



# Women and men in leadership positions: health and work-related attitudes and their associations with work-related stressors, private stressors, and privacy-work conflict

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## Abstract

Reconciling work and private life is difficult in leadership positions. A representative sample of 1070 Swiss leaders reported work stressors, private stressors, and work resources. For each domain, scales were aggregated to indices to allow for an adequate domain-related comparison. Compared to males, females reported higher levels of private stressors (Hedges'  $g = -0.66$ ) and somewhat lower levels of work stressors ( $g = 0.16$ ). Work stressors, but not private stressors, predicted affective commitment, job satisfaction, and turnover intention. Both work and private stressors predicted emotional exhaustion, health status and psychosomatic complaints, but for exhaustion and health status work stressors explained a larger proportion of the variance. Work resources predicted both attitudes and health indicators. A two-way interaction indicated a stronger association between private stressors and emotional exhaustion in men than in women; there were no three-way interactions between work stressors, private stressors, and sex. Privacy-work conflict (PWC) was confirmed as a mediator of the links between private stressors and job satisfaction, emotional exhaustion, psychosomatic complaints and health status. Contrary to expectations, the path between private demands and PWC was stronger in men than women. *Practical Relevance* Preventative efforts should decrease work stressors and support achieving a balance between work and family demands. The latter must be embedded in an accepting and supporting organizational culture, so that both men and women are encouraged to use these options.

**Keywords** Work stressors · Private stressors · Privacy-work conflict · Gender differences · Leadership positions · Double burden hypothesis

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Authors' Note: This study is based on data from the "Job-Stress-Index" project, a cooperation between the University of Bern, Applied University of Winterthur (ZHAW), and Health Promotion Switzerland (ger. Gesundheitsförderung Schweiz), for which Swiss employees have been investigated yearly since 2014.

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## Gesundheit und Arbeitseinstellungen von weiblichen und männlichen Führungskräften: Zusammenhänge mit privaten und arbeitsbezogenen Stressoren sowie Konflikten zwischen Privatleben und Arbeit

### Zusammenfassung

Die Vereinbarkeit von Berufs- und Privatleben ist für Führungskräfte schwierig. Eine repräsentative Stichprobe von 1070 Schweizer Führungskräften wurde zu Arbeitsstressoren (AS), privaten Stressoren (PS) und Arbeitsressourcen befragt. Einzelskalen wurden zu Indices zusammengefasst. Frauen berichteten höhere PS (Hedges'  $g = -0.66$ ) und etwas niedrigere AS ( $g = 0.16$ ). Höhere AS, nicht aber höhere PS sagten eine geringere affektive Bindung ans Unternehmen, geringere Arbeitszufriedenheit und grössere Fluktuationsabsicht vorher. AS und PS hingen mit stärkerer emotionaler Erschöpfung, schlechterem Gesundheitszustand und stärkeren psychosomatischen Beschwerden zusammen. Die Varianzaufklärung war jeweils grösser für AS als für PS. Die Arbeitsressourcen sagten sowohl Arbeitseinstellungen als auch Gesundheitsindikatoren vorher. Eine Zweifachinteraktion zeigte einen stärkeren Zusammenhang zwischen PS und emotionaler Erschöpfung bei Männern als bei Frauen; es zeigten sich keine Dreifachinteraktionen zwischen AS, PS und Geschlecht. Der Konflikt zwischen Privatleben und Arbeit (PWC) wurde als Mediator des Zusammenhangs zwischen PS und Arbeitszufriedenheit, emotionaler Erschöpfung, psychosomatischen Beschwerden und Gesundheitsstatus bestätigt. Entgegen der Erwartung war der Pfad zwischen PS und PWC bei Männern stärker als bei Frauen.

*Praktische Relevanz* Arbeitsstressoren sollten reduziert und die Vereinbarkeit von AS und PS erleichtert werden. Eine unterstützende Organisationskultur sollte männliche und weibliche Führungskräfte ermutigen, verfügbare Optionen zu nutzen.

**Schlüsselwörter** Arbeitsstressoren · Private Stressoren · Konflikte zwischen Privatleben und Arbeit · Geschlechtsspezifische Unterschiede · Führungspositionen · Doppelbelastungshypothese

### 1 Introduction

Conditions at work and in private life are both associated with health and well-being (Grandey and Cropanzano 1999). However, the stressors and resources in these domains are distributed unequally between men and women. Despite changes towards more egalitarian distribution of responsibilities women still bear greater responsibility for household chores and childcare and they typically spend more time on tasks in these domains (Ciciolla and Luthar 2019; Eek and Axmon 2015). Hence the 'double burden' of work and family roles has been a frequent focus of research (Nilsen et al. 2017). This hypothesis has its origin in role strain theory (Kahn et al. 1964), which posits that holding multiple roles, such as being an employee *and* a homemaker, may increase conflict between roles, which often results in higher work strain and health-related absenteeism (Nilsen et al. 2017). However, gender differences in the perception, and the effects, of conflicts between work and private life, if found at all, tend to be rather small (Amstad and Semmer 2009). One reason for the lack of clear effects may be that having multiple roles does not necessarily have negative effects and may in fact have positive effects. According to expansionist theory, performing multiple roles generates resources that help people manage work and private life demands more successfully (Barnett and Hyde 2001; Hyde 2016). Research on work-to-family enrichment (WFE) and family-to-work enrichment (FWE)

found that both WFE and FWE were positively related to work attitudes and to physical and mental health (Greenhaus and Powell 2006; McNall et al. 2010). Most authors now agree that the quality of the different roles is more important than the sheer number or the time spent in a particular role (Hyde 2016).

Research that takes the quality of roles into account requires the use of comparable measures/scales for the work and the privacy domain. Proxy measures such as number of children do not capture private demands as well as measures of work stressors and resources capture work demands; it does not make sense to use them for comparative analyses (Nilsen et al. 2017). For instance, time spent with household chores and childcare may often not be perceived as stressful (Sonnentag et al. 2017). Using rather rough measures of stress in the private domain may be one of the reasons why gender differences often are small or negligible (Amstad and Semmer 2009). A meta-analysis of gender differences by Shockley et al. (2017), for instance, used parental status, partner's work status and dual-earner status but only one established work stress indicator (work hours) and one work resource (autonomy). In contrast Michel et al. (2011) used elaborate measures of private life conditions and found only one work-private life conflict effect that was moderated by gender—the association between work-private life conflict and work-role ambiguity was higher for men than for women—and no privacy-work conflict effects that were moderated by gender. However, their meta-analysis only in-

investigated associations between work and private life conditions and work-private life and private life-work conflict, not associations between work or private life conditions and health and well-being. As a consequence, there is a need for studies that measure conditions at work and in private life directly, rather than relying on proxy variables, and relate them to health and well-being variables. This study uses comparable elaborated measures of stressors and resources in both domains and investigates associations between the conditions of working and private life and the health and well-being of men and women in leadership positions.

Research on women in leadership roles has yielded similar results as research on sex differences in general. Although there have been some changes in household routines in recent decades, women in leadership positions still spend more time on household tasks than men (Holst et al. 2015). The proportion of women—notably of women with children—in leadership positions is still small. One reason for women deciding against a leadership position could be the increased difficulty of balancing work and family requirements that is associated with a leadership position (Fritz and van Knippenberg 2018).

Women in leadership positions also report more work strain and lower job satisfaction than their male counterparts (e.g., Berntsson et al. 2006; Hasselhorn and Nübling 2004; Kromm et al. 2009). Leadership entails complex and diverse responsibilities towards diverse stakeholders (Miska and Mendenhall 2018), which implies a risk to leaders' own health and well-being (Barling and Cloutier 2017). It is therefore important to gain insight into the associations between work and private stressors and health and well-being among leaders. Barling and Cloutier (2017) noted that research on leaders' health is sparse. This study helps to fill this gap. It is important to note Frankenhaeuser's contribution to the field. Frankenhaeuser was the first to draw attention to the possibility that private demands may interfere with recovery after work (unwinding; e.g., Frankenhaeuser et al. 1989). In a field study with male and female middle managers and clerical workers Frankenhaeuser et al. (1989) found that it took female managers longer to unwind after work than their male counterparts, whereas stress responses at work did not differ between the sexes. Female managers' noradrenaline levels increased after work and their systolic and diastolic blood pressure levels did not decrease after work, whereas male managers' levels of noradrenaline and blood pressure decreased. Furthermore, female managers reported higher role conflict between demands at work and outside work and felt more tired than their male counterparts, reflecting their greater total workload. The differential vulnerability hypothesis assumes that women and men react differently to stressors. It is argued that women are more responsive to life events and stressors than men (McDonough and Walters 2001; Roxburgh 1996). Gender dif-

ferences in vulnerability may be due to biological or cultural factors or to the different ways in which women and men are socialised (e.g., Gerdes 1995; Tytherleigh et al. 2007). Pleck (1977) assumed asymmetrically permeable boundaries between work and family roles for both women and men. Traditional gender role expectations appear to mean that women and men experience work stressors and private stressors differently (Peeters et al. 2005). According to Pleck (1977), the socially defined role of breadwinner made paid employment more important for men, whereas women consider the family to be more important because of their still greater responsibility for family concerns. This vulnerability of the female work role to family demands is assumed to be an important part of negative stereotypes about women workers and a source of stress for women on the job. Overall, however, the findings on sex differences in the permeability of work and family demands are very mixed (e.g., Burke 2003; Eagle et al. 1997; Eby et al. 2005).

Work demands and private demands may have primarily additive effects on well-being but there may be an additional burden when demands from different life domains result in conflict between the expectations an individual faces in private life and in work roles (Amstad et al. 2011). Privacy-work conflicts occur if the demands of private life (time devoted to, and strain imposed by private life) interfere with performing work-related responsibilities, for example, having difficulty concentrating at work because your head is still stuck in a private problem or having to leave work early because you have to bring your child to the doctor. Conversely, work-privacy conflicts result from work interfering with private life, for example when a meeting takes longer, so that it becomes difficult to pick up your children at the kindergarten. In other words it is possible that there is an interaction between demands in the private and work domains, such that the effect of demands in one domain is greater if demands in the other domain are high.

## 1.1 Potential outcomes

Stressors and resources at work and at home can be assumed to be related to health and well-being (Ganster and Rosen 2013; Grandey and Cropanzano 1999; Sonnentag and Frese 2013). A variety of indicators for health and well-being would be pertinent. This study uses emotional exhaustion, as the core component of burnout (Maslach et al. 2001), subjective general health status because it is a valid indicator of subjective overall health (Idler and Benyamini 1997), and psychosomatic complaints as a measure of specific somatic complaints that can be assumed to be related to psychological influences (Sonnentag and Frese 2013).

In addition to indicators of health and well-being, work attitudes are likely to be affected by stressors and by work-family conflict (Allen et al. 2000; Podsakoff et al. 2007).

To the extent that stress appraisals focus on the domain that is seen as causing the problem, work-related stressors should be more strongly associated with work-related outcome variables than private stressors (matching hypothesis; Amstad et al. 2011). This study investigated three work-related attitudes: job satisfaction, emotional commitment and turnover intention.

The effects of private life- and work-related stress on health/well-being and attitudes may not be direct. Stressors at work and at home have been shown to produce a conflict between the two domains (Michel et al. 2011); this conflict is bi-directional and comprises work-to-private life (WPC) and private life-to-work (PWC) conflict. Such conflict may affect well-being (Amstad et al. 2011). Hence there are good reasons to assume that as well as having direct effects on health and well-being, work-related and private stressors also affect them via conflict between the two domains (Amstad and Semmer 2009; Grandey and Cropanzano 1999; Nilsen et al. 2017). Traditionally WPC has been investigated much more frequently than PWC (e.g., Amstad et al. 2011). In this study we investigated PWC as a potential mediator of the associations between conditions at work or at home and health, well-being and work-related attitudes.

## 1.2 Hypotheses

Based on the considerations presented above, we formulated the following hypotheses:

**Hypothesis 1** Mean levels of private stressors are higher for women than men.

**Hypothesis 2** Work-related stressors are associated with exhaustion (H2a), general health (H2b) and psychosomatic complaints (H2c).

**Hypothesis 3** Private stressors are associated with exhaustion (H3a), general health (H3b) and psychosomatic complaints (H3c).

**Hypothesis 4** The associations between private stressors and exhaustion (H4a), general health (H4b) and psychosomatic complaints (H4c) are stronger in women than men.

**Hypothesis 5** The associations between private stressors and exhaustion (H5a), general health (H5b) and psychosomatic complaints (H5c) are mediated by PWC, hence moderated mediation should be observed (as H4 postulates that the first path in the mediation model is stronger in women).

**Hypothesis 6** Work-related stressors are associated with affective commitment (H6a), job satisfaction (H6b) and turnover intention (H6c).

**Hypothesis 7** Private stressors are associated with affective commitment (H7a), job satisfaction (H7b) and turnover intention (H7c).

**Hypothesis 8** The associations between private stressors and affective commitment (H8a), job satisfaction (H8b) and turnover intention (H8c) are stronger in women than men.

**Hypothesis 9** The associations between private stressors and affective commitment (H9a), job satisfaction (H9b) and turnover intention (H9c) are mediated by PWC, so moderated mediation should be observed (as H8 postulates the first path in the mediation model is stronger in women).

## 2 Methods

Data were collected in 2015 using the Job-Stress-Index (JSI) assessment as part of a joint project by Health Promotion Switzerland, Zurich University of Applied Sciences and the University of Bern (Ilgic et al. 2015).

### 2.1 Sample

The sample was drawn from the large LINK Internet-Panel, the largest Swiss online panel with more than 130,000 active members. The panel is representative of the Swiss population that uses the Internet more than once a week (85% of Swiss people between 15 and 74 years of age). Being in full- or part-time work was an inclusion criterion; individuals who were in full-time vocational training were excluded. The sample included individuals from the German-, French- and Italian-speaking parts of Switzerland. The sampling goal was to obtain a sample of Swiss individuals in employment that was representative with respect to gender, age, language and economic sector. The Swiss census data of 2012 (Bundesamt für Statistik 2014), was used to apply an interlock sampling strategy to select members of the Internet-Panel to fit into 90 cells (gender [2] X age [3 ranges] X language [3] X economic sector [5]=90 cells). The final sample comprised 2844 participants of whom 1070 held a leadership position with at least one subordinate; 34% of the leaders were women; mean age was 47.1 (*SD* 10.2) years. Proportion of sex, age and employment status of our sample is comparable with a larger sample from the Swiss Labour Force Survey (SLFS; Schweizerische Arbeitskräfteerhebung 2019). Our sample of leaders is representative

of the Swiss population holding a leadership position with respect to sex, age and employment status.

## 2.2 Procedure

Participants completed the questionnaire electronically. The time taken to do so was approx. 20 min. All participants who finished the questionnaire received 200 points, corresponding to two Swiss francs (approximately \$2). Points can be used to buy a telephone card or supermarket or book shop voucher; they can also be donated to charities.

All participants gave informed consent and all responses to questionnaire questions were anonymous. The study was carried out in accordance with the code of ethics of the World Medical Association (Declaration of Helsinki) and the Swiss Society of Psychology. Ethical approval was not necessary because the study was carried out in cooperation with a foundation that acts under government mandate.

## 2.3 Measures

As described below, we aggregated the scales for work stressors, private stressors, and work resources into indices in order to make them more comparable. Whereas such an aggregation disregards unique aspect of the specific constructs, it enables seeing the “big picture”, comparable to regarding people as more or less ill even though their specific illnesses may differ (see the discussion of this issue with regard to core self-evaluations, another aggregate construct that is frequently employed, by Bono and Judge 2003). Methodologically, it has the advantage of reducing the number of variables, and it avoids problems of multicollinearity. Pertinent reliability indices according to Nunnally and Bernstein (1994) were high (see below).

Most of the items (64%) used a five-point Likert answer-scale. Whenever the original scales used other formats, these were transformed into five-point Likert scales as well before aggregating them.

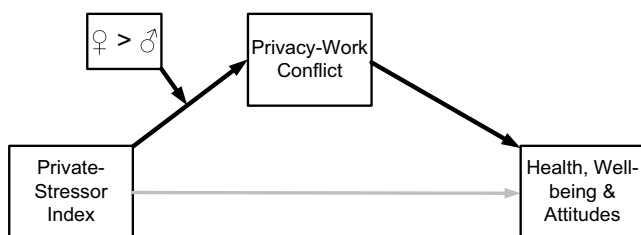
**Private life-work conflict (PWC)** was measured with the four of the six items making up the negative home-work interaction subscale developed by Geurts et al. (2005) that had the highest item-total correlations. A sample item is ‘How often do you have difficulty concentrating on your work because you are preoccupied with domestic matters’. Response options ranged from 0 (never) to 3 (always).

**Work stressors** were measured using scales for time pressure, role uncertainty, and performance constraints from the Instrument for Stress-related Task Analysis (ISTA, Version 5.1; Semmer et al. 1995; see Irmer et al. 2019), a qualitative overload scale from the SALSA questionnaire (Udris and Rimann 1999), and two scales of social stress due to supervisors and colleagues (Frese and Zapf 1987). *Time pressure* was assessed with a scale comprising four items (e.g.,

‘How often is a fast pace of work required?’). *Role uncertainty* was measured with three items (dealing with, e.g., unclear instructions; need for decisions based on insufficient information) and *performance constraints* (e.g., having to work with unsuitable materials or tools) with four items. A fourth stressor scale consisted of three items on *qualitative overload* (e.g., having to carry out tasks for which one is not really trained and prepared). Responses to all four scales were given using a five-point Likert-scale ranging from 1 (*very rarely/never*) to 5 (*very often/constantly*). *Social stressors at work* (Frese and Zapf 1987) were measured as difficulties with colleagues (five items, e.g., ‘some colleagues always blame me for mistakes, never themselves’) and supervisors (five items, e.g., ‘I often quarrel with my superior’). Responses were given using a five-point Likert-scale ranging from 1 (*not at all true*) to 5 (*absolutely true*). The six stressor scales were combined into a single work-stressor index representing demands from the job demand control model, as has been done in other studies (Frese 1985; Grebner et al. 2004; Igitic et al. 2017).

**Work resources** *Job control* was measured with the ISTA (Semmer et al. 1995; see Irmer et al. 2019), which consists of six items addressing method control (how to perform tasks) and time control (when to do tasks and take breaks, etc.). Responses were given using a five-point Likert-scale ranging from 1 (*very rarely/never*) to 5 (*very often/constantly*). *Task Identity* is the degree to which participants can complete a task from beginning to end and was measured with the item ‘In my work, one can complete a task from A to Z’ by Udris and Rimann (1999) to which responses were given using a five-point Likert-scale ranging from 1 (*never*) to 5 (*always*). *Social support from superiors* also was assessed with a five-item measure by Udris and Rimann (1999) to which responses were given using a five-point Likert-scale ranging from 1 (*never*) to 5 (*always*). *Appreciation at work* was measured with the item ‘I generally feel appreciated in my job’ (Jacobshagen et al. 2008) to which responses were given using a seven-point Likert-scale ranging from 1 (*do not agree at all*) to 7 (*completely agree*). Scores for the four resources were aggregated after transforming into a consistent range (1 to 5) to yield a resource index with a response range comparable to the stressor indices.

**Private life-related stressors** Peeters et al. (2005) developed an instrument designed to measure three types of private life-related stressors: quantitative, emotional and mental. Responses are given using a four-point Likert-scale ranging from 0 (*never*) to 3 (*always*). The *quantitative* private stressors subscale asks about the experience of having a lot to do after work (3 items), the *emotional* private stressors subscale asks about private emotional problems during non-



**Fig. 1** Privacy-work conflict mediates the association between private stressors and indicators of health, well-being, and work attitudes (H4a–f)

**Abb. 1** Privacy-Work-Konflikt vermittelt den Zusammenhang zwischen privaten Stressoren und Indikatoren für Gesundheit, Wohlbefinden und Arbeitseinstellung (H4a–f)

work time (2 items) and the *mental* private stressors subscale deals with the need to plan and organise many things in private life (3 items). The three scales were combined to yield a private-stressor index after transformation into a five-point scale.

**Affective commitment** was assessed with four items from the scale by Allen and Meyer (1990). A sample item is ‘This organisation has a great deal of personal meaning for me’; responses were given using a seven-point Likert-scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

**Job satisfaction** was measured with a single item: ‘How satisfied are you overall when you consider your work?’ (Semmer et al. 1990) to which responses were given using a series of seven faces showing expressions ranging from very sad to very happy (Kunin 1955).

**Intention to quit** Participants were asked with two items how likely they were to be working for the same organisation in 6 and 12 months time (Bluedorn 1982). Responses were given using a five-point Likert-scale ranging from 1 (*very unlikely*) to 5 (*very likely*).

**Emotional exhaustion** was measured using an eight-item scale (e.g., feeling emotionally drained; Demerouti et al. 2001). Responses were given using a four-point Likert-scale ranging from 1 (*not at all*) to 4 (*absolutely*).

**Self-reported general health** was measured using a single item (Idler and Benyamini 1997; Simon et al. 2005) to which responses were given using a five-point Likert-scale ranging from 1 (*very poor*) to 5 (*very good*).

**Psychosomatic complaints** Participants were asked about the frequency with which they experienced headaches, neck and shoulder pain, back pain, including lower back pain, joint and limb pain, lack of appetite, skin problems and eye problems (Bauer and Schmid 2008). Responses were given using a five-point Likert-scale ranging from 1 (*never*) to 5 (*always*).

**Control variables** Age, relationship status (partnered; single), number of children and employment status (full-time; part-time as percentage of full-time equivalent [FTE]), were included as control variables in the regression analy-

ses. Work and private demands change with *age* (Rantanen et al. 2012). Job satisfaction has been shown to be positively related to age (Spector 1997). *Relationship status* was included as a control variable because having a partner can alleviate stress or buffer the stressor-strain association (Grandey and Cropanzano 1999). Participants were asked whether they were (1) not married; without partner, (2) not married; with partner, (3) married, (4) separated/divorced/widowed; without partner, (5) separated/divorced/widowed; with partner and (6) in a registered partnership. Response options 1 and 4 were coded as single status; other responses were coded as partnered status.

*Number of children* was included as a control variable because parenthood has been shown to be associated with a closer stressor-strain link (Siegrist et al. 2006). *Employment status* was included because full-time work has recently been shown to be associated with greater emotional exhaustion (Igic et al. 2014), and this association is stronger in women than men (Igic et al. 2014; Oldenburg et al. 2010).

## 2.4 Statistical analyses

Data were analysed with multiple regression. The role of PWC as mediator of the relationships between the stressors and the six outcome variables (Fig. 1) were analysed using the PROCESS SPSS macro developed by Hayes et al. (2011), which estimates total, direct, and indirect effects using a set of OLS regressions and bootstrapping to estimate the confidence intervals for indirect path coefficients. We used 5000 bootstrapped samples and included the control variables mentioned above.

Preacher et al. (2007) defined moderated mediation as the phenomenon that occurs when the strength of an indirect effect depends on the level of some other variable; in other words when a mediation relationship is contingent on the level of a moderator. We investigated sex as potential moderator of indirect effects (Model 7 in Process). All tests were two-tailed and the alpha level was set at 5%.

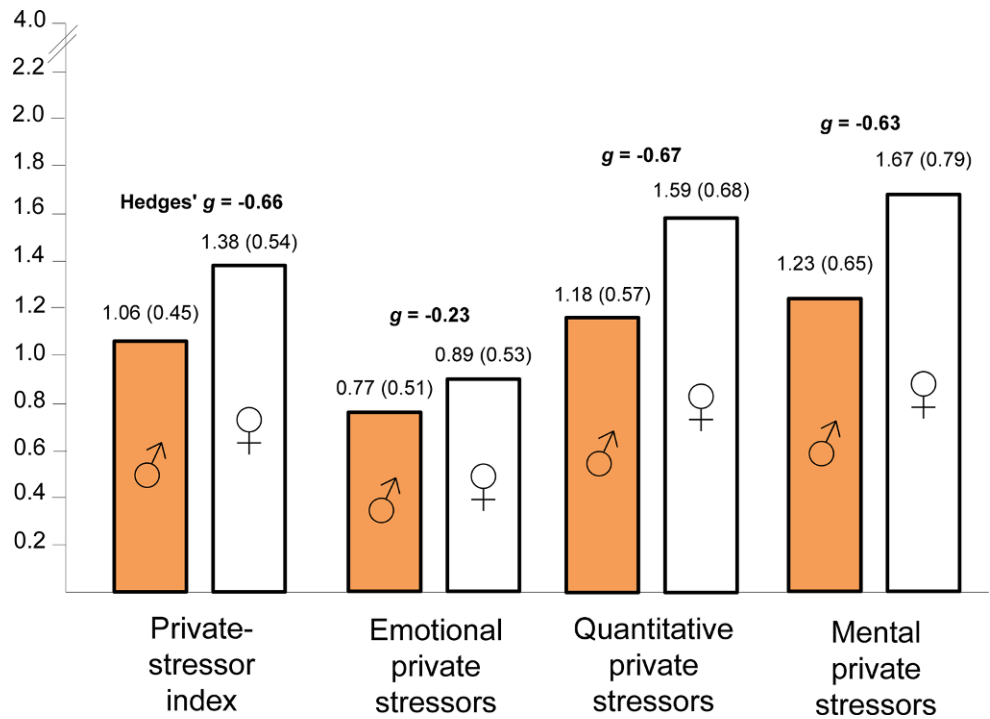
## 3 Results

### 3.1 Differences between male and female leaders

Mean scores on the work-stressor index were a bit lower than mean levels of private stressors when private stressors were transformed to a scale that is comparable to work stressors ( $t(1069)=-15.49$ ,  $p<0.001$ ) and there were sex differences in both.

Men reported slightly higher levels of work stressors than women ( $M_{\text{men}}=2.23$ ,  $SD=0.49$ ,  $M_{\text{women}}=2.15$ ,  $SD=0.52$ ,  $t(1068)=-2.59$ ,  $p<0.01$ , Hedges’  $g=0.16$ ). Sex differences were in the same direction for all stressor subscales.

**Fig. 2** Mean scores of male and female leaders on the private-stressor index and subscales (4-point scale 0–3). *Notes.* Small effect = 0.2; medium effect = 0.5; large effect = 0.8 (Cohen 1988)  
**Abb. 2** Mittelwerte des Privaten Stressoren Index und Unterskalen (4-Punkte-Skala 0–3) von männlichen und weiblichen Führungskräften



There were large sex differences in private stressor levels (Hypothesis 1), with women reporting higher private stressors ( $M_{\text{women}} = 1.38, SD = 0.54$ ) than men ( $M_{\text{men}} = 1.06, SD = 0.45, t(621.69) = 9.86, p < 0.001$ , see Fig. 2, Hedges'  $g = -0.66$ , moderate effect size). As shown in Fig. 2, sex differences were less pronounced for emotional private stressors than for quantitative and mental private stressors. Scores on the work-resources index were slightly higher in women ( $M = 4.09, SD = 0.64$ ) than men ( $M = 4.01, SD = 0.60, t(1068) = 2.07, p = 0.038, g = -0.13$ ); the sex differences were most pronounced in social support from supervisor ( $g = -0.18$ ) and appreciation ( $g = -0.14$ ), whilst levels of job control ( $g = -0.03$ ) and task identity ( $g = -0.06$ ) were similar in men and women.

There were no sex differences in mean scores on the work attitude variables. In descriptive terms affective commitment was high in both women ( $M = 5.41, SD = 1.38$ ) and men ( $M = 5.46, SD = 1.26, t(663.79) = 0.65, p = 0.519$ ) as was general job satisfaction ( $M_{\text{women}} = 5.69, SD = 1.04; M_{\text{men}} = 5.60, SD = 1.04, t(1068) = 1.40, p = 0.161$ ). Intention to quit was low in both women ( $M = 2.00, SD = 0.98$ ) and men ( $M = 1.95, SD = 0.88, t(656.13) = 0.72, p = 0.454$ ).

Turning to indicators of health and well-being, there were no sex differences in mean emotional exhaustion ( $M_{\text{women}} = 1.99, SD = 0.53; M_{\text{men}} = 2.03, SD = 0.54, t(1068) = -1.16, p = 0.248$ ) or general health status ( $M_{\text{women}} = 4.14, SD = 0.66; M_{\text{men}} = 4.08, SD = 0.69, t(1068) = 1.18, p = 0.237$ ), but female leaders reported slightly more frequent psychosomatic complaints ( $M = 2.17, SD = 0.58$ ) than

male leaders ( $M = 2.04, SD = 0.62, t(1068) = 3.33, p < 0.001$ , Hedges'  $g = -0.21$ ).

Full-time employment was predominant in men (91%) but much less common for women (51%). Mean percentage FTE was lower in women ( $M = 79.30, SD = 25.58$ ) than men ( $M = 96.46, SD = 13.22, t(456.78) = -11.95, p < 0.001$ , Hedges'  $g = 0.94$ ). The mean age of male and female participants was similar ( $M_{\text{women}} = 46.31$  years,  $SD = 9.96; M_{\text{men}} = 47.43$  years,  $SD = 10.30; t(1068) = -1.69, p = 0.091$ ). Parenthood was more frequent in men (33%) than in women (22%;  $\chi^2(1) = 14.78, p < 0.001$ ) and men were also more likely to be partnered (86%) than women (77%;  $\chi^2(1) = 13.20, p < 0.001$ ). Large minorities of both men and women had a university degree (men: 40.8%; women: 40.1%); the next most common type of qualification was an apprenticeship (men: 34%; women: 35.9%).

Descriptive statistics and correlations between study variables are shown in Table 1.

### 3.2 Correlations

There was a modest correlation between the work-stressor index and the private-stressor index ( $r = 0.21, p < 0.001$ ; see Table 1). The work-stressor index had the expected associations with all three attitudinal measures whereas the private-stressor index was only associated with job satisfaction ( $r = -0.12, p < 0.001$ ). The health and well-being variables were associated with both types of stressors, but the correlations with work-stressors were clearly higher than those with private stressors. The appropriate test of difference

**Table 1** Means (*M*), standard deviations (*SD*), reliabilities, and correlations between study variables  
**Tab. 1** Mittelwerte (*M*), Standardabweichungen (*SD*), Reliabilitäten und Korrelationen zwischen den untersuchten Variablen

Variables	<i>M</i>	<i>SD</i>	$\alpha$ /Rel	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Work-stressor index (1–5)	2.20	0.50	0.95 <sup>a</sup>														
2. Private-stressor index (0–3)	1.17	0.51	0.83 <sup>a</sup>	0.21***													
3. Affective commitment (1–7)	5.44	1.30	0.84	-0.35***	-0.04												
4. Job satisfaction (1–7)	5.63	1.04	n.a.	-0.50***	-0.12***	0.53***											
5. Turnover intention (1–5)	1.97	0.92	0.80	0.40***	0.04	-0.54***											
6. Emotional exhaustion (1–4)	2.01	0.54	0.84	0.58***	0.23***	-0.35***	-0.53***	0.36***									
7. General health status (1–5)	4.10	0.68	n.a.	-0.27***	-0.12***	0.14**	0.26***	-0.18***	-0.43***								
8. Psychosomatic complaints (1–5)	2.09	0.61	0.74	0.35***	0.25***	-0.11***	-0.28***	0.19***	0.45***	-0.45***							
9. Sex	0.66	0.47	n.a.	0.08**	-0.30***	0.02	-0.04	-0.02	0.04	-0.04	-0.10**						
10. Age	47.06	10.20	n.a.	-0.14***	-0.06	0.12***	0.11**	-0.13***	-0.12***	0.04	-0.10**	0.05					
11. Part-time work (% FTE)	90.72	20.03	n.a.	0.12***	-0.23***	-0.04	-0.06	-0.01	0.11***	-0.01	-0.02	0.41***	-0.07*				
12. Partnership	0.83	0.37	n.a.	-0.01	-0.04	0.05	0.04	-0.06	-0.02	-0.01	-0.01	0.11***	0.04	-0.06*			
13. Number of Children	0.51	0.90	n.a.	-0.02	0.15***	0.06*	0.03	-0.05	-0.07*	0.05	-0.10**	0.12***	-0.29***	-0.03	0.21***		
14. Work-recovery sources index (1–5)	4.04	0.62	0.85 <sup>a</sup>	-0.57***	-0.09**	0.52***	0.55***	-0.48***	-0.43***	0.22***	-0.26***	-0.06*	0.18***	-0.11***	0.04	0.02	
15. Privacy-work conflict (0–3)	0.35	0.39	0.74	0.25***	0.40***	-0.07*	-0.20***	0.06	0.29***	-0.17***	0.24***	-0.04	-0.09**	-0.02	-0.03	0.06*	-0.15***

*N* = 1070

$\alpha$  = Cronbach's Alpha. Time pressure  $\alpha$  = 0.84; role uncertainty  $\alpha$  = 0.78; performance constraints  $\alpha$  = 0.71; qualitative overload  $\alpha$  = 0.80; social stressors at work colleagues  $\alpha$  = 0.84; social stressors at work supervisor  $\alpha$  = 0.87; job control  $\alpha$  = 0.86; social support from supervisor  $\alpha$  = 0.87; quantitative private stressors  $\alpha$  = 0.72; emotional private stressors  $\alpha$  = 0.86

In parentheses after the variable name is the range of the response scale. \* $p$  < 0.05, \*\* $p$  < 0.01, \*\*\* $p$  < 0.001; all two-tailed

Sex: 0 = women, 1 = men. Partnership: 0 = no partner, 1 = partnered

Reliability, %FTE percentage of full-time equivalent

<sup>a</sup>Reliability of the composite indices was estimated by using the formula proposed by Nunnally and Bernstein (1994) for scales consisting of sub-scales that are correlated but do not represent a homogeneous construct



**Table 2** Multiple linear regression of emotional exhaustion, general health status, and psychosomatic complaints on work-related stressors and private stressors (Beta coefficient  $\beta$ ,  $p$ = probability)

**Tab. 2** Multiple lineare Regression zur Vorhersage von emotionaler Erschöpfung, allgemeinem Gesundheitszustand und psychosomatische Beschwerden durch arbeitsbedingte Stressoren und private Stressoren (Beta Koeffizient  $\beta$ ,  $p$ =Probability)

	<i>Emotional Exhaustion</i>		<i>General Health Status</i>		<i>Psychosomatic Complaints</i>	
	$\beta$	$p$	$\beta$	$p$	$\beta$	$p$
1 Step						
Sex (0= female, 1 = male)	-0.00	0.955	-0.04	0.186	-0.10	0.003
Age	-0.07	0.015	0.02	0.508	-0.08	0.011
Part-time work (% FTE)	0.06	0.060	0.04	0.216	-0.02	0.528
Partnership	0.02	0.478	-0.03	0.333	0.04	0.197
Number of Children	-0.09	0.003	0.06	0.055	-0.11	0.001
Work-resources index	-0.41	0.000	0.22	0.000	-0.26	0.000
2 Step						
Sex (0= female, 1 = male)	0.03	0.272	-0.06	0.063	-0.05	0.144
Age	-0.06	0.036	0.01	0.652	-0.08	0.013
Part-time work (% FTE)	0.06	0.033	0.04	0.243	-0.01	0.847
Partnership	0.02	0.446	-0.03	0.316	0.04	0.124
Number of Children	-0.11	0.000	0.08	0.022	-0.14	0.000
Work-resources index	-0.14	0.000	0.10	0.006	-0.10	0.004
Work-stressor index	0.44	0.000	-0.19	0.000	0.24	0.000
Private-stressor index	0.16	0.000	-0.09	0.007	0.20	0.000
3 Step						
Sex (0= female, 1 = male)	0.02	0.503	-0.06	0.079	-0.05	0.123
Age	-0.05	0.043	0.01	0.651	-0.08	0.012
Part-time work (% FTE)	0.05	0.056	0.04	0.292	-0.00	0.894
Partnership	0.03	0.327	-0.03	0.319	0.05	0.101
Number of Children	-0.11	0.000	0.08	0.018	-0.14	0.000
Work-resources index	-0.14	0.000	0.10	0.006	-0.10	0.004
Work-stressor index	0.39	0.000	-0.16	0.005	0.17	0.001
Private-stressor index	0.08	0.045	-0.11	0.031	0.18	0.000
Stressors Work $\times$ Private	0.04	0.102	-0.05	0.113	0.01	0.627
Work stressors $\times$ Sex	0.05	0.254	-0.04	0.419	0.09	0.088
Private stressors $\times$ Sex	0.10	0.017	0.03	0.554	0.01	0.823
4 Step						
Sex (0= female, 1 = male)	0.02	0.517	-0.06	0.076	-0.05	0.158
Age	-0.05	0.043	0.01	0.651	-0.08	0.012
Part-time work (% FTE)	0.05	0.056	0.04	0.293	-0.00	0.900
Partnership	0.03	0.328	-0.03	0.317	0.05	0.100
Number of Children	-0.11	0.000	0.08	0.018	-0.14	0.000
Work-resources index	-0.14	0.000	0.10	0.006	-0.10	0.004
Work-stressor index	0.39	0.000	-0.15	0.009	0.16	0.005
Private-stressor index	0.08	0.046	-0.11	0.031	0.18	0.000
Stressors Work $\times$ Private	0.04	0.328	-0.06	0.226	0.04	0.396
Work stressors $\times$ Sex	0.05	0.271	-0.05	0.397	0.09	0.070
Private stressors $\times$ Sex	0.10	0.017	0.03	0.561	0.01	0.802
Work stressors $\times$ Private stressors $\times$ Sex	0.00	0.941	0.01	0.789	-0.03	0.485

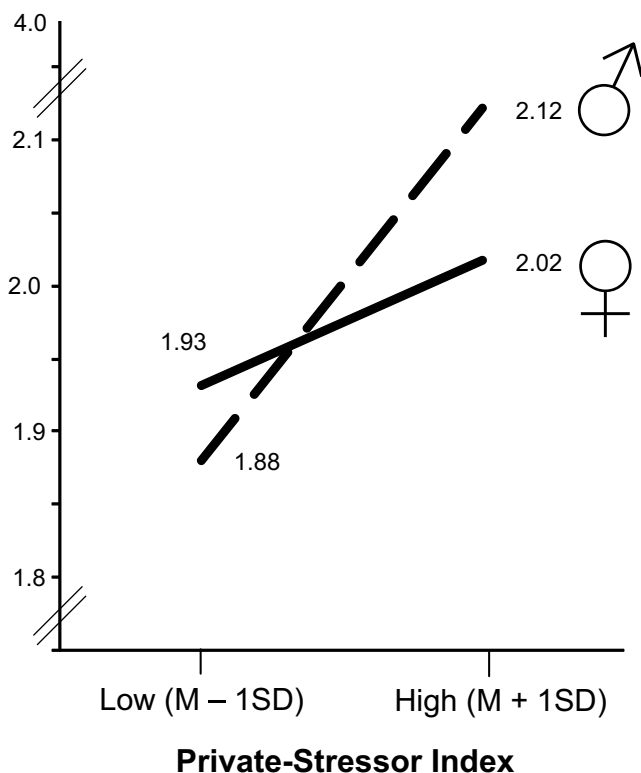
$N= 1070$

Prediction of emotional exhaustion:  $R^2=0.20$  for step 1,  $F(6,1063)= 43.76$ ,  $p<0.001$ ;  $\Delta R^2=0.18$  for step 2,  $F(2,1061)= 151.20$ ,  $p<0.001$ ;  $\Delta R^2= 0.006$  for step 3,  $F(3,1058)= 3.54$ ,  $p=0.014$ ;  $\Delta R^2<0.001$  for step 4,  $F(1,1057)=0.01$ ,  $p= 0.941$

Prediction of general health status:  $R^2=0.05$  for step 1,  $F(6,1063)= 10.14$ ,  $p<0.001$ ;  $\Delta R^2=0.04$  for step 2,  $F(2,1061)= 22.14$ ,  $p<0.001$ ;  $\Delta R^2=0.002$  for step 3,  $F(3,1058)= 0.93$ ,  $p=0.424$ ;  $\Delta R^2<0.001$  for step 4,  $F(1,1057)=0.07$ ,  $p= 0.789$

Prediction of psychosomatic complaints:  $R^2=0.10$  for step 1,  $F(6,1063)= 18.80$ ,  $p<0.001$ ;  $\Delta R^2=0.09$  for step 2,  $F(2,1061)= 56.83$ ,  $p<0.001$ ;  $\Delta R^2=0.003$  for step 3,  $F(3,1058)= 1.10$ ,  $p=0.350$ ;  $\Delta R^2<0.001$  for step 4,  $F(1,1057)=0.49$ ,  $p= 0.485$

%FTE percentage of full-time equivalent



**Fig. 3** Interaction between private-stressor index and sex with respect to emotional exhaustion in 1070 participants in leadership position

**Abb. 3** Interaktion zwischen Privaten Stressoren und Geschlecht bei der Vorhersage von emotionaler Erschöpfung bei 1070 Teilnehmern in Führungspositionen

(Lee and Preacher 2013) showed that the correlations were different in the cases of emotional exhaustion ( $z = 10.69$ ,  $p < 0.001$ ), general health status ( $z = -4.02$ ,  $p < 0.001$ ), and psychosomatic complaints ( $z = 2.79$ ,  $p = 0.005$ ).

Work resources were more closely related to work attitudes than work stressors (affective commitment:  $z = 6.89$ ,  $p < 0.001$ ; job satisfaction:  $z = 2.16$ ,  $p = 0.031$ ; turnover intention:  $z = 3.23$ ,  $p = 0.001$ ) and private stressors (affective commitment:  $z = 12.91$ ,  $p < 0.001$ ; job satisfaction:  $z = 11.84$ ,  $p < 0.001$ ; turnover intention:  $z = 11.63$ ,  $p < 0.001$ ).

The correlations between work resources and health and well-being were significant weaker than those of work stressors (emotional exhaustion:  $z = -6.42$ ,  $p < 0.001$ ; general health status:  $z = -1.83$ ,  $p = 0.034$ ; psychosomatic complaints:  $z = -3.37$ ,  $p < 0.001$ ). The correlations between work resources were significant stronger than those of private stressors in the case of emotional exhaustion ( $z = 5.32$ ,  $p < 0.001$ ) and general health status ( $z = 2.48$ ,  $p = 0.013$ ). No difference in association with psychosomatic complaints was observed between work resources and private stressors ( $z = 0.25$ ,  $p = 0.799$ ).

### 3.3 Regression analyses

**Health and well-being** Both work stressors and private stressors contributed uniquely to the prediction of all three health outcomes, and so did work resources (Hypotheses 2 & 3; Table 2, Step 2).

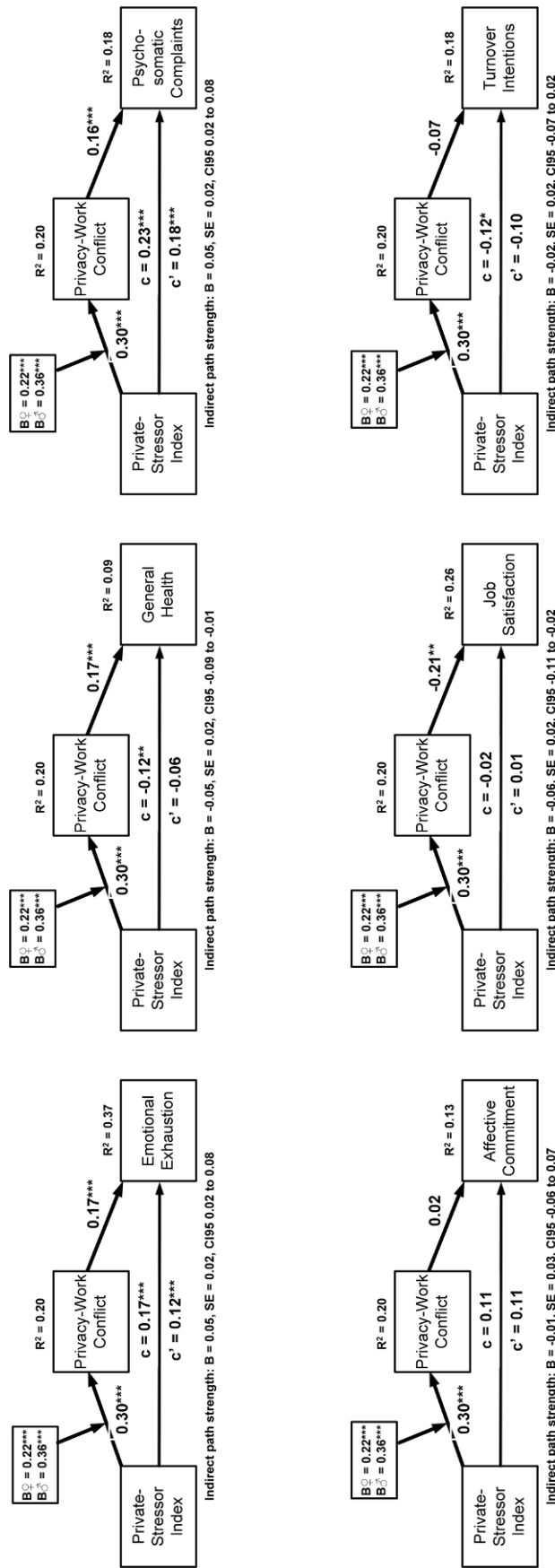
In order to test the difference between standardised beta weights of work- and private-stressor index, their 95% confidence intervals were estimated by bias-corrected bootstrapping (1000 resamples). If 95% confidence intervals (CIs) overlap by 50% or less of one CI arm, the difference between beta weights can be considered statistically significant ( $p < 0.05$ ; Cumming 2009). It should be noted that work-related stressors predicted emotional exhaustion and general health status, but not psychosomatic complaints, more strongly than private life-related stressors. With general health status as dependent variable there was a small overlap of the confidence intervals for the beta weights of work stressors ( $\beta = -0.19$ , CI95:  $-0.27$  to  $-0.12$ ) and private stressors ( $\beta = -0.09$ , CI95:  $-0.15$  to  $-0.03$ ); it was smaller than 50% of one CI arm ( $p < 0.05$ ). With emotional exhaustion as dependent variable there was no overlap between the confidence intervals for the beta weights of work stressors ( $\beta = 0.44$ , CI95:  $0.38$  to  $0.50$ ) and private stressors ( $\beta = 0.16$ , CI95:  $0.11$  to  $0.22$ ). With frequency of psychosomatic complaints as dependent variable there was no difference in the predictive power of work stressors and private stressors; the overlap of confidence intervals was more than 50% of one CI arm ( $p > 0.05$ ) between beta weights of work stressors ( $\beta = 0.24$ , CI95:  $0.17$  to  $0.31$ ) and private stressors ( $\beta = 0.20$ , CI95:  $0.14$  to  $0.26$ ).

The prediction of emotional exhaustion and general health by work resources was comparable to the prediction by private stressors. In prediction of psychosomatic complaints, private stressors ( $\beta = 0.20$ , CI95:  $0.14$  to  $0.26$ ) were the stronger predictor than work resources ( $\beta = -0.10$ , CI95:  $-0.17$  to  $-0.03$ ;  $p < 0.05$ ).

Work stressors were a more powerful predictor than work resources for emotional exhaustion ( $\beta = 0.44$ , CI95:  $-0.38$  to  $0.50$  vs.  $\beta = -0.14$ , CI95:  $0.20$  to  $0.09$ ) and psychosomatic complaints ( $\beta = 0.24$ , CI95:  $0.17$  to  $0.31$  vs.  $\beta = -0.10$ , CI95:  $-0.17$  to  $-0.03$ ) but in regression of general health both predictors did not differ in strength ( $p > 0.05$ ).

With health variables as the dependent variable there was one significant interaction between the predictors; this involved private stressors and sex as predictors of emotional exhaustion (Table 2, step 3). However, as illustrated in Fig. 3, the difference between slopes for men and women is in the opposite direction to what was predicted. Contrary to Hypothesis 4, the association between private stressors and emotional exhaustion was stronger in men than women.

Switzerland has four official languages. Controlling for the three main languages (German, French, Italian) did not



**Fig. 4** Test of a mediation model with PWC as mediator of the link between private-stressor index and health indicators or work attitudes; hypothesis 4 postulates a stronger path between private stressors and PWC in women compared to men

**Abb. 4** Prüfung eines Mediationsmodells mit PWC als Mediator des Zusammenhangs zwischen privaten Stressoren und Gesundheitsindikatoren oder Arbeitseinstellungen; Hypothese 4 postuliert einen stärkeren Pfad zwischen privaten Stressoren und PWC bei Frauen im Vergleich zu Männern

**Table 3** Multiple linear regression of work attitudes on work-related stressors and private stressors (Beta coefficient  $\beta$ ,  $p$ =probability)**Tab. 3** Multiple lineare Regression zur Vorhersage von Arbeitseinstellungen durch arbeitsbedingte Stressoren und private Stressoren (Beta Koeffizient  $\beta$ ,  $p$ =Probability)

	Affective Commitment		Job Satisfaction		Turnover Intention		
	$\beta$	$p$	$\beta$	$p$	$\beta$	$p$	
1	Step						
	Sex (0=female, 1=male)	0.04	0.186	-0.02	0.545	-0.02	0.511
	Age	0.04	0.148	0.01	0.620	-0.06	0.053
	Part-time work (% FTE)	0.01	0.732	0.01	0.681	-0.05	0.074
	Partnership	0.01	0.787	0.01	0.676	-0.03	0.353
	Number of Children	0.06	0.036	0.02	0.452	-0.05	0.100
	Work resources index	0.52	0.000	0.55	0.000	-0.47	0.000
2	Step						
	Sex (0=female, 1=male)	0.05	0.096	-0.02	0.529	-0.04	0.164
	Age	0.04	0.209	0.01	0.974	-0.04	0.128
	Part-time work (% FTE)	0.02	0.539	0.02	0.473	-0.07	0.018
	Partnership	0.01	0.685	0.02	0.549	-0.03	0.219
	Number of Children	0.05	0.085	0.02	0.490	-0.03	0.325
	Work resources index	0.47	0.000	0.39	0.000	-0.37	0.000
	Work-stressor index	-0.08	0.013	-0.27	0.000	0.21	0.000
	Private-stressor index	0.03	0.243	-0.03	0.269	-0.06	0.041
3	Step						
	Sex (0=female, 1=male)	0.06	0.059	-0.01	0.643	-0.04	0.155
	Age	0.03	0.247	0.00	0.987	-0.04	0.145
	Part-time work (% FTE)	0.03	0.379	0.03	0.353	-0.08	0.009
	Partnership	0.01	0.685	0.01	0.621	-0.03	0.216
	Number of Children	0.05	0.100	0.02	0.588	-0.03	0.388
	Work resources index	0.47	0.000	0.39	0.000	-0.37	0.000
	Work-stressor index	-0.14	0.004	-0.28	0.000	0.28	0.000
	Private-stressor index	0.08	0.064	0.03	0.537	-0.10	0.020
	Stressors Work $\times$ Privat	-0.03	0.309	0.01	0.723	-0.03	0.306
	Work stressors $\times$ Sex	0.09	0.064	0.02	0.731	-0.10	0.033
	Private stressors $\times$ Sex	-0.07	0.116	-0.07	0.073	0.07	0.133
4	Step						
	Sex (0=female, 1=male)	0.07	0.034	-0.01	0.797	-0.05	0.093
	Age	0.03	0.247	0.00	0.987	-0.04	0.145
	Part-time work (% FTE)	0.03	0.369	0.03	0.346	-0.08	0.008
	Partnership	0.01	0.672	0.01	0.612	-0.03	0.208
	Number of Children	0.05	0.104	0.02	0.598	-0.03	0.399
	Work resources index	0.47	0.000	0.39	0.000	-0.37	0.000
	Work-stressor index	-0.17	0.001	-0.30	0.000	0.31	0.000
	Private-stressor index	0.08	0.059	0.03	0.517	-0.11	0.018
	Stressors Work $\times$ Private	0.03	0.553	0.05	0.229	-0.09	0.047
	Work stressors $\times$ Sex	0.10	0.032	0.03	0.549	-0.12	0.014
	Private stressors $\times$ Sex	-0.07	0.131	-0.07	0.081	0.06	0.151
	Work stressors $\times$ Private stressors $\times$ Sex	-0.07	0.109	-0.05	0.206	0.07	0.084

 $N=1070$ 

Prediction of affective commitment:  $R^2=0.28$  for step 1,  $F(6,1063)=67.94$ ,  $p<0.001$ ;  $\Delta R^2=0.004$  for step 2,  $F(2,1061)=3.26$ ,  $p=0.039$ ;  $\Delta R^2=0.005$  for step 3,  $F(3,1058)=2.54$ ,  $p=0.056$ ;  $\Delta R^2=0.002$  for step 4,  $F(1,1057)=2.57$ ,  $p=0.109$

Prediction of job satisfaction:  $R^2=0.30$  for step 1,  $F(6,1063)=76.88$ ,  $p<0.001$ ;  $\Delta R^2=0.05$  for step 2,  $F(2,1061)=42.34$ ,  $p<0.001$ ;  $\Delta R^2=0.002$  for step 3,  $F(3,1058)=1.09$ ,  $p=0.352$ ;  $\Delta R^2=0.001$  for step 4,  $F(1,1057)=1.60$ ,  $p=0.206$

Prediction of turnover intentions:  $R^2=0.24$  for step 1,  $F(6,1063)=55.59$ ,  $p<0.001$ ;  $\Delta R^2=0.03$  for step 2,  $F(2,1061)=19.37$ ,  $p<0.001$ ;  $\Delta R^2=0.004$  for step 3,  $F(3,1058)=1.96$ ,  $p=0.119$ ;  $\Delta R^2=0.002$  for step 4,  $F(1,1057)=2.99$ ,  $p=0.084$

%FTE percentage of full-time equivalent

change the results of the regression analyses in any noteworthy way.

**Mediation by privacy-work conflict—health indicators** Testing of PWC as a mediator of the link between private stressors and health indicators (Hypothesis 5) revealed significant indirect pathways linking private stressors to emotional exhaustion ( $B=0.05$ ,  $SE=0.02$ , CI95 0.02 to 0.08), general health status ( $B=-0.05$ ,  $SE=0.02$ , CI95  $-0.09$  to  $-0.01$ ), and psychosomatic complaints ( $B=0.05$ ,  $SE=0.02$ , CI95 0.02 to 0.08; Fig. 4). All indirect paths were small in terms of effect size. The relationship between private stress and general health status was fully mediated by PWC, whereas the relationships between private stress and emotional exhaustion and frequency of psychosomatic complaints were partially mediated.

**Attitudes** Work resources were the strongest predictors of attitudes (Table 3, Step 2). Work stressors also were unique predictors of affective commitment, job satisfaction and turnover intention (Hypothesis 6). Private stressors were only unique predictors of turnover intention, which was negatively related to private stressors (Hypothesis 7).

In prediction of affective commitment there was no overlap between the confidence intervals for the beta weights of work stress ( $\beta=-0.08$ , CI95  $-0.15$  to  $-0.02$ ) and private stress ( $\beta=0.03$ , CI95  $-0.02$  to  $0.09$ ), indicating a significant difference ( $p<0.05$ ). With job satisfaction as the dependent variable there was also no overlap between the confidence intervals for the beta weights of work stressors ( $\beta=-0.27$ , CI95  $-0.33$  to  $-0.21$ ) and private stressors ( $\beta=-0.03$ , CI95  $-0.09$  to  $0.02$ ), indicating a significant difference ( $p<0.05$ ). Regression of turnover intention on work stressors ( $\beta=0.21$ , CI95 0.14 to 0.27) and private stressors ( $\beta=-0.06$ , CI95  $-0.12$  to  $-0.003$ ) showed no overlap of CIs. Work stressors were more powerful predictors than private stressors for affective commitment, job satisfaction, and turnover intentions (all  $ps<0.05$ ). Work resources were as well a more powerful predictor than work stressors for affective commitment, job satisfaction, and turnover intentions (all  $ps<0.05$ ).

It is notable that the interactions between work stressors, private stressors and sex did not increase the proportion of variance explained (Table 3, Step 3; although with turnover intention as dependent variable there was a small interaction between work stressors and sex; Hypothesis 8).

**Mediation by privacy-work conflict—attitudes** Job satisfaction was linked to private stress via PWC, but affective commitment and turnover intention were not (Fig. 4, lower part).

The indirect paths were stronger in men than in women because the path from private stress to PWC was stronger in

men ( $B=0.36$ ) than in women ( $B=0.22$ ). Thus the moderation of the mediation effect was in the opposite direction to that postulated in Hypothesis 9, which postulated a stronger effect among women.

## 4 Discussion

Concerning exposure to work stressors and access to work resources, there were no drastic differences between men and women in leadership positions in our study. In contrast, women were exposed to clearly higher levels of private stressors, primarily due to higher levels of quantitative and mental private stressors rather than high emotional private stressors. The latter finding confirms numbers reported in the German Führungskräfte-Monitor of 2012, which showed that women in leadership positions were doing far more housework than men in leadership positions, even when they were in full-time paid employment (Holst et al. 2015). It is important to work towards greater gender equality in the home as increasing the proportion of women in employment—and the representation of women in leadership positions—has benefits for both society and individuals (Eek and Axmon 2015).

Work-related variables clearly were stronger predictors of both health-related and attitudinal outcomes than private stressors. Comparing work stressors and work resources, the effect of work stressors was larger for health-related variables but smaller for attitude-related variables. Such a difference can be expected on the basis of the Job-Demands-Resources (JD-R) model, in that the association between stressors and health/well-being corresponds to the health-related pathway, whereas the association between resources and attitudes corresponds to the motivational pathway, which is more closely related to attitudes (Bakker et al. 2014).

Although work stressors had a stronger impact on health and well-being than private stressors, the latter were uniquely related to indicators of health and well-being after taking into account the effect of work stressors. These findings corroborate the results of Kushnir and Melamed (2006), who found that private stressors were associated with burnout, although other studies failed to find a link between private stressors and burnout (Hakanen et al. 2008; Montgomery et al. 2003). We also found that PWC mediated the association between private stressors and health indicators, a finding that supports the model proposed by Nilsen et al. (2017). However, the associations between private stressors and health indicators were not—as we had predicted—stronger in women than in men; on the contrary, private stressors were more closely linked to emotional exhaustion in men than in women. Similarly,

the link between private stressors and PWC was stronger in men than in women.

Hence we conclude that female leaders suffered from a higher burden in terms of private stressors, but their health was less likely to be affected by private stressors than that of men. In other words, as proposed by Peeters et al. (2005)—who also found private stressors and emotional exhaustion to be more strongly associated among men than among women—women may be better at coping with stressors than their male counterparts. Schär et al. (2014) also found private family-related stressors to be more closely connected with life satisfaction in men than in women and suggested that this was because men were less effective in coping with family stressors. Kirchmeyer (1993) reported that women were better than men at reducing conflict between their work and private life.

Sex differences in sources of self-worth, which are related to social expectations and gender norms, are relevant to sex differences in the impact of stressors (Schär et al. 2014). In that respect our results might imply that the assumption that family is more important for women and gainful employment is more important for men no longer seems to hold to the extent it used to, at least among those who are in leadership positions in the workplace. This development is reflected in the increased willingness of young men to undertake domestic chores (Gille 2006).

The differential vulnerability hypothesis, namely that women are more responsive to life events than men (McDonough and Walters 2001; Roxburgh 1996) is not supported by our results. The opposite seems to be the case, at least with regard to the private domain: men reacted more strongly to events in the private sphere.

It is possible that a gender-related healthy worker effect is operating, such that women who are less effective at coping with stress in their private life tend to quit leadership positions (e.g., Garst et al. 2000) or decline to accept them in the first place. This implies that one way to reduce PWC would be to reduce work involvement (Parasuraman and Greenhaus 1993), whilst another would be to reduce involvement in private life. Indeed, career-orientation was found to correspond to private plans to have children later in life (Abele 2005). Our results corroborate earlier findings (e.g., Griffin et al. 2002) that female leaders were less likely to be parents and less likely to be partnered than their male counterparts, but reported similar levels of affective commitment, job satisfaction and turnover intention. Note, however, that the number of children, although correlated with private stressors bivariately, was associated with better health and well-being in the regression analyses.

Private stressors and PWC were associated with health and well-being but the connections with work-related attitudes were weak in the case of job satisfaction and absent in the cases of affective commitment and turnover

intention. This finding makes sense theoretically, as the attitude measures referred to the work situation. This result also confirms the meta-analytically tested cross-domain matching hypothesis (Amstad et al. 2011). Amstad and colleagues carried out a meta-analysis of PWC and indicators of well-being from different life domains. PWC was more closely related to well-being in the private domain (e.g., family satisfaction) and to non-domain-specific indicators of well-being (e.g., general health) than to work-related indicators (e.g., job satisfaction). Consistent with this, in our data although private stressors were unique predictors of general health, emotional exhaustion and frequency of psychosomatic complaints, work stressors were considerably stronger unique predictors. It is notable that we found no interaction between work stressors and private stressors and there was no significant three-way interaction between work stressors, private stressors and sex. Thus, there is no evidence that the association between the stressors in one domain and health or work attitudes is strong only in the presence of stressors of the other domain—so called “threshold”-load dynamics from different life domains.

We tested for higher-level interactions between domain-specific stressors, but we did not assess potential domain-specific or cross-domain *enrichment* according to expansionist theory, which might be subject to sex differences (Sonntag and Fritz 2010). Enrichment has been reported to be stronger in female than in male leaders (Ruderman et al. 2002). In our sample, however, women were less likely than men to have children and intimate partners in addition to their work role—a difference that would be counterintuitive if cross-domain enrichment actually took place.

#### 4.1 Strengths and limitations

One of the strengths of our study is the large sample, which was also fairly representative of the population of Swiss employees. Another is the use of a validated instrument to assess private stressors. Some limitations must also be mentioned. A first limitation concerns our measures. We did not differentiate between levels of leadership. Given that, for instance, middle management positions have often been characterised as most stressful (e.g., Dieckhoff and Hoffmann 2008), the level of leadership should be controlled in subsequent studies. Also, we assessed only privacy-work conflict but not the reverse, that is work-privacy conflict. Another limitation is the cross-sectional nature of the data: reversed effects can not be differentiated. Longitudinal analysis of private stressors as antecedents of changes in health indicators and work attitudes would be more conclusive. Common-method bias is another problem affecting the study (Podsakoff et al. 2003). A final limitation is that we did not assess potential enrichment across life domains.

In future studies a work-family enrichment scale like that by Carlson et al. (2006) might be used.

## 5 Conclusions and implications

That men reported somewhat higher work stressors but women considerably higher private stressors indicates that women did, indeed, suffer from a higher burden of stressors overall. Associations with health-related variables were stronger for work-related than for private stressors, underpinning the importance of the work domain; this is true for attitudes as well, which were predicted mainly by work-related stressors and resources. Private stressors were uniquely associated with health as well, however, and the prediction of health by both work and private stressors indicates the importance of the *quality* of roles (Hyde 2016).

That private stressors were more strongly associated with health in men than women may indicate a weakening of traditional male role perceptions, in that work-life balance gains in importance. Future research should incorporate additional variables such as gender specific strategies of coping with stress, and perceptions of role norms and role identification to better understand the underlying mechanisms.

Regarding practical implications, our results suggest a priority for interventions that reduce work stressors and increase work resources, with optimal interventions entailing a combination of changing work characteristics (e.g., reduce overload; increase autonomy) and person-oriented strategies, such as stress-management techniques (e.g., Daniels et al. 2017; Knight and Parker 2019; Nielsen and Noblet 2018). Our results further imply that organizations should try to support their employees, including those in leadership positions, in reconciling the demands of working life and private life. Such initiatives could include flexible arrangements with respect to time and place of working (e.g., schedule flexibility; home office days) that allow employees to make demands from work and from private life more compatible. They also could include services such as an in-house “employee concierge” who deals with private matters such as cleaning, shopping, repairs or brokerage of craftsmen, etc., as well as flexible childcare facilities. Moreover, part-time work in leadership positions needs to be more widely accepted (Hipp and Stuth 2013).

However, care must be taken that such initiatives go beyond formal regulations. Offering such measures does not necessarily imply that they will be used. Rather, there are many barriers that keep employees from using them; among them are lack of support by superiors and being regarded as someone who is not really fit for leadership positions, implying a certain stigmatization. Such barriers have often been cited with regard to women; our results suggest

that they also need to be considered for men, for whom pursuing a better balance between work and family may be perceived as violating both male role expectations and leadership-role expectations. These expectations are still strong, despite changes in gender stereotypes; thus, women are still perceived as being less agentic (i.e., ambitious, competitive, assertive; Eagly et al. 2019), and leadership roles are still associated with masculinity (e.g., agency; Koenig et al. 2011). Such considerations point to the necessity to embed initiatives for a better work-family balance in an organizational culture that considers the effects of conditions at work on employees (including people in leadership positions) as important and offers support, including support for family-friendly conditions at work (Anderson et al. 2002; Kossek 2016).

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