## Combining work and family roles:

A daily diary study examining the relationships between job demands, job resources, personal resources, family satisfaction, family task performance, and family relationship performance.

Master Thesis

Author: Liza van Deursen (4142748)
Department of Social, Health and Organisational Psychology, Utrecht University
Reviewer: Dr. Jan Fekke Ybema
Second Reviewer: Dr. Meltem Ceri-Booms
Date: 17-06-2019
Word count (including references, excluding appendices): 9043
Publicly accessible after 21-06-2019


#### Abstract

Partly due to a growing number of working women (Gatrell, Burnett, Cooper, \& Sparrow, 2013), an increasing amount of people must combine work and family roles. This can lead to either work-family conflict or work-family enrichment. The current research examines the influence of work characteristics on family life by studying job demands, job resources and family outcomes in a daily diary study. In addition, the mediating role of transient personal resources is examined. The data are collected using two daily diary questionnaires for a period of five consecutive working days. The questionnaires are filled in by a total of 126 married or cohabitating employees from different Dutch organizations who participated two to five days.

Multilevel analysis shows that job demands and job resources both are related to transient personal resources such that job demands have a negative effect on personal resources and job resources have a positive effect on personal resources. Furthermore, job resources positively influence family outcomes, especially on person-level. Mediation analysis shows that transient personal resources explain some of the relationships between job characteristics and family outcomes. This means that work characteristics influence people's personal resources, which in turn contribute to an increase in some of the family outcomes. However, the examined personal resources do not explain all the relationships between work characteristics and family outcomes.


Keywords: job characteristics, diary study, multilevel analysis, job demands, job resources, personal resources, family outcomes

## 1. INTRODUCTION

Men used to be the breadwinners for their families, but nowadays, females are increasingly participating in the labor market (Gatrell, Burnett, Cooper, \& Sparrow, 2013). This implies that a growing number of people must combine work and family roles. Therefore, it is relevant to study which effects the work sphere has on the private sphere.

On the one hand, employees are increasingly challenged in finding a balance between work and private life (Chen, Powell \& Cui, 2014). This can lead to work-family conflict: 'participation in the family role is made more difficult by virtue of participation in the work role' (Netemeyer, Boles, \& McMurrian, 1996, p. 401). On the other hand, researchers are starting to explore the positive outcomes of participating in both roles, resulting in concepts such as work-family enrichment. This is defined as: 'the extent to which experiences in one role improve the quality of life in another role' (Powell \& Greenhaus, 2006, p. 73).

To explain how work characteristics influence family outcomes, Ten Brummelhuis and Bakker (2012) proposed a framework in which personal resources act as mediating variables. This means that personal resources explain the links between work and family life. However, they indicate that more research is needed to validate their framework. Specifically, they recommend study designs such as diary studies, that allow for the examination of the causal direction of the relationships between these concepts (Ten Brummelhuis \& Bakker, 2012).

Therefore, this study relied on data from a daily diary study. It focused on the impact of two work characteristics, namely job resources and job demands, on three family outcomes, namely family satisfaction, family task performance and family relationship performance. To deepen the understanding of the relationships between work and family roles, the mediating effects of two personal resources (i.e. after-work mood and energy) were also examined. Based on the insights retrieved from the research on these relationships, the following research question was answered: What is the influence of daily job demands and daily job resources on daily family outcomes and do daily personal resources mediate this process?

## 2. THEORETICAL BACKGROUND

Ten Brummelhuis and Bakker (2012) have developed a theoretical framework which links work characteristics, namely job demands and resources, to both positive and negative family outcomes, using Conservation of Resources Theory (COR). COR theory is a stress theory which describes how individuals react to stressors from their environment and what the influence of these stressors is on their wellbeing (Ten Brummelhuis \& Bakker, 2012).

The theory assumes that people want to acquire, preserve and protect their resources. However, when people encounter a stressor, they must use resources to cope with it. If people cannot cope successfully, stress will develop (Hobfoll, 1989). This leads to a loss spiral whereby stress increases and resources are depleted.

A specific type of stressor that employees must deal with is a job demand, which is 'a physical, social, or organizational aspect of the job that requires sustained physical or mental effort and is therefore associated with certain physiological and psychological costs' (Demerouti, Bakker, Nachreiner, \& Schaufeli, 2001, p. 501). Examples of job demands are high work pressure, heavy physical work and emotionally demanding encounters with clients (Bakker \& Demerouti, 2007).

According to Ten Brummelhuis and Bakker (2012), job demands can negatively influence family outcomes by depleting a specific form of resources, namely personal resources. These are defined as aspects of the self that are linked to resiliency, in other words: they refer to the individual's feelings of being able to successfully control and impact his or her environment (Hobfoll, Johnson, Ennis, \& Jackson, 2003). Examples of personal resources are time, mood and energy. If people are facing a lot of high demands in their job, their personal resources will be impeded (Ten Brummelhuis \& Bakker, 2012). If employees are not able to use personal resources, work-family conflict will arise. Employees can no longer adequately participate in the family role, which in turn, will result in decreased accomplishments in the family domain. Work-family conflict has several negative effects such as decreased family-related performance (Frone, Yardley \& Markel, 1997) and decreased family satisfaction (Kopelman, Greenhaus \& Connolly, 1983).

Next to a loss spiral, caused by stressors such as job demands, the COR theory also recognizes the existence of a gain spiral (Hobfoll, 1989) in which resources generate new resources. A specific type of resource that employees may encounter is a job resource. This is defined as: 'a physical, psychological, social or organizational aspect of the job that either is functional in achieving work goals, reduces job demands or stimulates personal growth and development (Demerouti et al., 2001, p. 501). Job resources may lead to the development of more personal resources, which will facilitate an increased performance in the family domain (Ten Brummelhuis \& Bakker, 2012). The work role will enrich the family role, thus increasing family performance. Since work-family enrichment indicates a higher quality of family life, family satisfaction is also likely to increase. This is confirmed in a meta-analysis by McNall, Nicklin, and Masuda (2009), which links work-family enrichment to increased family satisfaction.

In sum, an increase in job demands decreases personal resources, leading to negative family outcomes, while an increase in job resources leads to an increase in personal resources, which leads to positive family outcomes.

## 3. HYPOTHESES AND CONCEPTUAL MODEL

This study examined specific types of job demands, job resources, personal resources, and family outcomes. The job demands that were examined were quantitative demands, mental demands, and emotional demands. Quantitative demands are defined as: 'work overload or work pressure or too much work to do in too little time' (Peeters, Montgomery, Bakker \& Schaufeli, 2005, p. 45). Michel et al. (2011) found in a meta-analysis that work overload is the most important predictor of work-family conflict.

Mental demands refer to 'the degree to which work tasks call on a person to expend sustained mental effort in carrying out his or her duties' (Peeters et al., 2005, p. 45). Emotional job demands refer to the affective component of work and the degree to which one's work puts one in emotionally stressful situations (Peeters et al., 2005, p. 45). 'High emotional demands resulting from interactions with clients are a core characteristic of service jobs' (Zapf, Seifert, Schmutte, Mertini, \& Holz, 2001, p. 527). In 2018, 81 percent of the Dutch labor force was employed in service jobs, compared to only 16 percent working in industry jobs (International Labor Organization, 2019). Next to this, mental demands are increasing in this era of information explosion and rapidly developing new technologies (Peeters et al., 2005). Based on their growing relevance and presence, the quantitative demands, mental demands, and emotional demands took a central stage in this research.

This research examined two family outcomes to measure the impact of job demands, namely family satisfaction and family role performance. Both are negatively related to workfamily conflict. Family role performance comprises of family task performance (i.e. getting things done) and family relationship performance (i.e. facilitating the psycho-social context) (Chen et al., 2014), which were measured separately.

As said, the relationships between different variables were studied by means of a daily diary study. In contrast to structural personal resources, more transient personal resources are supposed to explain the described relationships on a daily level (Ten Brummelhuis \& Bakker, 2012). Two transient personal resources, namely mood, and energy were examined in this research. Both resources can be linked to the job demands of this study. First, Brosch and Binnewies (2018) found that increased quantitative work demands lead to decreased mood and energy levels. Secondly, there is a positive relationship between emotional demands,
mental demands and the level of exhaustion (Peeters et al., 2005). Finally, mental and emotional demands can be perceived as stressful, (Brotheridge \& Grandey, 2002) (Schaubroek \& Ganster, 1993), which can lead to negative mood states (Stewart \& Barling, 1996). These insights led to the following two hypotheses:

H1: Job demands (i.e. quantitative demands, mental demands, and emotional demands) have a negative relationship with family outcomes (i.e. family satisfaction, family task performance, and family relationship performance).

H2: Personal resources (i.e. after-work mood and after-work energy levels) mediate the relationships between job demands and family outcomes.

Next, two job resources were included in this research. The first job resource that was examined was job autonomy, which is 'the degree of control a worker has over his or her own immediate scheduling and tasks’ (Kim \& Stoner, 2008, p. 8). In earlier research, job autonomy has been positively associated with work-family balance (Voydanoff, 2005). Furthermore, it was linked to energy and enthusiasm at work (Schaufeli, Salanova, GonzálesRomá \& Bakker, 2002), which may lead to higher energy levels and increased mood after work.

The second job resource that was examined was social support, which is 'the exchange of resources between at least two persons, with the aim of helping the person who receives the support' (House, 1981, p. 39). Social support decreases work-family conflict (Greenhaus \& Beutel, 19850. Furthermore, it can protect an employee from experiencing negative emotions and maladaptive strategies of coping while experiencing stress (Wang, Liu, Zhang \& Shi, 2010) which may increase after-work mood. Furthermore, research by Schaufeli and Bakker (2004) found relationships between social support, vigor and dedication, which implies that energy levels increase when persons receive social support. These insights led to the following two hypotheses:

H3: Job resources have a positive relationship with daily family outcomes.
H4: Personal resources mediate the relationship between daily job resources and daily family outcomes.

Based on the theoretical framework and the proposed hypotheses, the following conceptual model is developed (see figure 1).


Figure 1. Proposed model of the relationships between job demands, job resources, personal resources, and family outcomes.

## 4. METHOD

### 4.1 Procedure and participants

This study used a snowball-sampling strategy to gather participants. All participants worked for an organization within the Netherlands, meaning that they were not self-employed.

Furthermore, participants were married or cohabitating and had a minimum age of eighteen. They were asked to complete a survey twice a day for a period of one working week (five consecutive days).

One hundred and sixty-seven $(\mathrm{N}=167)$ participants started the research. After filtering out participants, data of one hundred and twenty-six $(\mathrm{N}=126)$ participants were used for data analysis. Participants were filtered out for example because they participated less than two days or because they completed the second questionnaire before the first questionnaire.

The first questionnaire was completed directly after work and contained questions concerning job demands, job resources, after-work mood, and after-work energy. The second questionnaire was completed at the end of the day and contained questions concerning family satisfaction, family task performance, and family relationship performance. On day one, the first questionnaire also included questions that measured control variables such as age, gender, educational level, contractual working hours and working sector.

Since participants who participated only on the first day were filtered out, all 126 participants participated at least two days. A large part of the participants (43.7\%) participated throughout the week. The average age of the participants was 39.43 ( $\mathrm{SD}=11.51$ ). The
research sample consisted of 91 females ( $72.7 \%$ ) and 35 males ( $23.3 \%$ ). $86.6 \%$ was highly educated ('HBO' or 'University' degree). More detailed information about the participants can be found in Appendix 1.

### 4.2 Ethical issues

The participants were treated with respect. Before carrying out the research, the university's ethical committee approved the research design. Participants were informed that their data would be treated confidentially. In addition, participants were given a unique code to ensure anonymity. This code was necessary to match data from several days to the same participant and to match his/her first daily questionnaire to his/her second daily questionnaire. All participants gave informed consent that they agreed with the way the research was carried out. It was explicitly stated that participation was voluntary and that participation could be terminated at any time during the data collection phase.

### 4.3 Measures

Before starting the data collection, a pilot study was done among three individuals from the research population who did not participate in the main study. Their feedback was incorporated in the design of the questionnaires.

In the research, ten variables were measured in all daily questionnaires, namely: quantitative demands, mental demands, emotional demands, job autonomy, social support, after-work mood, after-work energy levels, family satisfaction, family task performance, and family relationship performance. All variables were measured using scales based on validated measures, adjusted for day-level measurement and translated into Dutch. All items were answered on a five-point Likert scale.

Quantitative demands were measured using four items taken from the Dutch Questionnaire on the Experience and Evaluation of Work (van Veldhoven, Meijman, Broersen \& Fortuin, 1997). An example question was: 'Today, I had to do a lot of work'. One item was recoded such that a higher score indicated higher levels of quantitative demands. Cronbach's alpha= .82 . The intraclass correlation $($ ICC $)=.42$.

Emotional demands were measured using four items from the Dutch Questionnaire on the Experience and Evaluation of Work (van Veldhoven et al., 1997). An example question was: 'Today, I found my job emotionally demanding'. Cronbach's alpha= .84 and the $\mathrm{ICC}=.51$.

Mental demands were measured using three items from the Dutch Questionnaire on
the Experience and Evaluation of Work (van Veldhoven et al., 1997). An example question was: 'Today, my work demanded high levels of concentration'. Cronbach's alpha=. 77 and the ICC= 49 .

Job autonomy was measured using a scale consisting of three items from the Dutch Questionnaire on the Experience and Evaluation of Work (van Veldhoven et al., 1997). An example question was: 'Today, I decided the order of my work myself'. Cronbach's alpha= .86 and the $\mathrm{ICC}=.39$, meaning that a relatively large part of the variation reflected differences between days within participants.

Social support was measured using four items developed by Peeters, Buunk, and Schaufeli (1995) which specifically examined colleague social support. An example question was: 'Today, my colleagues paid attention to my feelings and problems'. Cronbach's alpha = .72 , the $\mathrm{ICC}=.45$

Since the job demands and job resources scales all had variance both on person-level as on day-level, this indicates stability and test-retest reliability. As most of the scales had ICC values less than .50 , this means that less than half of the variation of these scales reflected differences between participants and more than half reflected differences between days within participants. This strengthened the choice of studying these variables in a diary study.

After-work mood was measured using two items of both the depression-, the hostilityand the anxiety scale of the Profile of Mood States questionnaire (POMS) (McNair, 1971). Examples of moods or feelings that were part of these three scales were: 'unhappy' (depression scale), 'annoyed' (hostility scale) and 'tense' (anxiety scale). These items were recoded such that a higher score indicated a more positive mood. Cronbach's alpha $=81$. The ICC of this and the upcoming scales are discussed in the 'Results' chapter.

After-work energy was measured using four items of the vigor scale and three items of the fatigue scale of the POMS (McNair, 1971). Participants had to answer to what extent certain moods or feelings matched how they felt at that moment. Examples of moods or feelings were: 'exhausted’ (fatigue scale) and 'active’ (vigor scale). Some of the items were recoded such that a higher score indicated higher levels of energy. Cronbach's alpha $=.88$.

Family satisfaction was measured using three items of the index of family adjustment, developed by Pleck and Staines (1985). This measure examined marital satisfaction, marital happiness, and family satisfaction. An example question was: 'How satisfied would you say that you are with your marriage/relationship today?'. Cronbach's alpha $=.87$.

Family relationship performance was measured using an eight-item scale developed by Chen et al. (2014). Participants had to answer to what extent they could do what was expected of them within different aspects of their family life to measure both family relationship performance (four items) and family task performance (four items). An example of an aspect of family relationship performance was 'doing household chores'. Cronbach's alpha of family relationship performance $=.88$. An example of an aspect measuring family relationship performance was 'giving emotional support to their family members'. Cronbach's alpha $=.93$. Since the Cronbach's alphas of all scales used in this research were .72 or higher, the scales were reliable.

### 4.4 Statistical analysis

The data were analyzed using Statistical Program for Social Sciences (SPSS), version 24. First, the results were controlled for influences of day number, age, educational level, and gender. Educational level did not yield any significant effects and was therefore not considered in further analyses. Secondly, the hypotheses were tested. To analyze the hypotheses, multilevel regression analysis and mediation analysis were used. The dependent variables in the analyses were family satisfaction, family task performance and family relationship performance, which were all measured on a daily basis. Personal resources were regarded as mediating variables and were therefore treated as dependent variables in this phase as well.

In the first model, the random intercept was included to determine the intraclass correlations (ICC). In the second model, the control variables age, gender and day number were entered in the regression. In the third model, the variation between persons, or in other words: the participant's means of job demands, job resources, and personal resources, were included. In the last model, daily variations within persons were included in the analysis. Following Enders and Tofighi (2007), the daily independent variables were person mean centered and the person-level independent variables were grand mean centered.

The mediation analysis was done by looking at the indirect effects ('ab'). This means that the product of both direct effects (' $a$ ') of job demands and job resources on the mediators (after-work mood and after-work energy) and the direct effects ('b') of the mediators on the outcome variable (family satisfaction, family relationship performance and family task performance) were determined and tested using the Sobel test (Baron \& Kenny, 1986).

## 5. RESULTS

The current research examined the relationships between job demands, job resources, personal resources, and family outcomes. After data-inspection, the hypotheses were tested both on person-level and on day-level. The assumptions for hypotheses testing were met.
5.1 Descriptive statistics and correlations

The descriptive statistics and correlations between work characteristics, personal resources, and family outcomes, averaged at the person-level ( $\mathrm{N}=126$ ), are shown in Table 1. It can be seen that participants scored fairly low on emotional demands ( $\mathrm{M}=1.82$ ) and fairly high on job autonomy ( $\mathrm{M}=3.56$ ). Remarkable are the relatively high scores on after-work mood ( $\mathrm{M}=$ $4.55)$ and family satisfaction $(M=4.21)$. However, there was substantial variation between persons regarding this personal resource and outcome variable.

With regard to the correlations, it can be seen that job demands were positively related to each other and they were negatively related to personal resources, with the exception of mental demands. Remarkably, mental demands were positively related to after-work energy, family satisfaction, and family relationship performance. Job resources were positively related to personal resources and family outcomes. After-work energy was positively related to family outcomes. Important to note is that these relations were found on person-level. This implies that daily variations in these variables were not considered.

Table 1. Descriptive statistics and correlations between the variables on person-level

| Person-level variable | M | SD | N | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1. Quantitative demands | 2.85 | . 76 | 124 | 1 |  |  |  |  |  |  |  |  |  |
| 2. Mental demands | 3.40 | . 73 | 124 | . $39 * * *$ | 1 |  |  |  |  |  |  |  |  |
| 3. Emotional demands | 1.83 | . 67 | 124 | .19*** | .23*** | 1 |  |  |  |  |  |  |  |
| 4. Job autonomy | 3.56 | . 82 | 124 | $-.30^{* * *}$ | $-.25 * * *$ | $-.28 * * *$ | 1 |  |  |  |  |  |  |
| 5. Social support | 2.77 | . 77 | 124 | .12** | .27*** | .27*** | -.11* | 1 |  |  |  |  |  |
| 6. After-work mood | 4.55 | . 40 | 124 | -.21 *** | -. 03 | $-.27^{* * *}$ | .26*** | -. 08 | 1 |  |  |  |  |
| 7. After-work energy | 3.14 | . 54 | 126 | -. $15^{* *}$ | .12** | -. 04 | 21*** | .10* | . 47 *** | 1 |  |  |  |
| 8. Family satisfaction | 4.21 | . 61 | 126 | -. 05 | .19*** | -.13** | .17*** | .21*** | .36** | . 31 *** | 1 |  |  |
| 9. Family relationship performance | 3.21 | . 83 | 126 | -. 08 | .09* | . 04 | . $25^{* *}$ | . $35^{* * *}$ | . 03 | . 21 *** | . 35 *** | 1 |  |
| 10. Family task performance | 2.89 | . 59 | 126 | -. 04 | -. 01 | . 07 | .24** | .27*** | . 02 | . $27 * * *$ | . $29 * * *$ | . 66 *** | 1 |

Note: *p<0.05 **p<0.01 ***p<0.001

### 5.2 Multilevel regression analyses

### 5.2.1 After-work mood

Table 2 shows the multilevel regression of after-work mood. The ICC= 0.37 , which means that the largest part of the variation reflected differences between days within participants in comparison to variation reflecting differences between participants.

In Model 2, the control variables were added. This significantly improved the fit of the model. Age was strongly related to after-work mood, such that older participants scored higher on after-work mood compared to younger participants.

In Model 3, person-level job demands and resources were entered in the regression. Together with the control variables, these explained $14.81 \%$ of the variance of after-work mood. Participants with lower levels of quantitative demands and higher levels of job autonomy experienced higher levels of after-work mood.

In Model 4, both person-level and day-level job demands and job resources were added to the model, which resulted in an explained variance of $22.22 \%$. Day-level job demands had a negative relationship with after-work mood, except for mental demands. Daylevel job resources had significant positive relationships with after-work mood, such that on days on which participants experienced a higher level of job resources, their after-work mood was higher compared to days on which they experienced lower levels of job resources.

Table 2. Multilevel regression of after-work mood

| Predictors | Model 1 | Model 2 | Model 3 | Model 4 |
| :---: | :---: | :---: | :---: | :---: |
| Intercept | 4.52*** | 4.54*** | 4.49*** | 4.49*** |
| Day number |  | -. 01 | -. 01 | . 01 |
| Gender |  | -. 05 | . 02 | . 02 |
| Age |  | . 01 ** | . 01 ** | . 01 ** |
| Person-level |  |  |  |  |
| Quantitative demands |  |  | -.13** | -.13* |
| Mental demands |  |  | . 03 | . 02 |
| Emotional demands |  |  | -. 07 | -. 07 |
| Job autonomy |  |  | .11* | .11* |
| Social support |  |  | -. 02 | -. 02 |
| Day-level |  |  |  |  |
| Quantitative demands |  |  |  | -.10** |
| Mental demands |  |  |  | . 05 |
| Emotional demands |  |  |  | -.20 *** |
| Job autonomy |  |  |  | .13*** |
| Social support |  |  |  | .07* |
| Fit (-2 $\log \mathrm{L}$ ) | $531.655^{* * *}$ | $512.880^{* * *}$ | 489.487*** | 433.074*** |
| $\Delta$ Fit |  | 18.775*** | 23.393*** | 56.413*** |
| Df |  | 3 | 5 | 5 |
| Variance |  |  |  |  |
| Random | 0.10 | 0.08 | 0.06 | . 07 |
| Intercept (person-level) |  |  |  |  |
| Residual (day-level) | 0.17 | 0.17 | 0.17 | . 14 |
| ICC | 0.37 |  |  |  |
| Explained variance |  | 7.41\% | 14.81\% | 22.22\% |

Note: ${ }^{*} p<0.05 * * p<0.01 * * * p<0.001, N=380$, Gender: $0=$ male, $1=$ female.

### 5.2.2 After-work energy

Table 3 shows the multilevel regression of after-work energy. The ICC $=0.39$, which means that the largest part of the variation reflected differences between days within participants. None of the control variables were significantly related to after-work energy.

In model 3, person-level job demands and resources were entered in the regression. Participants with lower levels of quantitative demands and higher levels of job autonomy experienced higher levels of after-work energy.

In Model 4, both person and day-level job demands and job resources were added to the model, which resulted in an explained variance of $12.90 \%$. Daily quantitative and daily emotional were negatively related to after-work energy, such that on days on which participants had low levels of quantitative and emotional demands, they experienced lower
levels of after-work energy compared to days on which they experienced high levels of quantitative and emotional demands. Daily job autonomy, on the other hand, was positively related to after-work energy. Daily variations in mental demands and social support were not related to after-work energy.

Table 3. Multilevel regression of after-work energy

| Predictors | Model 1 | Model 2 | Model 3 | Model 4 |
| :---: | :---: | :---: | :---: | :---: |
| Intercept | 3.04*** | 3.17*** | 3.13*** | 3.14*** |
| Day number |  | -. 03 | -. 03 | -. 01 |
| Gender |  | -. 20 | -. 13 | -. 13 |
| Age |  | . 01 | . 01 | . 01 |
| Person-level |  |  |  |  |
| Quantitative demands |  |  | -.19* | -.18* |
| Mental demands |  |  | . 11 | . 11 |
| Emotional demands |  |  | . 02 | . 02 |
| Job autonomy |  |  | .21** | .21** |
| Social support |  |  | . 04 | . 04 |
| Day-level |  |  |  |  |
| Quantitative demands |  |  |  | -.12* |
| Mental demands |  |  |  | . 03 |
| Job autonomy |  |  |  | .16** |
| Social support |  |  |  | . 08 |
| Fit (-2 $\log \mathrm{L}$ ) | 841.939*** | 823.929*** | 805.680** | $776.531^{* * *}$ |
| $\Delta$ Fit |  | 18.01*** | 18.249** | 29.149*** |
| Df |  | 3 | 5 | 5 |
| Variance |  |  |  |  |
| Random intercept (person-level) | 0.24 | 0.23 | 0.19 | 0.20 |
| Residual (day-level) | 0.38 | 0.38 | 0.38 | 0.34 |
| ICC | 0.39 |  |  |  |
| Explained variance |  | 1.61\% | 8.06\% | 12.90\% |

Note: $* \mathrm{p}<0.05$ ** p < 0.01 *** p < $0.001, \mathrm{~N}=380$, Gender: $0=$ male, $1=$ female.

### 5.2.3 Family satisfaction

Table 4 shows the multilevel regression of family satisfaction. The ICC $=0.58$, which means that the largest part of the variation reflected differences between participants. As Model 2 shows, all control variables contributed significantly to daily family satisfaction such that females and older participants experienced lower levels of family satisfaction and family satisfaction lowered during the week.

In model 3, person-level job demands and job resources were entered in the regression.

Together with the control variables, the person-level variables explained $15.38 \%$ of the variance of family satisfaction. Remarkably, participants with higher levels of mental demands experienced higher levels of family satisfaction. Job autonomy was marginally significant, implying that participants with higher job autonomy had slightly higher levels of family satisfaction.

In Model 4, daily variation in job demands and job resources were added to the model, but none of the day-level variables significantly influenced family satisfaction. Adding both person-level and day-level after-work mood and energy in model 5 increased the explained variance of family satisfaction to $23.08 \%$. Participants with higher levels of after-work mood experienced more family satisfaction.

Most of the hypotheses were not confirmed by these results. Only the relationship between person-level job autonomy and family satisfaction was in line with hypothesis 3 . As the other job demands and resources did not contribute significantly, this was not in line with hypothesis 1 and 3. In addition, the positive relationship between mental demands and family satisfaction was inconsistent with what was expected.

In table 5, the mediation analyses for the variables with (marginally) significant indirect effects on family satisfaction, through both personal resources, are shown. This table shows the contribution of person-level quantitative demands, person-level job autonomy and age to the mediating variable person-level after-work mood (a), the contribution of after-work mood to family satisfaction (b), the indirect effects of person-level quantitative demands, person-level job autonomy and age through after-work mood (ab), the total effect of personlevel quantitative demands, person-level job autonomy and age on family satisfaction (c) and finally, the percentage of the relationships that were indirect.

As table 5 shows, all depicted relationships were partly indirectly explained through after-work mood. This means that persons with higher levels of quantitative demands and lower levels of job autonomy generally experienced worse after-work mood, which in turn resulted in lower levels of family satisfaction. These results supported hypotheses 2 and 4. However, there were no mediation effects of after-work mood on day-level, which means that after-work mood did not explain the relationships between work characteristics and family outcomes, measured on day-level. Furthermore, after-work energy did not appear to be a mediating variable between job demands, job resources and family outcomes as none of the indirect effects through after-work energy reached significance.

Finally, there was an indirect effect of age on family satisfaction through person-level after-work mood. There was a suppression effect as there was a negative percentage of the
indirect effect of after-work mood. This means that older employees have, on average, higher levels of after-work mood. However, they score lower on family satisfaction. After correcting for after-work mood, the direct effect of age on family satisfaction is stronger compared to when there is not controlled for after-work mood.

Table 4. Multilevel regression of family satisfaction

| Predictors | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Intercept | 4.22*** | 4.49*** | 4.52*** | 4.52*** | 4.52*** |
| Day number |  | -. 07 *** | -.07*** | -.07** | -.07** |
| Gender |  | -.39** | -. $38 * *$ | -.39** | -.40*** |
| Age |  | -.01* | -.01** | -. 01 ** | -. 02 *** |
| Quantitative demands |  |  | -. 08 | -. 08 | -. 01 |
| Mental demands |  |  | . 25 ** | . $25^{* *}$ | . 22 ** |
| Emotional demands |  |  | -. 11 | -. 11 | -. 07 |
| Job autonomy |  |  | . $12^{\mathrm{x}}$ | . $12^{\mathrm{x}}$ | . 07 |
| Social support |  |  | . 11 | . 11 | . 10 |
| After-work mood |  |  |  |  | .44** |
| After-work energy |  |  |  |  | . 11 |
| Day-level |  |  |  |  |  |
| Quantitative demands |  |  |  | -. 04 | -. 03 |
| Mental demands |  |  |  | . 06 | . 05 |
| Emotional demands |  |  |  | -. 02 | -. 01 |
| Job autonomy |  |  |  | . 03 | . 02 |
| Social support |  |  |  | -. 03 | -. 03 |
| After-work mood |  |  |  |  | . 07 |
| After-work energy |  |  |  |  | . 01 |
| Fit (-2 $\log \mathrm{L}$ ) | 702.059*** | 665.364*** | 649.012* | 645.608 | 630.988 |
| $\Delta$ Fit |  | 36.695*** | 16.352** | 3.404 | 14.62** |
| Df |  | 3 | 5 | 5 | 4 |
| Variance |  |  |  |  |  |
| Random | 0.30 | 0.28 | 0.23 | 0.23 | 0.20 |
| Intercept (person-level) |  |  |  |  |  |
| Residual (day-level) | 0.22 | 0.21 | 0.21 | 0.21 | 0.20 |
| ICC | 0.58 |  |  |  |  |
| Explained variance |  | 5.77\% | 15.38\% | 15.38\% | 23.08\% |

Note: ${ }^{x} p<0.10 * p<0.05 * * p<0.01 * * * p<0.001, N=380$, Gender: $0=$ male, $1=$ female.

Table 5. Mediation of the relationship between person-level quantitative demands, personlevel job autonomy, age, person-level after-work mood, and family satisfaction

|  | Person- <br> level after- <br> work mood | Family <br> satisfaction | Indirect effect <br> person-level <br> after-work <br> mood <br> ab | Total effect | $\%$ <br> indirect |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  | a | b | c |  |  |
| Person-level <br> quantitative demands | $-0.126^{*}$ | -0.014 | $-0.056^{\mathrm{x}}$ | -0.076 | $74 \%$ |
| Person-level <br> job autonomy <br> Age | $0.110^{*}$ | 0.067 | $0.049^{\mathrm{x}}$ | $0.118^{\mathrm{x}}$ | $42 \%$ |
| Person-level <br> after-work mood | $0.010^{* *}$ | $-0.017^{* * *}$ | $0.005^{*}$ | $-.012^{* *}$ | $-42 \%$ |
| Note: ${ }^{\mathrm{x} p<0.10 ~^{*} p<0.05 * * p<0.01^{* * *} p<0.001, N=380}$ |  |  |  |  |  |

### 5.2.4 Family relationship performance

Table 6 shows the multilevel regression of family relationship performance. The ICC $=0.51$, which means that almost half of the variance reflected differences between participants and almost half of the variance reflected differences between days within participants.

As Model 2 shows, day number and gender contributed significantly to daily family relationship performance, such that females had lower levels of family relationship performance and participants' performance lowered during the week. Adding the control variables caused a significant improvement in the fit of the model.

In model 3, person-level job demands and job resources were entered in the regression, which further improved the fit of the model. Together with the control variables, the personlevel variables explained $20.20 \%$ of the variance of family relationship performance. Personlevel job autonomy and social support had a positive relationship with daily family relationship performance. This means that people who experienced higher levels of job autonomy and social support scored higher on family relationship performance.

As can be seen in Model 4, daily variation within job demands and resources dd not influence family relationship performance and adding them did not improve the fit of the model. Adding after-work mood and after-work energy in Model 5 did not have a significant influence on family relationship performance either. Altogether, Model 5 explained 21.20\% of the variation in daily family relationship performance.

These results were partly in line with the hypotheses. Job demands did not influence family relationship performance, which was not in line with hypothesis 1 . Person-level job resources did have a positive relationship with family relationship performance, which was in line with hypothesis 3 . However, they did not have a significant influence when measured at day-level. Since after-work mood and after-work energy did not significantly contribute, the influence of job resources is not mediated by personal resources, which is not in line with hypothesis 4.

Table 6. Multilevel regression of family relationship performance

| Predictors | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Intercept | 3.12*** | 3.36*** | 3.36*** | 3.36*** | 3.35*** |
| Day number |  | -.13*** | -.13*** | -. 12 *** | -. 12 *** |
| Gender |  | -.35* | $-.28{ }^{\text {x }}$ | $-.29{ }^{\text {x }}$ | $-.27^{x}$ |
| Age |  | -. 01 | . 00 | . 00 | . 00 |
| Person-level |  |  |  |  |  |
| Quantitative demands |  |  | -. 09 | -. 09 | -. 07 |
| Mental demands |  |  | . 08 | . 08 | . 06 |
| Emotional demands |  |  | . 00 | . 00 | -. 02 |
| Job autonomy |  |  | . 37 *** | . $37 * * *$ | . 35 *** |
| Social support |  |  | . 33 *** | . $33 * * *$ | . 32 ** |
| After-work mood |  |  |  |  | -. 14 |
| After-work energy |  |  |  |  | . 18 |
| Day-level |  |  |  |  |  |
| Quantitative demands |  |  |  | . 03 | . 03 |
| Mental demands |  |  |  | . 04 | . 04 |
| Emotional demands |  |  |  | . 03 | . 03 |
| Job autonomy |  |  |  | . 09 | . 09 |
| Social support |  |  |  | . 01 | . 01 |
| After-work mood |  |  |  |  | . 03 |
| After-work energy |  |  |  |  | -. 03 |
| Fit (-2 $\log \mathrm{L}$ ) | 979.389*** | 941.207*** | 909.125*** | 906.000*** | 904.043*** |
| $\Delta \mathrm{Fit}$ |  | 38.182*** | 32.082*** | 3.125 | 1.957 |
| Df |  | 3 | 5 | 5 | 4 |
| Variance |  |  |  |  |  |
| Random | 0.50 | 0.47 | 0.32 | 0.32 | 0.32 |
| Intercept (person- |  |  |  |  |  |
| level) |  |  |  |  |  |
| Residual (day-level) | 0.49 | 0.47 | 0.47 | 0.46 | 0.46 |
| ICC | 0.51 |  |  |  |  |
| Explained variance |  | 5.05\% | 20.20\% | 21.21\% | 21.21\% |

Note: ${ }^{x} p<0.10 * p<0.05 * * p<0.01 * * * p<0.001, N=380$, Gender: $0=$ male, $1=$ female.

### 5.2.5 Family task performance

Table 7 shows the multilevel regression of family task performance. ICC $=0.46$, which means that almost half of the variance reflected differences between participants and slightly more than half of the variance reflected differences between days within participants.

As Model 2 shows, all control variables had a negative effect on daily family task performance such that females and older participants had lower levels of family task performance and participants' performance lowered during the week. Controlling for these variables improved the fit of the model. Adding person-level job demands and resources to the regression in model 3 significantly improved the fit of the model. Both job resources had a positive relationship with family task performance. Person-level job demands did not have an effect on family task performance.

In Model 4, both person and day-level job demands and job resources were added to the model. Daily emotional demands had a negative relationship with family task performance. This means that participants had lower levels of task performance on days on which they experienced higher levels of emotional demands.

Adding after-work mood and after-work energy to the regression in Model 5 resulted in a total explained variance of family task performance of $23.66 \%$. Person-level after-work energy increased family task performance. This means that participants with higher levels of after-work energy had higher scores on family task performance. Day-level after-work mood also increased family task performance, such that on days on which participants had a better mood, they performed better.

These results were partly in line with the hypotheses. Day-level emotional demands decreased family task performance, which was in line with hypothesis 1 . However, personlevel and the other day-level job demands did not influence family task performance, which was not in line with hypothesis 1 . Person-level job resources did have a positive relationship with family task performance, which was in line with hypothesis 3 , but no relationships were found with day-level job resources.

In table 8, the mediation analyses for the variables that significantly contributed to daily after-work mood and person-level after-work energy in relation to family task performance are shown (i.e. day-level quantitative and emotional demands and person-level job autonomy). All relationships were partly explained indirectly through either day-level after-work mood or person-level after-work energy. All of the indirect effects reached (marginal) significance. On days on which participants had higher levels of quantitative and emotional demands and lower levels of job autonomy, they experienced worse after-work
mood, which in turn led to lower levels of family task performance compared to days on which they had lower levels of these job demands and higher levels of job autonomy.
Furthermore, on person-level, participants with lower levels of job autonomy had lower levels of after-work energy, which resulted in lower family task performance compared to persons with higher levels of job autonomy. These two findings were in line with hypotheses 2 and 4.

There was an indirect effect of age and gender on family task performance through respectively day-level after-work mood and person-level after-work energy. There was a suppression effect as there was a negative indirect effect. This means that after correcting for after-work mood, the direct effect of gender on family task performance is stronger compared to when there is not controlled for after-work mood. The same holds for after-work energy and age.

Table 7. Multilevel regression of family task performance

| Predictors | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Intercept | 2.72*** | 3.15*** | 3.16*** | 3.16*** | 3.77*** |
| Day number |  | -.11** | -.11** | -.10** | -.10** |
| Gender |  | -. $62 * * *$ | -. $58 * * *$ | $-.58 * * *$ | -. 55 ** |
| Age |  | -.02* | -.01* | -.01* | -.02* |
| Person-level |  |  |  |  |  |
| Quantitative demands |  |  | . 01 | . 01 | . 06 |
| Mental demands |  |  | . 00 | -. 01 | -. 05 |
| Emotional demands |  |  | . 13 | . 13 | . 10 |
| Job autonomy |  |  | . $39 * * *$ | . $39 * * *$ | . $33 * *$ |
| Social support |  |  | .24* | .24* | .23* |
| After-work mood |  |  |  |  | -. 07 |
| After-work energy |  |  |  |  | . 36 * |
| Day-level |  |  |  |  |  |
| Quantitative demands |  |  |  | -. 04 | . 00 |
| Mental demands |  |  |  | . 13 | . 11 |
| Emotional demands |  |  |  | -.21* | -. 13 |
| Job autonomy |  |  |  | . 04 | -. 01 |
| Social support |  |  |  | -. 08 | -. 11 |
| After-work mood |  |  |  |  | . $38 * *$ |
| After-work energy |  |  |  |  | . 00 |
| Fit (-2 $\log \mathrm{L}$ ) | 1101.474*** | 1062.277*** | 1039.907*** | 1030.101*** | 1015.620*** |
| $\Delta$ Fit |  | 39.197*** | $22.37 * * *$ | 9.806 | 14.481** |
| Df |  | 3 | 5 | 5 | 4 |
| Variance |  |  |  |  |  |
| Random intercept (person-level) | 0.60 | 0.49 | 0.35 | 0.37 | 0.34 |
| Residual (day-level) | 0.71 | 0.70 | 0.71 | 0.68 | 0.66 |
| ICC | 0.46 |  |  |  |  |
| Explained variance |  | 9.16\% | 19.08\% | 19.84\% | 23.66\% |

Note: ${ }^{*} p<0.05^{* *} p<0.01 * * * p<0.001, N=380$, Gender: $0=$ male, $1=$ female.

Table 8. Mediation of the relationship between day-level emotional demands, person-level job autonomy, person-level social support, day-level after-work mood, person-level after-work energy, and family task performance
$\left.\begin{array}{llllllll}\hline & \begin{array}{l}\text { Day-level } \\ \text { after-work } \\ \text { mood }\end{array} & \begin{array}{l}\text { Person- } \\ \text { level } \\ \text { after- } \\ \text { work } \\ \text { energy } \\ \text { a }\end{array} & \begin{array}{l}\text { Family } \\ \text { task } \\ \text { perfor- } \\ \text { mance }\end{array} & \begin{array}{l}\text { Indirect } \\ \text { effect } \\ \text { after- } \\ \text { work } \\ \text { mood } \\ \text { ab }\end{array} & \begin{array}{l}\text { Indirect } \\ \text { effect } \\ \text { after- } \\ \text { work } \\ \text { energy } \\ \text { ab2 }\end{array} & \begin{array}{l}\text { Total } \\ \text { effect }\end{array} & \begin{array}{l}\% \\ \text { indirect }\end{array} \\ & \mathrm{a} & -0.102^{* *} & & & -0.039^{\mathrm{x}}\end{array}\right]$

## 6. DISCUSSION AND CONCLUSION

This daily diary study examined the influence of job demands, job resources and personal resources on family outcomes. It was hypothesized that job demands (resources) would have a negative (positive) relationship with both personal resources and family outcomes and personal resources would mediate the relationships of job demands, job resources and family outcomes.

### 6.1 Interpretation of results

First, in accordance with Brosch and Binnewies (2018), work characteristics are related to after-work mood and energy, such that individuals with high levels of job demands experience worse mood and less energy compared to individuals with low levels of job demands. In addition, individuals experience lower levels of mood and energy on days on which they have high levels of job demands. With regard to job resources, the opposite effect is true. Individuals with high levels of job resources have a better mood and more energy.

Also, individuals experience higher levels of mood and energy on days on which they have high levels of job resources.

Secondly, it appears that job demands do not affect family outcomes. One exception is mental demands, which positively affect family outcomes. Both findings are not in line with hypothesis 1 . One possible explanation for this is that job demands can be perceived in two different ways, depending on the individual and the working sector (Bakker \& Sanz-Vergel, 2013). On the one hand, job demands can be seen as hindrances that drain energy, increase negative emotions and thwart well-being and goal achievement. On the other hand, job demands can be perceived as challenges that still cost energy, but at the same time stimulate competence and increase goal achievement (LePine, Podsakoff and LePine, 2005). In contrast to hindrances, challenging demands can improve family outcomes as they increase job satisfaction (Cavanaugh, Boswell, Roehling, and Boudreaus, 2000), which in turn decreases work-family conflict (Bruck, Allen \& Spector, 2002). The notion that it can differ whether individuals perceive the same job demands as challenges or as hindrances might explain the absence of unambiguous relationships between quantitative demands, emotional demands, and family outcomes. Since most individuals regard mental demands as challenges (e.g. Schaufeli \& Salanova, 2014), this is likely to explain their positive relationship with family outcomes.

In contrast to job demands, job resources do predict family outcomes. Individuals with higher levels of job autonomy and social support generally have higher levels of family outcomes. This is in line with hypothesis 3 . However, the level of job resources that individuals experience on a specific day does not influence levels of family outcomes, which is not in line with hypothesis 3 . One explanation for this could be that there is a limited spillover from work to home within one week as this is a relatively short measurement period. It could be, for example, that the family satisfaction of individuals would only start to decrease after a few weeks with little social support instead of one working week. This seems to be a plausible explanation since comparable variables such as job satisfaction and work-family conflict are also shown to be fairly stable across time (Michel \& Clark, 2009) (Rantanen, Kinnunen, Feldt \& Pulkkinen, 2008).

Finally, regarding the mediating role of personal resources, it appears that personal resources explain some of the relationships between job demands and family outcomes. Especially, the relationships between quantitative demands and family outcomes are explained by after-work mood and after-work energy of individuals. This means that when individuals have high amounts of work, this worsens their mood, which in turn negatively
affects their family life, such that they are less satisfied with their family and they have lower family task performance. This is in line with hypothesis 2 . However, some relationships between job demands and family outcomes are not mediated by personal resources.

Regarding the relationship between job resources and family outcomes, it appears that personal resources again explain some of the relationships between job resources and family outcomes. In line with hypothesis 4 , increased job autonomy leads to better moods and higher energy levels, which in turn positively affects family life. However, the relationships between social support and family outcomes are not explained by personal resources, which is not in line with hypothesis 4.

Something that could explain the missing mediating effects is that other personal resources play a role in the linking of job demands, job resources, and family outcomes. For instance, this research does not measure time, although this is an important personal resource (Ten Brummelhuis \& Bakker, 2012). Another explanation could be that participants answer the questions in a socially desirable manner. For example, it could be that participants do not want to admit that they are not in a good mood due to self-presentation concerns (Krumpal, 2013). This could blur the existing relationships between different variables.

### 6.2 Theoretical implications

This study contributes to the literature as it examines the dynamic relationship between work and family roles, which helps to extend the comprehension of the interaction between work and family life (Janssen, Peeters, de Jonge, Houkes, \& Tummers, 2004). Since the links between work characteristics and work-family conflict are claimed to be underexplored (Bakker, ten Brummelhuis, ten Brummelhuis, Prins, \& der Heijden, 2011), this implies that studying these variables is relevant.

Furthermore, this study contributes to the validation of the theoretical framework of Ten Brummelhuis and Bakker (2012) by examining personal resources as mediating variables between work characteristics and family outcomes in a daily diary study. This makes it possible to examine the causal direction of these variables, which has not been studied thoroughly in earlier research (Brummelhuis, \& Bakker, 2012). Since personal resources affected family outcomes, this study shows their value in linking work and family life.
6.3 Strengths, limitations and future research

This study has different strengths as well as some limitations. A strength is the adequate sample size of 126 participants, taking into consideration the design of the study and the
analysis strategy. A second strength is the diary design, in which participants filled out two questionnaires per day during one working week. This created the opportunity to examine daily variations in job demands, job resources, personal resources, and work outcomes. The value of the diary design of the study is underscored by the daily variation in job demands and job resources which contributed to personal resources.

A limitation of the present study is the self-reported based way of data collection. This can result in data affected by common method bias (Podsakoff, MacKenzie, Lee, \& Podsakoff, 2003). Since both the person-level variation of the outcome variables and the variation between days within participants are examined, this rules out a great part of individual tendencies to respond to the questions in a certain way. Since it may be that spouses are better capable of assessing family outcomes without work-related affect influencing this assessment (Ilies, Wilson \& Wagner, 2009), it would still be interesting to make use of spouse ratings. Also, more objective indicators such as time spend on household activities could be used in future research. Using objective measurement instruments could avoid the tendency to answer in a socially desirable way, as can be elicited by selfpresentation concerns (Krumpal, 2013).

Another limitation of this research is that participants are gathered using snowballsampling. Since this is a form of non-probability sampling, it may create bias in the sample group (Sadler, Lee, Lim \& Fullerton, 2010). For example, most participants of the sample group are highly educated, and the larger part is female. However, the impact of this bias has been reduced since the study controls for, among other, educational level and gender.

Thirdly, the causality of the relationships found in this study needs to be interpreted cautiously, considering that the experience of being satisfied with your family and performing well in your family role could also result in participants having a better mood and more energy the next day. In addition, the level of family satisfaction can also influence the way job demands and job resources are perceived. Therefore, it can be important to use longitudinal study designs that measure over a longer period, to further examine the insights obtained from this diary study. Specifically, future research can examine whether causal relationships can be found whereby the family domain influences the work domain through transient personal resources. In addition, future research can also examine the influence of other personal resources as they are an underexplored topic that can be studied more often in diary studies. This is also recommended by Ten Brummelhuis and Bakker (2012). In future diary studies, not only should the influence of transient personal resources such as time be considered, but also the influence of structural personal resources such as physical health and knowledge.

### 6.4 Practical implications

The results of this study suggest that individuals can benefit from job resources on a daily basis. Increased autonomy and social support within one's job result in a better mood and/or increased energy levels, which in turn can contribute to family-satisfaction and family task performance. Moreover, job resources also contribute directly to increased family satisfaction and better performance within the family. Therefore, organizations should create possibilities for employees to increase their job autonomy and to be able to give and receive social support and employees should be aware of the influence of their work characteristics on their family life, in order to take actions that maximize job resources.

In terms of job demands, especially emotional demanding and quantitative demanding work compromises one's mood and energy level. Since emotional and mental demands are growing in today's jobs, it is important to consider what the consequences of these demands might be. It can be inferred from this study that individuals and employers should try to especially limit the emotional demands within their work to make sure their mood and energy levels are not restrained.
6.5 In conclusion

This study shows that job characteristics of individuals are important in determining their after-work mood and after-work energy. These results are found on day-level as well as on an individual level. Moreover, this study shows that work roles clearly influence family roles since the job characteristics of an individual directly impact family outcomes. Especially job resources influence individuals' family outcomes such that higher levels of job resources contribute to better family outcomes. Transient personal resources explain some of these relationships and are therefore important variables to take into consideration when examining the influence of work roles on family roles.

## REFERENCES

Amstad, F. T., Meier, L. L., Fasel, U., Elfering, A., \& Semmer, N. K. (2011). A meta-analysis of work-family conflict and various outcomes with a special emphasis on crossdomain versus matching-domain relations. Journal of Occupational Health Psychology, 16(2), 151.

Bakker, A. B., \& Demerouti, E. (2007). The job demands-resources model: State of the art. Journal of Managerial Psychology, 22(3), 309-328.

Bakker, A. B., \& Sanz-Vergel, A. I. (2013). Weekly work engagement and flourishing: The role of hindrance and challenge job demands. Journal of Vocational Behavior, 83(3), 397-409.

Bakker, A. B., ten Brummelhuis, L., Prins, J. T., \& Van der Heijden, F. M. (2011). Applying the job demands-resources model to the work-home interface: A study among medical residents and their partners. Journal of Vocational Behavior, 79(1), 170-180.

Baron, R. M., \& Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. Journal of Personality and Social Psychology, 51, 1173-1182.

Brosch, E., \& Binnewies, C. (2018). A Diary Study on Predictors of the Work-life Interface: The Role of Time Pressure, Psychological Climate and Positive Affective States. Management revue, 29(1), 55-78.

Brotheridge, C. M., \& Grandey, A. A. (2002). Emotional labor and burnout: Comparing two perspectives of "people work". Journal of Vocational Behavior, $60(1), 17-39$.
Bruck, C. S., Allen, T. D., \& Spector, P. E. (2002). The relation between work-family conflict and job satisfaction: A finer-grained analysis. Journal of Vocational Behavior, 60(3), 336-353.

Cavanaugh, M. A., Boswell, W. R., Roehling, M. V., \& Boudreau, J. W. (2000). An empirical examination of self-reported work stress among U.S. managers. Journal of Applied Psychology, 85, 65-74.
Chen, Z., Powell, G. N., \& Cui, W. (2014). Dynamics of the relationships among work and family resource gain and loss, enrichment, and conflict over time. Journal of Vocational Behavior, 84(3), 293-302.

Chen, Y. P., Shaffer, M., Westman, M., Chen, S., Lazarova, M., \& Reiche, S. (2014). Family role performance: Scale development and validation. Applied Psychology, 63(1), 190218.

Demerouti, E., Bakker, A. B., Nachreiner, F., \& Schaufeli, W. B. (2001). The job demandsresources model of burnout. Journal of Applied Psychology, 86, 499-512.

Enders, C.K., \& Tofighi, D. (2007). Centering predictor variables in cross-sectional multilevel models: A new look at an old issue. Psychological Methods, 12(2), 121-138.
Frone, M. R., Yardley, J.K. \& Markel, K.S. (1997). Developing and testing an integrative model of the work-family interface. Journal of Vocational Behavior, 50, 145-167.

Gatrell, C. J., Burnett, S. B., Cooper, C. L., \& Sparrow, P. (2013). Work-life balance and parenthood: A comparative review of definitions, equity and enrichment. International Journal of Management Reviews, 15(3), 300-316.
Greenhaus, J. H., \& Beutell, N. J. (1985). Sources of conflict between work and family roles. Academy of Management Review, 10, 76-88
Janssen, P. P., Peeters, M. C., de Jonge, J., Houkes, I., \& Tummers, G. E. (2004). Specific relationships between job demands, job resources and psychological outcomes and the mediating role of negative work-home interference. Journal of Vocational Behavior, 65(3), 411-429.
Hobfoll, S. (1989). Conservation of resources: A new attempt at conceptualizing stress. American Psychologist, 44, 513-524.
Hobfoll, S. E., Johnson, R. J., Ennis, N., \& Jackson, A. P. (2003). Resource loss, resource gain, and emotional outcomes among inner city women. Journal of Personality and Social Psychology, 84(3), 632.
House, J. S. (1981). Work stress and social support. Reading, MA: Addison-Wesley
Ilies, R., Wilson, K. S., \& Wagner, D. T. (2009). The spillover of daily job satisfaction onto employees' family lives: The facilitating role of work-family integration. Academy of Management Journal, 52(1), 87-102.
Kim, H., \& Stoner, M. (2008). Burnout and turnover intention among social workers: Effects of role stress, job autonomy and social support. Administration in Social work, 32(3), 5-25.

Kopelman, R., Greenhaus, J., \& Connolly, T. (1983). A model of work, family and interrole conflict: A construct validation study. Organizational Behavior and Human Performance, 32, 198-215
LePine, J. A., Podsakoff, N. P., \& LePine, M. A. (2005). A meta-analytic test of the challenge stressor-hindrance stressor framework: An explanation for inconsistent relationships among stressors and performance. Academy of Management Journal, 48, 764-775.
McNair, D. M. (1971). Manual profile of mood states. Educational \& Industrial testing service.

McNall, L. A., Nicklin, J. M., \& Masuda, A. D. (2010). A meta-analytic review of the consequences associated with work-family enrichment. Journal of Business and Psychology, 25(3), 381-396.
Michel, J. S., Kotrba, L. M., Mitchelson, J. K., Clark, M. A., \& Baltes, B. B. (2011). Antecedents of work-family conflict: A meta-analytic review. Journal of Organizational Behavior, 32(5), 689-725.
Michel, J. S., \& Clark, M. A. (2009). Has it been affect all along? A test of work-to-family and family-to-work models of conflict, enrichment, and satisfaction. Personality and Individual Differences, 47(3), 163-168.

Peeters, M. C. W., Buunk, B. P., \& Schaufeli, W. B. (1995). Social interactions, stressful events and negative affect at work: A micro-analytic approach. European Journal of Social Psychology, 12(4), 391-401.

Peeters, M. C., Montgomery, A. J., Bakker, A. B., \& Schaufeli, W. B. (2005). Balancing work and home: how job and home demands are related to burnout. International Journal of Stress Management, 12(1), 43.

Pleck, J. H., \& Staines, G. L. (1985). Work schedules and family life in two-earner couples. Journal of Family Issues, 6(1), 61-82.
Podsakoff, P. M., MacKenzie, S. B., Lee, J., \& Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. Journal of Applied Psychology, 88(5), 879-903.

Powell, G. N., \& Greenhaus, J. H. (2006). Is the opposite of positive negative? Untangling the complex relationship between work-family enrichment and conflict. Career Development International, 11(7), 650-659.

Rantanen, J., Kinnunen, U., Feldt, T., \& Pulkkinen, L. (2008). Work-family conflict and psychological well-being: Stability and cross-lagged relations within one-and six-year follow-ups. Journal of Vocational Behavior, 73(1), 37-51.

Sadler, G. R., Lee, H. C., Lim, R. S. H., \& Fullerton, J. (2010). Recruitment of hard-to-reach population subgroups via adaptations of the snowball sampling strategy. Nursing \& Health Sciences, 12(3), 369-374.
Schaubroek, J., \& Ganster, D.C. (1993). Chronic demands and responsivity to challenge. Journal of Applied Psychology, 78, 73-85
Schaufeli, W. B., \& Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational

Psychology and Behavior, 25(3), 293-315.
Schaufeli, W. B., \& Salanova, M. (2014). Burnout, boredom and engagement at the workplace. People at work: An introduction to contemporary work psychology, 293-320.
Schaufeli, W. B., Salanova, M., González-Romá, V., \& Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. Journal of Happiness studies, 3(1), 71-92.

Netemeyer, R. G., Boles, J. S., \& McMurrian, R. (1996). Development and validation of work-family conflict and family-work conflict scales. Journal of Applied Psychology, 81(4), 400.
Ten Brummelhuis, L. L., \& Bakker, A. B. (2012). A resource perspective on the work-home interface: The work-home resources model. American Psychologist, 67(7), 545.

International Labor Organization, ILOSTAT database. (2019). Employment in industry. Retrieved from https://data.worldbank.org/indicator/SL.IND.EMPL.ZS?locations=NL International Labor Organization, ILOSTAT database. (2019). Employment in services. Retrieved from https://data.worldbank.org/indicator/SL.SRV.EMPL.ZS?locations=NL

Voydanoff, P. (2005). Toward a conceptualization of perceived work-family fit and balance: A demands and resources approach. Journal of Marriage and Family, 67(4), 822-836.

Van Veldhoven, M., Meijman, T. F., Broersen, J., \& Fortuin, R. (1997). Handleiding VBBA. Amsterdam: Stichting Kwaliteitsbevordering Bedrijfsgezondheidszorg.

Wang, M., Liu, S., Zhan, Y., \& Shi, J. (2010). Daily work-family conflict and alcohol use: Testing the cross-level moderation effects of peer drinking norms and social support. Journal of Applied Psychology, 95(2), 377.

## APPENDIX 1. DESCRIPTIVE AND FREQUENCY STATISTICS

Table 9. Descriptive statistics of number of days participated, age, contractual working hours, and hours worked on a working day, displayed in means (M) and standard deviations (SD)

| Variable | M | SD | Reach | N |
| :--- | :--- | :--- | :--- | :--- |
| Number of days participated | 3.99 | 1.05 | $2-5$ | 126 |
| Age | 39.43 | 11.51 | $22-64$ | 124 |
| Contractual working hours | 30.28 | 7.68 | $8-41$ | 125 |
| On a working day: hours worked | 7.90 | 1.77 | $1-14$ | 368 |

Table 10. Frequency statistics of number of days participated, gender, education, working sector and working day or not

|  | Number of participants | Frequency |
| :---: | :---: | :---: |
| Number of days participated |  |  |
| Two days | 14 | 11.10 |
| Three days | 28 | 22.20 |
| Four days | 29 | 23.00 |
| Five days | 55 | 43.70 |
| Total | 126 | 100 |
| Gender |  |  |
| Males | 35 | 27.80 |
| Females | 91 | 72.70 |
| Total | 126 | 100 |
| Education |  |  |
| MBO | 15 | 11.9 |
| HAVO, VWO | 2 | 1.6 |
| HBO | 54 | 42.9 |
| Universiteit | 55 | 43.7 |
| Total | 126 | 100 |
| Working sector |  |  |
| Agriculture, fishery, forestry | 4 | 3.20 |
| Industry | 2 | 1.60 |
| Construction industry | 2 | 1.60 |
| Wholesale and retail | 3 | 2.40 |
| Transport and storage | 1 | . 80 |
| Information and communication | 8 | 6.30 |
| Financial activities and insurances | 6 | 4.80 |
| Liberal professions and scientific activities | 3 | 2.40 |
| Public administration and defence | 10 | 7.90 |
| Education | 16 | 12.70 |
| Healthcare and welfare | 39 | 31.00 |
| Art, entertainment, and recreation | 1 | . 80 |
| Administrative and supportive services | 1 | . 80 |
| Other services | 100 | 7.90 |
| Other, namely.. | 20 | 15.90 |
| Total | 126 | 100 |
| Working day |  |  |
| A working day | 380 | 75.50 |
| Not a working day | 123 | 24.50 |
| Total | 503 | 100 |

## APPENDIX 2. PARTICIPANTS INVITATIONS

## Invitation day 1 questionnaire 1

Beste 'Name participant'
Ontzettend bedankt voor uw deelname aan dit onderzoek.
In deze mail vindt u de link naar vragenlijst éen van dag één van het onderzoek.
Vult u deze vragenlijst alstublieft direct na uw werk in.

## Volg deze link om naar de eerste vragenlijst te gaan:

Take the Survey
Of kopieer en plak de URL hieronder in uw webbrowser:
https://uusocsci.au1.qualtrics.com/jfe/form/SV_efYQi2gmYHONaXr?Q_DL=0IjN4XbI6rnox uJ_efYQi2gmYHONaXr_MLRP_cYENXSWnym7VzlX\&Q_CHL=email

Bij vragen of opmerkingen kunt $u$ me bereiken op het emailadres j.e.vandeursen@students.uu.nl of via het telefoonnummer 06-37417746.

Met vriendelijke groeten, Liza van Deursen

Volg de link om u uit te schrijven voor e-mails in de toekomst
Klik hier om u uit te schrijven

## Invitation day 2 to 5 questionnaire 1

Beste 'Name participant',
In deze e-mail vindt u de link naar de eerste vragenlijst van dag 'day number’ van het onderzoek. Heel fijn dat u al de hele week dit onderzoek invult. Dit verhoogt de bruikbaarheid van uw gegevens!
Vult u deze vragenlijst alstublieft direct na uw werk in.
Volg deze link om naar de eerste vragenlijst van dag 'day number' te gaan: $\$\{1: / /$ SurveyLink?d=Take the Survey $\}$

Of kopieer en plak de URL hieronder in uw webbrowser:
\$\{1://SurveyURL\}

Vanavond ontvangt u een e-mail met een link naar de tweede vragenlijst. Vult u deze alstublieft in aan het einde van de dag, voordat u naar bed gaat. Ontzettend bedankt voor uw trouwe deelname aan dit onderzoek.

Met vriendelijke groeten,
Liza van Deursen (j.e.vandeursen@students.uu.nl/ 06-37417746)

Volg de link om u uit te schrijven voor e-mails in de toekomst:
Klik hier om u uit te schrijven

## Invitation day 1 to 5 questionnaire 2

Beste 'Name participant'
In deze e-mail vindt u de link naar de tweede dagelijkse vragenlijst van dag ‘day number’ van het onderzoek.
Vult u deze vragenlijst alstublieft aan het einde van uw dag, direct voordat u naar bed gat in.

Volg deze link om naar de tweede vragenlijst van dag ‘day number’ te gaan:
Take the Survey
Of kopieer en plak de URL hieronder in uw webbrowser:
https://uusocsci.au1.qualtrics.com/jfe/form/SV_egiPr9VCcRS2is5?Q_DL=2tbok0P0JGNIBbv egiPr9VCcRS2is5_MLRP_3rZHJdMhfJImQOF\&Q_CHL=email

Nogmaals ontzettend bedankt voor uw deelname aan dit onderzoek,
Met vriendelijke groeten,
Liza van Deursen (j.e.vandeursen@students.uu.nl/ 06-37417746)

## APPENDIX 3. QUESTIONNAIRES

## General questions (only asked in the first questionnaire of the first day)

De volgende vragen zijn eenmalige vragen om algemene informatie over $u$ als deelnemer te krijgen.

Q1 Wat is uw leeftijd (in jaren)?

Q2 Wat is uw geslacht?ManVrouw

Q3 Wat is uw burgerlijke staat?
Getrouwd/ samenwonend
Oelfstandig wonend, met relatie
Zelfstandig wonend, zonder relatie
Inwonend bij ouders

- Anders, namelijk...

Q4 Wat is de hoogste opleiding die $u$ heeft voltooid?Lagere schoolMAVO, LBO, VMBOMBOHAVO, VWOHBOUniversiteit

Q5 In welke sector bent u werkzaam?
Landbouw, bosbouw, visserij
O Industrie
Bouwnijverheid

- Groot- en detailhandel
- Vervoer en opslag

Informatie en communicatie

- Financiële activiteiten en verzekeringen

Vrije beroepen en wetenschappelijke activiteiten
Openbaar bestuur en defensie
Onderwijs
Gezondheids- en welzijnszorg
Kunst, amusement en recreatie
Administratieve en ondersteunende dienstverlening
Overige dienstverlening
Anders, namelijk..

Q6 Voor hoeveel uur per week heeft u contractueel een aanstelling?

## Questionnaire part 1

De volgende stellingen gaan over uw werkomstandigheden.
Kruis bij iedere stelling steeds het antwoord dat vandaag op uw situatie van toepassing is.

Q1 Heeft u vandaag gewerkt?

- Ja

O Nee

Q2 Hoeveel uur heeft $u$ vandaag gewerkt?

Q3 Vandaag had ik voldoende tijd om mijn werk af te krijgenHelemaal nietEen beetjeEnigszinsNogalHeel erg

Q8 Vandaag moest ik heel snel werkenHelemaal nietEen beetje

- EnigszinsNogalHeel erg

Q12 Vandaag moest ik erg veel werk doenHelemaal nietEen beetjeEnigszinsNogalHeel erg

Q13 Vandaag werkte ik extra hard om dingen af te krijgenHelemaal nietEen beetjeEnigszinsNogalHeel erg

Q14 Vandaag moest ik erg geconcentreerd werkenHelemaal nietEen beetjeEnigszinsNogalHeel erg

Q15 Vandaag moest ik voortdurend mijn aandacht bij het werk houdenHelemaal niet
Oen beetje

- Enigszins
- Nogal

O Heel erg

Q16 Vandaag moest ik erg zorgvuldig werkenHelemaal nietEen beetjeEnigszinsNogalHeel erg

Q17 Vandaag moest ik veel informatie verwerkenHelemaal nietEen beetjeEnigszinsNogalHeel erg

Q18 Vandaag vond ik mijn werk emotioneel zwaar
$\bigcirc$ Helemaal niet

- Een beetje
- Enigszins
- Nogal
- Heel erg

Q19 Vandaag had ik in mijn werk te maken met zaken die mij persoonlijk rakenHelemaal nietEen beetjeEnigszins

- Nogal
- Heel erg

Q20 Vandaag kwam ik in mijn werk in emotioneel beladen situaties terechtHelemaal nietEen beetjeEnigszins

- NogalHeel erg

Q21 Vandaag besliste ik zelf de volgorde van mijn werkzaamhedenHelemaal nietEen beetjeEnigszins

- NogalHeel erg

Q22 Vandaag bepaalde ik zelf op welk moment ik een taak uitvoerdeHelemaal nietEen beetjeEnigszins

- NogalHeel erg

Q23 vandaag had ik de vrijheid om problemen op het werk zelf op te lossenHelemaal nietEen beetjeEnigszins

- NogalHeel erg

Q24 Vandaag hadden mijn collega's aandacht voor mijn gevoelens en problemenHelemaal nietEen beetjeEnigszins

- NogalHeel erg

Q25 Vandaag hebben mijn collega's laten merken waardering te hebben voor de manier waarop ik mijn werk doe

- Helemaal niet
- Een beetje
- EnigszinsNogalHeel erg

Q26 Vandaag hielpen mijn collega's mij, waar nodig, met een bepaalde taakHelemaal nietEen beetjeEnigszinsNogalHeel erg

Q27 Vandaag gaven mijn collega's me, als het nodig was, advies over hoe ik iets moet aanpakkenHelemaal nietEen beetjeEnigszinsNogalHeel erg
Q28 Hieronder vindt u een list met woorden. Deze woorden beschrijven stemmingen of gevoelstoestanden. Een aantal woorden beschrijft negatieve stemmingen, andere woorden geven een positieve stemming aan. Deze gevoelens kunt $u$ wel, of $u$ kunt ze niet hebben. Lees elk woord zorgvuldig en kruis de optie aan die het beste weergeeft hoe u zich op dit moment voelt.


## Questionnaire part 2

De volgende stellingen gaan over uw relatie/huwelijk en uw gezinsleven.
Kruis bij iedere stelling steeds het antwoord dat vandaag op uw situatie van toepassing is.

Q1 Ik ben vandaag tevreden met mijn huwelijk/relatie
Helemaal niet
Een beetjeEnigszinsNogalHeel erg

Q2 Ik ben vandaag tevreden met mijn gezinslevenHelemaal nietEen beetjeEnigszinsNogalHeel erg

Q3 Ik ben vandaag blij met mijn huwelijk/relatieHelemaal nietEen beetjeEnigszinsNogalHeel erg

De volgende vragen gaan specifiek over uw gezinsleven. Kruis het antwoord aan dat vandaag het meest op uw situatie van toepassing is

Q4 Beoordeel de mate waarin u vandaag kon doen wat van $u$ werd verwacht bij de volgende aspecten van uw gezinsleven:

|  | Helemaal <br> niet | Een <br> beetje | Enigszins | Nogal | Helemaal |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Algemene steun geven <br> aan familieleden |  |  |  |  |  |
| Zaken met betrekking <br> tot het huis <br> onderhouden |  |  |  |  |  |
| Huishoudelijke <br> verantwoordelijkheden <br> nakomen |  |  |  |  |  |
| Emotionele steun <br> geven aan <br> familieleden |  |  |  |  |  |
| Familieleden <br> onderling met elkaar <br> verbonden houden |  |  |  |  |  |
| Het doen van <br> huishoudelijke klusjes |  |  |  |  |  |
| Het geven van advies <br> aan familieleden |  |  |  |  |  |
| Taken in- en rondom <br> het huis vervullen |  |  |  |  |  |

