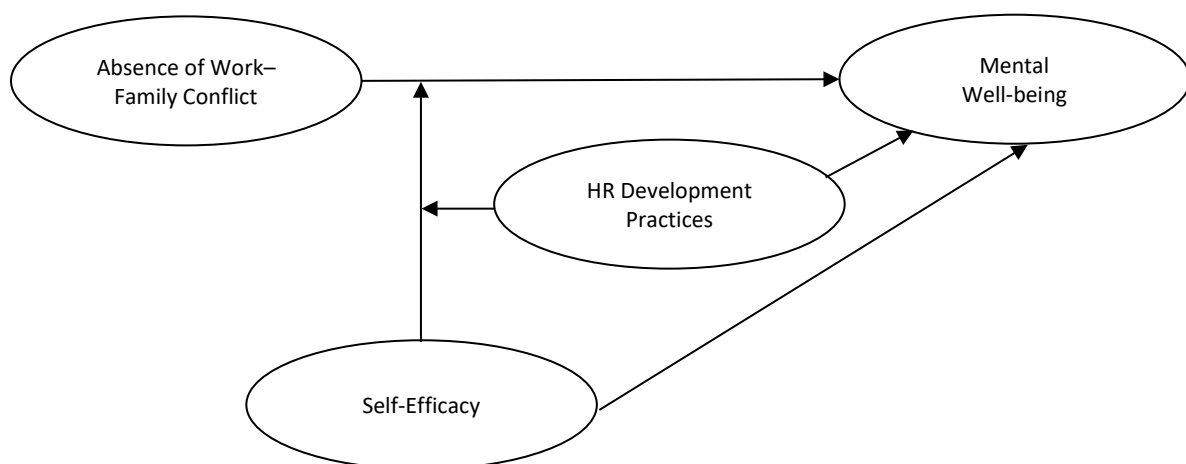


Fig. 1. Proposed research model

Source: authors' own elaboration.

3. Method

3.1. Data and participants

The presented study used four waves of an employee survey from the LPP (2012-2019; Mackeben et al. 2020). The analyses were based on the subset of German employees who (at least temporarily) work from home, have a full-time contract, and completed all four waves ($N = 5,570$).

Table 1. Relative and absolute frequencies for categorical demographic variables for the whole sample, women and men

| | Whole Sample ¹ | | Women ² | | Men ³ | |
|--|---------------------------|----------|--------------------|----------|------------------|----------|
| | % | <i>N</i> | % | <i>N</i> | % | <i>N</i> |
| Gender | | | | | | |
| Female | 16.21 | 903 | | | | |
| Male | 83.79 | 4,667 | | | | |
| Level of Education | | | | | | |
| Lower Secondary School Certificate | 30.40 | 1,690 | 27.69 | 250 | 30.93 | 1,440 |
| University of Applied Sciences Entrance Qualification | 19.37 | 1,077 | 12.51 | 113 | 20.70 | 964 |
| A-Level, Extended Secondary School Certificate | 49.65 | 2,760 | 58.80 | 531 | 47.87 | 2,229 |
| Another Level of Education | 0.58 | 32 | 1.00 | 9 | 0.49 | 23 |
| Partner in same Household | | | | | | |
| Yes | 93.84 | 3,106 | 89.12 | 393 | 94.56 | 2,713 |
| No | 6.16 | 204 | 10.88 | 48 | 5.44 | 156 |
| Household Size (Number of Persons) | | | | | | |
| One Person | 10.99 | 611 | 21.62 | 195 | 8.93 | 416 |
| Two Persons | 33.99 | 1,890 | 47.78 | 431 | 31.32 | 1,459 |
| Three or More Persons | 55.03 | 3,060 | 30.60 | 276 | 59.76 | 2,784 |
| Number of School-Age Children | | | | | | |
| No School-Age children | 46.69 | 1,482 | 53.87 | 174 | 45.88 | 1,308 |
| One Child | 26.75 | 849 | 31.58 | 102 | 26.20 | 747 |
| Two or More Children | 26.56 | 843 | 14.55 | 47 | 27.92 | 796 |
| Foreign Nationality | | | | | | |
| Yes, German and Another Citizenship/ Another Citizenship / Stateless | 4.20 | 234 | 5.76 | 52 | 3.90 | 182 |
| No, just the German Citizenship | 95.80 | 5,336 | 94.24 | 851 | 96.10 | 4,485 |
| Corporate Culture | | | | | | |
| Less Well to Poorly Communicated | 86.80 | 4,834 | 81.51 | 736 | 87.83 | 4,098 |
| Satisfactory to Well Communicated | 13.20 | 735 | 18.49 | 167 | 12.17 | 568 |
| Concerns about Job Insecurity | | | | | | |
| No Concerns | 67.23 | 3,742 | 64.41 | 581 | 67.75 | 3,161 |
| Some to Considerable Concerns | 32.77 | 1,824 | 35.59 | 321 | 32.21 | 1,503 |
| White-Collar Worker (1 = Yes)⁴ | 95.39 | 5,313 | 98.01 | 885 | 94.88 | 4,428 |
| Management Position | | | | | | |
| Management Position: Yes | 47.58 | 2,649 | 36.32 | 328 | 49.75 | 2,321 |
| Management Position: No | 52.42 | 2,919 | 63.68 | 575 | 50.25 | 2,344 |
| Fixed-Term Employment, Contract | | | | | | |
| No, Permanent Employment Contract | 97.34 | 5,419 | 96.90 | 875 | 97.43 | 4,544 |
| Yes, Fixed-Term Employment Contract | 2.66 | 148 | 3.10 | 28 | 2.57 | 120 |
| Amount of Work from Home | | | | | | |
| <30% Working from Home | 58.32 | 3,553 | 85.20 | 1,174 | 89.24 | 4,207 |
| 30–60% Working from Home | 5.32 | 324 | 8.20 | 113 | 5.77 | 272 |
| > 60% Working from Home | 1.79 | 109 | 6.60 | 91 | 4.99 | 235 |
| Industry | | | | | | |
| Processing Industry | 29.54 | 1,143 | 27.39 | 166 | 29.94 | 977 |
| Metal and Electrical Industry, Automotive Sector | 41.54 | 1,607 | 31.52 | 191 | 43.40 | 1,416 |
| Commerce, Traffic, Communication | 7.65 | 296 | 9.08 | 55 | 7.39 | 241 |
| Company-Related Services, Financial Services | 12.33 | 477 | 17.82 | 108 | 11.31 | 369 |
| IT, Communication, and Other Services | 8.94 | 346 | 14.19 | 86 | 7.97 | 260 |
| Establishment Size | | | | | | |
| Small, < 250 Employees | 26.10 | 1,010 | 30.86 | 187 | 25.22 | 823 |
| Big, ≥ 250 Employees | 73.90 | 2,859 | 69.14 | 419 | 74.78 | 2,440 |
| Year | | | | | | |
| 2012 | 21.51 | 1,198 | 17.39 | 157 | 22.31 | 1,041 |
| 2014 | 22.30 | 1,242 | 22.70 | 205 | 22.22 | 1,037 |
| 2016 | 21.81 | 1,215 | 22.81 | 206 | 21.62 | 1,009 |
| 2018 | 34.38 | 1,915 | 3.10 | 335 | 33.85 | 1,580 |

Note. ¹ $N = 5,570$, ² $N = 903$, ³ $N = 4,667$; ⁴Data protection by the LPP prevents a more detailed differentiation according to 1 = Yes and 0 = No.

Source: authors' own elaboration.

The 5,570 participants were on average about 47 years old ($SD = 9.62$, from 20 to 65 years) and worked on average 46 hours a week (including work overtime, $SD = 7.30$, from 5 to 90 hours). The number of hours working from home was on average of about 6 hours ($SD = 7.5$, from 1 to 60 hours). The average amount of working from home of the actual working hours per week increased over time (w1, 10.86%; w2, 12.94%; w3, 13.04%; w4, 20.31%). Table 1 presents the relative and absolute frequencies for categorical demographic variables.

3.2. Measures

Mental well-being was assessed using five items of the WHO-5-Well-Being questionnaire (Bech et al. 2003). Participants responded on a six-point scale from 0 “at no time” to 5 “all of the time,” according to whether during the last two weeks they felt, for example, “cheerful and in good spirits” ($\alpha = .75$).

The absence of WFC was assessed using a three-item scale of “work-family conflict” developed by Netemeyer et al. (1996). A sample item was: “The demands of my work interfere with my home and family life.” For the purpose of this study, low values in WFC indicated high levels of the absence of WFC and vice versa. Responses were made on a five-point Likert scale ranging from 1 “fully applies” to 5 “does not apply at all” ($\alpha = .85$).

Self-efficacy was measured in the LPP using three items. A sample item was “I can rely on my own abilities in difficult situations.” Responses were made on a five-point Likert scale ranging from 1 “does not apply at all” to 5 “fully apply” ($\alpha = .78$).

HR development practices were captured with five items regarding employees’ subjective perceptions about how personnel development and promotion decisions were made within their organization (Kampkötter et al. 2016). A sample item was “Our establishment is palpably interested in further development of my professional knowledge and competences.” Items were measured on a five-point Likert scale from 1 “strongly disagree” to 5 “strongly agree” ($\alpha = .77$).

Based on prior research (e.g. Bellmann and Hübler 2021; Meyer et al. 2021), the following control variables were included: employees’ level of education, the statement whether they live with their partner in the same household, their household size, their number of school-age children (<14 years old), and their nationality. Moreover, employees’ perceptions about the organization’s corporate culture, their concerns about job insecurity, their age, their employment situation, and a statement whether they are holding a management position were controlled for. Lastly, the study controlled for their employment contract, the amount of working from home of the actual working hours per week, the logarithm of their monthly gross wage, the organization’s sector of industry, the establishment’s size, and the year, in order to capture potential changes in the outcome variable over time/wave.

3.3. Analysis strategy

The statistical analyses using Stata were conducted. First, the descriptive statistics were investigated. Due to the panel design of the dataset, non-independence was expected in the data as individuals were observed at different points in time and, therefore the observations were nested in individuals. The linear mixed-effect regression analysis was employed to analyse the proposed research model, even though no group-level effects were expected or evident (Bliese et al. 2018; Hoffman 2015; Rabe-Hesketh and Skrondal 2008). To account for the unobserved heterogeneity between units (individuals) and for nested data (Bliese et al. 2018; Snijders and Bosker 2012), the author compared the results of a non-nested, a random-intercept, and a random-intercept-random-slope model with an unstructured covariance structure using the relative model fit indices the AIC, the BIC and the -2LL value. A likelihood-ratio test was used to compare and to determine significant differences between the models (Hoffman 2015; Schatz 2018). All variables were investigated at the individual-year level and used aggregated coefficient for wave/year in the analyses. Unstandardised coefficients were reported as b-values. However, these estimations cannot be interpreted as indicative of causal effects. To evaluate

the robustness of the findings, the research model was further examined by differentiating among small-sized and large-sized establishments. Based on prior research (Viertiö et al. 2021), the author also added employee mental well-being status of the previous period (t-1) as a control variable to the respective initial research model.

4. Results

4.1. Descriptive statistics

Table 2 presents the descriptive statistics for the variables of interest. At the 5% significance level, significant differences were found between women and men for all variables except for the absence of WFC, self-efficacy, employment contract, and amount of working from home of the actual working hours per week. By investigating the descriptive statistics, significant gender-specific differences were identified. Thus, the results of the following analyses were further differentiated among women and men. Based on the descriptive statistics, women, on average, have e.g. a lower mental well-being, and perceive lower HR development practices compared to men.

Table 2. Means, standard deviations, t-test, and confidence intervals for the variables of interest

| Variables | Whole sample | | | Women | | | Men | | | T-Test | |
|--|--------------|-------|------|-------|-------|-------|-------|-------|------|--------|------|
| | N | M | SD | N | M | SD | N | M | SD | | |
| Mental Well-Being | 5,563 | 3.32 | 0.84 | 903 | 3.23 | 0.87 | 4,660 | 3.34 | 0.83 | -3.40 | *** |
| Absence of WFC | 5,570 | 2.59 | 1.00 | 903 | 2.60 | 1.04 | 4,667 | 2.59 | 1.04 | 0.43 | n.s. |
| Self-Efficacy | 4,316 | 4.24 | 0.45 | 740 | 4.23 | 0.44 | 3,576 | 4.24 | 0.45 | -1.07 | n.s. |
| HR Development Practices | 5,568 | 3.73 | 0.91 | 902 | 3.63 | 0.95 | 4,666 | 3.75 | 0.90 | -3.58 | *** |
| Level of Education | 5,559 | 4.14 | 1.05 | 903 | 4.31 | 1.00 | 4,656 | 4.10 | 1.05 | 5.56 | *** |
| Partner in same Household | 3,310 | 0.06 | 0.24 | 441 | 0.11 | 0.31 | 2,869 | 0.05 | 0.23 | 4.44 | *** |
| Household Size (Number of Persons) | 5,561 | 2.88 | 1.21 | 902 | 2.25 | 1.03 | 4,659 | 3.00 | 1.21 | -17.26 | *** |
| Number of School-Age Children | 3,174 | 0.85 | 0.94 | 323 | 0.63 | 0.79 | 2,851 | 0.88 | 0.95 | -4.52 | *** |
| Foreign Nationality | 5,570 | 0.96 | 0.20 | 903 | 0.94 | 0.23 | 4,667 | 0.96 | 0.19 | -2.55 | * |
| Corporate Culture | 5,569 | 0.13 | 0.34 | 903 | 0.18 | 0.39 | 4,666 | 0.12 | 0.33 | 5.15 | *** |
| Concerns about Job Insecurity | 5,566 | 0.33 | 0.47 | 902 | 0.36 | 0.48 | 4,664 | 0.32 | 0.47 | 1.97 | * |
| Age (in Years) | 5,570 | 47.11 | 9.62 | 903 | 44.26 | 10.70 | 4,667 | 47.67 | 9.29 | -9.84 | *** |
| White-Collar Worker | 5,570 | 0.95 | 0.21 | 903 | 0.98 | 0.14 | 4,667 | 0.95 | 0.22 | 4.11 | *** |
| Management Position | 5,568 | 0.52 | 0.50 | 903 | 0.64 | 0.48 | 4,665 | 0.50 | 0.50 | 7.43 | *** |
| Fixed-Term Employment Contract | 5,567 | 0.03 | 0.16 | 903 | 0.03 | 0.17 | 4,664 | 0.03 | 0.16 | 0.90 | n.s. |
| Amount of Working from Home of the Actual Working Hours per Week | 5,489 | 1.16 | 0.48 | 884 | 1.17 | 0.50 | 4,605 | 1.15 | 0.48 | 1.16 | n.s. |
| Log (Wage) | 4,761 | 8.61 | 0.63 | 801 | 8.38 | 0.73 | 3,960 | 8.66 | 0.60 | -11.63 | *** |
| Industry | 3,869 | 2.30 | 1.26 | 606 | 2.60 | 1.41 | 3,263 | 2.24 | 1.22 | 6.49 | *** |
| Establishment Size | 3,869 | 0.74 | 0.44 | 606 | 0.69 | 0.46 | 3,263 | 0.75 | 0.43 | -2.90 | ** |

Note. *M* = Mean; *SD* = Standard Deviation; WFC = Work–Family Conflict; Level of Education (1 = No Qualification; 2 = Lower Secondary School Certificate, 3 = Intermediate Secondary School Certificate; 4 = University of Applied Sciences Entrance Qualification; 5 = A-Level, Extended Secondary School Certificate; 8 = Another Level of Education); Partner in Same Household (0 = Yes; 1 = No), Foreign Nationality (0 = Yes, German and Another Citizenship/ Another Citizenship / Stateless; 1 = No, just the German Citizenship), Corporate Culture (Coded as 0 = Less Well to Poorly Communicated, 1 = Satisfactory to Well Communicated), Concerns about Job Insecurity (0 = No Concerns, 1 = Some to Considerable Concerns), White-Collar Worker (0 = No, 1 = Yes), Management Position (0 = No, 1 = Yes), Fixed-Term Employment Contract (0 = No; 1 = Yes), Amount of Working from Home of the Actual Working Hours per Week (1 = < 30% Working from Home, 2 = 30–60% Working from Home, 3 = > 60% Working from Home), Industry (1 = Processing Industry; 2 = Metal and Electrical Industry/ Automotive Sector; 3 = Commerce, Traffic, Communication; 4 = Company-Related Services, Financial Services; 5 = IT, Communication and Other Services), Establishment Size (0 = Small, < 250 Employees; 1 = Big, ≥ 250 Employees); *n.s.* = not significant; *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

Source: authors' own elaboration.

4.2. Hypothesis testing

Comparing the mixed-effects models, it was found that the random-intercept model (where $-2\text{LogLik} = -852.05$; $\text{AIC} = 1,784.11$; $\text{BIC} = 1,968.75$) provided a significantly better fit than the non-nested model ($-2\text{LogLik} = -840.43$; $\text{AIC} = 1,764.87$; $\text{BIC} = 1,958.74$). This was confirmed by the significant intraclass correlation coefficient (ICC) and the results of the likelihood-ratio (LR) test (ICC = 0.42; 95% CI = [0.30; 0.58]; LR test: $p < .001$). Similarly, the random-intercept-random-slope

model ($-2\text{LogLik} = -840.43$; $\text{AIC} = 1,762.87$; $\text{BIC} = 1,952.13$) was better fitted than the random-intercept model (LR test $p < .001$). Hence, the following results were based on the more efficient random-intercept-random-slope model (see Table 3). Regarding the gender-specific models, the random-intercept model ($-2\text{LogLik} = -763.78$; $\text{AIC} = 1,628.07$; $\text{BIC} = 1,809.13$) provided significantly better fit than the non-nested model ($-2\text{LogLik} = -763.78$; $\text{AIC} = 1,609.55$; $\text{BIC} = 1,795.14$). This was supported by the significant ICC and LR test (ICC = 0.42; 95% CI = [0.28; 0.57]; LR test: $p < .001$). A random-intercept-random-slope model was not conducted as due to the differentiation of the sample, no random slopes were investigated among gender.

Table 3 presents the results of the linear mixed-effect regression analyses. In line with hypothesis 1, the absence of WFC was positively related to employee mental well-being. Furthermore, by testing for equality of the effect sizes among gender, the results provided evidence that this effect was significantly stronger among women.

In line with hypothesis 2, self-efficacy was positively related to mental well-being. Moreover, the effect is solely significant for men but not for women.

A positive relationship between HR development practices and employees' mental well-being was also identified, confirming hypothesis 3. The results indicated that this effect was solely significant for women but not for men.

Lastly, regarding hypothesis 4, the results provide evidence for the three-way interaction effect of self-efficacy and HR development practices moderating the positive relationship between the absence of WFC and mental well-being. Thus, hypothesis 4 was confirmed. This effect was further investigated by conducting a simple slope analysis (see Figure 2; Cohen et al. 2003). The analysis showed that the slope of line 1 ("high self-efficacy/high HR development practices", effect size: $b = 0.26$, $p < 0.001$) and of line 3 ("low self-efficacy/high HR development practices", $b = 0.14$, $p < 0.05$) were positively significant. The slopes of line 2 ("high self-efficacy/low HR development practices", $b = -0.01$, $n.s.$) and line 4 ("low self-efficacy/low HR development practices", $b = 0.01$, $n.s.$) were not significant. A slope difference test with Bonferroni correction (Dawson and Richter 2006) further revealed significant differences between the slopes of lines 1 and 2 ($t = -2.95$; $p < 0.05$); even so, the slope of line 2 was not significant. The other three slopes did not differ significantly from each other. Therefore, the results confirmed that the positive relationship between the absence of WFC and mental well-being was strongest when both self-efficacy and HR development practices were high.

Table 3. Linear mixed-effect regression results of mental well-being for the whole sample, women and men

| Variables | Mental well-being whole sample | | | Mental well-being women | | | Mental well-being men | | |
|---|--------------------------------|-----------|-------------|-------------------------|-----------|-------------|-----------------------|-----------|-------------|
| | <i>b</i> | <i>SE</i> | | <i>b</i> | <i>SE</i> | | <i>b</i> | <i>SE</i> | |
| Intercept | -5.31 | 3.27 | <i>n.s.</i> | -16.34 | 12.02 | <i>n.s.</i> | -5.54 | 3.38 | <i>n.s.</i> |
| Absence of WFC | 1.95 | 0.91 | * | 9.57 | 4.09 | * | 1.84 | 0.94 | * |
| Self-Efficacy | 1.70 | 0.76 | * | 4.78 | 2.64 | <i>n.s.</i> | 1.77 | 0.79 | * |
| HR Development Practices | 1.67 | 0.84 | * | 6.62 | 3.06 | * | 1.55 | 0.87 | <i>n.s.</i> |
| Absence of WFC x Self-Efficacy | -0.50 | 0.22 | * | -2.17 | 0.97 | * | -0.48 | 0.23 | * |
| Absence of WFC x HR Development Practices | -0.55 | 0.24 | * | -2.83 | 1.03 | ** | -0.47 | 0.25 | <i>n.s.</i> |
| Self-Efficacy x HR Development Practices | -0.44 | 0.20 | * | -1.52 | 0.70 | * | -0.41 | 0.21 | <i>n.s.</i> |
| Absence of WFC x Self-Efficacy x HR Development Practices | 0.15 | 0.06 | ** | 0.65 | 0.24 | *** | 0.13 | 0.06 | * |
| Level of Education (Ref. no Qualification) | | | | | | | | | |
| Lower Secondary School Certificate | 1.19 | 0.77 | <i>n.s.</i> | omitted ¹ | | | 1.11 | 0.77 | <i>n.s.</i> |
| Intermediate Secondary School Certificate | 1.28 | 0.77 | <i>n.s.</i> | omitted ¹ | | | 1.21 | 0.77 | <i>n.s.</i> |
| University of Applied Sciences Entrance Qualification | 1.23 | 0.77 | <i>n.s.</i> | 0.24 | 0.32 | <i>n.s.</i> | 1.14 | 0.77 | <i>n.s.</i> |
| A-Level, Extended Secondary School Certificate | 1.11 | 0.77 | <i>n.s.</i> | -0.26 | 0.18 | <i>n.s.</i> | 1.03 | 0.77 | <i>n.s.</i> |
| Another Level of Education | 1.65 | 0.90 | <i>n.s.</i> | 1.63 | 0.71 | * | 1.97 | 0.95 | * |
| Partner in same Household | 0.08 | 0.08 | <i>n.s.</i> | 0.26 | 0.28 | <i>n.s.</i> | 0.09 | 0.19 | <i>n.s.</i> |
| Household Size (Number of Persons) | 0.00 | 0.04 | <i>n.s.</i> | -0.04 | 0.10 | <i>n.s.</i> | -0.01 | 0.04 | <i>n.s.</i> |
| Number of School-Age Children | -0.03 | 0.04 | <i>n.s.</i> | 0.18 | 0.13 | <i>n.s.</i> | -0.04 | 0.04 | <i>n.s.</i> |
| Foreign Nationality | -0.18 | 0.15 | <i>n.s.</i> | 1.58 | 0.38 | *** | -0.35 | 0.16 | * |
| Corporate Culture | -0.02 | 0.09 | <i>n.s.</i> | -0.14 | 0.23 | <i>n.s.</i> | -0.02 | 0.10 | <i>n.s.</i> |
| Concerns about Job Insecurity | -0.18 | 0.06 | *** | -0.44 | 0.16 | ** | -0.18 | 0.07 | *** |
| Age (in Years) | 0.00 | 0.01 | <i>n.s.</i> | 0.03 | 0.01 | * | 0.00 | 0.01 | <i>n.s.</i> |

| | | | | | | | | | |
|---|----------|-------|-------------|----------------------|------|-------------|----------|------|-------------|
| White-Collar Worker | 0.17 | 0.14 | <i>n.s.</i> | omitted ¹ | | | 0.20 | 0.15 | <i>n.s.</i> |
| Management Position | -0.17 | 0.06 | *** | -0.37 | 0.19 | * | -0.16 | 0.06 | *** |
| Fixed-Term Employment Contract | -0.28 | 0.20 | <i>n.s.</i> | 0.03 | 0.31 | <i>n.s.</i> | -0.26 | 0.22 | <i>n.s.</i> |
| Amount of Working from Home of the Actual Working Hours per Week (Ref. < 30% Working from Home) | | | | | | | | | |
| 30-60% Working from Home | 0.01 | 0.11 | <i>n.s.</i> | -0.76 | 0.33 | * | 0.06 | 0.12 | <i>n.s.</i> |
| > 60% Working from Home | -0.12 | 0.18 | <i>n.s.</i> | -1.07 | 0.41 | *** | -0.03 | 0.19 | <i>n.s.</i> |
| Log (Wage) | 0.07 | 0.09 | <i>n.s.</i> | -0.52 | 0.26 | * | 0.11 | 0.09 | <i>n.s.</i> |
| Industry (Ref. Processing Industry) | | | | | | | | | |
| Metal and Electrical Industry, Automotive Sector | -0.05 | 0.07 | <i>n.s.</i> | -0.21 | 0.22 | <i>n.s.</i> | -0.05 | 0.07 | <i>n.s.</i> |
| Commerce, Traffic, Communication | -0.14 | 0.12 | <i>n.s.</i> | 0.27 | 0.30 | <i>n.s.</i> | -0.13 | 0.13 | <i>n.s.</i> |
| Company-Related Services, Financial Services | -0.01 | 0.10 | <i>n.s.</i> | -0.36 | 0.26 | <i>n.s.</i> | 0.05 | 0.10 | <i>n.s.</i> |
| IT, Communication, and Other Services | -0.06 | 0.11 | <i>n.s.</i> | 0.14 | 0.22 | <i>n.s.</i> | -0.14 | 0.12 | <i>n.s.</i> |
| Establishment Size | 0.13 | 0.07 | <i>n.s.</i> | 0.43 | 0.22 | <i>n.s.</i> | 0.13 | 0.07 | <i>n.s.</i> |
| Year | 0.04 | 0.05 | <i>n.s.</i> | 0.38 | 0.16 | ** | 0.03 | 0.05 | <i>n.s.</i> |
| Random Intercept | 0.56 | 0.12 | *** | 0.01 | 0.01 | *** | 0.49 | 0.05 | *** |
| Random Slope | 0.33 | 18.56 | *** | | | | | | |
| Intercept-Slope Covariance | -0.47 | 7.31 | *** | | | | | | |
| Within-Person Variance | 0.57 | 0.04 | *** | 0.49 | 0.04 | *** | 0.45 | 0.08 | *** |
| Observations | 5.570 | | | 903 | | | 4.667 | | |
| Deviance (-2LogLik) | -840.43 | | | -763.78 | | | -763.78 | | |
| AIC | 1,762.87 | | | 1,609.55 | | | 1,609.55 | | |
| BIC | 1,952.13 | | | 1,795.14 | | | 1,795.14 | | |
| Overall pseudo-R ² | 0.28 | | | 0.13 | | | 0.13 | | |

Note. b = Unstandardized Beta coefficient, SE = Standard Error; ¹Variable was omitted due to the issue of multicollinearity detected in the analyses; WFC = Work-Family Conflict; Level of Education (1 = No Qualification; 2 = Lower Secondary School Certificate, 3 = Intermediate Secondary School Certificate; 4 = University of Applied Sciences Entrance Qualification; 5 = A-Level, Extended Secondary School Certificate; 8 = Another Level of Education); Partner in Same Household (0 = Yes; 1 = No), Foreign Nationality (0 = Yes, German and Another Citizenship/ Another Citizenship / Stateless; 1 = No, just the German Citizenship), Corporate Culture (Coded as 0 = Less Well to Poorly Communicated, 1 = Satisfactory to Well Communicated), Concerns about Job Insecurity (0 = No Concerns, 1 = Some to Considerable Concerns), White-Collar Worker (0 = No, 1 = Yes), Management Position (0 = No, 1 = Yes), Fixed-Term Employment Contract (0 = No; 1 = Yes), Amount of Working from Home of the Actual Working Hours per Week (1 = < 30% Working from Home, 2 = 30–60% Working from Home, 3 = > 60% Working from Home), Industry (1 = Processing Industry; 2 = Metal and Electrical Industry/ Automotive Sector; 3 = Commerce, Traffic, Communication; 4 = Company-Related Services, Financial Services; 5 = IT, Communication and Other Services), Establishment Size (0 = Small, < 250 Employees; 1 = Big, ≥ 250 Employees); Year (1 = 2012, 2 = 2014, 3 = 2016; 4 = 2018); *n.s.* = not significant; *** *p* < 0.001, ** *p* < 0.01, * *p* < 0.05.

Source: authors' own elaboration.

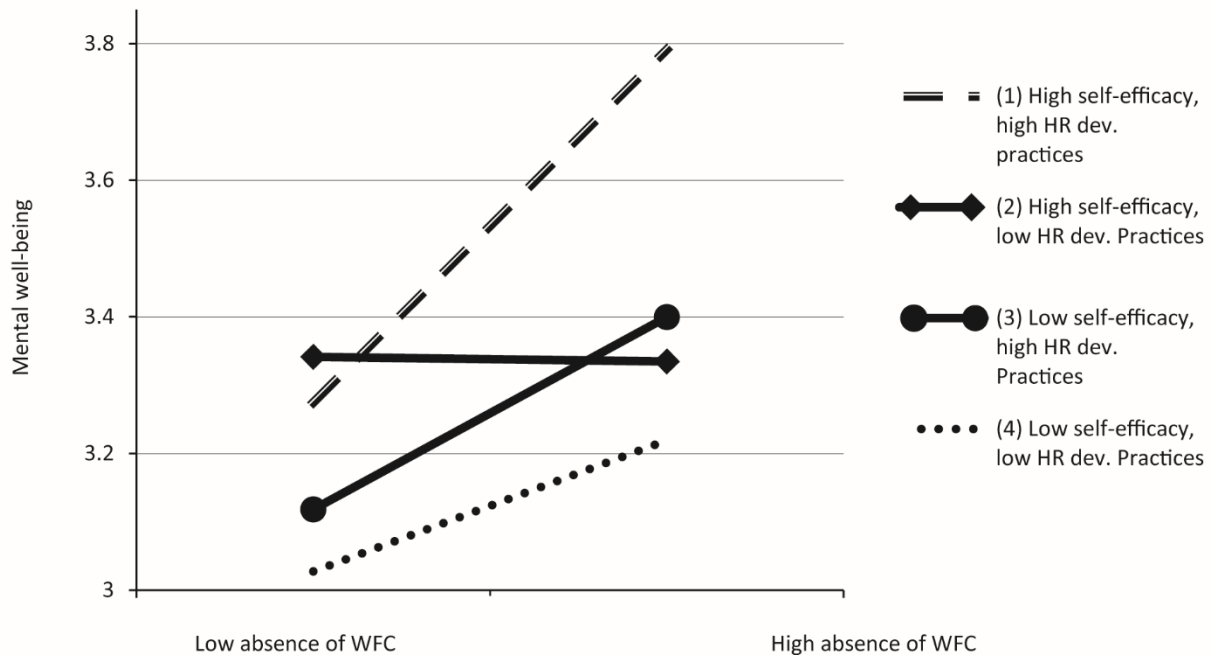


Fig. 2. Three-way interaction of self-efficacy and HR development practices on the relation between the absence of WFC and mental well-being

Source: authors' own elaboration.

4.3. Robustness tests

Based on past research (e.g. Chinomona 2012), the study compared the results between small and large establishments to check the robustness of the results. Therefore, the author regressed the absence of WFC, self-efficacy, and HR development practices firstly on mental well-being among employees working in small-sized establishments and secondly, on mental well-being among employees working in large establishments. The results of both tests were consistent with the results presented in Table 3 and thus did not change the conclusions (data available on request). Additionally, based on prior research (Viertiö et al. 2021), employee mental well-being of the previous period (t-1) was included as a control variable to the hypothesised research model. However, by estimating this model, the sample size reduced to a very small one ($N < 70$). Therefore, the results of the parameter estimation were not precise and accurate, and thus not used to check the robustness in this study.

5. Discussion

As working from home has become increasingly relevant in the recent decade and particularly obvious during the COVID-19 pandemic, this paper focused on employees who (at least temporarily) work from home. While past research provides evidence about the opportunities and challenges of working from home (Zhang et al. 2021), little attention has been paid to the anticipation of the negative consequences of working from home on employees' mental well-being. To address this research gap, the author developed a double-moderation model based on COR theory, aimed to provide the first indication of a specific resource gain spiral of employees to increase their mental well-being. In the model, firstly, the direct effects of the absence of WFC, self-efficacy, and HR development practices, and secondly, a three-way interaction effect on mental well-being among employees working from home were investigated. As considerable gender-specific differences were identified by means of the descriptive analysis, the regression results differentiated between women and men. This distinction was further justified by past research, the Gender Role theory and social role perspectives (Eagly 1987; Hare-Mustin and Marecek 1988; Judge et al. 2007; Lott 1988). In particular, the differing gender and social roles of women and men (Coltrane 2000; McElwain et al. 2005; Wang et al. 2010) may explain gender-specific differences regarding the variables of interest (e.g. Kapoor et al. 2021; Livingston and Judge 2008).

Regarding the results of the overall sample, the absence of WFC was identified as a relevant factor to increase employee mental well-being. Derived from past research (Carnevale and Hatak 2020; Kapoor et al. 2021; Pascucci et al. 2021), the study found that the absence of conflicting demands between work and private life increased employee mental well-being. In terms of gender-specific differences that were identified in past research (Gupta and Srivastava 2021; Livingston and Judge 2008; Pascucci et al. 2021), the results of this study showed that the absence of WFC enhanced mental well-being among women and men. Furthermore, the author provided evidence the absence of WFC promoted stronger mental well-being among women compared to men. An explanation for this may be derived from the traditional gender role expectations (Wang et al. 2010), arguing that home responsibilities rather than work roles are traditionally more salient to women compared to men. Thus, the absence of WFC protects women's valued home responsibilities and therefore intensifies the positive effect on their mental well-being.

The study also identified a positive effect of self-efficacy on mental well-being among employees working from home. Derived from COR theory and past research, self-efficacy is a valuable resource that facilitates employees' enthusiasm and thereby increases their mental well-being (Shoji et al. 2016). The study provided evidence that the effect of self-efficacy and mental well-being is highly significant for men, and confirmed that self-efficacy among women was not a relevant factor for increasing their mental well-being. Regarding mental well-being of women, social resources, such as lower income (Docka-Filipek and Stone 2021), social isolation, and face-to-face support (Petzold et al. 2020; Sharma

and Rees 2007), or the quality of marital relationships (Sharma and Rees 2007), may be crucial. Work-related aspects, such as unequal promotion opportunities or difficulties in accessing managerial positions (Aldossari and Chaudhry 2021), may become worse when working from home and therefore may affect women's well-being.

On the basis of the past research (Kotzé 2021; Plomp et al. 2016), HR development practices in terms of training opportunities to develop employees' skills and abilities encouraged employee mental well-being. Hence, organizations were able to facilitate their mental well-being by providing practices that encourage personal growth and development as well as enhance job skills and abilities (Bakker et al. 2005; Halbesleben et al. 2014; Plomp et al. 2016). In terms of gender-specific differences, the conducted analyses revealed that only women benefited significantly from HR development practices which strengthened their mental well-being. Hence, managers or leaders play a crucial role in, for example, facilitating women to balance their work and private demands which promote their mental well-being (Sharma and Gupta 2020). In turn, HR development practices were not a relevant factor to increase men's mental well-being. In this regard, other resources, such as high levels of job satisfaction, may be highly relevant to consider. What is more, prior research provided evidence that men's mental well-being benefits more strongly from social interactions than was the case for women (Uhing et al. 2021). Additionally, the mental demands of work are a relevant factor affecting men's mental well-being (Viertiö et al. 2021).

Lastly, these results confirmed the three-way interaction effect across gender, whereby the effect was stronger among women than among men. In particular, the effect of the absence of WFC on employee mental well-being was strengthened when both self-efficacy and HR development practices were high, and the corresponding effect was strengthened under low self-efficacy and high HR development practices. Although the slopes of "high self-efficacy/high HR development practices" (see Figure 2, line 1) and "low self-efficacy/high HR development practices" (see Figure 2, line 3) did not differ significantly from each other, the strength of the effect differs. In particular, the effect of the absence of WFC on employees' mental well-being was more strongly reinforced when both self-efficacy and HR development practices were high. On the contrary, if low levels of HR development practices were provided, neither high nor low self-efficacy strengthened the corresponding relations. Therefore, derived from COR theory and in line with the author's expectations, the results confirmed that the interaction of especially high personal and high job resources encouraged resource gain spirals of employees and, consequently, promoted their mental well-being (Hobfoll 2001; Llorens et al. 2007).

Overall, based on these results and derived from COR theory, the interplay of high self-efficacy and high HR development practices is crucial to encourage employees' resource gain spirals and to strengthen their mental well-being. In particular, by extending prior research (e.g. Margolis and McCabe 2006), this study recommends that organizations stimulate employees' self-efficacy in the first place, for example, by providing HR development practices in terms of training opportunities to indirectly reduce the negative consequences of working from home, in terms of strengthening the absence of the WFC–mental well-being relation. Furthermore, derived from Gender Role theory and social role perspectives, the study provided evidence that gender-specific differences are crucial to consider when investigating employees' resources and their effect on their mental well-being.

6. Theoretical implications

This study deepens insights into mental well-being of employees who (at least temporarily) work from home. By providing empirical evidence of panel data and applying the COR theory to the context of working from home, this study makes four theoretical contributions.

First, the findings provide valuable contributions by developing a double-moderation model and investigating the absence of WFC, self-efficacy, and HR development practices as resources that promote mental well-being of employees working from home. Although prior research characterised

these factors as crucial resources that encourage employee mental well-being (Brummelhuis and Bakker 2012; Hobfoll 2002), empirical evidence of the panel data regarding these effects among employees working from home was scarce.

In this regard, the second theoretical contribution refers to recent calls for empirical research that consider a three-way interaction effect between job demands, personal and job resources, and its effect on mental well-being (Bellmann and Hübler 2021; Demerouti and Bakker 2011; Hobfoll 2001; Llorens et al. 2007). By identifying significant relationships, the author provided initial evidence suggesting the presence of a specific resource gain spiral among employees in this context, thereby extending the COR theory (Hobfoll 2001; Hobfoll et al. 2018). In particular, the interaction of high personal and high job resources encourages a specific resource gain spirals of employees and, subsequently, promotes their mental well-being (Hobfoll, 2001; Llorens et al., 2007). The finding that the interaction of high self-efficacy and low HR development practices as well as low self-efficacy and low HR development practices did not strengthen the relation between the absence of WFC and mental well-being provides new contributions to existing research.

Third, this study contributes to the literature by applying the COR theory in the context of working from home and giving new empirical evidence regarding gender differences. The results showed gender-specific effects on mental well-being among both women and men. Based on these findings, gender role-COR theory may be developed that combines the COR theory with gender role theory and social role perspectives to investigate the different kinds of resources that are relevant to enhancing mental well-being of women and men working from home.

Lastly, based on the study's results, COR theory may be refined by differentiating resources and resource gain spirals in more detail. In particular, the resource gain process may be described as the interplay of resources regarding different domains that reinforce each other. Hence, resources can be maintained, and additional resources can be generated that increase employee mental well-being (Agrawal and Mahajan 2021; Grandey and Cropanzano 1999).

7. Managerial implications

Derived from these results, valuable approaches for both organizations and employees on how to design and implement a beneficial, high-quality, and sustainable work from home environment are provided. As management and leaders play a crucial role in promoting mental well-being among employees working from home, three key aspects were derived that facilitate managers and leaders to do so.

First, it is recommended that organizations emphasize the importance of the mental health status of employees who (at least temporarily) work from home, and show concern for it. The study also suggests that organizations implement and align their mental health care management to the individual conditions and circumstances when working from home, and in doing so, may respond to different predispositions (such as the individual level of self-efficacy) and the demands of employees (e.g. some have higher WFC than others).

Second, to design an effective 'work from home' environment and increase employee mental well-being, the absence of WFC is required. Therefore, the author suggests that organizations facilitate employees' detachment from work and reduce WFC when working from home (Tramontano et al. 2021), for example, by articulating clear rules and policies regarding working times, while aiming to meet work goals and aims. Additionally, managers should strengthen individuals' trust in their own abilities and apply HR development practices that may help employees to acquire the skills, knowledge, and competencies needed when working from home.

Third, to design an effective 'work from home' environment and increase employee mental well-being, organizations should pay special attention to supporting and encouraging employees' confidence in their own abilities in terms of self-efficacy when working from home. This is highly recommended as

self-efficacy is one of the resilience competencies that are of particular importance in stressful situations, such as working from home (Kniffin et al. 2021; Murtaza et al. 2021; Schwarzer and Warner 2013; Tramontano et al. 2021). To promote self-efficacy, organizations should pay special attention to the reinforcing effect of HR development practices and self-efficacy. In particular, organizations may implement HR development practices in terms of special training and development opportunities for their employees to encourage their self-efficacy and strengthen their mental well-being. Those practices may target developing employees' capabilities to work autonomously from home, their digital literacy to set up and use technical equipment and software, organizing their own tasks, etc. In doing so, individuals can become more confident about working from home, and work more effectively, strengthening their mental well-being.

8. Limitations and future research

Despite the theoretical and managerial contributions, this study has several limitations. First, this study focused on employees working (at least temporarily) from home. By means of the descriptive analyses, the majority of examined employees worked less than 30 % of their total work time from home. In this regard, future research may evaluate whether varying amounts of work from home lead to different results.

Second, despite using a large panel dataset of employees from a wide variety of industries and establishment sizes, this sample included predominantly males, older employees, as well as full-time workers (Bosle et al. 2021). Furthermore, working from home may be difficult or even impossible for some jobs or sectors, such as food or tourism. Consequently, future research should replicate these findings, for example, in different sectors or countries to increase the generalisability of the results.

Third, this study focused on the direct and indirect effects on employee mental well-being without considering longitudinal development and changes in working from home, such as the effects before and after implementing full-time work from home. Thus, future research may investigate causal relations and special points in time that may have changed employees' perceptions about working from home (over time). Therefore, future research should investigate the identified resource gain spiral in more depth by employing longitudinal analyses.

Lastly, other unobserved resources and stressors may have relevant impacts on employee mental well-being, such as specific capabilities needed when working from home (e.g. coping strategies or digital literacy). In particular, in considering the insignificant direct effects of women's personal resources and men's job resources on their mental well-being, future research could investigate other factors, such as social or economic resources (Docka-Filipek and Stone 2021; Petzold et al. 2020; Sharma and Rees 2007; Viertiö et al. 2021) as determinants of their mental well-being.

9. Conclusion

This was the first study that investigated and provided empirical evidence of panel data regarding a three-way interaction effect between the absence of WFC, self-efficacy, and HR development practices on mental well-being among employees who (at least temporarily) work from home. Building on COR theory, the results of this study go beyond prior findings regarding the direct effects of selected resources and resource gain spirals in terms of the reinforcing interaction effects of resources on employee mental well-being. Moreover, the results of this study provided evidence for gender-specific differences among employees working from home. In particular, while the absence of WFC was a significant predictor of mental well-being among women and men, self-efficacy promoted solely men's mental well-being and HR development practices encouraged solely women's mental well-being. The proposed three-way interaction effect of self-efficacy and HR development practices regarding the relation between the absence of WFC and mental well-being was highly relevant for women and men.

The relationship between the absence of WFC and mental well-being was especially strengthened by high self-efficacy and high levels of HR development practices.

To sum up, to foster resource gain spirals and mental well-being among women and men working from home, it is crucial for organizations to promote self-efficacy of employees by providing and implementing HR development. Additionally, it might be of interest for researchers to extend the COR theory to a Gender Role–COR theory to consider the varying impacts and interrelations of resources on mental well-being among women and men.

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Received: October 2023, revised: January 2024