Subjective Achievement Experiences and Employee Well-Being: An Investigation of Subjective Achievement Experiences and their Role for Emotional Demands and Time Pressure as Challenge and Hindrance Demands

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Overview of Publications

All empirical studies conducted for this dissertation have been published in peer-reviewed journals. The final published versions are available online and can be accessed as follows:

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Chapter 1

Introduction

Work plays a central role in most people's lives. Beyond the time people invest in their work, it also matters economically, socially, and psychologically. Work not only yields monetary income but can also provide joy, satisfaction, a sense of belonging, accomplishment, achievement, and success (Burke et al., 2010). Consequently, working conditions, characteristics of and events in the work environment as well as specific work tasks have a significant influence on people's life satisfaction, health, and well-being. Needless to say, those influences on health and well-being can be positive, but they also play a significant role when it comes to stress and negative effects. In fact, stress is a critical factor in the workplace, with far-reaching individual and economic consequences (Sonnentag & Frese, 2003). Work-related stress is a major risk factor for increased ill-being and absenteeism, and is responsible for billions of dollars of costs for organizations and societies around the globe (Brun, 2020). As such, it is not surprising that the impact of working conditions and the working environment on peoples' health and well-being have been attracting the attention of both scientists and practitioners and are unlikely to lose their relevance in the foreseeable future as the world of work is subject to constant change.

Current changes in the world of work become evident in increasing requirements for mobility and flexibility placed on employees, but also in changes of work itself. Work is becoming more diverse and complex, which is accompanied by a shift in work demands and a rise in psychosocial stress (Rothe et al., 2017). This change in work is mainly characterized by an increasing work intensity (e.g., time pressure and workload), a surge in emotional demands (e.g., in service, knowledge, and team work), and a progressive blurring of boundaries between work and nonwork life (e.g., engaging in work-related activities during rest periods due to increased availability and easy access of job-related content using smartphones and laptops; Wendsche & Lohmann-Haislah, 2016). It can be assumed that the importance of those factors

and their impact on people's health and well-being will continue to increase. Generally, it is desirable to design working conditions in such a way that people's health, well-being, and performance are not impaired, and that the development of skills and competences is enabled (Gesellschaft für Arbeitswissenschaft, 2016). This requires comprehensive knowledge about the respective demands, their potential effects on employees, and about aspects that might be particularly beneficial for people's well-being, in order to derive options for action to shape the work environment. In this regard, this dissertation aims to make a contribution, focusing especially on time pressure (one of the key dimensions of work intensity) and emotional demands, and how they affect psychological well-being.

When it comes to work-related psychological well-being, there is a seemingly vast number of stressors that may play an influential role, with 'stressors' referring to all psychological, social, organizational, or physical aspects of the work environment that may affect the individual in any way (i.e., positive and/or negative). In order to provide more guidance to employees and organizations in promoting well-being and preventing ill-being, it may seem helpful to separate stressors into a few categories that are of similar impact on the individual. One such approach follows the categorization of job characteristics and working conditions into 'job demands' and 'job resources' (Bakker & Demerouti, 2017; Demerouti et al., 2001). Job demands refer to those aspects that "require sustained physical and/or psychological effort or skills" (Bakker & Demerouti, 2017, p. 274) and are therefore associated with potential negative effects on employees' well-being, initiating a health impairment process. Job resources, on the other hand, refer to those aspects that "stimulate personal growth, learning, and development" (p. 274), initiating a motivational process. Time pressure and emotional demands fall into the category of job demands. Prominent job resources are for example social support, job control and feedback. According to this basic categorization, it seems that the change in work (i.e., increased time pressure and emotional demands) will primarily have negative, health-impairing effects.

The categorization of job characteristics into job demands and job resources enjoys wide acceptance, being used not only in scientific research, but also by practitioners and organizations to improve work conditions or to assess psychosocial risks at work. A general rule of thumb, that can be derived from this categorization is that it is advisable to reduce job

demands and increase job resources to foster health-promoting work environments. However, recent research suggests that the categorization of work stressors into job demands and job resources may be deficient, as for some job demands effects have been found paralleling those of job resources. That is, besides being health-impairing, some job demands may also stimulate growth and development (i.e., initiating a motivational process; LePine et al., 2005). This led to the development of the challenge–hindrance stressor framework (Cavanaugh et al., 1998, 2000). In this framework, job demands are differentiated into challenge and hindrance demands, with hindrance demands referring to demands that are only health-impairing, whereas challenge demands refer to demands that are health-impairing but which can also initiate a motivational process. Time pressure is often stated as a typical challenge demand and emotional demands seen as a hindrance demand (Crawford et al., 2010). However, recent research questions this categorization, showing that emotional demands may well act as a challenge demand and time pressure as a hindrance demand under specific circumstances or in certain occupations (e.g., Bakker & Sanz-Vergel, 2013).

Without question, any categorization always bears the risk of oversimplifying existing relations and effects. Therefore, they should be done with great care, especially as practical implications may be drawn based on a specific classification, that could then be accompanied by unintended side effects. In this respect, the present dissertation takes a close look at the classification of time pressure and emotional demands into different categories (i.e., challenge or hindrance) as has been proposed by previous research.

When it comes to a differentiation between challenge and hindrance demands, achievements at work are, by definition, assumed to be of central importance. Consequently, the presumed relations between demands and achievements have often been used as a theoretical explanation and justification for the classification of demands into challenge or hindrance. It is well established in the literature that achievements play an important role for individuals, with positive effects on well-being and motivation (Locke & Latham, 2002; Weiss & Cropanzano, 1996). Yet, even though the relation to achievements has been used as a theoretical explanation, the influence of achievements has not been directly investigated in the context of categorizing demands within the challenge–hindrance framework. Instead, research often categorized demands a priori into challenge or hindrance based on their *presumed*

relation with achievement and gains (Searle & Auton, 2015), focusing on different challenge and hindrance demands, job resources, their interactions, and subsequent effects on motivational and health-impairing outcomes (e.g., work engagement and emotional exhaustion). This dissertation argues that achievements at work (more specifically, subjective achievement experiences) are central to the unfolding health-impairing and motivational effects of job demands. More specifically, it is argued that definite categorizations of demands into challenge or hindrance are not always reasonable and that achievement experiences should be directly investigated when examining motivational and health-impairing effects of job demands. Thus, it is proposed that subjective achievement experiences not only play an important role for employees' well-being and motivation in general but may also be able to explain the inconsistent findings with regard to time pressure and emotional demands as challenge and hindrance demands. In this dissertation, two different ways are outlined how subjective achievement experiences may explain and influence the health-impairing and motivational effects of time pressure and emotional demands. It is suggested that both time pressure and emotional demands may positively relate to achievement experiences and thereby initiate a motivational process. Furthermore, it is investigated how actual achievement experiences may influence both health-impairing and motivational effects of time pressure and emotional demands when people initially expect time pressure and emotional demands to interfere or foster achievements. Thus, it is first proposed that achievement experiences may mediate associations between the two demands and health-impairing as well as motivational outcomes and, second, that achievement experiences may also be able to moderate the demands' effects on employees' well-being. Finally, after focusing on different ways of how achievement experiences may influence and explain health-impairing and motivational effects of the two demands, it is also investigated in this dissertation how achievement experiences exert their positive influence on well-being.

1.1 Research Questions and Research Objectives

As a contribution to current discussions in the occupational health psychology literature about inconsistencies in the classification of demands into challenge and hindrance demands in general, and time pressure and emotional demands in particular, this dissertation sets out to provide theoretical and empirical answers to the following two questions:

(1) *Which role do subjective achievement experiences at work play for the health-impairing and motivational effects of time pressure and emotional demands?*
   a. *Do subjective achievement experiences mediate the demands' health-impairing and motivational effects within the challenge–hindrance stressor framework?*
   b. *Do subjective achievement experiences moderate the demands' health-impairing and motivational effects within the challenge–hindrance stressor framework?*

(2) *How do subjective achievement experiences at work exert their positive influence on employees' psychological well-being?*

Answering these questions, this dissertation seeks to provide explanations for inconsistent results found within the challenge–hindrance stressor framework, focusing on time pressure and emotional demands. Both demands are assumed to increase due to current changes in work and have been reported to exert ambiguous effects in terms of challenge or hindrance. By tackling these questions, the studies conducted in this dissertation present empirical evidence for a better understanding of the challenging and hindering potential of time pressure and emotional demands in everyday working life and provide a more comprehensive understanding of subjective achievement experiences at work and their influence on well-being. The results provide theoretical insights for a refinement of the challenge–hindrance stressor framework, but also enable practical recommendations for addressing conditions and circumstances at work to improve employees' well-being.

In this dissertation, focus is on short-term variations of demands, achievements, and well-being as they occur in people's everyday working life. Empirical evidence shows that both employees' work-related experiences as well as work-related well-being is not stable but fluctuates within days and weeks (Sonnentag, 2015), calling for more research to investigate intraindividual models of employee well-being (Bakker, 2015; Ilies et al., 2015). By using weekly-diary and daily-diary study designs and primarily analyzing within-person effects, this dissertation provides insights and a more accurate understanding of within-person processes as they occur in employees' everyday life. Furthermore, this dissertation does not aim to focus

on specific occupational groups, but instead examines the effects of emotional demands, time pressure, and achievements on well-being covering a wide range of professions and occupational fields.

The dissertation comprises six chapters and is structured as follows: Following this chapter, chapter 2 introduces all the main theories and models that are used as a theoretical foundation of the research conducted for this dissertation. The chapter first focuses on the challenge–hindrance stressor framework and the resource and appraisal theory-based approaches that have been used as its theoretical foundation (i.e., conservation of resources [COR] theory, Hobfoll, 1989, 2001, and transactional theory of stress, Lazarus & Folkman, 1984). Then, criticism and current shortcomings of the challenge–hindrance distinction are discussed, highlighting the problem of categorizing work stressors a priori. Building upon COR theory and the success resource model of job stress (Grebner et al., 2008, 2010), it is furthermore illustrated how the consideration of subjective achievement experiences may contribute to shortcomings of research within the challenge–hindrance framework.

Chapters 3 to 5 contain the empirical studies conducted for this dissertation, investigating subjective achievement experiences with a focus on their role in the challenge–hindrance distinction of time pressure and emotional demands (study 1 and 2) and on their effects on employees' well-being (study 1 and 3). A combined overview of the conceptual models of the three studies is provided in Figure 1 at the end of this chapter.

Chapters 3 and 4 (study 1 and 2, respectively) focus on the role of subjective achievement experiences within the challenge–hindrance stressor framework. Both studies focus on emotional demands and time pressure and forego an a priori categorization of those demands into challenges or hindrances, and instead propose that both demands entail challenging and hindering potentials. Building upon reasoning from the success resource model of job stress (Grebner et al., 2008, 2010) and COR theory (Hobfoll, 1989, 2001), the two studies consider subjective achievement experiences as an important resource and an indicator of resource gain. The studies investigate different roles of subjective achievement experiences within the challenge–hindrance framework, that is, as a potential mediator between emotional demands and time pressure and employees' well-being, and as a potential moderator, influencing the relations between the two job demands and strain.

Study 1 focuses on subjective achievement experiences as a mediator in the challenge–hindrance stressor framework. Thereby, it differentiates between two kinds of achievement experiences that have been shown to be of importance and present in many jobs: task-related and prosocial achievement experiences. Based on the success resource model of job stress and COR theory, it is proposed that subjective achievement experiences are an indicator of whether emotional demands and time pressure are challenging or hindering. That is, whether they positively relate to achievement (i.e., resource gain) or not, which then affects employees' well-being. Furthermore, based on reasoning from COR theory, the study proposes that the job demands' relations with subjective achievement experiences are contingent on the presence of unnecessary tasks, which are presumed to consume resources necessary to handle emotional demands and time pressure. Thus, this study investigates whether positive relations of both job demands with resource gain (achievements experiences) are thwarted the more unnecessary tasks an employee is confronted with at work.

Study 2 of this dissertation investigates a potential moderating effect of subjective achievement experiences on the health-impairing and motivational processes within the challenge–hindrance framework. This study combines reasoning from both COR theory and transactional theory, emphasizing the importance of demand-specific cognitive appraisal when investigating challenging and hindering effects of job demands. Here, a central focus lies on the question of how achievement experiences, as an indicator of resource gain, may enhance or buffer the effects of employees' anticipated resource gain (challenge appraisal) or anticipated resource loss (hindrance appraisal), respectively.

Chapter 5 (study 3) shifts the attention, focusing on the positive effects of achievement experiences at work on employees' well-being in general. Positive effects of achievements on well-being have been shown in numerous empirical studies, so that the third study of this dissertation sets out to investigate more specifically how subjective achievement experiences — as a resource — exert positive influences on individuals' well-being. The study takes account of basic psychological needs theory (BPNT; Ryan & Deci, 2000, 2017), proposing that subjective achievement experiences satisfy basic psychological needs which in turn positively relate to employees' well-being (i.e., reduced ill-being).

In chapter 6, the three studies' results are summarized, discussed, and integrated into current theoretical models and frameworks. The chapter provides suggestions for future research, offers practical implications based on the findings of this dissertation, and closes with a general conclusion.

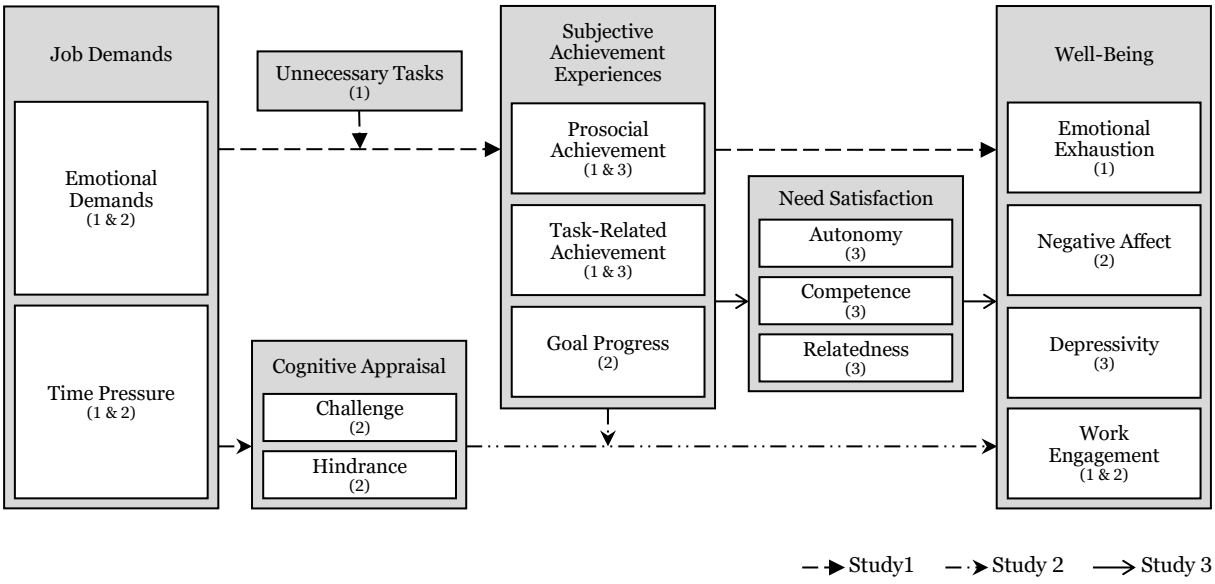

Figure 1. *Integrated Overview of the Conceptual Models proposed for this Dissertation*

Note. Numbers in brackets indicate the studies in which the respective variables were included.

Chapter 2

Theoretical Background

2.1 Ambivalent Relations between Job Demands and Well-Being: The Challenge–Hindrance Stressor Framework

In the occupational stress literature, focus has long been largely on job demands, which negatively impact employees' psychological and physical well-being (O'Brien & Beehr, 2019). Based on various empirical evidence, practical implications and recommendations consequently often aimed at reducing job demands in order to protect employees from negative effects on their well-being (Sonnentag & Frese, 2003). However, several studies also indicated the possible limitations of this approach, as certain demands sometimes did not relate to ill-being as expected or even positively related to subjective well-being (Scheck et al., 1997), performance (Peters et al., 1984), and desired job-related attitudes, such as job satisfaction (Dwyer & Ganster, 1991) and organizational commitment (Jex & Bliese, 1999).

Based on those ambivalent results, Cavanaugh et al. (1998, 2000) proposed the challenge–hindrance stressor framework, to account for differential associations of job demands with individuals' performance and well-being. In an attempt to differentiate between demands that show exclusively negative effects on employees' performance and well-being, and demands that show mixed (i.e., both positive and negative) effects, Cavanaugh et al. (1998, 2000) proposed a classification of job demands into two categories: challenge demands and hindrance demands. They defined challenge demands as "work related demands or circumstances that, although potentially stressful, have associated potential gains for individuals" (Cavanaugh et al., 1998, p. 6–7). Hindrance demands, on the other hand, are defined as "work-related demands or circumstances that tend to constrain or interfere with individual's work achievement, and which do not tend to be associated with potential gains for the individual [representing] an unmitigated source of stress" (Cavanaugh et al., 1998, p. 8). Thus, while both types of demands are assumed to positively relate to strain and reduced well-being, they are, by definition, presumed to differ with regard to achievement: challenge

demands relate positively to work achievement, whereas hindrance demands interfere with and block achievements. Consequently, achievements play an important role in the theoretical approaches applied by researchers to explain job demands' challenging and hindering effects. It seems apparent that the way in which demands relate to achievements or employees expect demands to affect achievements should be considered when investigating and proposing how demands relate to well-being and motivation. Yet, achievements have rarely been directly investigated when categorizing demands within the challenge–hindrance context.

2.1.1 Resource and Appraisal Theory-Based Approaches to the Challenge–Hindrance Distinction

Initially, Cavanaugh et al. (1998) took a resource-based approach in explaining the differential effects (i.e., health-impairing and motivational) of job demands, using reasoning from COR theory as a basis for their framework. Yet, in later works, Cavanaugh et al. (2000) took an appraisal-based approach to distinguish between challenge and hindrance demands, building on the primary appraisal process of the transactional theory of stress (Lazarus & Folkman, 1984). Although there are some incompatibilities between COR theory and transactional theory (see Hobfoll, 2001; Lazarus, 2001), both theories provide valid explanations and yield valuable insights to explain ambivalent empirical findings on the relationship between job demands and employees' well-being. In the following sections, an overview of both theories will be presented, as reasoning from both approaches is also used as a theoretical basis for the studies conducted in this dissertation.

Conservation of Resources Theory. COR theory, one of the most commonly cited theories in organizational psychology and organizational behavior in the past 30 years (Halbesleben et al., 2014), proposes that resources play a central role for the development of stress. More specifically, the theory proposes that stress occurs under three conditions: (1) when central resources are threatened with loss, (2) when resources are lost, or (3) when there is a failure to gain resources following significant resource investment (Hobfoll, 1989, 2001). Hobfoll (1989) defines resources broadly as "those objects, personal characteristics, conditions, or energies that are valued by the individual or that serve as a means for attainment of these objects, personal characteristics, conditions, or energies" (p. 516). The theory starts with the tenet that "individuals strive to obtain, retain, protect and foster those things that they

value [i.e., resources]" (Hobfoll, 2001, p. 341), with resources encompassing object resources (e.g., physical possessions), condition resources (e.g., employment), personal resources (e.g., self-efficacy) and energy resources (e.g., knowledge). Following this tenet, the theory posits several principles and corollaries to explain human motivation, behavior, and well-being. In the following paragraph, the four basic principles will be shortly described as the theoretical foundation of the research conducted as part of this dissertation merely draws on the tenet and the second principle of COR theory (for an extensive review of COR theory in the organizational context, see Hobfoll et al., 2018).

The first principle (i.e., the *primacy of loss principle*) of COR theory states that resource loss is disproportionately more salient than resource gain. As such, resource loss tends to affect the individual more rapidly, with greater effect and remains salient for much longer than comparable gains. The second principle (i.e., the *resource investment principle*) states that people must invest resources to protect against resource loss, to recover from resource loss or to gain resources. Regarding the challenge–hindrance stressor distinction, this principle is of central importance when it comes to health-impairing effects of job demands. Based on the second principle, any demand (i.e., challenge *and* hindrance) requires the investment of resources to be coped with and thus has the potential to result in negative health outcomes, independent of potential gains that may simultaneously arise. The third principle (i.e., the *gain paradox principle*) of COR theory states that resource gain increases in salience in the context of resource loss. That is, resource gains become more important for an individual when resource loss circumstances are high. Finally, the fourth principle (i.e., the *desperation principle*) states that individuals enter a defensive mode to preserve the self when resources are outstretched or exhausted, which may for example be indicated by aggressive or irrational behaviors.

Using COR theory as the theoretical foundation for the challenge–hindrance stressor framework, Cavanaugh et al. (1998) proposed that both challenge and hindrance demands consume resources, as energy and time is required to handle those demands (in line with the *resource investment principle*), inevitably resulting in resource loss and thereby stress. However, when overcome, challenge demands result in resource gain (e.g., achievement experiences), counteracting negative effects of resource loss. Hindrance demands, on the other

hand, are solely regarded as a source of stress, as these are obstacles which must also be overcome through the investment of resources, but from which no (new) resources can be gained.

Transactional Theory of Stress. According to the transactional theory of stress (Lazarus & Folkman, 1984), an individual's stress reaction to stressors depends primarily on the appraisal of the stressor, that is, how the individual interprets a particular stressor as well as the available personal resources to approach this stressor. Thus, in their theory, Lazarus and Folkman (1984) proposed that rather than the "objective" nature of a stressor, an individual's subjective evaluation is important for the subsequent psychological stress reaction. They emphasize that different people may react very differently to a particular stressor and that even for the same person the reaction may vary over time and across encounters.

The transactional theory of stress differentiates between two basic kinds of appraisal: primary and secondary appraisal. During *primary appraisal* an encounter (stressor) is first categorized dependent on whether or not it is relevant to an individual's values, goal commitments, beliefs about the self and the world, or situational intentions, and may thus be perceived as either irrelevant, positive or stressful. A stress process is only initiated when the encounter is perceived as stressful, which in turn can take the form of an appraisal as *harm/loss*, *threat* and *challenge* to that individual's well-being. Whereas harm/loss refers to damage that has already occurred (Lazarus, 1995), threat and challenge refer to effects that are anticipated in the future, with threat referring to "a harm that has not yet happened" (p. 4), and challenge referring to "a condition of high demand in which the emphasis is on mastering the demands, overcoming obstacles, and growing and expanding as an individual" (p. 4). Thus, challenge appraisal differs from threat and harm, as it emphasizes positive outcome possibilities. Furthermore, the theory proposes that threat and challenge appraisal can occur simultaneously and, even though one usually predominates, they are not mutually exclusive (Lazarus, 1995, 2012).

During *secondary appraisal* the individual assesses and evaluates their available coping options and how likely it is that a specific strategy may be successful in dealing with the harm, threat, or challenge (Lazarus & Folkman, 1984). This process is influenced by the availability of external and internal resources to deal with the stressful situation, such as the

individual's confidence and beliefs about being able to control oneself and environmental circumstances (Lazarus, 2012). When the individual assesses one's available resources as inadequate to meet the stressor, the theory proposes stress reactions to occur. In this theory, the primary and secondary appraisal process are assumed to operate concurrently with an active interplay rather than independently of each other.

Next to the cognitive appraisal process, the transactional theory of stress furthermore proposes a coping process to exert an important role for the development of stress (Lazarus & Folkman, 1984). Here, coping refers to the individual's cognitive and behavioral efforts to deal with the stressful encounter and to regulate emotions (i.e., problem-focused coping and emotion-focused coping). This dissertation only draws on the primary appraisal process of the transactional theory of stress. For a more in-depth description of the theory including the coping process, and its proposed application to the workplace, see Lazarus (1995).

2.1.2 Criticism and Shortcomings of the Challenge–Hindrance Stressor Framework

Overall, empirical studies seem to support the distinction between challenge and hindrance demands, with challenge demands being related to some positive outcomes, while hindrance demands are associated with negative outcomes (for meta-analyses, see Crawford et al., 2010; LePine et al., 2005; N. P. Podsakoff et al., 2007). Yet, the challenge–hindrance distinction has also been criticized from both theoretical and practical points of view (Mazzola & Disselhorst, 2019). Research showed that a clear classification of job demands into challenge or hindrance is, on the one hand, not always possible and, on the other hand, may represent an oversimplification that bears the risk of inappropriate actions being taken in practice. Overly emphasizing potential gains and positive effects of challenge demands, for example, could have negative consequences for employees in organizations if it leads to practical suggestions to increase "positive" challenge demands at work (e.g., within stress management programs or workplace interventions), as challenge demands nevertheless entail a health-impairing component (Mazzola & Disselhorst, 2019).

Within the challenge–hindrance research, job demands have often been categorized a priori as either challenge or hindrance demands (Searle & Auton, 2015). However, a definite categorization is problematic because it assumes that all people make the same appraisal under

the same circumstances, implying that specific demands relate to outcomes (e.g., motivation and well-being) in the same way for different people (Searle & Auton, 2015). Such an approach is not in line with the fundamental propositions of the transactional theory of stress. Nevertheless, the transactional theory of stress has been used by numerous researchers as the theoretical foundation for their arguments. As outlined in the previous section, the primary appraisal process of the transactional theory states that when confronted with a stressor, an individual may regard this stressor as either irrelevant, positive, or stressful, with "stressful" encompassing appraisals as challenge, threat, and harm/loss (Lazarus & Folkman, 1984). Thus, even though certain stressors may be appraised in a similar way by many people, it cannot be assumed that the general classification into *either* challenge *or* hindrance applies universally to all people. Moreover, the little research that did assess appraisals within the challenge–hindrance framework not only showed that appraisals of demands vary considerably among individuals, but also that the same demand may even be appraised as both challenging and hindering at the same time (Searle & Auton, 2015; Webster et al., 2011). Hence, this supports Lazarus and Folkman's (1984) further proposition, that threat and challenge appraisal can occur in the same situation.

Definite categorizations of demands into challenge or hindrance are furthermore seen as problematic, as research indicates that some demands seem to act as challenge demands in some circumstances but as hindrance demands under others (Bakker & Sanz-Vergel, 2013; Searle & Auton, 2015). Thus, this indicates that boundary conditions (i.e., personal and environmental characteristics) may play an important role for challenging and hindering effects to occur. For some job demands, clear categorizations may seem reasonable (e.g., role ambiguity or organizational constraints as hindrance demands), yet, there are also ambiguous stressors that may entail both challenging and hindering potentials, which may unfold contingent on boundary conditions. For time pressure and emotional demands, the two demands at focus in this dissertation, research by Bakker and Sanz-Vergel (2013) showed that time pressure (often regarded as a "typical" challenge demand) and emotional demands (often proposed as a hindrance demand) resulted in opposite effects in a sample of nurses, with time pressure showing effects of a hindrance demand and emotional demands being a challenge demand.

As outlined above, the definitions of challenge and hindrance demands emphasize the importance of achievements (Cavanaugh et al., 2000; LePine et al., 2004). Challenge and hindrance demands differ regarding their perceived opportunities for achievement and gains, that is, their *anticipated* (i.e., expected) relation with achievement. From the appraisal theory-based perspective (i.e., transactional theory), appraisals that are focused on the future (i.e., future harm or gains) are accompanied with a state of uncertainty as the individual cannot be sure about what will actually happen (Lazarus, 2012). It has been proposed that individuals continuously monitor their progress toward goals in relation to their expected rate of progress, with discrepancies between expected and actual outcomes affecting individuals' well-being (Carver & Scheier, 1982). From the resource theory-based perspective (i.e., COR theory), this translates into individuals continuously monitoring their resource gain in relation to their expected resource gain. As outlined in the previous section, one central proposition of COR theory states that stress occurs when individuals do not perceive resource gain following resource investment (Hobfoll, 1989, 2001). Independent of the type of demand (i.e., challenge or hindrance), an investment of energy and effort (i.e., resources) is required to cope with the demand (Dawson et al., 2016; Stiglbauer, 2018). Thus, based on the definition proposed in the challenge–hindrance stressor framework and especially when arguing with COR theory as the theoretical foundation, *actual* resource gain should be taken into account. It seems reasonable (especially when considering the role of achievements in the challenge–hindrance definitions), that work-related achievements, as a resource, should be considered in this context. Yet, achievement experiences have not been directly investigated or adequately been incorporated when examining the conditions under which the challenging or hindering potential of ambiguous job demands unfolds.

2.2 Subjective Achievement Experiences

Achievement experiences play a central role for individuals, with positive effects on well-being, engagement and motivation having been well established within the literature (e.g., Fredrickson, 2001; Locke & Latham, 2002; Weiss & Cropanzano, 1996). Having goals and especially progressing toward goal achievement are the main driving force for people to engage in activities. Reaching goals can result in positive psychological states such as happiness, increased well-being, and pride (Brunstein, 1993; Diener, 1984; Klug & Maier, 2015). Being

successful and experiencing achievement can foster an individual's belief in one's abilities and competences to effectively master challenges, in being able to have an impact on the environment, and it can create possibilities to achieve even larger goals and objectives. As such, goals and achievement play an important role for individuals' health and well-being in every aspect of life. In the past, research on achievement often focused on concrete goals and on how people's striving and attainment of those goals relate to well-being (e.g., Sheldon & Elliot, 1999), both in general and also within the working context.

This dissertation focuses on *subjective* achievement experiences at work. The subjectivity of achievement experiences takes into account that the meaning und success that is assigned to a performance outcome may vary between individuals as they depend on an individual's own frame of reference (Grebner et al., 2008). Subsequently the performance outcome may represent achievement for one person, but not necessarily from the perspective of others. Consequently, subjective achievement at work is also not necessarily synonymous with performance in terms of meeting organizational goals (Dyke & Murphy, 2006; Grebner et al., 2008).

Subjective achievement experiences may often result from the achievement of pre-set organizational goals (such as the successful completion of a project) and from significant progress towards such goals. But subjective achievement experiences can also result from spontaneous and small-scale achievements that do not necessarily relate to specific goals set by an employee, their supervisor, or organization (Mühlethaler, 2013). In fact, a considerable amount of tasks and events in everyday working life has been shown to occur unplanned (Claessens et al., 2010), which subsequently provides opportunities for achievements that were not necessarily anticipated or sought in advance. In sum, focusing on subjective achievement experiences takes into account that achievement experiences in everyday working life can occur during successful progress towards (larger) pre-set goals or the attainment thereof, and can result from spontaneous and small-scale achievements.

When focusing on subjective achievements at work, the question arises what kind of positive achievement events employees experience in everyday working life. Empirically, research has shown that most positive work events that people report in everyday working life are salient for themselves in terms of task-related success, goal achievement, and reasonable

goal progress (Basch & Fisher, 2000; Grebner et al., 2010; Ohly & Schmitt, 2015). Furthermore, results from different studies seem to indicate, that achievement experiences at work can be grouped into different clusters. Analyzing success events reported by employees, Grebner et al. (2008, 2010) classified subjective achievement experiences into four content-related dimensions. Two immediate and more frequent types of achievement experiences: task-related achievements (goal attainment and goal progress) and prosocial achievements (e.g., helping or motivating others), as well as two types of achievement experiences that are possible positive consequences thereof: positive feedback (e.g., from supervisors or colleagues) and career success (e.g., getting a promotion). Cluster analyses of positive work events by Ohly and Schmitt (2015) resulted in conceptually similar categories with "goal attainment, problem solving, task-related success", "praise, appreciation, positive feedback", and "perceived competence in or through social interactions" representing the most frequent positive events reported in their studies, thus paralleling and supporting results from Grebner et al. (2008, 2010). Building on Grebner et al. (2008, 2010), this dissertation focuses on subjective achievement experiences in everyday working life.

2.2.1 Achievement Experiences as a Resource

Within the occupational health psychology literature, there is broad consensus that theories and explanatory approaches to the development of work-related stress should include positive factors (i.e., resources) that promote optimal functioning, well-being, and health (Schaufeli, 2004). COR theory (Hobfoll, 1989, 2001) is one of the prominent theories in the current occupational health literature that emphasizes the role of resources. As outlined above (see section 2.1.1), the theory posits that resources play a central role for the development of stress and that people are motivated to acquire, retain, and protect resources. Hobfoll (1989) defines resources as "those objects, personal characteristics, conditions, or energies that are valued by the individual or that serve as a means for attainment of these objects, personal characteristics, conditions, or energies" (p. 516). Based on this definition, subjective achievement experiences at work can reasonably be considered a resource (Grebner et al., 2008, 2010), with achievement-related themes also occurring several times in Hobfoll's (2001) list of resources (e.g., "Feelings that I am accomplishing my goals", "Feeling that I am successful"; p. 342). Thus, subjective achievement experiences can be regarded not only as an energy resource that

may promote other resources (e.g., approval, job experiences, status, money), but also as a resource that is valued in its own right (Grebner et al., 2010), indicating in itself a resource gain.

Emphasizing the importance of subjective achievement experiences as a resource, Grebner et al. (2008, 2010) introduced the success resource model of job stress, providing a framework for understanding the role of achievement experiences in the stress process. The main proposition of this model is that subjective achievement experiences at work (termed 'occupational success experiences' in their model) promote well-being (Grebner et al., 2010). Even though the model posits reciprocal relationships between achievement experiences and well-being based on empirical evidence (e.g., Diener et al., 1999; Judge et al., 2001), it emphasizes the beneficial main effects of subjective achievement experiences on positive affect, well-being, and health. The model proposes that job- and person-related resources (e.g., job control or social support) promote achievement experiences, while job-related demands (task-related demands, such as role ambiguity and constraints; and social stressors, such as workplace conflicts) hamper subjective achievement. Combining this reasoning with the challenge–hindrance distinction outlined in the previous sections, it is suggested in this dissertation that job demands may also promote subjective achievement experiences, which in turn affects employees' well-being and motivation.

Furthermore, it is proposed that subjective achievement experiences as a resource can influence the effects of demands on employees' well-being and motivation. Subjective achievement experiences may indicate whether employees' anticipation of achievements was correct or not. Experiencing more achievements than expected due to the demands at hand may buffer negative and strengthen positive effects on employees' well-being, whereas experiencing less achievements than expected may worsen effects on well-being. Overall, this dissertation suggests that subjective achievement experiences play a central role both directly for employees' well-being and may also influence the differential effects of time pressure and emotional demands as challenge and hindrance on well-being and motivation in various ways (as a mediator and/or moderator).

2.2.2 Achievement Experiences and Basic Psychological Need Satisfaction

Empirical research has consistently shown that successful performance and achievement increases well-being and reduces ill-being (for a meta-analysis, see Klug & Maier, 2015). Based on these findings, the focus of this dissertation is explicitly on subjective achievement experiences as an antecedent of well-being and, as a first step, on how subjective achievement experiences reduce ill-being. Drawing on basic psychological needs theory (BPNT; Ryan & Deci, 2000, 2017), it is proposed, that the satisfaction of the psychological needs for autonomy, competence, and relatedness acts as the underlying mechanism linking subjective achievement experiences to employees' well-being.

Basic psychological needs theory is one of six sub-theories within self-determination theory (SDT; Ryan & Deci, 2000, 2017), a meta-theory of human motivation. Each sub-theory addresses different aspects of motivation, with BPNT focusing on basic psychological needs and their relation to psychological health and well-being. Ryan and Deci (2000) propose three basic psychological needs: the needs for *autonomy*, *competence*, and *relatedness*. They argue that the satisfaction of these three needs is essential to optimal functioning, thriving, and well-being across individuals and cultures. In BPNT, autonomy refers to "feeling willingness and volition with respect to one's behaviors [and it describes] the need of individuals to experience self-endorsement and ownership of their actions" (Ryan & Deci, 2017, p. 86), competence refers to "feeling effective in one's interactions with the social environment — that is, experiencing opportunities and supports for the exercise, expansion, and expression of one's capacities and talents" (p. 86), and relatedness refers to "feeling connected and involved with others and having a sense of belonging [which] is experienced both in being cared about and in caring" (p. 86). Research focusing on these basic psychological needs shows that their satisfaction relates to both increased positive and decreased negative aspects of well-being (e.g., positive and negative affect, general well-being, exhaustion, and engagement), supporting the general proposition of BPNT (for meta-analyses, see Ng et al., 2012; van den Broeck et al., 2016). BPNT has been used to explain not only how job demands impact employees' well-being, but also how resources at work (e.g., task autonomy and positive feedback) influence well-being via the satisfaction of the three basic psychological needs (van den Broeck et al., 2008). In this dissertation, it is proposed that basic psychological need

satisfaction may also explain positive effects of subjective achievement experiences on employees' well-being in everyday working life.

Chapter 3

Study 1:
Subjective Achievement Experiences as a Mediator for Challenging and Hindering Effects of Emotional Demands and Time Pressure[1]

3.1 Abstract

Job demands push employees to invest energy in certain behaviors in order to perform well, which can come with both costs and benefits to employees' well-being and motivation. Previous research presents contradictory results concerning whether specific job demands are a challenge (i.e., motivating) or a hindrance (i.e., only distressing). Building on the conservation of resources theory and the success resource model, we propose achievement experiences as an important work-related resource and indicator of whether job demands are challenging or hindering. We hypothesized that time pressure and emotional demands are positively related to achievement experiences (task-related and prosocial), contingent on the perception of unnecessary tasks, which in turn relate to work engagement and emotional exhaustion. Weekly diary data was gathered from 323 employees over the course of four weeks. Multilevel moderated mediation analyses revealed that time pressure and emotional demands unfold their challenging potential when unnecessary tasks are less frequent, and that these effects hold true for matching demands and achievement experiences (task-related and interpersonal dimensions). Overall, our study provides a resource-based theoretical rationale for the ambiguous results reported by various other studies, and it emphasizes the importance of subjective achievement experiences for employees' well-being.

[1] This chapter is a re-print of a manuscript that has been accepted for publication. The final published version is available in the Journal of Occupational Health Psychology:

Kronenwett, M., & Rigotti, T. (2019). When do you face a challenge? How unnecessary tasks block the challenging potential of time pressure and emotional demands. *Journal of Occupational Health Psychology, 24*(5), 512–526. https://doi.org/10.1037/ocp0000149

3.2 Introduction

Job demands have long been considered to have only negative effects on employees' health, such as burnout. However, there is growing evidence that job demands can trigger motivational gains (e.g., LePine et al., 2004; Widmer et al., 2012). Time pressure, for instance, has been found to be positively related to increased work engagement, showing its motivating (i.e., challenging) potential (e.g., Cavanaugh et al., 2000; Crawford et al., 2010; N. P. Podsakoff et al., 2007; Widmer et al., 2012). Other demands, such as role ambiguity, role conflicts, and daily hassles, on the other hand, are assumed to not have such challenging potential and only negatively affect workers' health and well-being. Such job demands are considered a hindrance (LePine et al., 2004).

Recent research has indicated that some demands may unfold their challenging and hindering potential contingent on the occupational sector (Bakker & Sanz-Vergel, 2013). Bakker and Sanz-Vergel (2013) have suggested that nurses perceive time pressure to be mostly hindering, rather than challenging, as time pressure was found to be negatively related to work engagement in their study. Furthermore, they found that, for nurses, emotional demands (that are often classified as a hindrance stressor) show the effects of challenge demands rather than hindrance demands. Bakker and Sanz-Vergel (2013) argued that, in professions in which taking care of others constitutes the core of one's work and central work value, emotional demands can be associated with motivational gains, since they appear legitimate and part of the nature of the profession, whereas time pressure may "frustrate the goal of providing good care to the patients" (p. 398). Building on this, we chose to investigate the conditional effects of the challenging and hindering *potential* of time pressure and emotional demands, independent of the specific profession.

In our study, we provide a theoretical advancement of the challenge–hindrance stressor framework by integrating the conservation of resources (COR) theory (Hobfoll, 1989) as well as the success resource model (Grebner et al., 2010). Thereby, we provide a resource-based theoretical rationale and empirical evidence to explain why previous research on time pressure and emotional demands (as challenge and hindrance stressors) has been partially contradictory. We regard employees' achievement experiences as a resource and an indicator of whether time pressure and emotional demands unfold their challenging potential.

While many tasks enable employees to achieve goals, other tasks do not facilitate any reasonable objectives. Unnecessary tasks, as defined by Semmer et al. (2007), do not serve any meaningful purpose from an employee perspective. In regard to time pressure, research has shown that, at moderate levels, challenging effects can arise, but not if time pressure is induced by unreasonable tasks (Schmitt et al., 2015). From a resource-based perspective, unnecessary tasks require an additional investment of resources (e.g., effort and time) in order to perform and to get on with the actual work. Therefore, the more unnecessary tasks employees are confronted with, the less resources they may have available for their actual work, and thus have fewer opportunities to achieve their goals. Therefore, unnecessary tasks are expected to 'hinder' achievement experiences, and we propose that these tasks play an important role in the challenging and hindering potential of time pressure and emotional demands, by suppressing the challenging potential and fostering the hindering potential.

In this study, we propose a conditional indirect effects model that links time pressure and emotional demands to work engagement and emotional exhaustion. First, we focus on the direct link between these demands and achievement experiences (differentiating between task-related achievement and prosocial achievement), and then expand the reasoning by introducing unnecessary tasks as a boundary condition for indirect effects (see Figure 2 for the proposed conceptual model). By empirically testing this model and using a weekly diary design, we aim to gain a better understanding of the processes and conditions under which time pressure and emotional demands unfold their challenging and hindering potential throughout different professions. Our research findings can help tailor occupational health programs within organizations by focusing on job design and job characteristics and can provide evidence-based recommendations for employees.

3.3 Theoretical Background

3.3.1 Challenge versus Hindrance Demands

Within the work context, research has shown that job demands affect employees' health and can play different roles in motivational processes. One recent development in occupational health research that addresses the differential effects of job demands is the challenge–hindrance stressor framework (Cavanaugh et al., 2000; LePine et al., 2005). In this framework, challenge stressors are defined as job demands that have the potential to promote personal

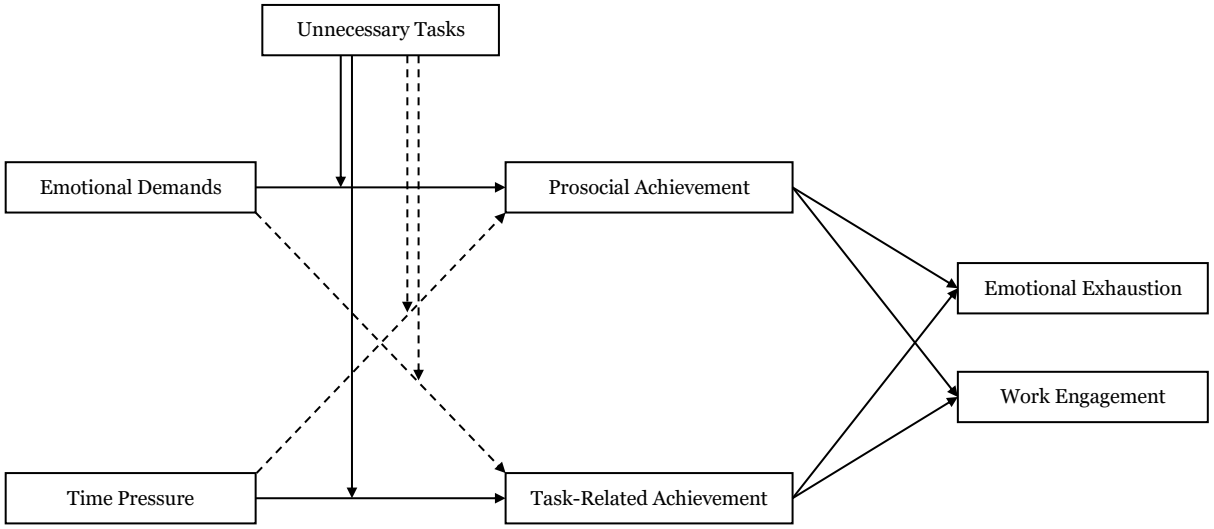

Figure 2. *Conceptual Model of the Relationships for the 1-1-1 Multilevel Moderated Mediation Model*

Note. Dotted arrows represent relationships that were included in the statistical analysis, but not explicitly hypothesized. Direct effects from emotional demands and time pressure to emotional exhaustion and work engagement are not presented for ease of representation.

growth and to foster the achievement of personal goals, whereas hindrance stressors are defined as job demands that interfere with accomplishment (Cavanaugh et al., 2000). Both types of job demands require increased effort in coping, and thus drain an individual's energy (Crawford et al., 2010). Thus, both challenge and hindrance demands have the potential to negatively affect an employee's health, meaning that both can lead to impaired well-being such as fatigue and exhaustion (Crawford et al., 2010). However, regarding their association with motivation, work engagement, and achievement, challenge and hindrance demands are — by definition — different in their outcomes. Hindrance demands *decrease* engagement and constrain personal development and work-related accomplishment, as such demands represent obstacles that prevent opportunities for personal growth and hinder progress toward achievement (Crawford et al., 2010; N. P. Podsakoff et al., 2007; Tuckey et al., 2015), whereas challenge demands, on the other hand, *promote* work engagement, achievement, and personal growth (N. P. Podsakoff et al., 2007; Tuckey et al., 2015). Since challenge demands enhance opportunities for future gains, investing resources (e.g., energy) may be seen as beneficial (Crawford et al., 2010). In short, challenge and hindrance demands differ in terms of motivational aspects and, from a resource investment perspective, they differ with regard to possible gains following resource investment.

In past research, job demands have often been categorized a priori as either challenge or hindrance demands (Searle & Auton, 2015). However, a definitive categorization is seen as problematic, as it assumes that a specific demand leads to the same results for different individuals in different contexts. This is contentious, as the same demand at work does not always have the same impact under different circumstances and in different situations (Crawford et al., 2010; Webster et al., 2011). Time pressure and emotional demands, for example, have mostly been reported as triggering challenging effects (time pressure) or hindering effects (emotional demands). However, they have also been found to demonstrate the opposite of what has been previously determined for specific occupations (e.g., Bakker & Sanz-Vergel, 2013). Consequently, more research is needed to uncover the conditions under which these demands exhibit challenging and hindering effects (Bakker & Demerouti, 2017; Bakker & Sanz-Vergel, 2013). In this paper, we refer to time pressure and emotional demands as 'demands with challenging and hindering potential' and suggest conditions under which these potentials may unfold.

3.3.2 Subjective Achievement Experiences as Resources

The definitions of challenge and hindrance demands emphasize the importance of achievement events, such as goal attainment and their potential role in the motivational process (Crawford et al., 2010; LePine et al., 2005). The prominent role of goals and achievements in individuals' actions, motivation, and well-being has been well established within the literature (e.g., Locke & Latham, 1990, 2002; Semmer, 2003). Reaching important goals is assumed to increase an individual's energy level and, as a result, acts as a motivating force (Locke & Latham, 1990). The experience of goal achievement can further be seen as an affective event that exerts a positive influence on an individual's affect and emotions (Weiss & Cropanzano, 1996). Occupational achievement experiences are likely to elicit positive emotions, such as pride and joy, thereby broadening an individual's thought-action repertoires and motivating them to engage at work (Avey et al., 2008; Fredrickson, 2001). Moreover, mastery experiences boost self-efficacy beliefs (Bandura, 2001; Rigotti et al., 2020), and thus enhance work engagement (Schaufeli & Salanova, 2010). For this reason, demands that promote achievements should increase motivation and work engagement. Yet, despite the profound role of achievement in individuals' lives, work-related accomplishment and

achievement have not been comprehensively assessed when investigating the conditions under which the challenging or hindering potential of demands unfold.

One of the most prominent resource-based theories of stress and motivation in the current organizational behavior literature is the conservation of resources (COR) theory (Halbesleben et al., 2014; Hobfoll, 1989). The COR theory posits that people are motivated to acquire, retain, and protect resources, and that people invest resources to do so (Hobfoll, 1989, 2001). The theory further states that stress will be experienced if the following occur: "(a) the threat of a net loss of resources, (b) the net loss of resources, or (c) a lack of resource gain following the investment of resources" (Hobfoll, 1989, p. 516). In this theory, resources are loosely defined as things (i.e., objects, states, personal characteristics, or conditions) that individuals value (Hobfoll, 1989, 2001). Accordingly, subjective achievement experiences can reasonably be considered resources, since they are valued in their own right (Beehr & Grebner, 2009; Grebner et al., 2008). In accordance with this reasoning, the success resource model (Grebner et al., 2008) has been proposed, which considers achievement experiences to be important work-related resources that facilitate and promote employees' well-being and health (Grebner et al., 2010).

The success resource model emphasizes the importance of different types of achievement events, and further suggests two frequent dimensions of subjective occupational achievement experiences that are presumed to play an important role in individuals' well-being: task-related achievements and prosocial achievements. Within COR theory, the feeling of being successful and feeling valuable to others are also regarded as important resources for individuals (Hobfoll, 2001). In the success resource model, task-related achievement is experienced when employees accomplish their own work tasks, make progress toward work goals or attain their goals. Prosocial success refers to interpersonal achievements, such as when employees improve the situations of others (e.g., colleagues/clients/patients) or help others make progress toward their goals. Task-related achievements and prosocial achievements are considered immediate personal experiences of one's successful work-related performance (Grebner et al., 2008). In our study, we focus specifically on these two achievement experiences, as they can also encompass achievement events that result from tasks that are not planned in advance or that relate to goals that were not explicitly set, which

may be excluded when only investigating achievements related to explicitly set and personally important work goals (Gross et al., 2011; Ilies et al., 2011; Mühlethaler, 2013).

Both time pressure and emotional demands require effort and an investment of resources to perform and to experience achievement. Time pressure is the extent to which employees feel that they have to work at a pace faster than usual, or to which they feel that there is not sufficient time to complete their work (Kinicki & Vecchio, 1994; Ohly & Fritz, 2010). Emotional demands can be defined as job characteristics that require sustained emotional effort due to interaction with others (de Jonge & Dormann, 2003). As stated above, the COR theory proposes that individuals are motivated to invest resources to obtain what they value (resources), and that stress will occur "where employees fail to gain sufficient resources following significant resource investment" (Hobfoll, 2001, p. 342). Thus, if investing resources (e.g., time and emotions) to manage time pressure and emotional demands leads to positive achievement experiences (i.e., a resource), then those achievement experiences may indicate that individuals invested their resources effectively, resulting in a 'net gain' of resources. However, if progress is prevented or the goal is not achieved, individuals may either have to invest additional energy, effort, and time to complete the task (in addition to the effort required to manage time pressure and emotional demands; Crawford et al., 2010; Grebner et al., 2010), or they may have less resources left to successfully manage time pressure and emotional demands in a way that will result in achievement. As a consequence, a subjective 'net loss' of resources may result.

3.3.3 Unnecessary Tasks as a Boundary Condition

Unnecessary tasks are tasks that do not make sense to an employee, could be carried out with less effort, or could even be avoided if the work had been organized differently or if others had made fewer mistakes (Semmer et al., 2015). They are, by definition, perceived to be useless and can stand in the way of employees executing their tasks in an efficient manner, and thus hinder achievement. Examples of such tasks include having to write reports that hardly anyone will ever read, or being required to attend meetings in which only a small part of the meeting is relevant for oneself. Unnecessary tasks require additional unjustified effort and time, and thereby slow down or even block the progress toward meaningful goals or achievement experiences. Whether tasks are regarded as unnecessary depends on the circumstances and an

employee's given work role and duties. Thus, by assessing unnecessary tasks, one does not have to propose different effects based on an employee's occupation or work role. When individuals have to accomplish unnecessary tasks, feelings of frustration, failure, and dissatisfaction can arise, resulting in a subsequent decline in well-being (Higgins, 1987; Tuckey et al., 2015). As a result, individuals may be less motivated and dedicated (Crawford et al., 2010; LePine et al., 2005; Tuckey et al., 2015). From a COR theory perspective, unnecessary tasks consume time and emotional resources, which restricts the investment of the resources necessary to successfully meet time pressure and emotional demands in ways that result in meaningful achievements and resource gain. Thus, unnecessary tasks threaten employees' resources, and thereby hinder the completion of more important tasks and they consume energy resources (e.g., time and emotions) that are necessary to support other people at work. Therefore, we propose that when time pressure and emotional demands are combined with many unnecessary tasks, then those two demands cannot unfold their challenging potential. Thus, we propose that the relation between the two job demands and achievement experiences should be contingent on the perception of unnecessary tasks.

Recent theoretical developments in stress research have suggested that the specific interplay between stressors, resources, and well-being may be strongest when the variables under investigation are based on qualitatively identical dimensions, so that, for example, the types of resources correspond to the types of demands (the so-called *matching principle*; de Jonge & Dormann, 2006). Drawing on this principle, we argue that emotional demands should primarily be associated with prosocial achievements, as they can both be assigned to an interpersonal dimension, whereas time pressure should primarily be associated with task-related achievements, as they can both be attributed to a task-related dimension.

> *Hypothesis 1:* The relationship between emotional demands and prosocial achievement is moderated by unnecessary tasks, such that the relationship is positive (challenge) when unnecessary tasks are less frequent and negative (hindrance) when unnecessary tasks are more frequent.

> *Hypothesis 2:* The relationship between time pressure and task-related achievement is moderated by unnecessary tasks, such that the relationship is positive (challenge)

when unnecessary tasks are less frequent and negative (hindrance) when unnecessary tasks are more frequent.

3.3.4 Motivational Gains and Health-Impairment

Achievement and mastery experiences at work can significantly improve well-being, motivation, and work engagement (Harris et al., 2003; Schaufeli & Salanova, 2010; Sheldon & Elliot, 1999). Achievement experiences can plausibly be conceptualized as resources, and can thus be considered antecedents to well-being (Beehr & Grebner, 2009; Grebner et al., 2008). Based on COR theory, resource gain spirals (Hobfoll, 2001) can be assumed, with reciprocal effects between subjective achievement experiences and employees' well-being. Yet, based on the success resource model, the positive effects of subjective achievement experiences on well-being are assumed to be stronger compared to the reversed causal effects of increased well-being on achievement experiences (Grebner et al., 2010). Furthermore, from the COR theory perspective, when achievements are minimized, resources are lost and employees should feel exhausted and disengaged in order to conserve resources further. While we acknowledge the reciprocal effects between achievement experiences and both well-being and work engagement (e.g., Bandura, 2001; Diener et al., 1999; Grebner et al., 2010), our focus is on achievement experiences as an antecedent to well-being, and we propose that subjective achievement experiences lead to motivation and a lack of achievement experiences leads to strain. To further explore the challenging and hindering potential of job demands and their possible consequences for employees' well-being, this research examines employees' optimal functioning and malfunctioning. In the present study, we focus on emotional exhaustion (i.e., the core component of burnout) as an indicator of strain, and on work engagement as a subsequent indicator of challenge or hindrance. Rather than focusing on specific professions and work roles and possible differences between occupational sectors, our model aims to determine conditions at the workplace under which the challenging and hindering potential of job demands unfolds, and thus whether employees feel engaged or exhausted. Furthermore, covering both concepts might be valuable for practitioners, as they are interested in understanding what causes burnout, as well as what energizes employees (Bakker et al., 2008).

Work Engagement as the Dependent Variable. As previously mentioned, the relation with work engagement has frequently been used to decide whether demands are

classified as challenge or hindrance demands (e.g., Crawford et al., 2010). Thus, if work engagement increased as a result of a job demand, it was considered a "challenge demand", whereas a decrease in work engagement resulted in it being labeled a "hindrance demand". As argued above, we assume that whether emotional demands and time pressure act as either challenge or hindrance demands depends on whether or not they promote achievement experiences. The following hypotheses are thus proposed:

> *Hypothesis 3:* There is a positive relationship between achievement experiences and work engagement, with both (Hypothesis 3a) prosocial achievement and (Hypothesis 3b) task-related achievement being positively related to work engagement.

Combining Hypothesis 1, Hypothesis 2, and Hypothesis 3 leads to the following hypotheses:

> *Hypothesis 4* (*Hypothesis 1 + Hypothesis 3a):* There is a conditional indirect relationship between emotional demands and work engagement via prosocial achievement experiences. When unnecessary tasks are less frequent, emotional demands will be positively related to prosocial achievement (challenge), and hence more work engagement will be reported. When unnecessary tasks are more frequent, emotional demands will be negatively related to prosocial achievement (hindrance), and hence less work engagement will be reported.

> *Hypothesis 5* (*Hypothesis 2 + Hypothesis 3b):* There is a conditional indirect relationship between time pressure and work engagement via task-related achievement experiences. When unnecessary tasks are less frequent, time pressure will be positively related to task-related achievement (challenge), and hence more work engagement will be reported. When unnecessary tasks are more frequent, time pressure will be negatively related to task-related achievement (hindrance), and hence less work engagement will be reported.

Emotional Exhaustion as the Dependent Variable. As we aim to understand the ambivalent nature of demands and their challenging and hindering potential, we must also consider their effects on strain (i.e., emotional exhaustion). When emotional exhaustion is the dependent variable, the relationship with emotional demands and time pressure is less clear in our proposed model.

Examining previous studies, the results consistently indicate that job demands deplete workers' energy, leading to increased emotional exhaustion over time (e.g., Bakker et al., 2005; LePine et al., 2004). Crawford et al. (2010) have further found this to be the case for both challenge and hindrance demands. Hence, we also expect to find the following direct effects:

> *Hypothesis 6:* There is a positive relationship between (Hypothesis 6a) emotional demands and (Hypothesis 6b) time pressure with emotional exhaustion.

As previously argued, with regard to well-being measures, achievement experiences can be considered resources that increase workers' well-being, and thus reduce emotional exhaustion. A diary study by Harris et al. (2003) provides empirical support, showing that daily individual goal attainment has a positive effect on pleasurable and activated affect (especially when the goals are important to the individual). Furthermore, research has also discovered that perceived prosocial impact improves the helpers' own affective states (Grant & Sonnentag, 2010) and replenishes their personal resources (Lanaj et al., 2016). As previously argued, being confronted with unnecessary tasks represents an obstacle to achievement that requires additional effort (i.e., investment of time and emotion resources), and thus impedes achievement experiences. The COR theory also proposes that stress will occur if employees' resources (i.e., achievement experiences) are threatened, or "where individuals fail to gain sufficient resources following resource investment" (Hobfoll, 2001, p. 342). Therefore, we argue that demands show their health-impairment potential contingent on the perception of unnecessary tasks. Thus, we propose the following hypotheses:

> *Hypothesis 7:* There is a negative relationship between achievement experiences and emotional exhaustion, with both (Hypothesis 7a) prosocial achievement and (Hypothesis 7b) task-related achievement being negatively related to emotional exhaustion.

Combining Hypothesis 1, Hypothesis 2, and Hypothesis 7 leads to the following hypotheses:

> *Hypothesis 8* (*Hypothesis 1 + Hypothesis 7a):* There is a conditional indirect relationship between emotional demands and emotional exhaustion via prosocial achievement. When unnecessary tasks are less frequent, emotional demands will be positively related to prosocial achievement, and hence less emotional exhaustion will be reported. When unnecessary tasks are more frequent, emotional demands will be negatively related to prosocial achievement, and hence more emotional exhaustion will be reported.

> *Hypothesis 9* (*Hypothesis 1 + Hypothesis 7b):* There is a conditional indirect relationship between time pressure and emotional exhaustion via task-related achievement. When unnecessary tasks are less frequent, time pressure will be positively related to task-related achievement, and hence less emotional exhaustion will be reported. When unnecessary tasks are more frequent, time pressure will be negatively related to task-related achievement, and hence more emotional exhaustion will be reported.

3.4 Method

Various companies and organizations from different economic sectors (i.e., the production industry, health and social sector) were recruited to promote the study among their employees. Furthermore, participants were recruited online by posting the study on social networking websites. Interested persons could register online for the study by providing an email address. Over a period of four consecutive weeks, participants received an email with a link to the online questionnaire at the end of each work week (i.e., Fridays, if the participant did not explicitly state another weekday as the last day of their work week during registration; Two participants stated that Thursday was the last day of their work week). Each week, participants were asked to fill out the same questionnaire, with each questionnaire assessing the current week. Since an employee's work week typically lasts from Monday to Friday, with the weekends forming natural breaks, we decided to use time lags of one week, in accordance with previous research (e.g., Bakker & Bal, 2010; Sonnentag et al., 2008; van Woerkom et al., 2016). Moreover, achievement experiences and progress made towards goals might be more easily assessed and

evaluated at the end of a work week. Furthermore, previous research has shown that workers can accurately judge and report their well-being and work engagement on a weekly basis (Totterdell et al., 2006).

One organization (15 participants; 4.6% of the total sample) also received the questionnaires as paper-pencil versions, as the employees did not feel confident answering the questions online. To ensure anonymity, all participants were asked to create a personal code at the beginning of each questionnaire, which was used to match the questionnaires from the four time points. Participation was voluntary. To encourage participation, five €20 vouchers were randomly awarded, via lottery, at the end of the study period. Furthermore, participants received an aggregated report of the research project's results after the data was collected. In addition, each participating company received a company-specific anonymous report when more than 14 employees participated.

Overall, 463 individuals participated in our study. To be included in the analysis, participants had to complete at least two of the four questionnaires, resulting in a final sample of 323 participants (69.8%). Demographic information was only obtained during the first week, so that the demographics presented in the following section only refer to those individuals who participated starting in week one (N = 275; 85.1%). Of these, 139 individuals were female (50.5%) and 136 were male (49.5%), between the ages of 18 to 63 years (M = 42.93, SD = 11.40). Actual hours spent working per week ranged from 15 to 60 hours (M = 41.07, SD = 7.03). Twenty-seven individuals reported having a fixed-term work contract (9.8%), 240 individuals reported having a permanent work contract (85.8%), and four individuals were self-employed (1.5%). One-hundred and ten participants indicated having leadership responsibilities (40%); 264 indicated having contact with colleagues (96.4%), and 178 reported being in direct contact with customers/clients/patients (66.9%). Participants were employed in different economic sectors: the industrial sector (236; 73.1%), human health and social work activities (37; 11.5%), education (14; 4.3%), the service sector (11; 3.4%), public administration (6; 1.9%), science (1; 0.3%) and 'others' (2; 0.6%) (missing data for 16 individuals; 5%). In the final sample, 63 participants responded to two questionnaires (19.5 %), 98 participants responded to three questionnaires (30.3%), and 162 participants responded to all four questionnaires (50.2%).

To investigate whether a systematic attrition occurred, we compared the final sample with the results obtained from individuals who only participated once (i.e., drop-outs). There was no significant difference between the two groups in regard to emotional demands ($F(1,461) = 2.22$, $p = .14$), time pressure ($F(1,461) = 1.00$, $p = .32$), unnecessary tasks ($F(1,457) = 0.08$, $p = .78$), task-related achievement ($F(1,458) = 0.33$, $p = .57$), emotional exhaustion ($F(1,457) = 0.04$, $p = .84$), or work engagement ($F(1,457) = 1.33$, $p = .25$). The groups, however, differed in regard to reported prosocial achievement, with the drop-outs reporting more prosocial achievement ($M_{sample} = 4.20$, $M_{drop\text{-}out} = 4.44$, $F(1,457) = 4.07$, $p = .04$). In regard to demographic differences, the drop-outs were younger than the final sample ($M_{sample} = 42.93$, $M_{drop\text{-}out} = 39.60$, $F(1,348) = 4.94$, $p = .03$), but did not differ on gender ($\chi^2(1) = 0$, $p = .99$), hours spent working per week ($F(1,344) = 0.05$, $p = .82$), contact with colleagues ($\chi^2(1) = 1.04$, $p = .31$), contact with customers/clients/patients ($\chi^2(1) = 0.66$, $p = .42$), leadership responsibilities ($\chi^2(1) = 0.39$, $p = .53$), or economic sector ($\chi^2(6) = 11.92$, $p = .06$). Overall, these analyses do not indicate a substantial selection bias of the sample used.

3.4.1 Instruments

To reduce questionnaire length and response burden, the scales used in this study were shortened by selecting items based on their face validity, so that the constructs under investigation were broadly covered and the scale's validity was maintained (C. D. Fisher & To, 2012). Since the questionnaires had to be filled out at the end of every work week, each construct was introduced with a short reminder to answer the questions based on the current work week (i.e., "Please answer the following questions relating to your current work week").

Emotional Demands. Emotional demands were measured using the emotional demands scale of the Copenhagen Psychosocial Questionnaire (COPSOQ; Kristensen et al., 2005). This instrument consists of three items with response options on a five-point Likert scale, ranging from 1 (*to a very small extent*) to 5 (*to a very large extent*); A sample item was "Was your work emotionally demanding?". Cronbach's alpha varied across the four weeks from .87 to .92.

Time Pressure. To assess time pressure, three items from the stress-oriented job analysis instrument (ISTA; Semmer et al., 1999) were used. Participants were asked to indicate the degree of occurrence using five-point Likert scale responses that ranged from

1 (*never/hardly ever*) to 5 (*always*); For example: "How often did you have to work faster than normal in order to complete your work?". Cronbach's alpha varied across the four weeks from .89 to .93.

Unnecessary Tasks. To assess unnecessary tasks, four items from the Bern Illegitimate Tasks Scale (BITS; Semmer et al., 2010) were used. Participants had to indicate the frequency of occurrence of such tasks on a five-point Likert scale, ranging from 1 (*never/very rarely*) to 5 (*very often*). All items were introduced with the phrase "Did you have work tasks to take care of, which kept you wondering if …", followed by statements like "… they have to be done at all?". Cronbach's alpha varied across the four weeks from .83 to .89.

Achievement Experiences. To assess subjective achievement experiences, the Subjective Occupational Success Scale (SUCCESS; Grebner et al., 2010) was used. For prosocial achievement, the "prosocial success sub-scale" of the SUCCESS was used, and for task-related achievement, "the goal attainment sub-scale" was used. Participants had to rate six items for prosocial achievement and three items for task-related achievement on a seven-point Likert scale, ranging from 1 (*never*) to 7 (*almost always/all the time*). Sample items are "I helped others to succeed" for prosocial achievement, and "I completed my tasks" for task-related achievement. Cronbach's alpha varied across the four weeks from .89 to .93 for prosocial achievement, and from .87 to .93 for task-related achievement.

Emotional Exhaustion. To assess emotional exhaustion, the German version of the Maslach Burnout Inventory–General Survey (MBI-GS; Büssing & Glaser, 1998; Schaufeli et al., 1996) was used. For the purpose of this study, participants completed three items adapted from the emotional exhaustion sub-scale of the MBI-GS, by rating the items on a seven-point Likert scale, ranging from 1 (*never/hardly ever*) to 7 (*always*); For example: "I felt burned out from my work." Cronbach's alpha varied across the four weeks from .89 to .90.

Work Engagement. To assess work engagement, six items were taken from the *Utrecht Work Engagement Scale-9* (UWES-9; Schaufeli et al., 2006), which covered the three sub-scales vigor, dedication, and absorption, with two items each. Again, this measure was administered on a seven-point Likert sale ranging from 1 (*never/hardly ever*) to 7 (*always*). Sample items are "At my job, I felt strong and vigorous" (vigor); "I was enthusiastic about my

job" (dedication); and "I got carried away when I was working" (absorption). Cronbach's alpha varied across the four weeks from .93 to .95.

Control Variables. We used direct contact with customers/clients/patients (yes/no), age (in years), and actual working hours per week as control variables. These items were chosen because participants who are in direct contact with the customers/clients/patients could be assumed to differ in regard to prosocial experiences, and thus prosocial achievements. Second, age was selected as a proxy for work experience, which we did not directly assess, but which can be assumed to have an effect on how employees deal with job demands. Third, work hours per week was chosen because participants who work more hours might also be exposed to more unnecessary tasks.

3.4.2 Analysis

All hypotheses were tested at Level 1 (within-person effects). We controlled for Level 2 relations (between-persons) to properly disentangle within- and between-persons effects (Raudenbush & Bryk, 2002). Furthermore, in accordance with matching demands and related achievement experiences, we restricted the formulation of hypotheses to the paths we deemed to be theoretically most relevant. Nevertheless, we also included and tested the non-matching paths in our empirical model (see dotted arrows in Figure 2).

To test the research hypotheses, we used a multilevel path analysis to analyze the data. A multilevel moderated mediation analysis was conducted using Mplus Version 7.3 (Muthén & Muthén, 1998–2017). The syntax used in this study was adapted from the appendix of Preacher et al.'s (2010) syntax for a 1-1-1 un-conflated, multilevel mediation model. The syntax was extended to reflect the proposed multilevel moderated mediation model, with emotional demands and time pressure as the independent variables, and emotional exhaustion and work engagement as the dependent variables. Both prosocial achievement and task-related achievement were included as potential mediators of the relationship between the independent and dependent variables. Moreover, unnecessary tasks were included as a moderator of the relationship between the two job demands and the two goal attainment measures. Group mean centering was used for the independent variables and the moderator variable at the within-person level, and grand mean centering was used at the between-persons level.

3.5 Results

We examined the proportion of within-person (i.e., Level 1) and between-persons (Level 2) variance of our study variables to determine whether there was substantial within-person variation. Within-person variation ranged between 32.6% (for work engagement) and 41.9% (for emotional demands), justifying multilevel analyses. Means, standard deviations, proportion of variance and inter-correlations of all the study variables can be found in Table 1. Furthermore, we conducted multilevel confirmatory factor analyses (CFAs) to test the dimensionality of the measures (the same models were used for the within and the between part, simultaneously). Our hypothesized model consisted of the following seven factors: emotional demands, time pressure, unnecessary tasks, prosocial achievement, task-related achievement, emotional exhaustion and work engagement. The results of our seven-factor model yielded acceptable fit to the data (χ^2 = 2233.79, *df* = 768); fit indices were comparative fit index (CFI) = 0.90, Tucker-Lewis index (TLI) = 0.89, and root-mean-square error of approximation (RMSEA) = 0.04. Inter-correlations between prosocial and task-related achievements indicate that they do not constitute a common achievement factor. Nevertheless, we compared our hypothesized model with a six-factor model (combining both achievement experiences into one factor, χ^2 = 3618.16, *df* = 780; CFI = .81, TLI = .76, RMSEA = .06) and a three-factor model. For the three-factor model, we combined emotional demands and time

Table 1. *Means, Standard Deviations, Proportion of Variance, and Intercorrelations of Study Variables*

Variable	*M*	*SD*	1–ICC[a]	1	2	3	4	5	6	7	8	9	10
1. Age	42.93	11.40	—	—									
2. Working hours[b]	41.07	7.03	—	.06	—								
3. Contact w. customers[c]	0.33	0.47	—	–.12	–.09	—							
4. Emotional demands	2.74	0.83	41.9%	**.13**	**.19**	–.12	—	**.36**	**.22**	**.18**	.03	**.32**	.02
5. Time pressure	3.11	0.79	32.8%	.05	**.16**	–.08	**.59**	—	**.19**	**.22**	**.15**	**.29**	.06†
6. Unnecessary tasks	2.62	0.71	40.1%	–.11	.08	–.03	**.40**	**.41**	—	**.11**	.01	**.28**	–.07†
7. Prosocial achievement	4.20	1.19	36.3%	.03	**.20**	**–.10**	**.37**	**.15**	**.18**	—	**.28**	**.17**	**.18**
8. Task-related achievement	5.28	1.03	40.3%	.08	–.07	.09	**–.24**	**–.14**	**–.31**	**.21**	—	.01	**.28**
9. Emotional exhaustion	3.78	1.11	32.8%	–.06	.09	–.04	**.64**	**.57**	**.52**	**.02**	**–.34**	—	**–.12**
10. Work engagement	3.18	1.35	32.6%	**.15**	.08	–.05	–.08	**–.18**	**–.38**	**.41**	**.49**	**–.53**	—

Note. *N* = 323 participants; 1,068 observations. Within-person (Level 1) correlations can be found above the diagonal; Between-person (Level 2) correlations can be found below the diagonal.

[a] ICC = intraclass correlation.

[b] Working hours per week.

[c] Contact with customers/clients/patients (0 = yes; 1 = no).

† $p < .10$; Values in bold type indicate significant effects (i.e., $p < .05$).

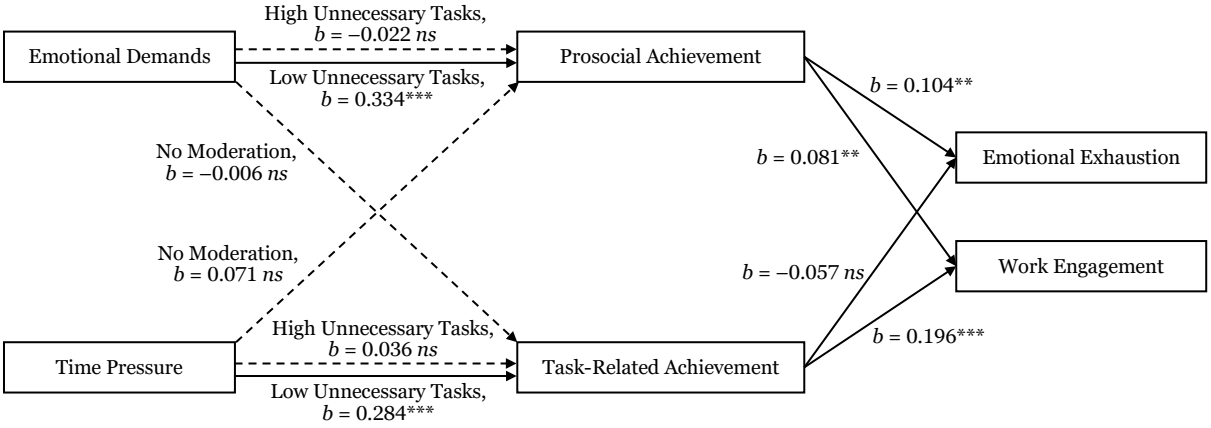

Figure 3. *Within-Person Path Coefficients of the Multilevel Moderated Mediation Model*

Note. Direct effects from emotional demands and time pressure to emotional exhaustion and work engagement are not presented for the ease of representation.
*$p < .05$, **$p < .01$, ***$p < .001$.

pressure, emotional exhaustion and unnecessary tasks, and prosocial achievement, task-related achievement and work engagement ($\chi^2 = 7302.95$, $df = 806$; CFI = .56, TLI = .52, and RMSEA = .09). Satorra-Bentler scaled chi-square difference tests (Satorra & Bentler, 2010) show superior fit for our hypothesized model, compared to both the six-factor model ($F = 2161.03$, $df = 12$, $p < .001$) and the three-factor model ($F = 7031.20$, $df = 38$, $p < .001$). We conclude that the constructs in our study show adequate discriminant validity.

3.5.1 Multilevel Moderation

The results of the moderation effects of unnecessary tasks on the relationship between the two job demands (i.e., emotional demands and time pressure) and achievement experiences (i.e., prosocial and task-related achievement) are first reported, before examining the overall moderated mediation effects. Table 2 provides the results for the within-person moderated mediation model, including the moderation effects (2a; "mediation variable model"), the moderated mediation effects (2c) and the conditional indirect effects (2d). Furthermore, we present the path coefficients of our moderated mediation model in Figure 3.

We hypothesized that the relationship between emotional demands and prosocial achievement is moderated by unnecessary tasks, such that the relationship is positive (challenge) when unnecessary tasks are less frequent and negative (hindrance) when unnecessary tasks are more frequent. We further hypothesized that the relationship between

time pressure and task-related achievement is moderated by unnecessary tasks, such that the relationship is positive (challenge) when unnecessary tasks are less frequent and negative (hindrance) when unnecessary tasks are more frequent.

Emotional Demands. The results show a significant positive relationship between emotional demands and prosocial achievement ($b = 0.156$, $p < .01$). As hypothesized, a significant interaction effect was found for emotional demands and unnecessary tasks on prosocial achievement ($b = -0.383$, $p < .01$; also see Figure 4). Moreover, simple slope analyses revealed that the relationship between emotional demands and prosocial achievement was positive for low (−1 *SD*) unnecessary tasks ($b = 0.334$, $z = 5.320$, $p < .001$), but not for high (+1 *SD*) unnecessary tasks ($b = -0.022$, $z = -0.442$, $p = .66$), providing partial support for Hypothesis 1. For task-related achievement as the dependent variable, the results showed no significant relationship between emotional demands and task-related achievement ($b = -0.031$, $p = .54$), nor any interaction effect between emotional demands and unnecessary tasks on task-related achievement ($b = -0.006$, $p = .95$).

Time Pressure. A significant relationship was found between time pressure and task-related achievement ($b = 0.160$, $p < .001$). A significant interaction effect was also found for time pressure and unnecessary tasks on task-related achievement ($b = -0.267$, $p < .01$; also see Figure 5). Simple slope analyses revealed that the relationship between time pressure and task-related achievement was positive for low (−1 *SD*) unnecessary tasks ($b = 0.284$, $z = 3.665$, $p < .001$), but not for high (+1 *SD*) unnecessary tasks ($b = 0.036$, $z = 0.539$, $p = .54$), providing partial support for Hypothesis 2. For prosocial achievement as the dependent variable, the results showed a significant relationship between time pressure and prosocial achievement ($b = 0.163$, $p < .001$), but no significant interaction between time pressure and unnecessary tasks on prosocial achievement ($b = 0.071$, $p = .42$).

Table 2. *Moderated Mediation Analysis (Within-Person Level)*

(a) Mediation variable model

	Outcome: Prosocial achievement			Outcome: Task-related achievement		
	B	*SE*	*p*	*B*	*SE*	*p*
Emotional demands (ED)	0.156**	0.050	< .010	−0.031	0.050	.540
Time pressure (TP)	0.163***	0.040	< .001	0.160***	0.039	< .001
Unnecessary tasks (UT)	0.065	0.046	.154	−0.042	0.045	.346
Interaction ED × UT	−0.383**	0.112	< .010	−0.006	0.111	.954
Interaction TP × UT	0.071	0.087	.420	−0.267**	0.087	< .010

(b) Dependent variable model

	Outcome: Emotional exhaustion			Outcome: Work engagement		
	B	*SE*	*p*	*B*	*SE*	*p*
Prosocial achievement (PsA)	0.104**	0.037	< .010	0.081**	0.028	< .010
Task-related achievement (TrA)	−0.057	0.038	.132	0.196***	0.029	< .001

(c) Moderated mediation effects with unnecessary tasks as moderator

		Outcome: Emotional exhaustion			Outcome: Work engagement		
			95% CI			95% CI	
IV	Mediator	INDEX	LL	UL	INDEX	LL	UL
ED	PsA	**−0.040**	**−0.076**	**−0.004**	**−0.031**	**−0.058**	**−0.003**
ED	TrA	0.000	−0.012	0.013	−0.001	−0.044	0.041
TP	PsA	0.007	−0.011	0.026	0.006	−0.009	0.020
TP	TrA	0.015	−0.007	0.037	**−0.052**	**−0.089**	**−0.016**

(d) Conditional indirect effects for moderated mediations at unnecessary tasks = ± 1 SD (0.464)

			Outcome: Emotional exhaustion			Outcome: Work engagement		
				95% CI			95% CI	
IV	Mediator	Moderator	Ind. effect	LL	UL	Ind. effect	LL	UL
ED	PsA	−1 *SD*	**0.035**	**0.006**	**0.064**	**0.027**	**0.005**	**0.049**
		0[a]	**0.016**	**0.001**	**0.032**	**0.013**	**0.001**	**0.024**
		+1 *SD*	−0.002	−0.016	0.011	−0.002	−0.012	0.009
ED	TrA	−1 *SD*	0.002	−0.007	0.010	−0.005	−0.035	0.024
		0	0.002	−0.004	0.008	−0.006	−0.025	0.013
		+1 *SD*	0.002	−0.006	0.010	−0.007	−0.032	0.019
TP	PsA	−1 *SD*	0.013	−0.002	0.029	0.010	−0.001	0.022
		0	**0.017**	**0.002**	**0.031**	**0.013**	**0.002**	**0.024**
		+1 *SD*	**0.020**	**0.002**	**0.039**	**0.016**	**0.002**	**0.030**
TP	TrA	−1 *SD*	−0.016	−0.038	0.006	**0.056**	**0.028**	**0.083**
		0	−0.009	−0.022	0.004	**0.031**	**0.014**	**0.049**
		+1 *SD*	−0.002	−0.009	0.005	0.007	−0.015	0.029

Note. *N* = 1,068 observations. IV = independent variable; CI = confidence interval; LL = lower limit; UL = upper limit; Ind. effect = indirect effect. Values in bold type indicate that the CI excludes zero.

[a] 'Moderator = 0' shows the conditional indirect effect with unnecessary tasks at their average level (i.e., their *mean*), as the moderator was being group mean centered (i.e., *mean* = 0).

* $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed).

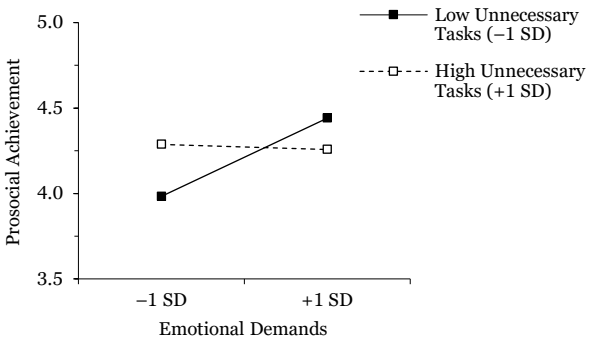

Figure 4. *The Within-Person Relations between Emotional Demands and Prosocial Achievement as a Function of Unnecessary Tasks*

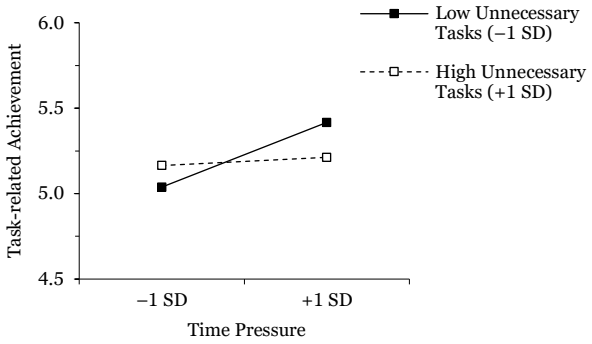

Figure 5. *The Within-Person Relations Between Time Pressure and Task-Related Achievement as a Function of Unnecessary Tasks*

3.5.2 Multilevel Moderated Mediation Model

As previously noted, the results showed that for prosocial achievement as the dependent variable, only the interaction between emotional demands and unnecessary tasks reached significance, whereas for task-related achievement as the dependent variable, only the interaction between time pressure and unnecessary tasks reached significance. To test for moderated mediation effects, both indices of moderated mediation (Hayes, 2015) and conditional indirect effects for high (+1 *SD*) and low (−1 *SD*) values of the moderator were estimated. The results of the moderated mediation effects and conditional indirect effects can be found in Table 2, section 2c and 2d, respectively.

Work Engagement as the Dependent Variable. A significant positive relationship was found between prosocial achievement and work engagement (b = 0.081, p < .01), and between task-related achievement and work engagement (b = 0.196, p < .001), confirming Hypothesis 3a and 3b, respectively. Furthermore, a significant moderated mediation effect was found, with unnecessary tasks moderating the indirect effect of emotional demands on work engagement via prosocial achievement (INDEX = −0.031, 95% CI [−0.058, −0.003]). For the corresponding conditional indirect effects, 95% confidence intervals show that the effect of emotional demands on work engagement via prosocial achievement was significant when unnecessary tasks were low (i.e., −1 *SD*; *conditional indirect effect* = 0.027, 95% CI [0.005, 0.049]), but not when they were high (i.e., +1 *SD*; *conditional indirect effect* = −0.002, 95% CI [−0.012, 0.009]). The direct effect of emotional demands on work engagement was not significant (b = −0.002, p = .95).

A significant moderated mediation effect was also found, with unnecessary tasks moderating the indirect effect of time pressure on work engagement via task-related achievement (INDEX = −0.052, 95% CI [−0.089, −0.016]). For the corresponding conditional indirect effects, 95% confidence intervals showed that the effect of time pressure on work engagement via task-related achievement was significant when unnecessary tasks were low (i.e., −1 *SD*; *conditional indirect effect* = 0.056, 95% CI [0.028, 0.083]), but not when they were high (i.e., +1 *SD*; *conditional indirect effect* = 0.007, 95% CI [−0.015, 0.029]). The direct effect of time pressure on work engagement was not significant ($b = 0.004$, $p = .91$).

Emotional Exhaustion as the Dependent Variable. A positive relationship was found between emotional demands and emotional exhaustion ($b = 0.312$, $p < .001$), as well as between time pressure and emotional exhaustion ($b = 0.208$, $p < .001$), confirming Hypothesis 6a and 6b, respectively. Furthermore, a significant positive relationship between prosocial achievement and emotional exhaustion was found ($b = 0.104$, $p < .01$), which was contrary to what was hypothesized (see Hypothesis 7a). Consequently, the results of the corresponding moderated mediation did not support Hypothesis 8 either: A significant moderated mediation effect was found, with unnecessary tasks moderating the indirect effect of emotional demands on emotional exhaustion via prosocial achievement (INDEX = −0.040, 95% CI [−0.076, −0.004]). However, for the corresponding conditional indirect effects, 95% confidence intervals revealed that the effect of emotional demands on emotional exhaustion via prosocial achievement was significant when unnecessary tasks were low (i.e., −1 *SD*; *conditional indirect effect* = 0.035, 95% CI [0.006, 0.064]), but not when they were high (i.e., +1 *SD*; *conditional indirect effect* = −0.002, 95% CI [−0.016, 0.011]). Furthermore, in contrast to what had been hypothesized (Hypothesis 7b), no relationship was found between task-related achievement and emotional exhaustion ($b = −0.057$, $p = .13$), and thus also no moderated mediation effect of emotional demands on emotional exhaustion via task-related achievement (INDEX = 0.000, 95% CI [−0.012, 0.013]). Furthermore, Hypothesis 9 was not supported, as no moderated mediation effect of time pressure on emotional exhaustion via task-related achievement was found (INDEX = 0.015, 95% CI [−0.007, 0.037]). In addition, no moderated mediation effect of time pressure on emotional exhaustion via prosocial achievement was found (INDEX = 0.007, 95% CI [−0.011, 0.026]).

3.5.3 Additional Analyses

To strengthen the validity of our results, we conducted additional analyses. First, we investigated our model using the well-being measures (i.e., emotional exhaustion and work engagement) as possible mediators and both achievement experiences as subsequent outcomes. In this model, emotional demands were positively related to emotional exhaustion ($b = 0.28$, $p < .001$), but not related to work engagement ($b = 0.02$, $p = .63$), and neither of the effects were moderated by unnecessary tasks ($b = 0.08$, $p = .48$; $b = 0.001$, $p = .99$, respectively). For time pressure, there was a direct positive relation with emotional exhaustion ($b = 0.19$, $p < .001$), but no significant relation was found to exist with work engagement ($b = 0.06$, $p = .06$). Again, neither of the direct effects were moderated by unnecessary tasks ($b = 0.01$, $p = .96$; $b = 0.06$, $p = .37$, respectively). Consequently, no moderated mediation effects were found in this model. Second, we calculated our original model, with unnecessary tasks further moderating the direct effect between demands and well-being (c-paths). The results show no additional direct interaction effects between demands and well-being measures, neither for the interaction effect with emotional demands on emotional exhaustion ($b = 0.03$, $p = .75$), nor on work engagement ($b = 0.12$, $p = .28$). Furthermore, there were also no interaction effects of unnecessary tasks with time pressure on emotional exhaustion ($b = 0.13$, $p = .06$) or work engagement ($b = -0.07$, $p = .41$).

3.6 Discussion

The purpose of this study was to investigate under which conditions emotional demands and time pressure unfold their challenging and hindering potential, to explain previous contradictory results from various extant studies (e.g., Bakker & Sanz-Vergel, 2013; Crawford et al., 2010). We expected the indirect effects of emotional demands and time pressure on emotional exhaustion and work engagement via achievement experiences to be contingent on unnecessary tasks. We tested our hypotheses using a multilevel moderated mediation analysis with a focus on a within-person level in a weekly diary design.

Our results are as expected with regard to work engagement as an outcome, supporting the positive influence of job demands on work engagement if such demands are positively related to subjective achievement experiences. The results indicate that emotional demands are associated with prosocial achievement experiences when unnecessary tasks are less

frequent. Yet, the more unnecessary tasks employees have to deal with, the less emotional demands can unfold their challenging potential. For time pressure, on the other hand, the challenging character unfolds by being positively related to task-related achievement, which however is also lowered when unnecessary tasks are more frequent. However, in contrast to our hypotheses, emotional demands and time pressure did not show negative relationships with achievement experiences (i.e., hindrance) when unnecessary tasks were more frequent. Confirming the health impairment potential of both types of job demands, our results indicate a positive relationship between those demands and emotional exhaustion. However, achievement experiences do not appear to mediate the effects of time pressure in the health impairing process. In terms of the relation between achievement experiences and emotional exhaustion, the results were not as expected, and thus will be discussed below.

3.6.1 The Hindering Potential of Emotional Demands and Time Pressure

Based on our proposed hypotheses, the effects of emotional demands and time pressure could not be labelled 'hindering' in our study when unnecessary tasks were more frequent, as neither demand was negatively related to achievement experiences in this instance. However, since hindering effects are present if work-related accomplishments are constrained and opportunities for achievement are prevented (Cavanaugh et al., 2000), we would, in hindsight, argue that no positive relationship with achievement experiences (i.e., no resource gain) should also qualify as a hindrance effect. Thus, we suggest employing more specific definitions of hindering effects and the hindering potential of demands in future research, specifically with regard to negative or nonexistent relationships with potential gains.

3.6.2 The Challenging Potential of Emotional Demands

In our study, emotional demands were not related to task-related achievement, irrespective of whether the frequency of unnecessary tasks was high or low. However, the more emotional demands that individuals experienced during their working week, the more prosocial achievement they reported, such as helping others to succeed — although, this was not the case if the frequency of the unnecessary tasks was high. These findings strengthen our arguments regarding the matching principle, which suggests that the strongest relations should be observed within the same domain (de Jonge & Dormann, 2006). An explanation for the positive relationship between emotional demands and prosocial achievement may be that

people who experience emotional demands at work (e.g., from co-workers, customers, or patients) also engage in more prosocial behavior (e.g., supporting or helping others), which facilitates interpersonal achievement. Completing (unnecessary) work tasks, however, may deplete workers' limited personal resources (Muraven & Baumeister, 2000). Based on the COR theory, the effort and energy required to engage in prosocial behavior may then be limited, which hinders employees' prosocial behavior. For this reason, no relationship may have been found between emotional demands and prosocial achievement under this condition.

When less tasks are perceived as unnecessary, emotional demands can unfold their challenging character with regard to prosocial achievement and subsequent work engagement. For emotional exhaustion as the dependent variable, emotional demands are partly mediated by prosocial achievement experiences, also contingent on the perception of unnecessary tasks. This indirect effect is stronger the less tasks are perceived to be unnecessary, which may at first appear to be counterintuitive. However, this effect is understandable when considering that prosocial achievement experiences are positively related to emotional exhaustion. Thus, at least on a weekly basis, experiencing prosocial achievement is related to negative well-being outcomes. This is in accordance with recent research, which reported mixed findings in regard to the cost and benefits of helping others (e.g., Bergeron et al., 2013; Bolino & Turnley, 2005; Lanaj et al., 2016). Research has shown that, in addition to the positive effects of the prosocial impact on others, demanding interpersonal interactions and helping behaviors deplete self-regulatory resources (e.g., Gailliot, 2010; Lanaj et al., 2016; Lin et al., 2016). Lanaj et al. (2016) have further found that, when differentiating between helping behavior and perceived prosocial impact, making a positive difference in the lives of one's coworkers replenishes resources. However, the present study does not differentiate between prosocial behavior and prosocial achievement to assess differential effects. Thus, as experiencing prosocial achievement is inherently linked to prior prosocial behavior, positive effects of prosocial achievement may be concealed on a weekly level. In our study, it appears that prosocial achievement is accompanied by a depletion of resources, which may explain increased reports of emotional exhaustion.

3.6.3 The Challenging Potential of Time Pressure

In contrast to emotional demands, our study demonstrates that time pressure is positively related to both prosocial and task-related achievement. Future studies should consider examining this finding in more detail, as two seemingly contradictory relationship directions seem plausible for the positive relationship with prosocial achievement: A negative relationship could be expected when considering that time pressure requires increased effort and concentration on core tasks, which can diminish prosocial behavior and thus the experience of interpersonal achievement. However, a positive relationship is also reasonable, since helping others (and experiencing success in doing so) requires effort and time, which comes at the cost of completing other work tasks and thus achieving own task-related goals. If, for example, prosocial achievement arises as a result of reacting to help requests from others, time and attention that would have been invested in one's own work may be lacking (cf. Bergeron et al., 2013). As a result, one might face time pressure when trying to complete one's own work tasks. However, in our study, prosocial achievement was not found to be negatively related to task-related achievement, indicating that helping others to succeed does not interfere with reaching one's own task-related goals. Rather, prosocial achievement is positively related to task-related achievement. Thus, helping others to succeed may be rewarded by receiving help from others in return. Furthermore, if people work in teams and pursue common goals, helping others to succeed is consequently helping oneself succeed. Clearly, more research is necessary to elaborate on these findings. Future research could for example focus on the types of goals (e.g., shared goals), causal relations and possible reversal effects.

Our results further indicate that time pressure and task-related achievement are positively related, and that this effect is moderated by unnecessary tasks. Thus, the more employees perceive tasks to be unnecessary, the less time pressure unfolds its challenging potential. We suggest that experiencing time pressure is accompanied by increased effort to complete the tasks. This increased effort to achieve one's goals and complete the tasks may result in the perception of making progress toward own work goals. Having to work faster may well lead to completing more tasks. However, it can also lead to comparably less achievement experiences if one must redirect resources to complete unnecessary tasks. The completion of

perceived unnecessary tasks does not bring one closer to one's actual work goals, and thus requires an additional, unjustified amount of resource investment.

Concerning emotional exhaustion as the dependent variable, time pressure was directly and positively related to emotional exhaustion. However, the relationship was not mediated by task-related achievement experiences, as no significant relationship was found between task-related achievement and exhaustion. One of the COR theory's principles posits that resource loss is disproportionally more salient to individuals than resource gain (Hobfoll, 2001). Furthermore, with regard to psychological distress, perceived loss of resources has been shown to have a greater impact than simultaneous resource gain (e.g., Wells et al., 1999). Thus, it may be argued that, on a weekly level, the investment of resources required by time pressure has a greater effect than the resources gained through task-related achievement, resulting in a perceived net loss of resources and hence exhaustion.

3.6.4 Theoretical Contribution

Our study contributes to the challenge–hindrance stressor framework (Cavanaugh et al., 2000) by integrating reasoning from COR theory and the success resource model. Our results stress the importance of employees' subjective achievement experiences and the perception of unnecessary tasks in this process. By doing so we provide resource-based psychological mechanisms as explanations for inconsistent findings of previous research. Emotional demands and time pressure seem to foster achievement experiences, but considerably less so the more employees perceive tasks as unnecessary, representing an obstacle to achievement events. If frequency of unnecessary tasks is low, both emotional demands and time pressure result in resource gain in terms of subjective prosocial and task-related achievement experiences. Thus, our results provide an empirical explanation for the inconsistent results found in previous studies concerning emotional demands and time pressure as challenge and hindrance (Bakker & Sanz-Vergel, 2013; Crawford et al., 2010). Furthermore, our study contributes to the challenge–hindrance literature by investigating interaction effects between a hindrance demand and job demands with both challenge and hindrance potentials, showing that hindrance stressors (i.e., unnecessary tasks) can block the challenging potential of other job demands (i.e., emotional demands and time pressure). Finally, our study contributes on an abstract level to the literature on the matching hypothesis (de Jonge & Dormann, 2006), as

there are relations on an interpersonal dimension for emotional demands via “prosocial achievement”, and on a task-related dimension for time pressure via “task-related achievement”.

3.6.5 Limitations and Directions for Future Research

In this study, self-report measures were used for all variables, which increases the likelihood of common-method bias (P. M. Podsakoff et al., 2003), which can result in overestimating associations. However, such concerns with common method variance are likely overstated (Spector, 2006). The perception of unnecessary tasks and subjective achievement are central to this study, which can only be assessed using self-reporting measures. Furthermore, since interaction effects cannot be artifacts of common-method bias but rather make them more difficult to detect (Siemsen et al., 2010), our moderated mediation results are unlikely to result from common-method variance. Nevertheless, future research could also focus on gathering information from co-workers and supervisors regarding employees’ achievement, and could also investigate effects on more objective measures (e.g., measurable performance indicators).

Additionally, there could be a theoretical overlap between the two achievement experience constructs used in our study (i.e., prosocial achievement and task-related achievement). The two factors were based on the research of Grebner et al. (2010), which found that these two constructs are the most frequent occupational success experiences. In our study, the statistical results also indicate that these two types of achievement experiences are indeed two constructs (i.e., there is a relatively small correlation between the two constructs and there is significantly better model fit when they are separated). Nevertheless, an overlap between these constructs is plausible and may be different for different jobs. For “helping” professions, own work goals and task-related achievement experiences are closely connected to interpersonal achievement, as the fulfillment of own work tasks is, to a greater extent, characterized by prosocial behavior. The same connection between the two achievement experiences is also true for leaders and supervisors, whose work roles encompass interpersonal behaviors such as motivating others and successfully settling conflicts. Thus, to obtain a clearer picture of the relationship uncovered in this study, future research could focus on a more detailed differentiation of those achievement experiences, specifically in regard to employees’ roles and for occupational sectors where an overlap seems most likely.

Future studies could also focus on causation and possible reversal effects. We focused on within-person effects, from which no causal inferences can be concluded. With regard to effects of goal progress and goal achievement on well-being, Klug and Maier (2015) suggested that some individuals could make more progress towards their goals due to improved well-being. Thus, it could also be argued that achievement experiences improve well-being, which in turn increases the chances of experiencing occupational achievement (Grebner et al., 2008), resulting in gain spirals (Hobfoll, 2001). Thus, even though effects of subjective achievement experiences are assumed to be stronger compared to reversed effects (Grebner et al., 2010), and based on COR theory, burnout (i.e., emotional exhaustion) is thought to arise from a lack of resource gain (e.g., achievement experiences) following significant resource investment (Hobfoll, 2001), we nevertheless suggest that future research investigate how task-related and prosocial achievement experiences interact with well-being and work engagement over time.

With regard to the challenging and hindering potential of emotional demands, future research could also differentiate between the perception of emotional demands and the dimensions of emotional labor (e.g., having to deal with other people's suffering or worries or having to control one's own emotions because of rude behavior of others). Future research should also investigate further job demands, as this study only focuses on two specific demands that have previously been found to act as challenge and hindrance demands in different settings. However, to determine whether our proposed mechanism is suitable for other demands as well, we encourage future research to investigate further job demands that can also be assumed to act as both challenges and hindrances (e.g., task complexity, emotional labor). Additionally, although unnecessary tasks hindered the challenging potential of emotional demands and time pressure, this did not result in decreased achievement experiences in terms of a negative statistical relation. Thus, more research is necessary to investigate which aspects or conditions in the workplace foster the hindering potential of these demands. Furthermore, with regard to achievement, job demands and the perception of unnecessary tasks might not only reduce the frequency of achievement experiences, but also increase the chance of experiencing failure. Not being able to support others at work, or helping others to succeed despite one's efforts, might result in more negative health outcomes than

reduced success experiences, and also might affect other well-being measures such as positive and negative affect or job satisfaction. Regarding the possible differences between reduced achievements and failure experiences, future research should also consider the extent to which employees value specific goals (i.e., self-concordance; Sheldon & Elliot, 1999) and the achievement thereof. Therefore, future studies should expand on our research by exploring a more in-depth differentiation of achievement and failure experiences, as they seem to play a central role in employees' well-being.

Finally, although our focus was on problematic working conditions (i.e., unnecessary tasks) that can be changed and influenced by organizations or managers, future research could focus on job crafting (e.g., Tims et al., 2016) to explore how employees can initiate changes to proactively optimize their work environment, so that the challenging potential of job demands can unfold.

3.6.6 Implications and Conclusion

Despite increasing research on the challenging and hindering effects of job demands, the role played by achievement experiences has thus far received little empirical attention with regard to effects on workers' well-being. Our study demonstrates that both prosocial and task-related achievement, in addition to unnecessary tasks, play a central role in the development of emotional exhaustion and work engagement. Our results indicate that subjective achievement experiences are important for employees' work engagement, and that perceived unnecessary tasks lower the ability to achieve as job demands increase. Organizations and managers concerned with fostering employee engagement could start minimizing levels of unnecessary tasks by reorganizing tasks and creating necessary conditions for an efficient workflow. Furthermore, supporting and training employees in setting and reaching goals or experiencing short-term success should be beneficial for employees. This may include setting reachable task-related goals on a weekly basis and encouraging employees to engage in prosocial behavior to experience interpersonal achievement.

In conclusion, our study contributes to the challenge–hindrance stressor framework by presenting under which conditions emotional demands and time pressure unfold their challenging character. In this regard, we emphasize the central importance of two types of occupational achievement experiences: namely, prosocial achievement and task-related

achievement. The less frequently tasks are perceived to be unnecessary, the more the challenging potential of emotional demands and time pressure will unfold in regard to increased occupational achievement experiences.

Chapter 4

Study 2:

Subjective Achievement Experiences as a Moderator for Challenging and Hindering Effects of Emotional Demands and Time Pressure[2]

4.1 Abstract

Drawing from both the transactional theory of stress and the conservation of resources theory, this paper sets out to investigate the role of demand-specific challenge and hindrance appraisal of emotional demands, as well as time pressure and perceived goal progress within the challenge–hindrance framework. For this research, 91 employees provided daily diary data for one working week. Focusing on within-person effects, multilevel moderated mediation models using multilevel path analyses were applied. Both emotional demands and time pressure exert positive effects on work engagement when people expect resource gain (challenge appraisal), independent of actual resource gain (achievement). Furthermore, results show that goal progress buffers negative effects of perceived blocked resource gain (hindrance appraisal) on both emotional and motivational well-being. This research proposes an extension and refinement of the challenge–hindrance stressor framework to explain health-impairing and motivational processes of emotional demands and time pressure, combining reasoning from both appraisal and resource theory perspectives. The study identifies demand-specific challenge and hindrance appraisals as mediators linking demands to emotional and motivational well-being, emphasizing the influence of goal progress as a resource on these relations.

[2] This chapter is a re-print of a manuscript that has been accepted for publication. The final published version is available in the Journal of Managerial Psychology:

Kronenwett, M., & Rigotti, T. (2020). All's well that ends well!? Moderating effects of goal progress on the relation between challenge and hindrance appraisal and well-being. *Journal of Managerial Psychology*. Advance online publication. https://doi.org/10.1108/JMP-11-2019-0618

4.2 Introduction

Job stressors (i.e., job demands) are usually associated with unfavorable consequences, such as emotional exhaustion (Bakker & Demerouti, 2007; Demerouti et al., 2001). However, recent research indicates that some job demands also relate to favorable outcomes, such as increased work engagement (N. P. Podsakoff et al., 2007). Such differential effects of job demands have been investigated within the challenge–hindrance stressor framework (Cavanaugh et al., 2000). This framework builds on the transactional theory of stress (Lazarus & Folkman, 1984), proposing that demands may be appraised as challenges or hindrances and, therefore, may result in favorable or unfavorable effects on employees' health and performance. An a priori classification of demands as challenging or hindering seems problematic, as empirical studies based on the challenge–hindrance framework are inconclusive (see meta-analysis by Mazzola & Disselhorst, 2019), suggesting that differential effects may depend on individual and contextual boundary conditions, such as task characteristics, resources at work, or occupational sector (Bakker & Sanz-Vergel, 2013; Kronenwett & Rigotti, 2019; Schmitt et al., 2015).

According to the challenge–hindrance framework, challenge stressors are demands that appear to promote achievement and development, whereas hindrance stressors appear to block goal achievement and progress (Cavanaugh et al., 2000). Occupational health research has highlighted the relevance of goal achievement and progress for employees' well-being (Grebner et al., 2010; Klug & Maier, 2015); yet, their influence has rarely been directly investigated within the challenge–hindrance stressor framework (Kronenwett & Rigotti, 2019).

This study provides a conceptual refinement to the challenge–hindrance framework. Initially, Cavanaugh et al. (1998) used a resource-based perspective, i.e., conservation of resources (COR) theory (Hobfoll, 1989), to explain differences between challenge and hindrance stressors, but later focused on appraisal theory, i.e., transactional theory (Lazarus & Folkman, 1984), to make the challenge–hindrance stressor distinction. In this study, we integrate reasoning from both appraisal- and resource-based perspectives, focusing on effects of challenge and hindrance appraisal on well-being and the influence of goal progress (as a resource) on those effects in daily working life. Even though appraisal has been argued to be of

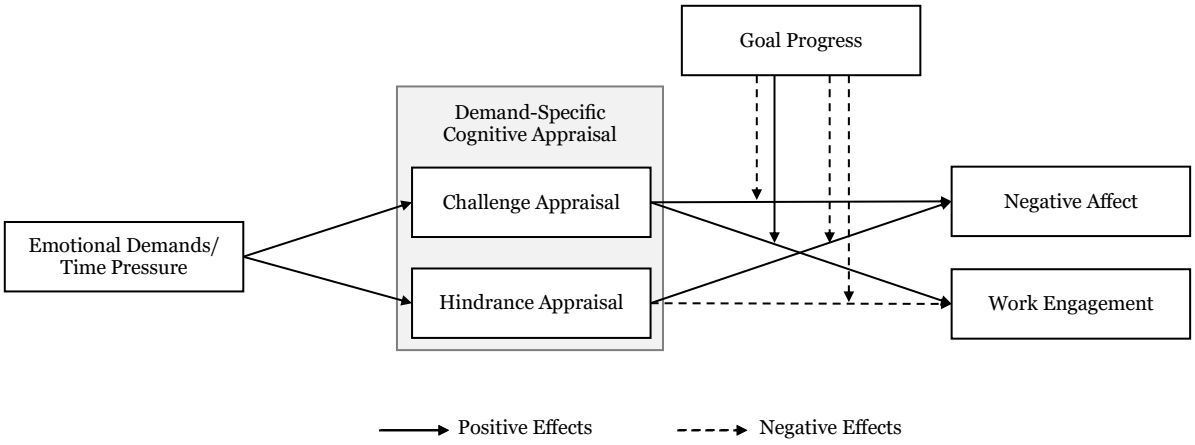

Figure 6. *Conceptual Model of the Within-Person Moderated Mediation Models*

Note. For ease of representation, only one model is presented here. Yet, two separate models (one for emotional demands, one for time pressure) are proposed and being analyzed in this study.

central importance for the theoretical challenge–hindrance stressor framework, only a few studies directly investigate employees' cognitive appraisal, let alone *demand-specific* challenge and hindrance appraisal (Prem et al., 2017; Searle & Auton, 2015). Furthermore, based on the definition of challenge and hindrance stressors, goal achievement and progress seem to play an important role regarding the stressors' relationships to well-being outcomes despite rare investigation within the challenge–hindrance stressor framework. In addition, employees' challenge and hindrance appraisal of demands (i.e., their perceived *potential* for achievement and progress) may not necessarily correspond to actual progress made at work. We examine effects of two demands (emotional demands and time pressure) on well-being in daily working life and propose that challenge and hindrance appraisal of those demands and perceived goal progress interact, exerting combined effects on employees' negative affect and work engagement. Figure 6 depicts our conceptual model.

Empirical evidence shows that not only do employees' work-related experiences vary from day to day but also that work-related well-being is not stable and fluctuates within days and weeks (Sonnentag, 2015). Therefore, in this study, to capture everyday working life, we focus on short-term variations of daily job-related factors (i.e., job stressors, appraisal, and goal progress) and well-being, using a diary method. Daily-diary studies have the advantage, on the one hand, of capturing short-term changes in working conditions and changes in

correlates of employee performance and well-being and, on the other hand, of reducing retrospective bias by collecting data close to the events of interest (Ohly et al., 2010). Therefore, we test our model empirically using a daily-diary study design, assessing working conditions and well-being measures with a time lag, to gain a more accurate understanding and insights into within-person processes.

4.3 Theoretical Background

4.3.1 The Concept of Challenge and Hindrance Stressors

Several approaches have been suggested to categorize job characteristics according to their effects on employees' health, such as the distinction between job resources and job demands with favorable (i.e., health-enhancing) and unfavorable (i.e., health-impairing) effects, respectively (Bakker & Demerouti, 2007). However, regarding the relationship between job demands and employees' health, research shows that while some job demands only have negative effects on well-being, others have a mix of both positive and negative effects (Crawford et al., 2010; LePine et al., 2005). The challenge–hindrance stressor framework (Cavanaugh et al., 2000) captures this observation, categorizing job demands in two groups: challenge stressors — demands that contain opportunities for achievement and growth — and hindrance stressors that impede optimal functioning and block achievement (Crawford et al., 2010; N. P. Podsakoff et al., 2007). Consequently, challenge and hindrance stressors differ regarding motivational well-being, with challenge stressors relating positively and hindrance stressors showing negative relationships. However, these stressors align regarding ill-health (e.g., stress, exhaustion), with both stressors positively relating to strain since they require increased effort to cope (Crawford et al., 2010). Several empirical studies classify demands as challenge or hindrance stressors, providing support for the framework (see meta-analyses, e.g., Crawford et al., 2010; LePine et al., 2005; Webster & Adams, 2015) and strong evidence for the challenge–hindrance stressor distinction (O'Brien & Beehr, 2019).

A conceptual weakness of the challenge–hindrance stressor framework is the dichotomous classification of demands as challenges or hindrances. Previous researchers often use a priori categorizations of job demands as challenge or hindrance stressors. However, that is problematic (Gerich, 2017; Searle & Auton, 2015) inasmuch as it assumes that all people perceive demands the same way. Categorizing demands a priori into challenges or hindrances

involves assumptions about how they are interpreted (Searle & Auton, 2015). Therefore, definite a priori classifications are not in line with the transactional theory of stress (Lazarus & Folkman, 1984), which often functions as the theoretical basis for the distinction between challenge–hindrance stressors (e.g., Cavanaugh et al., 2000). The cognitive-appraisal approach of the transactional theory of stress proposes that effects of stressors on well-being largely depend on an individual's primary appraisal (e.g., challenge appraisal: potential for mastery and gain; threat appraisal: anticipation of harm), which may differ from one individual to another (Lazarus & Folkman, 1987).

Furthermore, there is a growing consensus that some demands and job characteristics lead exclusively to negative outcomes, whereas others show both positive *and* negative effects (LePine et al., 2005; N. P. Podsakoff et al., 2007). Thus, for many stressors, appraisal may not just be a question of "either-or." Empirical research indicates that a work stressor may be perceived as both challenge *and* hindrance, and those appraisals are not mutually exclusive (Gerich, 2017; Searle & Auton, 2015; Webster et al., 2011). "Some aspects of a situation [may be] perceived as having potential for growth, mastery, or gain, whereas other aspects of the same situation are perceived as an obstruction in the pursuit of self-relevant goals" (Prem et al., 2017, p. 112). Yet, until recently, research on challenge and hindrance stressors often did not directly assess appraisal of demands as challenges and hindrances. Our study aims to gain new insights by considering some of the shortcomings above. Following calls from other researchers (e.g., Mazzola & Disselhorst, 2019), we directly assess demand-specific challenge and hindrance appraisal and allow demands to relate to both without categorizing them a priori.

Daily Time Pressure and Emotional Demands as Challenge and Hindrance Stressors. Employees in most contemporary jobs may face time pressure and encounter emotional demands (e.g., arising from interactions with colleagues or customers; Glomb et al., 2004; Kubicek et al., 2014). Time pressure at work is the extent to which employees feel there is not enough time to complete their work tasks, or they must work at a faster pace than usual (Kinicki & Vecchio, 1994; Ohly & Fritz, 2010), whereas emotional demands require sustained emotional effort due to interactions with others (de Jonge & Dormann, 2003). Time pressure is usually classified as a challenge stressor with possible motivational gains, whereas emotional

demands are usually classified as a hindrance stressor with no favorable well-being outcomes. However, Bakker and Sanz-Vergel (2013) showed opposite effects for nurses, for whom time pressure acted as a hindrance stressor, whereas emotional demands acted as challenge stressors. Thus, both time pressure and emotional demands can entail both challenge and hindrance potential (Bakker & Sanz-Vergel, 2013; Kronenwett & Rigotti, 2019).

Ambivalent effects of specific demands are in line with reasoning from the transactional theory of stress, which proposes that stressors are usually neither clearly positive nor negative but, instead, are open to the individual's appraisal. Even though some stressors are more likely be appraised as challenges and others as hindrances (Crawford et al., 2010; LePine et al., 2005), empirical studies show that a single stressor can be appraised as both challenge and hindrance at the same time (Prem et al., 2017; Searle & Auton, 2015; Webster & Adams, 2015). Thus, we expect to confirm findings from previous research and propose that in daily working life, both emotional demands and time pressure are appraised simultaneously as both challenge and hindrance.

> *Hypothesis 1*: Emotional demands and time pressure experienced during a workday are positively related to (a) daily challenge appraisal and (b) daily hindrance appraisal.

Stressor Appraisal and Well-Being. Challenge and hindrance stressors are assumed to differ regarding motivational well-being but to align regarding ill-health (e.g., stress, exhaustion), with both stressors positively relating to strain (Crawford et al., 2010). Based on the transactional theory of stress, empirical research shows that individuals' cognitive appraisals mediate stressor–outcome relationships (Ohly & Fritz, 2010; Prem et al., 2017; Webster et al., 2011). From a resource-approach perspective (i.e., COR; Hobfoll, 1989, 2001), individuals strive to gain resources and avoid resource loss. Despite some incompatibilities between the transactional theory of stress and COR theory (see Hobfoll, 2001; Lazarus, 2001), both theories provide valid explanations and yield valuable insights and approaches to explain the challenging and hindering effects of demands. Based on the COR theory perspective, effects on well-being of cognitive appraisal of demands as challenges and hindrances should differ regarding potential resource gain and loss. That is, when individuals

appraise a stressor as a challenge, they perceive it as having the potential for mastery or growth (i.e., resource gain), making it more likely that individuals respond with increased resource investment (i.e., effort) to cope with the stressor in order to gain new resources. This stimulating effect might result in increased motivation and engagement at work (Crawford et al., 2010). On the other hand, for hindrance appraisal, individuals perceive a stressor as blocking achievement, with no opportunities for growth or mastery (i.e., hindrance of resource gain). Hence, resource investment is unlikely to result in resource gains, so individuals should conserve their resources to protect themselves from strain (Dawson et al., 2016; Hobfoll, 1989, 2001). Subsequently, individuals might lower their performance goals, resulting in decreased motivation and engagement at work (e.g., decreased work tempo or overall dedication), in an attempt to save energy and protect resources (Perrewé & Zellars, 1999; van den Broeck et al., 2010). To account for those different effects in our study, we selected work engagement as an indicator for motivational, situational well-being, defined as a positive work-related state of mind characterized by vigor, dedication, and absorption (Schaufeli et al., 2002; Schaufeli et al., 2006). As a state variable (Tuckey et al., 2018), work engagement varies across situations and time points and within persons from day to day (e.g., Bakker, 2014) or even from task to task (e.g., Bujacz et al., 2017; Sonnentag, 2017). Thus, it is well suited for our daily-diary approach. In line with previous research, we propose that challenge appraisal of job demands positively relates to work engagement, whereas hindrance appraisal negatively relates to work engagement. Thus, we hypothesize:

> *Hypothesis 2:* Emotional demands and time pressure during a workday have (a) a positive indirect effect on end-of-workday work engagement via daily challenge appraisal and (b) a negative indirect effect on end-of-workday work engagement via daily hindrance appraisal.

To also study potential negative effects, we chose state negative affect as a second health-related outcome next to work engagement for conducting a test of our refined challenge–hindrance stressor model. Negative affect refers to subjective distress and unpleasant emotional experiences (Watson et al., 1988). It is a situation-specific, short-lived indicator of "a lack of well-being that matches the dynamic nature of daily stressors" (Turgut

et al., 2017, p. 124), shown to be a sensitive measure in short time frames (e.g., Harris et al., 2003; Reizer et al., 2019).

Both challenge and hindrance stressors are posited as consuming resources and increasing strain, as they require energy and increased effort for coping (Crawford et al., 2010; LePine et al., 2004; LePine et al., 2005), resulting in resource loss (Dawson et al., 2016; Hobfoll, 1989). Appraising demands as hindrances (i.e., as blocking achievement and growth) is likely to result in feelings of anxiety and anger—facets of negative affect (Scherer, 1988; Searle & Auton, 2015; Turgut et al., 2017). However, regarding challenge appraisal and unpleasant emotional reactions, results are less clear. Empirically, studies offer mixed results, with a priori defined challenge stressors (not challenge appraisal) increasing different well-being outcomes, such as emotional exhaustion, anxiety, and unpleasant affect in some studies (LePine et al., 2005), but also showing no relation with some of the same well-being measures (e.g., negative affect) in other studies (Turgut et al., 2017). Some studies that directly assess challenge appraisal report positive relations to anger (Searle & Auton, 2015), whereas others report no significant relation to emotional well-being measures, including anger, anxiety, and emotional exhaustion (Tuckey et al., 2015). Challenge appraisals could have ambivalent effects because, besides potential resource gains that may trigger positive emotions, challenge appraisals do imply some degree of uncertainty (Rodell & Judge, 2009): Challenge appraisal occurs if one appraises a demand as having the *potential* for achievement or growth, implying a potential risk that one may not succeed. We suggest that especially in the short term (i.e., on the day level), this uncertainty should increase negative affect (e.g., distress, nervousness, anxiety). From a COR theory perspective, resources (e.g., energy and time) must be invested to cope with demands, independent of potential gains that might be expected, inevitably resulting in resource loss and, thereby, negative strain reactions, such as increased negative affect. Therefore, in our study, we include the following hypothesis:

> *Hypothesis 3:* Experiencing emotional demands and time pressure during a workday increases end-of-workday negative affect via both (a) daily challenge appraisal and (b) daily hindrance appraisal.

4.3.2 Goal Progress as a Moderator of the Appraisal–Well-Being Relationship

Within the challenge–hindrance stressor framework, perceived opportunities, goal achievement, and progress play a central role for employees' motivation and well-being at work (Cavanaugh et al., 2000; Crawford et al., 2010; LePine et al., 2005). That is, challenge stressors refer to demands or circumstances that, although potentially stressful, employees perceive to create opportunities for achievement and potential gains for the individual. On the other hand, hindrance stressors relate to demands or circumstances that employees view as obstacles, interfering with an individual's work achievement and potential gains (Cavanaugh et al., 2000). Yet, research on challenge–hindrance stressors has rarely investigated actual achievement experiences (Kronenwett & Rigotti, 2019).

Several theories emphasize the importance of goal attainment and achievement experiences for employee motivation and psychological well-being (Locke & Latham, 1990; Ryan & Deci, 2000; Sheldon & Elliot, 1999). Achievement experiences (e.g., perceived goal progress and the feeling of being successful) can be regarded as important resources that promote individuals' well-being (Grebner et al., 2008; Hobfoll, 2001). In terms of different facets of achievement experiences at work, perceived goal progress may be a particularly important influencing factor of subjective well-being, with empirical research showing robust relations (Diener, 1984; Jakubiak & Feeney, 2016; Klug & Maier, 2015; Ryan & Deci, 2001). Jakubiak and Feeney (2016) show that fluctuations in daily goal progress predict well-being, with improved well-being (i.e., decreased negative affect) on days with greater goal progress. Regarding motivational well-being, Wang et al. (2020) show that, on a daily level, achievement events have positive effects on subsequent work engagement. Based on those findings, we also expect daily goal progress to negatively relate to negative affect and positively relate to work engagement.

While main effects of achievement and goal progress on well-being are firmly supported empirically, it has also been proposed that achievement experiences moderate (buffer) the stressor–strain relationship (Grebner et al., 2008, 2010). Grebner et al. (2008) suggest that the more achievement (e.g., goal progress) an individual experiences, the less harmful is a job stressor for well-being. However, in the stress literature in general and — to our knowledge — not at all in the challenge–hindrance literature, such buffering effects have rarely been

empirically investigated. Drawing from COR theory and aspects of control theory (Carver and Scheier, 1982, 1990), we expect goal progress to moderate the effects of challenge and hindrance appraisal on well-being.

As outlined above, challenge and hindrance stressors differ regarding their perceived opportunities for achievement and gains — that is, their *anticipated* (i.e., expected) effect on achievement. However, anticipated effects on achievement may not necessarily correspond to actual later achievement or progress made toward goals. Carver and Scheier (1982) propose that individuals continuously monitor their progress toward goals and the rate of goal progress in relation to their expected rate of progress. Resulting discrepancies between expectations and actual outcomes presumably affect well-being, with less progress than expected evoking negative effects and with more progress than expected resulting in positive effects. Transferred to a resource-approach perspective, this means that individuals monitor their resource gain (i.e., achievement) in relation to their expected resource gain, with discrepancies affecting their well-being. When individuals do not perceive resource gain following resource investment, additional stress occurs (Hobfoll, 1989). Coping with challenge or hindrance both requires an investment of energy and effort (i.e., consumption of resources) independent of potential gains, and thus, undesired resource loss can hardly be avoided (Dawson et al., 2016; Stiglbauer, 2018), resulting in stress. However, in the case of successful goal progress, new resources are gained and the stress resulting from a loss of resources should be attenuated (Stiglbauer, 2018). Therefore, in this study, we expect goal progress to buffer the positive effects of challenge and hindrance appraisal on negative affect.

Regarding motivational well-being, challenge appraisal should be associated with increased work engagement, due to the perceived potential for resource gain (Dawson et al., 2016). However, if individuals do not experience goal progress, a discrepancy exists between their expectation and actual achievement. Thus, they fail to gain resources so that positive effects of challenge appraisal on motivational well-being should be reduced. Hindrance appraisal, on the other hand, should be associated with decreased work engagement, due to hindrance of resource gain (Dawson et al., 2016). If individuals do experience goal progress, they gain resources so that negative effects of hindrance appraisal on motivational well-being should be reduced.

Combining our previous hypotheses and proposed relations, we expect both emotional demands and time pressure to exert their health-impairing and motivational effects via demand-specific appraisal, with the strength of relation depending on individuals' perceived goal progress (see Figure 6 for our proposed conceptual model). This leads us to our final set of hypotheses:

> *Hypothesis 4:* Conditional indirect relationships exist between daily job demands (emotional demands and time pressure) via daily challenge appraisal: The more goal progress is experienced during the workday, (a) the lower is the positive indirect effect of both job demands on end-of-workday negative affect and (b) the higher is the positive indirect effect of both job demands on end-of-workday work engagement.
>
> *Hypothesis 5:* Conditional indirect relationships exist between daily job demands (emotional demands and time pressure) via daily hindrance appraisal: The more goal progress is experienced during the workday, (a) the lower is the positive indirect effect of both job demands on end-of-workday negative affect and (b) the lower is the negative indirect effect of both job demands on end-of-workday work engagement.

4.4 Method

4.4.1 Procedure and Participants

In this daily-diary study, participants completed one general survey and, over five consecutive workdays, two daily surveys (at the end of work and at bedtime). All questionnaires were filled out online.

A group of master's-degree students recruited participants for this study through its members' private networks. When people expressed interest in the study, they received an email with information about the data-collection process and a link to a general online survey for gathering demographic data. Participants were asked to select one of four weeks for participating in a diary study. At the beginning of the selected week, participants were asked to answer two short online questionnaires per day for five consecutive workdays. The first daily questionnaire had to be completed at the end of the workday, providing data for assessing day-specific demands, challenge and hindrance appraisals of those demands, and day-specific

goal progress. The second daily questionnaire required completion in the evening, at bedtime, providing data for assessing participants' engagement and negative affect.

In total, 91 persons participated in our study. Of these persons, 6 (6.6%) participated only on one day, 4 (4.4%) participated on two days, 9 (9.9%) participated on three days, 14 (15.4%) participated on four days, and 58 (63.7%) participated on all five days. Participants in the final sample were between 23 and 63 years of age (M = 37.4, SD = 11.7), predominantly female (65.9%), mainly holders of a permanent employment contract (85.7%), and working an average of 39.2 hours per week (SD = 6.5). Years of work experience ranged from a few months to 43 years (M = 8.9, SD = 9.2). Regarding education, 5.0% of the final sample had no formal vocational education, 33.4% had vocational education, and 49.5% held a university degree; 12.1% did not indicate their education.

4.4.2 Measures

For this study, instruments and items were adapted for day-level assessment so that they referred to daily experiences suitable for our diary design.

Emotional Demands. To assess emotional demands, three items from the Copenhagen Psychosocial Questionnaire (Kristensen et al., 2005) were used. A sample item is "Was your work emotionally demanding today?" Participants had to respond using a five-point Likert scale, ranging between *to a very small extent* (1) and *to a very large extent* (5). Cronbach's alpha varied across the five workdays from .75 to .85.

Time Pressure. For time pressure, we used three items from the instrument for stress-oriented job analysis (Semmer et al., 1999). A sample item is, "How often did you have to work faster than normal today in order to complete your work?" Items were scored on a five-point Likert scale, ranging from *never/hardly ever* (1) to *very often/always* (5). Cronbach's alpha varied across the five workdays from .87 to .92.

Challenge and Hindrance Appraisal of Demands. To assess challenge and hindrance appraisal of emotional demands and time pressure, we combined different approaches from previous research. First, we told participants that we wanted to assess the degree to which they regarded each demand as a challenge and a hindrance. We did so right before assessing emotional demands and time pressure. Following the approach of Webster et al. (2011), participants were asked to carefully read our definitions of challenge and hindrance

to ensure their interpretation of the terms would be consistent with the theory. The following definitions were provided:

> Challenge: By challenge, we mean a situation/demand that may cause stress, but which can also help to achieve goals or learn new things.
>
> Hindrance: By hindrance, we mean a situation/demand that prevents you from succeeding or restricts you from working as well as you actually could.

On the next page, participants were asked to respond to the three items of emotional demands directly followed by the instructions/items for appraisal (building on Moise, 2014, and Prem et al., 2017): "Now indicate how you appraise the above three items combined" was followed by "Challenge: To what extent did you regard these demands as a positive challenge today?" and "Hindrance: To what extent have these demands prevented you from achieving your goals?" Time pressure and appraisal of time pressure were assessed the same way on the next page. At the bottom of each page that assessed the demands and their appraisal, the definitions of challenge and hindrance were stated once more as a reminder. Appraisal items were scored on a five-point Likert scale, ranging from *not at all* (1) to *very much* (5).

Goal Progress. To assess daily goal progress, a single-item measure developed by (Jakubiak & Feeney, 2016) was used: "How much progress did you make on achieving your goals for today?" Participants responded to the item using a slider showing a scale ranging from *not at all* (1) to *very much* (100). For our statistical analyses, we rescaled the response format by dividing all scores by 10.

Negative Affect. We used 10 of the negative affect items from the Positive and Negative Affect Schedule (Watson et al., 1988). Participants were asked to indicate for each item (e.g., "distressed," "nervous," "afraid") how they felt at that moment on a five-point Likert scale, ranging from *not at all* (1) to *very much* (5). Cronbach's alpha varied across the five workdays from .66 to .89.

Work Engagement. To assess work engagement, the Utrecht Work Engagement Scale-3 (Schaufeli et al., 2017) with three items was used. A sample item is, "Today, I was enthusiastic about my job." Items were scored on a seven-point Likert scale, ranging from *never* (1) to *always* (7). Cronbach's alpha varied across the five workdays from .85 to .95.

4.4.3 Analysis

We conducted separate analyses for time pressure and emotional demands, as cognitive appraisals as challenge and hindrance were demand-specific (hereinafter referred to as "time pressure models" and "emotional demands models"). Thus, for our proposed mediation effects, we conducted two separate analyses: one with time pressure as the independent variable and one with emotional demands as the independent variable and corresponding appraisals of those demands. Two separate analyses were conducted to respectively analyze the moderated mediation models.

Our data had a hierarchical structure with days nested within persons. Therefore, we applied multilevel path analyses to test our hypotheses, using Mplus Version 7. 3 (Muthén & Muthén, 1998–2017). All hypotheses were tested at the within-person level (Level 1). Person mean centering was used for the independent variables and the moderator variable, to ease interpretation and to remove between-person variance in interaction terms.

To determine whether our hypotheses of moderated mediations were supported, we calculated the index of moderated mediation (Hayes, 2015) for our proposed models. A significant index of moderated mediation indicates that the indirect effect varies systematically along changes in the moderator variable. With this approach, "inference is based on the size of the index of moderated mediation rather than a set of two or more inferential tests about

Table 3. *Means, Standard Deviations, Intraclass Correlations, and Correlations between Study Variables*

Variable	*M*	*SD*	ICC	1	2	3	4	5	6	7	8	9
1. Emotional demands (ED)	2.18	0.90	.63	—	**.22**	**.36**	**.32**	**.11**	**.26**	−.05	**.23**	−.00
2. Time pressure (TP)	2.77	1.13	.58	**.43**	—	**.16**	**.17**	**.29**	**.34**	.12	.07	.06
3. ED challenge appraisal	2.57	1.13	.49	**.42**	.15	—	.13	**.39**	.12	.03	.03	**.16**
4. ED hindrance appraisal	1.78	0.94	.57	**.57**	**.63**	−.13	—	−.06	**.47**	**−.19**	**.24**	−.10
5. TP challenge appraisal	2.80	1.09	.44	.17	.13	**.89**	−.24	—	−.03	**.19**	−.07	**.32**
6. TP hindrance appraisal	2.00	1.00	.54	**.47**	**.63**	−.15	**.95**	−.22	—	**−.22**	**.20**	−.05
7. Goal progress	6.37	2.88	.64	−.00	−.16	**.39**	**−.38**	**.59**	**−.49**	—	**−.22**	**.35**
8. Negative affect	1.22	0.30	.27	**.53**	**.60**	.09	**.46**	−.16	**.46**	**−.47**	—	**−.31**
9. Work engagement	4.10	1.46	.62	.15	.03	**.65**	**−.28**	**.72**	**−.34**	**.63**	−.14	—

Note. N = 91 participants; 387 observations. ICC = intraclass correlation. Within-person (Level-1) correlations can be found above the diagonal; Between-person (Level-2) correlations can be found below the diagonal. Values in bold type indicate significant results (i.e., $p < .05$).

components of the model" (Hayes, 2015, p. 3) and, thus, represents a direct quantification of the association between the indirect effects and the proposed moderator of those effects.

4.5 Results

Proportions of within- and between-persons variance of our study variables (with ICC(1) ranging between .49 and .64) indicated substantial within-person variation, justifying multilevel analyses. Table 3 presents intraclass correlations, means, standard deviations, and correlations for all study variables. In the following sections, we will first report the results of the mediation models without the moderator (i.e., goal progress) and then results of the moderated mediation models. The text provides results of all within-person path estimates of the two mediation models. Table 4 (i.e., moderated mediation analysis for the emotional demands model) and Table 5 (i.e., moderated mediation analysis for the time pressure model) show statistical results of the moderated mediation models, as well as the amount of variance explained in the outcome variables.

4.5.1 Emotional Demands Models

Mediation Model. As proposed, emotional demands were positively related to both challenge appraisal (b = 0.54, SE = 0.09, p < .001) and hindrance appraisal (b = 0.37, SE = 0.07, p < .001), confirming Hypotheses 1a and 1b for emotional demands. In turn, challenge appraisal of emotional demands was positively related to work engagement (b = 0.19, SE = 0.06, p < .01), but — in contrast to our expectation — not related to negative affect (b = −0.02, SE = 0.02, p = .29). Hindrance appraisal of emotional demands was negatively related to work engagement (b = −0.20, SE = 0.10, p < .05) and positively related to negative affect (b = 0.11, SE = 0.05, p < .05).

Indirect effects only reached significance for the effects of emotional demands on negative affect via hindrance appraisal (b = 0.04, SE = 0.02, p < .05) and on work engagement via challenge appraisal (b = 0.10, SE = 0.04, p < .01), confirming Hypotheses 2b and 3a for emotional demands. In contrast to our expectations (Hypotheses 2a and 3b), challenge appraisal of emotional demands did not mediate the effect of emotional demands on negative affect (b = −0.01, SE = 0.01, p = .29) and hindrance appraisal did not mediate the effect of emotional demands on work engagement (b = −0.08, SE = 0.04, p = .08). Thus, Hypotheses 2a and 3b were rejected. In the mediation model, direct effects of emotional demands on work

engagement were not significant (b = –0.02, SE = 0.13, p = .88), whereas direct effects on negative affect were significant (b = 0.11, SE = 0.06, p < .05).

Moderated Mediation Model. In contrast to our hypotheses, interaction effects of challenge appraisal of emotional demands with goal progress were only significant for work engagement but not for negative affect as the dependent variable (see Table 4 for statistics). For hindrance appraisal, significant interaction effects occurred with goal progress on both negative affect and work engagement. Analyzing moderated mediation effects (i.e., the index of moderated mediation; Hayes, 2015), only those relations with hindrance appraisal as the

Table 4. *Moderated Mediation Analysis for the Emotional Demands Model*

(a) Mediation variable model

	Challenge appraisal			Hindrance appraisal		
	B	*SE*	*p*	*B*	*SE*	*p*
Emotional demands	**0.538**	**0.091**	**< .001**	**0.374**	**0.073**	**< .001**
		R^2 = **.138**			R^2 = **.104**	

(b) Dependent variable model

	Negative affect			Work engagement		
	B	*SE*	*p*	*B*	*SE*	*p*
Emotional demands	**0.121**	**0.054**	**.024**	–0.056	0.117	.663
Challenge appraisal (ChA)	–0.020	0.022	.375	**0.182**	**0.060**	**.003**
Hindrance appraisal (HiA)	**0.075**	**0.037**	**.041**	–0.053	0.088	.552
Goal progress (GP)	**–0.033**	**0.014**	**.014**	**0.182**	**0.039**	**< .001**
Interaction ChA × GP	–0.007	0.019	.702	**–0.091**	**0.046**	**.046**
Interaction HiA × GP	**–0.076**	**0.019**	**< .001**	**0.136**	**0.052**	**.009**
		R^2 = **.122**			R^2 = **.145**	

(c) Moderated mediation effects and conditional indirect effects

	Negative affect			Work engagement		
	B	*SE*	95% CI	*B*	*SE*	95% CI
INDEX[a]						
Mediator: Challenge appraisal	–0.004	0.010	[–0.024, 0.016]	–0.049	0.025	[–0.099, 0.001]
Mediator: Hindrance appraisal	**–0.028**	**0.009**	**[–0.047, –0.010]**	**0.051**	**0.021**	**[0.011, 0.091]**
Conditional indirect effects via hindrance appraisal[b]						
–1 *SD*	**0.070**	**0.025**	**[0.021, 0.118]**	**–0.095**	**0.036**	**[–0.166, –0.024]**
M	0.028	0.015	[–0.001, 0.057]	–0.020	0.034	[–0.086, 0.047]
+1 *SD*	–0.014	0.015	[–0.042, 0.015]	0.056	0.053	[–0.049, 0.160]

Note. N = 387 observations. R^2 = amount of variance explained in the corresponding outcome variables; CI = confidence interval; Values in bold type indicate significant results.

[a] INDEX = moderated mediation effect with challenge/hindrance appraisal as a mediator and goal progress as a moderator.

[b] Conditional indirect effects at high (+1 *SD*), average (*M*) and low (–1 *SD*) values of the moderator are only presented for the relations with hindrance appraisal as the mediator, as the index of the moderated mediation only reached significance in those cases.

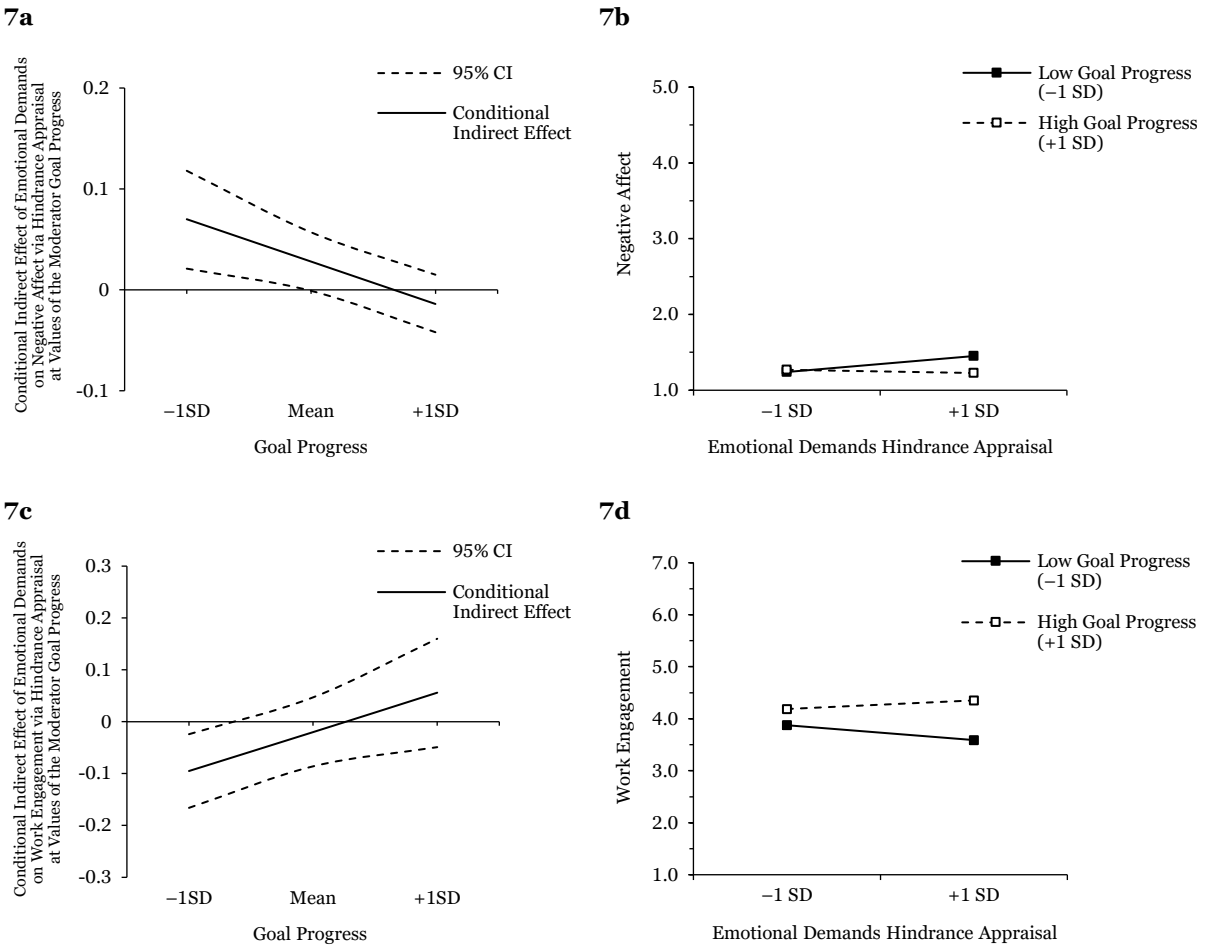

Figure 7. *Conditional Indirect Effects for Significant Moderated Mediations*

Note. Conditional indirect effects of emotional demands via (7a) hindrance appraisal on negative affect with (7b) corresponding interaction, and via (7c) hindrance appraisal on work engagement with (7d) corresponding interaction.

mediator reached significance. Conditional indirect effects of emotional demands on negative affect via hindrance appraisal were positive and significant for low goal progress but not for high goal progress. Regarding work engagement as the dependent variable, conditional indirect effects were negative and significant for low but not for high goal progress. Figure 7 shows all significant moderated mediation effects with corresponding interaction effects.

4.5.2 Time Pressure Models

Mediation Model. As proposed, time pressure was positively related to both challenge appraisal (b = 0.33, SE = 0.07, p < .001) and hindrance appraisal (b = 0.32, SE = 0.07, p < .001), confirming Hypotheses 1a and 1b for time pressure. In turn, challenge appraisal of time pressure was positively related to work engagement (b = 0.34, SE = 0.07,

$p < .001$) but not related to negative affect ($b = -0.03$, $SE = 0.03$, $p = .33$). Hindrance appraisal of time pressure was positively related to negative affect ($b = 0.11$, $SE = 0.04$, $p < .01$) but, in contrast to our expectation, not related to work engagement ($b = -0.03$, $SE = 0.09$, $p = .74$).

Indirect effects only reached significance for the effects of time pressure on negative affect via hindrance appraisal ($b = 0.04$, $SE = 0.01$, $p < .01$) and on work engagement via challenge appraisal ($b = 0.11$, $SE = 0.03$, $p < .01$), confirming Hypotheses 2b and 3a for time pressure. In contrast to our expectations (Hypotheses 2a and 3b), challenge appraisal of time pressure did not mediate the effect of time pressure on negative affect ($b = -0.01$, $SE = 0.01$, $p = .32$), and hindrance appraisal did not mediate the effect of time pressure on work engagement ($b = -0.01$, $SE = 0.03$, $p = .80$). In the mediation model, direct effects of time pressure on negative affect ($b = 0.01$, $SE = 0.04$, $p = .74$) and work engagement ($b = -0.03$, $SE = 0.09$, $p = .74$) were not significant.

Moderated Mediation Model. In contrast to our hypotheses, interaction effects of challenge appraisal of time pressure with goal progress were significant for negative affect as the dependent variable but not for work engagement as the dependent variable (see Table 5 for all statistics). For hindrance appraisal, significant interaction effects occurred with goal progress on both negative affect and work engagement. Analyzing moderated mediation effects, the relation with challenge appraisal as the mediator only reached significance for negative affect as the dependent variable. Yet, conditional indirect effects of time pressure on negative affect via challenge appraisal were neither significant for low nor for high goal progress. Moderated mediation effects with hindrance appraisal as the mediator reached significance for both negative affect and work engagement as the dependent variable. Conditional indirect effects of time pressure via hindrance appraisal on negative affect were positive and significant for low but not for high goal progress. Regarding work engagement as the dependent variable, conditional indirect effects were positive and significant for high but not for low goal progress. Figure 8 shows all significant moderated mediation effects with corresponding interaction effects.

Furthermore, all analyses were repeated controlling for gender and years of work experience, with relationship directions being the same and only slight differences in significance values with the moderated mediation effect of time pressure on negative affect via

challenge appraisal (p = .065 with control variables, p = .049 without control variables). Results with controls are available from the first author.

Table 5. *Moderated Mediation Analysis for the Time Pressure Model*

(a) Mediation variable model

	Challenge appraisal			Hindrance appraisal		
	Estimate	*SE*	*p*	Estimate	*SE*	*p*
Time pressure	**0.329**	**0.070**	**< .001**	**0.374**	**0.065**	**< .001**
		R^2 = **.080**			R^2 = **.112**	

(b) Dependent variable model

	Negative affect			Work engagement		
	Estimate	*SE*	*p*	Estimate	*SE*	*p*
Time pressure	0.028	0.038	.465	−0.096	0.084	.253
Challenge appraisal (ChA)	−0.009	0.026	.720	**0.275**	**0.067**	**< .001**
Hindrance appraisal (HiA)	**0.067**	**0.031**	**.028**	0.113	0.086	.253
Goal progress (GP)	**−0.035**	**0.016**	**.034**	**0.160**	**0.040**	**< .001**
Interaction ChA × GP	**0.029**	**0.014**	**.042**	−0.048	0.037	.190
Interaction HiA × GP	**−0.041**	**0.016**	**.009**	**0.120**	**0.044**	**.006**
		R^2 = **.077**			R^2 = **.173**	

(c) Moderated mediation effects and conditional indirect effects

	Negative affect			Work engagement		
	Estimate	*SE*	95% CI	Estimate	*SE*	95% CI
INDEX[a]						
Mediator: Challenge appraisal	**0.010**	**0.005**	**[0.000, 0.019]**	−0.017	0.012	[−0.041, 0.008]
Mediator: Hindrance appraisal	**−0.013**	**0.006**	**[−0.024, −0.002]**	**0.040**	**0.016**	**[0.009, 0.072]**
Conditional indirect effects via challenge appraisal[b]						
−1 *SD*	−0.017	0.011	[−0.039, 0.004]			
M	−0.003	0.009	[−0.020, 0.014]			
+1 *SD*	0.011	0.011	[−0.011, 0.034]			
Conditional indirect effects via hindrance appraisal						
−1 *SD*	**0.041**	**0.015**	**[0.012, 0.071]**	−0.021	0.035	[−0.088, 0.047]
M	**0.022**	**0.011**	**[0.001, 0.042]**	0.037	0.028	[−0.019, 0.092]
+1 *SD*	−0.002	0.011	[−0.020, 0.024]	**0.094**	**0.038**	**[0.019, 0.169]**

Note. N = 387 observations. R^2 = amount of variance explained in the corresponding outcome variables; CI = confidence interval; Values in bold type indicate significant results.

[a] INDEX = moderated mediation effect with challenge/hindrance appraisal as a mediator and goal progress as a moderator.

[b] Conditional indirect effects at high (+1 *SD*), average (*M*) and low (−1 *SD*) values of the moderator are only presented when the index of the moderated mediation reached significance.

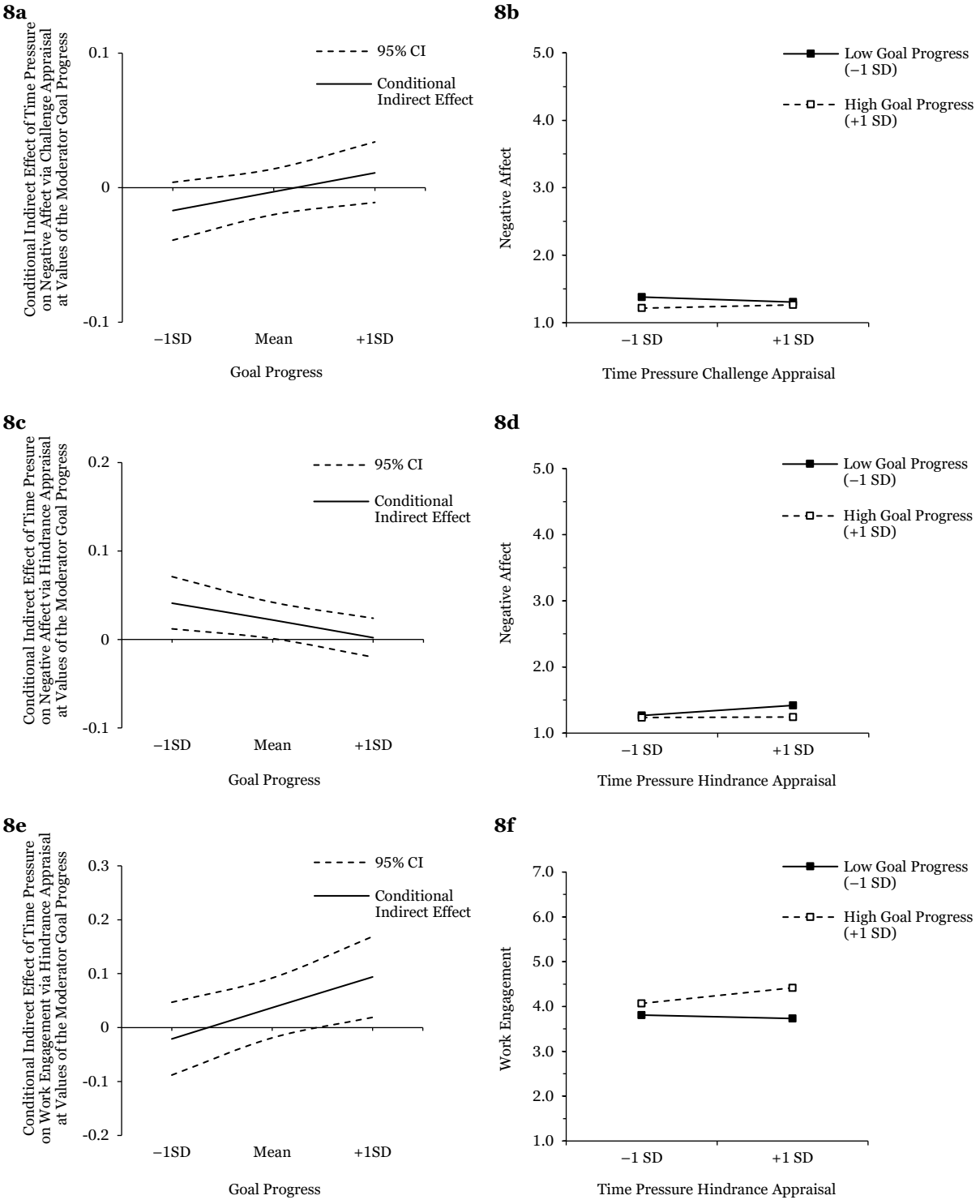

Figure 8. *Conditional Indirect Effects for Significant Moderated Mediations*

Note. Conditional inderect effects of time pressure via (8a) challenge appraisal on negative affect with (8b) corresponding interaction, via (8c) hindrance appraisal on negative affect with (8d) corresponding interaction, and via (8e) hindrance appraisal on work engagement with (8f) corresponding interaction.

4.6 Discussion

In this study, we propose an extension and refinement of the challenge–hindrance stressor framework to explain the daily health-impairing and motivational processes of emotional demands and time pressure. Building on reasoning from both the transactional theory of stress (Lazarus & Folkman, 1984) and COR theory (Hobfoll, 1989, 2001), we examined employees' demand-specific challenge and hindrance appraisal of demands as a mediating mechanism. Furthermore, drawing on aspects of control theory (Carver & Scheier, 1982, 1990), we proposed moderation of these indirect effects by individuals' perceived progress toward goals. We found that emotional demands and time pressure were each appraised as both challenges and hindrances. Indirect effects of both job demands on work engagement were significant only via challenge appraisal, whereas indirect effects on negative affect were significant only via hindrance appraisal. Significant conditional indirect effects on negative affect were found via hindrance appraisal, with perceived goal progress buffering effects. Furthermore, significant conditional indirect effects on work engagement via hindrance appraisal were found contingent on perceived goal progress.

By definition, challenge and hindrance appraisal are closely tied to achievement and goal progress, as appraisal implies an anticipation regarding future achievement. Based on our results, challenge appraisal of demands (i.e., perceiving a potential for achievement and growth) solely has a positive impact regarding work engagement. On the other hand, hindrance appraisal (i.e., perception of blocked opportunities for achievement) solely has a negative impact regarding emotional well-being. However, perceived daily goal progress seems to both foster motivational well-being (i.e., work engagement) *and* reduce negative emotional well-being (i.e., negative affect) and furthermore acts as a buffer for the negative impact of demands' hindrance appraisal on well-being.

4.6.1 Demand-Specific Challenge Appraisal and Well-Being

Within-person, demand-specific challenge appraisal mediated the motivational effects, independent of actual daily goal progress that employees experienced. The positive motivational effects are in line with reasoning from COR theory, suggesting that emotional demands and time pressure promote work engagement, as employees are motivated to invest resources (i.e., energy and effort) because they appraise those demands as a challenge — that

is, employees perceive those demands as having the potential for achievement and growth (i.e., expected resource gain). Our results seem to indicate that this relation has quite robust effects; actual resource gain — or even less resource gain/goal progress than on average — had no effect on this positive relation on the daily level.

Our results do not indicate that challenge appraisal is also health-impairing regarding negative affect. It had been proposed that challenge appraisal might come with uncertainty due to a remaining potential risk of not being able to succeed (Rodell & Judge, 2009). Yet, even if individuals did report less goal progress than on average, it did not affect the relation of challenge appraisal with negative affect. This finding is in contrast to our expectations, based on the COR theory principle, that stress occurs if resource investment does not result in consequent payoff (Hobfoll, 2001). In line with this principle, challenge *stressors* (categorized a priori) have previously been suggested and found to impair health and negatively relate to strain (Crawford et al., 2010; LePine et al., 2005). However, our results suggest that this relation cannot directly be transferred to the effects of demand-specific challenge *appraisal* but, instead, may be due (at least partially) to the simultaneous hindrance appraisal.

4.6.2 Demand-Specific Hindrance Appraisal and Well-Being

Both emotional demands and time pressure did positively relate to negative affect, showing their health-impairing effects, with demand-specific hindrance appraisal mediating the positive relations. COR theory posits that both actual resource loss and lack of resource gain produce stress (Hobfoll, 1989). Yet, based on the results we found, the negative effects of emotional demands and time pressure at work may be due predominantly to the expected absence of resource gain. Furthermore, actual resource gain (i.e., perceived goal progress) buffered those effects for both emotional demands and time pressure. Thus, the expected absence of resource gain (i.e., hindrance appraisal) may turn out to be wrong when people do make progress toward their goals. In this case, they surpass their initially low expectations. For motivational well-being, emotional demands were related to decreased work engagement via hindrance appraisal, but only if goal progress was perceived to be less than average. Time pressure, on the other hand, related to increased work engagement via hindrance appraisal if goal progress was higher than average. Thus, it seems that for emotional demands, work engagement decreases when expected lack of resource gain matches an actual absence of

resources. On the other hand, for time pressure, work engagement increases in the case of a perceived discrepancy between expected and actual resource gain, with actual (occurring) resource gain seemingly outweighing negative effects of expected lack of resource gain. Nevertheless, drawing clear conclusions about possible systematic differences between those two demands requires more research.

4.6.3 Theoretical Contribution

This study contributes to research on the challenge–hindrance framework, providing an extension and refinement of the health-impairing and motivational processes of two different job demands (emotional demands and time pressure). Our findings stress the importance of challenge and hindrance appraisal as an underlying mechanism, mediating both health-impairing and motivational effects of the two types of demands in the work context on a daily level. More specifically, we assessed demand-specific appraisal to enable investigation of the extent to which time pressure and emotional demands are perceived as a challenge and/or a hindrance. This approach expands recent research that assesses appraisal but operationalizes it as the perception of each day's tasks and overall experiences in general (Ohly & Fritz, 2010; Prem et al., 2017; Searle & Tuckey, 2018) or only assesses either challenge or hindrance appraisal for different demands (Liu & Li, 2018). Our results are in line with previous research (Prem et al., 2016; Searle & Auton, 2015) showing that demands can relate to both challenge and hindrance appraisal, underpinning the proposition of the transactional theory of stress that stressors can be appraised as challenging as well as threatening (Lazarus & Folkman, 1984). Classifying job demands a priori as challenges or hindrances, or only assessing challenge *or* hindrance appraisal, falls short of the differential effects that demands can have on emotional and motivational well-being and, thus, may be insufficient to capture underlying mechanisms (Searle & Tuckey, 2018). Consequently, instead of speculating on how employees might perceive job demands and inferring their appraisal theoretically based on relationships with well-being measures, we support other researchers' call to directly assess (demand-specific) challenge and hindrance appraisal (Searle & Auton, 2015) for its potential to reveal effects and processes in occupational health, which might otherwise be missed or concealed.

With this paper, we also expand research on the challenge–hindrance framework building on COR theory. First, our findings endorse the prominent role of subjective achievement experiences as an important resource for employees' well-being (Beehr & Grebner, 2009; Grebner et al., 2008). Beyond that, our findings stress the positive impact of perceived actual resource gain (goal progress) on both emotional and motivational well-being within the challenge–hindrance framework. Additionally, regarding COR theory, our results seem to suggest differential effects in terms of *expected* resource gain/loss versus *actual* perceived resource gain/loss. Expected resource gain due to a specific demand (challenge appraisal) seems to motivate individuals, independent of actual resource gain (goal progress). Risks not to gain resources due to a specific demand (hindrance appraisal), on the other hand, lead to stress (i.e., negative affect), which may be buffered in the event of net resource gain — if resources (goal progress) are unexpectedly gained. Finally, reduced likelihood of not gaining resources does not inherently accompany increased motivational well-being.

4.6.4 Limitations and Directions for Future Research

By centering our predictor variables at the person level, we can make statements about deviations from the typical (average) level of those constructs and how they relate among each other, interact, and exert their influence on emotional and motivational well-being independent of the constructs' typical level. Thereby, our results provide relations between challenge and hindrance appraisal and well-being, independent of individual differences in appraisal. Yet, given the likelihood that individuals appraise stressors differently (e.g., due to different perception tendencies), our approach provides no insight into why employees appraise emotional demands and time pressure as challenges and hindrances. Future research should expand on internal and external influences on the challenge–hindrance appraisal process to provide a more finely grained understanding of unfolding appraisal processes and effects on stress.

One strength of our study is our assessment of outcome variables (negative affect and work engagement) with a time lag. However, emotional demands, time pressure, demand-specific appraisal, and perceived goal progress were all assessed at the same time, so no causal inferences can be concluded. Especially regarding challenge and hindrance appraisal and goal progress, this presents a conceptual limitation. Those appraisals conceptually include

an anticipation of achievement — that is, opportunities for achievement (challenge) or blocked achievement (hindrance). When assessing appraisal and goal progress at the same time, employees may retrospectively judge their demand appraisal dependent on their actual perceived progress toward achievement. Yet, inspecting within-person correlations, relations between appraisals and goal progress were less than one may have expected, with weak relations and even insignificant correlation between the challenge appraisal of emotional demands and goal progress. Furthermore, to reduce survey length and respondent burden, we used single-item measures for both challenge and hindrance appraisal and goal progress. Even though single-item measures provide valid assessments of constructs in organizational research (G. G. Fisher et al., 2016; Wanous et al., 1997), our approach does not allow us to tap into possible multiple facets of challenge and hindrance appraisal (see Searle & Auton, 2015). Thus, we suggest that future research use multiple item measures for appraisal and perceived achievement and separate those measures in time, to reduce conceptual overlapping and causal uncertainties. Furthermore, future research could gather more objective information (e.g., predefined milestones or achievement) or collect data and ratings from different sources, such as colleagues or supervisors. This would also reduce the likelihood of common-method bias when relying solely on self-report measures (P. M. Podsakoff et al., 2003).

Concerning the strain process within the challenge–hindrance framework, we suggest that future research take a deeper look at challenge appraisal and strain. In contrast to our expectations, challenge appraisal was not related to strain (i.e., negative affect), neither for emotional demands nor for time pressure. However, as coping with challenge requires effort, relations might differ for other strain outcomes next to negative affect, such as exhaustion. Concerning affect, recent research also suggests that challenge and hindrance stressors may exert different effects regarding high and low activated pleasant and unpleasant affect, dependent on resource loss and gain (Stiglbauer, 2018). Relations of challenge and hindrance stressors on strain have been mixed (Mazzola & Disselhorst, 2019). Thus, we endorse future research applying more finely grained differentiations, especially regarding demand-specific challenge appraisal and strain as the outcome.

In terms of general conclusions on challenging and hindering processes and the role of goal progress within the challenge–hindrance framework, we must be cautious. Even though

we investigated two qualitatively different job demands (time pressure and emotional demands) and patterns turned out to be quite similar, our results are nevertheless restricted to these demands. Furthermore, we chose two demands that have previously been shown to entail both challenging and hindering potential (Kronenwett & Rigotti, 2019). Thus, different patterns may evolve for other job demands, such as demands that are unlikely to entail a challenging potential (e.g., role ambiguity). We encourage future research to examine further demands to expand on our proposed relations.

4.6.5 Practical Implications

Our results provide practical starting points for taking action with respect to improving employees' health at work. First, demand-specific challenge and hindrance appraisal seems to play an important role in individuals' well-being, with challenge appraisal fostering motivational well-being and hindrance appraisal increasing strain reactions (i.e., negative affect). Emotional demands and time pressure both hold challenging and hindering potential. Respective ambivalent relations with strain and motivation should be kept in mind when thinking about health interventions or redesigning working conditions. That is, focusing only on reducing exposure to (potentially) stressful working conditions may not only reduce unfavorable health outcomes but could simultaneously reduce favorable motivational aspects. Also, generally increasing seemingly beneficial demands (challenge demands) is not advisable, as demands may entail both challenge and hindrance potential. Thus, they may have positive motivational benefits but, at the same time, still impair psychological health. Instead, and in addition to job-design measures, we recommend that stress-management interventions provided for employees should include appraisal training to positively influence their well-being and motivation. Research has shown that individuals' appraisal of situations or tasks can be influenced and trained (Tomaka et al., 1997; van der Klink et al., 2001). This may include group training or individual coaching in cognitive-behavioral stress management or resource-activating self-management, shown to effectively impact primary appraisal and subsequent stress responses (e.g., Gaab et al., 2005; Storch et al., 2007). Training individuals' appraisal would benefit not only the individual but also the economic interests of the employer (Gerich, 2017), as an increase in well-being and work engagement is directly related to employees' work performance (Demerouti & Cropanzano, 2010; Gerich, 2017).

Next to expected resource gain (challenge appraisal) and the risk of not gaining additional resources (hindrance appraisal), our results also stress the role of actual daily goal progress as an important resource for employees' motivation and well-being, as it can buffer negative effects of hindrance appraisal on emotional and motivational well-being. Accordingly, the focus should not only be on the individual and how they may be trained in changing their appraisals. Perhaps even more important, organizations and employers would be well advised to design work conditions that foster mastery experiences. This may include an evaluation of working conditions to reduce roadblocks and obstacles to goal achievement, creating opportunities for future resource gain. A further fruitful approach could be the empowerment of job crafting, including the idiosyncratic reduction of relevant hindering demands, along with the improvement of challenging job demands (Tims et al., 2013; Tims et al., 2014). Furthermore, support for reaching goals and providing employees with feedback on their progress will benefit employees' health not only in a direct way but also as a resource to buffer potential negative effects of daily job demands.

4.6.6 Conclusion

This study supports previous research showing that emotional demands and time pressure entail both a challenging and a hindering potential, with positive and negative effects on motivational and emotional well-being. Moreover, our study especially emphasizes the importance of perceived goal progress as a resource for individuals' well-being. While positive effects of the challenging potential — that is, individuals' expected achievements and resource gain associated with both job demands — resulted in increased engagement, goal progress seems able to buffer the negative effects of an expected absence of resource gain (hindrance). The more goal progress individuals perceive on a daily level, the lower seem the negative consequences of both demands on emotional and motivational well-being. Thus, employers and organizations are well advised to foster settings and conditions that allow for daily achievement experiences and gain in resources, to improve employees' well-being and buffer the negative impact demands may have on individuals.

Chapter 5

Study 3:
Subjective Achievement Experiences at Work as an Antecedent of Employee Well-Being[3]

5.1 Abstract

Achievements at work play important roles with regard to employees' well-being and health. Based on conservation of resources theory, the success resource model and self-determination theory, this paper investigates how subjective occupational achievement experiences (task-related and prosocial) relate to employees' psychological well-being (i.e., depressivity). We hypothesize differential mediating effects via the satisfaction of the basic psychological needs for autonomy, competence, and relatedness. Over a course of four consecutive weeks, 260 employees provided weekly diary data (942 observations) that were analyzed using multilevel structural equation modelling. At the within-person level, results showed that relatedness need satisfaction mediated the negative relationship between prosocial achievement experiences and depressivity, while competence need satisfaction mediated the negative relationship between task-related achievement experiences and depressivity. This study contributes to the research proposing achievement experiences as a beneficial resource in the health promotion process and reinforces the call to differentiate between the satisfaction of the three basic psychological needs of autonomy, competence, and relatedness.

5.2 Introduction

Mental health problems have a great impact on individuals' daily lives and constitute a high societal and economic burden. Reduced working hours and higher absenteeism at work due to

[3] This chapter is a re-print of a manuscript that has been accepted for publication. The final published version is available in the European Journal of Work and Organizational Psychology:

Kronenwett, M., & Rigotti, T. (2020). Subjective achievement experiences at work and reduced depressivity: The mediating role of psychological need satisfaction. *European Journal of Work and Organizational Psychology*. Advance online publication. https://doi.org/10.1080/1359432X.2020.1862086

mental health problems were estimated to cost approximately €42 billion across EU countries in 2015 (OECD/EU, 2018). According to the World Health Organization (World Health Organization, 2012) depression has become the most common reason for long-term sick leave in Europe. Therefore, fostering a work environment that contributes to the prevention of depressive symptoms before a psychological illness occurs will not only be beneficial for individuals at work but also for both social security programs and organizations interested in a healthy and productive workforce.

With regard to psychological health, research has shown that goal achievement and the experience of success represent important aspects for employees' motivation and well-being (Grebner et al., 2010; Harris et al., 2003). Based on conservation of resources (COR) theory (Hobfoll, 2001), the success resource model states that achievement experiences represent an important resource in the work context (Beehr & Grebner, 2009; Grebner et al., 2008, 2010) and act as a positive source for well-being. How subjective achievement experiences as resources and antecedents of better well-being exert their positive influence has not yet been clarified, calling for further research and empirical data.

With the present study, we want to uncover underlying mechanisms and focus on the subjective experience of achievements at work and how they contribute to employees' subjective well-being. Therefore, we investigate short-term subjective achievement experiences and argue for two kinds of important achievement experiences at work: task-related and prosocial achievements. Bringing together reasoning from the success resource model, COR theory, and self-determination theory (SDT; Deci & Ryan, 2000), we argue that the favourable effects of those achievement experiences on employees' depressivity emerge because they satisfy basic psychological needs (BPN). We furthermore propose distinct mediating mechanisms on depressivity through the satisfaction of the three BPNs of autonomy, competence, and relatedness (see Figure 9 for the proposed conceptual model).

By doing so, we contribute to the occupational health psychology literature in several ways. First, we contribute to research on the mechanism linking subjective achievement with well-being by proposing BPN satisfaction as a mediator and by testing distinct mediating paths. Thereby, we connect the success resource model with SDT and follow calls to differentiate among the satisfaction of different kinds of psychological needs, as they differ in

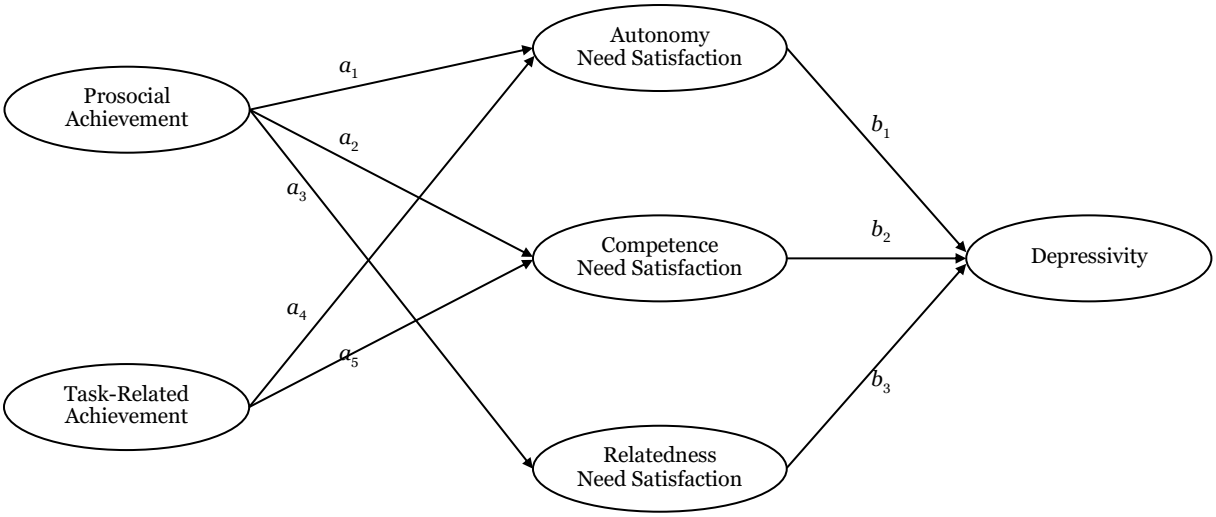

Figure 9. *Conceptual Model of the Relationships for the 1-1-1 Multilevel Mediation Model*

their relation to predictors as well as outcomes (van den Broeck et al., 2016). This is also in line with recent research relating positive work events to autonomy, competence, and relatedness need satisfaction (Wang et al., 2020). Second, we respond to calls to investigate intraindividual models of employee well-being (Bakker, 2015; Ilies et al., 2015) by focusing on temporary dynamics in shorter time frames. Projects and tasks at work often last several days and achievement experiences and subsequent well-being is likely to vary accordingly. Yet, depressive symptoms may unlikely vary or develop from day to day. Thus, by empirically testing our model in a weekly diary design, we focus on within-person effects of achievement experiences instead of investigating underlying mechanisms as they occur in general across individuals.

5.3 Theoretical Background

Achievements at work are at the heart of many theories in occupational psychology literature. Especially goal achievement seems to play a key role, which has been studied in a variety of conditions and theoretical frameworks (e.g., Grebner et al., 2010; Locke & Latham, 2002). Aiming to reach goals and progressing towards achievement represents an important driving force, and by that, positively relates to motivation and performance. Based on COR theory (Hobfoll, 2001), success and achievement experiences at work can plausibly be conceptualized as work-related resources (Grebner et al., 2008, 2010). Furthermore, based on the success

resource model, subjective achievement experiences refer to "positive and meaningful work events that are related to work goals and one's own working behavior" (Grebner et al., 2010, p. 70) which represent resources that are valued in their own right. Moreover, to experience achievement at work, previous investment of resources (e.g., energy and time) in performance is required. Thus, achievement experiences not only represent resources themselves but also indicate an individual's resource gain, which in turn is assumed to act as a causal agent in facilitating and promoting psychological well-being (Grebner et al., 2010; Hobfoll, 2001). In this study, we focus on two types of achievement experiences (task-related and prosocial achievement experiences) as antecedents to well-being and uncover distinct paths of their effects.

5.3.1 Task-Related and Prosocial Achievements

Research has consistently shown that achievement experiences increase people's subjective well-being and reduce their ill-being (for a meta-analysis, see Klug & Maier, 2015). Yet, when investigating the role of occupational achievement experiences in the routine of a daily job and possible effects on workers' well-being, the question arises as to which types of occupational achievement events should be considered. Empirically, research has shown that the most positive work events individuals report are salient for them in terms of task-related success, goal achievement, and reasonable goal progress (e.g., Basch & Fisher, 2000; Grebner et al., 2010; Ohly & Schmitt, 2015), such as succeeding in challenging work tasks and finishing projects or important steps of a project. Furthermore, several studies highlight the importance of attaining goals and making progress towards goals and its effects on subjective well-being (e.g., Diener, 1994; Klug & Maier, 2015; Wiese, 2007). Failing to attain goals or finishing tasks, on the other hand, are theorized to result in increased rumination (Martin & Tesser, 1996), one of the central components of depression (Nolen-Hoeksema, 2000). In contrast, attaining goals and experiencing achievements is related to increased self-efficacy (e.g., Rigotti et al., 2020), which in turn is related to less depressive symptoms (e.g., Topa & Valero, 2017). Subjective goal attainment itself can be seen as a positive affective event (Weiss & Cropanzano, 1996) that positively relates to employees' well-being and health (e.g., Brunstein, 1993; Sheldon & Kasser, 1998). Furthermore, goal progress is characterized by the successful completion of steps necessary to attain the goal. It can be assumed that an employee's

subjective well-being is influenced by such accumulating smaller-scale satisfying achievement experiences (Klug & Maier, 2015). Drawing on research by Grebner et al. (2010) and Ohly and Schmitt (2015), we consider subjective task-related achievement as a resource and an important work-related achievement experience that encompasses both task-related goal attainment and goal progress.

Most theories on goals and goal achievement imply that goals are either consciously set or at least apparent for a person and in that way exert their influence. Research indeed shows that people strive towards achieving goals and that the more people identify with goals, the more moving towards and reaching those goals affects their well-being (Sheldon & Elliot, 1999). However, striving to reach goals at work may not necessarily result in achievement experiences but may also result in frustration when goals are not met. Furthermore, in daily working life, goals may not always be explicitly set, and thus, not always consciously represented by an employee (Mühlethaler, 2013). Instead, work may also offer opportunities for achievement experiences that are not directly related to an employee's own core work goals. In fact, people do not only show egoistic tendencies by acting in ways to progress towards their individual goals, and thus, improve their own situation, but they can also be motivated by improving the welfare of others (Penner et al., 2005). Grebner et al. (2008) investigated subjectively experienced achievement events that signaled successful performance that workers experienced and reported in their daily lives. In addition to task-related achievement, Grebner et al. (2008) reported prosocial achievements as the most frequently mentioned achievement events in the workplace. Clustering work events reported by employees, Ohly and Schmitt (2015) also reported satisfactory experiences through social interactions as one of the most frequently encountered positive work events.

Prosocial achievements encompass the subjective experience of successfully helping or working with others, thus relating to social interpersonal performance. Prosocial achievements can be experienced as a consequence of prosocial organizational behaviour (Brief & Motowidlo, 1986). Therefore, they can be a result of both in-role behaviours (e.g., a supervisor motivating employees or successfully settling a conflict) and a result of extra-role behaviours (e.g., voluntarily supporting co-workers; Grebner et al., 2008, 2010). With regard to psychological well-being, helping others not only benefits those who receive help but also the helper's own

well-being and health (Eisenberger, 2013). Experiencing subjective prosocial achievement after successfully helping others can, for example, relieve a helper's negative affective state that is caused by witnessing another person's problem (Piliavin et al., 1981). Positive effects on a helper's own well-being have also been reported with regard to reduced blood pressure (Piferi & Lawler, 2006), greater happiness (Aknin et al., 2013), increased positive affect (e.g., Sonnentag & Starzyk, 2015), and accelerated recovery from depression (Brown et al., 2008).

Theories of depression propose that depressive symptoms (among other factors) may arise due to a lack of positive events in the environment (Kranabetter & Niessen, 2019). According to COR theory, "Loss or threat of loss of resources is particularly stressful because individuals are faced with diminished coping capabilities in handling future challenges" (Hobfoll & Schumm, 2009, p. 134). Based on COR theory and the success resource model, we focus on task-related and prosocial achievement experiences (i.e., positive work events) as resources as well as indicators of resource gain and their effects on employees' depressive symptoms. Empirically, resource-based approaches showed that resource loss is associated with depressed mood (e.g., Hobfoll et al., 2003; Hobfoll & Lilly, 1993), whereas resource gain is associated with decreased depression (Holahan et al., 1999). Since people with clinical symptoms of depression are often unable to continue working, and because we are interested in working employees, we selected depressivity (Mohr, 1986) to assess employees' psychological well-being, or rather ill-being. Depressivity comprises preclinical depressive symptoms and thus reflects a preliminary phase of clinical depression (Mohr, 1986; Mohr & Müller, 2014). The following hypotheses are proposed:

Hypothesis 1: Prosocial achievements are negatively related to depressivity.

Hypothesis 2: Task-related achievements are negatively related to depressivity.

5.3.2 Basic Psychological Need Satisfaction as a Mediating Mechanism

According to SDT (Deci & Ryan, 2000), people are naturally motivated to achieve growth and ensure their well-being. The theory posits that the satisfaction of three BPNs (i.e., the need for autonomy, competence, and relatedness) are a necessary condition for individuals to thrive and that health is strengthened when one's action and interactions satisfy those needs. Moreover, the theory has been used to explain how resources (i.e., job characteristics, such as

task autonomy, social support, and cognitive and emotional resources) influence employees' well-being (Trépanier et al., 2015; van den Broeck et al., 2008). Thus, it is likely that the positive effects of achievement experiences (as a resource) on well-being can also be explained by BPN satisfaction. Positive effects of BPN satisfaction and their role as underlying mechanisms between resources and health outcomes have been shown, explaining not only the emergence of work engagement and well-being when needs are satisfied but also on ill-being (e.g., emotional exhaustion) when needs are not satisfied (e.g., Lynch et al., 2005; Trépanier et al., 2015; van den Broeck et al., 2010).

In the past, research often focused on overall BPN satisfaction by averaging the three basic needs, as it was assumed that "the accumulation of these three types of experiences over time leads to an increase in longitudinal well-being" (Sheldon & Elliot, 1999, p. 484) and as those need satisfactions were found to be highly intercorrelated in different contexts (Baard et al., 2004; Weinstein & Ryan, 2010). However, recent meta-analytic results suggest that the effects of each need should be examined separately (van den Broeck et al., 2016), which is supported by studies showing unique mediating effects of different needs (e.g., Desrumaux et al., 2015; Gieter et al., 2018).

One of the focal goals of our study is to contribute to this literature by assessing differential paths making use of the matching principle (de Jonge & Dormann, 2006). The matching principle suggests that the interplay of job stressors, resources, and well-being should be strongest for qualitatively identical dimensions, such as emotional support from colleagues should be better able at mitigating effects of emotional stressors on well-being than cognitive-informational support from co-workers (de Jonge & Dormann, 2006; Viswesvaran et al., 1999). The need for relatedness could be particularly satisfied by prosocial achievements, as both match on an interpersonal dimension; however, it may not be satisfied by task-related achievements. Differential relationships will be proposed in the following sections.

Autonomy Need Satisfaction. In SDT, the need for autonomy refers to the concept of volition and the feeling that one's behaviour is self-chosen. Workers' need for autonomy is satisfied if they have a sense of independence and control over how they do their job. A strong degree of autonomy is implied if people adhere to personally relevant or important work goals and progress towards them (Steger et al., 2008). Research shows that prosocial acts provide

opportunities to experience the satisfaction of autonomy, especially when self-initiated and performed freely (Weinstein & Ryan, 2010). With regard to subjective prosocial achievements (e.g., as a result of prosocial organizational behaviour) and task-related achievements and their relationship to autonomy need satisfaction, we further assume that having successfully spent time helping others and finishing work tasks frees up time and the capacity to choose and focus on new projects or steps. Subjective achievement experiences (both prosocial and task-related) indicate that one's own energy and effort invested was successful, which may contribute to the perception of an internal locus of causality, satisfying one's need for autonomy (Deci & Ryan, 2000; Wang et al., 2020). Regarding depressive symptoms, on the other hand, a perceived lack of control over situations (i.e., perceived helplessness) has been proposed as one central factor for the development and perpetuation of depressive disorders (Härter et al., 2007). Thus, the experience of autonomy need satisfaction should be directly related to lower depressivity. We, therefore, hypothesize that subjective achievement experiences reduce depressive symptoms by satisfying one's psychological need for autonomy.

> *Hypothesis 3:* (a) Prosocial achievement and (b) task-related achievement relate indirectly and negatively to depressivity via higher autonomy need satisfaction.

Competence Need Satisfaction. The need for competence refers to people's desire to interact effectively with their environment, to feel skillful and able to master challenges in life (White, 1959). Empirically, research has shown that mastery experiences relate to people's perceived competence (Reis et al., 2000). Furthermore, support has been found showing associations of successful prosocial behaviour and perceived prosocial impact with higher perceptions of competence (Penner et al., 2005; Sonnentag & Grant, 2012). Thus, both task-related and prosocial achievement should promote competence need satisfaction, as they inevitably require prior action-oriented behaviour and inherently imply that this behaviour resulted in positive changes for oneself or others. Regarding depressive symptoms, research shows that depressed individuals have reduced beliefs in their own competencies and skills (Garber & Hollon, 1980). Thus, we propose that individuals' subjective achievement experiences satisfy their need for competence, which in turn directly relates to lower levels of depressive symptoms.

Hypothesis 4: (a) Prosocial achievement and (b) task-related achievement relate indirectly and negatively to depressivity via higher competence need satisfaction.

Relatedness Need Satisfaction. The need for relatedness describes the desire to feel connected and accepted and to both give and receive attention to and from others (Baumeister & Leary, 1995). As mentioned above, we argue that, based on the matching principle, prosocial achievement experiences should be closely connected to relatedness need satisfaction, whereas task-related achievement experiences (i.e., successfully completing work tasks and progressing toward personal goals) do not necessarily relate to relatedness need satisfaction, as these achievement experiences can occur without any interpersonal interaction or contact with others at work. Prosocial behaviours — a necessary prerequisite for prosocial achievement experiences —, on the other hand, are inherently interpersonal, improving interpersonal connections and promoting closeness (Sonnentag & Grant, 2012; Weinstein & Ryan, 2010). Successful prosocial behaviour, such as helping colleagues, makes a positive difference not only in the recipients' but also in the helpers' lives (Weinstein & Ryan, 2010) and thus should satisfy one's need for relatedness. With regard to depressive symptoms, it has been proposed that depressed mood and reduced energy are often based on a series of negative life experiences, such as social isolation (Härter et al., 2007). Therefore, we propose that experiencing the satisfaction of one's need for relatedness due to prosocial achievement experiences should directly relate to lower depressive symptoms.

Hypothesis 5: Prosocial achievement relates indirectly and negatively to depressivity via higher relatedness need satisfaction.

Based on the matching principle, we expect the mediating paths via the satisfaction of the three needs to differ for the two types of achievements experiences. As outlined above, we hypothesize that the negative effect of task-related achievement on depressivity is mediated by both autonomy need satisfaction and competence need satisfaction, but not relatedness need satisfaction. Yet, the matching principle furthermore suggests that relations should be strongest for qualitatively identical dimensions. For task-related achievement experiences, we thus propose that the mediating effect of competence need satisfaction is stronger than the mediating effect of autonomy need satisfaction, as those achievement experiences may

primarily exert feelings of mastery and competence. Task-related achievements may not necessarily be based on intrinsic goal setting; hence, experiencing autonomy along with task achievement may not occur by default. With regard to prosocial achievement experiences, we expect that the strength of the indirect effect via relatedness need satisfaction is stronger than the indirect effects via both autonomy and competence need satisfaction, as prosocial achievements and relatedness need satisfaction match on an interpersonal dimension. This leads us to our final set of hypotheses:

> *Hypothesis 6:* Indirect effects via the satisfaction of the three basic psychological needs differ in strength, with (a) a stronger indirect effect of task-related achievements on depressivity via competence need satisfaction than via autonomy need satisfaction and (b) a stronger indirect effect of prosocial achievements on depressivity via relatedness need satisfaction than via autonomy and competence need satisfaction.

5.4 Method

5.4.1 Procedure and Participants

We recruited participants by posting information about our study on social networking websites and by contacting private organizations in Germany. Organizations that were willing to participate in our study forwarded our invitation to their employees. All interested persons had to register online by providing an email address, which was used to send them a link to the online questionnaires at the end of their working weeks (i.e., Fridays; two participants stated that Thursday was the last day of their working week). For four consecutive weeks, participants were asked to complete the questionnaire, with each questionnaire assessing the current week. In the first week, participants were additionally asked to provide demographic data. We decided to use time lags of one week, as the most common unit of work time lasts from Monday to Friday, with the weekends forming natural breaks (Bakker & Bal, 2010; Sonnentag et al., 2008; van Woerkom et al., 2016). Furthermore, we consider a weekly time frame to be appropriate as depressive symptoms may unlikely vary or develop from day to day. Additionally, regarding achievement experiences, projects and tasks may last several days, so that an assessment at the end of each working week seems reasonable. Participation was

anonymous and voluntary, with a chance of winning one of five €20 vouchers as an incentive. At the end of the data collection, all participants received an aggregated report of the research project's results. Each participating organization additionally received a company-specific anonymous report if more than 14 employees successfully completed the questionnaires.

In total, 463 persons participated in our study. Of these, 260 provided valid data and participated in at least three weeks, representing the final sample. For this study, we were able to recruit seven organizations. From those organizations, 198 individuals are part of our final sample (75.8% of all participants). To reduce the overall complexity of our model, we did not include organizations as an additional level in data modelling, which is also supported by very low ICC(1) values, indicating that only 2%–5% of variance in our study variables were explained by organizational affiliation. Demographic data were only gathered in the first week. Thus, information about the final sample only refers to those individuals who participated in that week (n = 238, 91.5%). Approximately half of the participants were female (50.4%) and 43.2 years of age on average (SD = 11.3). Participants were mostly employed with a permanent work contract (86.6%), working 41.1 hours per week on average (SD = 6.9; range: 18–60 hours). There was a large variety of jobs that participants indicated, with job titles such as architect, chemist, dentist, electrician, HR manager, IT-consultant, key account manager, nurse, office clerk. Out of the final sample, 162 (62.3%) persons completed all four questionnaires and 98 (37.7%) persons participated in three weeks.

To investigate potential systematic attrition, we compared our final sample with dropouts (i.e., individuals who participated in less than three weeks). No significant difference between the two groups were found concerning task-related achievement (F(1,458) = 0.55, p = .46), prosocial achievement (F(1,457) = 0.86, p = .35), autonomy need satisfaction (F(1,452) = 2.29, p = .13), competence need satisfaction (F(1,454) = 0.03, p = .86), or depressivity (F(1,457) = 0.21, p = .64). However, groups differed with regard to reported relatedness need satisfaction, with dropouts reporting less relatedness need satisfaction (ΔM = 0.22, F(1,438) = 6.17, p = .01). With regard to demographic differences, dropouts were younger than our final sample (ΔM = 2.98, F(1,348) = 5.13, p = .02), but the two groups did not differ on gender (χ^2(1) = 0, p = .93) or hours spent working per week (F(1,344) = 0.02,

p = .90). Overall, these results do not indicate a substantial selection bias of the final sample used for analyses.

5.4.2 Instruments

As questionnaires had to be filled out at the end of the working week, every construct was introduced with a short reminder to answer the questions referring to the current working week (i.e., "Please answer the following questions relating to your current working week").

Subjective Achievement. For assessing subjective achievement at work, the Subjective Occupational Success Scale (SUCCESS; Grebner et al., 2010) was used. The Prosocial Success subscale was used to measure prosocial achievement and the Goal Attainment subscale was used to measure task-related achievement. Participants had to rate six items for prosocial achievement and three items for task-related achievement on a 7-point Likert scale, ranging from 1 (*never*) to 7 (*almost always/all the time*). Sample items were "I helped others to succeed" and "I motivated others" for prosocial achievement, and "I completed my tasks" and "I made reasonable goal progress" for task-related achievement. Cronbach's alpha varied across the four weeks from .88 to .92 for prosocial achievement and from .87 to .92 for task-related achievement.

Psychological Need Satisfaction. The scale developed by Albrecht (2015) was used to assess psychological need satisfaction at work, with three subscales being used to measure autonomy, competence, and relatedness separately. The subscales consisted of three items each. Participants were asked how much the corresponding needs were being satisfied during their current working week, rated on a 5-point Likert scale, ranging from 1 (*never satisfied*) to 5 (*very satisfied*). Sample items were, "Your need for autonomy in deciding how to do your work" for satisfaction of need for autonomy, "Your need for feeling competent at work" for satisfaction of need for competence, and "Your need for a sense of connection with the people you work with" for satisfaction of need for relatedness. Cronbach's alpha varied across the four weeks from .90 to .94 for need for autonomy, from .90 to .93 for need for competence, and from .83 to .90 for need for relatedness.

Depressivity. As people with clinical symptoms of depression are often unable to work, and to avoid highly skewed variables, we assessed preclinical symptoms of depression (i.e., depressivity) with a scale developed by Mohr (1986). Participants had to rate eight items

on a 7-point Likert scale, ranging from 1 (*never*) to 7 (*almost always*). Sample items were "I had sad moods" and "I felt alone even if I stayed together with others". Cronbach's alpha varied across the four weeks from .90 to .93.

5.4.3 Confirmatory Factor Analyses

To test the dimensionality of the measures, we conducted multilevel confirmatory factor analyses (CFA) before proceeding to hypotheses testing. Our measurement model consisted of six factors: prosocial achievement, task-related achievement, autonomy need satisfaction, competence need satisfaction, relatedness need satisfaction, and depressivity. We further computed a four-factor model combining the satisfaction of needs for autonomy, competence, and relatedness into one factor. The six-factor model provided the best fit for the data ($\chi^2(568) = 1093.57$, $p < .001$), with following fit indices: comparative fit index (CFI) = .95, root-mean-square error of approximation (RMSEA) = .03, and Akaike's information criterion (AIC) = 57214.98. Fit indices of the four-factor model ($\chi^2(586) = 2602.26$, $p < .001$) were the following: CFI = .79, RMSEA = .06, and AIC = 58935.79. Satorra-Bentler scaled chi-square difference test (Satorra & Bentler, 2010) results showed superior fit for our six-factor model ($\Delta\chi^2(18) = 1355.23$, $p < .001$). We conclude that the constructs used in this study show adequate discriminant validity.

5.5 Results

First, we examined within- and between-persons variance components of all study variables. Analyses showed intraclass correlations (ICCs) ranging from .63 for relatedness need satisfaction to .82 for depressivity, justifying examination at the within-person level. Table 6 shows the means, standard deviations, and both within- and between-persons correlations of all study variables. Multilevel mediation analysis was conducted to test our hypotheses using Mplus Version 7.3 (Muthén & Muthén, 1998–2017). All hypotheses were simultaneously tested using multilevel structural equation modelling (MSEM), decomposing the variance of our variables into their within-person and between-person components. Both achievement experiences as well as the three need satisfaction variables were allowed to covary in our latent factors model. Furthermore, we controlled for the respective measures of the previous week at the within-person level for all dependent variables (autonomy, competence, and relatedness need satisfaction, and depressivity). Estimates of within-person path coefficients of all direct

effects as well as indirect effects with corresponding confidence intervals can be found in Table 7. Significant within-person path coefficients of our mediation model are further displayed in Figure 10.

Investigating the total effects of both achievement experiences on depressivity, results showed that prosocial achievement was not related to depressivity (b = 0.06, SE = 0.07, p = .45); thus, Hypothesis 1 is not confirmed. However, task-related achievement was negatively related to depressivity (b = –0.14, SE = 0.06, p < .05), confirming Hypothesis 2.

Prosocial achievement was positively related to the satisfaction of the needs for autonomy (b = 0.22, SE = 0.08, p < .01) and relatedness (b = 0.31, SE = 0.13, p < .05) but not related to the satisfaction of the need for competence (b = 0.14, SE = 0.08, p = .08). Task-related performance was positively related to both autonomy need satisfaction (b = 0.16, SE = 0.05, p < .01) and competence need satisfaction (b = 0.23, SE = 0.06, p < .001) but not associated with relatedness need satisfaction (b = 0.03, SE = 0.06, p = .62). Autonomy need satisfaction was not related to depressivity (b = 0.10, SE = 0.07, p = .13). Both competence need satisfaction and relatedness need satisfaction were negatively related to depressivity (b = –0.19, SE = 0.07, p < .01; b = –0.16, SE = 0.07, p < .05, respectively).

Table 6. *Means, Standard Deviations, and Intercorrelations for all Study Variables*

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12
1. Prosocial ach.[a]	4.13	0.96	—	**.18**	.01	.15	**.28**	–.04						
2. Task-related ach.	5.28	0.93	**.28**	—	**.37**	**.51**	.13	**–.44**						
3. Autonomy ns[b]	4.07	0.77	**.25**	**.28**	—	**.76**	.14	**–.52**						
4. Competence ns	4.10	0.77	**.16**	**.27**	**.40**	—	**.39**	**–.63**						
5. Relatedness ns	3.79	0.79	**.20**	**.14**	**.30**	**.25**	—	**–.35**						
6. Depressivity	2.20	1.05	.02	**–.15**	–.06	**–.19**	**–.19**	—						
7. Prosocial ach. (T-1)	4.19	1.01	.05	.01	**.19**	.10	**.15**	.10	—					
8. Task-related ach. (T-1)	5.29	0.98	.05	**.30**	**.20**	**.19**	**.20**	–.04	**.18**	—				
9. Autonomy ns (T-1)	4.10	0.77	.11	**.19**	**.24**	.09	**.16**	–.08	**.15**	**.40**	—			
10. Competence ns (T-1)	4.11	0.80	.07	**.16**	**.13**	.07	**.18**	–.08	**.14**	**.49**	**.62**	—		
11. Relatedness ns (T-1)	3.80	0.80	**.12**	.11	**.23**	**.14**	**.18**	–.03	**.24**	**.20**	**.27**	**.37**	—	
12. Depressivity (T-1)	2.21	1.07	.00	**–.17**	–.03	–.09	–.11	**.32**	.01	**–.37**	**–.35**	**–.52**	**–.29**	—

Note. N = 260 participants; 942 observations. Correlations were obtained using Mplus modelling at within- and between persons level. Within-person (Level-1) correlations can be found below the diagonal; between-persons (Level-2) correlations can be found above the diagonal. For between-person correlations, we do not report correlations between same constructs from different time points. Values in bold type indicate significant results (i.e., p < .05).

[a] ach. = achievement.

[b] ns = need satisfaction; (T-1) = variable assessed in the previous week.

Testing the proposed mediation effects, Hypothesis 3 was not supported, as autonomy need satisfaction was not related to depressivity in our study. Thus, autonomy need satisfaction did not mediate the relationship between prosocial achievement and depressivity, nor the relationship between task-related achievement experiences and depressivity. Hypothesis 4 was only partly supported, with competence need satisfaction mediating the relationship between task-related achievement experiences and depressivity (Hypothesis 4b). However, competence need satisfaction did not mediate the negative relation between prosocial achievement and depressivity (Hypothesis 4a). Hypothesis 5 was supported, with relatedness need satisfaction mediating the negative relationship between prosocial achievement and depressivity.

Table 7. *Within-Person Indirect and Total Effects of the Latent Multilevel Mediation Model*

	Estimate	*SE*	95% CI[a]
Indirect effects (*ab*-paths)			
Prosocial achievement			
Prosocial ach.[b] → autonomy ns[c] → depressivity	0.02	0.02	[−0.010, 0.048]
Prosocial ach. → competence ns → depressivity	−0.03	0.02	[−0.054, 0.009]
Prosocial ach. → relatedness ns → depressivity	**−0.05**	0.02	[−0.099, −0.004]
Total indirect effect: Prosocial ach. → depressivity	−0.06	0.03	[−0.113, 0.002]
Task-related achievement			
Task-related ach. → autonomy ns → depressivity	0.02	0.01	[−0.007, 0.038]
Task-related ach. → competence ns → depressivity	**−0.04**	0.02	[−0.078, −0.006]
Task-related ach. → relatedness ns → depressivity	−0.01	0.01	[−0.024, 0.015]
Total indirect effect: Task-related ach. → depressivity	−0.03	0.02	[−0.053, 0.001]
Total effects (*c*-paths) and direct effects (*c′*-paths)			
c_1: Prosocial ach. → depressivity	0.06	0.07	[−0.087, 0.197]
c'_1: Prosocial ach. → depressivity	0.11	0.07	[−0.025, 0.245]
c_2: Task-related ach. → depressivity	**−0.14**	0.06	[−0.250, −0.023]
c'_2: Task-related ach. → depressivity	−0.11	0.06	[−0.218, 0.007]

Note. N = 260 participants; 942 observations. Values in bold type indicate significant results based on the 95% CI.

[a] CI = confidence interval.

[b] ach. = achievement.

[c] ns = need satisfaction.

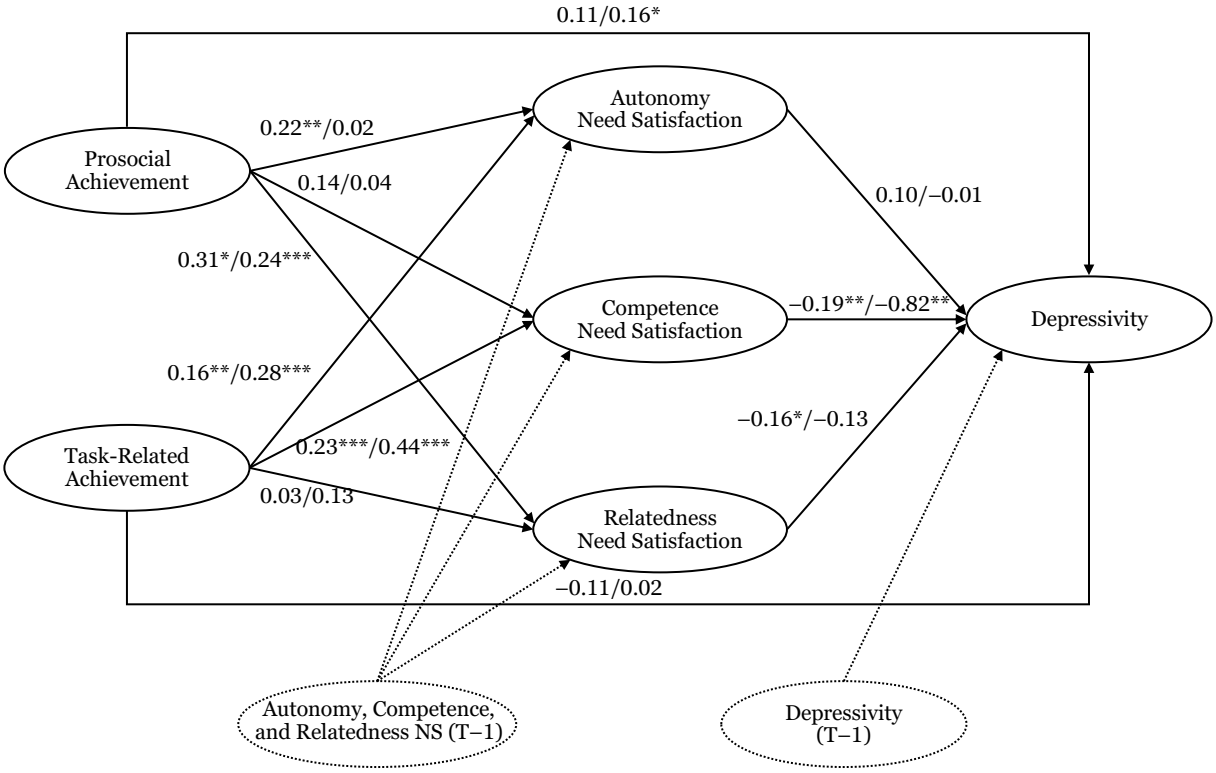

Figure 10. *Unstandardized Within- and Between-Person Estimates of the Multilevel Mediation Model*

Note. Within-person estimates are presented in front of the slash, between-person estimates are presented after the slash. Dotted arrows indicate paths that were included to control for the previous week (T−1). Covariances between variables (i.e., between both independent variables and between mediators) are not presented for the ease of presentation. Indirect and total effects are presented in Table 7.
*p < .05, **p < .01, ***p < .001

In summary, indirect effects on depressivity turned out to be significant only via relatedness need satisfaction for prosocial achievement experiences and via competence need satisfaction for task-related achievement experiences. Nevertheless, we tested the differences between indirect effects to analyse differences in strength (see Hypothesis 6). For task-related achievement, the indirect effect via competence need satisfaction was stronger than the (non-significant) indirect effect via autonomy need satisfaction (Δab = 0.05, p < .01) and stronger than the (non-significant) indirect effect via relatedness need satisfaction (Δab = −0.03, p < .05), confirming Hypothesis 6a. For prosocial achievement, the indirect effect via relatedness need satisfaction was stronger than the (non-significant) indirect effect via autonomy need satisfaction (Δab = 0.06, p < .01) but not stronger than the (non-significant) indirect effect via competence need satisfaction (Δab = 0.03, p = .07), partly supporting Hypothesis 6b.

5.5.1 Post-Hoc Analyses

We concurrently tested within- and between-person effects. Though it was not our main focus, we also looked at between-persons effects of our proposed model. Overall, the pattern for between-person effects was similar to the within-person effects, which aligns with a recent meta-analytical report on within- and between-person differences (Steed et al., 2019). Notable exceptions were the non-significant path between prosocial achievement and autonomy need satisfaction at the between-level (b = 0.02, SE = 0.05, p = .70) as well as the non-significant path between relatedness need satisfaction and depressivity (b = –0.13, SE = 0.15, p = .37). Between-persons estimates are also presented in Figure 10. Bivariate between-persons correlations of all study variables for the four time points are available from the authors upon request.

The success resource model assumes effects from achievement experiences to well-being to be stronger, compared to the reversed causation from well-being on achievement experiences (Grebner et al., 2010). Yet, the model does posit reciprocal relationships. Thus, we furthermore conducted additional post-hoc analyses to investigate possible reversed-causal effects between depressivity and both achievement experiences. We used multilevel structural equation modelling to investigate whether, at within-person level, depressivity is related to prosocial and task-related achievement experiences the following week. Controlling for achievement experiences from the previous week, depressivity in one week was neither related to prosocial achievement experiences (b = 0.02, SE = 0.05, p = .67) nor to task-related achievement experiences (b = –0.09, SE = 0.07, p = .15) in the following week.

Furthermore, because prosocial achievement might be part of the job in certain occupations but not in others, we tested whether the type of job moderates the relationship between prosocial achievement and the three facets of basic need satisfaction. Based on the job titles we created a dummy variable, resulting in 43 persons in jobs with a primarily social focus, and 192 persons without such a clear social focus. We used multiple group modelling in Mplus to check whether path estimates between prosocial achievement and need satisfaction differ between these two groups. We compared the overall model, where we fixed all paths to be equal between the two occupational groups with three models, in which we let the paths between prosocial achievement and one of the three facets of need satisfaction to be freely estimated.

We compared these models using a loglikelihood ratio test, including the Satorra-Bentler-Scale correction. This test showed to be significant only for autonomy need satisfaction (Δ-2LL(2) = 10.07, p = .007), but not for competence need satisfaction (Δ-2LL(2) = 1.03, p = .598) or relatedness need satisfaction (Δ-2LL(2) = 2.77, p = .250). As in the overall model presented above, the between-person path estimates between prosocial achievement and autonomy need satisfaction were not significant for both groups. At the within-person level the relationship between prosocial achievement and autonomy need satisfaction was significant for those, not working in jobs with a social focus (*B(SE)* = .21(.08), p = .012) but not for those working in a social job context (*B(SE)* = .12(.14), p = .379). Given the rough classification of jobs in our sample, this can only be interpreted as a first hint that occupational context, and thus centrality of prosocial achievement experiences, might act as a moderator for the relationship between prosocial achievement and autonomy need satisfaction.

Although we found a significant negative indirect effect of prosocial achievement experiences on depressivity via relatedness need satisfaction, there was no direct effect between prosocial achievement and depressivity at the within-person level. At the between-person level, there was even a positive direct effect between prosocial achievement and depressivity. This indicates a (classical) suppressor effect (Pandey & Elliott, 2010), caused by the fact the predictors for depressivity in the model (especially the sub-dimensions of need satisfaction) share some common variance. In order to find out, which variable(s) are causing the (small) suppression effect, we tested several models by excluding one of the variables in the model. Only when relatedness need satisfaction was left out, the direct effect between prosocial achievement and depressivity was no longer significant (*B(SE)* = .11(.07), p = .103).

5.6 Discussion

This study set out to investigate how achievement experiences at work relate to employees' psychological well-being, or rather reduced ill-being. It extends previous research by distinguishing between employees' prosocial and task-related achievement experiences and shows how they exert their influence via BPN satisfaction. Mediation analyses showed that prosocial as well as task-related achievement experiences at work significantly related to depressivity via employees' BPN satisfaction. Moreover, results indicate that negative indirect

effects on employees' depressivity levels are present not via the satisfaction of all three basic needs but via differential indirect paths related to the three individual needs.

Whereas both achievement experiences were positively related to autonomy need satisfaction, they differed regarding their relation to competence and relatedness need satisfaction. Task-related achievement was positively related to competence need satisfaction, whereas prosocial achievement was positively related to relatedness need satisfaction. As autonomy need satisfaction did not relate to depressivity, consequently only a negative indirect effect of prosocial achievement experiences on depressivity via relatedness need satisfaction and a negative indirect effect of task-related achievement experiences on depressivity via competence need satisfaction were evident.

In addition, competence need satisfaction, as expected, was the strongest mediator for the link between task-related achievement and depressivity, and relatedness need satisfaction (even though not significantly different from competence need satisfaction) was the strongest mediator for the link between prosocial achievement and depressivity. Overall, we can conclude that it is important to differentiate between the three facets of psychological need satisfaction.

5.6.1 Prosocial Achievement and Well-Being

Looking only on the direct effect of reported achievement experiences on depressivity, there seems to be no relationship for prosocial achievement experiences. Yet, mediation analyses showed that prosocial achievement does significantly relate to well-being (i.e., decreased depressivity) via BPN satisfaction.

The positive influence of helping others to succeed seems to satisfy both employees' innate need for autonomy and relatedness but not the need for competence. Yet, with regard to prosocial achievement and depressivity, our results showed that only the satisfaction of the need to feel connected to others at the workplace mediates the effect. In weeks with more prosocial achievement experiences at work, people reported higher relatedness need satisfaction. Thus, successful prosocial behaviour seems to promote closeness and satisfy the desire to feel connected to others, not only for the person receiving help but also for the helping person itself. In our study, this satisfied desire to feel connected in turn is positively related to the helper's own well-being in terms of less subclinical depressive symptoms. Indirect effects

on depressivity via the satisfaction of the need for autonomy and competence were not significant.

Occupational context seems to moderate the relationship between prosocial achievement and autonomy need satisfaction, indicating that for employees in social occupations prosocial achievement is less important to fulfil autonomy needs. This might imply that if successful prosocial performance is part of the job description, and thus the norm rather than the exception, it offers less opportunity to experience autonomy. Prosocial achievement in non-social occupations may more likely result from freely chosen prosocial behaviour, whereas in social occupations, it is expected of employees and may therefore be less at their individual discretion.

But this has no effect on the indirect effects, as reported in the overall model. These findings not only stress the importance of assessing need satisfaction, but they also stress the importance of differentiating between the satisfaction of the needs for autonomy, competence, and relatedness and matching resources to corresponding needs. Without assessing these BPNs, the favourable effect of prosocial achievement experiences on reduced ill-being seems to be concealed. Nevertheless, we suggest future research to investigate our non-significant indirect relationships in more detail. In contrast with our expectations, prosocial achievement did not satisfy employees' need for competence in the overall model. There was a small and significant bivariate positive within-person correlation. Hence, when simultaneously controlling for task-related achievement the small effect of prosocial achievement is no longer significant, indicating that prosocial achievement might only trigger fulfilment of the need for competence in so far as it also provides the experience for task-related achievement. Indeed, prosocial achievement showed to be positively related to task achievement. Furthermore, and to our surprise, autonomy need satisfaction did not mediate the effect of prosocial achievement on depressivity, as autonomy need satisfaction was not related to depressivity in our proposed model. Perceived lack of control over situations has been proposed as a central factor for the development and perpetuation of depressive disorders (Härter et al., 2007), yet, it seems that if individuals experience independence and control over how they do their job (i.e., autonomy need satisfaction), this does not relate to preclinical depressive symptoms. Future research might investigate in more detail how autonomy need satisfaction relates to well-being next to

competence and relatedness need satisfaction, as previous research suggests that autonomy need satisfaction is positively related to well-being (van den Broeck et al., 2016).

5.6.2 Task-related Achievement and Well-Being

In weeks with more task-related achievement experiences, employees reported less depressivity than in weeks with less task-related achievement, which is in line with the proposition derived from COR theory (cf., Hobfoll et al., 2000). In contrast to the effect of prosocial achievement experiences on employees' reduced ill-being via relatedness need satisfaction, the effect of experiencing task-related achievement was mediated exclusively via the satisfaction of the need for competence. Thus, with regard to reduced depressivity in our study, it seems that the positive relationship with task-related achievement results solely from individuals' fulfilled desire to feel capable to master the environment and to manage different challenges. Thus, task-related achievement experiences seem to foster feelings of effectiveness, counteracting reduced beliefs in one's competencies and skills, which are often reported by individuals with depressive symptoms (Garber & Hollon, 1980). However, our results also show that finishing work tasks means more than experiencing mastery and feeling effective and capable of achieving desired outcomes. In fact, finishing tasks or making progress towards goals may also give employees the capacity to focus on new tasks and steps, providing them with a sense of control and autonomy over how they execute their job.

5.6.3 Theoretical Implications

Building on the success resource model (Grebner et al., 2008, 2010) we classify achievement experiences as resources that are valued in their own right. Yet, based on reasoning from COR theory (Hobfoll, 2001), we emphasize the importance of achievement experiences as resources that indicate resource gain with subsequent favourable effects for employees' health. Furthermore, we extend the success resource model by integrating SDT (i.e., BPN theory; Deci & Ryan, 2000) to explain the positive relationship between subjective achievement experiences and psychological well-being. Thereby, this study adds to recent research on BPN satisfaction by supporting and reinforcing the call for a differentiation between the satisfaction of the needs for autonomy, competence, and relatedness (van den Broeck et al., 2016), as our results showed that the satisfaction of the different needs does not contribute to decreased depressivity to the same degree. We highlight differential effects on well-being via need

satisfaction, depending on the type of achievement experience at work (i.e., prosocial or task-related), and thereby contribute on a more abstract level to the matching principle (de Jonge & Dormann, 2006), which states that a stronger interplay between variables should be observed when they correspond on qualitatively identical dimensions (e.g., an interpersonal dimension; relatedness need satisfaction and prosocial achievement versus task-related achievement). Thus, our results indicate that it may not be appropriate to average needs to overall need satisfaction because resources and perceived resource gains exert their influence via specific, individual paths of the three different needs. To uncover underlying mechanisms of possible effects of resource gain and psychological well-being, we stress the importance of matching resources, perceived resource gain and needs on qualitatively similar dimensions when combining reasoning from resource theory perspectives and BPN theory.

Overall, the prominent role of achievement experiences is also supported by recent trends in occupational health literature that attempt to explain different effects of job demands on motivational well-being by classifying them as promoting or hindering achievement experiences (e.g., Kronenwett & Rigotti, 2019; van den Broeck et al., 2010). In this context, job resources have been proposed to add to need satisfaction, whereas job demands may either frustrate needs or provide opportunities for need satisfaction (Giebe & Rigotti, 2020; van den Broeck et al., 2008). Thus, for employees' well-being, it may depend on how job demands and job resources (i.e., characteristics of the work environment) relate to achievement experiences and how those achievement experiences — as an indicator of resource gain — satisfy psychological needs.

5.6.4 Limitations and Directions for Future Research

In the present study, our focus was only on achievement experiences as antecedents to well-being. However, research also shows that job attitudes (e.g., job satisfaction) exert a positive influence on performance (e.g., Riketta, 2008) and hence achievement experiences. Thus, associations between achievements and well-being may be assumed to be bi-directional, which may result in beneficial reciprocal effects (Judge et al., 2001). In terms of COR theory, positive reciprocal effects could result in an upward gain spiral (Hobfoll, 2001). Thus, on a broader level, bringing together reasoning from both COR theory and BPN theory, our results may suggest that BPN satisfaction can take on an important role as one underlying mechanism

in building resource gain cycles. However, more research is necessary to determine the role of BPN satisfaction in this process, and we encourage future research to investigate resource gain cycles, which have received relatively little empirical attention to date (Hobfoll, 2011).

Our weekly diary design allowed us to investigate within-person relations controlling for the measures of the previous week of both the mediators and depressivity. Yet, we cannot interpret the effects causally. Furthermore, we did not differentiate between prosocial achievement experiences as a result of in-role prosocial behaviour (e.g., supervisory tasks such as supporting subordinates and settling conflicts) versus extra-role prosocial behaviour (e.g., organizational citizenship behaviour; Organ, 1988). This may influence subsequent success in helping others and a corresponding satisfaction of the need for competence as well as the need for autonomy. In jobs where prosocial behaviour represents in-role behaviour (i.e., part of one's prescribed tasks), such behaviour is expected and may be less freely chosen by one's own will. Thus, resulting achievement experiences may relate differently to competence and autonomy need satisfaction than as a result of extra-role prosocial behaviour. In our study, analyses showed that prosocial and task-related achievements were two separate factors; however, we recommend more research that considers the core elements of employee's work tasks (e.g., helping and prosocial behaviour as an explicit part of employees' job description) when investigating possible differential relations of achievement experiences and well-being.

Furthermore, achievement experiences in our study were not necessarily related to pre-set goals but were framed in a way that they could encompass all kinds of achievement experiences that employees encounter during their working week that may not be visible to other people at the workplace. Additionally, it may not be objective achievements at work that influence an employee's well-being and motivation, but rather workers' subjective perceptions and their evaluations (Grant & Sonnentag, 2010, p. 13). Thus, *subjective* achievements and individual need satisfaction were of central importance in this study, which can only be assessed using self-report measures. Yet, this increases the danger of common method bias (P. M. Podsakoff et al., 2003), resulting in overestimating associations. Even though concerns regarding common method variance are likely overstated (Spector, 2006), we encourage future research to consider achievement measures that are more objective. This could include collecting information about pre-set goals (interpersonal or task-related) and the degree of

attaining them or the judgement of achievements from colleagues and supervisors. Our main interest was on within-person effects. Using MSEM with concurrent models at the within- and the between-person level of analyses makes social desirability as well as any confounding aspects on the person level unlikely (Ilies et al., 2006). Furthermore, results from CFA analyses showed that our constructs are reasonably distinct from each other, lowering the risk for a same-source bias.

In this study, we classified task-related and prosocial achievement experiences as resources in terms of COR theory that satisfy basic psychological needs. We regard achievement experiences as resources that are valued in their own right. Yet, they may also be classified as energy resources which are, by definition, proposed to generate and promote other resources (Hobfoll, 1989). Achievement experiences in particular have been proposed to promote personal resources, such as self-efficacy beliefs (Bandura, 1994). Thus, a different approach to investigate the link between achievement experiences and well-being may be to focus on achievement experiences as an energy resource, promoting other resources which in turn affect well-being. We encourage researchers to investigate further possible underlying mediator mechanisms in future studies.

Future research could also investigate the influence of employees' perceptions of the relevance of their achievements on need satisfaction and subsequent effects on well-being. Achievements of goals that are congruent with a worker's own values and aspirations can be assumed to better serve basic needs, and therefore contribute to well-being (Deci & Ryan, 2000; Klug & Maier, 2015; Sheldon et al., 2004). Furthermore, it might be interesting to investigate interindividual differences in this context, as recent research suggests that individuals may differ with regard to their valuation of the needs and the importance of having their needs met (Ryan et al., 2019; van Assche et al., 2018).

5.6.5 Practical Implications and Conclusion

Despite vast amounts of research on goal achievement and its relation to well-being, little research is currently investigating subjective achievement experiences that also encompass achievements resulting from tasks or behaviours that were not planned in advance (Mühlethaler, 2013). Our results suggest that both interpersonal and task-related achievement experiences at work positively relate to well-being (i.e., decreased depressivity) by satisfying

different psychological needs. Supporting employees in experiencing both prosocial and task-related achievement experiences may be a small but significant step to prevent employees in developing a psychological illness and may thus be of economic value for organizations. Yet, interventions to enhance achievement experiences should be targeted both on individual and organizational levels (Semmer, 2006a). Therefore, organizations and supervisors should be advised to reduce obstacles to perform well and create work settings that provide employees opportunities to experience achievement. This may encompass assigning challenging but reachable tasks or enhancing job control aimed at increasing the frequency of task-related achievement experiences as well as involve creating work environments in which prosocial behaviour is encouraged, as it not only helps the person receiving help but also seems to positively influence the well-being of the person successfully helping another. Finally, training employees about promoting and hindering success factors as well as providing them with information about how to recognize and manage their psychological needs may help to prevent depressivity among employees.

Chapter 6

General Discussion

This dissertation is based on three studies aimed at investigating the effects of subjective achievement experiences at work on employee well-being, and their role for health-impairing and motivational effects of time pressure and emotional demands within the challenge–hindrance stressor framework. The research conducted for this dissertation was motivated by the ongoing debate on the general classification of job demands into "challenge" or "hindrance" (see Mazzola & Disselhorst, 2019; O'Brien & Beehr, 2019), and specifically inconsistent findings for time pressure and emotional demands (e.g., Bakker & Sanz-Vergel, 2013). Different studies which focused on the challenge–hindrance stressor framework and a classification of demands indicate that definite categorizations into challenge or hindrance may not always be possible and that such an approach is bound to have limitations (Searle & Auton, 2015; Webster & Adams, 2015). Moreover, it is not only limited empirically, but it also contradicts fundamental propositions of the theories on which the framework was originally built. Acknowledging those underlying theories (i.e., conservation of resources [COR] theory and transactional theory of stress) and recent empirical findings, this dissertation highlights the importance of subjective achievement experiences for the challenge–hindrance distinction. As such, this dissertation directly investigated achievement experiences and their potential role in challenging and hindering effects of time pressure and emotional demands, proposing a refinement of the challenge–hindrance stressor framework. In the following sections of this chapter, the results of the three studies conducted to this end are summarized, followed by an integration into extant research, a discussion of strengths and limitations, and suggestions for future research. Further, the chapter presents implications for practice and ends with a general conclusion.

6.1 Recap of the Empirical Studies conducted for this Dissertation

All three studies of this dissertation argued for subjective achievement experiences to be conceptualized as a resource as well as an indicator of resource gain with positive effects on employee well-being. The first two studies furthermore focused on achievement experiences within the challenge–hindrance framework, showing different ways of how they influence challenging and hindering effects of time pressure and emotional demands. For the third study, the focus then shifted by investigating how subjective achievement experiences contribute to the satisfaction of basic psychological needs and thereby to employees' well-being.

Study 1 examined the relations of emotional demands and time pressure with prosocial and task-related achievement experiences as the indicator of challenge and hindrance, mediating the effects of emotional demands and time pressure on subsequent well-being and work engagement. Results showed that both demands can positively relate to achievement experiences, with emotional demands being associated with prosocial achievements and time pressure with task-related achievement. Furthermore, this study revealed that these positive effects on achievement and subsequent work engagement only arose when employees were confronted with few unnecessary tasks at work. Apparently, when employees are confronted with emotional demands or time pressure at work, they have to invest resources to successfully cope with those demands. However, when these necessary resources are consumed by unnecessary tasks, the stimulating (challenging) effects cannot unfold.

Focusing not only on resource-based theories as a foundation of the challenge–hindrance distinction (i.e., COR theory, Hobfoll, 1989, 2001, and the success resource model of job stress, Grebner et al., 2008, 2010), the second study additionally accounted for an appraisal-based approach to explain challenging and hindering effects (i.e., transactional theory of stress, Lazarus & Folkman, 1984). Study 2 directly assessed employees' appraisal of time pressure and emotional demands as challenge and hindrance with positive and negative effects on employee well-being and engagement. It was shown that when employees experienced achievements at work but initially expected that achievements would be absent (i.e., hindrance appraisal), the negative effects of those expectations on well-being were buffered. Thus, the second study indicates that negative effects on well-being can be mitigated when an individual perceives goal progress – an important finding, as research shows that both

emotional demands and time pressure are health-impairing, even when the resource investment to handle those demands results in achievement experiences and positive effects on motivation and work engagement.

Regarding the ongoing scientific debate about demands as challenge *and*/*or* hindrance, the first two studies of this dissertation stress two key points: First, emotional demands and time pressure are not exclusively challenge *or* hindrance demands but instead entail challenging *and* hindering potentials as both may relate to subjective achievement experiences. Second, emotional demands and time pressure may both be appraised as challenging and hindering at the same time, while associated negative effects on employees' well-being can be mitigated by perceived goal progress. The results emphasize the positive influential effects that subjective achievements can have for employees' well-being in their everyday working life.

Stressing the role of subjective achievement experiences in health-impairing and motivational effects of time pressure and emotional demands, the third study then shifted the focus away from the challenge–hindrance stressor framework towards subjective achievement experiences and how they affect well-being. Study 3 showed that subjective achievement experiences positively affect employee well-being by satisfying basic psychological needs. More specifically, prosocial and task-related achievement experiences satisfy different psychological needs (i.e., the needs for autonomy, competence, and relatedness), which in turn exert positive effects on employees' well-being. Prosocial achievement experiences showed positive effects by satisfying people's need for relatedness, whereas task-related achievement experiences showed positive effects by satisfying the need for competence.

6.2 Contributions of this Dissertation

The three studies of this dissertation examined the impact and different roles of subjective achievement experiences at work on employees' well-being, focusing on within-person effects. While in study 1 and study 3 the theoretical reasoning primarily followed a resource-based approach (i.e., COR theory), in study 2 reasoning was expanded by additionally drawing on an appraisal-based approach (i.e., transactional theory). Combined, the research conducted for this dissertation overcomes several shortcomings of previous research and thereby contributes to the occupational psychology literature in several ways. First, subjective achievement experiences were considered as a resource and an underlying mechanism for challenge and

hindrance effects of emotional demands and time pressure. Second, demand-specific cognitive appraisal of time pressure and emotional demands was investigated within the challenge–hindrance stressor framework. Third, appraisal- and resource-based approaches were combined, with subjective achievement experiences playing an important role as resources and indicators of resource gain. Fourth, differential effects of prosocial and task-related achievement experiences on employees' psychological well-being were examined. In the following sections, these contributions will be elaborated in more detail.

6.2.1 Subjective Achievement Experiences and the Challenging and Hindering Potential of Emotional Demands and Time Pressure

Focusing on emotional demands and time pressure, this dissertation investigated two demands for which previous studies reported conflicting results. Furthermore, it is assumed that emotional demands and time pressure are particularly affected and relevant in current changes of the working environment (Rothe et al., 2017; Wendsche & Lohmann-Haislah, 2016), so that a more detailed investigation of possible health-impairing and motivating components are of particular theoretical and practical interest.

Subjective Achievement Experiences as a Mediator. This dissertation contributes to extant research by empirically considering achievement experiences and their role in health-impairing and motivating effects of emotional demands and time pressure. In line with COR theory (Hobfoll, 1989, 2001) and the success resource model of job stress (Grebner et al., 2008, 2010), achievement experiences were regarded as a resource in this dissertation. Yet, this dissertation extends and refines this approach, showing that effects may best be understood when subjective achievement experiences are additionally seen as an indicator of resource gain. Emphasizing achievement experiences not only as a resource but also an indicator of resource gain distinguishes achievement experiences from other resources at work such as social support or control, for example. Such resources rarely arise as a direct and immediate consequence of one's own resource investment. When confronted with emotional demands and time pressure, employees have to invest resources (e.g., energy, effort, and time) to handle those demands. Even though such resource investment may be exhausting, it can result in a resource gain, indicated by prosocial and task-related achievement

experiences. Thus, when people experience achievement, it is evident that own resource investment (e.g., energy and time spent) was successful.

This dissertation reveals that both emotional demands and time pressure can positively relate to subjective achievement experiences which in turn result in increased engagement at work. However, this dissertation also shows that this relationship is not particularly robust. If at the same time people have to invest resources to handle tasks that they perceive to be unnecessary, that is, tasks that have no associated benefits when dealt with (i.e., no associated resource gain), the positive challenging effects of emotional demands and time pressure diminish. This shows that when employees are confronted with too many unnecessary tasks, those tasks compete for and consume resources that are necessary for handling emotional demands and time pressure, impeding achievement experiences and thus a net resource gain.

Subjective Achievement Experiences as a Moderator. Considering subjective achievement experiences as a moderator between the two demands and their effects on well-being and engagement, this dissertation adds to the challenge–hindrance framework in several ways. Thereby, both appraisal- and resource-theory perspectives are combined. First, the results of this dissertation demonstrate that emotional demands and time pressure relate to both challenge and hindrance appraisal. Thus, even though one type of appraisal may prevail in specific situations so that overall (total) effects may seem indicative of a challenge or hindrance effect, the findings show that rigid a priori classifications fall short of differential effects that demands can have on health and motivation. Second, not only do those findings support the proposition of the transactional theory of stress that stressors can be appraised as challenging and hindering at the same time, but they also show how both employees' anticipation of achievements as well as actual achievement experiences are essential for challenging and hindering potentials to unfold. Subjective achievement experiences hence indicate whether one's appraisal of a demand turned out as expected. The results of this dissertation show that positive deviations between expected and actual achievements (i.e., higher actual achievement than expected) may not necessarily strengthen positive associations between demands and well-being when the individual already expected achievements to follow (i.e., resource gains), but positive deviations are able to buffer negative effects when the individual initially expected no achievements to follow (i.e., no resource gains). At least for

emotional demands and time pressure, negative effects on employees' well-being were attenuated when progress towards goals was made. To date, such differentiations in terms of expected resource gain or loss versus actual resource gain or loss have not been considered, let alone empirically investigated, when arguing for health-impairing and motivating effects of demands within the challenge–hindrance stressor framework.

6.2.2 Subjective Achievement Experiences as an Antecedent of Well-Being

This dissertation investigated beneficial effects of subjective achievement experiences at work on a weekly (study 1 and study 2) and on a daily basis (study 3). The overall pattern of the relationship between subjective achievement experiences and the well-being outcomes investigated supports the beneficial effects of achievement experiences on employees' health. In weeks and on days, when employees experienced more prosocial achievements than on average or successfully progressed toward goals, they reported fewer negative signs of ill-being (i.e., less depressivity and negative affect) but also increased levels of engagement. Thus, the results of this dissertation especially contribute to research on the effects of achievement experiences as an antecedent to well-being and engagement, supporting propositions of both COR theory (Hobfoll, 1989, 2001) and the success resource model of job stress (Grebner et al., 2008, 2010). The findings furthermore show that such achievement experiences represent important resources (indicating resource gain) in peoples' everyday working life that can directly add to an individual's basic psychological need satisfaction. Being able to help others and completing important work tasks can create feelings of closeness and connection with others (satisfying needs for relatedness) or foster one's feelings of being skillful and able to master challenges in life (satisfying needs for competence), positively affecting one's psychological well-being. In general, employees' subjective achievements experienced at work can encompass reaching larger milestones and success events, but also small-scale, spontaneous achievements that may not be directly visible to outside observers (e.g., colleagues or supervisors). Regarding the satisfaction of psychological needs, this dissertation also contributes to current research on the differentiation between basic psychological needs (van den Broeck et al., 2016). Past research often investigated the effects of overall need satisfaction as an underlying mechanism for effects to occur (Sheldon & Elliot, 1999). However, findings of this dissertation show that it may not be appropriate to integrate all three

needs into an overall need satisfaction factor. The results reveal that prosocial and task-related achievement experiences exert their influence via specific individual paths of the different needs.

6.3 Strengths, Limitations, and Directions for Future Research

Overall, this dissertation provides valuable insights and contributions to the occupational health psychology literature. Yet, in the following section, strengths and limitation of the research conducted are considered, along with possible directions for future research.

First of all, this dissertation integrated reasoning from different theories and model, such as COR theory (Hobfoll, 1989, 2001), the success resource model (Grebner et al., 2008, 2010), transactional theory of stress (Lazarus & Folkman, 1984), and basic psychological needs theory (Ryan & Deci, 2000, 2017). Thereby, this dissertation provides empirical support for work-related achievement experiences as an antecedent to employees' well-being. Furthermore, it presents different approaches as explanations for inconclusive findings regarding the challenge–hindrance distinction of job demands.

A major strength of all three studies of this dissertation is their focus on short-term (weekly and daily) within-person effects. Empirical evidence showed that both work-related experiences and well-being are not stable but instead fluctuate within days and weeks (Sonnentag, 2015), so that all three studies combined provide a more accurate understanding of intraindividual processes as they occur in people's everyday working life. Furthermore, by centering predictor variables at the person level in all studies, this research provides insights about effects and relations between constructs, independent of individual differences. Additionally, measures were taken to improve inferences about causality by separating measurement points of mediators and the outcome (study 2) as well as controlling for lagged effects of mediators and dependent variables (study 3).

One limitation shared by all three studies is the reliance on self-report measures. Even though most constructs examined in this dissertation are highly subjective (e.g., subjective achievement experiences, cognitive appraisal, psychological need satisfaction, psychological well-being), self-reported data increase the likelihood of common-method bias and thus an overestimation of associations (P. M. Podsakoff et al., 2003; P. M. Podsakoff et al., 2012). As stated above, person-mean centering was carried out for variables in all three studies, reducing

confounding variance due to stable individual differences. Nevertheless, obtaining objective measures (e.g., for achievements) or gathering ratings from other sources (e.g., colleagues or supervisors) might further reduce common-method variance and be a path to follow for future research.

A second limitation concerning the proposed important role of subjective achievement experiences within the challenge–hindrance stressor framework is the exclusive focus on two specific job demands (time pressure and emotional demands) that have previously been found to act as challenge and hindrance demands in different settings. Even though patterns turned out to be quite similar for the two qualitatively different demands, the results are clearly restricted to those very demands. It is important to note that not all demands may have the potential to act as challenge demands. More research is necessary to determine whether the proposed mechanisms can be generalized to other ambiguous job demands.

Thirdly, as stated above, all three studies investigated within-person effects. Thus, no causal inferences can be concluded. This dissertation explicitly focused on subjective achievement experiences as an antecedent to well-being. Yet, previous research showed that people might also progress towards goals or experience success due to improved well-being (Klug & Maier, 2015). Therefore, future research should investigate how achievement experiences interact with well-being and work engagement over time, focusing on causation and possible reversal effects. Assuming bidirectional associations between achievements and well-being, future research might furthermore not only focus on beneficial reciprocal effects (Judge et al., 2001), but might also investigate possible upward gain spirals as proposed in COR theory (Hobfoll et al., 2018).

Finally, this dissertation only focused on subjective achievement experiences, that is different degrees of achievement as reported from the employees themselves. However, when focusing on demands, an associated investment of resources, and employees' anticipated effects on achievements and resource gain, there might be an important difference between 'few achievement' experiences and 'failure' experiences. Thus, future research might expand on the research conducted for this dissertation by differentiating between achievement and failure experiences (e.g., not being able to help others versus making situations worse or not

progressing toward goals versus failing in a task), as achievements seem to play such an important role for employees' well-being and engagement.

6.4 Practical Implications

Based on the findings of the three studies conducted for this dissertation, valuable practical implications can be derived to improve employee well-being. The empirical results provide starting points for both organizational and individual, person-centered interventions. Organizational and individual interventions combined can not only benefit the individual but may also be of economic interest for the organization (Gerich, 2017).

First of all, the results of this dissertation emphasize the positive influential effects of subjective achievement experiences. Supporting employees in experiencing both prosocial and task-related achievement experiences appears to be a valuable approach to positively affect the well-being and motivation of each individual employee and thus, at best, the well-being of the entire workforce. It seems particularly advisable that organizational interventions aim at creating conditions and work settings that reduce obstacles to perform well. As a first step, organizations or supervisors may start with a systematic evaluation of working conditions to reduce roadblocks and obstacles to goal achievement, such as minimizing levels of unnecessary tasks. On this basis, a reorganization of tasks may follow, aimed at creating efficient workflows and opportunities for different mastery experiences and resource gain. This second step can include assigning challenging but manageable tasks, providing social support to achieve goals, and providing feedback to make goal progress and achievements more explicit and salient for employees. Furthermore, increasing autonomy gives employees the opportunity to act and make decisions in a self-determined, autonomous manner, enabling employees to develop their own skills and to experience personal success. Finally, organizations may focus on creating a work environment and organizational culture in which prosocial behavior is encouraged. The results of this dissertation show that prosocial behavior may not only benefit the person receiving help or support, but it also seems to positively influence one's own well-being when successfully engaging in prosocial behavior.

Based on the results of this dissertation, creating favorable working conditions can foster job demands' motivational potential and reduce health-impairing effects. In this context, it is also safe to say that a general recommendation to increase challenging demands and to

reduce hindering demands is ill-advised and falls short of the complex interactions and relations between different job demands and their diverse effects on peoples' motivation and health. Even if a job demand could be classified as a definite challenge demand, that is, always initiating a motivational process, it is important to keep in mind that dealing with such demands nevertheless requires an investment of resources to be coped with and may therefore be health-impairing.

Interventions to enhance achievement experiences should start at an organizational level, but ideally can be accompanied and supported by interventions at an individual level (Semmer, 2006b). At the individual level, employees may be trained and supported in (daily and weekly) goal setting strategies to increase the likelihood and visibility of both smaller scale and larger achievement experiences on a short-term basis. Furthermore, interventions may also include appraisal trainings to positively influence individuals' appraisal of situations or tasks and thereby subsequent well-being and motivation (see Tomaka et al., 1997; van der Klink et al., 2001). Finally, teaching employees about basic psychological needs and training them how to recognize and manage their own needs may be beneficial to the improvement of their psychological well-being.

6.5 Conclusion

This dissertation stresses the relevance of subjective achievement experiences for employees' health and their role in and influence on challenging and hindering effects of emotional demands and time pressure. Three studies provide novel insights on subjective achievement experiences as an important resource and their effects on well-being and on health-impairing and motivating effects of the two job demands. Prosocial and task-related achievement experiences at work satisfy employees' basic psychological needs and consequently positively affect their individual well-being. The studies provide a refinement of the challenge–hindrance distinction concerning earlier inconsistent results by integrating achievement experiences as an important, influential factor for the different effects of demands on well-being. They emphasize that definite categorizations of demands into challenge or hindrance fall short of the diverse health-impairing and motivating effects demands can have. This dissertation shows that achievement experiences are an important resource at work, and that working conditions should be designed in such a way that diverse mastery experiences are fostered and enabled so

that positive effects of job demands can unfold, promoting employee motivation, well-being, and health.

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Appendices

Appendix A

Scales and German Items used in this Dissertation

A1. Basic Psychological Need Satisfaction

Used in study 3 (chapter 5).

Items:
Im Folgenden sehen Sie Aussagen zu Bedürfnissen bei Ihrer Arbeit. Bitte beurteilen Sie, wie sehr das jeweilige Bedürfnis in der vergangenen Arbeitswoche befriedigt wurde.

[Autonomy:]
1. Ihr Bedürfnis, die Kontrolle darüber zu haben, wie Sie Ihre Arbeit erledigen.
2. Ihr Bedürfnis, selbstständig entscheiden zu können, wie Sie Ihre Arbeit erledigen.
3. Ihr Bedürfnis, frei und unabhängig darin zu sein, wie Sie Ihre Arbeit erledigen.

[Competence:]
4. Ihr Bedürfnis, sich bei der Arbeit kompetent zu fühlen.
5. Ihr Bedürfnis, sich in der Lage zu fühlen, Ihre Arbeit zufriedenstellend zu erledigen.
6. Ihr Bedürfnis, sich dabei sicher zu fühlen, wie Sie Ihre Arbeit ausführen.

[Relatedness:]
7. Ihr Bedürfnis, sich mit den Personen, mit denen Sie zusammenarbeiten, verbunden zu fühlen.
8. Ihr Bedürfnis ein authentisches Verhältnis mit Personen/Kollegen bei Ihrer Arbeit zu haben.
9. Ihr Bedürfnis, Freundschaften am Arbeitsplatz zu haben.

Response format:
1 (*gar nicht befriedigt*), 2 (*kaum befriedigt*), 3 (*weder noch*), 4 (*ziemlich befriedigt*), 5 (*sehr befriedigt*)

Reference:
Albrecht (2015)

A2. Demand-Specific Challenge and Hindrance Appraisal

Used in study 2 (chapter 4).

Items:
Im Folgenden fragen wir Sie nach verschiedenen Anforderungen, die Sie an Ihrem heutigen Arbeitstag erlebt haben. Zu jeder Anforderung bitten wir Sie dann anzugeben, in welchem Ausmaß Sie diese Anforderung als „Herausforderung“ und „Hindernis“ ansehen. Bitte lesen Sie folgende Beschreibungen, was wir in diesem Zusammenhang unter Herausforderung und Hindernis verstehen.

> Herausforderung:
> Unter Herausforderung verstehen wir eine Situation/Anforderung, die zwar Stress auslösen kann, die aber auch dabei helfen kann, Ziele zu erreichen oder Neues zu lernen.
>
> Hindernis:
> Unter Hindernis verstehen wir eine Situation/Anforderung, die Sie daran hindert, Erfolg zu haben oder Sie einschränkt, so gut zu arbeiten wie Sie eigentlich könnten.

[…]
[following this description, the emotional demands (see Appendix A4)/time pressure (see Appendix A8) items were presented; note from the author]
[…]

Geben Sie nun an, wie Sie die obigen drei Anforderungen zusammengefasst bewerten.

[Challenge:]
1. Herausforderung: Inwieweit sahen Sie diese Anforderungen heute als eine positive Herausforderung?

[Hindrance:]
2. Hindernis: Inwieweit haben diese Anforderungen Sie heute daran gehindert, Ziele zu erreichen?

Response format:
1 (*gar nicht*), 2 (*kaum*), 3 (*etwas*), 4 (*ziemlich*), 5 (*sehr*)

A3. Depressivity

Used in study 3 (chapter 5).

Items:
Wie häufig trafen folgende Aussagen diese Woche auf Sie zu?

1. Ich musste mich sehr dazu antreiben etwas zu tun.
2. Vielen erschien mir so sinnlos.
3. Mich bedrückten Schuldgefühle.
4. Ich fühlte mich einsam, selbst wenn ich mit anderen Menschen zusammen war.
5. Ich hatte traurige Stimmungen.
6. Ich fand es schwer, Entscheidungen zu treffen.
7. Am Anfang des Tages fühlte ich mich am schlechtesten.
8. Ich sah ohne Hoffnung in die Zukunft.

Response format:
1 (*nie*), 2 (*sehr selten*), 3 (*selten*), 4 (*gelegentlich*), 5 (*oft*), 6 (*sehr oft*), 7 (*fast immer/immer*)

Reference:
Mohr (1986)

A4. Emotional Demands

Used in study 1 (chapter 3) and study 2 (chapter 4).

Items:
Bitte beantworten Sie folgende Fragen in Bezug auf Ihre vergangene Arbeitswoche [study 1] / Ihren heutigen Arbeitstag [study 2].

1. Brachte Ihre Arbeit Sie [heute; study 2] in emotional belastende Situationen?
2. Fühlten Sie sich [heute; study 2] bei Ihrer Arbeit emotional eingebunden?
3. War Ihre Arbeit [heute; study 2] emotional fordernd?

Response format:
Item 1: 1 (*sehr selten/nie*), 2 (*eher selten*), 3 (*ab und zu*), 4 (*eher häufig*), 5 (*sehr häufig*)
Items 2 & 3: 1 (*in sehr geringem Maß*), 2 (*in geringem Maß*), 3 (*zum Teil*), 4 (*in hohem Maß*), 5 (*in sehr hohem Maß*)

Reference:
Copenhagen Psychosocial Questionnaire (Kristensen et al., 2005)

A5. Emotional Exhaustion

Used in study 1 (chapter 3).

Items:
Wie häufig trafen folgende Aussagen diese Woche auf Sie zu?

1. Ich fühlte mich durch meine Arbeit emotional erschöpft.
2. Ich fühlte mich bereits ermüdet, wenn ich morgens aufstand und einen neuen Arbeitstag vor mir liegen sah.
3. Ich fühlte mich durch meine Arbeit ausgebrannt.

Response format:
1 (*nie*), 2 (*sehr selten*), 3 (*selten*), 4 (*gelegentlich*), 5 (*oft*), 6 (*sehr oft*), 7 (*fast immer/immer*)

Reference:
German version of the Maslach Burnout Inventory–General Survey (Büssing & Glaser, 1998; Schaufeli et al., 1996)

A6. Negative Affect

Used in study 2 (chapter 4).

Items:
Wie fühlen Sie sich im Moment?

1. bekümmert
2. verärgert
3. schuldig
4. erschrocken
5. feindselig
6. gereizt
7. beschämt
8. nervös
9. durcheinander
10. ängstlich

Response format:
1 (*sehr wenig/gar nicht*), 2 (*ein bisschen*), 3 (*einigermaßen*), 4 (*ziemlich*), 5 (*sehr*)

Reference:
Positive and Negative Affect Schedule (Watson et al., 1988)

A7. Subjective Achievement Experiences

Goal Progress

Used in study 2 (chapter 4).

Item:

1. Inwieweit sind Sie Ihren heutigen Zielen nähergekommen?

Response format:
Slider from 1 (*überhaupt nicht*) to 100 (*sehr*)

Reference:
Jakubiak and Feeney (2016)

Prosocial and Task-related Achievement

Used in study 1 (chapter 3) and study 2 (chapter 4).

Items:
In der vergangenen Woche habe ich bei meiner Arbeit…

[Prosocial:]

1. … Konflikte geschlichtet.
2. … anderen Mut gemacht.
3. … anderen zum Erfolg verholfen.
4. … anderen Rat gegeben.
5. … andere gefördert.
6. … andere motiviert.

[Task-related:]

1. … Aufgaben abgeschlossen.
2. … gute Ergebnisse erzielt.
3. … Ziele erreicht / beträchtliche Fortschritte beim Erreichen von Zielen gemacht.

Response format:
1 (*nie*), 2 (*sehr selten*), 3 (*selten*), 4 (*gelegentlich*), 5 (*oft*), 6 (*sehr oft*), 7 (*fast immer/immer*)

Reference:
Subjective Occupational Success Scale (Grebner et al., 2010)

A8. Time Pressure

Used in study 1 (chapter 3) and study 2 (chapter 4).

Items:
Bitte beantworten Sie folgende Fragen in Bezug auf Ihre vergangene Arbeitswoche [study 1] / Ihren heutigen Arbeitstag [study 2].

1. Wie häufig standen Sie [heute; study 2] unter Zeitdruck?
2. Wie häufig passierte es [heute; study 2], dass Sie schneller arbeiteten, als Sie es normalerweise tun, um die Arbeit zu schaffen?
3. Wie oft wurde bei Ihrer Arbeit [heute; study 2] ein hohes Arbeitstempo verlangt?

Response format:
1 (*sehr selten/nie*), 2 (*eher selten*), 3 (*ab und zu*), 4 (*eher häufig*), 5 (*sehr häufig*)

Reference:
Instrument for stress-oriented job analysis (Semmer et al., 1999)

A9. Unnecessary Tasks

Used in study 1 (chapter 3).

Items:
Gab es diese Woche Arbeitsaufgaben in Ihrem Arbeitsalltag, bei denen Sie sich fragten, ob…

4. … diese überhaupt gemacht werden müssen?
5. … diese überhaupt Sinn machen?
6. … diese nicht gemacht werden müssten (oder mit einem geringeren Aufwand erledigt werden könnten), wenn es anders organisiert wäre?
7. … diese nicht gemacht werden müssten (oder mit einem geringeren Arbeitsaufwand erledigt werden könnten), wenn andere Leute weniger Fehler machen würden?

Response format:
1 (*sehr selten/nie*), 2 (*eher selten*), 3 (*ab und zu*), 4 (*eher häufig*), 5 (*sehr häufig*)

Reference:
Bern Illegitimate Tasks Scale (Semmer et al., 2010)

A10. Work Engagement

Work Engagement (study 1/chapter 3)

Items:
Wie häufig trafen folgende Aussagen diese Woche auf Sie zu?

1. Bei meiner Arbeit war ich voll überschäumender Energie.
2. Beim Arbeiten fühlte ich mich fit und tatkräftig.
3. Meine Arbeit inspirierte mich.
4. Ich war von meiner Arbeit begeistert.
5. Ich ging völlig in meiner Arbeit auf.
6. Meine Arbeit riss mich mit.

Response format:
1 (*nie*), 2 (*fast nie*), 3 (*ab und zu*), 4 (*regelmäßig*), 5 (*häufig*), 6 (*sehr häufig*), 7 (*immer*)

Reference:
Utrecht Work Engagement Scale-9 (Schaufeli et al., 2006)

Work Engagement (study 2/chapter 4)

Items:
Bitte bewerten Sie, inwiefern folgende Aussagen auf Ihren heutigen Arbeitstag zutreffen.

1. Bei meiner Arbeit war ich voll überschäumender Energie.
2. Ich war von meiner Arbeit begeistert.
3. Ich ging völlig in meiner Arbeit auf.

Response format:
1 (*trifft überhaupt nicht zu*), 2 (*trifft größtenteils zu*), 3 (*trifft wenig zu*), 4 (*trifft mittelmäßig zu*), 5 (*trifft etwas zu*), 6 (*trifft größtenteils zu*), 7 (*trifft völlig zu*)

Reference:
Utrecht Work Engagement Scale-3 (Schaufeli et al., 2017)

Appendix B

Declaration of Authorship

ERKLÄRUNG

gemäß § 6 Absatz 2 g) und gemäß § 6 Absatz 2 h) der Promotionsordnung der Fachbereiche 02, 05, 06, 07, 09 und 10 vom 04. April 2016

Name: Kronenwett

Vorname: Michael

Hiermit erkläre ich, dass ich die eingereichte Dissertation selbständig, ohne fremde Hilfe verfasst und mit keinen anderen als den darin angegebenen Hilfsmitteln angefertigt habe, dass die wörtlichen oder dem Inhalt nach aus fremden Arbeiten entnommenen Stellen, Zeichnungen, Skizzen, bildlichen Darstellungen und dergleichen als solche genau kenntlich gemacht sind.

Von der Ordnung zur Sicherung guter wissenschaftlicher Praxis in Forschung und Lehre und zum Verfahren zum Umgang mit wissenschaftlichem Fehlverhalten habe ich Kenntnis genommen.

Meine Erklärung bezieht sich auf Schriften, die ich als alleiniger Autor eingereicht habe oder bei Ko-Autorenschaft auf jene Teile, für die ich mich verantwortlich zeichne.

Ich habe keine Hilfe von kommerziellen Promotionsberatern in Anspruch genommen.

Datum Unterschrift

Appendix C

Summary (German)

Zusammenfassung

Diese Inauguraldissertation basiert auf drei empirischen Studien.

Studie 1: Anforderungen am Arbeitsplatz zwingen Beschäftigte dazu, Zeit und Energie in bestimmte Verhaltensweisen zu investieren, um gute Leistungen zu erbringen, was sowohl positive als auch negative Auswirkungen auf das Wohlbefinden und die Motivation von Beschäftigten haben kann. In dieser Studie wurde postuliert, dass subjektive Erfolgserlebnisse eine wichtige arbeitsbezogene Ressource darstellen und als Indikator dafür dienen können, ob Arbeitsanforderungen (Zeitdruck und emotionale Anforderungen) als Herausforderungs- oder Hindernisanforderung wirken. Moderierte Mediationsanalysen zeigen, dass Zeitdruck und emotionale Anforderungen ihr herausforderndes Potenzial entfalten, wenn bei der Arbeit unnötige Aufgaben weniger häufig anfallen, und dass diese Effekte durch subjektive Erfolgserlebnisse vermittelt werden.

Studie 2: In dieser Studie wurde die Rolle der anforderungsspezifischen Bewertung von emotionalen Anforderungen und Zeitdruck sowie des wahrgenommenen Zielfortschritts und deren Zusammenspiel für das psychische Wohlergehen und Arbeitsengagement von Beschäftigten untersucht. Unter Anwendung moderierter Mediationsmodelle zeigte sich, dass sowohl emotionale Anforderungen als auch Zeitdruck sich positiv auf das Arbeitsengagement auswirken, wenn Personen einen Ressourcengewinn erwarten (Bewertung der Anforderungen als Herausforderung), unabhängig von tatsächlichem Ressourcengewinn (Zielfortschritt). Darüber hinaus zeigen die Ergebnisse, dass der Zielfortschritt die negativen Auswirkungen des wahrgenommenen verhinderten Ressourcengewinns (Bewertung als Hindernis) auf das emotionale und motivationale Wohlbefinden abmildert.

Studie 3: Erfolgserlebnisse bei der Arbeit spielen eine wichtige Rolle für das Wohlbefinden und die Gesundheit von Beschäftigten. In dieser Studie wurde untersucht, wie subjektive Erfolgserlebnisse (aufgabenbezogen und prosozial) mit dem psychischen Wohlbefinden von Beschäftigten zusammenhängen. Es wurde postuliert, dass die Befriedigung der psychologischen Grundbedürfnisse nach Autonomie, Kompetenz und Verbundenheit diese Zusammenhänge vermittelt. Die Ergebnisse zeigen, dass die Befriedigung des Bedürfnisses nach Verbundenheit die negative Beziehung zwischen prosozialen Erfolgserlebnissen und Depressivität vermittelt, während die Befriedigung des Bedürnisses nach Kompetenz die negative Beziehung zwischen aufgabenbezogenen Erfolgserlebnissen und Depressivität vermittelt.

Diese Dissertation leistet einen wesentlichen theoretischen Beitrag zur Forschungsliteratur, indem ressourcen- und bewertungsbasierte theoretische Ansätze zur Erklärung bisher widersprüchlicher Zusammenhänge von Zeitdruck und emotionalen Anforderungen mit dem Wohlbefinden und Arbeitsengagement von Beschäftigten kombiniert werden. Die Ergebnisse stellen eine Erweiterung und Verfeinerung des Challenge–Hindrance Frameworks dar. Die Dissertation hebt in diesem Zusammenhang den Einfluss von subjektiven Erfolgserlebnissen bei der Arbeit hervor und leitet hierbei praktische Implikationen zur Reduzierung gesundheitsbeeinträchtigender und zur Förderung motivationaler Prozesse im Arbeitskontext ab.

Appendix D

Course of Higher Education

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