Studying work-related well-being on a day-to day basis: An expanded JD-R theory approach

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CHAPTER ONE:

General Introduction

Introduction

For many people, work represents an important and time-consuming aspect of everyday life: Employed individuals spend about one-third of their time each day on average at their workplace in developed countries (European Social Survey, 2012). Regardless of the occupational setting, putting effort in work can represent one of the ways to fulfill basic psychological needs and promote well-being in everyday life. Indeed, research has shown that employees who view their work not only as economic means, but also as a meaningful and valuable calling tend to be highly engaged in their work and find a lot of satisfaction in it (Gagné & Deci, 2005). Moreover, the existing literature has demonstrated substantial benefits of experiencing high work-related well-being, including workplace productivity, creativity, and cooperation (Boehm & Lyubomirsky, 2008; De Neve et al., 2013), high job performance (Bakker & Bal, 2010; Daniels, Wimalasiri, Beesley, & Cheyne, 2012; Van De Voorde, Paauwe, & Van Veldhoven, 2012), high income and good health (Graham, 2008; Graham, Eggers, & Sukhtankar, 2004; Shimazu, et al., 2012), and low turnover intentions (Iverson, Olekalns, & Erwin, 1998; Van Katwyk, Fox, Spector, & Kelloway, 2000). Hence, the way employees experience their work on a daily basis is highly important not only for their own lives (Boehm & Lyubomirsky, 2008; Weiss, 2002), but also for the organization as a whole.

Although there are significant differences between employees in their typical responses to work environments, demands and conditions, employees' responses are not static; rather, they change continuously. Experiences of work-related tasks, situations, and people can be different every day, and work-related needs, cognitions and affective states vary meaningfully within individual employees (Ilies & Judge, 2002; Xanthopoulou, et al., 2012). Despite these notions, most of the previous studies on work-related well-being used a between-person or "trait" approach, which provided valuable insights on the differences between individuals (e.g. Brief & Weiss, 2002). However, a comprehensive understanding of the determinants of work-related well-being on a within-person or "state" level is still missing.

The present thesis aims to present a detailed view into the subtle and complex mechanisms that can foster (vs. thwart) work-related well-being in the natural work environment on a day-to-day, and within-day basis. The thesis aims to test the job demands- resources theory (JD-R; Bakker & Demerouti,

2014) at the day level, and expand it by integrating notions from the self-determination theory (SDT; Gagné & Deci, 2005), and the challenge-hindrance stressor framework (LePine et al., 2005). Specifically, it aims to explore the dynamic within-person associations between job resources and different types of job demands on the one hand, and motivation and work-related well-being on the other hand. It also explores how work status as a between-person variable influences daily activities and daily happiness. Thus, it combines a between-person and within-person approach in studying work-related well-being by also taking into account specific life circumstances.

More concretely, the current thesis focuses on two specific work-related contexts. First, before conducting an in depth analyses of work-related well-being on a daily basis, the thesis aims to examine the role and relevance of work in everyday life. That is, the thesis explores how certain life circumstances (i.e. work status) relate to happiness experienced in common daily activities. Bearing in mind that relevant work status changes (working vs. nonworking) are typically pronounced in older adulthood (Kim & Moen, 2002), the thesis focuses on the experiences of daily activities of working and nonworking older adults in particular.

The second focus of the thesis is teachers' occupational setting because teaching is a very valuable and important profession as teachers touch the lives of every pupil they work with. Teachers are crucial for our children because they provide them with basic social and academic skills as well as set the groundwork for further education. In this way, teachers can influence all other professions. Work-related well-being of teachers is highly important in order to perform well in the classroom (Bakker, 2005; Bakker, Hakanen, & Demerouti, 2007; Hakanen, Bakker, & Schaufeli, 2006). Teachers' well-being and socio-emotional competences are highly important not for only individual teachers, but also for the pupils they interact with in because they foster developing and maintaining supportive classroom climate and positive teacher–student relationships (Jennings and Greenberg, 2009). Moreover, teaching is an intriguing combination of highly demanding job tasks and conditions on the one hand, and potentially highly rewarding job outcomes on the other hand.

Specifically, teachers often encounter high work overload and time pressure (Chan, 1998), intense emotional interactions with pupils (Brotheridge &

Grandey, 2002; Turk, Meeks, & Turk, 1982), as well as unsupportive colleagues and uncooperative parents (Lasky, 2000), which represent risk factors for teachers' work-related well-being, as such factors contribute to feelings of exhaustion, stress, and cynical attitudes (Borg & Riding, 1991; Brackett, Palomera, Mojsa-Kaja, Reyes & Salovey, 2010; Hakanen, Bakker, & Schaufeli, 2006). Nonetheless, most teachers still feel satisfied and happy in their work (Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007; Borg & Riding, 1991; Grayson & Alvarez, 2008; Hakanen et al., 2006; Jacobsson, Pousette, & Thylefors, 2001). These contradictory findings on the associations between high job demands and high work-related well-being require a more fine-grained investigation, particularly on a within-person level.

By using episodic measures within the expanded JD-R theoretical framework, the currents thesis aims to add to our knowledge of the specific and more proximal factors, such as immediate job resources and demands, which promote (vs. thwart) teachers' work-related well-being in their everyday work life. These subjective experiences close to real time cannot be captured by global indicators. This is important because it can add to a better understanding of work-related well-being not only among teachers, but also in other occupational settings as well, as the interplay between job demands and resources, work motivation, and well being on a daily basis is important in other professions (Demerouti & Bakker, 2011).

In addition, the thesis presents four studies that have been conducted in two different national settings, namely, Croatia and The Netherlands, which enables examining whether the findings on work-related well-being in everyday life can be generalized to different environments, and whether the daily psychological work-related processes are the same in different national contexts. In the following section, I will first describe our approach to daily work-related well-being, and then I will introduce the overall model we presented and tested in the thesis.

Daily Work-Related Well-Being

Work-related well-being has been defined in various ways. For example, previous literature has largely concentrated on negative indicators of work-related well-being, such as exhaustion and burnout (Spilt, Koomen, & Thijs, 2011). Bakker and Oerlemans (2012) have recently conceptualized work-related well-being as an overarching term reflecting work-related subjective experiences as: (a) How well employees feel at work (affective experiences), and (b) how well the workplace meets employees' own personal standards and needs (cognitive evaluations; Pavot & Diener, 2008; Rojas & Veenhoven, 2013; Weiss, 2002). In this thesis, I concentrate on the affective experiences of well-being, namely, positive affect and work engagement that employees actually experience while working on a day-to-day basis. Positive affect at work refers to transient positive emotions and moods (e.g., inspired, happy, satisfied) that are felt by employees in different degrees during different working days (Amabile, Barsade, Mueller, & Staw, 2005; Watson, 1988), whilst work engagement refers to a stimulating, energetic and meaningful work-related experience characterized by vigor, dedication, and absorption (Bakker, Albrecht, & Leiter, 2010; Breevaart, Bakker, Demerouti, & Hetland, 2012; Schaufeli, Bakker & Salanova, 2006).

The circumplex model of affect (Russell, 2003) proposes that affective states arise from two fundamental neurophysiological systems, one related to a pleasure–displeasure continuum and the other to arousal, activation, or alertness. Each affective state can be conceptualized as a combination of these two dimensions. Whereas emotions are brief multi-component response tendencies, related to specific personally meaningful events and circumstances (i.e., they have an object), moods are mostly longer lasting and free-floating or objectless, like an "affective background" (Fredrickson, 2001). These affective states influence behavior and performance at work (Barsade & Gibson, 2007; Estrada, Isen, & Young, 1997; Fredrickson, 2000; Weiss & Cropanzano, 1996), as well as longer-term well-being, both at work and in other life domains (Boehm & Lyubomirsky, 2008; Lyubomirsky et al., 2005).v

Even though there are relatively stable interindividual differences in trait-level positive affect and work engagement (Langelaan, Bakker, van Doornen, & Schaufeli, 2006), these affective aspects of work-related well-being are inherently dynamic and fluctuate substantially on a within-person level (Breevaart

et al., 2012; Fredrickson, 2004; Sonnentag, Dormann, & Demerouti, 2010; Sonnentag & Ilies, 2011; Xanthopoulou et al., 2012). Given this context, work-related well-being can be seen as having two qualitatively distinct aspects: state (episodic, within-person) level and trait (global, between-person) level well-being (Schwarz, Kahneman, & Xu, 2009; Xanthopoulou, Bakker, & Ilies, 2012). Trait level work-related well-being reflects the typical ways individuals evaluate their job in general, or the degree to which an individual judges the overall quality of his/her own job favorably. State (episodic) level work-related well-being relates to within-person fluctuations in how people experience their job moment to moment (Bakker & Oerlemans, 2012; Schwarz et al., 2009). For example, a teacher may like her job in general, and she may feel especially happy and engaged in her work when she is teaching very motivated pupils, but when she has to do administrative paperwork, her happiness and engagement levels may drop considerably.

Most of the previous studies focused on work-related well-being as a trait (trait-level approach), and examined the differences between employees and in the factors that can explain them. For instance, studies indicate that teachers with high (vs. low) work-related well-being are less likely to leave teaching (Pillay, Goddard, & Wilss, 2005). Despite the valuable insights trait-level studies have provided (Boehm & Lyubomirsky, 2008; Fisher, 2010), studies using a between-person design cannot detect important proximal factors that affect work-related well-being fluctuations in everyday work life, and between-person differences cannot explain within-person changes in well-being over time. Even very happy employees sometimes have their off-days. Moreover, recent research revealed that global trait-level assessments are susceptible to retrospective biases, such as the overestimation of the frequency and intensity of positive and negative affect when reporting retrospectively compared to the aggregate of episodic real-time reports for the same time period (Miron-Shatz, Stone, & Kahneman, 2009; Tadić, Braam, Vliet, & Veenhoven, 2013).

Consequently, some researchers have shifted their focus on studying the fluctuations of work-related well-being on a within-person level. Studies using episodic types of assessment such as the experience sampling method (ESM), the day reconstruction method (DRM; Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004; Oerlemans & Bakker, 2013), and diary methodology (Bolger, Davis, & Rafaeli, 2003; Kahneman & Krueger, 2006), enable researchers to capture the subtle fluctuations in workplace conditions and employees' affective and motivational states, and to discover the more proximal determinants of work-related well-being. Also, within-person level studies on well-being have been shown to successfully tackle most of the retrospective biases because daily assessments are less influenced by cognitive dispositions and processes than global assessments (Kahneman & Krueger, 2006; Reis, Sheldon, Gable, Roscoe, & Ryan, 2000; Robinson & Clore, 2002; Stone et al., 2006). Nonetheless, work-related well-being from a within-person perspective is still largely understudied (Xanthopoulou et al., 2012).

Therefore, in order to find out under which proximal circumstances employees feel and function well at work, the current thesis focuses on the short-term, within-person fluctuations in work-related well-being (i.e. positive affect and work engagement), and explores its potential environmental and personal determinants that may also vary significantly within the same employee across days. Two studies in the thesis used the daily diary research design (Ohly, Sonnentag, Niessen, & Zapf, 2010), and two studies used the DRM (Kahneman et al, 2004; Oerlemans & Bakker, 2013).

Daily diary studies can capture participants' reports on work-related experiences close to their natural workplace context and to their occurrence, which reduces recall biases (Schwarz, Kahneman, Xu, Belli, Stafford, & Alwin, 2009), and enhances the ecological validity of the findings (Bolger, Davis, & Rafaeli, 2003; Daniels & Harris, 2005). Aside from collecting the data on daily experiences and conditions, a daily diary research design can also include trait-level variables. This enables researchers to account for both within-person fluctuations and stable factors associated with the individual, as well as to examine potential cross-level interactions. In the two daily diary studies presented in this thesis, groups of teachers were followed during a small number of consecutive work days via internet applications designed specifically for the two studies. When teachers joined the studies, they were first asked to fill in a background (trait-level) questionnaire consisting of relevant sociodemographic information, and general feelings and experiences at work. Next, they were invited to complete a short diary survey every day after work for five consecutive workdays, consisting of questions about their daily experiences at work, such as how they felt during this particular day at work, why they put effort in work today, and what were their daily job demands and job resources.

Two other studies used the DRM (Kahneman et al, 2004), which builds upon the notion that people typically encode and store their affective experiences into their memory when one episode ends and another episode starts, and asks participants to reconstruct their episodes of the day in a chronological order (Oerlemans & Bakker, 2013). After reconstructing the episodes of a particular day, participants are asked to indicate their affective and/or other types of experiences for each episode, such as feelings of happiness, excitement, satisfaction, stress, anger, fatigue, or depression. In this way, the DRM facilitates recall, and reduces retrospection bias.

Compared to the experience sampling method, DRM imposes fewer burdens on the participants, while still providing an assessment of continuous episodes over the course of the full day, rather than a sampling of moments. Several studies documented close congruence between the DRM reports and

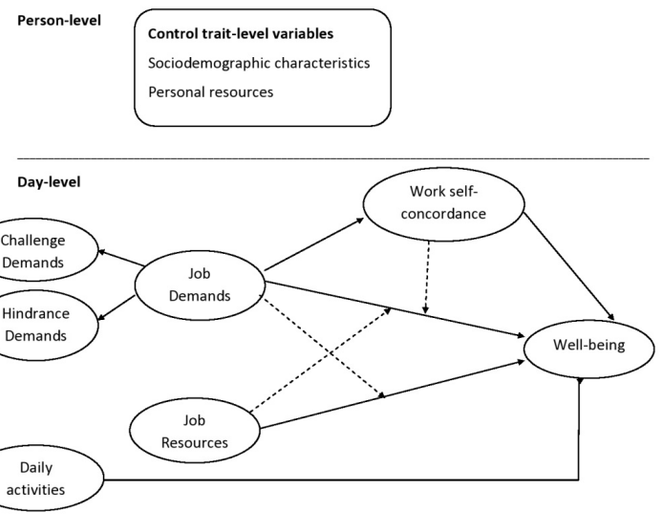

Figure 1. The hypothesized overall model of daily work-related well-being

results from experience sampling method (e.g., Dockray et al. 2010; Kahneman et al. 2004; Stone et al. 2006). In other words, these studies showed that the DRM produces very similar diurnal cycles of affect—especially for happiness—as compared to experience sampling, which has proven to be substantially less susceptible to various retrospective biases than global, trait-level measures (Bakker & Oerlemans 2011; Kahneman & Krueger 2006; Robinson & Clore 2002; Schwarz et al. 2009).

The two DRM studies included in the present thesis employed internet applications, designed specifically for the studies. Before testing our hypotheses, we wanted to investigate the validity of using DRM as episodic assessment of well-being. Using an internet application, participants first reported every activity they were engaged in during the previous day in a chronological order, starting with getting up and ending with going to bed. Thereafter, participants were redirected to a second screen which showed all of the activities they listed in a chronological order. Here, participants were asked to rate the happiness felt during each reported activity. During the first session, participants also filled out a general background questionnaire, consisting of sociodemographic information, such as work status, marital status, age, and physical health. The study revealed that DRM study design can provide novel information on intraindividual differences in lifestyle relating to the everyday happiness between working and nonworking older people which cannot be accurately captured by global survey methods.

Introducing the Overall Model of Daily Work-Related Well-Being

The JD-R theory (Bakker & Demerouti, 2014; Demerouti & Bakker, 2011) is one of the most influential theories of employee well-being. It provides a comprehensive and flexible approach to work-related well-being by acknowledging that each workplace has its unique work conditions. The theory posits that work-related well-being results from an interplay between effortful (demands) and motivating (resources) job conditions, which signify two essential processes: A health impairment process, triggered by job demands, and a motivational process, triggered by personal and job resources. In addition to these main effects of job demands and resources, JD–R theory also proposes an interaction effect: Personal and job resources can modify the impact of high job demands on work-related well-being because of their support in performing highly demanding work activities (Demerouti & Bakker, 2011;

Schaufeli & Taris, 2014; Xanthopoulou, et al., 2013).

The JD-R theory has received considerable research interest: More than half of all the empirical research on work engagement has been grounded in the JD-R perspective (Crawford et al., 2010; Demerouti & Bakker, 2011; Halbesleben, 2010), and these studies provided evidence for the theory's main premises. However, several issues require further investigation, some of which the current thesis aims to tackle in the overall model of daily work-related well-being (see Figure 1). Specifically, the findings on the associations between job demands and work-related well-being have been somewhat inconsistent. Although many studies showed that high job demands cost energy and undermine work-related well-being (Bakker, Demerouti, & Verbeke, 2004; Hakanen, Schaufeli, & Ahola, 2008); some studies found nonsignificant (Schaufeli & Bakker, 2004; Simbula, 2010; Sonnentag, 2003), or even positive associations (Schaufeli, Taris, & Van Rhenen, 2008) between job demands and work-related well-being (for an overview, see Schaufeli & Taris, 2014; Van den Broeck, Van Ruysseveldt, Vanbelle, & De Witte, 2013). Thus, the major aim of the present thesis is to provide a closer view of the nature of the associations between job demands and work-related well-being by examining the role of work motivation, job resources, and different types of job demands in those associations on a daily basis.

The role of work motivation. One of the main assumptions of the JD-R theory is that work motivation is highly relevant for work-related well-being. However, within JD-R theory research, work motivation is mostly studied on a trait-level through work engagement as a motivational state, but without direct examination of specific types of motivation on state level (e.g. Berg, Bakker, & Cate, 2013 Fernet, Austin, &Vallerand, 2012). Hence, the thesis aims to provide more insight into these matters by directly investigating one specific type of work motivation based within self-determination theory (SDT) (Gagné & Deci, 2005; Meyer & Gagné, 2008)—self-concordant work motivation on a within-person level. Self-concordant motivation for work entails autonomous involvement in work out of genuine interest and choice rather than out of external pressure.

High self-concordant work motivation reflects a high congruence between employees' work-related activities and their own identity, personal interests and values (Gagné & Deci, 2005). More concretely, employees with self-concordant work motivation may not like to go to work each day, but they ac-

knowledge the importance of getting to work through finding meaning and value in it, and by appreciating the importance of their work activities, even when they are uninteresting. For example, teachers may not particularly enjoy organizing meetings with parents, but they can acknowledge the importance of developing positive collaboration with parents.

Between-person studies demonstrated that employees with generally high (vs. low) levels of self-concordant work motivation are more committed to their work organizations and less prone to leave their workplace (Otis & Pelletier, 2005; Richer, Blanchard, & Vallerand, 2002), and also report less hassles at work (Otis & Pelletier, 2005). Their profession is more central to their identity, which helps them to find the meaning and value in the demands that are challenging. In line with these findings, research has also shown that differences between employees in self-concordant work motivation strongly relate to well-being in the workplace (for an overview, see Gagné & Deci, 2005; Deci & Ryan, 2008).

According to SDT, within-person changes in motivation from either moment-to-moment (within the day) or day-to-day (between days) should impact momentary and daily well-being, respectively. However, previous studies did not address the extent to which variations in employees' affective states at work are dependent on variations in their motivational states. Bearing in mind that employees are likely to have different motivation and happiness levels during different work activities on different working days (Ashkanasy & Daus, 2002; Ilies, Schwind, & Heller, 2007; Reis, Sheldon, Gable, Roscoe, & Ryan, 2000), we need a better understanding on how momentary motivational states impact affective experiences during work days and work activities.

The present thesis integrates the self-concordance model of work motivation into JD-R theory by emphasizing the importance of direct examination of work motivation as a highly relevant aspect of employees' everyday work life that fluctuates substantially between working days and work activities. This thesis is among the first to directly examine the role of work-activity self-concordant work motivation in the associations between job demands, job resources and work-related well-being on a day-to-day, and even on a within-day basis. Specifically, the current thesis explores self-concordant work motivation as (a) a buffering factor that protects employees from the unfavorable effects of highly demanding work-related daily activities and helps them

maintain happiness while engaging in those activities on a within-day basis; and as (b) a psychological mechanism that may explain the somewhat inconsistent findings on the relationship between daily job demands and daily work-related well-being, while accounting for different types of job demands.

Different types of job demands: Challenge vs. hindrance demands. The thesis argues that inconsistencies found in the relationship between job demands and work-related well-being indicators imply differences in types of job demands: Some job demands may foster work-related well-being among employees, while other job demands might obstruct it. These notions are in line with the challenge-hindrance stressor framework distinction model (Cavanaugh et al., 2000; Crawford et al, 2010), which postulates two main distinct categories of job demands—challenges and hindrances—that are differentially related to attitudinal and behavioral work outcomes (Cavanaugh et al., 2000; LePine, LePine, & Jackson, 2004; LePine et al., 2005).

Challenge demands are "good" demands that are potentially rewarding and worth the effort, such as high workload and high responsibilities, which signify the potential realization of desired outcomes through overcoming difficulties. As such, challenge demands can stimulate motivation and a proactive approach in dealing with them (Crawford et al., 2010). Conversely, hindrance demands represent "bad" job demands that encompass the assumption that the available resources and efforts will not be adequate to meet the demands, and that these demands are dependent on external and uncontrollable factors, which can result in a sense of being overwhelmed. Examples of hindrance job demands are role conflict, role ambiguity, pupils' misbehavior, organizational politics, and a lack of reciprocity from pupils (Van den Broeck, De Cuyper, De Witte, & Vansteenkiste, 2010). Although the interpretation of demands as either challenges or hindrances may be a matter of individual perception, certain demands are typically perceived as challenges and others as hindrances by most employees (Crawford, et al., 2010; Webster, Beehr, & Christiansen, 2010).

Although the integration of the challenge-hindrance stressor framework within the JD-R theory is not new (Crawford et al., 2010; Van den Broeck, et al., 2010), two important issues are still understudied: Can job demands be distinguished on a within-person level? How exactly can daily challenge demands foster daily work-related well-being, and daily hindrance demands

thwart it? Bearing in mind that the large majority of previous studies on the challenge-hindrance demands distinction primarily used a between-person design (for two exceptions, read Sanz-Vergel, 2013; Rodell & Judge, 2009), the present thesis aims to provide an empirical investigation on the differentiation between challenge and hindrance demands, and of the mechanisms that underlie their associations with work-related well-being on the within-person level.

The different functions of job resources. Finally, JD-R theory suggests that employees who experience high levels of job resources tend to be motivated and engaged in their work, and that these resources not only buffer the negative effects of high job demands, but may also boost and stimulate work motivation and work-related well-being (Bakker & Demerouti, 2014; Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007; Van den Broeck et al., 2010). However, the precise working conditions under which daily job resources tend to buffer, and work conditions under which daily job resources tend to boost daily work-related well-being have not yet been thoroughly studied. Starting from the challenge-hindrance stressor framework, this thesis aims to distinguish between the subtle differences in the functions of daily job resources—buffer and boost functions—in the associations between the different types of daily job demands and daily work-related well-being. In this way, the present thesis aims to make a unique contribution to the literature. To the best of our knowledge, this is the first empirical investigation of the different functions of job resources (i.e. buffering and boosting) in the relationship between different types of job demands (i.e. challenges and hindrances) and work-related well-being (i.e. positive affect and work engagement) on a within-person level.

Altogether, starting from the JD-R theory and using within-person study designs, the thesis aims to develop and test a model of work-related well-being in everyday life (see Figure 1), by exploring (a) the relevance and impact of work status in everyday life; (b) the roles and outcomes of different types of job demands (i.e. challenge and hindrance job demands) (Crawford, LePine, & Rich, 2010; Van den Broeck, De Cuyper, De Witte, & Vansteenkiste, 2010); (c) the (moderating and mediating) roles and functions of self-concordant motivation for work in the associations between job demands and work-related well-being (Gagné & Deci, 2005; Meyer & Gagné, 2008); and (d) the different functions of job resources in the relationship between job demands and

work-related well-being on a daily and within-day, episodic level.

Specific research questions: A reading guide

The thesis has four specific research objectives that can be presented with four specific research questions that build on each other. The overall hypothesized research model is presented in Figure 1.

Research question 1. What is the role of work for well-being in everyday life?

Before detailed analyses of our main research questions, the thesis aims to examine the role of work, both on a trait-level (i.e. work status) and state-level (i.e. working as a daily activity), for well-being in everyday life. Specifically, the effect of work status on daily activities and well-being is still unclear. In order to establish the relevance and meaning of work, in **Chapter 2,** the thesis examines the meaning of time spent in different daily activities for individuals in different life circumstances.

The thesis investigates whether similar activities, one of which is work (paid work for working older adults and volunteer work for non-working older adults), can lead to different levels of happiness depending on work status (i.e. working versus non-working). In other words, the focus is on work status as a moderator, not as a predictor of happiness felt during the engagement in different daily activities. In this way, the thesis provides novel information on whether work status and the experience of working on a daily basis is a motivational factor in the lives of older adults, in terms of their momentary well-being (momentary happiness during activities). The thesis does not only distinguish trait from state, but it also examines cross-level interactions, and, thus, adds to the existing literature on the impact of work on one's everyday life. Moreover, the study in Chapter 2 represents a first test of the feasibility of the DRM for assessing catching happiness on a daily and momentary basis.

Research question 2. Can daily self-concordant work motivation reduce the negative effects of high job demands?

The main purpose of the studies in **Chapters 3** and **4** is to examine the daily interrelations between employees' work motivation, perceived demands, and well-being (positive affect and work engagement) experienced during

the work day. In this way, the thesis aims to expand the JD-R theory by incorporating self-concordant work motivation in the associations between job demands and work-related well-being. Chapter 3 posits that teachers' motivation for work represents a buffering factor that facilitates coping with high demands, whilst the Chapter 4 proposes that self-concordant work motivation might represent an underlying mechanism that can explain differential outcomes of challenge and hindrance job demands.

Specifically, the study in Chapter 3 examines whether teachers' higher self-concordant work motivation (i.e. sense of autonomy, meaning and value) for daily work activities, such as teaching, and meetings with parents, corresponds to higher happiness in work activities, and better dealing with the demanding nature of these activities, beyond the baseline happiness during the previous day, as well as beyond the baseline of trait work demands and trait self-concordance. The study uses a DRM research design focused on the experiences of work activities on a within-person and a within-day level. The study captures the subjective experiences of teachers' most prominent work activities in their daily work life: The teachers reflect on the two work-related activities they had spent most time on for five consecutive work days (and not just one work day), which added to the data richness.

Previous studies within the JD-R theory did not address the extent to which variations in employees' affective states at work are dependent on variations in their motivational states, and we need a better understanding on how momentary motivational states impact affective experiences during work activities among teachers. Therefore, this study expands the JD-R theory by exploring if the levels of self-concordance and happiness experienced by employees vary significantly on a work activity level and if they show a predictable pattern.

Research question 3. Can self-concordant work motivation explain the differential associations between challenge vs. hindrance demands and work-related well-being?

Chapter 4 further explores the role of self-concordant motivation in the relationship between job demands and work-related well-being on a daily basis, but it also integrates the challenge-hindrance stressor framework in the

JD-R theoretical model. Using a daily diary methodology, the main goal of the study in Chapter 4 is to examine whether daily self-concordant motivation for work can explain how daily differences in job demands lead to differences in motivational states among employees, which in turn can explain fluctuations in daily well-being at work (i.e. daily work-related positive affect and work engagement).

Although the research on daily fluctuations in work conditions and outcomes within the JD-R theory has expanded recently (Simbula, 2010; Xanthopoulou et al., 2009b; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2011), previous research did not focus specifically on self-concordant motivation for work as a significant process that can explain the link between different types of job demands and work-related well-being. Thus, Chapter 4 aims to add to the existing literature by providing empirical evidence for the JD-R theory's understudied distinction between different types of demands— challenge and hindrance job demands—as well as on their differential effects on self-concordant work motivation, and work-related well-being on day-to-day basis.

Research question 4. Do job resources have different functions for work-related well-being when combined with challenge vs. hindrance demands?

The final aim of the thesis studied? in **Chapter 5** is to distinguish between the different functions of job resources—buffer and boost functions—in the associations between the challenge and hindrance job demands and work-related well-being on a within-person level. In line with JD-R theory, previous research has suggested that job resources – including social support, autonomy, performance feedback, and opportunities for development – can buffer the unfavorable impact of job demands on well-being (Bakker, Demerouti, & Euwema, 2005; Xanthopoulou et al., 2007). Previous research has also suggested that job resources can become particularly salient when job demands are high (e.g., Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007;Bakker, van Veldhoven, & Xanthopoulou, 2010). However, these studies did not differentiate between challenge and hindrance job demands. Do job resources particularly buffer the relationship between hindrance (instead of challenge) job demands and well-being? Do challenge demands (but not hindrance demands) boost the relationship between job resources and well-being?

In order to gain more insight into these matters on a daily basis, the study in Chapter 5 aims to add to the JD-R theory by specifying the working conditions that enable job resources to buffer, and specific working conditions that enable job resources to boost work-related well-being in daily work life. More concretely, the study hypothesizes that daily job resources buffer the negative relationship between daily hindrance job demands and daily work-related well-being, and that daily job resources are particularly positively related to daily well-being when daily challenge job demands are high.

Chapter 6 provides the summary of the results presented in the previous chapters and discusses the theoretical, as well as methodological implications of these findings for JD-R theory and practice. In addition, it presents the strengths and limitations of the studies included in the thesis. It also provides an overview of recommendations for future studies. Altogether, the thesis aims to develop and test a comprehensive theoretical framework for capturing the dynamic nature of work-related well-being on a day-to-day basis from the perspective of expanded JD-R theory. It also aims to demonstrate that working conditions (challenge and hindrance job demands, job resources), as well as employees' internal states (work motivation, personal resources) fluctuate within employees and have immediate impact on their work-related well-being. Thus, the thesis aims to show that the in-depth investigation of work-related well-being requires taking fluctuations on a within-person level into account.

CHAPTER TWO:

Daily Activities and Happiness in Later Life: The Role of Work Status

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Abstract

The aim of this study was to examine the role of work status (i.e. working versus not working) in the relationship between time-use and momentary happiness. We employed a longitudinal research design using monthly assessments via the day reconstruction method over 3 years among 579 older adults. In total, participants reported 84,247 daily activities and accompanying momentary happiness levels. Hierarchical linear modeling results revealed that working older individuals are not happier than nonworking individuals in the overall. However, involvement in work as a daily activity does coincide with higher levels of momentary happiness. Furthermore, working older individuals experience more happiness during relaxing activities, and during weekends, whereas nonworking older individuals experience more happiness during administrative activities. These findings provide novel information on intraindividual differences in lifestyle relating to the everyday happiness between working and nonworking older people which cannot be accurately captured by global survey methods.

Daily Activities and Happiness in Later Life: The Role of Work Status

Although many studies explored changes in time-use following retirement (e.g., Gauthier & Smeeding, 2003; McKenna, Broome, & Liddle, 2007; Stanley, 1995), to date only few studies explored the role of older adults' work status in daily activities and happiness on a within-person level (e.g., Oerlemans, Bakker & Veenhoven, 2011; Carstensen et al., 2011; Nimrod, 2007; Rosenkoetter, Garris, & Engdahl, 2001). Specifically, work status (i.e. whether a person is working or not) may influence the way older adults experience daily activities; and in turn, those activities might have different immediate affective consequences for working vs. nonworking older adults.

Hence, the role of older adults' work status in their affective experiences of everyday time-use (activities) requires further examination. More specifically, getting more insight into the differences in subjective experiences of daily activities between working and nonworking older adults on a within-person level can provide us with information on what might be the optimal time-use for working vs. nonworking adults; and, in the long run, these insights can be used for developing empirically based intervention strategies for enhancing older adults' well-being.

Therefore, the main purpose of this study was to examine the role of work status in the subjective experience of daily activities of older adults on a within-person level. More concretely, using the Day Reconstruction Method (DRM; Kahneman, Krueger, Schkade, Schwarz & Stone, 2004), we focused on momentary happiness felt during specific daily activities as a function of work status. In other words, the current study captured the direct affective experience (i.e. happiness) related to specific daily activities on a within-person and within-day level. This adds to the existing literature as it shows the potential influence of work status on happiness experienced during very specific daily activities in later life.

Theoretical Background

Happiness. Research on subjective well-being investigates how an individual judges the quality of his or her life (Veenhoven, 2009); thus, subjective well-being is considered to be one of the important indicators of successful aging (Herero & Extremera, 2010). In order to assess the quality of their lives, people typically rely on two different types of information. On the one hand, people

asses how well they meet their own standards of good life, which relates both to intraindividual and interindividual comparisons (Pavot & Diener, 2008). On the other hand, people also assess how well they feel, that is, the degree to which positive emotional experience outweighs negative ones (Diener, Sandvik, & Pavot, 1991). In this paper we focus on the definition of happiness as a pleasurable and mildly activated emotional state experienced during everyday activities, as an indicator of momentary well-being (Russell, 2003). This emotional state can be described as mood (Fredrickson, 2001; Lyubomirsky, King, & Diener, 2005; Russell, 2003), and in this study we particularly focus on the hedonic aspect of the mood (pleasantness level) (Veenhoven, 2009).

Most of the previous studies on the relationship between work status and happiness analyzed the differences in happiness between working and retired individuals at one point in time, or in a follow-up over time as participants pass from being employed to being retired (e.g., Calvo, 2006; Jaeger & Holm, 2004). These studies often relied on global happiness assessments, which have proven to be informative, but susceptible to various retrospective biases, such as the focusing illusion (Kahneman & Krueger, 2006; Kahneman, Krueger, Schkade, Schwarz, & Stone, 2006), mood and context effects, and the effects of comparison standards (Schwarz, Kahneman & Xu, 2009). In addition, growing evidence documents incongruence between people's concurrent and retrospective reports of emotional experience (Miron-Shatz, Stone, & Kahneman, 2009; Schwarz, et al., 2009).

Hence, in order to gain more accurate happiness reports, rather than assessing how older adults "usually" feel, in this study the participants filled out a happiness diary based on a DRM once a month throughout a three-year time period. In that way, we managed to capture how older people experienced daily activities from moment-to-moment, as reflected in happiness that accompanied these activities, and also as a function of their work status.

Daily activities and happiness in later life. The importance of daily activities for a person's happiness has been acknowledged both in theory and empirical findings. For instance, Lyubomirsky, Sheldon, and Schkade (2005) emphasized that, although dispositional factors account for a large portion of happiness variance, there is still up to 40% of happiness variance in individual differences that is not accounted for by circumstances and dispositions, suggesting a substantial link between happiness and intentional activities people engage in (Herero & Extremera, 2010).

However, the extent to which individuals experience happiness during specific activities in daily life might also depend on their situational context (e.g. work status). Accordingly, the existing theoretical frameworks on aging (e.g., Baltes, 1997; Kim & Moen, 2001; Kim & Moen, 2002; Wang, 2007) conceptualize retirement as a dynamic process and emphasize the importance of the interaction between various environmental and personal variables unique to each individual (Bye & Pushkar, 2009; Wang, 2007). For example, a life-course ecological model (Kim & Moen, 2002; Schulz & Heckhausen, 1996) outlines retirement as a normative life transition, which occurs within a specific context including not only sociodemographic characteristics, but also specific activities individuals engage in throughout their everyday life.

Similarly, the selection, optimization, and compensation model (SOC; Baltes & Baltes, 1990; Baltes, 1997) emphasizes that it is not necessary that individuals continue engagement in the same specific activities they engaged in before retirement, but rather that individuals experience continuity in levels of engagement in meaningful activities, which they regard as important (Pushkar et al, 2010). In addition, activity theory (Lemon, Begtson & Peterson, 1972) also posits that happiness largely depends on what people do and how active they are in their everyday life.

Indeed, previous studies reveal that older adults are happier when they are more active (Herzog, Franks, Markus, & Holmberg, 1998; Inal, Subasi, Ay, & Osman, 2006; Lawton, Winter, Kleban, & Ruckdeschel, 1999). For example, Menec (2003) showed that greater activity level at the beginning of the study was positively related to happiness six years later, which is in good agreement with activity theory (Lemon, et al, 1972). Similarly, Pushkar et al. (2010) found that increased activity frequency, ability and future intentions were related to higher positive affect.

Although these studies provide important and useful insights on the time-use and lifestyle patterns in later adulthood, several issues demand further examination. People differ not only in the amount and type of the activities they engage in, but also in the subjective experience of those activities; namely, people differ in the psychological meaning they assign to specific daily activities (Oerlemans et al., 2011; Reis, Sheldon, Gable, Roscoe, & Ryan, 2000). Moreover, none of the studies mentioned above analyzed the variations in time-use in terms of momentary affective experience older adults

derive from such activities. Thus, in order to gain more insight into these matters, the present study aimed to investigate the role of work status in the subjective experience of older adults' specific daily activities.

The present study

The present study built upon the notion that one of the main differences in everyday life of working and nonworking older adults can be seen in time use: Retirement implies freedom from work obligations, which provides older adults with more time available and new time-management challenges (Rosenkoetter, Garri & Engdahl, 2001). While working older adults are occupied with work obligations almost every day, nonworking older adults can sustain an active life-style through involvement in various meaningful and effortful activities, such as volunteer work, and administrative activities (Backman & Dixon, 1992; Katz, 2000).

Accordingly, working older adults have more time-pressure – and other types of physical, cognitive, or emotional work-related demands - from which they need to recover in their daily lives (Demerouti, Bakker, Geurts & Taris, 2009; Meijman & Mulder, 1998), whereas such demands are more or less absent in the group of nonworking older adults. Hence, in order to live a balanced and fulfilling life, working older adults might be more occupied with how to combine work obligations and relaxation, whilst nonworking older adults might be more focused on how to stay active and maintain a sense of usefulness and engagement in everyday life.

Therefore, in this study we particularly focused on effortful activities on the one hand, and relaxing daily activities on the other hand. Specifically, we aimed to see whether engagement in effortful and relaxing activities might have different affective consequences for working vs. nonworking older adults. We conceptualized effortful daily activities as meaningful productive activities that aimed to provide a product or a service (Herzog, et al., 1998). As such, effortful activities have the potential to elicit a sense of usefulness and competence (i.e. volunteer work). In this study we focus on administrative and work (either paid or voluntary) activities as examples of effortful activities in particular.

According to the continuity theory (Atchley, 1999), maintaining engagement in autonomously chosen activities established earlier in life fosters well-being among older adults, because it helps to maintain and express identity across life stages (Atchley, 1999; Hoppmann, Gerstorf, Smith, & Klumb, 2007). Time spent in active leisure activities has been positively associated with long-term well-being in old age (e.g., Everard, Lack, Fisher, & Baum, 2000; Menec, 2003).

Given this context, we expect a positive relationship between work-related daily activities and momentary happiness for both working and nonworking older adults. Therefore, we formulate our first hypothesis:

Hypothesis 1. Working as a daily activity (either paid or voluntary) is positively related to momentary happiness.

We also investigated the role of work status for the subjective experience of administration activities, which represent productive activities aimed at fulfilling diverse responsibilities (e.g., such as paying the bills, working with an accountant). In line with Atchley's (1999) continuity theory, after withdrawal from working life and with the loss of the work role in retirement, administrative activities might provide a sense of meaning and structure in the daily life of nonworking older adults (Calvo, Haverstick, & Sass, 2009). Conversely, working older adults might not need a sense of meaning and structure from administrative activities because they receive it in through their formal work obligations.

Administrative activities can be described as task-related activities, which are often cognitively demanding (Sonnentag, 2001). Hence, working older individuals, who have less time and cognitive resources available in their leisure time and have a higher need for recovery from work, might experience administrative activities as a burden and hindrance (Meijman & Mulder, 1998; Sonnentag, 2001). In contrast, nonworking older adults may experience administrative activities as opportunities for cognitive involvement, which might to help them have a sense of engagement and usefulness in everyday life. Thus, we predicted that the more time nonworking older individuals spend in administrative activities, the happier they will be while engaging in them, whereas, the more time working older individuals spend in administrative activities, the less happy they will be, as assessed on a within-person level. Stated in a more formal way:

Hypothesis 2. Work status moderates the relationship between time spent on administrative activities and happiness felt during those activities. More concretely, nonworking (vs. working) older adults will be significantly happier whilst spending time on administrative activities.

Furthermore, we expected that daily relaxation activities might serve different functions for older adults who work and for those who do not work. Based on the effort-recovery model (Meijman & Mulder, 1998), we define relaxing activities as restful activities involving little or almost no effort (e.g., taking a nap, watching TV, reading; Oerlemans, et al., 2011; Sonnentag, 2003). More specifically, the effort-recovery model (Meijman & Mulder, 1998) posits that investing efforts (whilst working) leads to specific load reactions, such as physiological, behavioral, and subjective responses. These reactions are reversible, if the individual is no longer confronted with the (work) demands. The opportunity to rest and recover from activities that are more active in nature appears to have positive effects on individual health and well-being, because psychobiological systems previously affected by the demands return to their baseline level (Demerouti et al., 2009; Meijman & Mulder, 1998; Sonnentag & Bayer, 2005).

Thus, we assume that working older adults will gain more benefit from relaxing activities than nonworking adults because they have higher need for recovery. Therefore, our third hypothesis states that psychological detachment from work, that is, spending time in relaxation activities, relates positively to momentary happiness (cf. Sonnentag & Bayer, 2005), particularly among working older adults:

Hypothesis 3. Work status moderates the relationship between the time spent on relaxing activities and happiness felt during those activities. In particular, working (vs. nonworking) older adults will be significantly happier whilst spending time on relaxing activities.

The Role of Work Status in the Weekend Peak Effect

In addition, we also addressed the association of work status and fluctuations of happiness as a function of day of the week. Previous research consistently shows a weekend peak effect: weekend days being associated with a more positive mood than weekdays (e.g., Egloff, Tausch, Kohlmann, & Krohne, 1995;

Reis et al., 2000). The weekend peak effect could be explained by more time available for engagement in desirable activities of one's own choice, whereas scheduled, obligatory activities such as work tasks are less prominent (Kennedy-Moore, Greenberg, Newman, & Stone, 1992).

Consequently, we expected differences in the weekend peak effect between working and nonworking older adults. Specifically, older adults who are engaged in their jobs throughout the week might feel especially liberated during the weekend, so their happiness level increases significantly, as demonstrated in previous diary studies (e.g., Egloff, et al., 1995; Reis et al, 2000). In contrast, older adults who do not work might not show a weekend peak, since they have more freedom in choosing the activities they want to engage in all week long. Thus, we expected that working older adults will experience the weekend peak effect, while not working older adults do not, as formulated in our fourth hypothesis:

Hypothesis 4. Work status moderates the effect of the day of the week on happiness: Working (vs. nonworking) older adults will be happier during the weekend compared to weekdays.

Method

Participants

The data reported in this paper comes from the project Lifestyle and Life Satisfaction in the Third Age executed in The Netherlands (Veenhoven & Vermeulen 2008). The original number of participants in the project was 587. However, 8 persons (1%) were omitted from the analysis because they only filled out the trait-questions, but did not complete the diary. Of the 579 participants, 65,8% of were male and 34,2% female. Moreover, 82,4% reported being married, cohabiting or having a romantic relationship, and 18,6% was single. Participants' age ranged from 51 to 88 years old (M = 65.32; SD = 7.78). Please note that although the official retirement age in The Netherlands is 65, it is common to retire before that age early retirement.

The participants in our study are mainly highly educated older adults who were recruited at the university where they followed courses specifically de-

signed for older population. According to the Dutch Centraal Bureau voor de Statistiek (CBS, 2012), the higher the income of older age groups (50-80 years), the better their physical and mental health is likely to be. Moreover, in the Netherlands education deficiency has been found to be related with lower income (CBS, 2012). Therefore, we can assume that most of our participant had relatively high degree of autonomy in quitting their job or continue to work at older age.

Procedure

The study sample is a convenience sample. Older adults were first recruited at a senior education program at a university in the Netherlands. However, the recruited adults were later free to invite others to participate. Altogether, 81 persons were original senior students, and 498 persons were not associated with the senior education program whatsoever.

Upon agreement, participants received an e-mail once every month throughout three years (2006-2008) in which they were invited to fill in the internet diary called Yesterday's diary, based on the Day Reconstruction Method (DRM; Kahneman et al., 2004). The emails were sent on different days of the week, in order to get sufficient data on both weekdays and weekends. The reminder was the same for all participants, and it was sent to all participants on a same day.

Yesterday's diary (Figure 1) is an internet application by Veenhoven (2008a), based on the DRM proposed by Kahneman et al. (2004). Compared to experience sampling method, DRM imposes fewer burdens on the participants, while still providing an assessment of continuous episodes over the course of the full day, rather than a sampling of moments. Several studies documented close congruence between the DRM reports and results from experience sampling method (e.g., Dockray et al, 2010; Kahneman et al., 2004; Stone et al., 2006). In other words, they showed that DRM produces very similar diurnal cycles of affect - especially for happiness – as compared to experience sampling, which has proven to be substantially less susceptible to various retrospective biases (Bakker & Oerlemans, 2011; Kahneman & Krueger, 2006; Robinson & Clore, 2002; Schwarz, et al., 2009).

In the Yesterdays 'diary participants first reported in chronological order every activity they engaged in during the previous day in chronological order, starting with getting up and ending with going to bed.

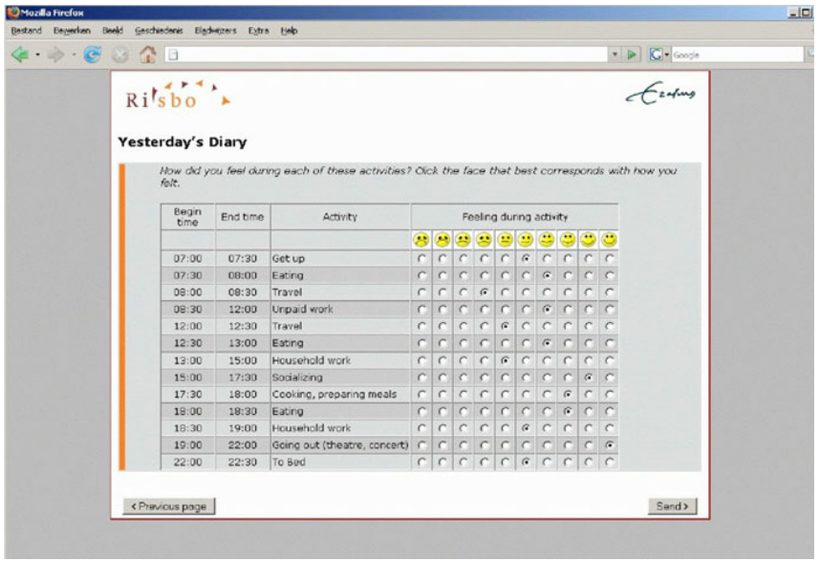

Figure 1. An example of a completed Yesterday's Diary (Veenhoven 2008a).

Thereafter, participants were redirected to a second screen which showed all of the activities they listed in a chronological order. Here, people rated their happiness during each reported activity. During the first session, participants filled out a general background questionnaire, consisting of sociodemographic information, such as marital status and age, and they reported their physical health in general.

Measures

Happiness. For each activity listed in the diary, participants rated how they felt using a one-item, graphical faces scale that ranged from 1(extremely unhappy) up to 10 (extremely happy). A single item for happiness has good temporal stability and concurrent, convergent, and divergent validity (Abdel-Khalek, 2006). Moreover, it is quite common to have to rate one item affective experiences in DRM studies (e.g. Dockray et al, 2010; Kahneman et al., 2004; Stone et al., 2006)

Work status. Working status of the participants was derived from the background questionnaire; in which participants simply stated whether they had a paid job. Accordingly, 49 older adults stated to have a paid job, whereas 530 stated not to have such a paid job. We asked participants for yearly changes in their profile which included an update on their work-status (e.g. being retired or not). However, only a very small group of individuals (10 persons) changed their status from work to retired. A longer follow-up period is needed to assess large groups of adults in their change from paid work to (forced/voluntary) retirement. The current study is therefore limited to assessing differences in momentary happiness during different daily activities on a within-person level, which is a novel approach as it shows which kind of daily lifestyle fits older adults best in terms of happiness, depending on their work status.

Daily activities. In the current study, we refer to activities as intentional behavioral practices in which participants engage in daily life. Participants reported the activities they were engaged in during the previous day in a chronological order, starting with getting up and ending with going to bed. Participant chose the activities from a drop-down menu of activities, which included various daily activities, such as household chores, eating, relaxing, commuting, rest/sleeping, TV/Internet, Caring for grandchildren, working, shopping etc. For each of the activities they listed, participants also reconstructed the times at which an activity began and ended. The participants reported on average number 15 activities per day (M = 14.83; SD = 5.22).

In this study we particularly focused on administrative, relaxing and work-related activities, as global categories that incorporate specific activities. More concretely, work-related activities refer to paid work and voluntary work. Relaxation activities include watching TV, reading (e.g., newspaper or books), surfing on the internet, resting and taking a nap. Administration activities include task-oriented, productive activities aimed at fulfilling diverse obligations (e.g., paying the bills, working with an accountant). Respondents reported the amount of time spent on each of the activities, and afterwards. We analyzed the categories of activities in order to avoid overly complex analyses. This strategy of incorporating specific similar activities into categories is commonly used in diary and time-use studies (e.g. Oerlemans, Bakker, & Veenhoven, 2011; Sonnentag, 2001;Van Hoof, Geurts, Kompier & Taris, 2007).

Control variables. We controlled for marital status, gender, age, and physical health. Being married generally has a positive effect on happiness (Seligman, 2002). Furthermore, gender and age do not appear to have a substantial effect on average happiness (Cheng & Furnham, 2003; Shmotkin, 1990). However, women appear to experience positive and negative emotions more intensely compared to men (Fujita, Fujita, Diener, & Sandvik, 1991). Similarly, the experience of positive and negative emotions generally becomes less intense (e.g., Diener, Sandvik, & Larsen, 1985) and more positive (Carstensen et al., 2011) with age.

Finally, ill physical health appears to result in lower happiness levels, but only when the illness is severe (Seligman, 2002). Physical health was measured on a five-point scale ranging from 1=very unhealthy, through 3=neutral to 5=very healthy. None of the control variables in this sample was related to happiness during specific activities.

Analysis

The data has a hierarchical structure with days nested within persons and activities nested within days. Therefore, as recommended, we used hierarchical linear modeling to analyze the data (Hox, 2002; Snijders & Bosker, 1999). We centered the person-level variables (work status, marital status, gender, age, and physical health) at the grand mean. All activity types - as variables that fluctuate on a within-person level - were centered at the person mean. We used the MLwin program for data analysis (Rasbash, Browne, Healy, Cameron, & Charlton, 2000).

We built a two-level model with between person level variables, like paid job vs. no job, and within person variables such as time spent on activities, weekend vs. weekday activities, and cross-level interactions (see Table 3). We handled multilevel modeling, including the cross-level interactions as suggested by Preacher, Curran and Bauer (2006). For further explanation, please see Preacher, Curran and Bauer (2006) and their website (2012), referring to case 3, which argues how to handle cross-level interactions in multilevel modeling.

Results

Table 1 reports means, standard deviations, and zero-order correlations. Before testing the hypotheses, we examined the variability of happiness on a between-person and a within person level. Of the total variance, 35% (0.988 / (0.988 + 1.867)) was between persons, and 65% (1.867 / (0.988 + 1.867)) within persons, which demonstrated the importance of performing multilevel analyses.

As Table 2 shows, the degree of participation in particular activities does not differ significantly between the sample of working and non-working older adults. Moreover, non-working people appear to spend more time on some leisure activities compared to working people. Working people tend to be a little happier during a range of activities compared to non-working people.

Testing Hypotheses

To test our hypotheses, we started with a Null model that included the intercept as the only predictor and momentary happiness (as derived from activities) as the outcome variable. In Model 1, we entered person-level variables (age, gender, marital status, paid job, and physical health). In Model 2, we added within-person level variables that are related to daily activities (work-related, relaxation-related and administration-related activities) and time (weekend). In Model 3, we entered the interaction terms for having a paid job on the one hand, and work-related activities, relaxation, administrative duties and weekend peak effect on the other hand. The findings related to each of the models can be found in Table 3.

We tested the improvement of each model over the previous one by computing the differences of the respective log-likelihood statistic -2*log and submitting this difference to a Chi^2-test. Model 1 did not show an improved model fit over the Null (intercept only) model (Δ-2 x log = 0.056, Δdf = 6, p < .001). Model 2 was compared to Model 1 (Δ-2 x log = 8216.12, Δdf = 4, p < .001) and Model 3 was compared to Model 2 (Δ-2 x log = 58.41, Δdf = 2, p < .001) and both models showed an improved model fit over the previous one.

Table 1

Means, Standard Deviations and Correlations between Study Variables

	Variables	N	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
1	Paid job (0 = no; 1 = yes)	579	0.14	0.35												
2	Age	579	65.33	7.78	-0.38											
3	Gender (0 = female; 1 = male)	579	0.66	0.47	0.01	-0.09										
4	Married*	579	0.74	0.44	0.05	-0.06	-0.24									
5	Cohabiting*	579	0.04	0.19	0.00	-0.07	0.02	-0.32								
6	Relationship*	579	0.04	0.20	-0.06	0.02	-0.03	-0.35	-0.04							
7	Physical health	579	2.07	1.16	-0.02	0.05	0.04	-0.15	0.06	-0.04						
8	Time spent working	1299	0.02	0.05	0.28	-0.32	0.06	-0.01	0.05	-0.01	-0.07		-0.02	-0.03	-0.02	0.05
9	Time spent in voluntary work	1508	0.02	0.03	-0.11	0.01	-0.06	0.04	-0.04	-0.03	-0.03	-0.11		-0.03	-0.02	0.06
10	Relaxation	4663	0.05	0.04	0.02	-0.02	0.03	0.03	-0.04	0.00	0.02	-0.08			-0.03	0.08
11	Administrative duties	1343	0.01	0.02	-0.13	0.18	-0.20	-0.03	-0.03	0.16	-0.01	-0.05				-0.05
12	Momentary happiness	8424	7.56	1.11	0.08	-0.05	-0.06	0.04	0.00	0.02	-0.18	0.01	0.05	0.02	-0.01	

Note. Correlations below the diagonal are between-person level correlations with correlations r ≥ |.10| being significant at p <.05 and r ≥ |. 13| being significant at p < .01. Correlations above the diagonal are within-person correlations with correlations r ≥ |.04| being significant at p < .01.* reference group = single. Please note that not all participants filled in all the data, but not all participants were involved in the same types of activities throughout 3 years, hence the different N for different activities.

Table 2

Participation and average mood during activities for working (N=49) and non-working (N=530) sample of older adults

Activities	Average Minutes spent on activity				Average mood			
	Non-work	Work	F	P	Work	Non-work	F	P
Relaxation								
relaxing	50	50	0.01	0.98	8.45	7.91	10.18	0.01**
rest/sleep	27	15	4.19	0.04*	7.94	7.69	0.98	0.32
internet / email	52	64	2.65	0.10	7.96	7.65	4.01	0.05*
watching tv	43	37	1.59	0.21	7.76	7.56	1.34	0.25
reading newspaper	30	22	6.33	0.01*	7.68	7.35	3.71	0.06
Administration								
administrative activities	15	6	9.47	0.01**	6.73	6.78	0.04	0.85
Time spent working								
working	34	172	116.14	0.00***	7.68	7.68	0.00	0.99
volunteering work	22	9	10.54	0.01***	7.81	7.86	0.03	0.86

Note. Significance level; * p < .05; ** p < .01; *** p < .001.

Table 3 *Multilevel Estimates for Models Predicting Happiness,* N = 579 older adults.

	Daily happiness			Daily happiness			Daily happiness		
	Estimate	*SE*	*t*	*Estimate*	*SE*	*t*	*Estimate*	*SE*	*t*
Constant	7.57	0.09	86.00***	7.57	0.09	86.01***	7.57	0.09	86.01***
Between-person level									
Age	-0.01	0.01	-0.29	-0.01	0.01	-0.29	-0.01	0.01	-0.29
Gender (reference = male)	0.03	0.11	0.29	0.03	0.11	0.29	0.03	0.11	0.29
Married	0.18	0.12	1.48	-0.06	0.23	-0.27	-0.06	0.23	-0.27
Cohabiting	0.10	0.21	0.46	0.10	0.21	0.46	0.10	0.21	0.46
Relationship	0.28	0.23	1.20	-0.18	0.12	-1.48	-0.18	0.12	-1.48
Paid Job	0.10	0.15	0.69	0.10	0.15	0.69	0.10	0.15	0.69
Physical Health	-0.09	0.05	-1.80	0.09	0.05	1.76	0.09	0.05	1.73
Within-person level									
Working a paid job				0.19	0.04	4.57***	0.23	0.06	3.814
Working a voluntary job				0.47	0.04	12.60***	0.46	0.04	12.49***
Administration				-0.46	0.04	-11.85***	-0.44	0.04	-10.61***
Relaxation				0.53	0.02	24.14***	0.51	0.02	21.04***
Weekend				0.09	0.01	7.17***	0.07	0.01	5.31***
Two-way cross-level interactions									
Paid job x relaxation							0.16	0.06	2.65**
Paid job x administration							-0.35	0.14	-2.47**
Paid job x weekend							0.11	0.03	3.46***
-2*log (lh)	251694.79			243478.67			243420.26		
Diff-2*log	0.06	*n.s.*		8216.12***			58.41**+		
Df		6			4		2		
Between-person variance	0.99	0.07	0.00	0.99	0.07	-0.01	0.99	0.07	-0.00
Within-person variance	1.87	0.01	0.00	1.67	0.01	0.07	1.66	0.01	0.07

Note. Significance level; * p < .05; ** p < .01; *** p < .001.

Hypothesis 1. Our first hypothesis stated that work (either paid for working participants or voluntary for nonworking participants) as a daily activity would be positively related to momentary happiness. Indeed, the results from the Table 3 demonstrated that paid work ($z = 0.23$; $p < .01$) and voluntary work ($z = 0.46$; $p < .01$) are both daily activities that make older adults significantly happier on a within-person level, thus confirming our Hypothesis 1.

Cross-level Interactions

Hypothesis 2. The second hypothesis stated that work status moderates the relationship between time spent in administrative activities and momentary happiness. Specifically, we predicted that, when compared to working older adults, nonworking older adults will be significantly happier when engaging in administrative activities. Table 3 shows that the interaction effect between having a paid job and engaging in administrative activities was indeed significant ($z = -0.35$; $p < .01$).

This interaction effect is displayed in Figure 2. To examine the interaction pattern in more detail, we ran simple slope tests as suggested by Preacher, Curran and Bauer (2006). Simple slope tests showed that for older adults without a paid job, spending more time on administrative duties (1 SD above the mean) had no significant effect on their happiness ($\gamma = -0.78$, $SE = 0.47$, $z = 1.658$; n.s.). However, for older adults with a paid job, spending more time on administrative duties was negatively associated with their happiness level ($\gamma = -0.43$, $SE = 0.04$, $z = -10.53$; $p < 0.001$). This confirms our Hypothesis 2.

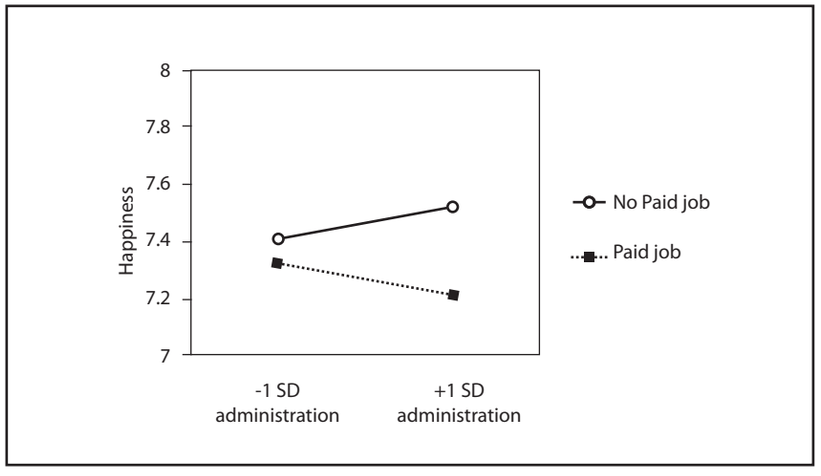

Figure 2. Interaction effect of work status and time spent on administration activities on happiness. Note. –1 SD = 1 standard deviation below the mean; +1 SD = 1 standard deviation above the mean.

Hypothesis 3. Our third hypothesis stated that work status moderates the relationship between time spent in relaxation and happiness. Specifically, we hypothesized that working individuals will derive significantly more happiness from relaxation, when compared to nonworking individuals.

Results in Table 3 demonstrate that the cross-level interaction between work status and relaxation was significant ($z = 0.16$; $p < .01$). Figure 3 demonstrates that both older adults with and without a paid job experienced higher levels of momentary happiness when they were relaxing (1 standard deviation above the mean).

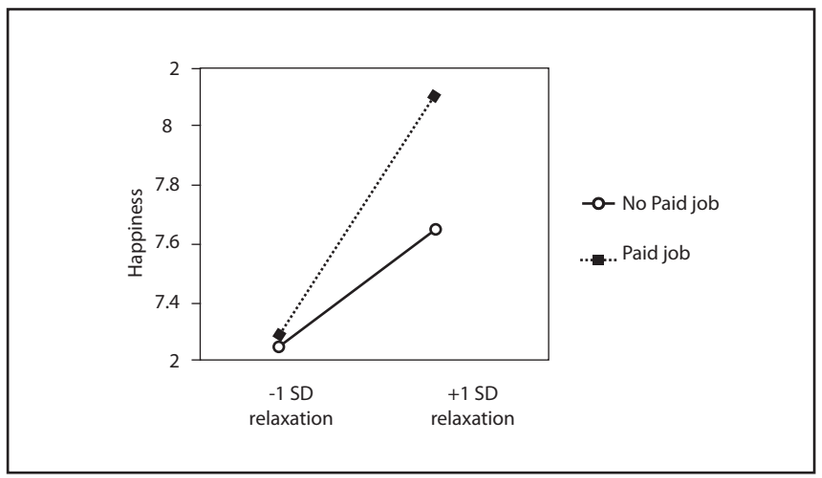

Figure 3. Interaction effect of work status and time spent on relaxation activities on happiness. Note. −1 SD = 1 standard deviation below the mean; +1 SD = 1 standard deviation above the mean.

However, the positive effect of relaxation on momentary happiness was stronger for older adults who had a paid job ($\gamma = 0.51$, SE = 0.02, $z = 22.58$, $p < .001$) compared to older adults without a paid job ($\gamma = 0.67$, SE = 0.11, $z = 6.03$, $p < .001$).

Hypothesis 4. Finally, our fourth hypothesis stated that work status moderates the weekend peak effect: Working older adults will show significantly higher momentary happiness levels during the weekend, compared to weekdays, whereas nonworking older adults will not.

In order to analyze the results regarding this hypothesis, we coded Monday to Friday as weekdays, and Saturday and Sunday as weekend. Table 3 shows that the cross-level interaction between paid job and weekend-days on happiness was significant ($z = 0.11$; $p < .001$).

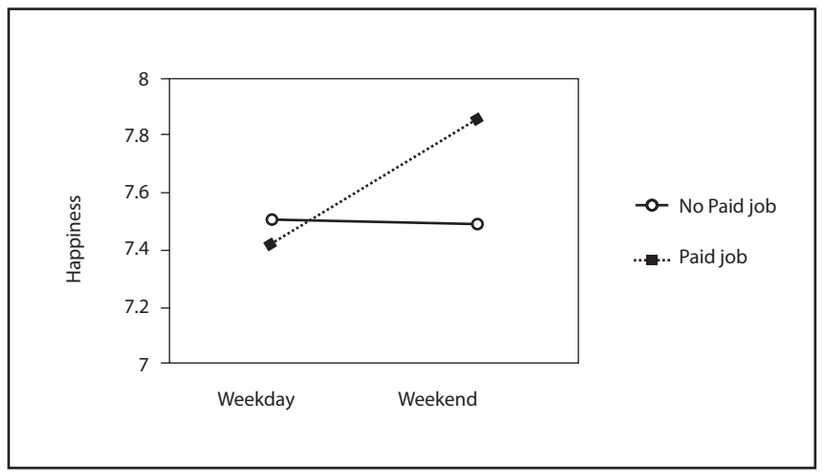

Figure 4. Interaction effect of work status and weekend (versus weekday) on happiness. Note. −1 SD = 1 standard deviation below the mean; +1 SD = 1 standard deviation above the mean.

Figure 4 shows this interaction pattern in more detail. Simple slope tests revealed that older adults with a paid job experienced a significant increase in their happiness level during weekends compared to working days ($\gamma = 0.07$, SE = 0.01, $z = 21.82$, $p < .001$). In contrast, the happiness of the older adults without a paid job was similar on weekdays compared to weekend-days ($\gamma = 0.18$, SE = 0.10, $z = 1.73$, n.s.), confirming Hypothesis 4.

Discussion

The central aim of this study was to explore how work status relates to the subjective experience of specific daily activities among older adults, by using the day reconstruction method (DRM; Kahneman et al., 2004). Specifically, we aimed to investigate how work status relates to the experience of positive affect during effortful and relaxing daily activities for working vs. nonworking older adults. In that way, this study contributes to the literature as most of the research in this field used global measures of happiness, which may be inaccurate to assess how older adults feel on a moment-to-moment basis.

Our study expands existing findings in several ways. First, our three-year follow-up research design resulted in 84,247 reported daily activities and accompanying happiness levels, which presents a particularly rich dataset. Second, the methodology used in the study - the DRM - enabled us to gain more accurate happiness reports and to minimize the reconstructive biases involved in global reports (Kahneman et al, 2004). Hence, this study provides new insights on the momentary happiness levels during specific daily activities among older adults, and the role of work status in those within-day experiences.

Daily activities and happiness in later life: The Role of Work Status

Our study showed that, although being retired is not associated with lower levels of happiness, working (either paid or voluntary) as a daily activity is very important because time spent on paid or voluntary work activities relates positively to momentary happiness. This finding is in line with the activity theory (Lemon et al., 1972), as well as with previous findings, which reveal positive relations of social, physical and cognitive activities with happiness (Kahneman & Krueger, 2006; Penedo & Dahn, 2005).

Specifically, successful aging has been related to high levels of social, physical and cognitive resources (Baltes & Lang, 1997), and work related activities (both paid and voluntary) might serve as means to sustain those resources later in life (Wang et al., 2006). Bearing in mind that working as a daily activity is often related to effort and concentration; it may provide the sense of usefulness and mastery. Moreover, when working, an individual usually also engages in social activities; hence, work-related activities can presumably also function as a means for connecting with the community through providing opportunities for social interactions.

Furthermore, work may help in maintaining one's social network and general fitness due to involvement in challenging tasks (Herzog & House, 1991; Oerlemans, et al., 2011). These notions are consistent with previous empirical findings that showed positive association between involvement in effortful activities and various positive outcomes in later life, such as reduced mortality risk, reduced risk of cognitive impairment, and improved physical health (Dawson, Winocur, & Moscovitch, 1999; Silverstein & Parker, 2002).

Hence, daily work might be associated with affective benefits because it may help older adults to satisfy various needs, such as the need for relatedness, autonomy and competence (Ryan & Deci, 2000), which, in turn enhances positive emotional experiences and also helps them build and/or sustain personal resources (Fredrickson, 2005). Although this is not new, the present study adds to the literature by showing that work activity also enhances momentary happiness within a sample of older adults on a within-person and day-to-day level.

Moreover, we also hypothesized and found that work status of the older adults moderates the experience of administration activities in everyday life. The analysis confirmed our predictions demonstrating that nonworking older adults enjoy those types of activities significantly more than working older adults do, as expressed in momentary happiness levels. These results can be interpreted in terms of time-pressure issues: Working older adults have to do administration activities in their leisure time, and, thus, have higher time pressure; whilst nonworking individuals do not have work-related obligations and have generally more time available. However, these findings also imply that administration activities serve different functions for working and nonworking individuals.

More concretely, administration activities are predominantly performed in order to achieve specific outcomes (Maier & Klumb, 2005). These findings clearly contribute to the literature because they show on a within-person level that administrative activities may present another way of maintaining the sense of competence and usefulness for the nonworking older adults (Schulz & Heckhausen, 1996). Indeed, according to the model of selection, optimization, and compensation (SOC model; Baltes, 1997), these kind of compensatory mechanisms become increasingly important as people age, because old means become less available, and new means are needed in order to reach goals, so compensatory mechanisms allow people to maintain psychological well-being when faced with age-related losses (Menec, 2003).

Furthermore, our results demonstrate that, compared to nonworking individuals, working older adults derive significantly more momentary happiness from relaxation. One explanation is that working older adults need time to recover from their work: Relaxation enables a person to recover from various daily demands, especially when challenged with work obligations (Sonnen-

tag & Bayer, 2005). Relaxation may be particularly beneficial when combined with an active lifestyle like being socially, cognitively and/or physically active (Demerouti, et al, 2009; Meijman & Mulder, 1998; Oerlemans, et al., 2011). These findings contribute to the literature on recovery (Demerouti et al., 2009) by showing that the same activities can have different functions for individuals with different work status.

Weekend Peak Effect: The Moderating Role of Work Status

Finally, the results of our analysis revealed an interesting and important addition to the literature on the weekend peak effect - significantly higher positive happiness during weekend than weekdays - identified by several researchers (e.g., Egloff, et al., 1995). Our study shows that the weekend peak effect is moderated by work status: Working older adults are happier during weekends compared to weekdays; while nonworking older adults do not show that pattern.

The interpretation of these results can be found in the notion that the weekend's main characteristic is usually being free from work, which provides more possibilities for autonomously chosen activities, such as hobbies, sports, being with family, friends, which, in turn, can enhance a person's momentary happiness (Calvo, 2006; Reis et al, 2000). Hence, weekends (as opposed to weekdays) seem to be particularly important for older adults who are still working. In contrast, nonworking older adults do not have work obligations during weekdays, so weekends do not add much more to their freedom of autonomously choosing their activities; thus, specific days of the week do not significantly change their daily happiness fluctuations. These results do not pertain only to older adults (e.g. Reis et al, 2000); however, weekend peak effect has not yet been investigated among older adults with regard to their work status. Hence, our results contribute to the existing literature by providing additional insights on the weekend peak effect.

Limitations and Concluding Remarks

This study has some particular limitations. First of all, the sample of respondents is not a probability sample, and the working and nonworking group sizes are unequal. However, we justify the comparison between the two groups because of the nature of our data: repeated measures throughout three years, which yielded no less than 84,247 momentary happiness reports.

In other words, we have very rich within-person and activity-level data on happiness, which may arguably be more accurate compared to a happiness measure filled out only once per year in global reports.

Second, this study used only one well-being measure, namely, momentary happiness. Other well-being measures such as life satisfaction, marital satisfaction were not used. Nevertheless, previous findings demonstrate that happiness is a valuable and important well-being indicator because it is not only correlated with, but also precedes various successful life outcomes, such as relationships satisfaction, income, work satisfaction, performance, and health (e.g., Fredrickson, 2001; Lyubomirsky, King, & Diener, 2005).

Third, in our study we did not find differences in happiness when looking at trait work status. This might be explained by the degree of autonomy people have in quitting their job or continue to work at older age. This might be an interesting issue to examine in future research. Please note, however, that the poverty in the Netherlands among elderly is quite low at about 2.6% (CBS, 2012). Moreover, the Netherlands has a social security system in place that guarantees people without work a net-income of 909.33 euros a month. Moreover, our sample was mainly highly educated. Thus, we expect that reasons for older adults to continue work in this sample are motivational rather than financial.

In addition, our study did not focus on the change from work to nonwork status per se, but on the daily lifestyle that brings most happiness on a within person level, depending on peoples work / non-work status. We feel that this line of research is important, as it shows the kind of lifestyle fits makes older adults happy, depending on their life circumstances. Also, only a very small number of people (N = 10) changed their work status from paid work to retirement in the three years of follow up. Therefore, we were unable to explore the effects of the change from paid work to retirement on a between-person level. We acknowledge that these research questions would indeed be interesting to explore in future research.

Finally, our approach does not allow us to distinguish cause and effect, that is, in we can only say whether our working and nonworking older adults differ in their happiness levels during different daily activities, but not exactly whether the transition from work to retirement in itself changes the everyday life experiences at the older age. Also, we do not have information about

substantial changes in health status during the three years we followed the participants.

Nevertheless, we did control for the self-rated health at the beginning of the study, and some studies show that changes in health do not affect happiness. For example, 12-year longitudinal study among middle aged US citizens found a relation between baseline self-rated health and later happiness, but no effect of change in physical health over this period (Palmore, 1977). Moreover, recent meta-analysis revealed that the correlations between physical health and happiness (which usually vary between +.10 and +.40 in the existing literature) can be largely attributed to a causal effect of happiness (Veenhoven, 2008b).

Still, this study provides new insights in the everyday life of the older adults, namely, the relationship between daily activities and happiness, as well as the role of working status in that relationship. As predicted, we found that whereas being retired versus still working is not associated with lower levels of happiness in the overall, working as a daily activity corresponds with higher levels of momentary happiness. Yesterday's diary used in the present study proved to be a very useful and detailed method that enables an in-depth analysis of the everyday life experiences of the older adults. Altogether, this study provides a substantial addition to research on the role of work in the older age, illustrating the way work status changes some of the aspects of everyday life, that is, the subjective experience of various types of activities.

Practical implications

Our study has several practical implications, namely, the results obtained in this study reveal that contextual variables (i.e. work status) have substantial impact on the subjective experience of daily activities; hence, they should be taken into account when developing strategies for enhancing well-being of older adults' everyday life. In other words, what works for working older adults is not necessary suitable for nonworking adults. As this study shows, it seems that working older adults derive more happiness from relaxing activities in their leisure time, whereas nonworking older adults derive more happiness from effortful activities in their leisure time. Therefore, it could be advised that working older adults invest more time in relaxing recovery time after work, and nonworking older adults invest more time in constructive, effortful activities in order to keep an active life-style and feel useful and happy.

CHAPTER THREE:

Work Happiness among Teachers:

A Day Reconstruction Study on the Role of Self-Concordance

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Abstract

Self-concordant work motivation arises from one's authentic choices, personal values, and interests. In the present study, we investigated whether self-concordant motivation may fluctuate from one work-related task to the next. On the basis of self-determination theory, we hypothesized that momentary self-concordance buffers the negative impact of momentary work demands on momentary happiness. We developed a modified version of the day reconstruction method to investigate self-concordance, work demands, and happiness during specific work-related tasks on a within-person and within-day level. In total, 132 teachers completed a daily diary on three consecutive work days as well as a background questionnaire. The daily diary resulted in 792 reported work activities and activity-related work demands, self-concordance, and happiness scores. Multilevel analysis showed that—for most work activities—state self-concordant motivation buffered the negative association of work demands with happiness. These findings add to the literature on motivation and well-being by showing that the levels of self-concordance and happiness experienced by employees vary significantly on a within-day level and show a predictable pattern. We discuss theoretical and practical implications of the findings to increase employees' well-being.

Work Happiness among Teachers: A Day Reconstruction Study on the Role of Self-Concordance

Previous studies have shown positive associations between happiness and various indicators of workplace success. Compared with their less happy peers, happy people tend to earn more money, show superior task performance, and help their colleagues more often (Boehm & Lyubomirksy, 2008; Lyubomirksy, King & Diener, 2005). In the context of teaching, research has shown that teachers' happiness is predictive of student happiness, and student happiness is predictive of school performance (Bakker, 2005). For example, in their longitudinal study, Duckworth, Quinn and Seligman (2009) showed that teachers' positivity, namely, grit and life satisfaction predicted pupils' academic achievement. Sutton and Wheatley (2003) argued that the teachers' expression of positive emotions might affect pupils' motivation. Turner et al. (2002) showed that teachers' humor was more likely to be present in low avoidance and high mastery classrooms and absent in high avoidance and low mastery classrooms. In their review of over 180 papers, Jennings and Greenberg (2009) noticed the importance of teachers' socio-emotional competences and well-being in developing and maintaining supportive classroom climate and teacher–student relationships. However, the authors also emphasized that more research is needed in order to examine how teachers' motivation and well-being can potentially present the start of an upward spiral that enhances high quality teaching and, in turn, fosters high levels of students' motivation, well-being, and their academic achievement.

Unfortunately, teachers often encounter high job demands, such as substantial work overload, time pressure (Chan, 1998), pupils' misbehavior, and intense emotional interactions with pupils (Brotheridge & Grandey, 2002; Turk, Meeks, & Turk, 1982). There are also other factors outside the classroom, such as unsupportive colleagues and uncooperative parents (Lasky, 2000), which can result in feelings of anger or frustration (Bullough, Knowles, & Crow, 1991; Sutton & Wheatley, 2003).

These high work demands constitute a risk factor for teachers' well-being by contributing exhaustion, stress, cynical attitudes, and lower job satisfaction (Borg & Riding, 1991; Brackett, Palomera, Mojsa-Kaja, Reyes & Salovey, 2010; Hakanen, Bakker, & Schaufeli, 2006; Guglielmi & Tatrow, 1998). For instance,

previous research revealed that lack of reciprocity in teachers' relationships with pupils predicts burnout (Taris, Van Horn, Schaufeli, & Schreurs, 2004). Similarly, Burke, Greenglass, and Schwarzer (1996) showed that pupils' disruptive behavior had significant relations with teachers' burnout one year later, and that burnout served as a mediator between the job demands and emotional and physical health.

Nevertheless, many teachers still feel satisfied and happy while working (Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007; Borg & Riding, 1991; Grayson & Alvarez, 2008; Hakanen et al., 2006; Jacobsson, Pousette, & Thylefors, 2001). Teachers experience positive emotions when their pupils are responsive and make progress (Hargreaves, 1998; 2000), when they manage to finish their work tasks, and when they can get support from their colleagues (Hatch, 1993; Lasky, 2000). Consequently, we need more insight into the fine-grained relations between high work demands, available resources, and work-related well-being outcomes such as happiness.

Building upon the research within the Job Demands–Resources (JD-R) model (Bakker, Demerouti, De Boer, & Schaufeli, 2003; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) and self-determination theory (SDT; Ryan & Deci, 2000), we propose that teachers' work motivation is a personal resource that facilitates coping with high work demands. Specifically, previous studies have shown that motivation can influence the way people perceive and approach various work tasks (Lazarus, 1993). Also, studies showed that motivation can influence the effort and persistence invested in the task, as well as the emotions felt during the involvement in the task (Judge, Bono, Erez & Locke, 2005; Gagné & Deci, 2005; Sheldon & Elliot, 1999; Sheldon, Kasser, Smith & Share, 2002). In that way, work motivation could be seen as a buffering factor that protects teachers from the unfavorable effects of high job demands and helps them maintain happiness with their work context.

Bearing in mind that teachers have different motivation and levels of happiness during different work activities on different working days (Ashkanasy & Daus, 2002; Ilies, Schwind, & Heller, 2007; Reis, Sheldon, Gable, Roscoe, & Ryan, 2000), in this paper, we specifically focused on within-person fluctuations in teachers' motivation, happiness, and work demands. Previous research has demonstrated substantial associations between variations in state happiness and the immediate context and specifics of time use (Krueger &

Schkade, 2008; Reis et al., 2000; Stone, et al., 2006). For instance, previous studies showed that changing work activities contributes to changes in employees' affective states on a within-day level (Ashkanasy & Ashton-James, 2006; Ilies et al., 2007; Weiss & Cropanzano, 1996). However, previous studies did not address the extent to which variations in teachers' affective states at work are dependent on variations in their motivational states, and we need a better understanding on how momentary motivational states impact affective experiences during work activities among teachers. Therefore, the central goal of the present study was to examine the interrelations between secondary school teachers' momentary motivation, perceived demands, and momentary happiness during the execution of work activities on a within-person and a within-day level. We examined these within-person motivation-demand fluctuations and interaction effects on happiness beyond the baseline happiness during the previous day as well as beyond the baseline of trait work demands and trait self-concordance.

In doing so, we also statistically controlled for several relevant variables in order to address the possibility that additional factors other than the proposed predictors might have had impact on our outcome variable. Specifically, we controlled for age and health as relevant sociodemographic factors for happiness. Previous research indicated significant positive relation between happiness and health, and suggested age shows curvilinear relations with happiness (e.g. Pressman & Cohen, 2005; Veenhoven, 2008). Moreover, we also controlled for job resources, because they have consistently been positively related to indicators of work-related well-being such as happiness at work and work engagement (e.g. Bakker & Bal, 2010; Demerouti & Bakker, 2011; Fernet, Austin, Trépanier, & Dussault, 2012; Hakanen et al., 2006; Schaufeli & Bakker, 2004). Finally, we controlled for the fulfillment of the basic psychological needs (autonomy, relatedness and competence), because previous research has shown that basic psychological needs fulfillment supports autonomous motivation, and fosters positive psychological, developmental, and behavioral outcomes (Ryan & Deci, 2000).

Because diary methodology is highly suitable for examining the interrelations between motivation, demands, and happiness among teachers on a within-person level (Ohly, Sonnentag, Niessen & Zapf, 2010; Sonnentag & Ilies, 2011), we employed a modified version of the Day Reconstruction Method (DRM; Kaheneman, Krueger, Schkade, Schwarz & Stone, 2004) in this study. The DRM

is a diary method in which the participants reconstruct what they did and how they felt during their daily activities in the evening of the same day. Previous research suggests episodic assessments such as DRM generally reduce retrospective biases (Dockray et al., 2010; Kahneman & Krueger, 2006; Oerlemans, Bakker, & Veenhoven, 2011; Miron-Shatz, Stone & Kahneman, 2009; Stone et al., 2006).

Happiness reports obtained via the DRM show similar patterns compared to happiness reports obtained in real-time, such as those using the Experience Sampling Method (ESM), an assessment method that asks participants to answer questions about their momentary experiences in real time (e.g., emotions felt) at specific times (e.g., several times a day; Dockray et al., 2010; Hektner, Schmidt, & Csikszentmihalyi, 2006; Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004; Napa Scollon, Prieto & Diener, 2009). For instance, a study by Kahneman et al. (2004) of 909 employed women documented a close congruence between the DRM and reports obtained using the ESM (Napa Scollon et al., 2009). Similarly, Dockray et al., (2010) showed that correlations between momentary happiness scores obtained with the DRM and ESM range from .70 to .90. Altogether, the DRM design enabled us to analyze the role of motivation as a potential protective factor in the relation between high demands and happiness among teachers on the within-teacher activity level. To the best of our knowledge, this study is the first to examine the interaction between teachers' work demands and motivation during work-related activities on different workdays.

Theoretical Background

Happiness. Happiness is typically considered to have two qualitatively distinct aspects: experienced (episodic) and overall (global, trait-level) happiness (Schwarz, Kahneman & Xu, 2009). Overall, trait-level happiness refers to how people evaluate their lives in general––

the degree to which people judge the overall quality of their lives favorably––whereas experienced happiness relates to how people experience their life moment to moment as reflected in emotions that accompany their daily activities (Veenhoven, 2009). Recent research demonstrates that measures of overall happiness often reflect various retrospective biases. However, most studies of happiness have relied on such global reports (e.g., Kahneman et al., 2004). In contrast, episodic measures of happiness (e.g., ESM or DRM) successfully tackle these biases because they are less influenced by cognitive dispositions and processes (Kahneman & Krueger, 2006; Reis et al., 2000; Robinson & Clore, 2002; Stone et al., 2006). Happiness at work has proven to be a crucial indicator of work-related well-being. For example, overall happiness at work has shown positive associations with job satisfaction and performance (Crede, Chernyshenko, Stark, Dalal, & Bashshur, 2007; Fisher, 2010; Judge et al., 2001) and negative associations with burnout (Iverson, Olekalns, & Erwin, 1998) and turnover intentions (Van Katwyk, Fox, Spector, & Kelloway, 2000).

Moreover, experienced (episodic) happiness, as a short term positive emotion, has demonstrated positive associations with longer-term well-being, both at work and in other life domains (Ashkanasy & Ashton-James, 2006; Boehm & Lyubomirsky, 2008; Fredrickson, Mancuso, Branigan, & Tugade, 2000; Lyubomirsky, King, & Diener, 2005). In order to gain more understanding of the mechanisms related to within-person fluctuations of happiness, especially within the teachers' workplace context, in this study we focused on episodic happiness, as a transient (within-person) pleasant emotional state that teachers may experience in different degrees during work activities (Bakker & Oerlemans, 2011; Fisher, 2010).

Self-concordant motivation for work. The motivational literature mentions two different, but related types of self-concordant motivation: identified and integrated motivation. Both identified and integrated types of motivation are self-concordant because they reflect an experience of personal choice rather than external pressure (Sheldon et al., 2004; Roth, Assor, Kanat-Maymon & Kaplan, 2007; Ryan, Rigby, & King, 1993).

On the one hand, integrated motivation reflects a fully autonomous motivation because it reflects engagement in work for its own sake—that is, out of curiosity and interest (Ryan & Deci, 2000; Vansteenkiste, Sierens, Soenens, Luyckx, & Lens, 2009). For example, when teachers teach with an integrated motivation, they teach with genuine interest and are aware that teaching is their own autonomous choice. On the other hand, identified motivation for a work activity stems from identifying with the importance of that activity for the person (Gagné & Deci, 2005). For example, when teachers organize meetings with parents with an identified motivation, they are not spontaneously drawn to those meetings, but they value them and acknowledge their importance (Roth, et al., 2007; Ryan et al., 1993). Research evidence from between-person studies revealed positive associations between self-concordance and

concurrent subjective well-being (Sheldon & Kasser, 1995; Sheldon, et al., 2004) as well as increases in subjective well-being over time (Sheldon & Elliot, 1999; Sheldon & Houser-Marko, 2001). Yet, teachers' motivational state may vary not only between persons but also within persons (that is, from one work activity to the next).

According to SDT, changes in motivation from either moment-to-moment (within the day) or day-to-day (between days) should impact momentary and daily well-being, respectively. Indeed, research has shown that differences between employees in self-concordant work motivation strongly relate to well-being in the workplace (for an overview, see Gagné & Deci, 2005; Deci & Ryan, 2008). However, only a limited number of studies within the context of schools examined changes in self-concordant motivation and its impact on well being on within-person levels. One exception is the study performed by Reis and colleagues (2000) that followed a group of 67 students over the course of 14 days. Results showed that higher self-concordance related to higher well-being on both between-person and within-person level. However, the study by Reis et al. (2000) focused on students and did not address the combined influence of work demands and self-concordance of work activities among school teachers.

Demanding work activities and self-concordant work motivation. The Job Demands–Resources (JD-R) model (Bakker & Demerouti, 2007; Demerouti et al., 2001) posits two essential processes for work-related well-being: job demands and job resources. First, job demands encompass physical, psychological, social, and organizational aspects of the job that require sustained physical effort, psychological effort (cognitive and emotional), or both types of effort (Demerouti & Bakker, 2011; Demerouti et al., 2001; Fernet et al., 2012). As such, high job demands are at the basis of an energy depletion process and can lead to the exhaustion of employees' energetic resources, burnout, health impairment and lower well-being (Bakker, Demerouti, & Schaufeli, 2003; Demerouti, & Bakker, 2011; Hakanen et al., 2006).

Second, the JD-R model distinguishes a motivational process related to job resources. Job resources refer to both organizational and personal aspects of the job that stimulate work engagement, learning and development, realization of work goals, and personal growth (Demerouti, & Bakker, 2011; Fernet et al., 2012; Hakanen et al., 2006). In addition to the main effects of demands and

resources, the JD-R model also proposes an interaction effect. Job resources can buffer the impact of high job demands because they provide support for realization of highly demanding work activities (Demerouti & Bakker, 2011).

According to Lazarus model of stress, the appraisal of potential threats (i.e., job demands) is a crucial predictor of stress outcomes (Lazarus, 2000). Job resources might be related to this appraisal process, namely, the presence of job resources might reduce the perception of how threatening high demands are because they provide support for dealing with them. In the current study, teacher motivation is studied as a personal resource that can modify the association between job demands and teacher well-being.

Indeed, previous research revealed that organizational job resources reduce the negative effects of job demands on job strain (Bakker, Demerouti, & Euwema, 2005), work engagement (Bakker, Hakanen, Demerouti & Xanthopoulou, 2007; Hakanen, Bakker & Demerouti, 2005), and work enjoyment (Bakker, Van Veldhoven & Xanthopoulou, 2010). Also, in a diary study on teachers' well-being, Simbula (2010) showed that day-level work engagement mediated the impact of day-level coworkers' support on teachers' day-level job satisfaction and mental health.

However, although the number of diary studies has increased in recent years, there is still limited research on intra-individual variability in teachers' daily work experiences, and only a few studies have examined the role of personal resources in the relation between job demands and work engagement on a within-person level (e.g., Avey, Luthans, Smith, & Palmer, 2010; Xanthopoulou, Bakker, Demerouti & Schaufeli, 2007). Moreover, to the best of our knowledge, no previous study examined the buffering effect of self-concordant motivation (a fluctuating personal resource) on the relation between job demands and affective experiences of teachers on a within-day, activity level.

Overview of the Research Aims

The primary goal of the current study was to examine whether self-concordant motivation for work activities enhances teachers' happiness during those activities. We based the first hypothesis on previous studies that revealed positive associations between well-being indicators and self-concordant motivation (e.g., Howell, Chenot, Hill, & Howell, 2011; Sheldon & Houser-Marko, 2001; Sheldon et al., 2004; Reis et al., 2000).

Hypothesis 1. Teachers' experience of momentary self-concordance during specific work-related tasks is positively associated with momentary happiness felt during these tasks. In other words, the more self-concordant a specific work activity is perceived to be, the happier teachers feel while engaging in that activity as measured on a within-day, activity level. Moreover, building upon the JD-R model, we also wanted to investigate the association between perceived demands and happiness during work activities on a within-person level. Bearing in mind previous findings (e.g., Hakanen et al., 2006), we expected that perceived demands have negative associations with happiness on a within-person level. Thus, we formulated the second hypothesis.

Hypothesis 2. The perceived demand level of specific work activities is negatively related to momentary happiness felt during those activities as measured on a within-day, activity level.

Finally, based on the SDT and the JD-R model, we aimed to check whether teachers' self-concordant motivation for specific work-related tasks affects that relation between highly demanding work-related tasks and happiness. We expected that the interaction between teachers' perceptions of the demand level of specific work activities and their motivation for those work activities can predict intra-individual changes in happiness felt while engaging in work activities. Accordingly, we formulated the third and final hypotheses.

Hypothesis 3. Self-concordant motivation for work activities buffers the negative relation between the perceived demand level of specific work activities and state of happiness felt during those activities within a teachers' workday. Teachers who perceive highly demanding work activities (instruction, work-related trainings, meetings, and exams) as highly self-concordant remain happy while engaging in them, whereas those who perceive work activities as low self-concordant will become less happy while engaging in them.

Method

Participants

Among the teachers who received an invitation to join the study, 245 of them filled out the profile page and completed the diary at least once (for a 32% response rate). Among those 245 teachers, 174 filled it out at least two times, 132 filled it out at least three times, 108 filled it out at least four times, and 76 filled it out five times or more. Because this diary study examines within-person processes, we analyzed the data of participants who filled out the diary at least three times (N = 132). We justify this approach by providing a dropout analysis.

The results of this dropout analysis, in which we compared the teachers who filled out the diary once with those who filled it out more often, revealed that there are no significant differences regarding background variables, namely age, M = 45.16 (SD = 11.58) vs. M = 45.64 (SD = 11.32), t(1150) = - 0.62, ns; health, M = 7.08 (SD = 2.20) vs. M =7.11 (SD = 2.16), t(1095) = -.20, ns; and gender, a chi-square test of independence indicated that the number of days teachers filled out the diary was not associated with their gender, $\chi 2(1) = 0.01$, ns. The teachers who filled out the diary once, and those who filled it out more often also did not differ regarding mean scores over the days on self-concordance, M = 6.89 (SD = 2.59) vs. M = 6.86 (SD = 2.25), t (1294) = .19, ns; happiness , M = 6.58 (SD = 2.12) vs. M = 6.70 (SD = 1.97), t (717) = -.98, ns; and demands, M = 5.52 (SD = 2.93) vs. M = 5.79 (SD = 2.72), t (710) = -1.58, ns.

The final sample consisted of 47 men and 85 women. This sample size is an adequate for a diary study (e.g., Dimotakis, Scott & Koopman, 2011; Ilies et al., 2007; Ohly et al., 2010; Sonnentag & Ilies, 2011) and provides sufficient statistical power to test the hypotheses (cf. Snijders & Bosker, 1999). Participants' age ranged from 22 to 69 years (M = 45.27; SD = 11.57). Participants' teaching job tenure was 17 years on average (SD = 11.97), and they worked 32 hours per week on average. There was substantial variation in the hours teachers worked per week (SD = 12.55), given that many teachers in the Netherlands work part-time. According to the Centraal Bureau voor de Statistiek (CBS, 2012), Netherlands has the most part-time workers in Europe. Teachers were employed at higher general education secondary schools (58.1%), vocational secondary schools (12.5%), gymnasium (11.0%), or practical secondary schools (5.9%). A small percentage of teachers did not answer the question on the type of school in which they were employed (12.5%).

Measures

Day-level measures. Day-level measures refer to the measures of happiness, demands, self-concordant motivation related to daily work-related activities that were included in the included in the daily diary questionnaire.

Work activities. In the current study, we refer to work-related activities as intentional behavioral practices in which teachers put effort in order to fulfill their work obligations and tasks. The teachers were asked to write down two work-related activities in which they spent most of their time during the preceding day. Bearing in mind the main research goals of the current study, we did not ask teachers to report every work-related activity they engaged in during the preceding day. Rather, we aimed to disentangle some of the within-person processes between motivation, job demands, and happiness among teachers. In order to gain a better understanding of these matters, we wanted to capture the subjective experiences of teachers' most prominent work activities in their daily life. Thus, we asked the teachers to reflect on the two work-related activities they have spent the most time in engaging today. Moreover, we asked them to do this 5 work days in a row (and not just 1 work day), which added to the data richness.

Teachers were able to choose the two activities from a drop-down list of various teacher-specific daily work activities. Teachers also had the option to add other types of activities on their own, all of which were later categorized in the one of the following: administrative activities; commuting; teaching; preparing for the lessons; preparing and correcting tests and exams; meetings with parents, colleagues or supervisors; counseling pupils; attending work-related training or education; and excursions. Only 8% of all the listed activities were added by teachers outside the 11 work activities in the drop-down list, which shows that we adequately captured secondary school teachers' everyday work activities. Although commuting is not a directly work-related activity, we listed it as an option in the drop-down list because it is indirectly related to work. As can be seen in the Table 1, many Dutch teachers commute (M = 180.26 min per day, SD = 133.22 min per day), which implies that commuting is an integral part of work life for many of them.

In this study, we focused on four specific work activities that teachers reported spending most time on: teaching (M = 201.80 min per day, SD = 106.70 min per day; N = 501; which is about 42% of teachers' typical school day work

time); attending a work-related training and education (M = 185.82 min per day, SD = 105.62 min per day, N = 51; which is about 38% of teachers' typical school day work time); meetings (M = 153.67 min per day, SD = 130.60 min per day, N = 160; which is about 32% of teachers' typical school day work time); and, finally, tests and exams (M = 143.57 min per day, SD = 81.20 min per day, N = 181, which is about 30% of teachers' typical school day work time). Because teachers' typical working days often encompass these four activities, we argue that by referring to these activities, we were able to capture how happy teachers were during the large majority of the time in their daily work life.

Happiness. Teachers rated how happy they felt during both work-related activities they reported each day, using a one-item scale ranging from 0 (not happy at all) to 10 (very happy). A single-item measure of happiness has demonstrated evidence of validity, with good temporal stability and highly significant positive correlations between the single item and both the Oxford Happiness Inventory (Argyle, Martin, & Lu, 1995; Hills & Argyle, 1998) and Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985; Pavot & Diener, 1993). Moreover, the single item has been shown to be highly and positively correlated with optimism, hope, self-esteem, positive affect, extraversion, and self-ratings of both physical and mental health, which demonstrated its convergent validity. In addition, single-item measures of happiness have shown divergent validity with significant and negative correlations with anxiety, pessimism, negative affect, and insomnia (Abdel-Khalek, 2006). Moreover, single-item happiness ratings are commonly used in happiness research (e.g., Lyubomirsky et al., 2005).

Self-concordant motivation. Because both identified and integrated motivation types represent self-concordant motivation, we measured self-concordant motivation using identified and integrated reasons for engaging in work activities (Sheldon & Houser-Marko, 2001; Sheldon & Kasser, 1995). Each day, participants rated the extent to which they were engaged in each of the two work-related activities for each of the two presented reasons, using Likert-type items with a response scale ranging from 0 (not at all for this reason) to 10 (completely for this reason). Item wording for identified motivation was as follows: "I did it because I thought it was an important and valuable thing to do" and item wording for integrated motivation was as follows: "I did it because I really wanted to do it" (see Figure 1). We obtained a self-concordance

score for each of the work-related activities participants listed by averaging the scores reported on measures of identified and integrated motivation. This aggregation of two self-concordant motivation types is typical in the self-concordance literature because both of those motivational types represent self-concordant motivation (Sheldon & Houser-Marko, 2001; Sheldon & Kasser, 1995). Cronbach's alphas for the scale as a whole varied between .73 and .84 (M = .77) across five days. The Cronbach's alphas for the specific activities were as follows: teaching α = .81; attending a work-related training and education α = .84; meetings α = .89; and tests and exams α = .75. These alpha levels illustrate that the level of self-concordance is dependent on the type of activities pursued rather than that it is only a trait-like characteristic.

Job demands. Instead of using predefined categories of what are assumed to be demanding work-related activities for teachers (e.g., dealing with pupils' misbehavior and a high workload), in this study, we measured the perceived demand level for each of the work-related activities teachers engaged in during their working days. Teachers were asked to rate how demanding they had experienced each of the work-related activities they listed each day, using a Likert-type item with a response scale ranging from 0 (not demanding at all) to 10 (extremely demanding). Cronbach's alphas ranged between .63 and .73 (M = .69) per day, across 5 days. Job demands were measured via single item; however, each teacher rated two work activities using this item, 3 to 5 days in a row, which means that each teacher included in the analysis rated job demands at least six times. Hence, each teacher has a mean job demand score, calculated on the basis of those six or more ratings. Cronbach's alpha coefficients were calculated for each teacher using these measures, and the coefficients refer to the average Cronbach's alpha coefficient on the whole sample of teachers.

Control measures. Trait-level measures refer to the background questionnaire, consisting of demographics, and trait-level control variables (age, health, autonomy, competence, and general job resources).

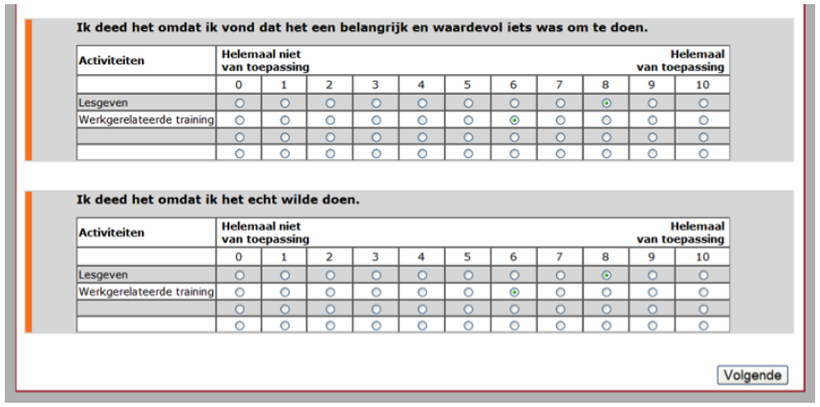
Age. Teachers entered their age in years in the background questionnaire.

Satisfaction of basic psychological needs. We measured the satisfaction of autonomy, relatedness, and competence needs with the Basic Psychological Needs Scale (Deci & Ryan, 2000). The Autonomy subscale consisted of seven items (e.g., "I feel like I am free to decide for myself how to live my life", α

= .78); the Competence subscale consisted of 6 items (e.g., "Most days I feel a sense of accomplishment from what I do", α = .60) and the Relatedness subscale consisted of 8 items (e.g., "I really like the people I interact with", α = .76). These Cronbach's alpha coefficients are in line with previous studies that reported values of internal consistency ranging from .61 to .81 for the Autonomy subscale, .60 to .86 for the Competence subscale, and .61 to .90 for the Relatedness subscale (Johnston & Finney, 2010; Gagné, 2003; Kashdan et al., 2009; Wei, Philip, Shaffer, Young, & Zakalik, 2005).

Satisfaction with health. Teachers rated the extent to which they were satisfied with their overall health, using one item (i.e., Taking everything together, how satisfied are you with your health?; Simon, De Boer, Joung, Bosma & Mackenbach, 2005). The Likert-type response scale ranged from 0 (not satisfied at all) to 10 (completely satisfied). This one-item measure reflects an overall self-assessment of an individual's overall satisfaction with health. Substantial body of international research demonstrated that this measure is a useful and reliable way of assessing and monitoring health satisfaction. The item was found to be significantly and independently associated with specific health problems, use of health services, changes in functional status, recovery from episodes of ill health, mortality, and sociodemographic characteristics of respondents (e.g. Bowling, 2005; Kinney & Coyle, 1992; Meurer, Layde & Guse, 2001; Zhang, Rohrer, Borders & Farrell, 2007). For example, low self-assessed health satisfaction is associated with mortality risk, even when other (even objective) indicators of health status have been controlled for (Idler & Benyamini, 1997).

Job resources. We measured job resources with four subscales (Bakker, Demerouti & Verbeke, 2004), each consisting of three items: social support from colleagues (e.g., "If necessary, can you ask your colleagues for help?", α = .84); feedback about performance (e.g., "I receive sufficient information about my work objectives", α = .91); supervisor coaching (e.g., "I feel valued by my supervisor", α = .93), and opportunities for development (e.g., "In my work, I can develop myself sufficiently", α = .95). These subscale provide evidence of construct validity (i.e., that the scale could be considered heterogeneous to some extent). The reliability for the whole scale was α = .82. Previous studies demonstrated internal and external validity for this scale showing that job resources are the most important predictors of various indicators of positive work-related outcomes, such as extra role performance (Bakker, Demerouti & Verbeke, 2004), and work engagement (e.g. Hakanen, Bakker & Schaufeli, 2006).



F**igure 1.** The self-concordance measure in Dutch: Screenshot of the on-line "Happiness Diary"

Procedure

A sample of secondary school teachers from across Netherlands received an invitation to join the study via official school email contact. Teachers who joined the study received daily reminders via e-mail to fill out the diary. Participation in this research was voluntary, and respondents were ensured anonymity. The study did not involve any form of deception or risk to the participants beyond that encountered in everyday life, and the official ethics committee of our Institute approved it. At the end of the data collection, all the participants who had filled out the diary three times or more entered a lottery, in which we randomly selected five teachers and awarded them with a €100 cheque each.

The diary filled out by teachers was a structured internet diary application designed specifically for this study—a modified version of the day reconstruction method (DRM; Kahneman et al., 2004). On the first screen, teachers reported the two work-related activities they have spent in most time during the preceding day, by choosing from a drop-down activities list, which included the following activities: teaching, preparing lessons, preparing and correcting exams, meetings with parents, meetings with colleagues, meeting with supervisors, counseling pupils, work-related training, commuting, and excursions. The teachers also reported the duration for each of the work activities they listed. On the next screen, teachers rated the reasons for engaging in each of the two activities they listed, using two items representing

self-concordance (see Figure 1). On the third screen, teachers rated how demanding each of the two work activities were for them. Finally, on the fourth screen, teachers rated how happy they felt during the two work activities.

Analysis

The dataset has a three-level hierarchical structure with work activities (Level 1) nested within days (Level 2), and days nested within teachers (Level 3). Therefore, we used hierarchical linear modeling to analyze the data. In this way, we accounted for the dependencies between the work activities reports from the same teacher (Snijders & Bosker, 1999). We centered the person-level variables (i.e. age, health, autonomy, competence and job resources) at the grand mean. Furthermore, we centered the within-person variables (i.e., self-concordance, demands and happiness) at the respective person mean. This centering strategy is typical with multilevel models (e.g., Heck, Thomas & Tabata, 2010; Snijders & Bosker, 1999; Peugh, 2010; Peugh & Enders, 2005). We used the SPSS program for multilevel modeling (Heck et al., 2010).

Hierarchical linear modeling is particularly suitable for longitudinal data analysis, where missing data occurs relatively often, because of its capacity of the typical estimation procedure used with this model that makes use of all available data in the estimation of model parameters (Kwok et al., 2008). Maximum likelihood (ML) estimation employs both the complete and incomplete data to estimate the parameter values that have the highest probability of producing the sample data (Baraldi & Enders, 2010). These values for missing data are only used during the ML method for obtaining final estimates and are not imputed within a data set (Jeličić, Phelps, & Lerner, 2009). As such, ML is considered to be one of the "state of the art" missing data techniques (Baraldi & Enders, 2010; Jeličić et al., 2009).

Hypothesis testing. A three-level hierarchical model assessed the effects of the perceived demand level and self-concordance of teachers' work activities on happiness felt during those activities while controlling for age, health, general autonomy and competence, and general job resources. It was predicted that self-concordance would buffer the negative effect of demand on happiness on a within-day activity level (Hypothesis 1) and that demand level would be negatively related to happiness on a within-day activity level (Hypothesis 2). Finally, it was also predicted that the self-concordance would buffer the negative effect of the demand on happiness (Hypothesis 3).

In order to test our hypotheses, we used a staged approach. We started with a Null model without predictors. Hence, before testing our hypotheses, we examined the decomposition of total state happiness variance across the three levels (teachers, days, and activities). For our three-level model, the proportion of variability or the intraclass correlation (ICC) in state happiness variance at Level 3 (between teachers) was 0.16 (0.63/[0.63+0.47+2.96]); for Level 2 (within-teachers day level), the ICC was 0.12 (0.47/[0.63+0.47+2.96]); and for Level 1 (within teachers activity level) the ICC was 0.73 (2.96/[0.63+0.47+2.96]). These results suggest that there is adequate variability at each level to conduct a multilevel analysis (Heck et al., 2010; Snijders & Bosker, 1999).

Next, in Model 1, we entered age, health, autonomy, competence, and job resources as between-person trait-level (level 3) control variables:

$$\beta 00k = \gamma 000 + \gamma 001(AG)k + \gamma 002(H)k + \gamma 003(AU)k + \gamma 004(CO)k + \gamma 005(RE)k + \gamma 001(JR)k + u00k, \quad (1)$$

where γ000 represents the intercept, (AG)k is age, (H)k is health, (AU)k is autonomy, (CO)k is competence, (RE)k is relatedness, and (JR)k is job resources for teacher k, γ001 to γ006 are the corresponding Level 3 predictors' coefficients, and u00k represents the Level 3 random effect.

In Model 1, we also assessed lagged effects of previous days' happiness on next days' state happiness during work activities because we wanted to predict changes in happiness during activities due to the interaction between the demand and self-concordance level experienced during work-related activities, beyond the previous day's happiness. Thus, we added day of the week as well as the lagged effect of happiness during the previous day as within-person (level 2) day-level control variables:

$$\pi 0jk = \beta 00k + \beta 01k(DAY)jk + \beta 02k(HPD)jk + r0jk, \quad (2)$$

where β00k is the intercept for a teacher k in modeling the day j effects. Moreover, (DAY)jk is day, and (HPD)jk is happiness felt during the previous day for day j (Level 2 predictors), with β01k and β02k as the corresponding Level 2 predictors' coefficients, and r0jk represents the Level 2 random effects.

In Model 2, we added the perceived demand level and self-concordance during each of the four work activity types that teachers spent most time in-teaching, work-related training, meetings, and exams (level 1). We proposed

that, for an activity i of a teacher k, performed during the day j, the perceived demand level and self-concordance affect happiness felt during that activity:

$$Yijk = \pi 0jk + \pi 1jk(DL)ijk + \pi 2jk(SC)ijk + \varepsilon ijk, \quad (3)$$

where π0jk presents the intercept, (DL)ijk presents the demand level and (SC) ijk represents self-concordance (Level 1 predictors) for an activity i during the day j of a teacher k, π1jk and π2jk are the corresponding Level 1 predictors' coefficients, and εijk is the Level 1 random effect.

Finally, in Model 3, we entered the interaction terms between the perceived demand level and self-concordance experienced during teaching, work-related training and education, meetings and exams:

$$Yijk = \pi 0jk + \pi 1jk(DL)ijk + \pi 2jk(SC)ijk + \pi 3jk(DL)ijk\,(SC)ijk + \varepsilon ijk. \quad (4)$$

In order to examine which model provided the best fit, we compared the deviance values of the models (Snijders & Bosker, 1999). We tested the improvement of each model over the previous one by computing the differences of the respective log likelihood statistic -2*log and submitting this difference to a χ^2-test. Each nested model showed an improved model fit. Model 1 was compared to the null (intercept only) model (Δ-2 x log =2222.54, Δdf = 12, $p < .001$); Model 2 was compared to Model 1 (Δ-2 x log = 160.26, Δdf = 8, $p < .001$); and Model 3 was compared to Model 2 (Δ-2 x log = 37.81, Δdf = 4, $p < .001$).

Results

Descriptive Analyses

Table 1 presents the descriptive information for the work activities, namely, the self-concordance, demand level, and happiness means and standard deviations per activity type. Table 2 illustrates the nature of our teachers' reports; that is, it presents the overall means, standard deviations, and zero-order correlations between variables included in the study. The measures of self-concordance demand level and happiness of each participant were averaged across work activities for these descriptive and correlational analyses.

Multilevel Analysis Results

The results of multilevel modeling analyses with subsequent models are shown in the Table 3.

Table 1

Self-concordance, demand level, and happiness means and standard deviations for teachers' daily work activities

		Teachers' experiences of daily work activities			
		Self-concordance	Demand	Happiness	Duration (in minutes)
Activity type	*N*	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)
Administrative	146	5.81(2.30)	5.32(2.69)	5.59(2.34)	198.85 (103.72)
Commuting	57	4.37(3.40)	3.61(3.00)	6.44(1.75)	180.26 (133.22)
Teaching	485	7.43(1.78)	5.93(2.75)	7.21(1.67)	201.80 (106.70)
Preparing lessons	145	7.32(1.80)	5.51(2.66)	6.63(1.73)	149.59 (89.41)
Tests/Exams	174	5.98(2.54)	5.56(2.09)	6.25(2.64)	143.57 (81.20)
Meetings	152	6.77(2.62)	6.12(2.96)	6.64(2.08)	153.21 (103.50)
Counseling pupils	69	8.46(1.47)	5.15(2.98)	7.94(1.41)	134.79 (91.85)
Work trainings	51	7.00(2.62)	7.16(2.12)	6.86(1.93)	185.82 (105.62)
Excursions	18	7.47(2.88)	4.06(2.99)	7.61(1.72)	141.67 (63.48)

Note. All scores range from 1-10.

Model 1. Results from Model 1 indicated that age, satisfaction with health, and autonomy were not significantly related to state happiness during work activities (see Table 3). Competence, t(126.82) = 2.37, p = 0.02, and job resources, t(131.89) = 2.35, p = 0.02, related positively to state happiness. Moreover, whereas day of the week was not significantly related to state happiness during work activities, happiness felt during the previous day (a lagged effect) was significantly and positively related to state happiness during work activities, t (733.52) = 5.96, p < .001.

Model 2. The first hypothesis stated that self-concordance during specific work activities would be positively related to the happiness felt during those activities. In line with this hypothesis, the more teachers experienced their work activities as self-concordant, the significantly happier they felt during those activities (see Model 2 in Table 3). The teachers' four most prominent work activities showed this pattern: teaching, t (765.28) = 3.92, p < .001; work-related trainings, t (755.97) = 2.65, p < .001; meetings, t (770.41) = 6.93, p < .001; and exams, t (754.97) = 7.55, p < .001.

In Hypothesis 2, we stated that the perceived demand level of specific work activities would be negatively related to momentary happiness felt during

Table 2

Means, Standard Deviations, and Person-level Correlations for the Study Variables

Variable	*M* (*SD*)	1.	2.	3.	4.	5.	6.	7.	8.
1. Self-concordance	6.87 (2.36)	—	.68**	-.09**					
2. Happiness	6.67(2.01)	.68**	—	-.30**					
3. Demand level	5.71(2.79)	-.06*	-.27**	—					
4. Age	45.33 (11.43)	.09**	.08**	-.03	—				
5. Health	7.10 (2.16)	.04	.06	-.05	-.16**	—			
6. Autonomy	6.79 (1.45)	.14**	.20**	-.20**	.11**	.15**	—		
7. Relatedness	7.40 (1.21)	.03	.06*	.03	-.03	.08**	.52**	—	
8. Competence	7.22 (1.23)	.19**	.21**	-.09**	.07*	.15**	.67**	.62**	—
9. Job resources	6.66 (1.69)	.23**	.18**	-.03	.04	.02	.25**	.15**	.30**

Note. $N = 132$. Correlations below the diagonal are person-level correlations, and correlations above the diagonal are within-person correlations. *$p < .05$, **$p < .01$.

those activities on a within-day activity-level. In line with this hypothesis, the more demanding work activities were perceived to be, the less happy teachers felt while engaging in those activities (see Model 2 in Table 3). Again, the four most prominent work activities showed this pattern: teaching, t(759.98) = -4.44, p < .001; work-related trainings, t(756.46) = -2.76 , p < .001; meetings, t(770.70) = -6.96, p < .001; and exams, t(754.97) = -7.37, p < .001.

Model 3. Hypothesis 3 stated that self-concordant motivation during activities would moderate the relation between the perceived demand level and state happiness felt during work-related activities (teaching, work-related trainings, meetings, and exams). To test this hypothesis, in Model 3 we added four interaction terms in Model 3 at the lowest level (Level 1), namely, the interaction of the perceived demand level and the experienced self-concordance during the four work activities: teaching, work-related trainings, meetings, and exams.

The results, presented in Table 3, Model 3, indicated that the interaction effects between the perceived demand level and self-concordance of teaching, t(756.82) = 4.17, p < .001; exams, t(765.22) = -2.81, p < .001; and meetings, t(782.34) = -2.98, p < .001, were statistically significant. However, the interac-

Table 3

Fixed Effects Estimates (Top) and Variance-Covariance Estimates (Bottom) for Models predicting

Activity-level

Parameter	Null-model	Model 1	Model 2	Model 3
		Fixed effects		
Level 3 (Teacher)				
Intercept	6.67 (0.08)***	5.07 (0.39)***	5.25 (0.62)***	0.21 (1.88)
Age		0.11 (0.08)	0.10 (0.07)	0.11 (0.08)
Health		0.03 (0.08)	0.04 (0.08)	0.03 (0.08)
Autonomy		0.23 (0.11)*	0.06 (0.10)	0.04 (0.10)
Competence		0.29 (0.12)*	0.35 (0.11)**	0.29 (0.1)**
Relatedness		0.28 (0.10)*	0.24 (0.09)*	0.20 (0.09)*
Job resources		0.20 (0.09)*	0.19 (0.07)*	0.19 (0.08)*
Level 2 (Day)				
Day		-0.09 (0.06)	-0.06 (0.06)	-0.07 (0.06)
Happiness previous day		0.28 (0.05)***	0.23 (0.04)***	0.22 (0.04)***
Level 1 (Work activity)				
Teaching demand			-0.04 (0.001)***	-0.21 (0.04)***
Exams demand			-0.35 (0.05)***	-0.23 (0.06)***
Meetings demand			-0.31 (0.04)***	-0.15 (0.07)*
Training/studying demand			-0.21 (0.07)**	-0.04 (0.14)
Teaching SC			0.04 (0.009)***	0.02 (0.01)
Exams SC			0.36 (0.05)***	0.53 (0.08)***
Meetings SC			0.31 (0.04)***	0.53 (0.08)***
Training/studying SC			0.20 (0.07)**	0.37 (0.12)***
Teaching demand by SC				0.02 (0.001)***
Exams demand by SC				-0.03 (0.001)**
Meetings demand by SC				-0.03 (0.001)**
Training demand by SC				-0.03 (0.02)
		Variance–Covariance Estimates		
Level 3 variance	0.63 (0.13)***	0.27 (0.10)**	0.20(0.09)*	0.23(0.08)**
Level 2 variance	0.47 (0.15)**	0.23 (0.17)*	0.24 (0.15)*	0.18 (0.14)
Level 1 variance	2.96 (0.16)***	2.94 (0.20)***	2.36 (0.17)***	2.29 (0.17)***
-2 Log Likelihood	5420.625	3198.09	3037.83	3000.02
Diff-2 Log		2222.54***	160.26***	37.81***
df		12	8	4

Note. SC = self-concordance.
*$p < .05$, **$p < .01$, ***$p < .001$

tion term for the work-related trainings demand level and self-concordance of was not statistically significant, t(744.44) = -1.50, p = .14. Hence, our Hypothesis 3 is partially supported. To examine the interaction patterns in more detail, we ran simple slope tests as suggested by Preacher, Curran, and Bauer (2006). The interaction patterns are graphically displayed in Figures 2 through 5.

Figures 2 through 4 show that self-concordant motivation for work activities does indeed buffer the effects of high job demands on state happiness. More concretely, Figure 2 shows that a high demand level of teaching (1 standard deviation above the mean) combined with low self-concordant motivation for teaching (1 standard deviation below the mean, γ = -0.10, SE = 0.04, z = -2.16, p = .04) related significantly and negatively to state happiness during teaching activities. However, when pursued with high self-concordant motivation (1 standard deviation above the mean), the demand level of teaching did not relate significantly to happiness (γ = -0.03, SE = 0.05, z = -0.57, p = .09). In other words, under conditions of highly demanding teaching, high self-concordance (1 standard deviation above the mean) buffered the otherwise negative relation between high job demands and happiness, thus supporting our Hypothesis 3 for teaching.

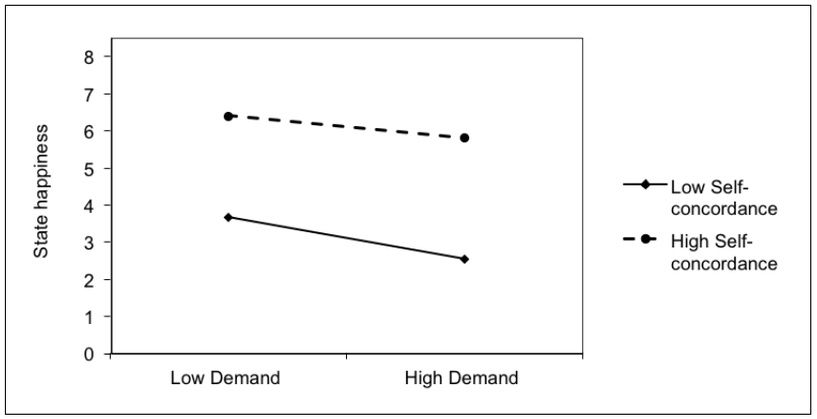


Figure 2. Interaction effect of teaching demands x self-concordance on state happiness. Note. Low = 1 standard deviation below the mean. High = 1 standard deviation above the mean.

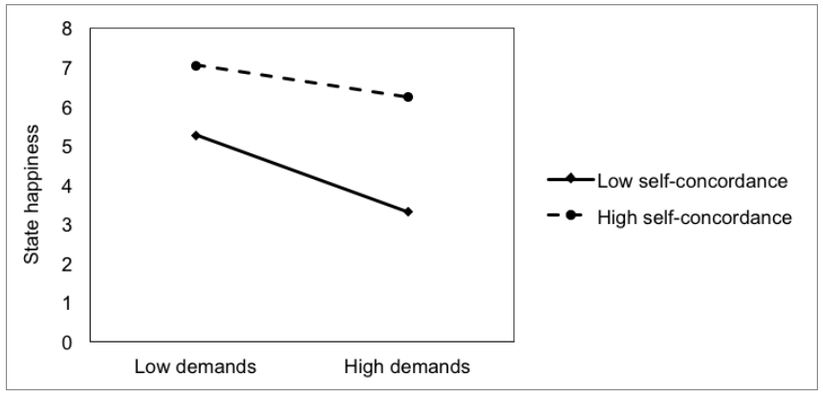


Figure 3. Interaction effect of Exams Demands x Self-concordance on State Happiness. Note. Low = 1 standard deviation below the mean. High = 1 standard deviation above the mean.

Figure 3 demonstrated that highly demanding exams (1 standard deviation above the mean) did relate significantly negatively with happiness. However, the negative relation of high demands on state happiness during exams was weaker under conditions of high self-concordance (1 standard deviation above the mean, $\gamma = -0.49$, SE = 0.75, $z = -0.65$, $p = .07$), as compared to low self-concordance (1 standard deviation below the mean, $\gamma = -0.33$, SE = 0.24, $z = -1.37$, $p = .02$), which provides evidence supporting Hypothesis 3 for this activity.

Furthermore, Figure 4 demonstrated that high demands during meetings with parents, colleagues, or supervisors (1 standard deviation above the mean) related significantly and negatively to state happiness during meeting activities. The negative effects of high demands on state happiness during meetings with parents, colleagues or supervisors were weaker under conditions of high self-concordance (1 standard deviation above the mean, $\gamma = -0.20$, SE = 0.05, $z = -3.91$, $p < .001$) as compared to low self-concordance (1 standard deviation below the mean, $\gamma = -0.18$, SE = 0.04, $z = -4.23$, $p < .001$), which also provides evidence supporting Hypothesis 3 for this activity.

As recommended by Peugh (2010), we used the proportional reduction in variance statistic as one of the effect size estimates that are generally accepted in MLM analyses. We calculated the proportional reduction in Level-3

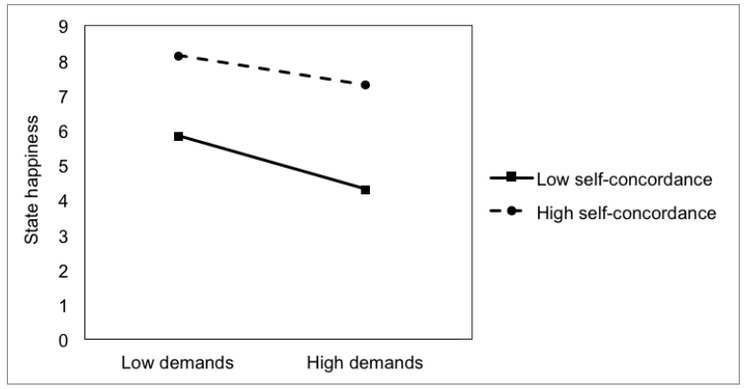


Figure 4. Interaction effect of Meetings Demands x Self-concordance on State Happiness. Note. Low = 1 standard deviation below the mean. High = 1 standard deviation above the mean.

residual variance that resulted from adding activity-level self-concordance and demands from the Level-1 residual variance estimates in the model with control variables ($\sigma 2 = 2.94$) and the model that includes activities' self-concordance and demands ($\sigma 2 = 2.36$). Substituting these values into the proportional reduction in variance equation (Peugh, 2010) showed that Level-1 residual variance decreased by 20% (i.e., [2.94–2.36] / 2.94= .20) after adding activities' self-concordance and demands.

We also examined the effect size of adding the interaction between the activities' self-concordance and demands. Hence, we incorporated the Level-1 residual variance estimates from the model that includes control variables and activities' self-concordance and demands ($\sigma 2 = 2.36$) and the model that includes the interaction between activities' self-concordance and demands ($\sigma 2 = 2.29$) values into the proportional reduction in the variance equation (Peugh, 2010). The results showed that Level-1 residual variance decreased by 3 % (i.e., [2.36–2.29] / 2.36 = .03) after adding activities' self-concordance and demands.

Discussion

The central aim of the study was to examine the role of self-concordant work motivation in the relation between demanding work activities and happiness of teachers, using an innovative diary methodology that measures the relevant constructs on an activity level. Building upon previous research within the domains of work stress (e.g., Bakker et al., 2005, Scheck, Kinicki, & Davy, 1997), happiness (e.g., Reis et al., 2000; Howell et al., 2011), and the self-concordance model of motivation (Gagné & Deci, 2005), this study provides a deeper insight into the associations between activity-related demands and happiness among secondary school teachers.

Altogether, the analyses mainly provide confirmation for the proposed model: Teachers' self-concordant motivation for specific work activities buffers the negative impact of high work demands on happiness on a within-person level, for teaching, exams, and meetings; however, the effect was not evident for work-related trainings. In other words, self-concordant motivation for work has an important role in reducing the negative effects of high demands during specific activities and making secondary school teachers happy in their everyday work life.

Theoretical Contributions

The current study makes several important contributions to the existing literature. First, it emphasizes the intraindividual changes in work-related happiness, motivation, and work demands among teachers. In this study, we controlled for several relevant trait-level variables. We also controlled for the lagged effects of previous days' happiness on next days' state happiness because we wanted to predict changes in happiness during activities due to the interaction between the activities' demands and self-concordance, beyond the previous day's happiness. Thus, we think it is justified to imply that, although some teachers might be generally happier at work than others, our study nevertheless shows that happiness at work is largely dependent on the teachers' subjective experience of their moment-to-moment work activities.

Second, our study has shown that different teachers perceive the demand levels of work activities differently on different work days. Similarly, teachers' motivation for putting effort in these activities varied on a within-person level. Moreover, these fluctuations in the perceived activities' demand level and

motivation were associated with changes in teachers' momentary happiness during the engagement in those activities (Ashkanasy & Ashton-James, 2006; Ilies et al., 2007; Weiss & Cropanzano, 1996). Using the DRM approach, the present study revealed that both motivation and demand level of work activities have a strong association with state happiness at the work-activity level. No less than 75% of happiness during work activities actually resided on the activity level, and it depended on specific perceptions of the demand level and self-concordance of work activities. Thus, teachers' happiness fluctuates not only on a day level, but also depending on the perception of those work activities as either demanding or self-concordant in nature. These results are valuable because previous studies mostly conceptualized happiness at work at the person level (Fisher, 2010). In that way, the current study expands the existing literature by providing novel information on how the demand level and the self-concordance of specific work activities relate to state happiness beyond the baseline level of the previous day happiness. These findings also support the view that work activities have immediate affective consequences (Weiss & Cropanzano, 1996; Ilies et al., 2007).

Third, our findings demonstrate that variations in work happiness can be predicted by the interaction between the demands level and the self-concordant motivation for engagement in those activities. The results showed that, when teachers perceive highly demanding work activities as intrinsically valuable or interesting (i.e., self-concordant), that perception influences how they emotionally respond to those activities. It helps teachers to interpret complex, highly demanding work activities that require a lot of effort as important, meaningful and/or interesting tasks.

Teachers who experience their everyday work life activities as highly self-concordant (i.e. consistent with their own interests and values) remain happier when working compared to teachers who experience their work activities as low self-concordant, even when those activities require high effort and result in increased workload and responsibilities. In that way, self-concordant motivation can be seen as a personal resource that reduces the psychological costs related to highly demanding work activities. These findings are highly consistent with the Lazarus (2000) stress appraisal conceptualization, namely, self-concordant motivation helps teachers to cope with high demands in a more effective way. More concretely, pursuing highly demanding work activities with self-concordant motivation enables teachers to reappraise a po-

tential threat (i.e., high work demands) in nonthreatening terms (e.g., highly demanding work activities seen as valuable, interesting or meaningful work that requires a lot of effort and complexity), which can remove the cognitive basis of the stress reaction.

Fourth, our study provides additional support for the job demand-resources model by showing that the higher the demands level of work activity is, the lower the happiness felt during that activity. Previous between-person survey studies had already shown that high work demands have negative effects when they are related to prolonged high effort, work overload, insecurity, or heighted responsibility from which teachers do not recover adequately (Bakker et al., 2010; Demerouti & Bakker, 2011; Hakanen et al., 2006; Jamal, 1999; Meijman & Mulder, 1998; Scheck et al., 1997). Although there is some support for the importance of self-concordance in within-person happiness fluctuations (e.g., Howell et al., 2011; Reis et al., 2000; Sheldon & Houser-Marko, 2001), to date, few studies have directly used within-day measures of self-concordance, happiness, and demands among teachers on the work activity level. Also, most happiness at work studies used generic measures to assess the predictors and effects of happiness, and, as such, they have somewhat neglected the complexity and variation of subjective experiences of specific teachers' work activities (Fernet et al., 2012). Hence, the novelty of our study is the use of a diary methodology—the modified version of the DRM—which enabled us to capture fine grained within-person processes regarding the demand level of work activities, motivation for engaging in those activities. and happiness felt during those activities.

Our measurement approach is somewhat similar to the episodic process model of affective influences on performance (Beal, Weiss, Barros, & MacDermid, 2005). Beal and his colleagues (2005) focused on the performance episodes, which they described as thematically organized behaviors directed toward relevant goals. However, while Beal et al. emphasized the role of cognitive resources and allocation for performance efficiency in work activities, we expand their approach by showing the importance of motivation for the immediate affect related to the specific work activities.

Altogether, our findings go beyond previous studies by suggesting that the psychological meaning of each specific daily work activity matters for teachers' happiness at work. As Sheldon and Kasser (1997) have noted, when daily

activities are perceived as congruent with one's basic needs and values, happiness is likely to be fostered. Thus, it seems that happiness at work involves more than avoiding high demands and having good resources at hand; happiness also depends on an interpretation made by an individual teacher and by existing personal interest and value found in everyday work activities as reflected in self-concordant motivation (Reis et al., 2000).

In summary, our results can partially explain the contradictory findings in research on teachers' stress levels and happiness. They provide an explanation as to why teachers remain happy and satisfied in their work even though they also report high levels of stress. Our findings reveal that it can, at least partly, be attributed to their motivation. These findings have theoretical implications for motivational theory as they show that motivation for work can be seen as a specific personal resource for dealing with highly demanding work tasks.

Limitations

It should be noted that this approach has some limitations. First, the participants were a relatively homogenous sample of secondary school teachers; hence, in order to generalize the present findings, it is necessary to replicate them in different types of schools (e.g., primary schools, or universities). Second, we refer to the episodic assessments of happiness as experienced happiness, whereas in fact, they are retrospective reports of very recent episodes. This notion leads to question whether a teacher's perception of motivation and demands would be any different if measured just before or during the actual work activity rather than after the teacher has had some distance from the event. The DRM is susceptible to recall bias, as it uses chronological reconstruction to recall into memory the momentary happiness during activities that occurred during the previous day. However, a recent study indicated that happiness ratings as collected with the DRM converge well with concurrent reports of happiness as collected with experience sampling methods (Dockray et al., 2010). Nevertheless, we do not yet have ESM data on resources and demands. Thus, it would be useful to use ESM in future studies in order to gain more insight into the concordance of DRM and ESM reports of resources and demands.

Third, a possible limitation might be related to the order in which the teachers completed the diaries. Specifically, teachers first selected the activities, and then rated them in terms of self-concordance ratings, perceived demands and

happiness. This ordering did not change; hence, there is a potential risk that some ordering effects might be embedded in the data. Whereas in traditional cross-sectional study design question ordering effects have been studied extensively (Rasinski et al., 2012), relatively little is known about the effects of diary completion itself on participants' responses (Bolger, Davis, & Rafaeli, 2003; Laurencau & Bolger, 2005). However, the DRM is a repeated measures design that allows for examination of processes in their natural context. In that way, DRM reduces the likelihood of retrospection by minimizing the amount of time between the actual experience and the assessment of the experience (Bolger et al., 2003; Kahneman et al., 2004; Stone, Shiffman, & DeVries, 1999) because participants "relive" a particular moment and questions about demands and motivation could actually help respondents to accurately recall their emotional state. In that way, the DRM requires minimal cognitive processing before indicating the responses (Kahneman et al., 2004). Thus, we think that ordering did not have substantial effects in the present study.

Finally, the present study did not model processes; it was based on the analysis of associations. Nevertheless, it provides an opportunity for future work to build off this study, namely, future studies could orient more on modeling the dynamic causal processes between motivation, job demands, and happiness in teaching.

Practical Implications and Conclusions of the Study

The results of this study showed that, after adding activities' self-concordance and demands, an extra 3% of happiness variance was explained, which is relatively small but nevertheless substantial because it is an important qualification of the main effects. Furthermore, the deviance test (producing the log likelihood statistic -2*log) showed a better model fit when including the interaction effects as opposed to the model where only main effects were reported. Also, effect sizes of the significant relations between work activity-level happiness, self-concordance, and perceived demands were moderate to large, all of which suggests that the present study is meaningful not only in theory but also in a practical way.

More concretely, work motivation and the perception of work demands seem to be the essential determinants of momentary work-related well-being. In that way, our findings can provide a base for intervention strategies for enhancing teachers' work-related well-being and stress management. Because

motivation has proven to be highly relevant in the appraisal of job demands—potential work stressors—it seems beneficial to help teachers become aware of and, if possible, manage their motivation for work activities.

On the one hand, teachers can be encouraged to get back in contact with their self-concordance (e.g., to get back in contact with why they wanted to be teachers in the first place). On the other hand, if a teacher continuously experiences a low level of self-concordance during work, and, in turn, feels unhappy at work most of the time that could be a signal to change one's job or to craft the job so that it better fits with personal needs and abilities and is more self-concordant with personal interests (Tims & Bakker, 2010).

Altogether, the current study is the first exploration on the within-person and within-day interplay between motivation, perceived demands, and happiness among secondary school teachers. It shows substantial within-person variability in motivation, job demands, and happiness as well as that motivation for work activities can have a positive effect on work-related state happiness. Our findings indicate that, when confronted with highly demanding work activities, teachers appraise their meaning and significance, and self-concordant work motivation seems to be beneficial during this appraisal process. Specifically, teachers' engagement in highly demanding activities with self-concordant motivation seems to reduce the negative impact related to those high demands. Teachers perceive those high demands more as a challenge than as a threat.

CHAPTER FOUR:

How Challenging was Your Work Today? A Diary Study on Challenge and Hindrance Job Demands and Work-related Well-being

This chapter has the revise-resubmit status: Tadić, M.; Oerlemans, W. G.M. & Bakker, A. B. (2014). How Challenging was Your Work Today? A Diary Study on Challenge and Hindrance Job Demands and Work-related Well-being. *European Journal of Work and Organizational psychology.*

Abstract

The main aim of this study was to investigate whether self-concordant motivation for work can explain the distinctive effects of hindrance and challenge demands on work-related well-being outcomes (i.e. positive affect and work engagement) on a within-person level. Self-concordant work motivation represents the degree to which motivation for putting effort in work has been internalized, without feelings of internal or external pressure. In order to test our hypotheses, we employed a diary methodology and followed 153 secondary school teachers throughout five consecutive working days. The results of multilevel modeling provided full support for the hypothesized research model. On days when teachers experienced more challenges, they also experienced more positive affect and more engagement in their work on the same day, and this relationship could be explained by (higher) self-concordant work motivation on that day. In contrast, on days when teachers experienced more hindrance demands, they experienced less positive affect and less work engagement, and this process was explained by (reduced) self-concordant work motivation that day. Our findings add to the literature by showing that daily self-concordant motivation as a motivational process can explain why daily challenge and hindrance demands are differentially related to positive well-being at work.

How Challenging was Your Work Today? A Diary Study on Challenge and Hindrance Job Demands and Work-related Well-being

Challenge demands encompass opportunities to achieve gains such as better performance, satisfaction and recognition resulting from the invested effort in work (Crawford, LePine, & Rich, 2010). Conversely, hindrance demands have the potential to harm and interfere with various work outcomes, such as work-related well-being and performance (Cavanaugh, Boswell, Roehling, & Boudreau, 2000). Although the differential effects of challenge and hindrance demands on some work-related outcomes have been supported by the results of meta-analyses (Crawford, et al., 2010; LePine, Podsakoff, & LePine, 2005), underlying processes that may explain why challenge and hindrance demands are differentially related to work-related outcomes are still largely unknown. Therefore, the central aim of the present study was to examine if a particular motivational process — self-concordant motivation for work — can explain the distinctive effects of hindrance and challenge demands on work-related well-being. Self-concordant work motivation represents the degree to which motivation for putting effort in work has been internalized, without feelings of internal or external pressure (Gagné & Deci, 2005). We argue that daily variations in self-concordance can explain why daily challenge demands are positively, and hindrance demands are negatively related to daily positive affect and engagement at work.

This study adds to the literature in several ways. First, to our knowledge, this is one of the first studies to examine the impact of both challenge and hindrance demands on an individual's level of self-concordance and subsequent work-related well-being on a within-person level. This is important because it can capture how specific types of demands may be internalized in different ways, leading to differences in work-related well-being. Second, between-person studies have provided valuable insights into how employees differ in their general reactions to different types of job demands (Cavanaugh, et al., 2004; Crawford, et al, 2010).

However, challenge and hindrance demands are likely to fluctuate substantially on a day-to-day basis, and are likely to predict daily consequences such as fluctuations in daily work-related well-being (Tadić, Bakker, & Oerlemans, 2013; Xanthopoulou, Bakker, & Ilies, 2012). Yet, only two previous studies ex-

amined the within-person fluctuations in challenge and hindrance demands (Bakker & Sanz-Vergel, 2013; Rodell & Judge, 2009; further discussed below), and no study empirically examined the mechanisms that could explain why challenge and hindrance demands are differentially related to daily work-related well-being. Hence, this paper adds knowledge as it increases our understanding of why job demands promote vs. thwart work-related well-being in our everyday work life.

Finally, the current study examines the above daily processes among teachers, who represent a specific occupational setting. Most of the previous studies on work-related well-being of teachers focused on strain and negative indicators, such as exhaustion and burnout (Spilt, Koomen, & Thijs, 2011). The present study adds to this knowledge by examining positive indicators of work-related well-being among teachers. In the present study, we followed 153 secondary school teachers in Croatian across five consecutive working days.

Theoretical Background

Although the interpretation of demands as either challenges or hindrances may be a matter of individual perception, certain demands are typically perceived as challenges and others as hindrances by most employees (Crawford, et al., 2010; Webster, Beehr, & Christiansen, 2010). Challenge demands are "good" demands that are potentially rewarding and worth the effort, such as high workload and high responsibilities, which signify the potential realization of desired outcomes through overcoming difficulties. As such, challenge demands can stimulate motivation and a proactive approach in dealing with them (Crawford et al., 2010). Conversely, hindrance demands represent "bad" job demands that encompass the assumption that the available resources and efforts will not be adequate to meet the demands, and that these demands are dependent on external and uncontrollable factors, which can result in a sense of being overwhelmed, such as role conflict, role ambiguity, pupils' misbehavior, organizational politics, and a lack of reciprocity from pupils (Van den Broeck, De Cuyper, De Witte, & Vansteenkiste, 2010).

Cross-sectional studies show that challenge and hindrance demands can indeed be considered as different types of job demands that relate differentially to work-related well-being on a between-person level. For instance, Van den Broeck et al. (2010) showed that hindrance demands were positively associ-

ated with exhaustion and negatively associated with its positive counterpart vigor. Challenge demands were unrelated to exhaustion, and positively related to vigor. Moreover, the meta-analysis by Crawford et al. (2010) demonstrated that associations between job demands and work engagement (i.e. an active, positive work-related state that is characterized by vigor, dedication, and absorption; Schaufeli & Bakker, 2004) were highly dependent on the type of demand. In particular, demands that could be perceived as hindrances, such as role conflict, role ambiguity, organizational politics, and hassles, were negatively associated with work engagement, whereas demands that could be perceived as challenges, such as high workload, time pressure, and high levels of job responsibility, were positively associated with work engagement.

However, job demands also fluctuate substantially on a within-person level. For example, Rodell and Judge (2009) followed 100 employees of various organizations using an experience sampling methodology (ESM) and asked them to fill in one survey a day for 10 consecutive workdays (defined according to their work schedule). Their results showed that hindrance demands were negatively related to citizenship through a mediating effect of anxiety, and positively related to counterproductive behaviors through anger and anxiety on a within-person level. Challenge demands were found to have a positive indirect association with citizenship behavior through attentiveness, and a negative indirect association with citizenship behavior through anxiety on a within-person level.

Bakker and Sanz-Vergel (2013) examined fluctuations in weekly challenge and hindrance demands using diary methodology among a sample of 63 nurses who filled in a questionnaire at the end of the working week for three consecutive weeks. Their findings revealed that weekly challenge demands strengthened the effect of nurses' weekly personal resources (self-efficacy and optimism) on their weekly well-being. Weekly personal resources had a positive relationship with weekly work engagement in weeks when challenge demands were high. In contrast, weekly hindrance demands thwarted nurses' weekly well-being. That is, in weeks when hindrance demands were high, nurses were unable to use their personal resources to foster their flourishing. Only when hindrance demands were low, personal resources were positively related to flourishing on a weekly basis.

In sum, two previous studies showed that challenge and hindrance demands fluctuate substantially on a within-person level, which is associated with with-

in-person fluctuations in work-related well-being. However, to the best of our knowledge, no previous studies examined the underlying mechanism that can account for differential relations of challenge and hindrance demands to within-person fluctuations in work-related well-being.

The Present Study

In the present study, we argue that daily self-concordance, a particular form of work motivation, can explain how daily differences in job demands lead to differences in motivational states among employees, which in turn can explain fluctuations in daily well-being at work (i.e. daily work-related positive affect and work engagement). Self-concordant motivation for work entails autonomous motivation, that is, involvement in work out of genuine interest and choice rather than out of pressure. High self-concordant work motivation reflects a high congruence between employees' work-related activities and their own personal interests and values (Gagné & Deci, 2005). Between-person studies demonstrated that employees with generally high (vs. low) levels of self-concordant work motivation are more committed to their work organizations and less prone to leave their workplace (Otis & Pelletier, 2005; Richer, Blanchard, & Vallerand, 2002), and also report less daily hassles at work (Otis & Pelletier, 2005). Their profession is more central to their identity, which helps them to find the meaning and value in the demands that are challenging. As such, self-concordant motivation is positively related to work-related well-being (Deci & Ryan, 2008; Gagné & Deci, 2005). However, self-concordant motivation also fluctuates substantially on a within-person level (Tadić, Bakker & Oerlemans, 2013).

Based on the above literature, we expected that challenge and hindrance demands, self-concordant motivation, work-engagement, and positive affect fluctuate substantially on a within-person level. The overall research model is presented in Figure 1. As can be seen, we analyzed daily fluctuations in all of these states with a diary study. Moreover, we predicted that daily fluctuations in self-concordance depend on daily fluctuations in challenge and hindrance demands. In particular, when employees encounter challenge demands, they tend to perceive them as self-concordant because these demands signal potential positive outcomes of their efforts and enable employees to acquire personal resources, such as knowledge and skills.

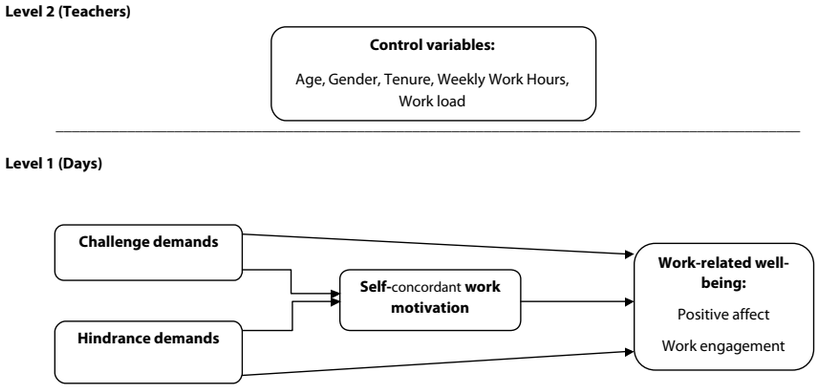


Figure 1. Hypothesized mediation model being tested: The effects of daily work challenge and hindrance demands on daily work engagement and daily positive affect via daily self-concordant work motivation.

When perceiving demands as challenges, individuals are likely to find the demands meaningful and important (i.e. self-concordant), and subsequently invest autonomous effort to deal with the demands. For example, when dealing with high daily challenge demands, such as high responsibilities and high job complexity, teachers may acknowledge the potential positive outcomes of putting effort in these demands. In other words, they may be motivated by understanding that, if they put effort in these demands, pupils can develop and gain more knowledge, and they can acquire new skills. Thus, we posit that daily challenge demands facilitate positive work-related well-being (i.e. daily positive affect and work engagement), because such demands are self-concordant with the employees' personal goals and interests. Stated in a more formal way:

Hypothesis 1. Daily self-concordant motivation at work mediates the direct positive relationship between daily challenge demands and (a) daily positive affect at work, and (b) daily work engagement. On days when teachers experience more challenges demands, they also experience more self-concordant motivation and, in turn, they experience higher positive affect and work engagement during that day.

In contrast, when employees encounter hindrance demands, they are likely to perceive these demands as unnecessary hassles that will block the achievement of personal goals (i.e. as self-discordant). For instance, contradictory work obligations, or role conflict is likely to drain teachers' resources that could have otherwise been used for attaining desired and meaningful outcomes. Under such conditions, employees are likely to adopt a more passive style of coping, feel bad at work, and invest less effort in dealing with hindrance demands. Thus, we expect hindrance demands to be negatively related to self-concordant motivation. In turn, we expect that low self-concordance (i.e. the internalization of hindrance demands as non-self concordant) will undermine an employees' daily work engagement and daily positive affect because they are perceived as potentially harmful to one's personal goals and interests (LePine, et al, 2005). Based on the above reasoning, we formulate our second hypothesis:

Hypothesis 2. Daily self-concordant motivation at work mediates the direct negative relationship between daily hindrance demands and (a) daily positive affect at work, and (b) daily work engagement. On days when teachers experience more hindrance demands, their motivation for work is less self-concordant, and, in turn, they experience less positive affect and less work engagement during that day.

Method

Participants

Participants were 153 secondary school teachers working throughout Croatia. The majority of participants were female (N = 123), and their age ranged from 26 to 64 (M = 43, SD = 10.16). The teachers in our study worked in different types of secondary schools: gymnasiums (secondary schools focused on preparing students to enter a university for advanced academic study) (33%), economic schools (8.5%), medical schools (5.4%), engineering schools (13.7%), art schools (1%), and vocational schools (31.1%). A small number of teachers did not indicate the type of school they worked for (7.3%). On average, participants worked as teachers for 14 years (SD = 10.01), and worked 27 hours per week (SD = 13.28). All participants had either a bachelors or a master's degree, and most participants were either married or in a relationship (80.6%); some were single (12.9%), and some were divorced (3.9%) or widowed (2.6%). This distribution of age, gender, and types of schools in our sample fairly represents the sociodemographic structure of secondary teachers' population in Croatia, namely, national statistic show that majority of teachers in Croatia are female, and most of them work in technical and vocational schools (48%), followed by gymnasiums (44%), and, finally, art schools (8%) (Avilov, 2012).

Altogether, 153 teachers filled out the initial background questionnaire. Among them, 89 teachers joined the diary study and filled out the diary at least two times, 88 teachers filled out the diary three times, 78 four times, and 65 teachers filled out the diary five times. We excluded teachers who filled out the diary only once because this diary study examines within-person processes; hence we needed data from at least two working days. This sample size of 153 is satisfactory for a diary study (Zapf, Niessen, Sonnentag, & Ohly, 2010). The results of a dropout analysis, in which we compared the teachers who filled out the diary once, with those who filled it out more often, revealed that there were no significant differences in age (t (402) = 0.39, n.s.), weekly work hours (t (399) = -0.12, n.s.), and workload (t (399) = 0.11, n.s.).

The teachers who filled out the diary once and those who filled it out more often also did not differ in daily self-concordance (t (376) = 1.87, n.s.); daily positive affect (t (381) = 1.84, n.s.); daily work engagement (t (373) = 1.01, n.s.), and daily challenge demands (t (374) = -0.47, n.s.). A small, but significant difference was found in hindrance demands, namely, teachers who filled the diary two or more times also reported more hindrance demands (M1 = 1.96, SD = 0.85; M2 or more= 2.34, SD = 1.03; t (374) = -2.76, p = .006). This small yet significant difference may be a method artifact, namely, those who filled in the diary more often perhaps had more opportunities to think about the experiences they had at work, and may have become more aware of all the hindering demands they encountered during their everyday work life.

Procedure

We contacted a sample of 84 secondary school principals by telephone, explained the main aims of the study, and kindly asked the principals to e-mail the invitation for participation in a study on "well-being at work" to teachers in their school. Almost all contacted principals (91%) agreed to forward the study invitation to all of their teachers in their schools. However, we could not

establish the number of teachers who received the invitation for participation; hence, we could not determine the exact response rate.

Data collection took place over six months. Participation in this research was voluntary, and respondents were ensured anonymity. The study did not involve any form of deception or risk to the participants beyond that encountered in everyday life, and was approved by the official research ethics committee of The Ministry of Science, Education and Sports and the Education and Teacher Training Agency of the Republic of Croatia.

In the study we used a self-developed online diary, named the Teachers' happiness diary. Teachers were first asked to fill out a background questionnaire. After that, teachers were asked to complete a short diary survey every day at the end of the workday, for five consecutive workdays. On the first screen of diary survey, teachers reported the current day of the week, and rated the reasons for investing effort at work today (daily work self-concordance). Thereafter, on the next screen, teachers rated challenging and hindering demands they had encountered at work during that specific day. Next, teachers responded to how much positive affect at work and work engagement they experienced at work at the end of each workday.

Measures

All of the questionnaires were translated into Croatian. The scales - originally in English - were back translated by two independent bilingual researchers, and the items of the scales remained similar after the translation process. The items and instructions were adapted for daily assessment, which is a common procedure in daily diary studies (Ohly, Sonnentag, Niessen, & Zapf, 2010; Xanthopoulou, Bakker, & Ilies, 2012). As can be seen in detailed descriptions below, these modifications did not reduce the reliability and validity of the scales.

Daily positive affect. Participants rated their positive affect at the end of a specific work day by using a list of seven emotion-related adjectives on a scale ranging from 1 (very slightly) to 7 (extremely). Five items were taken from a short form of the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988), namely inspired, alert, excited, attentive and determined. We added two additional items: happy and satisfied to include less active forms of positive affect as well. Altogether, these seven items dem-

onstrated good internal consistency. Cronbach's alpha varied over the 5 days between α = .92 and α = .98 (M = .94).

Daily work engagement. Daily work engagement was assessed at the end of each workday using the daily 9-item version of the Utrecht Work Engagement Scale (UWES; Schaufeli et al., 2006), which has been validated in previous research (Breevaart, Bakker, Demerouti & Hetland, 2012). Example items are: "I got carried away when I was working today", and "Today, I felt strong and vigorous in my job". All items were scored on a 7-point rating scale ranging from 1 (strongly disagree) to 7 (strongly agree). Cronbach's α varied over the 5 days between α = .93 and α = .96 (M = .95).

Daily self-concordant work motivation. In order to asses daily self-concordant motivation at work, we used the Motivation at Work Scale (MAWS, Gagné, Forest, Gilbert, Aubé, Morin, & Malorni, 2010), which we modified so it could be used on a day level. At the end of each working day, participants rated the extent to which they made effort/got involved in their work for six different reasons, which combines two sub dimensions reflecting self-concordant motivation (identified and integrated motivation) for engaging in work activities (Gagné & Deci, 2005; Gagné et al, 2010), using a scale ranging from 1 (not at all for this reason) to 7 (Completely for this reason). Example items included: "Because I personally considered it important to put effort in this job today", "Because putting effort in this job had personal significance to me today", and "Because the work I did today was interesting". Cronbach's alpha of this scale varied between α = .89 and α = .94 (M = .91) across five days. We obtained a self-concordance score for each day by averaging the scores reported on the six items.

Daily challenge and daily hindrance demands. In order to assess challenge and hindrance demands on a daily basis, we used two eight-item measures created by Rodell and Judge (2009) and adapted this measure for daily use. Participants were asked to indicate how much they agreed with the sixteen items, using a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree) at the end of each workday. The challenge demands items represented perceived levels of workload, time urgency, job responsibility, and job complexity. Example items included "Today, my job has required me to work very hard"; and "Today, I have experienced severe time pressures in my work". Cronbach's alphas for the scale varied between α = .91 and α = .98 (M = .94)

across five days. Example items of the hindrance demands included "Today, I have not fully understood what is expected of me", and "Today, I have had many hassles to go through to get projects/assignments done". Cronbach's alphas for this scale varied between α = .72 and α = .94 (M = .85) across five days.

Control measures. General (trait-level) workload was found to be significantly related to work-related well-being (Ilies, Schwind, Wagner, Johnson, DeRue, & Ilgen, 2007). In order to focus on daily fluctuations in job demands, and to examine whether day-level challenges and hindrances are important over and above general levels of workload, we controlled for a general baseline as measured in the general questionnaire. Objective workload was assessed with one question: "How many hours do you work in a typical week on average?" Subjective workload was assessed with three items on general workload on a scale from 0 (Almost never) to 10 (Almost always): "Do you have to work very fast?"; "Do you have a lot of work to do?", and "How often do you have to work extra hard to finish something?" The reliability of general-level subjective workload measure was α = .82. Moreover, we also controlled for age, gender (male versus female) and tenure (number of years working as a teacher) as possible confounding variables, as previous studies showed that teachers' age, years of experience and gender have significant relationship with work stress and self-efficacy (e.g. Klassen & Chiu, 2010; Warr, 1992).

Data Analysis

We used multilevel linear modeling to analyze the data because the dataset has a two-level hierarchical structure with repeated measures collected at five working days (Level 1) nested within teachers (Level 2). Multilevel models have the capacity to effectively manage unequal group sizes and missing data on the repeated measures, and make use of all available data in the estimation of model parameters (Kwok et al., 2008); thus, they are particularly suitable for longitudinal data analysis. Also, multilevel models can be used to examine simultaneously the effects of between-person (teachers) and within person (day) variables, which accounts for the dependencies between the day-level reports from the same teacher (Kenny, Korchmaros & Bolger, 2003; Snijders & Bosker, 1999).

In the present study, the Level 1 (day level) variables were challenge and hindrance demands, self-concordant work motivation, positive affect at work

and work engagement. Level 2 variables were teachers' age, gender, tenure, weekly work hours and general workload. In order to appropriately test and interpret intra-individual relationships, we centered the Level 1 predictor variables - variables that fluctuate on a within-person level – at the respective person mean, whist centering the person-level variables at the grand mean. This is a typical centering strategy with multilevel models (e.g. Peugh & Enders, 2005). Centering on the person-level focuses specifically on the within-person changes whilst excluding between-person variations. We used the SPSS program for multilevel modeling (Heck, Thomas & Tabata, 2010).

Results

Descriptive Analyses

Table 1 presents the overall means, standard deviations, and zero-order correlations among the variables included in the study. Note that the correlations below the diagonal represent person-level correlations and correlations above the diagonal represent within-person correlations. As can be seen, challenge and hindrance demands correlated significantly and positively. Whereas challenge demands were significantly and positively correlated with self-concordant motivation for work, positive affect and work engagement on a within-person level; hindrance demands were significantly and negatively correlated with these outcomes.

Before testing the hypotheses, we investigated whether multilevel analyses are appropriate by examining intraclass correlations (ICC) of the outcome variables. The proportion of variability or the ICC at Level 1 (within-teachers, day level) in positive affect variance was 0.50 (0.72 / (0.72+0.71)), and for work engagement the ICC was 0.36 (0.82 / (1.47+0.82)), which is consistent with previous studies (Sonnentag, 2003; Xanthopoulou et al., 2009). The proportion of variability at the within-teachers day level for challenge demands was 0.46 (0.83 / (0.99+0.83)), and it was 0.43 (0.46 / (0.61+0.46)) for hindrance demands. These ICC values confirm that these variables fluctuate substantially on a within-person level, and suggest that there is adequate variability at each level of the analysis for multilevel modeling (Heck, Thomas & Tabata, 2010; Snijders & Bosker, 1999), and that a multilevel analysis is needed, for example to avoid inflated type I error rates (Peugh, 2010; Snijders & Bosker, 1999).

Table 1

Means, Standard Deviations, and Correlations for the Study Variables

	M (SD)	1.	2.	3.	4.	5.	6.	7.	8.	9.
Teacher-level variables (N=132)										
1. Age	43.02 (10.16)	.07								
2. Gender (0 = male, 1 = female)	80.39%	.01	.12**							
3. Weekly Work Hours	27.27 (13.28)	.08	.14**	.10*						
4. Workload	7.24 (2.09)	.07	.01	.08						
Day-level variables (N=441)										
5. Challenge Demands	4.01 (1.35)	-.05	.03	.05	.31**		.36**	.15**	.10*	.17**
6. Hindrance Demands	2.31 (1.02)	-.02	-.16**	.01	.22**	.50**		-.15**	-.17**	-.11*
7. Self-Concordance	5.00 (1.32)	-.09	.06	.05	.05	.28**	-.11*		.40**	.65**
8. Positive Affect	4.94 (1.22)	-.05	.03	.10*	.04	.24**	-.17**	.72**		.42**
9. Work Engagement	4.70 (1.49)	-.06	.06	.04	.03	.29**	-.12*	.77**	.81**	

Note. M = Mean, *SD* = standard deviation. Correlations below the diagonal are person-level correlations and correlations above the diagonal are within-person correlations. *$p < .05$. **$p < .01$.

Hypotheses Testing

The main aim of our study was to investigate whether daily self-concordant work motivation mediated the relationship between daily challenge and daily hindrance demands on the one hand, and daily positive affect and daily work engagement on the other hand. The overall hypothesized research model is presented in Figure 1. A two-level hierarchical model assessed the differential effects of the two types of demands (challenges and hindrances) and teachers' work motivation on work-related well-being indicators (positive affect and work engagement) on a day-level, while controlling for age, gender, average weekly work hours and general workload at the between person-level. In the current study, the predictors, the mediator, and the outcome were all measured at a lowest of analysis (level 1, daily reports) nested in level-2 units (teachers). In order to test our hypotheses, we performed separate analyses

for each work-related well-being indicator as an outcome variable (positive affect and work engagement). In each analysis, we first entered the control variables: age, gender, tenure, weekly work hours, and general workload as level 2 variables (Model 1). Second, we added the daily challenge and daily hindrance demands as level 1 predictors (Model 2). Finally, we entered the mediator – daily self-concordant motivation.

We compared the nested models in the analyses, which is a typical strategy in multilevel modeling (Peugh, 2010). Specifically, we tested the improvement of each model over the previous one by computing the differences of the respective log likelihood statistic -2*log and submitting this difference to a Chi^2-test. Each nested model showed an improved model fit for both daily well-being indicators, as can be seen in the Table 2. The comparison showed that the mediation model (Model 3) has the best model fit for both work-related well-being indicators. According to Preacher and Selig (2010), a mediation effect happens when an effect of a predictor (daily challenge demands or daily hindrance demands) on an outcome (daily positive affect or daily work engagement) is transmitted through a mediator variable (daily self-concordant work motivation).

The results of our multilevel analyses are shown in the Table 2. First, we examined whether daily challenge and hindrance demands (predictors) significantly predicted self-concordant work motivation (mediator). In line with our expectations, on days teachers were confronted with more challenge demands, they experienced more self-concordant work motivation (estimate = 0.27, SE = .08, t (431.76) = 3.37, p = .001). In contrast, on days teachers were confronted with more hindrance demands, they experienced lower self-concordant work motivation (estimate = - 0.29, SE = .07, t (430.14) = - 4.09, p < .001).

Second, we tested the associations between daily challenge and hindrance demands and two indicators of daily work-related well-being: positive affect and work engagement. The results in Table 2 (Model 2) showed that on days when teachers perceived job demands as more challenging, they experienced more positive affect at work (estimate = 0.29, SE = .06, t (441.53) = 4.51; p < .001), and more engagement in their work (estimate = 0.24, SE = .08, t (412.10) = 4.69; p < .001). However, on days with more hindering job demands, teachers felt less positive affect at work (estimate = - 0.24, SE = .06, t (441.99) = -3.93; p < .001), and they were also less engaged in their work

(estimate = - 0.20, SE = .08, t (413.12) = -2.58; p = .010).

Third, we also examined the association between self-concordant work motivation (mediator) and work-related well-being (outcomes). The results in Table 2 showed that on days when teachers experienced high levels of self-concordance in their work, they also felt high positive affect (estimate = 0.56, SE = 0.04, t (304.70) = 13.26, p < .001), and were highly engaged in their work (estimate = 0.62, SE = 0.05, t (290.46) = 12.76, p < .001) (Model 3). Finally, mediation analysis aimed to investigate whether self-concordant work motivation (SC) mediated the relationship between challenge and hindrance demands and daily positive affect at work on the one hand, and work engagement on the other hand. The main effect of challenge demands on positive affect was no longer significant (estimate = 0.08, SE = .06, p = 0.19), when we entered self-concordant motivation in the model. This indicated that daily self-concordant motivation fully mediated the relationship between daily challenge demands and daily positive affect at work. To further test this mediation effect, we used the Monte Carlo Method for Assessing Mediation (MCMAM; Selig & Preacher, 2008).

Results of the MCMAM in Table 3 showed that the distribution interval of the indirect effect was above zero at a 95% confidence interval (lower level (LL) = 0.03, upper level (UP) = 0.14, Table 3). This showed that the SC mediation effect was indeed significant because the interval does not include a zero (Selig & Preacher, 2008). This confirms hypothesis 1a.

Similarly, the findings in Model 3 (Table 2) showed that, after adding daily self-concordant motivation as a mediator, the main effect of daily challenge demands on daily work engagement was substantially reduced; however, it remained significant (estimate = 0.24, SE = 0.08, t (388.33) = 2.85, p = .005). Results from the MCMAM in Table 3 confirmed that SC was a significant mediator (LL = 0.07, UP = 0.27), as the interval of the indirect effect at the 95% confidence interval was above zero. Thus, the results confirmed hypothesis 1b and showed that daily self-concordant motivation partially mediated the relationship between daily challenge demands and daily work engagement.

Table 2

Multilevel results of Challenge and Hindrance Demands on Daily Work-related Well-Being through Daily Self-concordant Motivation

	Mediator Self-Concordance	Daily Work Well-Being Indicators							
		Positive Affect				Work Engagement			
		Null-model	*Model 1*	*Model 2*	*Model 3*	*Null-model*	*Model 1*	*Model 2*	*Model 3*
		Fixed Effects							
	Estimate (SE)	*Estimate (SE)*	*Estimate (SE)*	*Estimate (SE)*	*Estimate (SE)*	*Estimate (SE)*	*Estimate (SE)*	*Estimate (SE)*	*Estimate (SE)*
Level 2 (Teacher)									
Intercept	5.14 (0.45)***	4.94 (0.08)***	4.94 (0.09)***	5.21 (0.39)***	5.32 (0.40)***	4.70(0.11)***	4.54(0.57)***	4.86(0.51)***	4.77(0.52)***
Age	-0.19 (0.15)		-0.01 (0.14)	0.03 (0.13)	0.06 (0.13)		-0.07(0.18)	-0.05(0.17)	-0.08(0.17)
Gender	-0.08 (0.24)		0.01 (0.08)	-0.14 (0.13)	-0.17 (0.21)		0.10(0.30)	-0.10(0.27)	-0.04(0.28)
Tenure	-0.19 (0.15)		0.10 (0.14)	0.10 (0.13)	0.13 (0.13)		0.02(0.18)	0.04(0.17)	0.03(0.16)
Work Hours	0.02 (0.09)		0.11 (0.11)	0.08 (0.08)	0.12 (0.08)		0.08(0.11)	0.05(0.10)	0.07(0.10)
Work Load	-0.01 (0.09)		-0.01 (0.09)	-0.06(0-07)	-0.01 (0.08)		-0.04(0.11)	-0.13(0.10)	-0.10(0.11)
Level 1 (Day)									
Challenge Demands	0.27 (0.08)**			0.29 (0.06)***	0.08 (0.06)			0.41(0.09)***	0.24(0.08)**
Hindrance Demands	-0.29 (0.07)***			-0.24 (0.06)***	-0.17 (0.05)**			-0.20(0.08)**	-0.08(0.07)
Self-Concordance					0.56(0.04)***				0.62(0.05)***
		Variance-Covariance Estimates							
Level 2 variance	0.75 (0.14)***	0.71 (0.06)***	0.70 (0.11)***	0.53(0.09)** *	0.68 (0.10)***	1.47(0.21)***	1.45(0.22)** *	1.03(0.17)***	1.23(0.18)***
Level 1 variance	0.74 (0.06)***	0.72 (0.12)***	0.71 (0.06)***	0.66(0.05)** *	0.38 (0.03)***	0.82(0.06)***	0.82(0.07)** *	0.80(0.07)***	0.51(0.04)***
-2 Log Likelihood	1277.76	1313.78	1288.51	1238.97	1051.24	1463.85	1433.51	1314.24	1176.49
Diff-2 Log			25.27***	49.54***	187.73***		30.34***	119.27** *	137.75***
Df			5	2	1		5	2	1

Note. *$p < .05$. **$p < .01$. ***$p < .001$. *N*= 441 occasions

Table 3

Confidence Intervals of Mediation Tests: The Results from the Monte Carlo Method for Assessing Mediation (MCMAM)

x → m → y	95% Confidence Interval	
	Lower level	*Upper Level*
Challenge Demands → Self-Concordance →Positive Affect	0.03	0.14
Challenge Demands → Self-Concordance → Work Engagement	0.07	0.27
Hindrance Demands → Self-Concordance →Positive Affect	-0.25	-0.08
Hindrance Demands → Self-Concordance → Work Engagement	-0.27	-0.09

Similar analyses were also performed to test whether daily self-concordance is a mediator in the daily relationship between hindrance demands on the one hand and positive work-related well-being (i.e., positive affect and work engagement) on the other hand. Specifically, after adding daily self-concordant motivation as a mediator in the model (Model 3 in Table 2), the main effect of daily hindrance demands on daily positive affect was substantially reduced, although it remained significant (estimate = -0.17, SE = 0.05, t (415.71) = - 3.11, p = .002). The MCMAM confirmed that daily self-concordant motivation was a significant partial mediator (LL = -0.25, UP = -0.08, Table 3) in the relationship between hindrance demands and positive affect, which supported hypothesis 2a.

After adding daily self-concordant motivation in the model with daily work engagement as the outcome, the main effect of hindrance demands was no longer significant (estimate = -0.08, SE = .07, p = .26.), which indicated that daily self-concordant motivation fully mediated the relationship between daily hindrance demands and daily work engagement. The MCMAM showed that the distribution interval of the indirect effect was below zero at a 95% confidence interval (LL = -0.27, UP = - 0.09, Table 3), which further confirmed hypothesis 2b. Thus, the mediation analysis confirmed our expectations also in the context of hindrance demands as they demonstrated that daily self-concordant work motivation partially mediated the relationship between daily hindrance demands and daily positive affect at work (hypothesis 2a), and that daily self-concordant work motivation fully mediated the relationship between daily hindrance demands and daily work engagement (hypothesis 2b).

Discussion

The main goal of this study was to examine whether daily self-concordant work motivation functions as an underlying mechanism that may explain differential associations between daily challenge and hindrance job demands and daily positive work-related well-being (i.e. daily positive affect and daily work engagement). In this way, the study aimed to bring novel insights into the roles of work motivation and on more proximal factors that foster (vs. thwart) work-related well-being in everyday work life. The results of our diary study among 153 secondary school teachers provided full support for the hypothesized model. On days when teachers experienced more challenges, they also experienced more self-concordant work motivation, and, in turn, they reported higher positive affect and more engagement in their work on the same day. In contrast, on days when teachers experienced more hindrance demands, they also experienced lower self-concordant motivation, which, in turn, was linked to less daily positive affect and less daily work engagement.

Theoretical Contributions

The current study makes several important contributions to the existing literature. First, the study demonstrates that employees have different experiences of job demands, motivation and well-being on different work days, and that these experiences are significantly interrelated. We found that daily challenge demands foster daily positive affect at work and work engagement, whilst daily hindrance demands undermine these positive experiences. These findings are in line with previous research and theoretical notions (Crawford et al., 2010). However, our findings provide further insights into the sometimes contradictory findings of the associations between job demands and well-being.

More specifically, some studies found nonsignificant relationships between job demands and work engagement (Schaufeli & Bakker, 2004; Schaufeli, Bakker, & Van Rhenen, 2009), whereas others found that job demands were positively related to work engagement (Schaufeli, Taris, & Van Rhenen, 2008). In addition, Sonnentag (2003) found that whilst some job demands (i.e. missing or outdated information) had negative associations with work engagement, other demands (i.e. time pressure) showed a nonsignificant association with work engagement. Our study shows that it is important to differentiate between challenge and hindrance job demands, because they have differential

effects on self-concordant motivation. Whereas challenge demands motivate teachers, and thus contribute to their vigor, dedication, and absorption; hindrance job demands undermine teachers' motivation, and reduce teachers' levels of vigor, dedication, and absorption.

Second, our study extends the existing literature on hindrance and challenge demands by showing that self-concordant work motivation, as a specific type of motivation (Gagné & Deci, 2005), is a mediator in the daily relationship between challenge and hindrance demands and work-related well-being. This important outcome can be explained as follows. When teachers encounter daily challenge demands, they tend to perceive them as potentially rewarding and meaningful (although effortful and not necessarily pleasant), which aligns with their personal values and interests and stimulates daily self-concordant work motivation, and, subsequently, higher daily well-being (i.e. daily positive affect at work and daily work engagement). These findings are interesting as they show that challenge demands stimulate curiosity, active approach and intrinsic motivation, and, in turn, lead to higher work-related well-being on a day-to-day basis.

In contrast, our findings suggest that daily hindrance demands are particularly detrimental for daily work engagement and daily positive affect at work because they lead to a sense that daily work is not meaningful, i.e. hindrance job demands lower daily self-concordant work motivation. When teachers encounter hindrance demands, such as receiving assignments without adequate resources and materials, or having to go through many hassles (e.g., high administrational workload), they see these demands as potential threats and obstacles that are not aligned with their interests and values. This translates into low levels of self-concordant work motivation, meaning that teachers do not feel autonomously and intrinsically motivated to do their work, which, in turn, lowers their daily work-related well-being. In other words, the negative relationship between daily hindrance demands and daily work-related well-being can be explained, at least in part, by mediating effect of daily self-concordant work motivation.

Third, the study integrates and explains somewhat contradictory findings on teachers' work stress and well-being. Specifically, teaching has been shown to be one of the most stressful jobs along with ambulance workers, social services, prison and police officers (Roorda, Koomen, Spilt, & Oort, 2011), and

these high job demands often lead to burnout, which can have detrimental effects on teachers' work performance (e.g. Feuerhahn, Stamov-Roßnagel, Wolfram, Bellingrath, & Kudielka, 2013). Nevertheless, previous studies also showed that many teachers experience high work engagement ((Hakanen, Bakker, & Schaufeli, 2006), job satisfaction (Bishay, 1996), and enthusiasm regarding work despite the high daily job demands (Simbula, 2010).

Our study provides a deeper understanding of these findings because it shows that high demands are not always negative. Indeed, some demands, when perceived as challenges (e.g., a large number of projects and/or assignments), can be experienced as valuable and meaningful (e.g., because they promote pupils' well-being). This, in turn, can foster teachers' work motivation and work-related well-being, which is important because maintaining high levels of teachers' well-being has proven to be beneficial not only for teachers themselves, but also for pupils they work with (Roorda et al., 2011).

In addition to broadening the knowledge on the nature of different types of job demands and their relationships with work motivation and well-being, our study also adds to the existing literature by demonstrating the substantial within-person fluctuations of challenge and hindrance demands. Specifically, bearing in mind that scientific evidence for these fluctuations is still very limited, our study provides further confirmation that both challenge and hindrance demands indeed fluctuate substantially on a within-person level. We show that almost half of the variance in both challenge (46%) and hindrance demands (43%) can be attributed to these day-to-day fluctuations. This suggests that examination of the within-person fluctuations of work-related well-being and work conditions is necessary in order to acquire more insight into how and why teachers show different levels of engagement and positive affect, depending on proximal, daily factors such as different types of job demands and self-concordant work motivation (Xanthopoulou et al., 2012). This can add to our understanding of the circumstances that foster employees to feel and function better at work in their everyday work life.

Limitations

The current study has a few limitations that should be acknowledged. First, although self-reports are valid and useful method of well-being assessment (Sandvik, Diener, & Seidlitz, 2009), a multi-methodological approach that combines self-reports and objective data (e.g. various indicators of teachers'

performance) may be useful. Also, by using more sources of information (e.g. colleagues', pupils' and/or school principals' reports), additional aspects of the teachers' motivation, well-being and their impact could be examined. Still, this study demonstrates that daily hindrance and challenge demands, self-concordant work motivation and daily well-being show meaningful intra-individual fluctuations on the day level.

The second limitation was that the participants formed a relatively homogenous sample of Croatian secondary school teachers. In order to be able to generalize our findings to all teachers (i.e. primary schools, universities), and to other working populations, it is necessary to replicate the findings in different populations. Third, the variables under study refer to rather subtle intrapersonal processes. Thus, it is possible that sole involvement in this study made teachers think more and evaluate the reasons why they put effort in their work, which they perhaps may not normally do in their everyday work life in terms of appraisal. However, as our study shows, it seems that these processes indeed occur within teachers and that they can be captured using diary methodology. Importantly, the daily fluctuations in the levels of job demands are related to well-being in a theoretically meaningful way.

Practical Implications and Conclusions of the Study

The present study shows that teachers' daily work related well-being partially depends on the differential effects of daily challenge and hindrance job demands on daily self-concordant work motivation. Challenge job demands stimulate teachers' work-related well-being through strengthening their self-concordant motivation for work, whereas hindrance demands weaken it. These findings are important because they can be used to provide more evidence-based strategies aimed at fostering school well-being and creating more supportive school contexts (Spilt et al., 2011).

They imply that principals could promote teachers' well-being in their everyday work life by limiting the amount of hindrance demands, such as unclear and contradictory work tasks the teachers have to cope with. However, when situations at school cannot be changed easily and do not allow for demands reduction, such as pupils' misbehavior or uncooperative parents, the negative effects of coping with those demands may be weakened by strengthening teachers' self-concordant work motivation by giving them more challenges than hindrances, and enabling them to find meaning and value in their work.

Therefore, it seems necessary for teachers to sustain interest, sense of meaning and relevance in their work in order to thrive in their work on a daily basis.

CHAPTER FIVE:

Challenge Versus Hindrance Job Demands and Well-Being: A Diary Study on the Moderating Role of Job Resources

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Abstract

The present study among 158 primary school teachers in Croatia integrated the challenge-hindrance stressor framework in Job Demands – Resources theory. We hypothesized that hindrance job demands would be negatively related to well-being, and that job resources could buffer this relationship. In addition, we hypothesized that challenge job demands would be positively related to well-being, and that job resources would boost this relationship. The study employed a quantitative daily diary methodology. Teachers filled out a background questionnaire and a daily diary booklet for three to five consecutive workdays (N = 438 occasions). Results of multilevel analyses showed that daily hindrance job demands had a negative relationship with daily positive affect and work engagement. Daily job resources buffered this relationship. In contrast, daily challenge job demands had a positive relationship with positive affect and work engagement. Daily job resources boosted this relationship. We discuss the implications of these findings for JD-R theory and practice.

Challenge Versus Hindrance Job Demands and Well-Being: A Diary Study on the Moderating Role of Job Resources

The direct and interactive effects of job demands and job resources on various work-related outcomes have received considerable research interest (Demerouti & Bakker, 2011; Halbesleben, 2010). The general pattern that emerges is that job demands cost energy and are unique predictors of strain, whereas job resources have motivating potential (cf. Hackman & Oldham, 1980) and are particularly predictive of work engagement (Bakker & Demerouti, 2014). Indeed, job demands-resources (JD-R) theory (Bakker & Demerouti, 2014) proposes that job resources are directly related to positive indicators of work-related well-being, whereas the associations between job demands and positive indicators of work-related well-being depend on the nature of the demand (Bakker & Demerouti, 2014; Van den Broeck, Van Ruysseveldt, Vanbelle, & De Witte, 2013). Specifically, in their meta-analysis, Crawford, LePine, and Rich (2010) showed that hindrance job demands have negative relationships with work engagement, and that challenge job demands have positive associations with work engagement.

Thus, it is conceivable that job resources play different roles in the relationship between challenge job demands and well-being than in the relationship between hindrance job demands and well-being. Previous research has suggested that job resources – including social support, autonomy, performance feedback, and opportunities for development – can buffer the unfavorable impact of job demands on well-being (Bakker, Demerouti, & Euwema, 2005; Xanthopoulou et al., 2007). Previous research has also suggested that job resources can become particularly salient when job demands are high and boost work-related well-being (e.g., Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007; Bakker, Van Veldhoven, & Xanthopoulou, 2010). However, these studies did not differentiate between challenge and hindrance job demands. Do job resources particularly buffer the relationship between hindrance (instead of challenge) job demands and well-being? Do job resources boost well-being particularly under the conditions of challenge demands (but not hindrance demands)?

In order to gain more insight into these matters, the major goal of the present study is to examine the roles of job resources in the relationship between different types of job demands and positive indicators of work-related well-

being, namely, work engagement and positive affect. In this way, the current study aims to expand JD-R theory by integrating it with the challenge-hindrance stressor framework (Cavanaugh, Boswell, Roehling, & Boudreau, 2000; LePine, Podsakoff, & LePine, 2005). The challenge-hindrance stressor framework posits that the somewhat inconsistent findings on the association between job demands and work-related well-being could, at least in part, be explained by different types of job demands. Although both types of demands are effortful and can be energy draining, challenge demands can trigger positive emotions and cognitions and increase work engagement and performance, whereas hindrance demands trigger negative emotions and cognitions and seem to undermine work engagement and performance. Thus, challenge demands can be seen as facilitating goals that foster motivation and not only the energetic processes.

The current study aims to make a unique contribution to the literature by integrating the challenge-hindrance stressor framework in JD–R theory and by revealing the different roles of job resources in the interplay between challenge and hindrance job demands and work-related well-being on a within-person level. More concretely, the study employed a daily diary methodology that enabled us to investigate whether teachers experience most positive affect and work engagement on the days they are confronted with high challenge (vs. low) job demands and high job resources, and lowest levels of positive affect and engagement on the days they are confronted with high (vs. high) hindrance demands and low job resources. We used two positive indicators of work-related well-being — positive affect and work engagement — which is in line with Bakker and Oerlemans' (2011) conceptualization of subjective well-being in organizations based of the circumplex model of affect (Russell, 2003). Positive affect and work engagement have been shown to fluctuate substantially on a within-person level and to predict optimal employee functioning (Xanthopoulou, Bakker & Ilies, 2012).

Although work engagement has been studied most often (e.g. Halbesleben, 2010), other work-related states have been investigated as indicators of work-related well-being as well. The JD-R model is a broad model that has been able to predict a range of well-being and attitudinal indicators, including burnout, work engagement, and commitment (Bakker & Demerouti, 2014). The present study conceptualizes positive affect as various positive emotional states (e.g., inspired, happy, alert, satisfied) that are felt in different degrees

during different working days (Watson & Clark, 1992). Positive affect at work has been found to have positive associations with longer-term well-being and positive organizational functioning (Ashkanasy & Humphrey, 2011; Madrid, Patterson, Birdi, Leiva, & Kausel, 2013).

Although these notions are not new as they have been discussed previously (e.g. Bakker & Demerouti, 2014), only one study empirically examined the interactions between resources and challenge and hindrance demands on a within-person level. Bakker and Sanz-Vergel (2013) showed that weekly challenge demands strengthened (boosted) the effect of weekly personal resources (i.e., self-efficacy and optimism) on weekly well-being, whereas weekly hindrance demands undermined this effect. The study used employees' interpretations of which demands are considered challenging, and which demands are considered hindering, and showed that these subjective perceptions are indeed important in assessing the types of demands. However, in the current study, although the interpretation of demands as either challenges or hindrances may be a matter of individual perception to a certain extent, we posit that certain demands are typically perceived as challenges and others as hindrances by most employees (Crawford, et al., 2010; Lepine et al. 2005). Moreover, Bakker and Sanz-Vergel study focused on personal resources in particular, and not on job resources – as we will do in the present study.

Theoretical Background and Hypotheses

We conceptualized job demands based on the LePine et al. (2005) challenge and hindrance stressor framework. Challenge demands, including workload, job complexity, and time urgency present work tasks and conditions that require effort and energy, but efficient dealing with them can result in growth, learning, and goal attainment. For instance, highly complex work tasks may require high levels of energy investment, but can also promote mastery and competence. In contrast, hindrance demands present work tasks and conditions that are require effort and energy, but do not have the growth potential (LePine et al., 2005; Van den Broeck, De Cuyper, De Witte, & Vansteenkiste, 2010). Typical hindrance demands are role ambiguity, job insecurity, constraints, and interpersonal conflicts.

Two meta-analyses have confirmed these notions. LePine et al. (2005) analyzed 101 different samples and provided support for the distinction be-

tween challenge and hindrance job demands by showing that challenge and hindrance demands have differing relationships with strain, motivation and performance consistent with theory. In a similar vein, Crawford et al. (2010) investigated 64 different samples, and confirmed that although both types of demands were positively related to burnout, challenge demands had strong positive associations with engagement, whereas hindrance demands had strong negative associations with engagement.

Job demands–resources theory. The JD-R theory (Bakker, 2011; Bakker & Demerouti, 2014) posits that two main categories of job characteristics - job demands and job resources - are crucial for work-related well-being, regardless of the occupational setting. Job resources foster learning, development, and goal achievement, and are therefore particularly related to motivation and work engagement. In contrast, job demands require considerable physical and/or psychological efforts and skills, and therefore involve physiological and psychological costs, such as exhaustion and burnout (e.g. Van den Broeck et al. 2013).

Next to these main effects, JD-R theory posits that job demands and resources have an interactive effect on work-related well-being. Job resources have the capacity to reduce the costs of job demands – this is called the buffer hypothesis. In addition, job resources have particularly a positive impact on work-related well-being when job demands are high – this is called the boost hypothesis (Van den Broeck, Van Ruysseveldt, Smulders, & De Witte, 2010). Despite the progress in our understanding of these interaction effects (e.g., Bakker et al., 2010; Hakanen, Bakker, & Demerouti, 2005), it is still unclear under which conditions the buffering effect occurs and under which conditions the boosting effect occurs.

We argue that the effects of interactions between job resources and job demands on work-related well-being depend upon the type of job demands on a day-to-day level. In line with the challenge-hindrance stressor framework, we posit that (a) daily job resources buffer the negative daily relationship between daily hindrance demands and daily work-related well-being, and that (b) daily job resources are particularly positively related to daily work-related well-being when combined with high levels of daily challenge demands (but not daily hindrance demands).

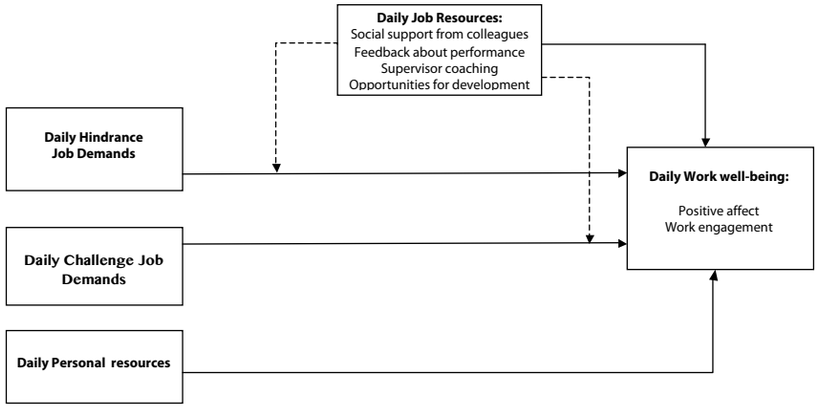

Figure 1. Hypothesized overall model (dashed lines refer to indirect effects)

The buffer hypothesis. The buffer hypothesis within JD-R theory builds upon the Job Demands-Control Model (JD-C; Karasek, 1979), which states that the most significant predictor of job strain is the combination of high job demands and low job control, and that job control can moderate the negative effects of high demands on well being. The JD-R theory has widely expanded this idea to incorporate a range of job demands and resources (Bakker & Demerouti, 2014), and the JD-R theory's buffer hypothesis posits that the costs associated with high job demands are lower for employees with sufficient job resources because these job resources enable efficient coping (Bakker et al., 2005).

For instance, using a sizable sample of Finnish dentists, Hakanen et al. (2005) showed that the negative relationship between job demands (e.g., unfavorable physical environment) and work engagement was weaker for dentists with many (vs. few) job resources (e.g., positive patient and peer contacts, variability in professional skills). Similarly, in a study involving higher education employees, Bakker et al. (2005) found that job resources (e.g., autonomy, performance feedback) buffered the impact of job demands (e.g., work overload, emotional demands) on burnout (i.e. exhaustion, cynicism, reduced professional efficacy). These studies provided considerable support for the buffer hypothesis; however, they also showed that not all possible combinations of job demands and resources had a significant interaction effect (e.g.,

Bakker, et al., 2004; Hu, Schaufeli & Taris, 2011). For example, in the study by Xanthopoulou et al. (2007), autonomy did not buffer the negative effect of workload on burnout. This may be because autonomy boosted the impact of workload (typically considered as a challenge demand); however, this could not be examined because the focus of the study was on negative indicators of work-related well-being.

We argue that daily job resources buffer the negative effects of daily hindrance demands on daily work-related well-being. Hindrance demands, such as role conflict and role ambiguity (Crawford, et al., 2010; Rodell & Judge, 2009), cost energy and form barriers in reaching organizational goals. On days when employees experience high hindrance demands, having access to sufficient job resources may undo their negative effects because they are instrumental in achieving work goals and enhance willingness to dedicate effort to the work task (Meijman & Mulder, 1998).

For instance, daily social support can help employees to cope with their daily hindrance job demands by providing them with both instrumental support and protection from consequences of stress. Similarly, on days employees receive social support from their supervisors, employees will have a sense of being understood and appreciated, and may receive additional assets in coping with their hindrance demands. Moreover, by providing specific and accurate information in a positive manner, adequate daily feedback can provide guidance for working efficiently and optimize daily communication between supervisors and employees. This can prevent difficulties in work and relationships. Finally, daily opportunities for growth and learning may increase the likelihood of being successful in achieving one's work goals. Stated in a more formal way, we formulate our first hypotheses:

Hypothesis 1. Daily job resources moderate the relationship between daily hindrance demands and (a) daily positive affect, and (b) daily work engagement. In particular, the negative relationship between hindrance demands and (a) positive affect and (b) work engagement is weaker for teachers who have high (vs. low) levels of job resources (buffer effect).

The boosting hypothesis. The boosting hypothesis builds upon the conservation of resources theory (COR; Hobfoll, 2002), which acknowledges that resources are not only necessary to deal with job demands but they are also important in their own right, and are particularly relevant when employees

are confronted with high job demands. The boosting hypothesis posits that the combination of high job demands and high job resources enhances work motivation and stimulates work-related well-being (Bakker et al., 2007; Bakker et al., 2010). A few studies examined whether job resources are indeed particularly salient under highly demanding working conditions. For example, in a cross-sectional study among 12,359 employees working in different types of organizations, Bakker et al. (2010) revealed that job resources (e.g., learning opportunities, autonomy) had a positive relationship with work enjoyment and organizational commitment when job demands (e.g., workload, emotional demands) were high (vs. low). Also, in a survey study among Finnish teachers, Bakker et al. (2007) reported that job resources positively influenced work engagement when teachers experienced high levels of pupil misbehavior. Thus, when combined with high job resources, dealing with pupils' misbehavior can be stimulating in finding the most effective strategies of class management.

These studies supported the notion that not all job demands are necessarily detrimental; however, these studies did not directly differentiate between hindrance and challenge job demands. Also, studies that examined the boosting hypothesis on the within-person level are very scarce. One of the few examples is the dairy study by Kühnel, Sonnentag, and Bledow (2012) who followed 114 employees via electronic questionnaires three times a day over the course of one working week. Their findings revealed that on days with higher job control, time pressure was beneficial for work engagement, whilst on days with lower job control time pressure was detrimental for work engagement. Note however, that these authors only studied one specific job demands x resources interaction.

The current study aims to provide novel information by examining whether daily job resources become particularly salient under the conditions of high daily challenge demands, and boost daily work engagement and daily positive affect. We argue that job resources have the highest motivational potential when used in combination with challenge demands because, when confronted with complex problems or very challenging issues at work, access to sufficient job resources can enhance the sense of competence and prospects that one's work behavior and effort will have positive results (Widmer, Semmer, Kälin, Jacobshagen, & Meier, 2012). This can foster work engagement and positive affect. In the school context, teachers might be particularly stimulat-

ed to mobilize their job resources (e.g., asking colleagues for help, developing a new skills) on days when they experience high challenge demands (e.g., work complexity, high workload) because the combination of high resources and high challenges may foster their learning and involvement in work. This, in turn, might promote their daily work-related well-being. We formulate our second hypotheses accordingly:

Hypothesis 2**.** Daily job resources moderate the relationship between challenge demands and daily (a) positive affect and (b) work engagement. In particular, the positive relationship between challenge demands and (a) positive affect and (b) work engagement is stronger for teachers who have high (vs. low) levels of job resources available (boosting effect). The overall research model is presented in Figure 1.

In addition, recent research has shown that personal resources—individuals' aspects reflecting resiliency and ability to efficiently control and impact upon their environment (Hobfoll, Johnson, Ennis, & Jackson, 2003) —significantly and positively relate to various favorable employee outcomes, such as work-related well-being, commitment, and job performance– also on a daily basis (e.g. Luthans, Norman, Avolio, & Avey, 2008; Xanthopoulou, Bakker, & Fischbach, 2013). Thus, personal resources have been recognized as important predictors in JD-R theory (Xanthopoulou, Bakker, Demerouti & Schaufeli, 2007; 2009). In order to show the unique effect of job resources on both positive affect and work engagement, as well as the unique job resources and challenge and hindrance job demands interaction effects, the current study controlled for personal resources.

Method

Participants

A sample of 158 primary school teachers, 130 women and 28 men, aged 41.09 years on average (SD = 9.06), and working throughout Croatia participated in this study. Most of the participants worked full-time, working 33.09 (SD = 9.32) hours per week on average. Teachers' tenure ranged from 1 to 34 years (M = 15.14, SD = 10.71). Participants' socioeconomic background was relatively homogeneous as all of the participants hold either a bachelors or a master's degree, and all of them have the Croatian nationality. Most of the teachers reported being either married or in a relationship (83.5%); some of them were single (8.9%), divorced (6.3%) or widowed (1.3%). Altogether, the sample fairly represented the typical sociodemographic distribution of primary school teachers in Croatia as, according to the Croatian Bureau of Statistics (2012), most of the primary school teachers in Croatia are female (77.9%), work full-time (89%), and are above 40 years old (62.2%).

All of the 158 teachers filled in the initial background questionnaire. Among them, 92 teachers filled in the diary at least two times, 79 of them filled it in three times, 65 four times, and 52 teachers filled in the diary five times (total N = 438 occasions). The sample size is adequate for a diary study (Ohly, Sonnentag, Niessen, & Zapf, 2010; Scherbaum & Ferreter, 2009), implying that we have sufficient power to test the hypotheses. In order to check whether there were some systematic differences between participants based on the amount of diaries they filled in, we performed a dropout analysis. The analysis showed no significant differences between participants who filled out the diary once and those who filled it out more often in any of the background variables, namely, age ($F(4, 156) = 0.85$, $p = .43$), weekly work hours ($F(4, 155) = 0.28$, $p = .75$), and tenure ($F(2, 153) = 1.08$, $p = .34$). There were also no significant differences on the day-level variables, namely, on the measures of challenge ($F(4, 365) = 0.72$, $p = .58$), and hindrance demands ($F(4, 365) = 0.76$, $p = .55$), job resources ($F(4, 357) = 0.94$, $p = .44$), personal resources ($F(4, 359) = 0.36$, $p = .84$), positive affect ($F(4, 375) = 0.39$, $p = .81$), and work engagement ($F(4, 352) = 0.43$, $p = .77$).

Procedure

We contacted a sample of 95 primary schools' principals throughout Croatia by telephone and e-mail, explained the main aims of the study and asked the principals to e-mail the invitation for participation in the study on "well-being at work" to teachers in their school. The invitation included a link to the online questionnaires and specific details about the study, an informed consent form, and a registration form. Most of the contacted principals agreed to forward the invitations (92%). However, we could not determine the precise response rate because we could not establish the number of teachers who received the invitation for participation. We assume that the response rate was low (between 10 and 20%) because the data collection took place at the end of the school year (May and July 2013) when teachers had substantial workload. Relatively low response rates are typical for web-based diary studies without personal contact with participants (e.g. Cook, Heath & Thompson, 2000) as diary studies require considerable time and effort. Nonetheless, bearing in mind that several previous studies revealed that the low response rate did not lead to bias in daily diaries (e.g. Bolger, DeLongis, Kessler, & Schilling, 1989), and that the study particularly focuses on within-person fluctuations, we do not think that the low response rate presents a major limitation.

We developed an Internet application designed specifically for this study ("How happy are primary school teachers in Croatia? A work-related well-being diary"). All of the scales were originally in English, and were back translated in Croatian by two independent experts. When participants joined the study, they were first asked to fill in a background (trait-level) questionnaire consisting of relevant sociodemographic information, and general feelings and experiences at work. Next, they were invited to complete a short diary survey every day after work for five consecutive workdays. On the first screen of the diary survey, teachers reported the current day of the week, and rated how they felt during this particular day at work. On the next page they responded to questions on job demands, job resources and personal resources. Thereafter, on the final page, teachers rated how engaged they felt at work today. Participants were informed that the data would be treated confidentially and anonymously. The study did not involve any form of deception or risk to the participants beyond that encountered in everyday life, and the official research ethics committee of The Ministry of Science, Education and Sports of the Republic of Croatia approved our study.

Measures

Day-level measures. Day-level measures refer to the measures of work-related well-being, challenge and hindrance job demands, self-concordant motivation for work, and personal resources that were included in the included in the daily diary questionnaire. Using an approach suggested by Shrout and Lane (2012), we computed both within- and between-person reliability coefficients for the work engagement, positive affect, job resources, personal resources, and job demands scales. First, we computed variance component estimates using analysis of variance. Second, building upon generalizability theory, we calculated reliability estimates based on these variance components.

Daily work-related well-being. In order to capture the teachers' daily well-being at work, we assessed the degree to which teachers experienced positive affective states and how engaged they were during work on a specific day.

Positive affect. Positive affect was measured via the widely used and validated positive and negative affect schedule (PANAS; MacKinnon et al., 1999). Specifically, we used a short form of the positive affect subscale consisting of five items - inspired, alert, excited, and attentive and determined. However, we added two additional items: happy and satisfied, in order to capture additional aspects of positive affect as happy and satisfied represent more passive, pleasurable states (Fredrickson, 2003; Russell, 2003). Participants rated how they felt during their work today on a 1 (not at all) to 7 (very much) scale. The reliability analyses showed that both between-person (RKR= .98), and within-person reliability was high (RC= .86).

Work engagement. In order to measure daily work engagement, participants filled in the daily version of the 9-item version of the Utrecht work engagement scale (UWES; Schaufeli et al., 2006), which has been validated in previous studies (e.g. Breevaart, Bakker, Demerouti, & Hetland, 2012). Example items are: "I got carried away when I was working today", and "Today I felt strong and vigorous in my job". All items were scored on a 7-point rating scale ranging from 1 (strongly disagree) to 7 (strongly agree). The reliability analyses (Shrout & Lane, 2012) showed that both between-person (RKR= .98), and within-person reliability was high (RC= .92).

In order to test whether the factor structure of the work engagement and positive affect corresponds to the hypothetical two-factor model of work-related well-being described in this study, the items from the UWES and PANAS (with two additional items happy and satisfied) were subjected to confirmatory factor analysis (CFA) using Amos (Arbuckle, 2006). The two-factor model, constructed by assigning the UWES items to one latent factor and the PANAS items to a second latent factor, was compared to one-factor model. The Chi-square difference test showed that the two-factor model of work-related well-being fits significantly better to the data than the one-factor model ($\Delta\chi2 = 450$, $\Delta df = 1$; $p < .001$). The RMSEA of 0.08 and CFI of .97 showed a good overall fit of the two-factor model, which indicated support for the hypothesized factor structure (Kline, 1998; Schermelleh-Engel, Moosbrugger, & Müller, 2003). The goodness of fit indices of the two-factor model of work-related well-being model showed an acceptable model fit (CFI = .97; IFI = .97; RMSEA = 0.08; GFI = .92), better than one-factor solution (CFI = .93; IFI = .93; RMSEA = 0.11; GFI = .84), which indicated support for the hypothesized factor structure (Kline, 1998; Schermelleh-Engel, Moosbrugger, & Müller, 2003).

Daily challenge and hindrance demands. Challenge and hindrance demands were measured using a 16-item scale by Rodell and Judge (2009) that was adapted for the diary study. Participants reported the extent to which they agreed with the statements about their work that may or may not influence their level of stress today, using a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree). The challenge demands subscale consisted of eight items reflecting the perceived levels of workload, time urgency, job responsibility and job complexity. Example items included "Today, my job has required me to work very hard", and "Today, my job has required me to use a number of complex or high-level skills". The reliability analyses (Shrout & Lane, 2012) showed that both between-person (RKR = .97), and within-person reliability was high (RC = .80). The hindrance demands subscale consisted of eight items assessing excessive bureaucracy, role ambiguity, role conflict, and hassles. Example items included "Today, I have not fully understood what is expected of me" and "Today, I have had many hassles to go through to get projects/assignments done". The between-person reliability of the scale was high (RKR = .94), however, within-person reliability was moderate (RC = .65).

We executed CFA in order to check whether challenge and hindrance demands cover two different constructs. The two-factor model, constructed by

assigning the challenge demands subscale items to one latent factor and the hindrance demands subscale items to a second latent factor, was compared to the one-factor model. The Chi-square difference test showed that the two-factor model of job demands fits significantly better to the data than the one-factor model ($\Delta\chi2 = 162.4$, $\Delta df = 1$; $p < .001$). Also, the goodness of fit indices of the two-factor model of job demands showed an acceptable model fit to the data (CFI = .93; RMSEA = 0.08), which supported the hypothesized challenge-hindrance demands factor structure (Kline, 1998; Schermelleh-Engel, Moosbrugger, & Müller, 2003).

Daily job resources. We measured daily job resources using three items to asses social support from colleagues (e.g., "I felt valued by my colleagues in my work today."); three items to assess performance feedback (e.g., "I received sufficient information about the results of my work today"); four items for assessing supervisor coaching (e.g., "I felt valued by my supervisor today"), and three items for assessing opportunities for development (e.g., "My work offered me the possibility to learn new things today") (Bakker et al., 2004). Daily job resources scale showed high between-person (RKR= .98), and high within-person reliability (RC= .88).

Daily personal resources. Previous studies showed that personal resources are highly relevant for employees' work-related well-being (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009), and can contribute to increasing employee's commitment and preventing exhaustion over time (Xanthopoulou et al., 2009). The measure of personal resources was the Psychological capital questionnaire (PCQ; Luthans, Avolio, Avey, & Norman, 2007). The PCQ underlies the four dimensions of hope, resilience, optimism, and efficacy, and has demonstrated reliability and construct validity (Avey, Reichard, Luthans, & Mhatre, 2011). We used shortened version of the PCQ, consisting of twelve items that were adapted for the diary study. We particularly focused on items that were most likely to vary on a daily basis, as it is often the practice in diary studies (Binnewies & Wörnlein, 2011). The participants were asked to describe how they thought about themselves "today at work", using a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree). Example items include: "Today I was pretty successful at work" and "Today, I felt confident in discussions the school's strategies". Our analyses showed that the shortened scale was highly reliable, both on a between-person (RKR= .97) and within-person level (RC= .84).

Data Analysis

Bearing in mind that our dataset had a two-level hierarchical structure with repeated daily measures (level 1) nested within teachers (level 2), we used multilevel linear modeling (MLM) to analyze the data. In the present study, all variables in the analyses were level 1 (daily) variables. We employed a common centering strategy with multilevel models (Enders, 2007; Peugh, 2010; Snijders & Bosker, 1999), namely, we centered the level 1 predictor variables - variables that fluctuate on a within-person level – at the respective person mean. We used the SPSS program for MLM (Peugh & Enders, 2005).

Results

Descriptive Analyses

Table 1 presents the overall means, standard deviations (SD), and zero-order correlations among variables included in the study. Please note that the correlations below the diagonal represent teacher-level correlations and correlations above the diagonal represent day-level correlations.

Multilevel Analyses Results

Preliminary analyses. In order to examine whether multilevel analyses were appropriate, we investigated the decomposition of daily positive affect and work engagement variance across the two levels (teachers and days), before testing the hypotheses (Peugh, 2010). The intraclass correlation (ICC) in positive affect at level 1 (within-teachers, day level) was 0.47 (0.67 / [0.67+0.75]) (Table 2), and the ICC in work engagement at level 1 (within-teachers, day level) was 0.45 (0.88 / [1.09+0.88]), which is consistent with previous studies (Breevaart et al., 2012; Sonnentag, Dormann, & Demerouti, 2010). These ICC values can be considered high and multilevel analysis is therefore appropriate, also to avoid an inflated type I error rate (Snijders & Bosker, 1999).

We performed separate analyses for daily positive affect (Table 2) and daily work engagement (Table 3). In Model 1 we examined whether daily challenge and hindrance demands were related to daily positive affect and work engagement. In Model 2, we entered daily job resources (that might theoretically account for and/or alter the association between different daily job demands and daily work-related well-being. Thereafter, in Model 3, we entered

Table 1

Means, Standard Deviations, and Correlations for the Study Variables (N=158 teachers; N=438 daily reports)

	M (SD)	SD_{wp}	1.	2.	3.	4.	5.	6.
1. Challenge Demands	3.87 (1.28)	0.72		.34**	.23**	.23**	.04	.06
2. Hindrance Demands	2.38 (0.99)	0.56	.48**		.01	-.24**	-.23**	-.23**
3. Job resources	4.44 (1.16)	0.63	.23**	-.10		.51**	.30**	.50**
4. Personal resources	5.33 (1.01)	0.59	.28**	-.17**	.63**		.50**	.58**
5. Positive Affect	4.91 (1.17)	0.67	.15**	-.19**	.47**	.63**		.69**
6. Work Engagement	4.72 (1.37)	0.76	.12*	-.25**	.61**	.68**	.78**	

Note. All listed variables are measured on daily basis, and have a range of 1 – 7. *M* = Mean; *SD* = standard deviation; SD_{wp} = within-person standard deviation. Correlations below the diagonal are person-level correlations with correlations, and correlations above the diagonal are within-person correlations.

the interactions between daily job resources on the one hand, and daily challenge/hindrance demands on the other hand. In Model 4, we also entered the control variable, daily personal resources, in the last step, as suggested by Spector and Brannick (2011). We tested the improvement of each of the subsequent model over the previous one by computing the differences of the respective log likelihood statistic -2*log, and submitting this difference to a Chi^2-test, which can be seen in Tables 2 and 3.

Results from Model 1 indicated that the more the challenge demands teachers encountered during their workday, the more positive affect (t (250.15) = 2.08, p = .04) and work engagement (t (234.07) = 2.19, p = .03) teachers experienced on that particular day. In addition, the more hindering demands teachers encountered during their workday, the less positive affect (t (250.15) = - 4.31, p < .001) and work engagement (t (238.19) = - 4.07, p < .001) teachers experienced on that particular day. Model 2 showed that the more job resources teachers perceived to have during their workday, the more positive affect (t (245.57) = 4.69, p < .001), and the more work engagement they experienced (t (232.91) = 8.86, p < .001) during that workday.

Hypotheses testing. The overall hypothesized research model is presented in Figure 1, and the results of multilevel modeling analyses are shown in Tables 2 (daily positive affect) and 3 (daily work engagement). Hypothesis 1 stated that daily job resources will buffer the negative effects of daily hindrance demands on two daily work-related well-being indicators; positive affect and work engagement. Hypothesis 2 stated that daily challenge demands will boost the positive effects of daily job resources on positive affect and work engagement.

As can be seen in Tables 2 and 3, Model 3 showed that the interaction between daily job resources and daily hindrance demands was not significant for daily positive affect (t (281.99) = - 1.51, p = .13), and daily work engagement (t (257.90) = - 1.80, p = .08). The interaction between daily job resources and daily challenge demands was also not significant for daily positive affect (t (310.99) = 1.67, p = .09), but it was significant for daily work engagement (t (284.72) = 2.04, p = .04)

However, when we entered daily personal resources -the control variable- within Model 4 in the last step (Spector & Brannick, 2011), the results in Tables 2 and 3 showed that the interaction between daily job resources and daily

Table 2

Multilevel Analysis of Indirect Effects of Daily Challenge and Hindrance Demands and Daily Job Resources on Daily Positive Affect

	Daily Positive Affect				
Parameter	*Null Model*	*Model 1*	*Model 2*	*Model 3*	*Model 4*
			Fixed Effects		
Level 2 (Teacher)					
Intercept	4.83 (0.09)***	4.88 (0.09)***	4.88 (0.09)***	4.86 (0.09)***	4.85 (0.09)***
Level 1 (Day)					
Challenge Demands		0.13(0.06)*	0.06 (0.06)	0.05(0.06)	-0.05 (0.06)
Hindrance Demands		-0.34(0.08)***	-0. 32 (0.08)***	-0.32(0.08)***	-0.13 (0.08)
Job resources			0.30 (0.06)***	0.31(0.06)***	0.08 (0.06)
CD*JR				0.17(0.10)	0.23(0.09)**
HD*JR				-0.19(0.13)	-0.26(0.11)*
Personal resources					0.54 (0.08)***
			Variance-Covariance Estimates		
Level 2 variance	0.75 (0.13)***	0.73 (0.13)***	0.77 (0.13)***	0.76(0.13)***	0.81 (0.13)***
Level 1 variance	0.67 (0.06)***	0.61 (0.06)***	0.48 (0.04)***	0.55(0.05)***	0.46 (0.04)***
-2 Log Likelihood	1101.49	1029.08	996.42	992.86	944.69
Diff-2 Log		72.41***	32.66***	3.56	48.17***
Df		2	1	2	1

Note. Standard errors are in parentheses. *$p < .05$. **$p < .01$. ***$p < .001$. $N = 438$ occasions.
CD = Challenge demands; *HD* = Hindrance demands*; JR* = Job resources.

Table 3

Multilevel analysis of indirect effects of daily challenge and hindrance demands and daily job resources on daily work engagement

			Daily Work Engagement		
Parameter	*Null Model*	*Model 1*	*Model 2*	*Model 3*	*Model 4*
			Fixed Effects		
Level 2 (Teacher)					
Intercept	4.61 (0.11)***	4.60 (0.11)***	4.58 (0.11)***	4.56(0.11)***	4.55 (0.11)***
Level 1 (Day)					
Challenge Demands		0.16 (0.07)*	0.03 (0.06)	0.02 (0.06)	0.09 (0.06)
Hindrance Demands		-0.38 (0.09)***	-0.32 (0.08)***	-0.32 (0.08)***	-0.11 (0.08)
Job resources			0.61(0.07)***	0.61 (0.07)***	0.37(0.07)***
CD*JR				0.22 (0.11)*	0.30 (0.09)**
HD*JR				-0.24 (0.13)	-0.31(0.12)*
Personal resources					0.58 (0.08)***
			Variance-Covariance Estimates		
Level 2 variance	1.09 (0.20)***	1.14 (0.20)***	1.26 (0.21)***	1.28 (0.21)***	1.34 (0.21)***
Level 1 variance	0.88 (0.08)***	0.81 (0.08)***	0.60 (0.06)***	0.69 (0.05)***	0.48 (0.04)***
-2 Log Likelihood	1136.53	1120.06	1052.20	1047.02	999.13
Diff-2 Log		16.47***	67.86***	5.18	47.89***
Df		2	1	2	1

Note. Standard errors are in parentheses. *$p < .05$. **$p < .01$. ***$p < .001$. $N = 366$ occasions. *CD* = Challenge demands; *HD* = Hindrance demands; *JR* = Job resources.

hindrance demands was significant for daily positive affect (t (272.71) = - 2.22, p = .02), and daily work engagement (t (253.79) = - 2.57, p = .01). The interaction between daily job resources and daily challenge demands was also significant for both positive affect (t (299.53) = 2.49, p = .01), and work engagement (t (276.46) = 2.97, p = .003). In order to examine whether these interaction patterns were in the hypothesized direction, we conducted simple slope tests for multilevel models as suggested by Preacher, Curran, and Bauer (2006).

Figures 2 through 5 present the significant interaction patterns. In line with the first hypothesis, Figure 2 shows that daily hindrance demands were negatively related to positive affect when job resources were low (1 SD below the mean, γ = - 0.98, SE = 0.39, z = -2.49, p < .001). However, when combined with high daily job resources (1 SD above the mean), the negative association of daily hindrance demands and daily positive affect was weaker, although the effect was still significant and negative (γ = - 1.58, SE = 0.66, z = -2.38, p

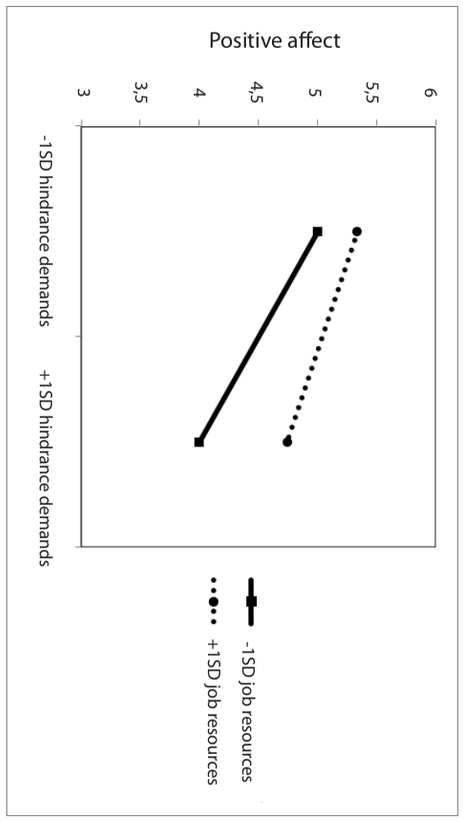

Figure 2. The buffering effect of daily job resources on the relationship between daily hindrance demands and daily positive affect. Note. -1SD = 1 standard deviation below the mean. +1SD = 1 standard deviation above the mean.

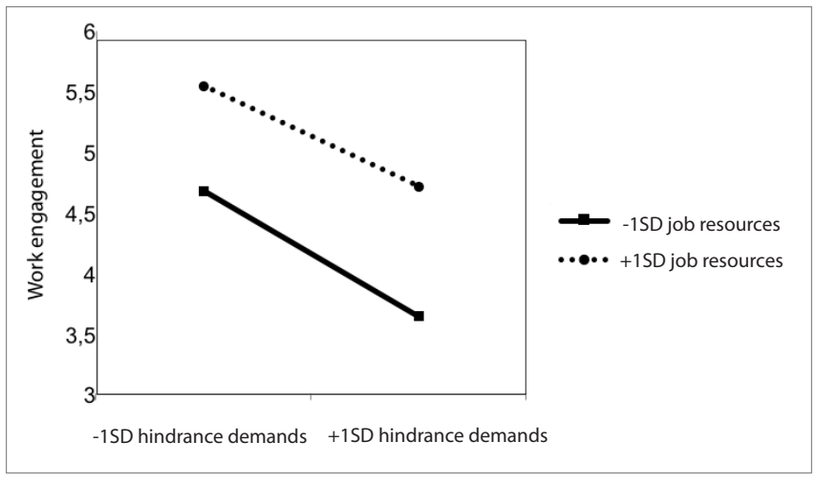

Figure 3. The buffering effect of daily job resources in the relationship between daily hindrance demands and daily work engagement. Note. -1SD = 1 standard deviation below the mean. +1SD = 1 standard deviation above the mean.

= .02). Similarly, Figure 3 demonstrated that daily hindrance demands were negatively related to work engagement when daily job resources were low (1 SD below the mean; γ = - 1.14, SE = 0.41, z = -2.79, p = .01). However, when daily job resources were high (1 SD above the mean), the relationship between daily hindrance demands and daily work engagement was weaker, although the effect was still significant and negative (γ = -1.86, SE = 0.68, z = -2.71, p = .01). This confirms our first hypothesis for both (a) positive affect and (b) work engagement: Daily job resources buffered the negative relationship between daily hindrance demands and daily positive affect, and buffered the negative relationship between daily hindrance demands and daily work-engagement.

Our second hypothesis stated that daily job resources are particularly positively related to daily (a) positive affect and (b) work engagement when combined with high daily challenge demands. Figure 4 demonstrated that daily challenge demands and daily positive affect were significantly and positively related when daily job resources were low (1 SD below the mean, γ = 0.70, SE = 0.30, z = 2.29, p = .02). However, daily challenge demands were more strongly related to daily positive affect when daily job resources were high (1 SD above the mean; γ = 1.24, SE = 0.51, z = 2.38, p = .01).

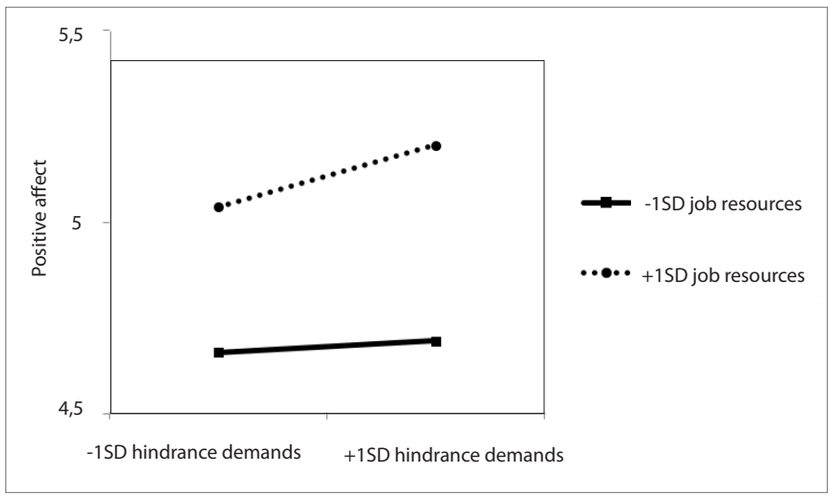

Figure 4. The boosting effect of daily challenge demands in the relationship between daily job resources and daily positive affect. Note. -1SD = 1 standard deviation below the mean. +1SD = 1 standard deviation above the mean.

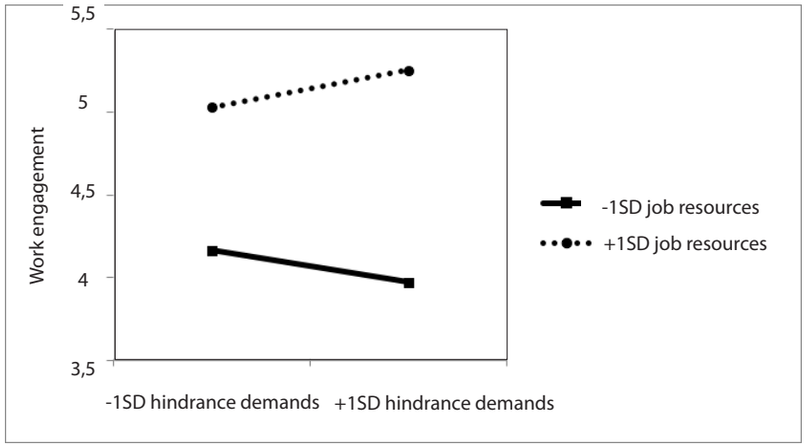

Figure 5. The boosting effect of daily challenge demands in the relationship between daily job resources and daily work engagement. Note. -1SD = 1 standard deviation below the mean. +1SD = 1 standard deviation above the mean.

Similarly, as illustrated in Figure 5, the association between daily challenge demands and daily work engagement was positive when daily job resources were low (1 SD below the mean; γ = 0.88, SE = 0.33, z = 2.67, p = .01). Yet, the relationship between daily challenge demands and daily work engagement was stronger when daily job resources were high (1 SD above the mean; γ = 1.57, SE = 0.56, z = 2.81, p = .01).

The nature of these interactions confirmed our second hypothesis for both work-related well-being indicators: High (vs. low) daily job resources significantly and positively boosted the relationships between daily challenge demands and (a) daily positive affect and (b) daily work-engagement.

In addition, the findings revealed that the more personal resources teachers perceived to have during their workday, the more positive affect (t (243.83) = 6.93, p < .001), and the more work engagement they experienced (t (234.73) = 7.28, p < .001) during that workday. Also, when we entered daily personal resources in the model, the main effect of daily job resources on positive affect (estimate = 0.08, SE = .06, p = 0.23) was no longer significant, and the main effects of daily hindrance demands on positive affect (estimate = - 0.13, SE = .08, p = 0.10) and on daily work engagement (estimate = - 0.11, SE = .08, p = 0.15) were insignificant as well. This indicated a mediation effect. In order to further test this mediation effect, we used the Monte Carlo Method for Assessing Mediation (MCMAM; Selig & Preacher, 2008). Results of the MCMAM in showed that the distribution interval of the indirect effect did not include zero at a 95% confidence interval (lower level (LL) = 0.15, upper level (UP) = 0.39) only for the mediation effect of daily personal resources in the association between daily job resources and daily positive affect, which demonstrated that that was the only significant mediation effect (Selig & Preacher, 2008).

Finally, we would also like to note that we tested the interaction between personal resources and different types of job demand; however, the results showed that the interaction between daily personal resources and daily hindrance demands was not significant for daily positive affect (Estimate = 0.05, SD = 0.13; t (274.74) = 0.42, p = .68), as well as for daily work engagement (Estimate = -0.03, SD = 0.13; t (255.56) = - 0.21, p = .84). In a similar vein, the results also showed that the interaction between daily personal resources and daily challenge demands was not significant for daily positive affect (Estimate = 0.07, SD = 0.11; t (281.95) = 0.58, p = .56) and daily work engagement (Estimate = -0.05, SD = 0.12; t (260.40) = - 0.45, p = .66). Although the personal resources did not moderate the relationships of hindrances or challenges with work engagement, we mention these results as they may be interesting and informative for other scholars.

Discussion

Building upon previous research findings within JD-R theory (Bakker & Demerouti, 2014) and the challenge-hindrance stressor framework (LePine, et al., 2005), the main aim of the present study was twofold. First, we predicted that daily job resources would buffer the negative impact of daily hindrance demands on daily work-related well-being indicators (i.e. positive affect and work-engagement). Second, we predicted that daily job resources would boost the relationship between daily challenging job demands and daily well-being (i.e. positive affect and work engagement). We conducted a diary study among 158 primary school teachers. The findings fully confirmed our hypotheses; however, they revealed that daily personal resources also have an important role in the interplay between job demands, job resources and work-related well-being. Specifically, daily job resources acted as a buffer against the unfavorable impact of daily hindering job demands on daily well-being (i.e., daily positive affect and daily work engagement). Moreover, daily job resources significantly and positively boosted the daily relationships between challenge demands and well-being.

Theoretical contributions

The results of the present study make several important contributions to the existing literature and broaden our understandings on the conditions that may foster or undermine work-related well-being of employees. First, the findings in the present study refine JD-R theory by showing that not only the level of job demands, but also the different types of demands that employees encounter in their everyday work life are important when examining work-related well-being of employees. All demands can be stressful because they require effort and energy, especially if employees have to deal with them for prolonged periods of time without adequate recovery (e.g. Sonnentag, 2003). However, as our study shows, job resources foster well-being, especially under conditions of high challenge (but not hindrance) demands.

In line with the JD-R theory, the present study demonstrates that job resources can provide the instrumental (e.g. colleague's advices on efficient task performing), cognitive (e.g. discussing work can help to gain different perspective on the issue), and emotional (e.g. colleague's support after dealing with pupils' misbehavior) assets for dealing with both challenge and hindrance demands. In the case of hindrance demands, job resources predominantly act as buffers by weakening their negative effects. For example, experiencing highly conflicting daily work obligations or role ambiguity does not have goal attainment potential for teachers. Dealing with these hindrance demands will not help pupils attain a better education or feel better at school on that day. Rather, dealing with these demands will only enable teachers to "clear out the way" for working on achieving the desired work goals of that day.

Accordingly, daily hindrance demands tend represent barriers that are unnecessary for goal attainment, yet employees have to deal with them in order to move on with their work (Crawford, et al., 2010). Thus, hindrance demands thwart daily work-related well-being because, aside from the energy and time needed to attain work goals, they require additional investment of energy and effort (LePine, et al., 2005). However, as the current study shows, high levels of daily job resources can provide means to ease the process of handling hindrance demands.

Nonetheless, under conditions of high challenge demands, job resources seem to be motivators that foster the positive potential of challenge demands, and in turn, promote work-related well-being by (boost hypothesis). Our findings suggest there is a need for a specific kind of demand (i.e. challenge) in order for job resources to be translated into enhanced work-related well-being (Bakker, et al., 2010). Workdays that give rise to high challenge demands foster employees to proactively look for and use the job resources that are available (i.e. ask colleagues for help, learning a new skill), which promotes daily positive affect and work engagement (Demerouti & Bakker, 2011). This may be because challenge demands encompass a sense of competence and stimulation, and signal moving forward in accomplishing desired work goals; while job resources provide the means for it. Challenge demands may not really be manageable on days teachers have no resources available.

For example, in the context of teachers, challenge demands such as having to use highly complex skills and having a high workload (i.e., teaching, parental

meetings, doing projects with pupils) can be stressful because it requires a lot of time and effort, but it is also necessary in order to accomplish work goals (i.e., provide the best possible education and support for pupils). However, when these demands are accompanied with high levels of job resources, such as adequate performance feedback from the school principal and social support from colleagues, dealing with them can actually foster positive affect and work engagement because teachers can feel supported, appreciated, and have a sense that what they are doing is valuable and meaningful, not only for themselves, but also for their pupils (Jennings & Greenberg, 2009).

Second, within the JD-R theory the buffer and boost hypotheses are usually framed using different outcomes. Empirical investigations of the boosting hypothesis mainly used work engagement as an outcome. However, studies testing the buffer hypothesis most often explored job resources as buffers against the adverse effects of high job demands on burnout on a between-person level (e.g., Bakker et al., 2005; Xanthopoulou, et al., 2007), although Hakanen et al. (2005) tested it for work engagement. Thus, the current study adds to the existing literature by exploring both buffer and boost hypotheses using positive work-related well-being indicators on a day-to-day basis, which provides more insight into the different functions of job resources on a within-person level.

Third, the study shows that challenge and hindrance demands fluctuate significantly on a within-person level. On some days employees encounter higher levels of hindrance or challenge demands than on other days. These results are important because within-person level fluctuations of challenge and hindrance job demands have rarely been empirically examined, and situational, daily variables are necessary to accurately predict why such fluctuations occur in the first place. To the best of our knowledge, only two previous studies investigated challenge and hindrance demands on a within–person level (Bakker & Sanz-Vergel, 2013; Rodell & Judge, 2009). Our findings are in line with these previous findings (e.g. Crawford et al., 2010); however, our study further expands the existing knowledge base by revealing the dynamic complexities of differential outcomes of challenge and hindrance demands on work-related well-being and the role of job resources in those outcomes on a within-person level.

In addition, it is important to note that the participants in the study were a relatively homogenous sample of Croatian primary school teachers. Based on

previous studies, such as Bakker & Sanz-Vergel's (2013) study among nurses, we expect that these results would be highly similar across different populations. Nevertheless, in order to ascertain the generalizability of the findings, it is necessary to replicate them in different work settings.

Limitations

The findings support our hypotheses; nevertheless, our research design had some limitations that could be addressed in future studies. First, the variables under study refer to rather subtle intrapersonal processes, and it is possible that the involvement in this study made our participants more aware of their work-related experiences, which might have influenced their responses. However, our study confirms that daily job resources indeed have differential functions in the associations between daily challenge and hindrance demands and daily work-related well-being among teachers and that they can be captured using diary methodology.

Second, the present study moved forward from cross-section research design by using diary methodology; however, some improvements of the design can be recommended. Future research could benefit from the use of longer-term longitudinal multi-method data collection (e.g., multiple information sources from colleagues, pupils) to develop and test models capturing the dynamic relations in employees' experiences of challenge and hindrance demands, job resources and work-related well-being over time. In order to expand and further investigate the differential roles of job resources, in addition to work-related well-being measures, other work outcomes might be assessed, such as performance indicators. Based on previous findings (e.g. Crawford et al., 2010), we expect that high daily hindrance demands would lower daily performance and that high daily job resources would buffer this negative effect, whereas high daily challenge demands would enhance daily performance when combined with high daily job resources.

Third, although the present study involves longitudinal data, it does not allow for any causal interpretations as we only tested cross-sectional effects using concurrent measures. Future studies could benefit from examining lagged effects in order to gain more opportunities for assessing potential causal associations. Fourth, we did not use negative indicators of work-related well-being (e.g. burnout) as outcomes in this study because most of the previous studies focused on them. Based on these previous findings (e.g. Crawford et

al., 2010), we assume that the relationship between both daily challenge and daily hindrance demands and negative indicators of daily work-related well-being (e.g. exhaustion, strain) would be positive, and that daily job resources would buffer this positive relationship.

Future Directions and Practical Implications

The existing literature emphasizes that hindrance demands thwart goal attainment and do not have the potential for gains. Our study confirms these notions and shows that hindrance demands indeed lower work-related well-being, particularly when job resources are low. However, it may be possible that some coping strategies are more efficient than others. Hence, future studies could examine which strategies provide best coping with hindrance demands, and enable more positive outcomes both within an individual employee and within organization.

In addition, although studies provided evidence for both buffer and boost effects of job resources, some of them failed to find significant interaction effects. For instance, Xanthopoulou et al. (2007) showed that autonomy did not interact with workload, and that autonomy, social support and feedback did not interact with physical demands in predicting dimensions of burnout. Also, Hu et al. (2011) revealed that high job demands coincided with high levels of burnout, but only when job resources were low only among health professionals, but not among blue collar workers. These insignificant interactions occurred among demands that are typically considered to be challenges (e.g. workload) as well as among those that are typically considered hindrances (e.g. emotional demands). Hence, future research could examine in more detail (a) which specific job resources (e.g., autonomy, social support) provide the best buffer against which specific hindrance demands (e.g., conflicting work tasks, insufficient material resources); and (b) which combination of specific job resources (e.g., autonomy, social support) and specific challenge demands represents the best situation for daily work-related well-being.

A recent study by Bakker and Sanz-Vergel challenged the popular view that the same demands can be considered challenges and hindrances across different occupational settings, and showed that it is crucial to ask the employees themselves on their subjective experiences of specific job demands. The authors found that, among nurses, work pressure acts more as a hindrance than as a challenge, whist emotional demands act more as a challenge than

as a hindrance, which is inconsistent with previous research among other occupations (e.g. Rodell & Judge, 2009). Thus, further research should explore the appraisal of specific job demands and their associations with well-being more extensively, and in different occupational settings.

The current diary study also contributes to practice by providing empirical evidence that could be used in work-related well-being enhancement interventions. The findings could be implemented within future teachers' and school principals' trainings by: (a) emphasizing the importance of providing additional job resources that could reduce the negative impact of high hindrance job demands and prevent teachers from developing high levels of burnout when these high demands cannot be limited; (b) limiting the hindrance demands the teachers have to cope with, because previous research has shown that teachers, due to the unique demands of their job, are highly susceptible to burnout (e.g. Hakanen, Bakker & Schaufeli, 2006); (c) training teachers to build and strengthen their own work motivation, personal and job resources, for example through job crafting (Tims, Bakker, & Derks, 2013).

Conclusion

Altogether, by providing empirical evidence for the significant interaction effects between different types of job demands and job resources, the current study increases our insight in the mechanisms that foster (vs. thwart) work-related well-being on a daily basis. These findings are important because they can account for inconsistencies in associations between job demands and work-related well-being found in previous studies. Also, these findings can contribute to the more optimal workplace design for teachers.

CHAPTER SIX:
General Discussion

General Discussion

In order to gain a better understanding of work-related well-being processes in everyday life, the current thesis aimed to unravel the dynamic relations between employees' work motivation, different types of job demands (challenges vs. hindrances), different functions of job resources (i.e. buffering and boosting), and work-related well-being (i.e. positive affect and work engagement). The main goal was to develop and test a comprehensive theoretical framework for capturing the dynamic nature of work-related well-being on a day-to-day basis (see Figure 1). This theoretical framework has its roots in Job Demands-Resources (JD-R) theory (Bakker & Demerouti, 2014), and integrates propositions from self-determination theory (SDT) (Gagné & Deci, 2005), and the challenge-hindrance stressor framework (LePine, LePine, & Jackson, 2004; LePine, Podsakoff, & LePine, 2005). The dynamic nature of this model was tested in four empirical studies by combining between-person questionnaires with within-person methodologies (i.e. the day reconstruction method and diary methodology) in order to accurately measure momentary and daily changes.

Altogether, the results of the thesis supported the hypothesized research model (Figure 1) by showing that employees' work motivation, positive affect, and work engagement vary on a daily basis, depending on proximal, daily circumstances (e.g., daily job demands, job resources, and activities) and enduring trait-level characteristics (i.e. work status). Employees feel positive affect and are engaged in their work on days when their motivation for work is self-concordant, that is, when they perceive work as meaningful, valuable, and interesting. This self-concordant motivation, in turn, buffers the unfavorable effects of high job demands. On days when employees have high job resources available and encounter high challenge demands, they are likely to experience particularly high work engagement and positive affect. On such days, employees are also likely to deal effectively with hindrance demands as job resources buffer the negative impact of daily hindrance demands on work engagement and positive affect at work. Thus, the thesis provided novel insights and offered support for an expanded JD-R theoretical framework on a daily basis.

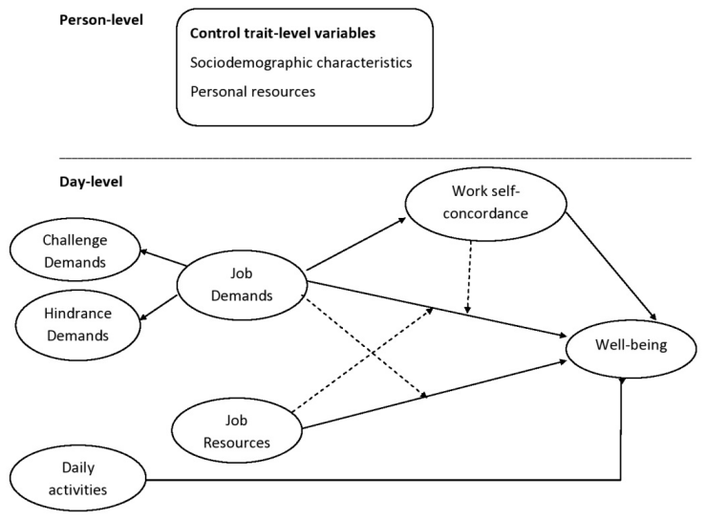

Figure 1. The hypothesized overall model of daily work-related well-being

Discussion of the Main Findings

I will first discuss the main findings of the four empirical studies using the research questions formulated in Chapter 1. Thereafter, I will discuss the strengths and weaknesses of the studies, and propose directions for future research. Finally, I will address the practical implications of the findings.

Research Question 1. What is the role of work for well-being in everyday life?

The first goal of the thesis was to explore the role of work in everyday life among older adults, both on a trait-level (i.e. work status) and a state-level (i.e. working as a daily activity). The thesis posited that work status as a specific life circumstance relates to happiness experienced in common daily activities. Bearing in mind that relevant work status changes (working vs. nonworking) are typically pronounced in older adulthood (Kim & Moen, 2002), and that the existing literature shows mixed findings as to whether retirement versus working leads to higher happiness among older adults (Horner, 2014), the thesis focused on the experience of daily activities of working and nonworking older adults. The focus on daily activities is important because investiga-

tion of daily experiences enables us to capture affective processes, behaviors, and events occurring in the natural, real-life setting (Ohly, Sonnentag, Niessen, & Zapf, 2010).

Using the Day Reconstruction Method (DRM) (Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004) in a longitudinal, three year follow-up research design, the study in Chapter 2 was unique in that older adults (i.e. average age M = 65.32; SD = 7.78) reported 84247 daily activities and accompanying happiness levels, which enabled monitoring the within-person fluctuations in happiness. In this way, the current thesis provided novel empirical evidence on the importance of disentangling effects of work on a between-person and a within-person-level, which has not been thoroughly examined previously.

Working and nonworking older adults reported similar levels of overall happiness (i.e. an aggregated measure of momentary happiness accompanying their daily activities). However, work (either paid or voluntary) as a daily activity of older adults showed a positive relationship with episodic, daily happiness. As predicted, results in Chapter 2 clearly demonstrated that work as a daily activity is an important positive and motivating aspect of daily life: Paid work activities relate positively to momentary happiness for working older adults, and voluntary work activities relate positively to momentary happiness for nonworking older individuals. These findings are theoretically very interesting as they explain why working and nonworking older adults differ in how they enjoy their daily activities.

More specifically, although sometimes stressful, work assumes at least some degree of cooperation, effort and concentration and might serve as a way to sustain social, physical and cognitive resources in later life (Baltes & Lang, 1997; Lemon, Bengtson, & Peterson, 1972; Longino & Kart, 1982). Working older adults, being actively involved in work, encounter many different obligations and experiences in their work life. As outlined within the challenge-hindrance stressor framework (Cavanaugh, Boswell, Roehling, & Boudreau, 2000; Crawford, LePine, & Rich, 2010), these obligations and experiences can be stimulating and growth promoting (i.e. challenging) on the one hand. Daily work activities can represent a platform for social interactions with the community (Herzog & House, 1991; Oerlemans, Bakker, & Veenhoven, 2011), which may foster satisfaction of relatedness needs (Ryan & Deci, 2002) and positive emotional experiences (Fredrickson, 2004). On the other hand, these

obligations and experiences can be exhausting and growth thwarting (i.e. hindering).

Moreover, nonworking older adults may have less formal obligations and, thus, may have more free time and more autonomy in their time-use choices. Bearing in mind that work can provide the sense of usefulness and help in maintaining one's social network due to involvement in challenging tasks, nonworking older adults may sometimes lack the means for fulfilling their basic needs for mastery (Baltes & Lang, 1997; Lemon et al., 1972). Thus, positive and negative consequences of older adults' work status seem to even out when it comes to the average happiness felt in everyday life.

Does this mean that working elderly and non-working elderly are equally happy with similar everyday activities? No. Activities not related to work may hold similar benefits as working older adults are not happier in the overall. The findings indicate that work status has an important impact on everyday life as the same daily activities seem to yield different emotional reactions, depending on work status. Specifically, similar activities seem to be interpreted as challenging or hindering depending on between-person differences in work status. For nonworking individuals, daily activities such as administrative work seem to provide meaning and facilitate happiness, whereas for working individuals, daily work activities like administration come as an additional demand and thwart happiness. Also, nonworking (vs. working) older adults seem to derive significantly less momentary happiness from relaxation as nonworking (vs. working) older adults need less time to recover due to the absence of demanding work obligations (Sonnentag & Fritz, in press; Sonnentag & Niessen, 2008). Altogether, these findings contribute to the existing literature by showing the ways in which work affects everyday life of older adults. Although work status (working vs. nonworking) does not seem to be a significant factor for overall happiness on a between-person level, it affects the way older adults experience the common daily activities on the intraindividual level.

Research Question 2. Can daily self-concordant work motivation reduce the negative effects of high job demands?

According to the JD-R theory, motivation for work is one of the key factors for work-related well-being (Bakker, 2011; Bakker, Albrecht, & Leiter, 2010; Bakker & Leiter, 2010). However, the JD-R theory does not yet distinguish between

different types of motivation (e.g., self-concordance vs. non-self-concordance). Hence, it is important to examine the quality of work motivation on a within-person level (i.e. the type of motivation an employee has in everyday work life) (Van den Broeck, Lens, De Witte, & Van Coillie, 2013), because different types of motivation may lead to important differences in the way in employees cope with demands or use their resources (Fernet, 2013).

In order to address the understudied quality of work motivation, the study in Chapter 3 incorporated the self-concordance model of work motivation (Meyer & Gagné, 2008; Sheldon, Turban, Brown, Barrick, & Judge, 2003) in JD-R theory. Self-concordant work motivation reflects the level of internalization of work activities as it encompasses inherent pleasure from engagement in a specific work activity (i.e. intrinsic motivation) and/or the personal endorsement of importance and meaning of the work activity (i.e. identified motivation) (Fernet, Gagné, & Austin, 2010).

As predicted, the results of the study in Chapter 3 clearly showed that, when employees experience a highly demanding work activity as self-concordant, the negative effects of high demands on work-related well-being are substantially reduced. In other words, involvement in daily work activities for self-concordant reasons substantially fosters daily work-related well-being and reduces the negative impact of daily job demands. The study in Chapter 3 also showed that different employees experience different levels of demands and self-concordant work motivation not only from one day to the next, but also from one work activity to the other. The higher employees' self-concordant work motivation for a specific work activity, the happier they feel while engaging in that work activity. Furthermore, the more demanding (i.e. difficult) the work activity is perceived to be, the less happy employees feel during their involvement in that activity.

Therefore, self-concordant work motivation can indeed be considered as an essential aspect of employees everyday work life, and deserves to be included in JD-R theory. Specifically, JD-R theory argues that job demands require sustained effort and can have certain physiological or psychological costs (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). The findings reported in Chapter 3 suggest that self-concordant work motivation can be considered as a transient cognitive and motivational resource that enables appraisal of work activities and job demands as meaningful, interesting, and valuable

versus hindering and stressful. As such, self-concordant work motivation can buffer the unfavorable effects of high job demands as the appraisal of demands as enjoyable, important, and intrinsically valuable (i.e. self-concordant) buffers the otherwise negative effect of demands on well-being.

Altogether, the study in Chapter 3 can be seen as further empirical evidence that self-concordant work motivation is an important employee resource through which daily work-related well-being is developed and sustained, even when daily work activities are highly demanding. Employees with high versus low self-concordant work motivation for a highly demanding activity tend to find more pleasure, interest and/or substance while being involved in that particular work activity. This, in turn, enables them to work on the activity energetically and to overcome the negative aspects of high demands when they have to deal with them.

Research Question 3. Can self-concordant work motivation explain the differential associations between challenge vs. hindrance demands and work-related well-being?

The existing literature shows somewhat inconsistent relations between job demands and work-related well-being. Although many studies confirmed that job demands are the most important predictors of exhaustion and burnout (Bakker, Demerouti, & Verbeke, 2004; Hakanen, Schaufeli, & Ahola, 2008), other studies found nonsignificant (Schaufeli & Bakker, 2004; Simbula, 2010) and even positive associations between job demands and work-related well-being (Schaufeli, Taris, & Van Rhenen, 2008; Van den Broeck, Van Ruysseveldt, Vanbelle, & De Witte, 2013). Moreover, previous research within JD-R theory rarely addressed the underlying processes that may explain why job demands can relate to work-related well-being in different ways.

Building upon the challenge-hindrance stressor framework (Cavanaugh et al., 2000; LePine et al., 2005), and the SDT (Meyer & Gagné, 2008), the study in Chapter 4 aimed to provide a deeper understanding on the relations between different types of job demands and positive forms of work-related well-being. The study examined self-concordant work motivation as a potential underlying mechanism that might explain the mixed associations between job demands and daily work-related well-being (i.e. daily work-related positive affect and work engagement). The results revealed that high job demands are not always negative; rather it is important to differentiate between hindrance

and challenge job demands as they have different consequences for daily well-being at work via their effects on daily self-concordant work motivation.

More concretely, using the Rodell and Judge (2009) framework, the study defined specific daily job demands that are challenging and those that are hindering by nature. Specifically, according to Rodell and Judge, challenge demands encompass perceived levels of workload, time urgency, job responsibility, and job complexity. These demands, although potentially stressful, can also be associated with gains and accomplishment. Hindrance demands reflect perceived levels of redundant formal rules and bureaucracy, role ambiguity, role conflict, and hassles. These demands are typically viewed as obstacles that thwart gains and accomplishment.

The study in Chapter 4 provides evidence that challenge demands are indeed appraised by employees as highly self-concordant (interesting, valuable, and enjoyable), which leads to higher daily positive affect and work engagement. Thus, daily challenge demands stimulate employees' internalization of daily work tasks and enhance employees' felt sense that the work they do is fun, interesting, and meaningful. This can further increase their engagement with the work environment as well as their positive affect at work. For example, teachers may see the value of putting effort into effective dealing with daily challenge demands, such as large number of projects, because that may help their pupils learn better, which, in turn, promotes teachers' positive affect and their work engagement. This is important because maintaining high levels of employee well-being has proven to be beneficial not only for employees themselves, but also for the people they work and live with (Bakker, Demerouti, & Burke, 2009; Ilies, Wilson, & Wagner, 2009; Roorda, Koomen, Spilt, & Oort, 2011).

Furthermore, the third study showed that specific daily job demands that are hindering in nature are usually appraised or valued by employees as non-self-concordant. This, in turn, negatively affects daily work-related well-being as employees have difficulties finding the sense of satisfaction, meaning, and value (i.e. self-concordant work motivation) when dealing with daily hindrance job demands. For instance, when teachers have to deal with a large amount of daily hindering bureaucratic tasks, they may not only loose valuable energy while dealing with these tasks, but also have difficulties to find fun, interest, and meaning in them, which can lead to lower work engagement and positive affect. This means that daily hindrance demands reduce the opportunities for engagement and positive affect by lowering employees' self-concordant work motivation. Hindrance demands may be difficult to internalize because it is hard for employees to see their meaning or value. As outlined in Chapter 3, high self-concordant work motivation can be useful in dealing with hindrance demands because it has the potential to buffer the otherwise negative effect of high hindrance demands.

These findings are in line with previous research: All job demands require effort and energy; however, challenge demands can also stimulate growth and goal achievement, whereas hindrance demands do not have this positive potential (Boswell, Olson-Buchanan, & LePine, 2004; Crawford et al., 2010; LePine et al., 2005). The study in Chapter 4 broadened these findings by providing novel insights on the circumstances as well as on the mechanisms that foster employees to feel and function well at work in their everyday life: Challenge and hindrance demands fluctuate on a daily basis and these fluctuations have significant impact on employees' daily work-related well-being through the mediation of daily self-concordant work motivation.

Hence, daily self-concordant work motivation can be considered a short-term (daily, momentary) interpretation or appraisal of job demands, which, in turn, explains short-term reactions to these demands (i.e. work engagement and positive affect). In this way, the study in Chapter 4 refined the JD-R theory by showing that self-concordant work motivation—as a proximal psychological mechanism that influences daily work-related well-being—can be integrated within the JD-R theory as a transient and strong employee resource, which has not been examined previously.

Research Question 4. Do job resources have different functions for work-related well-being when combined with challenge vs. hindrance demands?

The short answer to this research question is: Yes they do. Building upon the studies in Chapters 3 and 4, the study in Chapter 5 took another step further in integrating the challenge-hindrance stressor framework (LePine, et al., 2005) within JD-R theory. The existing literature consistently demonstrated that high job resources are very beneficial for work-related well-being (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2012): When combined with high levels of job demands, job resources can boost well-being (e.g., Bak-

ker, Hakanen, Demerouti, & Xanthopoulou, 2007; Bakker, Van Veldhoven, & Xanthopoulou, 2010), as well as buffer the unfavorable impact of high job demands on work-related well-being (Bakker, Demerouti, & Euwema, 2005; Xanthopoulou et al., 2007). However, we still lack clear distinction between the circumstances that enable job resources' buffer function and those that enable job resources' boost function.

In order to advance our understanding of these issues, the fourth study reported in Chapter 5 examined the potential moderation effects of job resources– including social support, autonomy, performance feedback, and opportunities for development – in the relationship between different types of job demands (i.e. challenge and hindrance demands) and work-related well-being (i.e. positive affect and work engagement) on a daily level. We expected that job resources would have the highest motivational potential when used in combination with challenge demands. When confronted with complex problems or very challenging issues at work, access to sufficient job resources can enhance the sense of competence and prospects that one's work behavior and effort will have positive results (Widmer, Semmer, Kälin, Jacobshagen, & Meier, 2012), which may foster work engagement and positive affect. On days when employees encounter high hindrance job demands, access to sufficient job resources may undo the negative effects of such demands because job resources are instrumental in achieving work goals and enhance willingness to dedicate effort to the work task (Meijman & Mulder, 1998). As predicted, the results showed that daily job resources buffered the negative relationship between daily hindrance demands and daily work-related well-being, and boosted the positive relationship between daily challenge demands and daily work-related well-being.

These results contribute to the existing JD-R literature as well as the broader literature in several ways. First, previous research has mostly considered all job demands under a general category of job demands. The studies in Chapters 4 and 5 showed that it is important to distinguish between different types of job demands on a daily level. The study in Chapter 5 refined these findings by showing that employees experienced most positive affect and work engagement on days they were confronted with high (vs. low) challenge demands and high (vs. low) job resources, and lowest levels of positive affect and engagement on the days they were confronted with high (vs. low) hindrance demands and low (vs. high) job resources. Thus, on days when resources are high, daily challenge demands are engaging and stimulating for daily work-related well-being, whereas daily hindrance demands undermine work-related well-being, especially when daily job resources are scarce.

Second, these findings demonstrated that job resources play an important role in the way challenge and hindrance demands are experienced on a day-to-day basis. Specifically, job resources facilitate the positive impact of challenge demands. Thus, employees become particularly engaged in work that is really challenging when they have sufficient job resources. This means that it is necessary to have a positive stimulation (i.e. challenge) in order for job resources to be translated into enhanced work-related well-being (Bakker & Demerouti, 2014; Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007). Our study expanded previous findings by showing that it is necessary to have high job resources in order for challenges to fulfill this potential. Challenge demands seem to be motivators that trigger employees to proactively look for and use the job resources that are available (i.e. ask colleagues for help, learning a new skill), which promotes daily positive affect and work engagement.

However, there are several issues that warrant further discussion. On the one hand, high challenge demands may be difficult to cope with on days when employees do not have sufficient job resources available. For instance, when teachers are faced with high workload, such as preparing a meeting with parents, or teaching, this requires a lot of time and effort, and may be very stressful. Nonetheless, if teachers proactively seek and receive instrumental and emotional support from colleagues, this can help them to effectively manage these challenging tasks, which can ultimately result in high work engagement and feelings of pride, accomplishment, and even happiness. Without sufficient resources, high challenge demands could leave teachers only feeling drained out.

On the other hand, insufficient challenge demands could also be problematic. If there are no challenges, high job resources may not be particularly helpful when there is not much going on at work. Also, employees may have difficulties to experience self-concordant work motivation, and may even feel boredom. Indeed, arousal theories conceptualize boredom as the state of non-optimal arousal based upon insufficient or overwhelming challenges

in the environment that unable engagement and satisfaction in an activity (Eastwood, Frischen, Fenske, & Smilek, 2012; Fisher, 1993). Hence, it is feasible to assume that daily work-related well-being blossoms when there is a precise combination of stimulating tasks in the environment (i.e. high daily challenge demands) and abundant opportunities for instrumental and emotional support in handling those tasks (i.e. high daily job resources), which seem to present the optimal conditions for self-concordant work motivation, as well as feeling good and experiencing engagement in work.

Furthermore, the study in Chapter 5 showed that high daily job resources are very useful when dealing with hindrance demands, albeit in a somewhat different way. As the study in Chapter 4 showed, high levels of daily job resources reduce the negative effects of high hindrance demands by providing social support from colleagues (e.g., colleague's support after dealing with pupils' misbehavior), performance feedback (e.g., receiving sufficient information about the results of one's daily work), coaching from the supervisor (e.g. feeling valued by supervisor), and by using opportunities for development (e.g., having the possibility to learn new things). Thus, hindrance demands can be efficiently handled (i.e. without substantial losses of work engagement and positive affect), but this requires employees to use the resources they have in their job. Lack of resources in the combination with high hindrance demands may overwhelm and exhaust employees. In some cases, it could also result in feelings of hopelessness as employees may feel helpless and think that there is not much they can do (Eastwood et al., 2012).

Moreover, the thesis also showed that, on the one hand hindrance demands lead to lower levels of self-concordant work motivation, which in turn predicts lower well-being. On the other hand, high self-concordant work motivation can actually buffer the negative effect of hindrance demands on well-being. These findings give rise to a new question: Can employees experience high hindrance demands and still have high self-concordant work motivation at the same time? Based on the results of the thesis, we assume that this is indeed possible if employees have just finished a challenging task and are now faced with a hindrance task. Also, we assume that would be possible if employees have very high self-concordant work motivation in general. However, clear and empirically-based answers to these questions require further research.

Altogether, the findings in Chapter 5 further refined JD-R theory and increased our understanding of the mechanisms that foster (vs. thwart) work-related well-being on a daily basis by incorporating the challenge-hindrance stressor framework (Crawford et al., 2010; LePine et al., 2005) in the theory. Previous research argued that combinations of job demands and job resources can be indicative of boosting or buffering effects (Bakker, Demerouti, & Euwema, 2005; Bakker et al., 2007); however, these studies did not differentiate between hindrance and challenge demands, particularly not on a within person level. Thus, the present study both supported and expanded the existing literature by providing novel empirical evidence for the significant interaction effects between different types of job demands and job resources: Daily job resources have different functions for work-related well-being when combined with challenge vs. hindrance demands. High daily job resources foster employee's daily work-related well-being particularly when daily challenge demands are high, and buffer the unfavorable impact of high daily hindrance demands on daily work-related well-being.

Strengths

This thesis has several strengths. I will first discuss the theoretical contributions, and thereafter the methodological contributions. Finally, I will address the contributions provided by employing different research settings in the studies.

Theoretical contributions. First**,** the current thesis provides novel empirical evidence on the role of work for well-being in everyday life. These findings provide support for the importance of work and studying work-related well-being using the combination of a between-person and within-person approach.

Second, building upon SDT (Meyer & Gagné, 2008), the thesis shows how work motivation may be positioned within the JD-R theoretical framework. These results are important because they are among the first to directly asses and acknowledge the relevance of the quality of work motivation within JD-R theory. More concretely, the thesis revealed that self-concordant work motivation can be regarded as a psychological mechanism that (a) mediates the relations between challenge and hindrance job demands and work related well-being, and explains why different types of demands relate to work-related well-being in different ways; and (b) protects employees against the

unfavorable effects of high job demands. In particular, self-concordant work motivation buffered the negative effects of high hindrance job demands, and boosted positive effects of high challenge demands on work-related well-being.

Third, the thesis provided an in-depth elaboration of the associations between job demands and work-related well-being. These findings are important because previous studies often found mixed results on the relations between job demands and work-related well-being, and have rarely addressed the issues of different types of job demands. The current thesis brings new insights into these matters by showing when high job demands foster work-related well-being, and when they thwart it. More concretely, the thesis demonstrated that job resources can have different functions (i.e. buffer and boost) for work-related well-being depending on the type of job demands (i.e. challenge vs. hindrance demands) they interact with. I predicted and found that job resources not only reduce (i.e. buffer) the negative effects of high hindrance demands, but job resources can also boost the positive effects of high challenge demands on work-related well-being.

Thus, job demands have positive effects on work-related well-being when the nature of the demands is challenging, when employees have high job resources available, and when their work motivation is self-concordant. However, if high job demands have a hindering nature, employees may not have sufficient job resources or self-concordant work motivation available; these demands can be very damaging for work-related well-being.

Finally, Chapters 3 to 5 focused on examining daily work-related experiences among teachers in particular. The present thesis expanded the existing views and research on teachers' work-related well-being by focusing on positive work-related well-being, which suggests that it may also important to include positive indicators when creating and executing practical interventions. Indeed, most of the previous research on teachers' work-related well-being focused on strain and negative indicators, such as exhaustion and burnout (Spilt, Koomen, & Thijs, 2011). However, the absence of negative symptoms and difficulties at work is not indicative of health and well-being at work (Huppert, 2009). For instance, a teacher who does not experience health-related problems and exhaustion at work is not necessarily happy and motivated at work.

Methodological contributions. The current thesis contributed to the methodology of studying work-related well-being in several ways. First, the thesis emphasized the importance of using a dynamic approach that can model short-term changes in employees' internal states (i.e. work motivation), the work environment (i.e. job demands and resources), and work-related well-being (i.e. work engagement and positive affect), while acknowledging some of the enduring trait-like characteristics of individuals (e.g., their work status). This dynamic approach is important as between-person and within-person effects of work on happiness can lead to different conclusions. As the current thesis shows, work status (working vs. nonworking) is not a significant factor for overall happiness on a between-person level. However, on the within-person level, work (either paid or voluntary) as a daily activity can foster daily happiness. That's why we need a dynamic model that takes into account both between-person and within-person effects of work as it has indeed a substantial impact on individuals' lives and modify how happy individuals feel during their daily activities, in both leisure and obligatory aspects of life.

Second, the thesis presented two specific diary approaches in capturing within-person fluctuations in work-related well-being, namely, the DRM (Dockray et al., 2010; Kahneman et al., 2004; Oerlemans & Bakker, 2013) and diary methodology (Bolger, Davis, & Rafaeli, 2003; Zapf, Niessen, Sonnentag, & Ohly, 2010). Examining these within-person fluctuations in work-related well-being is important because these fluctuations can predict important personal and organizational outcomes (Bakker & Xanthopoulou, 2009; Dimotakis, Scott, & Koopman, 2011). Between-person studies cannot capture these subtle intraindividual variations in experiencing and reacting to real-life work environment. The DRM and daily diary methodology can be efficiently used to gain more accurate well-being reports as they minimize the reconstructive biases involved in global reports by enabling researchers to systematically capture and assess continuous episodes over the course of the full day, rather than sampling of moments or assessing how people "usually" or "typically" feel during various daily activities (Kahneman et al., 2004).

Indeed, this thesis showed that the DRM and the daily diary methodology are useful and valid measures of episodic well-being because work motivation, affective states, work engagement, as well as work characteristics (i.e. job demands and resources) fluctuate significantly on a within-person level – in a predictable way. Even though this may not be surprising, to the best of our

knowledge, previous studies did not examine the quality of work motivation and its association with positive affect and work engagement on a within-person level. Thus, diary methods can be considered very useful for advancing our understanding of work-related well-being, and helping employees become happier and more engaged in their everyday work lives.

Different research settings. The proposed work-related well-being model (Figure 1) was examined in two different countries and two different work contexts. First, two DRM studies were performed in The Netherlands (Chapters 2 and 3) and two diary studies were performed in Croatia (Chapters 4 and 5) using very similar designs. These study features contribute to the external validity of the findings. Second, the thesis investigated the proposed research model in two different work sample contexts. One context referred to the role and relevance of work in everyday life by focusing on the experiences of daily activities of working and nonworking older adults in particular. The other context is secondary and primary school teachers, which enabled a more detailed analyses on the specifics of teachers' profession. More concretely, teachers' occupation is a specific and a very important job as (almost) everyone goes to school.

Thus, teaching can be seen as a profession that influences all other professions: Teachers touch the lives of all students who go through their education by setting groundwork for further education, as well as some of the basic social and academic skills (Jennings & Greenberg, 2009). Clearly, those tasks are very important, but also very demanding, which makes teaching sometimes very stressful (Bakker, Demerouti, & Sanz-Vergel, 2014; Brackett, Palomera, Mojsa-Kaja, Reyes, & Salovey, 2010; Brouwers & Tomic, 2000). Indeed, research evidence shows that teachers tend to be highly motivated, but also experience high levels of burnout (when compared to other professions) (Hakanen, Bakker, & Schaufeli, 2006). Thus, the current thesis provided insight into how can we keep this particular group of employees happy, motivated, and engaged at work.

Limitations and Directions for Future Research

This thesis shows many contributions as presented above. Nonetheless, there are also some limitations that should be acknowledged and that could be addressed in future research. First, the samples included in the studies are not probability samples. However, the sampling approach can be justified due

to the use of episodic assessment, which enabled us to employ an in-depth investigation of our proposed research model. Specifically, we performed diary and DRM studies where we analyzed intraindividual variations instead of between-person or between-group variations.

Second, even though self-reports are generally considered to be valid and useful means for assessing well-being (Sandvik, Diener, & Seidlitz, 2009), future research could gain further insights into daily work-related well-being and its consequences by using longer-term longitudinal and multi-source data collection (e.g., multiple information sources from colleagues, supervisors, and/or clients, as well as objective data, such as performance indicators). This would enable the development and testing of models capturing the dynamic relations in employees' workplace and their motivation, resources and well-being, and the links with organizational and economic outcomes.

Third, some improvements of the design can be recommended. The thesis refers to the daily and episodic assessments of well-being as experienced well-being, whilst they are in fact retrospective reports of very recent daily episodes (Miron-Shatz, Stone, & Kahneman, 2009). This notion leads to the question whether the employees' perception of motivation and demands would be any different if measured just before or during the actual work activity rather than after the employee has had some time distance from the event, which could be addressed in future studies. Although previous research showed that positive affect DRM reports are highly consistent with experience sampling (ESM) positive affect reports (Dockray et al., 2010), we do not yet have ESM data on work motivation, resources, and demands. Thus, it would be useful to use ESM in future studies in order to monitor specific events, job demands, and job resources (e.g., event-based sampling), and their effects on work-related well-being.

Finally, the studies did not track long-term effects nor distinguish cause and effect; rather, the studies were based on the analysis of associations. Future studies could orient more on modeling the long-term causal processes between motivation, job demands, resources, and work-related well-being by investigating whether there is an upward spiral of challenge demands, motivation, resources and work-related well-being (cf. Bakker & Demerouti, 2014). For instance, future studies could examine whether challenge demands combined with high job resources and high self-concordant work motivation at

Time 1 enhance high self-concordant work motivation and work-related well-being at Time 2. In this way, future studies could provide additional knowledge on how can work-related well-being be sustained in everyday life, as well as in the longer term.

Practical Implications

Creating interventions aimed at promoting work-related well-being in everyday work life is important because employees who have high work-related well-being are typically hard working, proactive, open to learning new things, enthusiastic about their jobs, and tend to experience positive emotions (Bakker, Schaufeli, Leiter, & Taris, 2008), which is beneficial for organizations as a whole, as well as for the people organizations work for (i.e. pupils). The findings of the current thesis can be implemented in practice in several ways.

First, we saw that contextual variables (i.e. work status) can modify the subjective experience of daily activities; hence, they should be taken into account when developing strategies for enhancing well-being. The types of activities that make working individuals happy are not necessary suitable for nonworking individuals. Based on the findings in this theses, it could be advised that working individuals invest more time in relaxing recovery time after work, and that nonworking individuals invest more time in constructive, effortful activities in order to keep an active and engaging lifestyle, which fosters happiness.

Second, the most prominent practical implication of the thesis's findings is to gain awareness about the current state of different workplace aspects (i.e. job resources and demands) and employees' strengths and limitations, which can be done through careful assessment and feedback. This first step is very important for individual teachers as well as for the school management level. It raises awareness of the specific aspects of the work environment (i.e. job demands and resources) and an employee (i.e. work motivation) that have the potential to either foster or thwart well-being at work. Based on the results of the assessment performed through specialized questionnaires and/or interviews, top-down (i.e. facilitated by school management), or bottom-up (i.e. performed by teachers themselves) interventions aimed at fostering teachers' enjoyment and engagement at work can be developed.

Bottom-up interventions. One of novel finding in this thesis is that self-concordant work motivation is highly relevant in the appraisal of high job demands—potential work stressors. In order to enhance self-concordant work motivation in everyday work life, teachers can be taught to employ cognitive forms of job crafting (Wrzesniewski, LoBuglio, Dutton, & Berg, 2013). For instance, teachers could be encouraged to reframe the way they perceive and interpret their work activities and to get back in contact with the reasons why they wanted to be teachers in the first place. This could be done using (a) formal interventions, such as professional coaching aimed to assess the reasons for being a teacher, team building, and professional supervision, and (b) informal social interactions, such as through fostering emotional and instrumental support from colleagues and supervisor (Bakker, 2013; Bakker, Tims, & Derks, 2012; Tims, Bakker, & Derks, 2013).

However, if the assessment reveals that a teacher continuously experiences a low level of self-concordant work motivation, and, in turn, feels unhappy at work, that could be a signal to change one's job or to craft the job so that it better fits with the persons' needs, abilities, and interests (Demerouti & Bakker, 2014; Tims & Bakker, 2010). For instance, teachers could get involved in a skills-training; and could be motivated to seek feedback and social support from their colleagues and supervisors. Teachers could also asses the level of the hindrance demands they encounter in their daily work life because, aside from the energy and time needed to attain work goals, hindrance demands require additional investment of energy and effort. Dealing with these demands only enables employees to "clear out the way" for working on the achievement of the desired work goals. If the level of hindrance demands is very high, it is likely that this undermines teachers' work motivation, and, in turn, their work engagement and positive affect. Thus, teachers could be encouraged to take personal initiative and proactively mobilize their job resources (i.e. ask for feedback, engage in skills training, seek instrumental help), when they encounter high hindrance demands. For instance, when teachers are aware of a highly demanding work day ahead, they could be advised to pay special attention to the resources around and inside of them. The teachers could be encouraged to take special care of themselves, talk to colleagues, seek instrumental and emotional support, as well as feedback from the school principal.

It is also possible to organize focus groups where teachers discuss various solutions on how self-concordant work motivation and resources could be. The teachers could discuss how hindrance demands could be reduced as well. In this way, teachers' agency could be promoted and opportunities for their self-development, adaptation, and self-renewal capacities would be enabled (Bandura, 2001; Breevaart, Bakker & Demerouti, 2014).

Top-down interventions. In addition to the individual bottom-up interventions, it is always important to take care of the working environment in a structural way. Thus, thus top-down interventions from the management can facilitate bottom-up interventions, such as job crafting by giving employees sufficient decision latitude and autonomy. On the basis of the assessment and feedback results, tailor-made interventions could be developed and implemented on the school-management level to manage job characteristics.

Specifically, specialized training sessions, coaching, and educational workshops could be organized in order to build and strengthen employees' work motivation, as well as personal and job resources, for example through individual or collaborative job crafting (e.g., proactively seeking support from colleagues, developing one's communication skills, finding meaning and value in work tasks) (Tims, Bakker, & Derks, 2012). For instance, if the assessment reveals that large numbers of teachers score low on self-concordant work motivation, the school management should investigate the potential causes, such as high levels of hindrance demands, for the lack of work self-concordance. Thereafter, the school management could organize group discussions on how to improve the work conditions.

Nonetheless, sometimes the work conditions and situations cannot be changed easily and do not allow for demands reduction (e.g., uncooperative parents). The negative effects of such hindrance demands on work-related well-being may be buffered by strengthening teachers' self-concordant work motivation and by providing them with support, acknowledgment and feedback on their work, and enabling them to find meaning and value in their work. Indeed, self-concordant work motivation may be strengthened through acquiring additional personal and job resources.

It seems necessary for teachers to sustain interest, sense of meaning and relevance in their work in order to thrive in their work on a daily basis, which could be achieved through tailor-made supervision and training organized

as series of lectures, exercises, one-on-one and group discussions aimed (a) to monitor teachers' resources, work motivation, as well as the challenge and hindrance job demands they encounter (Tims, Bakker, & Derks, 2013); (b) to provide constructive feedback on teachers' work-related strengths as well as the aspects that may be optimized (VandeWalle, Cron, , & Slocum, 2001); (c) to develop and practice new skills, such as stress management, mindfulness, support seeking, communication skills, time management strategies, etc. (Hahn, Binnewies, Sonnentag, & Mojza, 2011; Roeser et al., 2013); and (d) to provide opportunities for teachers to express their experiences and needs (Cote, & Morgan, 2002). Teachers could attend workshops in order to develop specific skills to recognize and identify (e.g., by making lists, by monitoring daily challenges and hindrances, job resources, and work motivation) the most prominent challenge and hindrance job demands in their workplace. Then they could be further guided in finding creative solutions for crafting their job by setting specific and self-concordant work goals and exploring ways in which they can achieve them (Govindji & Linley, 2007; Meyer & Gagné).

Final Conclusion

In order to refine JD-R theory, this thesis presented four empirical studies that combined a between-person and within-person approach (i.e. the day reconstruction method and diary methodology) in investigating work-related well-being. In the overall, these four diary studies provide novel insights into the role of work in everyday life, and the interplay between work motivation, job demands and resources, and work-related well-being. Specifically, the thesis shows that motivational experiences and work-related well-being vary on a daily basis, depending on proximal, daily circumstances (e.g., daily job demands, job resources, and activities) as well as enduring trait-level characteristics (i.e. work status). The results support the proposed hypothesized research model: Employees feel happy and engaged in their work when they perceive it as meaningful, valuable, and interesting (i.e. self-concordant), even in the face of highly demanding work activities. In this way, the current thesis refines JD-R theory by showing that the quality of employees' work motivation—as a proximal psychological mechanism that influences daily work-related well-being—can be integrated within the JD-R theory as a transient and strong employee personal resource.

Although there are some doubts whether or not there are objective types of challenge and hindrance demands, a central finding across all studies of the thesis is that challenge and hindrance demands in everyday life can be categorized into concrete work characteristics or activities (e.g., administrative activities are typically bothersome, and conflicts at work are usually hindering). However, at the same time employees can deal with these challenge and hindrance demands in different ways, depending on the availability of job resources, and their motivation for involvement in those activities.

These findings are important because they can account for inconsistencies in associations between job demands and work-related well-being found in previous studies: Challenge demands have the potential to foster work-related well-being if an employee also has high job resources available and high self-concordant work motivation. Hindrance demands undermine work-related well-being through lowering employees' self-concordant work motivation, but these negative effects can be buffered by high job resources. Thus, the thesis successfully distinguishes between challenge and hindrance demands while also taking into account motivational aspects, job resources and trait-level characteristics of employees, which moderate these relationships between job demands and work-related well-being. In addition, if implemented in practice, these findings can contribute to a more optimal workplace environment by using either top-down or bottom-up interventions for fostering work-related well-being.

In sum, the results obtained in the studies presented in the current thesis refined JD-R theory by integrating some tenets of SDT (Gagné & Deci, 2005; Meyer & Gagné, 2008) in the theory, as well as by integrating the challenge-hindrance stressor framework in the theory (Cavanaugh et al., 2000) - on a daily basis. The thesis shows that episodic assessments of work motivation, job demands, and job resources can represent the ongoing ebb and flow nature of the processes that can explain work engagement and positive affect in everyday work life.

Nederlandse Samenvatting

Dagelijkse Werkgerelateerde Welzijn: Een Job Demands-Resources benadering

Inleiding

Ongeacht de beroepsmatige setting kan inspanning leveren voor werk één van de manieren zijn om psychologische basisbehoeften te bevredigen en welzijn in het dagelijks leven te bevorderen. In dit proefschrift definieer ik werkgerelateerd welzijn als de mate waarin werknemers (a) zich goed voelen op het werk (bijv. geïnspireerd, tevreden, voldaan) tijdens verschillende werkdagen (Fredrikson, 2003) en (b) zich bevlogen voelen tijdens hun dagelijkse werkzaamheden, of met andere woorden hoeveel energie, toewijding en absorptie zij ervaren in hun werk (Bakker, Albrecht & Leiter, 2011). Hoewel er significante verschillen bestaan tussen werknemers in hun typische reacties op werkomgevingen, eisen en omstandigheden, zijn deze reacties niet statisch; ze veranderen juist continu. Werknemers kunnen verschillend reageren op werkgerelateerde taken en situaties op verschillende dagen. Daarnaast kunnen werkgerelateerde behoeften, cognities en affectieve gesteldheden betekenisvol verschillen binnen individuele werknemers (Xanthopoulou et al., 2012).

Onderzoek heeft aangetoond dat op dagen waarop medewerkers een hoge mate van toewijding aan hun werk ondervinden zij proactiever zijn (Sonnentag, 2003) en tevens positieve beoordelingen ontvangen in termen van in- en extra-role prestaties (Bakker & Bal, 2010) en een hogere financieel rendement behalen (Xanthopoulou et al., 2009). De manier waarop werknemers hun werk ervaren is dan ook niet alleen voor hun eigen leven belangrijk (Boehm & Lyubomirsky, 2008), maar ook voor hun klanten en de organisatie als geheel. Ondanks dit besef gebruikten de meeste voorgaande onderzoeken naar werkgerelateerd welzijn een interpersoonlijke of "trait" aanpak, wat waardevol inzicht in de verschillen tussen individuen heeft opgeleverd (bijv. Brief & Weiss, 2002). Een diepgaand begrip van determinanten die werkgerelateerd welzijn op intrapersoonlijk of 'state' niveau kunnen verklaren (bijvoorbeeld fluctuaties binnen werknemers, tussen dagen) is er echter nog niet.Om werkgerelateerd welzijn in het dagelijks leven beter te kunnen begrijpen heeft dit proefschrift gepoogd de dynamische (dagelijkse) relaties tussen de motivatie van werknemers, verschillende typen taakeisen (uitdagingen vs. belemmeringen), energiebronnen en hun verschillende functies (d.w.z. buffering en boosting) en werkgerelateerd welzijn (d.w.z. positief affect en toewijding) te ontrafelen. Het voornaamste doel was het ontwikkelen van een theoretisch raamwerk wat de dynamische aard van werkgerelateerd welzijn in het dagelijks leven (beter) kan verklaren.

Dit proefschrift is gebaseerd op de Job Demands-Resources (JD-R) theorie (Bakker & Demerouti, 2014) en heeft hierop voortgebouwd door de integratie van proposities uit de zelfbeschikkingstheorie ('self-determination theory'; Gagné & Deci, 2005) en het uitdaging-belemmering stressor raamwerk ('hindrance-challenge stressor framework'; LePine, et al. 2005). Het proefschrift onderzocht met name de dynamische intrapersoonlijke associaties tussen energiebronnen en verschillende typen dagelijkse taakeisen aan de ene kant, en motivatie en werkgerelateerd welzijn aan de andere kant. Ook is onderzocht hoe werkstatus als een interpersoonlijke variabele invloed heeft op dagelijkse activiteiten en tevredenheid.

De JD-R theorie (Bakker & Demerouti, 2014) is één van de meest invloedrijke theorieën over het welzijn van werknemers. De theorie biedt een alomvattende en flexibele aanpak van werkgerelateerd welzijn door erkennen dat iedere werkplek unieke werkomstandigheden biedt. De theorie stelt dat werkgerelateerd welzijn resulteert uit een verhouding van veeleisende (taakeisen) en motiverende (energiebronnen) werkomstandigheden die twee essentiële processen beduiden: (1) Een uitputtingsproces, veroorzaakt door taakeisen en (2) een motivationeel proces veroorzaakt door persoonlijke en werkgerelateerde energiebronnen. Naast effecten van taakeisen en energiebronnen worden er in de JD-R theorie tevens interactie-effecten gedefinieerd, namelijk: Energiebronnen kunnen de impact van hoge taakeisen op werkgerelateerd welzijn modificeren dankzij hun ondersteunende kracht bij het uitvoeren van veeleisende werkzaamheden (Bakker, 2011; Bakker & Demerouti, 2014). Het proefschrift omvat vier specifieke onderzoeksvragen, elk beantwoord door vier dagboekstudies die op elkaar voortbouwen.

Onderzoeksvraag 1. Wat is de rol van werk voor welzijn in het dagelijks leven?

De eerste doelstelling van dit proefschrift was het onderzoeken van de rol van werk in het dagelijks leven onder oudere volwassenen, zowel op een trait-niveau (d.w.z. werkstatus) als een state-niveau (d.w.z. werk als dagelijkse activiteit). Er is nog maar weinig onderzoek gedaan naar de effecten van

werkstatus op de ervaring van dagelijkse activiteiten binnen en buiten het werk. Het proefschrift onderzocht of activiteiten, waarvan werk er één is (betaald werk voor werkende oudere volwassenen en vrijwilligerswerk voor niet-werkende ouder volwassenen), kunnen leiden tot verschillende niveaus van geluk, afhankelijk van de werkstatus (d.w.z. werkende versus niet-werkende mensen). De focus op dagelijkse activiteiten is belangrijk omdat onderzoek naar dagelijkse ervaringen ons in staat stelt affectieve processen, gedragingen en gebeurtenissen in een natuurlijke, real-life setting vast te leggen (Ohly, Sonnentag, Niessen & Zapf, 2010). Hiervoor is in Hoofdstuk 2 gebruik gemaakt van een Dag Reconstructie Methode (DRM) (Kahneman et al, 2004), waarbij oudere deelnemers drie jaar lang maandelijks zijn opgevolgd waarbij ze hun dagelijkse activiteiten en gelukservaringen per activiteit rapporteerden (d.w.z. gemiddelde leeftijd M = 65.32; SD = 7.78). Dit resulteerde in de rapportage van 84247 dagelijkse activiteiten en de bijbehorende gelukservaringen voor iedere activiteit, waardoor intrapersoonlijke fluctuaties in geluk binnen personen konden worden onderzocht. Het proefschrift levert met name nieuwe informatie op over de vraag of werkstatus en de ervaring van werken op dagelijkse basis een motiverende factor is in het leven van oudere volwassenen in termen van hun momentele welzijn (geluk tijdens activiteiten) en algemeen welzijn (geluk in het algemeen).

Er werden geen verschillen aangetroffen tussen werkende en niet-werkende oudere volwassenen voor wat betreft hun algemeen welzijn (d.w.z. een geaggregeerde maatstaf van momenteel geluk bij hun dagelijkse activiteiten). Werk (zowel betaald als vrijwillig) bleek als dagelijkse activiteit van oudere volwassenen echter een positieve relatie met momenteel dagelijks geluk te hebben. Met andere woorden, wanneer ouderen aan het werk waren droeg dit bij aan hun momentele gevoel op dat moment. Daarnaast lieten de resultaten van Hoofdstuk 2 zien dat werk als dagelijkse activiteit een belangrijk positief en motiverend aspect van het dagelijks leven vormt: Wanneer ouderen aan het werk zijn, ongeacht het feit of dit betaald of vrijwilligerswerk betreft, leidt dat –op dat specifieke moment – tot meer momenteel geluk. Deze bevindingen zijn zeer interessant voor theorievorming, aangezien zij inzicht bieden in de vraag of werken versus niet meer werken op oudere leeftijd bijdraagt aan het welzijn van ouderen: Deze studie wijst uit dat werkende en niet-werkende ouderen geen verschil vertonen in algemeen welzijn. Echter, op momenten dat ouderen aan het werk zijn geeft het hen geluk. Positieve en negatieve consequenties van de werkstatus (d.w.z. werken versus niet werken) van oudere volwassenen lijken elkaar dus op te heffen voor wat betreft algemeen welzijn, maar niet als we kijken naar momenteel geluk.

Verder is ook onderzocht of werkende versus niet-werkende oudere volwassenen even gelukkig zijn met soortgelijke leefstijl. Dit blijkt niet het geval. De bevindingen van ons onderzoek tonen aan dat werkstatus een belangrijke impact heeft op het dagelijks leven aangezien dezelfde dagelijkse activiteiten verschillende emotionele reacties opleveren bij werkende versus niet werkende ouderen. Meer precies lijkt het te gaan om een verschillende interpretatie van activiteiten als uitdagend of belemmerend, afhankelijk van interpersoonlijke verschillen in werkstatus. Voor niet-werkende individuen leiden dagelijkse activiteiten, zoals administratief werk, tot meer momenteel geluk, terwijl administratief werk negatieve consequenties heeft voor het momentele geluk van werkende ouderen. Een mogelijke verklaring hiervoor is dat administratief werk door werkende ouderen wordt gezien worden als een belemmerende taakeis, terwijl dit wellicht niet het geval is voor niet-werkende ouderen. Een ander verschil was dat niet-werkende (vs. werkende) oudere volwassenen significant minder momenteel geluk ervoeren bij ontspannende activiteiten (bijvoorbeeld, TV kijken, een boek lezen, etcetera). Een mogelijke verklaring is dat werkende (vs. Niet-werkende) oudere volwassenen meer hersteltijd nodig hebben dankzij de aanwezigheid van veeleisende werkverplichtingen (Sonnentag & Fritz, in press; Sonnentag & Niessen, 2008). Al met al dragen deze bevindingen bij aan de bestaande literatuur door aan te tonen hoe werkstatus het dagelijks geluk leven van oudere volwassenen beïnvloedt. Hoewel werkstatus (werkend vs. niet-werkend) geen significante factor voor algeheel geluk op een interpersoonlijk niveau lijkt te zijn, beïnvloedt het de mate van geluk die oudere volwassenen tijdens alledaagse activiteiten op een intra-individueel niveau ervaren.

Onderzoeksvraag 2. Kan dagelijkse zelfconcordante werkmotivatie de negatieve effecten van hoge taakeisen verminderen?

Volgens de JD-R theorie is werkmotivatie één van de cruciale factoren voor het werkgerelateerd welzijn van werknemers (Bakker, 2011). Echter, de JD-R theorie maakt geen onderscheid tussen verschillende soorten motivatie. In dit proefschrift is daarom onderzocht of de kwaliteit van de werkmotivatie op een intrapersoonlijk niveau (d.w.z. het type motivatie dat een werknemer in het dagelijks werk ervaart; Van den Broeck et al., 2013) kan leiden

tot belangrijke verschillen in de manier waarop werknemers met taakeisen omgaan, hun energiebronnen gebruiken (Fernet, 2013), alsmede de mate van dagelijks welzijn die ze ervaren. In Hoofdstuk 3 staat een dagboekstudie beschreven, waarbij het zelfconcordantie model van werkmotivatie (Meyer & Gagné, 2008) is onderzocht als mogelijke aanvulling op de JD-R theorie. Zelfconcordante werkmotivatie reflecteert de mate waarin werknemers hum werkzaamheden internalizeren als plezierig en motiverend (d.w.z. intrinsieke motivatie), of betekenisvol (d.w.z. geïdentificeerde motivatie; zie Fernet, Gagné & Austin, 2010). Zoals voorspeld toonden de resultaten van Hoofdstuk 3 duidelijk aan dat wanneer werknemers een veeleisende werkactiviteit als zelfconcordant ervaren, de negatieve effecten van hoge taakeisen op het werkgerelateerd welzijn substantieel verminderd worden. Met andere woorden, betrokkenheid bij dagelijkse werkzaamheden om zelfconcordante redenen draagt substantieel bij aan werkgerelateerd welzijn, omdat het de negatieve effecten van dagelijkse taakeisen op welzijn verminderd (buffert). Het onderzoek in Hoofdstuk 3 toonde tevens aan dat verschillende werknemers niet alleen per dag, maar ook per werkactiviteit verschillende niveaus van taakeisen en zelfconcordante werkmotivatie ervoeren. Resultaten gaven duidelijk aan dat een hogere zelfconcordante werkmotivatie tijdens werkactiviteiten leidden tot een hogere mate van geluk bij werknemers tijdens het uitvoeren van specifieke werkactiviteiten. Bovendien bleek dat veeleisende werkactiviteiten leidden tot minder geluk tijdens specifieke werkactiviteiten.

Zelfconcordante werkmotivatie kan daarom gezien worden als een essentieel aspect van het dagelijks leven van werknemers en als zodanig vormt zelfconcordante werkmotivatie een belangrijke aanvulling op de JD-R theorie. JD-R theorie stelt dat taakeisen voortdurende inspanning vereisen en fysiologische en/of psychologische kosten met zich meedragen (Demerouti, Bakker, Nachreiner & Schaufeli, 2001). De bevindingen uit Hoofdstuk 3 geven aan dat zelfconcordante werkmotivatie (i.e. de ervaring van werktaken als plezierig, belangrijk en waardevol) de ongunstige effecten van hoge taakeisen op welzijn kunnen verminderen (bufferen). Al met al levert het dagboek onderzoek in Hoofdstuk 3 empirisch bewijs dat zelfconcordante werkmotivatie een belangrijke energiebron voor werknemers is waaruit dagelijks werkgerelateerd welzijn wordt ontwikkeld en behouden, zelfs wanneer de dagelijkse werkactiviteiten zeer veeleisend zijn. Werknemers met een hoge (versus lage) zelfconcordante werkmotivatie beleven tijdens veeleisende werktaken meer plezier, interesse en beschouwen de inhoud van de activiteit als waardevol.

Dit stelt hen in staat om vol energie aan de activiteit te werken en de negatieve aspecten van hoge taakeisen te boven te komen wanneer ze ermee geconfronteerd worden.

Onderzoeksvraag 3. Kan zelfconcordante werkmotivatie de verschillende verbanden tussen uitdagende vs. belemmerende eisen en werkgerelateerd welzijn verklaren?

De bestaande literatuur geeft een inconsistent beeld inzake de relaties tussen taakeisen en werkgerelateerd welzijn. Enerzijds wijst onderzoek uit dat taakeisen belangrijke, negatieve voorspellers zijn van burnout (Hakanen et al., 2008), maar ander onderzoek geeft aan dat er ook niet-significante (Schaufeli & Bakker, 2004), of zelfs positieve associaties mogelijk zijn tussen tussen taakeisen en werkgerelateerd welzijn (Van den Broeck, Van Ruysseveldt, Vanbelle & De Witte, 2013). Tot noch toe ging de JD-R theorie zelden in op de processen die mogelijk kunnen verklaren waarom taakeisen op verschillende manieren gerelateerd kunnen zijn aan werkgerelateerd welzijn.

Op basis van het uitdaging-belemmering stressor framework (LePine et al., 2005) en de zelfbeschikkingstheorie (Meyer & Gagné, 2008) was het onderzoek in Hoofdstuk 4 gericht op het beter begrijpen van de verbanden tussen verschillende typen taakeisen en positieve vormen van werkgerelateerd welzijn. De studie in hoofdstuk 4 onderzocht of zelfconcordante werkmotivatie een potentieel onderliggend mechanisme is dat kan verklaren waarom taakeisen soms negatief en soms positief samenhangen met dagelijks werkgerelateerd welzijn. De resultaten toonden inderdaad aan dat dit het geval was. In overeenstemming met Rodell en Judge (2009) werden dagelijkse uitdagende taakeisen gedefinieerd als werkdruk, tijdsdruk, verantwoordelijkheid en complexiteit van het werk. Deze eisen, hoewel potentieel stressvol, kunnen geassocieerd worden met mogelijke opbrengsten en het behalen van werkgerelateerde doelen. Dagelijkse belemmerende taakeisen werden gedefinieerd als de mate van overbodige formele regels, bureaucratie, ambiguë rolverdelingen, rolconflicten en dagelijkse obstakels. Deze taakeisen worden over het algemeen beschouwd als obstakels die baten en prestaties in de weg staan.

Het onderzoek in Hoofdstuk 4 leverde het empirisch bewijs dat uitdagende taakeisen over het algemeen door werknemers beoordeeld werden als zeer zelfconcordant (interessant, waardevol en plezierig), wat verklaarde waarom

uitdagende taakeisen een positieve relatie vertoonden met welzijn (positief affect en bevlogenheid). Dagelijkse uitdagende taakeisen stimuleren de internalisatie van dagelijkse werkzaamheden en versterken het gevoel bij werknemers dat het werk wat zij doen leuk, interessant en betekenisvol is. Dit vergroot vervolgens hun bevlogenheid en tevens hun positief affect op het werk. Leraren zien bijvoorbeeld de waarde in van inspanning die gericht is op de omgang met dagelijkse uitdagende taakeisen, omdat deze inspanningen gericht zijn op het leergedrag van leerlingen, wat op zijn beurt weer positief affect en bevlogenheid stimuleert bij leraren. Dit is van belang omdat het behouden van een hoge mate van welzijn onder werknemers bewezen voordelig is voor zowel de werknemers zelf als de mensen met wie zij werken en leven (Roorda et al., 2011).

De studie in 4 hoofdstuk toonde aan dat dagelijkse belemmerende taakeisen over het algemeen door werknemers beoordeeld worden als niet-zelfconcordant. Een lage zelfconcordantie heeft vervolgens weer een negatieve invloed op het dagelijks werkgerelateerd welzijn aangezien werknemers moeite hebben om voldoening, betekenis en waarde (d.w.z. zelfconcordante werkmotivatie) te halen uit zulke taakeisen. Wanneer leraren bijvoorbeeld te maken krijgen met een grote hoeveelheid dagelijkse belemmerende bureaucratische taken kunnen zij niet alleen kostbare energie kwijtraken tijdens het afhandelen van deze taken, maar ook moeite hebben plezier, interesse en betekenis uit het werk te halen, met als gevolg een verminderde bevlogenheid op het werk en minder positief affect. Dit betekent dat dagelijkse belemmerende taakeisen de mogelijkheden tot toewijding en positief affect beperken door de zelfconcordante werkmotivatie van werknemers te verlagen. Belemmerende taakeisen zijn mogelijk lastig te internaliseren omdat werknemers moeite hebben er de betekenis of waarde van in te zien. Zoals uiteengezet in Hoofdstuk 3 kan hoge zelfconcordante werkmotivatie voordelig zijn in het omgaan met belemmerende taakeisen omdat het de potentie heeft om de anderszins negatieve effecten van hoge belemmerende taakeisen op te vangen. Dagelijkse zelfconcordante werkmotivatie kan daarom beschouwd worden als een korte termijn (dagelijkse, momentele) interpretatie of beoordeling van de taakeisen, wat het welzijn op korte termijn kan verklaren (d.w.z. toewijding en positief affect). De studie in Hoofdstuk 4 geeft dus een belangrijke aanvulling op de JD-R theorie, door aan te tonen dat zelfconcordante werkmotivatie kan worden geïntegreerd in de JD-R theorie als momentele energiebron voor werknemers, waardoor het welzijn toeneemt.

Onderzoeksvraag 4. Hebben energiebronnen verschillende functies voor werkgerelateerd welzijn wanneer ze gecombineerd worden met uitdagende vs. belemmerende taakeisen?

Het korte antwoord op deze vraag is: Ja. Voortbouwend op het onderzoek in Hoofdstuk 3 en 4, ging het onderzoek in hoofdstuk 5 een stap verder met het integreren van het uitdagingen-belemmeringen stressor framework (LePine, et al., 2005) en de JD-R theorie. De bestaande literatuur geeft aan dat het tot de beschikking hebben van energiebronnen zeer voordelig is voor werkgerelateerd welzijn (Xanthopoulou et al., 2012): In combinatie met hoge taakeisen kunnen energiebronnen zowel welzijn stimuleren (bijv., Bakker et al., 2010) als de negatieve impact van hoge taakeisen op werkgerelateerd welzijn opvangen (Xanthopoulou et al., 2007). Er is echter nog geen duidelijk onderscheid tussen de omstandigheden die de bufferfunctie van energiebronnen mogelijk maken en de omstandigheden die de stimulerende functie mogelijk maken. Om meer inzicht te verkrijgen in deze problemen, richtte de vierde studie in Hoofdstuk 5 zich op potentiële moderatie effecten van energiebronnen– waaronder sociale ondersteuning autonomie, performance feedback en mogelijkheden tot ontwikkeling – binnen de relatie tussen verschillende typen taakeisen (d.w.z. uitdagende en belemmerende eisen) en werkgerelateerd welzijn (d.w.z. positief affect en toewijding) op dagelijkse basis. We verwachtten dat energiebronnen de hoogste motivationele potentie zouden hebben wanneer ze werden ingezet in combinatie met uitdagende taakeisen. Wanneer men op het werk geconfronteerd wordt met complexe of uitdagende problemen, en wanneer men kan beschikking over voldoende energiebronnen, dan zal dat het gevoel van competentie en vooruitzichten op positieve uitkomsten versterken (Widmer et al., 2012) waardoor het werkgerelateerd welzijn toenmeemt. Op dagen waarop werknemers te maken krijgen met hoge belemmerende taakeisen, maar zij kunnen beschikken over voldoende energetische hulpbronnen, dan kan dat de negatieve effecten van belemmerende taakeisen tenietdoen (Meijman & Mulder, 1998). Zoals was voorspeld toonden de resultaten inderdaad aan dat dagelijkse energiebronnen het negatieve verband tussen dagelijkse belemmerende taakeisen en dagelijks werkgerelateerd welzijn konden verminderen (buffer effect) en het positieve verband tussen dagelijkse uitdagende taakeisen en dagelijks werkgerelateerd welzijn konden versterken (boost effect).

Deze resultaten dragen op verschillende manieren bij aan de JD-R theorie. Ten eerste geven resultaten uit studies 4 en 5 aan dat het van belang is om onderscheid te maken tussen verschillende typen taakeisen. Daarnaast tonen de studies in hoofdstuk 4 en 5 aan dat het welzijn van werknemers (positief affect, bevlogenheid) op dagelijkse basis het hoogst ligt wanneer werknemers worden geconfronteerd met hoge (vs. lage) uitdagende taakeisen en veel (vs. weinig) energetische hulpbronnen en het laast is wanneer op dagen wanneer werknemers te maken krijgen met hoge (vs. lage) belemmerende taakeisen en weinig (vs. veel) energiebronnen.

Ten tweede demonstreren deze bevindingen dat energiebronnen een belangrijke rol spelen bij de manier waarop uitdagende en belemmerende taakeisen per dag worden ervaren. Energiebronnen faciliteren met name de positieve impact van uitdagende taakeisen. Werknemers raken dan ook in het bijzonder toegewijd aan werk dat zeer uitdagend is wanneer zij voldoende energiebronnen tot hun beschikking hebben. Dit betekent dat een positieve stimulering (d.w.z. uitdaging) nodig is om energiebronnen te vertalen naar beter werkgerelateerd welzijn (Bakker & Demerouti, 2014). Deze studies versterken het inzicht verkregen uit eerdere studies door aan te tonen dat toegang tot energiebronnen nodig is om uitdagende taakeisen om te zetten naar motivatie en welzijn. Uitdagende taakeisen werken motiverend, met name wanneer werknemers in staat zijn om beschikbare energiebronnen te gebruiken (d.w.z. collega's om hulp vragen, een nieuwe vaardigheid leren), waardoor hun dagelijks positief affect en bevlogenheid toeneemt. Bovendien toonde het onderzoek in Hoofdstuk 5 aan dat energiebronnen zeer belangrijk zijn wanneer men te maken krijgt met belemmerende taakeisen. Een gebrek aan energiebronnen in combinatie met hoge belemmerende taakeisen kan werknemers overweldigen en uitputten. In sommige gevallen kan dit ook resulteren in gevoelens van hopeloosheid omdat werknemers zich hulpeloos kunnen voelen en denken dat ze er weinig aan kunnen doen (Eastwood et al., 2012).

Al met al hebben de bevindingen uit Hoofdstuk 5 de JD-R theorie verder verfijnd middels de inclusie van mechanismen die werkgerelateerd welzijn kunnen verklaren of dwarsbomen. De studie wijst uit dat energiebronnen de impact van dagelijkse uitdagingen of belemmeringen (Crawford et al., 2010; LePine et al., 2005) op dagelijks welzijn van werknemers betekenisvol kan beinvloeden. Voorgaand onderzoek stelde dat combinaties van taakeisen en energiebronnen indicatief kunnen zijn voor stimulerende of buffereffecten (Bakker, Demerouti & Euwema, 2005; Bakker et al., 2007). Echter, voorgaand onderzoek maakte geen onderscheid tussen belemmerende en uitdagende taakeisen en de relaties werden niet op intrapersoonlijk, dagelijks niveau onderzocht. Deze studie geeft aan dat er belangrijke buffer en boost functies uitgaan van energiebronnen, afhankelijk van verschillende typen taakeisen.

Conclusie

Ten einde JD-R theorie te verfijnen zijn er in dit proefschrift vier studies uitgevoerd op interpersoonlijk niveau (d.w.z. dag reconstructie methode en dagboekmethodologie) met als belangrijkste uitkomstmaat het dagelijks werkgerelateerd welzijn van werknemers (geluk, positief affect en bevlogenheid). Als geheel biedt het proefschrift nieuwe inzichten in de rol van werk in het dagelijks leven en de wisselwerking tussen werkmotivatie, taakeisen, energiebronnen en werkgerelateerd welzijn. Dit proefschrift toont met name aan dat motivationele ervaringen en werkgerelateerd welzijn per dag kunnen verschillen verschillen en afhankelijk zijn van proximale, dagelijkse omstandigheden (bijv., dagelijkse taakeisen, energiebronnen en activiteiten) en voortdurende karakteristieken op trait-niveau (d.w.z. werkstatus). De resultaten ondersteunen het gehypothiseerde onderzoeksmodel in het eerste hoofdstuk: Werknemers voelen zich gelukkig en betrokken bij hun werk wanneer ze het zien als betekenisvol, waardevol en interessant (d.w.z. zelfconcordant), zelfs als zij worden geconfronteerd met veeleisende werkactiviteiten. Het proefschrift toont hiermee aan dat de kwaliteit van de werkmotivatie van werknemers—als proximaal psychologisch mechanisme dat dagelijks werkgerelateerd welzijn beïnvloedt— kan worden geïntegreerd in de JD-R theorie als een belangrijke persoonlijke energiebron voor werknemers die kan verklaren hoe taakeisen samenhangen met welzijn.

Men kan zich afvragen of uitdagende en belemmerende taakeisen objectief kunnen worden vastgesteld. Een van de centrale bevindingen uit dit proefschrift is dat uitdagende en belemmerende taakeisen in het dagelijks leven kunnen worden verdeeld in concrete werkactiviteiten of eigenschappen (administratieve activiteiten zijn bijvoorbeeld vaak vervelend en conflicten op het werk meestal belemmerend). Tegelijkertijd kunnen werknemers op verschillende manieren met deze uitdagende en belemmerende taakeisen omgaan, afhankelijk van de beschikbare energiebronnen en hun (zelfconcordante) motivatie tijdens deze activiteiten en taakeisen.

Deze bevindingen zijn belangrijk aangezien ze de tegenstrijdigheden in associaties tussen taakeisen en werkgerelateerd welzijn uit voorgaand onderzoek kunnen verklaren: Uitdagende taakeisen hebben de potentie om bij te dragen aan werkgerelateerd welzijn als een werknemer tevens veel energiebronnen en hoge zelfconcordante werkmotivatie tot zijn/haar beschikking heeft. Belemmerende taakeisen ondermijnen werkgerelateerd welzijn doordat dit de zelfconcordante werkmotivatie van werknemers verlaagt. Echter, negatieve effecten van belemmerende taakeisen kunnen worden verminderd door de aanwezigheid van energiebronnen. Dit proefschrift maakt daarmee onderscheid tussen verschillende typen (uitdagende versus belemmerende) taakeisen en houdt tevens rekening met zelfconcordantie als motivationeel proces, energiebronnen en trait-niveau eigenschappen van werknemers die deze verbanden tussen taakeisen en werkgerelateerd welzijn beïnvloeden. In de praktijk kunnen deze bevindingen bijdragen aan een interventies gericht op (1) het verminderen van belemmerende taakeisen, (2) het verhogen van uitdagende taakeisen en energiebronnen, en (3) het stimuleren van zelfconcordante motivatie bij werknemers, waardoor het werkgerelateerd welzijn van werknemers kan worden gestimuleerd.

In theoretisch opzicht levert dit proefschrift een belangrijke bijdrage in de verfijning van de JD-R theorie middels het toevoegen van zelfbeschikkingstheorieën (Gagné & Deci, 2005; Meyer & Gagné, 2008) en het uitdaging-belemmering stressor framework (Cavanaugh et al., 2000), alsmede dagstudies die deze relaties op dagelijkse basis hebben onderzocht. Het proefschrift toont aan dat dagelijkse, of zelfs momentele peilingen van werkmotivatie, taakeisen en energiebronnen een beeld kunnen geven van de continuë fluctuaties van deze processesn die de bevlogenheid en het positief affect van werknemers in het dagelijkse werkleven kunnen verklaren.

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Curriculum Vitae

Curriculum Vitae

Maja Tadić was born in Osijek, Croatia, on January 1st, 1981. After completing secondary education at the General Gymnasium in Osijek, she studied psychology at the Psychology Department within the Centre for Croatian Studies, University of Zagreb (1999-2005). In 2005, she defended her master thesis entitled *The Role of Self-Esteem in the Relationship between Personality Traits and Nonverbal Social Skills* and received a master degree in psychology. In 2004, she worked as a psychologist in candidate selections processes at the Diplomacy academy, Ministry of foreign affairs, Zagreb. From 2005 to 2007, she worked as a clinical child psychologist at the Centre for mental health of children and youth, Children's Hospital Zagreb. Since November 2007, she works at the Institute of social sciences Ivo Pilar in Zagreb as a graduate research assistant. She started her PhD research under the supervision Prof. dr. Arnold Bakker and Dr. Wido Oerlemans in November 2008. The studies in her PhD project entitled *Studying work-related well-being on a day-to day basis: An expanded JD-R theory approach* focused on the role of work in everyday life, and the interplay between work motivation, job demands and resources, and work-related well-being on a day-to-day basis. She is currently involved in a large an international project Measuring Youth Well-Being (MYWEB), financed within the EU's Seventh Framework Programme for Research, and is a member of management committee in the ISCH COST Action IS1204: Tourism, Wellbeing and Ecosystem Services (TObeWELL). She is also a research supervisor and principal investigator in the project *Examining well-being in school context: Daily experiences of pupils and teachers* within the international EFPSA Junior Researcher Programme (2013-2014). In addition to her research activities at the Institute Ivo Pilar, Maja Tadić also teaches undergraduate courses Communication skills and Positive psychology at the University of Zagreb. The complete bibliography of Maja Tadić can be obtained at: http://bib.irb.hr/lista-radova?autor=299653&lang=EN

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