

PhD Thesis

*Aging at work*

**The interplay of resources and self-regulation strategies across the work  
lifespan**

Thesis presented as part of the requirements for the  
Degree of Doctor of Philosophy in Management

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under the supervision of Professor Miguel Pina e Cunha  
and Professor Filipa Castanheira



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PhD Thesis

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**The interplay of resources and self-regulation strategies across the work lifespan**

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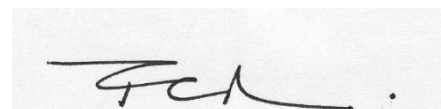
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A handwritten signature in black ink, appearing to read 'FCH.', is centered on a light gray rectangular background.

Filipa Rocha Rodrigues

*To my parents, António and Amélia,  
my brother, António  
my husband, Bruno,  
and my daughter, Clara*

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## THESIS ABSTRACT

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The aging of the population is considered one of the most significant challenges facing Europe. For organizations, the main impact is on how to maintain this increasingly age-diverse workforce healthy, productive and engaged over time. Sustaining well-being and functioning at work depends not just on the resources provided by organizations but also on how individuals effectively manage their available and future resources. The main goal of this research was to study how workers better adapt to work during the process of aging. Based on the conservation of resources model, the job demand-resources model, the person-environment fit theory, the job design and the lifespan literatures, three empirical studies were conducted. The first study analyses the relationship between work engagement and age, and how job resources are valued by young, middle-aged, and old employees. The second study analyses how fit or misfit between demands and abilities, needs and resources is perceived, and what regulation strategies are adopted in order to sustain well-being. The third study investigates job crafting as a mediator in the relationship between SOC and well-being (work engagement and burnout). Knowing how to sustain well-being at work through the effective use of personal and contextual resources is critical, especially in times of increased burnout and extended working lives. Addressing age-related changes and considering the importance of organizational resources to well-being can help promote active aging.

*Keywords:* aging, well-being, job resources, person-job fit, job crafting.

# CHAPTER 1. INTRODUCTION

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## 1.1 INTRODUCTION

The aging of the population is considered one of the most significant challenges facing Europe. Consistently low birth rates along with higher life expectancy are transforming the workforce in developed countries, especially in Europe (Eurostat, 2015). In Portugal (where the studies for this thesis were conducted), fertility rates have decreased from over 3.1 children in 1960 to 1.38 children in 2017 (Pordata, 2019). In Europe (EU-28) the vast majority of women gave birth to either one or two children in 2016. At the same time, the proportion of population aged above 65 years is growing. In Europe this number was 19.2% in 2016 compared to 15% in 1996. Similar numbers were observed in Portugal. Estimations project that these demographic patterns are likely to continue (Eurostat, 2015). In response to these pressures, many European countries are raising retirement ages as a way to ensure the sustainability of pension systems (Eurofound, 2019).

Further contributing to a longer work lifespan is the fact that organizations are trying to retain older workers in an attempt to avoid a shortage of the expertise that may result from a massive retirement of baby boomers (those born following World War II; Dychtwald, Erickson, & Morison, 2006). Additionally, today's elders, as they remain healthy for longer periods of time than previous generations, they want to stay active in the workforce, either because they enjoy it and find meaning in it or for financial reasons (Moen & Altobelli, 2007; Smyer & Pitt-Catsouphes, 2007). For organizations, the main impact of these demographic changes is how to maintain this increasingly age-diverse workforce healthy, productive and engaged over time (Gratton, 2011; Zaniboni, Fraccaroli, & Truxillo, 2015).

Sustaining well-being and functioning at work depends not just on the resources provided by organizations but also on how individuals effectively manage their available and future

resources (Kooij, Tims, & Kanfer, 2015). The process of aging implies changes in a person's abilities, goals and needs (Baltes & Baltes, 1990; Carstensen, 1995; Kanfer & Ackerman, 2004), and as a consequence, aging will demand a constant process of adjustment between organizational members and their work environments in order to maintain well-being and effective functioning at work (Feldman & Vogel, 2009). Individuals can play an agentic role in order to increase their person-job fit and maintain their well-being by engaging in different regulation strategies, such as selection, optimization, and compensation, or job crafting (Baltes & Baltes, 1990; Wrzesniewski & Dutton, 2001).

Even though the process of aging is central to the psychological well-being of workers, there is scarce research that integrates aging, well-being and person-job fit. Furthermore, there is still the need to answer the “when”, “how”, and “what” strategies employees adopt to establish person-environment fit (Zacher, Jimmieson, & Bordia, 2014). Additionally, the concept of age and the definition of an old worker is changing and preconceptions of old workers as disengaged are being questioned (James, McKechnie, & Swanberg, 2011; Pitt-Catsouphes & Matz-Costa, 2008). Are older workers really disengaged? Empirical results are not clear but there is recent evidence that points to a new paradigm of age. Moreover, and as a consequence of the shifts that occur in motives and needs during the aging process, the utility of a job resource for employees might also change with age. This research aims to contribute to answer to these questions by drawing upon important insights from lifespan theories and organizational psychology literatures. The main goal of this research was to study how workers better adapt to their work environment in order to sustain well-being at work during the aging process. Specifically, we addressed three main research questions: (1) how age and work engagement relate; (2) how person-job fit is achieved during the process of aging; (3) how do self-regulated strategies, such as SOC and job crafting relate and affect well-being? Three empirical studies were conducted, which are briefly presented next.

In manuscript one, entitled “Engaging the aging workforce”, the main objective was to analyze how work engagement and age relate, and how job resources are perceived to contribute to work engagement among young, midlife and old workers. Despite the emerging body of literature on the relationship between age and work engagement, findings are inconclusive, and it seems that depends on several factors, such as the scales used to measure work engagement, the contexts and occupation types, and in what is considered to be an “old” employee. Specifically, we addressed the following questions: (1) how does age relate to work engagement? (2) what are the most relevant job resources for work engagement? and (3) are job resources valued differently by employees considering their age? This study was conducted in a major Iberian organization operating in the utilities sector. More than 500 employees answered our survey. In line with our theoretical expectations, age was positively related to work engagement and results were even higher with employees aged above 50 years of age, contradicting preconceptions of disengagement among employees in a pre-retirement phase (Kooij et al., 2011; Super, 1980). Additionally, support was found for the notion that some job resources are valued differently in accordance to age.

In manuscript two, entitled “The show must go on. Person-job fit across the work lifespan - the case of classical ballet dancers”, the main objective was to understand how workers make sense of the changes in their personal resources during the process of aging, how do they cope with these changes, and which organizational resources workers perceive as enablers to sustain well-being over the life course. The study adopted an inductive approach and followed the precepts of grounded theory (Glaser & Strauss, 1967; Strauss & Corbin, 1990). This method made the study of aging in a broader sense possible, taking into account chronological, functional, psychosocial, organizational and life-span perspectives of age. Specifically we addressed the questions: (1) how do workers assess their job demands, their abilities, and their needs across their work lifespan?, (2) what regulation strategies do

workers engage in to better fit and why?, and finally (3) which organizational resources are perceived to contribute to the process of adjustment and why. The context of professional ballet dancers was selected for two main reasons. First, the depletion of a dancer's main physical capital (Bourdieu, 1984), the body, is inevitable and visible, and is especially difficult for the dancer because it is a means of expression and part of a dancer's self-identity (Wainwright & Turner, 2006). Second, dynamics of resource losses and gains should be more pronounced among ballet dancers, as they have relatively short careers in which they have to cope with these changes. Forty ballet dancers were interviewed. This study's primary contribution is a framework that shows how the interplay between demands and abilities, needs and organizational resources, and regulation strategies across the work lifespan contributes to a process of adjustment, consequently enhancing psychological well-being at work. Additionally, this study contributes to well-being literature by presenting evidence of how organizational resources are perceived differently across the work lifespan and why. Finally, this study extends the theory on job crafting (Kooij et al., 2015; Wrzesniewski & Dutton; 2001) by showing that crafting is partly a function of the phases of one's lifetime and by providing evidence of forms of crafting among older workers.

Manuscript three, entitled "Daily use of Selection, Optimization, and Compensation strategies and well-being: the mediating role of job crafting", had the main aim of testing a model in which daily job crafting mediates the relationship between daily use of selection, optimization and compensation (SOC) strategies, and daily well-being (work engagement and burnout). We used a daily diary study design to examine the relationships between daily SOC and job crafting use, daily work engagement and burnout at the *within-* and the *between-* person levels. The vast majority of research on SOC use has focused on *between-*person level, presuming that the use of SOC strategies is stable rather than fluctuating over time (Moghimi et al., 2017; exceptions are Schmitt, Zacher, & Frese, 2012; Yeung & Fung, 2009;

Zacher et al., 2015). Most behaviors fluctuate on a daily basis and are dependent on personal and contextual conditions (Ohly et al., 2010). Data was collected from 72 participants, recruited through personal and professional contacts, who completed a general questionnaire (baseline) and one daily questionnaire over ten consecutive workdays (N=656). Specifically, we addressed the following questions: (1) how SOC use relates to job crafting?; (2) is job crafting a mediator in the relationship between SOC use and work engagement and burnout ?; (3) is the relationship between SOC use and well-being stronger among older individuals? Results from structural equation modeling showed that job crafting mediates the relationship between SOC use and well-being (work engagement and burnout) at the *within* and *between*-person levels. Additionally, we found that age was unrelated to the variables under analysis, indicating that SOC use is an important regulated mechanism at any age.

This research was conducted based on three main concerns. The first is to increase validity of results. To that aim, research on aging was conducted in different contexts. The first study was held in a private organization in which HR practices are fully implemented. The second one was conducted in an organization within the arts sector, state-owned, dealing with budget constraints. In the third study, we asked our personal and professional contacts, coming from diverse occupations, to participate. The second concern is to better understand the process of aging in the workplace through the use of different approaches and methodologies. Therefore, a quantitative cross-sectional was used in study one, a qualitative method in study two, and a quantitative multilevel analysis in study three. The third concern is to develop research to start collaborations to continue beyond the PhD dissertation. Therefore, we established a network of professionals and invited well-known researchers to participate in our manuscripts, each one contributing with his or her expertise. An overall view of the PhD research is presented in Figure 1.

PhD Research Goal	To investigate how personal and organizational resources, and self-regulation strategies contribute to maintain well-being at work in the process of aging		
	PhD Strategy		
	<i>Study # 1</i>	<i>Study # 2</i>	<i>Study # 3</i>
Context	Private Organization - Utilities Sector	Public Organization - Arts Sector	Personal and professional Contacts - Multiple sectors
Method	Quantitative Cross-sectional	Qualitative Grounded Theory   Cross-sectional	Quantitative Daily diary study   Multilevel analysis
Sample	512 sample	40 interviews	656 daily data
Main Objective	Perceiving differences in the value of job resources on work engagement according to age	Assessing resources, needs, and self-regulation strategies to better adapt to work	Analyzing job crafting as a mediator in the relationship between SOC strategies use and work engagement and burnout
Main Contributions	<ul style="list-style-type: none"> <li>• Age and work engagement are positively related</li> <li>• Development, recognition, meaningful work and a positive work environment are relevant predictors of work engagement.</li> <li>• Job resources are perceived (as important) differently in accordance to age</li> </ul>	<ul style="list-style-type: none"> <li>• Different personal and contextual resources impact on well-being across the work lifespan</li> <li>• Individuals use different self-regulation strategies, such as job crafting to better adapt to work during the work lifespan</li> <li>• Evidence of forms of job crafting among older workers</li> </ul>	<ul style="list-style-type: none"> <li>• Job crafting is an important mediator to explain the relationship between SOC and well-being</li> <li>• Intraindividual fluctuations in SOC use and job crafting explain part of the total variance in well-being indicators</li> <li>• Age was unrelated to the variables under analysis, indicating that self-directed strategies are important regulated mechanisms at any age</li> </ul>
Contribution of the paper to the PhD research	<ul style="list-style-type: none"> <li>• Complete different context (a business oriented organization) and method</li> <li>• Level of specification: based on the job demands-resources model (job resources as predictors of work engagement)</li> </ul>	<ul style="list-style-type: none"> <li>• Broad perspective of age (chronological, functional psychosocial, organizational and life-span perspectives)</li> <li>• Complete theoretical background (life-span theories, job crafting, job demands-resources model, person-job fit...)</li> </ul>	<ul style="list-style-type: none"> <li>• State of the art methodology</li> <li>• Zoom-in on self-regulatory strategies, and analysis of the impact on concrete indicators of well-being at work: work engagement and burnout</li> </ul>
Invited co-authors	<ul style="list-style-type: none"> <li>• Matthijs Bal, University of Lincoln, UK</li> <li>• Paul Jansen, Vrije Universiteit Amsterdam the Netherlands</li> </ul>	<ul style="list-style-type: none"> <li>• Matthijs Bal, University of Lincoln, UK</li> <li>• Paul Jansen, Vrije Universiteit Amsterdam the Netherlands</li> </ul>	<ul style="list-style-type: none"> <li>• Hannes Zacher, University of Leipzig, Germany</li> <li>• Patrícia Costa, ISCTE, Lisbon, Portugal</li> <li>• Arménio Rego, Católica University, Porto, Portugal</li> </ul>

Figure 1. Overall view of the PhD Strategy and summary of the studies conducted



This dissertation is organized in three parts. The first chapter provides a comprehensive literature review about the importance of studying the concept of age, the aging process, and how personal and contextual resources contribute to enhance well-being at work. The second chapter comprises three empirical studies attempting to answer the questions presented previously. Finally, the last chapter reviews and discusses the findings, and its implications for theory and practice, followed by suggestions for future research.

## **1.2 THE CONCEPT OF AGE AND THE PROCESS OF AGING**

Aging comprehends changes that occur in biological, psychological and social functioning at various points in the life cycle, and thus involves much more than just calendar age (Kooij & Van de Voorde, 2015). Sterns and Doverspike (1989) provided five different approaches to conceptualizing age. The first is chronological age, which is based on the number of years since birth, one's calendar age. The second is functional age and is related to a worker's physical and psychological ability to perform the job, and recognizes that there is great variation in individual abilities across time. The third is psychosocial age, and it refers to subjective age, to how old individuals feel, and to which age cohort the individual identifies himself with (Kaliterna, Larsen, & Brkljacic, 2002). The fourth perspective of age is based on the aging of individuals in their work roles, jobs and organizations. Organizational tenure, job tenure and career stage are important indicators of organizational age (Kooij & Van de Voorde, 2015). Finally, the fifth approach is called lifespan age which states for the possibility of behavioral changes at any point in the life cycle, resulting from career expectations and life events (De Lange et al., 2006; Sterns, Sterns, & Hollis, 1996).

Based on functional age, Kanfer and Ackerman's (2004) framework suggests that aging involves losses in fluid intelligence (i.e., working memory, abstract reasoning, attention and processing of novel information) and gains in crystallized intelligence (i.e., general

knowledge, extent of vocabulary and verbal comprehension). As a result, individuals engage in coping mechanisms for protecting their self-concept, for example, strategies of avoidance (aversion to fluid intelligence tasks) or compensation (increased interest in crystallized intelligence tasks).

The socioemotional selectivity theory (SST; Carstensen, 1995), based on subjective age, states a reorganization of goals as a result of the perception of time, age or when endings are salient. When perceived as an open-ended future time perspective (“life lived from birth”), social interactions are driven by resource acquisition goals (i.e., learning technical skills). However, when time is perceived as limited (“life left”), emotional goals are prioritized (i.e., meaningful experiences, caring for others, giving back to society).

Based on organizational age, the career literature suggests that employees progress through four career stages, each one with specific career goals, personal challenges and psychological needs that emerge from the intersection of work and social life. In an initial exploratory stage, employee’s primary concern is to find an occupation and to learn the skills required in a job. Needs include peer acceptance and social support. The key challenge consists in establishing a professional self-concept. Later, in an establishment stage, having mastered their duties and reached their goals, they expect to be promoted. Needs felt in this phase include achievement and autonomy. Balancing family and career demands constitute main challenges. The following stage, maintenance, comprehends keeping what has already been achieved and seeking greater opportunity for involvement in decision-making. It includes needs for security and maintenance of the current level of productivity. Finally, the last stage, disengagement, is about the transition to retirement, facing the challenge of establishing a self-identity outside of work (Super, 1980).

In today’s workforce, the assumption that older workers are “checked out”, in a phase out, just waiting for retirement, is being questioned, especially because of the desire of elder

workers to remain in the labor force as they feel healthy and active (James et al., 2011; Pitt-Catsouphes & Matz-Costa, 2008). The concept of third age (composed by baby boomers) introduces a radically different perspective about aging and reflects the desire of older workers to stay in the labor force and make meaningful contributions (Pitt-Catsouphes & Matz-Costa, 2008). Indeed, evidence shows that older workers present higher levels of job satisfaction, organizational commitment, intrinsic work motivation, and perceived person-job fit, as well as lower levels of role ambiguity, role conflict, and emotional exhaustion compared to younger workers (Ng & Feldman, 2010). This new paradigm of age presents a new challenge to researchers and practitioners.

Because there is immense variability in how people age (Zacher, Kooij, & Beier, 2017), it is not easy to define who is an older worker. For example, a soccer player may be old at the age of 30, whether an academic may be considered old only when approaching retirement age. Or, to reinforce the complexity of what the concept of age comprises, a 20-year-old ballet dancer may be considered in the last phase of her career if she has a physical condition that inhibits dancing. Carstensen (2006), based on socioemotional selectivity theory, has showed how constraints on time horizons shift motivational priorities in extreme cases of illnesses and war. Even a young man with a terminal illness will have a narrow perspective of time and his goals and needs will change accordingly. Nevertheless, most researchers either split workers into young or old, according to chronological age, or in terms of career stage, career entry or retirement entry phase (Zacher et al., 2017). However, as observed by James et al (2011), there is plenty of consensus around the notion that the subjective perception of age is changing and that individuals in their 50s today do not consider themselves to be old. Therefore, age is a complex concept and should be studied through different perspectives besides chronological age.

### **1.3 THE ROLE OF RESOURCES IN PSYCHOLOGICAL WELL-BEING**

The conservation of resources theory (COR theory; Hobfoll, 1988) posits that resources (e.g., health, self-esteem, positive sense of the self, money) are a key operating mechanism by which well-being is influenced, and thus individuals strive to obtain, retain, foster, and protect resources (Hobfoll, 1988). Resources are those personal characteristics, objects, conditions or energies that are either valued in their own right or because they act as a means for attainment or protection of valued resources. Accordingly, those with greater resources are less vulnerable to resource loss and more likely to gain additional resources, whereas those with fewer resources are more vulnerable to resource loss (Hobfoll, 1988, 2001). Thus, individuals tend to accumulate resources, forming resource caravans that will help them to deal with situations in life, such as sickness or aging and the loss of resources inherent to it (Hobfoll, 2002). Strain and burnout occur when individuals lose resources, are unable to regenerate resources after substantial investment, or when resources are threatened (Hobfoll & Wells, 1998). In fact, there is evidence for the relationship between resources and successful aging. Baltes and Lang (1997) found that the negative effects of aging were less pronounced in individuals who were rich in resources (e.g., perceived social support, role variety, and social status) because they were able to use resources to maintain effective functioning and well-being.

Consistent with COR theory, the job demands-resources model states that resources are critical because they fulfill intrinsic needs, such as the need for personal growth, learning, and development, or because they help to buffer the impact of job demands and to achieve work goals (JD-R model; Bakker & Demerouti, 2007; Demerouti et al., 2001; Schaufeli & Bakker, 2004a). The JD-R suggests that all job characteristics can be classified into demands or resources. Demands (e.g., role ambiguity, role conflict, role stress, stressful events, workload, and work pressure) are the most important predictors of burnout because they

require sustained physical, emotional, or cognitive effort (Demerouti et al. 2001), and thus, are associated with physiological and psychological costs (Bakker, Demerouti, & Sanz-Vergel, 2014). Instead, job resources (e.g., social support, role clarity) are those physical, psychological, social or organizational aspects of the job that help to either achieve work goals, reduce job demands or stimulate personal growth, learning, and development (Bakker & Demerouti, 2007). Job resources have been consistently linked to work engagement (Bakker & Demerouti, 2007). Importantly, in order to be engaged, an employee must be stimulated by an adequate level of challenging demands since they contribute to a sense of self-efficacy and personal growth (Tims, Bakker, & Derks, 2012). Moreover, studies suggest that not only job resources but also personal resources (e.g., self-efficacy and self-esteem) are related to work engagement, and that job resources and personal resources may be reciprocally related (Llorens, Schaufeli, Bakker, & Salanova, 2007; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007).

Work engagement is conceptualized by Schaufeli and colleagues as a “positive, fulfilling, work-related state of mind characterized by vigor, dedication, and absorption” (Schaufeli, et al., 2002, p. 74). Vigor is characterized by high levels of energy and mental resilience while working, the willingness to invest effort in one’s work, and persistence even in the face of difficulties. Dedication refers to being strongly involved in one’s work and experiencing a sense of significance, enthusiasm and challenge. Absorption is characterized by being fully concentrated and happily engrossed in one’s work, whereby time passes quickly. Engaged employees feel energetic, involved and competent - opposite dimensions of burnout - which is characterized by symptoms of exhaustion, cynicism and reduced professional efficacy (Demerouti, Bakker, & Leiter, 2014; Maslach, Jackson & Leiter, 1996; Schaufeli, 2018).

Burnout is caused by a long-term process of resources loss, following significant resource investment of time and energy (Gorgievski & Hobfoll, 2008; Hobfoll, 2001). Exhaustion is

the most common manifestation of burnout and it refers to feelings of being depleted of emotional and physical resources. Cynicism reflects the lack of involvement with aspects of the job. Reduced efficacy refers to feelings of incompetence and a lack of achievement at work (Maslach, Schaufeli, & Leiter, 2001). Vigor and exhaustion, and cynicism and dedication are taken as extreme dimensions of a continuum (Schaufeli et al., 2002). Absorption, however, is not considered as a positive side of lack of efficacy. Burnout researchers consider lack of efficacy to be loosely related to the absence of relevant resources, whereas exhaustion and cynicism emerge from the presence of demands such as work overload, social conflict (Maslach et al., 2001). Thus, because the two concepts are related but independent constructs, an employee who is not burned out is not necessarily engaged and vice-versa.

Kahn (1990), who was the first to conceptualize work engagement, proposes that engagement results from people's perceptions of working characteristics that influence meaningfulness, safety and availability. Kahn defined engagement as "the harnessing of organization members' selves to their work roles; in engagement, people employ and express themselves physically, cognitively, and emotionally during role performances" (p. 694, 1990). The author emphasizes that important to engagement at work is the perception of correspondence between the work task and the work role (Kahn, 1990). Work is experienced as meaningful when it is consistent with an individual's perceptions of who they are or who they want to become (Scroggins, 2008). The strong identification to the work role resonates in accordance to living as the true self, thereby establishing a sense of authenticity that enables full engagement (Kahn, 1990). Alignment or misalignment between work content and work role influences emotions and behaviors, such as frustration and coping reactions (Kira, van Eijnatten, & Balkin, 2010; Tims, Derks, & Bakker, 2016). Thus, the "fit" with the work role is an important resource to work engagement. Therefore, inherent to psychological

well-being is the perception of congruence between the demands of the job and the resources of the employee (i.e., demands-abilities fit), as well as the resources provided by the organization and the needs and goals of the employee (i.e., needs-supplies fit; Edwards, 1991; Scroggins, 2008).

#### **1.4 SELF-REGULATION STRATEGIES OF SOC AND JOB CRAFTING**

Previous research in the fields of lifespan theory and job design indicate that individuals take initiative to better fit with the work and function effectively (Baltes & Baltes, 1990; Wrzesniewski & Dutton, 2001). For instance, strategies of selection, optimization and compensation (SOC; Baltes & Baltes, 1990) facilitate the optimization of resource allocation. The model of selection, optimization, and compensation (SOC; Baltes & Baltes, 1990) suggests that individuals adopt processes of developmental regulation toward three different goals in life: growth (i.e., reaching higher levels of functioning), maintenance (i.e., maintaining current level of functioning), and regulation of loss (i.e., functioning at lower levels). The SOC model states that the constraint of resources inherent to human existence demands an optimal prioritization of goals and allocation of means (i.e., resources). Elective selection involves the choice of goals based on preference, importance or urgency. For example, an employee might decide to not attend a conference in order to meet a project deadline (Moghimi et al., 2017). Loss-based selection refers to the reorganization of goals when individuals cannot pursue a goal anymore given the loss of a relevant mean, and when compensation is not possible. A physically injured ballet dancer, deciding to be a choreographer, is an example of this type of selection. Optimization involves the allocation, acquisition or re-activation of necessary resources to reach selected goals and achieve a higher level of functioning. For instance, an employee may have additional training on leadership to be prepared to start a management position. Compensation is related to the

regulation of loss and refers to obtaining substitute means when confronted with (potential) loss or decline in goal-relevant means. For example, an older employee who lost physical strength and ask for the help of coworkers (Freund & Baltes, 2000; Moghimi et al., 2017). Thus, whereas selection (either elective or loss-based) prevents workers of inefficient dispersion across multiple goals (Weigl et al., 2014), optimization and compensation are strategies to regulate personal resources. Personal resources are aspects of the self that refer to individuals' sense of their ability to control and impact the work environment (Hobfoll et al., 2003), such as efficacy beliefs (Bandura, 1997). SOC use is related to subjective indicators of well-being because by focusing and committing to a subset of goals, behavior is organized over time, contributing to a sense of purpose and meaning (Freund & Baltes, 2002).

In a similar way, the job crafting literature (Wrzesniewski & Dutton, 2001) stresses that employees proactively engage in self-regulatory actions to change tasks or the relational and cognitive boundaries of their work to enhance meaning, person-job fit, and work identity. Not all employees will craft, but those who feel that their needs are not being met are more likely to do so (Wrzesniewski & Dutton, 2001). Job crafting is initiated by employees (i.e., bottom-up) and not explicitly authorized by the employer (Hornung et al., 2010). Wrzesniewski and Dutton (2001) introduced three forms of job crafting. Task crafting involves altering the content of a task, the scope of the tasks, or by changing the means of task accomplishment. An example is delegating tasks that interfere with the attainment of a deadline (Niessen et al., 2016; Tims, Bakker, & Derks, 2012). Relational crafting addresses interactions that individuals have at work, to the change of the quality and/or amount of interactions with others at work (Niessen et al., 2016). An example is talking more with colleagues who are helpful (Kooij et al., 2015). Cognitive crafting relates to how individuals alter their perception of the job, such as a hospital cleaner seeing his job as more than simply cleaning



(Tims, Bakker, & Derks, 2012; Wrzesniewski & Dutton, 2001). Tims, Bakker, and Derks (2012) framed their definition of job crafting in the job demands–resources model (JD–R; Bakker & Demerouti, 2007; Demerouti, et al., 2001), and defined job crafting as the changes that employees may make to balance their demands and resources with their personal abilities and needs. To the authors, employees craft by increasing structural and social job resources (e.g., autonomy and feedback, respectively), increasing challenging job demands (e.g., start a new project), and decreasing hindering job demands (e.g., shortening working hours). In line with these authors, Petrou et al. (2012) defined job crafting as a proactive employee behavior consisting of seeking resources and challenges, and reducing demands. Studies have shown that results in well-being will depend on the type of crafting. Increasing job resources and challenging job demands related positively to work engagement, whether reducing demands and challenge resulted in lower levels of engagement (Petrou et al., 2012).

As observed by Tims, Bakker, & Derks (2012) there are certain aspects of job crafting that distinguish the concept from other similar constructs. Job crafting is not about redesigning the whole job but certain aspects of it, even smaller alterations can be framed as crafting. Further, employees change characteristics of their job on their own initiative, without the involvement of the employers as in other bottom-up approaches such as idiosyncratic deals (i-deals; Hornung et al., 2010). Moreover, even though job crafting is a proactive initiative in the sense that is initiated by the person, it is different from other proactive constructs because the change job crafters make aim to beneficiate the self (and not, for example, the organization).

As job crafting is a type of proactive person-job fit behavior (Niessen et al., 2016; Tims, Derks, & Bakker, 2016; Wrzesniewski & Dutton, 2001), it is also a way to adapt to age-related changes. In fact, Kooij et al. (2015) have suggested that crafting is important for successful aging since it offers older workers mechanisms to continuously adjust their job to

their intrapersonal changes that occur in the aging process. Kooij et al. (2015) have suggested three primary forms of job crafting among older workers: (1) developmental crafting toward growth, such as attending training to sharpen knowledge and skills; (2) utilization crafting toward the optimization of resources, such as taking on tasks that activate unused skills; (3) accommodative crafting toward regulation of losses, such as hiring an assistant or looking for alternative ways to achieve goals.

Although SOC and job crafting are different strategies, they are possibly related. Whereas SOC focuses on the optimal combination of goals and *personal* resources (Zacher et al., 2015), job crafting refers to changes made to *contextual* resources. Personal and contextual resources (e.g., self-efficacy and feedback, respectively) constitute a set of raw materials employees dispose to achieve work goals and to have a better experience of their work. Moreover, whereas the driver of SOC use is the optimal functioning, job crafting is motivated by the need to enhance meaning and person-job fit (Demerouti, 2015).

Taken together, life-span theories and job crafting (i.e., job design literature; Baltes & Baltes, 1990; Carstensen, 1995; Kanfer & Ackerman, 2004; Kooij et al. 2015) advocate that individuals proactively adopt different behaviors toward effective functioning and well-being throughout life. These strategies towards a better fit involve various levels of action: selecting and changing goals, allocating resources, increasing tasks, prioritizing social interactions or enriching roles (Baltes & Baltes, 1990; Carstensen, 1995; Kanfer & Ackerman, 2004; Kooij et al. 2015; Super, 1980; Wrzesniewski & Dutton, 2001). An overall view of the theories discussed are presented in Figure 2.

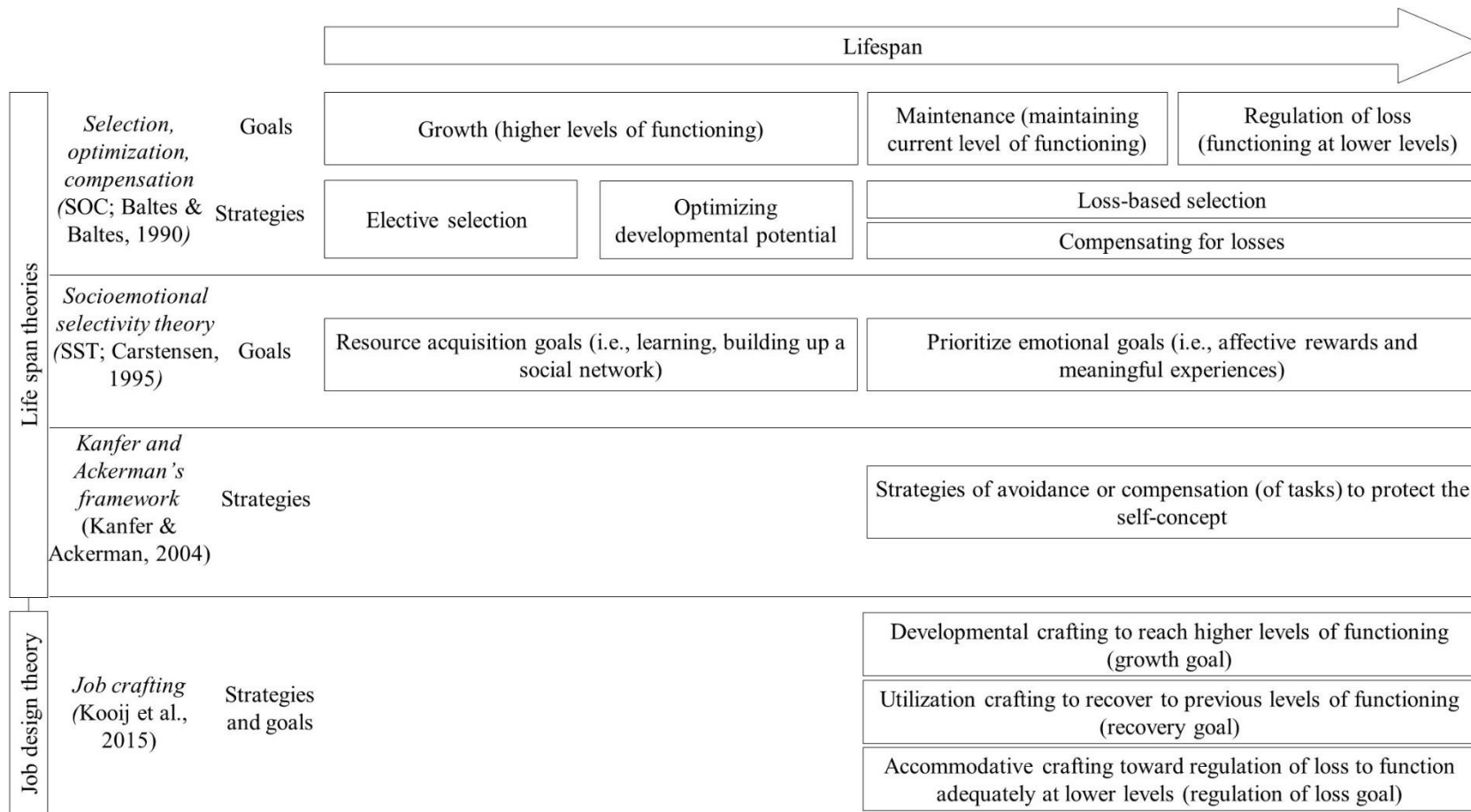


Figure 2. Summary of theories suggesting changes in goals and strategies across time

## 1.5 KEY ISSUES

This PhD research aimed at addressing three main issues:

### *Key Issue 1: How age and work engagement relate*

Are older workers disengaged? Studies investigating the relationship between chronological age and work engagement provide inconclusive findings. Some studies express a positive correlation (Gallup, 2013; Goštautaitė & Bučiūnienė, 2015; Pitt-Catsouphes & Matz-Costa, 2008; Schaufeli & Bakker, 2004b), others positive curvilinearity (James et al., 2011), and still others a negative bivariate correlation (Avery, McKay, & Wilson, 2007). The variability in the work engagement frameworks used by researchers turn the comparison of results even harder. There are studies using Schaufeli's scale (Goštautaitė & Bučiūnienė, 2015; Schaufeli & Bakker, 2003), other using Gallup's framework (Avery et al., 2007; Gallup, 2013), and others adopting their own measure (James et al., 2011; Towers Perrin, 2005). Additionally, prior research has been applied to diverse contexts, and results suggest that differences between occupational groups are significant to work engagement (Schaufeli & Bakker, 2003). The large majority of research on work engagement has either ignored the factor of age or has considered age as a secondary or control variable (Zacher & Schmitt, 2016). Further research is needed to clarify work engagement among older workers.

The job demands-resource model (JD-R; Demerouti et al., 2001) stresses the importance of job resources to work engagement because they fulfill intrinsic needs, such as the need for personal advancement and growth. Yet, the JD-R sustains that work characteristics (i.e., demands and resources) are equally determinant to work engagement regardless of age (Korunka et al., 2009), whilst ignoring age-related changes that affect abilities, motives and needs. For example, aging involves losses and gains in skills that may affect the ability to perform (Kanfer & Ackerman, 2004). Additionally, there is intense discussion among

researchers whether old employees are motivated by different resources (e.g., learning; recognition; meaningful work). Further research is needed to understand how job resources are valued among employees throughout their working lives.

*Key Issue 2: How person-job fit is achieved during the process of aging*

Researchers argue that a continuous fit between workers and their work environments is important for successful aging (Kooij, 2015a) due to the need of older workers to adapt to age-related changes. Lifespan theories found evidence of several adaptive strategies that workers use during the process of aging. Nevertheless, questions arise. How do workers assess fit or misfit across time? What regulation strategies do workers engage in to better fit and why? Furthermore, researchers have suggested that crafting is important for successful aging, and have suggested forms of crafting among older workers based on the SOC model (Baltes & Baltes, 1990) and on Kanfer and Ackerman's (2004) framework. The way older workers *effectively* craft lacks empirical evidence (Kooij et al., 2015). Moreover, is crafting different among young, middle-aged and old workers? As far as we know, there is no research addressing crafting throughout the work lifespan.

*Key Issue 3: How SOC and Job crafting relate and affect well-being*

SOC strategies help individuals to adapt to limited resources and achieve work goals, thus resulting in increased performance and well-being (Freund & Baltes, 1998; Bajor & Baltes, 2003; Moghimi et al., 2017; Venz & Sonnentag, 2015). Job crafting enhances meaning, person-job fit and work identity. Although SOC and job crafting are different strategies, they are possibly related. Whereas SOC focuses on the optimal combination of goals and *personal* resources (Zacher et al., 2015), job crafting refers to changes made to *contextual* resources. Personal and contextual resources (e.g., self-efficacy and feedback, respectively) constitute a

set of raw materials employees dispose to achieve work goals and to have a better experience of their work. Moreover, whereas the driver of SOC use is the optimal functioning, job crafting is motivated by the need to enhance meaning and person-job fit (Demerouti, 2015). How SOC use relates to job crafting? Is job crafting a mediator in the relationship between SOC use and work engagement and burnout? As far as we know, there are no studies analyzing the mediation role of job crafting in the relationship between SOC use and well-being. Is the relationship between SOC use and well-being stronger among older individuals? Previous studies suggest that older workers benefit from the application of SOC at the job since the use of SOC strategies helps to minimize age-related losses and maximize age-related gains (Freund & Baltes, 2002). Empirical evidence is inconsistent so far.

## **CHAPTER 2. EMPIRICAL STUDIES**

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### **2.1 STUDY 1. ENGAGING THE AGE-DIVERSE WORKFORCE**

## **ENGAGING THE AGE-DIVERSE WORKFORCE**

### **ABSTRACT**

Despite the understanding that work engagement is an important indicator of successful aging, some questions addressing age and work engagement remain unanswered. In particular, there are inconsistencies regarding the relationship between work engagement and age, and the perceived importance of job resources across the work lifespan. This study aims to examine the links between work engagement and age, and how job resources are perceived to contribute to work engagement among young, midlife and older workers. The current study, based on more than 500 employees, shows that age and work engagement are positively related, contradicting preconceptions of disengagement among employees in a pre-retirement phase. Midlife workers present the lowest level of engagement. Additionally, the findings demonstrate that job resources of development are perceived as more important among young workers. Job resources of a positive work environment are perceived as more relevant among young and midlife workers. Recognition and meaningful work are important to work engagement regardless of age. Therefore, organizations facing the challenge of an increasingly age-diverse workforce might need to match job resources to age to maintain employee motivation and well-being throughout the work lifespan.

*Keywords:* aging; work engagement; job resources; working lifespan



### **2.1.1 Introduction**

Different factors have been contributing to a longer working lifespan. First, and in response to the joint effect of low birth rates and increased life expectancy, many European countries are considering raising retirement ages (European Union, 2015). Second, organizations are trying to retain older workers in an attempt to avoid a shortage of the expertise that may result from a massive retirement of baby boomers (Dychtwald, Erickson, & Morison, 2006). Lastly, it has become more common for individuals to work beyond the conventional retirement age, motivated by a combination of factors beyond economic, such as giving back to society (European Union, 2015). Organizations face the challenge of how to maintain this increasingly diverse workforce satisfied, productive and healthy over time (Zaniboni, Fraccaroli, & Truxillo, 2015). Besides an objective criterion related to physical and cognitive functioning, there is convergence around the notion that successful aging can be associated with indicators of psychological well-being, older workers remaining active and productive at work (Zacher & Schmitt, 2016). Thus, work engagement as a positive, work-related state of well-being or fulfillment (Schaufeli et al., 2002) is a relevant subjective indicator of successful aging.

Despite the emerging body of literature on the relationship between age and work engagement, several aspects remain unclear. Moreover, studies investigating the relationship between chronological age and work engagement provide inconclusive findings. Some studies express a positive correlation (Gallup, 2013; Goštautaitė & Bučiūnienė, 2015; Pitt-Catsouphes & Matz-Costa, 2008; Schaufeli & Bakker, 2004b), others positive curvilinearity (James et al., 2011), and still others a negative bivariate correlation (Avery, McKay, & Wilson, 2007). The variability in the work engagement frameworks used by researchers make the comparison of results even harder. There are studies using Schaufeli's scale (Goštautaitė & Bučiūnienė, 2015; Schaufeli & Bakker, 2003), other using Gallup's framework (Avery et

al., 2007; Gallup, 2013), and others adopting their own measure (James et al., 2011; Towers Perrin, 2005). Additionally, prior research has been applied to diverse contexts, and results suggest that differences between occupational groups are significant to work engagement (Schaufeli & Bakker, 2003). The large majority of research on work engagement has either ignored the factor of age or has considered age as a secondary or control variable (Zacher & Schmitt, 2016). This study aims to contribute to this stream of research by investigating age-work engagement correlation.

Inherent to psychological well-being at work is the availability of job resources, such as autonomy, feedback and social support since they fulfill intrinsic needs, are instrumental to achieve goals and buffer the impact of job demands on well-being (Demerouti et al., 2001). However, age (chronological, organizational or psychosocial; cf. Kooij & Van de Voorde, 2015) affects individual abilities, needs and goals

(Baltes & Baltes, 1990; Carstensen, 1995), which may suggest the need for an adjustment process between workers and their work environments throughout the working lifespan to maintain well-being. Indeed, this “fit” between the aging worker and his or her work environment has been indicated as determinant for successful aging (Kooij, 2015b; Pitt-Catsouphes & Matz-Costa, 2008). Yet, little attention has been paid to what job resources are most important for engaging workers across the work lifespan (exceptions are James et al., 2011; Pitt-Catsouphes & Matz-Costa, 2008).

Specifically, the following questions are addressed: (1) How does age relate to work engagement? (2) What are the most relevant job resources for work engagement? and finally, (3) Are job resources valued differently by employees considering their age? The study responds to calls for evidence of how work engagement differs on the basis of age (James et al., 2011), for interaction effects between age and work characteristics (Zacher & Schmitt, 2016), and for a better understanding of different age-based interests among workers (Bal,

Kooij, & Rousseau, 2015). It is examined whether results differ among young, midlife and old workers, covering the whole professional career.

The empirical research is based on an employee survey within a major organization, which operates in the utilities sector in the Iberian Peninsula (N=512). We selected this site for three main reasons. Firstly, because it is mainly composed of employees aged above 50 years old; thus, older workers are representative. Secondly, because manufacturing and production jobs are considered to have the lowest level of work engagement (Schaufeli & Bakker, 2003). Lastly, the utility sector is highly affected by the loss of accumulated knowledge that may result from the retirement of skilled workers (Economist, 2006). Another aim is to contribute to the literature on occupational health by providing evidence of age as an important variable in the study of work engagement and by showing that organizational resources will be valued differently in each life stage. Therefore, organizations may need to segment some job resources in accordance to age in order to achieve higher levels of work engagement among employees across the work lifespan.

### **2.1.2 Theoretical Background and Hypotheses Development**

#### *Age and work engagement*

Work engagement is conceptualized as a “positive, fulfilling, work-related state of mind characterized by vigor, dedication, and absorption” (Schaufeli et al., 2002, p. 74). Vigor denotes high levels of energy, mental resilience and persistence, even in the face of difficulties. Dedication refers to being strongly involved in one’s work and experiencing a sense of significance, enthusiasm and challenge. Absorption is characterized by being fully concentrated in one’s work. Engaged employees feel physically strong, activated, and energized, highly enthusiastic about their work, cognitively focused, and fully immersed in their jobs (Kahn, 1990; Schaufeli, & Bakker, 2003). Evidence found links between an

engaged workforce and several beneficial outcomes, such as employee well-being and performance (Schaufeli & Bakker, 2003; Schaufeli & Salanova, 2008).

Employees will maintain well-being and optimal functioning at work if they have enough resources to meet job demands, such as role ambiguity and work pressure (Demerouti et al., 2001). Job resources are those physical, psychological, social or organizational aspects of the job that fulfill basic human needs, such as the needs for autonomy, relatedness and competence (Deci & Ryan, 1985; Hobfoll, 1998, 2001). However, the lifespan literature states that age affects individual abilities, needs and goals (Baltes & Baltes, 1990; Carstensen, 1995). Yet, the occupational health literature (Bakker & Demerouti, 2007) sustains that work characteristics (i.e., demands and resources) are equally determinant to work engagement regardless of age (Korunka et al., 2009), whilst ignoring age-related changes that may affect the abilities and the performance of the employee, and consequently his or her psychological well-being at work.

It has long been assumed that workers become disengaged from work with age. This idea was influenced by the career development literature which posits that individuals start disengaging from work when approaching retirement age (Super, 1980). Nowadays, this assumption is being questioned specially because of the desire of older workers to remain in the labor force as they feel healthy and active (Pitt-Catsouphes & Matz-Costa, 2008). Evidence shows that older workers present higher levels of job satisfaction, organizational commitment, intrinsic work motivation, and perceived person-job fit, as well as lower levels of role ambiguity, role conflict, and emotional exhaustion compared to younger workers (Ng & Feldman, 2010). This may be due to the fact that older workers, who have a more limited future time perspective, tend to focus on positive feelings (Charles & Carstensen, 2010), exercise agency in dealing with the age-related changes that occur across the lifespan (Freund & Baltes, 2002), and because they select themselves into or out of jobs (Warr, 1992) that

better fit with their personal characteristics and needs, enhancing person-job fit (Edwards, 1991). Summing up theoretical arguments and considering existing empirical evidence, we expect a positive relationship between age and work engagement.

**Hypothesis 1:** Age is positively related to work engagement.

#### *Motives throughout the working lifespan*

Life-span theories comprehend biological, psychological and social changes that occur over the course of life, and thus they offer a holistic approach to the study of age. The model of selection, optimization and compensation (SOC; Baltes & Baltes, 1990) explains how individuals select goals and allocate resources towards these goals. It also suggests that, as individuals age, they will allocate more resources to maintenance and compensation of functioning, and fewer resources to growth goals. The socioemotional selectivity theory (SST; Carstensen, 1995) predicts a reorganization of goals as a result of the perception of time, age, or when endings are salient. When perceived as an open-ended future time perspective, social interactions are driven by work-related growth motives (i.e., learning technical skills). When time is perceived as “time left”, social interactions prioritize meaningful-oriented goals (Kanfer & Ackerman, 2004). Thus, life-span theories suggest that changes in motives might happen during the lifespan on the basis of different expectations that individuals have about their work and their careers (Sterns, Sterns & Hollis, 1996).

#### *Perceived relevance of job resources among young, middle-aged and old workers*

Previous studies have presented evidence for a decrease both in the desire to learn among older adults compared to younger adults (Kanfer & Ackerman, 2000), and in the importance attached to job variety and feedback (Warr, 1997). A different perspective presents motivation to learn as constant over time, driven by internal rather than external factors, older adults engaging in self-directing learning projects toward deepening their knowledge in relation to an object of interest (Gegenfurtner & Vauras, 2012). Some research positively

correlates age with the interest in training (Hale, 1990). Other studies show that the interest will depend on the content of the training (Warr, 2001a). However, there are consistent findings suggesting a negative relationship between chronological age and formal learning (i.e., a structure deliberately created for the purpose of increasing knowledge; Eraut, 2004, Raemdonck, et al., 2015; Warr & Birdi, 1998; Warr, 2001b). Kooij et al. (2011) found that training practices are less attractive for older workers. Finegold, Mohrman, and Spreitzer (2002) found that older workers were less motivated to develop technical skills. Ng and Feldman (2012) discovered that the willingness to engage in training and development among older workers is lower than among younger workers. Based on lifespan theories and on prior findings, we thus propose that job resources of *development* are more strongly associated with work engagement among young than midlife and old workers.

**Hypothesis 2:** Development is more strongly associated with work engagement among young workers than midlife and old workers.

Recognition and reward (whether financial, institutional or social) enhances the sense of efficacy related to work engagement, and creates a perception of consistency between what the person does and what the organization offers in return (Kahn, 1990; Leiter & Maslach, 2004). Crawford, LePine and Rich (2010) provide evidence that recognition is a determinant predictor of work engagement. Further, older workers express stronger needs for seeing their skills recognized. Respect and recognition have been presented as one of the most important HR practice regarding older workers' decision to remain in or return to the workforce (Armstrong-Stassen, 2008). Therefore, we expect that job resources of *recognition* are more strongly associated with work engagement among midlife and old workers than young workers.

**Hypothesis 3:** Recognition is more strongly associated with work engagement among midlife and old workers than young workers.

As proposed by the socioemotional selectivity theory (SST; Carstensen, 1995), as older individuals perceive their future time as more limited than younger people, they are likely to focus on positive experiences and to give higher priority to emotionally gratifying interactions (Charles & Carstensen, 2010). For example, older employees value generativity (i.e., transmitting values and knowledge to future generations) more than younger employees (Erikson, 1997). Additionally, the aging process comprehends losses in fluid intelligence (i.e., working memory, abstract reasoning, attention and processing of novel information) and gains in crystallized intelligence (i.e., general knowledge, extent of vocabulary, and verbal comprehension; Kanfer & Ackerman, 2004). These age-related changes have important implications in the work setting and are likely to influence self-regulation strategies. There is evidence of a higher person-job fit as employees age, because they know their strengths and interests better, and they create work environments that fit their identity (Kooij et al., 2017). Hence, we expect job resources of *meaningful work* to have a stronger association with engagement among older than midlife and young workers.

**Hypothesis 4a:** Meaningful work is more strongly associated with work engagement among older workers than midlife and young workers.

Since older adults focus more on emotionally gratifying interactions (Kanfer & Ackerman, 2000), work characteristics that support these goals, such as perceiving a positive atmosphere at work, are likely to have a stronger association with engagement among old workers. Additionally, a positive work environment can be representative of the employees' perception of fairness in treatment by the organization, and is especially prominent since older workers suffer discriminatory behavior at work (Posthuma, Wagstaff, & Campion, 2012). Stereotype discrimination has been found as an antecedent to mature-age worker

disengagement (Kulik, Perera, & Cregan, 2016). Therefore, we hypothesize that job resources of a *positive work environment* are more strongly associated with work engagement among old, than midlife and young workers.

**Hypothesis 4b:** A positive work environment is more strongly associated with work engagement among older workers than midlife and young workers.



Job resources	Items	Hypotheses	Expected relationship		
			Younger adults (under age 35)	Midlife adults (age 35 to 49)	Older adults (age 50 or older)
Development ( $\alpha = .78$ )	5 items (e.g., “developing new competencies and learning”; “receiving feedback about my performance”)	#2	Positive / stronger		
Recognition ( $\alpha = .81$ )	4 items (e.g., “having autonomy and empowerment”; “being recognized for work”)	#3		Positive / stronger	Positive / stronger
Meaningful work ( $\alpha = .77$ )	5 items (e.g., “knowing that my work has meaning”; “doing what I do best”)	#4a			Positive / stronger
Positive work environment ( $\alpha = .68$ )	3 items (e.g., “perceiving organizational justice”; “conciliating life and work”)	#4b			Positive / stronger

Table 1. Summary of hypotheses

### 2.1.3 Method

#### *Research context*

This study was conducted in a major Iberian company within the utilities sector, with operations in Spain and Portugal. By means of an online survey, 1,256 employees were asked to fill out the questionnaire, resulting in a total response of N=512 (response rate 40 percent). The questionnaire was distributed using a web-based tool among the employees, of whom the organization provided email addresses. Participants were assured confidentiality and were informed about the added value of the research. Of these participants, 87 percent were male, 58 percent aged between 51 and 66 years old, 23 percent from 35 to 50 years old, and 19 percent from 20 to 34 years old. With regards to the hierarchical position, 60 percent is in the lower position level of the organizational structure.

#### *Measures*

*Work engagement.* Work engagement was measured using the nine-item Utrecht Work Engagement Scale from Schaufeli and Bakker (2004). Responses could be given on a seven-point Likert scale from 1 (never) to 7 (always). An example item is “when I get up in the morning, I feel like going to work”. Reliability of the scale was .94.

*Perceptions of the importance of job resources to work engagement.* Based on the literature, four job resources were analyzed: *development* ( $\alpha = .78$ ), including five items (e.g., “developing new competencies and learning” and “receiving feedback about my performance”; Bakker & Demerouti, 2007); *recognition* ( $\alpha = .81$ ), including four items (e.g., “being recognized for the work that I do”; Kahn, 1990); *meaningful work* ( $\alpha = .77$ ), containing five items (e.g., “knowing that my work has meaning”; Hackman & Oldham, 1980; Kahn, 1990); *positive work environment* ( $\alpha = .68$ ), encompassing three items (e.g., “perceiving organizational justice”; Moliner et al., 2005). Following the literature (Dawis, 2002), we asked participants how important the job resource is to his or her level of work

engagement. Responses could be given on a five-point Likert scale from 1 (not important) to 5 (very important).

*Age.* We asked participants to indicate their chronological age in years. The age range in the overall sample was 20 to 66 with a mean of 48.6 and a standard deviation of 12.12. Following De Lange et al. (2006), age sub-group analyses utilize the subsequent age cut-offs: young workers (under age 35), middle-aged workers (35 to 49 years of age) and old workers (aged 50 or older). Although the subjective perception of age is changing (Westerhof, Barrett, & Steverink, 2003), and individuals do not consider themselves old in their 50s (James et al., 2011), researchers still delimit 55 years old as older workers (James et al., 2011; Munnell et al., 2006), ten years before the conventional retirement age of 65. In our research site, employees would be eligible for retirement at the age of 60 years old. Thus, we delimited 50 years old (ten years before eligible age for retirement) and above as old workers.

*Control variables.* Work engagement is associated with employee gender (Schaufeli, Bakker, & Salanova, 2006) and position level (Quantum workplace, 2017). Thus, we controlled for gender (1 = “male”; 2 = “female”) and for hierarchical position (1 = “lower position”; 7= “top management”).

#### **2.1.4 Results**

Means, standard deviations, and intercorrelations between the study variables are presented in Table 2. Age was positively related to work engagement ( $r = .12, p < .01$ ). The four job resources analyzed are positively correlated to work engagement (Development:  $r = .26, p < .01$ ; Recognition:  $r = .25, p < .01$ ; Meaningful work:  $r = .29, p < .01$ , Positive work environment:  $r = .20, p < .01$ ). Development, recognition, meaningful work, and a positive work environment significantly correlate with each other. Development and a positive work environment are negatively related to age ( $r = -.22, p < .01$ ;  $r = -.15, p < .01$ , respectively),

recognition and meaningful work are not significantly related to age ( $r = -.07, p > .05$ ;  $r = -.05, p > .05$ , respectively).

Variables	M	SD	1	2	3	4	5	6	7	8
1. Age	48.6	12.12	1							
2. Gender	1.13	-	-.02	1						
3. Hierarchical position	1.97	-	.14**	.03	1					
4. Development	4.42	.48	-.22**	.17**	.00	1				
5. Recognition	4.51	.48	-.07	.13**	.17**	.69**	1			
6. Meaningful work	4.48	.43	-.05	.13**	-.03	.65**	.67**	1		
7. Positive work environment	4.60	.48	-.15**	.17**	.00	.67**	.67**	.59**	1	
8. Work engagement	6.01	1.05	.12**	.09*	.11*	.26**	.25**	.29**	.20**	1

\* $p < .05$ ; \*\*  $p < .01$ .

Table 2. Means, standard deviations, and correlations between the study variables ( $N=512$ )

One way analysis of variance (ANOVA) was used to identify differences in work engagement among the three age groups. The ANOVA indicated that there were significant differences among the groups, [ $F(2,509) = 7.95, p < .001$ ]. Post hoc comparisons, using the Tukey HSD test, indicated what groups means differed from what other groups means. These results, presented in table 3, show that older workers scored higher in work engagement (M=6.13). Therefore, Hypothesis 1 was supported. Middle-aged employees had the lowest level of work engagement (M=5.68), which was significantly less than older workers. Young employees' level of work engagement was not significantly different from middle-aged nor old workers (M = 6.02).

Work Engagement by age group	Groups of age	Mean difference	Standard error	Sig.
20-34 N = 98; Mean = 6.02; s.d. = .88	35-49	.33	.14	.05
	50-70	-.12	.12	.57
35-49 N = 113; Mean = 5.68; s.d. = 1.31	20-34	-.33	.14	.05
	50-70	-.45*	.11	.00
50-70 N = 301; Mean = 6.14; s.d. = .96	20-34	.12	.12	.57
	35-49	.45*	.11	.00

Table 3. Work engagement by age group: Tukey post hoc results

We ran an additional analysis including the control variables *gender* and *hierarchical position*. Results of the hierarchical regression analysis are shown in Table 4. The control variables, *gender* and *hierarchical position*, were significantly related to work engagement, [ $F(2,509) = 5.00, p < .01$ ]. The higher the position within the organization, the higher the engagement. Moreover, female employees are more engaged than male employees.

Furthermore, we found a significant positive effect of age on work engagement, above and beyond the effects of gender and hierarchical position, [ $F(3,508) = 5.28, p < .001$ ].

<i>Variables</i>	<i>Work engagement</i>	
	<i>Step 1</i>	<i>Step 2</i>
	<i>B (SE)</i>	<i>B (SE)</i>
Gender	.09*	.09*
Hierarchical position	.10*	.09*
Age		.10*
<i>F</i>	5.00**	5.28***
<i>R</i> <sup>2</sup>	.02	.03

Note:  $N = 512$ . Standardized  $\beta$  are reported.

\* $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

Table 4. Hierarchical regression analysis

The test of means, presented in table 5, shows that all job resources were considered important to workers, and that a *positive work environment* ( $M=4.59$ ) is the job resource which scores the highest importance to all groups of age, followed by *recognition* ( $M=4.51$ ), *meaningful work* ( $M=4.48$ ), and *development* ( $M=4.41$ ), respectively.

Groups of age	Development	Recognition	Meaningful work	Positive work environment
20-34 N = 98	4.62 (.38)	4.61 (.42)	4.54 (.46)	4.73 (.36)
35-49 N = 113	4.45 (.42)	4.48 (.51)	4.48 (.41)	4.63 (.41)
50-70 N = 301	4.34 (.50)	4.49 (.49)	4.46 (.43)	4.54 (.52)
Total N = 512	4.41 (.48)	4.51 (.48)	4.48 (.43)	4.59 (.48)

Table 5. Means of the importance of a job resource to their level of work engagement by age group

We then ran a *post hoc* test to analyze differences among groups in how they rank the importance of each job resource to their work engagement. Results (presented in table 6) show that differences among the groups exist in how *development* and a *positive work environment* are perceived as important to their level of engagement. *Development* is perceived as significantly more important to young than to middle-aged and to older workers (*Mean difference*=.16  $p < .05$ ; *Mean difference*=.28  $p < .001$ , respectively). Therefore, Hypothesis 2 was supported. There were no significant differences in the job resources of recognition and meaningful work. Therefore, Hypotheses 3 and 4a were not supported. A *positive work environment* was significantly more important to young than to older workers (*Mean difference*=.19  $p < .001$ ). Thus, Hypothesis 4b was not supported.



	Groups of age		Mean difference	Standard error	Sig.
Development	20-34 N = 98; Mean = 4.61; s.d. = .38	35-49	.16*	.06	.03
		50-70	.28*	.05	.00
	35-49 N = 113; Mean = 4.45; s,d, = .42	20-34	-.16*	.06	.03
		50-70	.11	.05	.07
	50-70 N = 301; Mean = 4.33; s,d, = .50	20-34	-.28*	.06	.00
		35-49	-.11	.05	.07
Recognition	20-34 N = 98; Mean = 4.60; s.d. = .42	35-49	.12	.07	.16
		50-70	.12	.06	.09
	35-49 N = 113; Mean = 4.48; s,d, = .51	20-34	-.12	.07	.16
		50-70	-.00	.05	.99
	50-70 N = 301; Mean = 4.49; s,d, = .49	20-34	-.12	.01	.09
		35-49	.01	.05	.99
Meaningful work	20-34 N = 98; Mean = 4.53; s.d. = .46	35-49	.06	.06	.56
		50-70	.08	.05	.27
	35-49 N = 113; Mean = 4.48; s,d, = .41	20-34	-.06	.06	.56
		50-70	-.02	.05	.93
	50-70 N = 301; Mean = 4.46; s,d, = .43	20-34	-.08	.05	.27
		35-49	-.02	.05	.93
Positive work environment	20-34 N = 98; Mean = 4.73; s.d. = .36	35-49	.11	.07	.22
		50-70	.19*	.06	.00
	35-49 N = 113; Mean = 4.62; s,d, = .42	20-34	-.11	.07	.22
		50-70	.08	.05	.24
	50-70 N = 301; Mean = 4.54; s,d, = .48	20-34	-.19	.06	.00
		35-49	-.08	.05	.24

Table 6. Differences among groups in the importance of a job resource to their level of work engagement

### **2.1.5 Discussion**

This study investigated the relationship between age and work engagement, as well as how job resources are perceived to contribute to work engagement among young, midlife and old workers. In line with our theoretical expectations and with several existing studies (Gallup, 2013; Goštautaitė & Bučiūnienė, 2015; James et al., 2011; Pitt-Catsouphes & Matz-Costa, 2008; Schaufeli & Bakker, 2003), age was positively related to work engagement. Moreover, results were even higher among employees aged above 50 years old, contradicting preconceptions of disengagement among employees in a pre-retirement phase (Kooij et al., 2011; Super, 1980). Importantly, the site where this study was conducted is a resource endowed organization, where HR practices that facilitate work role changes, such as mentoring, are fully implemented, which could have contributed to a better adaptation to age-related changes that occur during the process of aging. Additionally, when the study was being conducted, many older employees were participating in a knowledge transfer project (in an organization's attempt to avoid the loss of accumulated wisdom and experience), which may have contributed to the level of work engagement among the elders. Therefore, our findings support the job demands-resources model (JD-R model; Demerouti et al., 2001) and the conservation of resources theory (Hobfoll, 1998, 2001) as they show that a resourceful context enhances work engagement, help to maximize well-being and age successfully. In fact, there is evidence for the relationship between resources and successful aging. Baltes and Lang (1997) found that the negative effects of aging were less pronounced in individuals who were rich in resources (e.g., perceived social support, role variety, and social status) because they were able to use resources to maintain effective functioning and well-being.

Nevertheless, we could have expected linear results since with increasing age employees would benefit from a more granular knowledge about the sector and the work itself

(Goštautaitė & Bučiūnienė, 2015). However, our results were not linear in terms of the link between age and work engagement. Midlife workers presented the lowest level of engagement, which is supported by the notion that mid-career workers tend to have higher job demands, lower levels of coworker support, and subsequently, lower occupational well-being than young and old workers (Zacher, Jimmieson, & Bordia, 2014). Theories that take into account the dynamics of adult development across the life span converge in the notion that middle age represents a turning point in life, the reorganization of goals and motives suggesting a discontinuity in adult development (Kanfer & Ackerman, 2004) that may generate uncertainty and a negative impact on well-being. Moreover, middle-aged workers in the context of manufacturing jobs may have additional age-related challenges that affect their ability to perform as the tasks are physically demanding.

Our work has suggested that gender and a hierarchical position are positively related to work engagement. The context where the study was conducted is an organization operating in the electric generation sector, composed mainly by engineers, that detain specific knowledge. Although manufacturing and production jobs are consistently linked to lower engagement levels (Miller & Adkins, 2016), we thus may interpret that the higher the position level in the hierarchy, the less the operational, technical and routinized work, and the more challenging and interesting the job. Indeed, higher position levels are positively related to work engagement (Quantum workplace, 2017). In a similar way, female employees within this organization perform work that is more administrative and less technical, which may have contributed to a higher-level work of engagement.

Additionally, our study has shown that all four job resources were considered important to workers. A *positive work environment* is the job resource which scores the highest importance, followed by recognition, meaningful work, and development, respectively. A positive work environment (i.e., social support, work-life conciliation, and organizational

justice) signals that the organization invests in the employee well-being. Even though there is convergence around the notion that job resources influence work engagement, there is also evidence of a reciprocity norm. The employee will work harder and perform better if the he or she feels respected by the organization (James et al., 2011).

*Meaningful work* and *recognition* are important conditions for work engagement regardless of age. Performing work that is purposeful and consistent to an individual's own ideals and his or her self-concept results in higher levels of work engagement (Kahn, 1990; Goštautaitė & Bučiūnienė, 2015). Recognition is crucial because it values both the worker and the work, and is closely associated with the sense of personal efficacy (Leiter & Maslach, 2004). Further, *development* and a *positive work environment* differ significantly by age group. The score given by young employees to *development* is significantly more important than to midlife and old workers, which is in line with growth orientation goals from lifespan theories (Baltes & Baltes, 1990; Carstensen, 1995; Kanfer & Ackerman, 2000). Young workers place more value in tasks and interactions that drive learning, such as developing new competencies and receiving feedback about performance. A recent study conducted by Gallup (2016) concluded that opportunities for development are the most important job characteristic for Millennials. Yet, these results are similar to previous studies conducted by lifespan researchers almost thirty years ago, signaling that it is not that Millennials value more growth and development than previous generations, but that employees in their first career stages seek for opportunities for growth more than employees in latter career stages.

Further, our study shows that *development* is less important among older adults. These results are in line with several others (e.g., Finegold et al., 2002; Kooij et al., 2011; Ng & Feldman, 2012; Warr & Birdi, 1998; Warrb, 2001). This may happen because older workers are in a phase of their careers, where they have reached a plateau and do not feel that they need to learn new skills. Conversely, as young workers are in early stages of their careers,

they have a stronger need for growth, and value more job characteristics related to development. Yet, it is important to refer that development in our study is measured with items, such as, acquire new skills, have feedback or to be coached, which are related to career advancement. As the clash in results from prior studies may suggest, further research should disentangle development in terms of learning new skills and climbing the ladder (important to young employees), from learning to be up-to-date in terms of knowledge and to crystalize existent expertise.

Results also differ significantly in the score given to a *positive work environment* among young and older employees. In fact, the score is significantly different and higher to young than to old workers. The perception of social support, work-life integration and organizational justice may be perceived as especially important among young workers because these job resources help to buffer the impact of job demands related to the process of workplace socialization. A supportive context may buffer the demands linked to non-work issues, such as work-family conflict (especially for working parents), enhancing the psychological availability that is needed in order to be fully engaged at work (Kahn, 1990).

### **2.1.6 Theoretical Implications**

Our research contributes to the literatures on well-being and aging by showing that older workers are engaged employees. It seems that past career theories that argue for a decline in engagement with age are out-of-date. Older workers of today, the “third age”, have a new perspective about work and retirement. Since they have a longer lifespan along with good health, they want to remain longer in the workforce. Additionally, our work brings insights about the inconsistency in results regarding work engagement and age. The utilities sector is the one with the lowest level of engagement (Quantum workplace, 2017). However, our site shows that it is possible to have higher levels of work engagement in manufacturing and production jobs, even among older workers. Thus, more than occupation type, to study work

engagement and age, researchers need to understand if the organization provides employees the job resources they need. If the organization provides the resources that allow older workers to effectively perform, this will affect well-being positively. Furthermore, our research includes middle-aged employees who have received less attention from researchers who have privileged to study age differences among two groups: young and old workers (exceptions for James et al., 201; Pitt-Catsouphes & Matz-Costa, 2008, 2009).

Our study contributes to the job demands-resource (JD-R) model (Demerouti et al., 2001) by showing that organizational resources will be valued differently across age. Not only different working contexts affect the importance allocated to specific job characteristics as proposed by the JD-R model, but also within working contexts across different life stages. This may happen because resources will answer to different goals and needs that are specific to a life stage. The job demand-resources model posits that individuals will maintain well-being and optimal functioning at work if they have enough resources to meet job demands (Demerouti et al., 2001). Yet calendar age causes the loss of resources to deal with demands, affecting work ability. Organizational age (i.e., tenure) increases demands through increased responsibility from a more senior position or through the need to better conciliate work and life. Consequently, age impacts well-being. Moreover, the job demands-resource model (Demerouti et al., 2001) stresses the importance of job resources because they fulfill intrinsic needs, such as the need for personal advancement and growth. But age affects intrinsic needs. Learning and a positive work environment will be more important to young than to older workers. Thus, to fully comprehend aging, it is important to consider not only what is occurring in a specific context (as emphasized by the JD-R model; Bakker, & Demerouti, 2007) but also what is happening with individuals within that specific context at that moment in life.

### 2.1.7 Implications for Practice

This study has several implications for human resources management. It is shown that approaching retirement does not mean disengaging from work, or counting the time until employees retire. Indeed, the research shows that older workers have the highest level of work engagement. Older employees can be active, enthusiastic, and dedicated to their work. Organizations, especially those who need to retain older workers to avoid the loss of accumulated knowledge, wisdom and experience, should elucidate their workforce to avoid negative attitudes and stereotypes about old workers. Negative preconceptions may represent additional challenges older individuals confront, whilst wanting to remain longer in the workplace. Still, maintaining an engaged workforce implies investments in job resources that do play a central role in maintaining worker's well-being and in successful aging. Although our study does not permit to show evidently what factors predict work engagement, it does offer an understanding of the factors that are most valued by employees. Investing in job resources that are valued means creating a perception that the organization is concerned with the employees' well-being. The employee will then put extra effort and dedication towards work.

Furthermore, while there are job resources that are equally valued by employees across their work lives, such as *recognition* and *meaningful work*, the importance given to some job resources differ in accordance to age. Thus, organizations may segment resources in order to better influence psychological well-being at work. Young workers place a higher importance to career development, and so organizations need to invest on creating stimulating career paths. Midlife and old workers place less value in acquiring new skills, which can represent an additional challenge for HR managers in order to maintain their employability while dealing with their obsolete skillset, especially considering the digital challenges organizations are facing. HR managers may focus on *acquired* skills rather than on *acquiring* skills, and

allocate older workers to more rewarding roles, such as mentoring or teaching. Employers can use intergenerational activities to exchange knowledge between younger and older workers. Although development is more important among young workers, middle-aged and old employees still value learning opportunities. However, as young employees are in today's context no longer expecting to work in a single organization and are less committed than previous young workers (Harrington & Hall, 2007), organizations offering career development opportunities might be more likely to attract and retain young workers. A supportive environment is especially important among young and midlife workers. HR professionals are in a unique position to create a supportive culture through the implementation of HR practices and policies that signals to the employees that they are treated fairly and with respect.

### **2.1.8 Limitations and Future Research**

There are several limitations that should be acknowledged when analyzing the findings of the current research. First, we measured the perceived importance of job resources and not the actual availability of them. Therefore, we could not conclude about causality between job resources and work engagement. Future research should measure job resources implemented to differentiate between perception and availability of job resources. Second, our study concentrated on job resources because they are important in their own right. Nevertheless, it would be important to measure job demands (and burnout), mainly because job resources are especially determinant in high-demanding contexts. Third, in our study, age was based on calendar age, which is related to work ability and the performance-based conception of age. However, as other studies suggest (e.g., De Lange et al., 2006; Kanfer & Ackerman, 2004), age is a broad concept and should be studied through different perspectives besides chronological age. For example, the inconsistencies in previous empirical studies regarding learning and intention to learn among older employees (Finegold et al., 2002; Gegenfurtner &



Vauras, 2012; Kanfer & Ackerman, 2000; Kooij et al., 2011; Ng & Feldman, 2012; Warr, 1997; Warr & Birdi, 1998) may result from other conceptions of age rather than just calendar age. It may be that the stage within a career, or the perception of time left, have a stronger impact on the motivation to learn. Support for this argument can be found in a study conducted by Kooij and colleagues (2013), who showed that it is not age in terms of years per se but future time perspective that determined work motives to continue to work. Therefore, age must be studied from different standpoints other than just calendar age. Fourth, our study is cross-sectional, focusing on interindividual differences, turning possible the evaluation of cohort differences. A longitudinal study may be necessary to analyze intraindividual differences, disentangling aging and generational effects. Finally, the specific context in which our proposed relationships were examined may restrict the generalization of our findings. Further studies should consider other occupations in which performance depends on abilities, such as physical strength or fluid intelligence. Results could have been different in physically demanding occupations, in which age-related changes are more problematic to compensate.

### **2.1.9 Conclusions**

With the aging of the workforces around the world, one of the most pressing challenges for HR managers is how to maintain this diverse workforce engaged. Based on an integrative perspective, taking insights from lifespan theories and the occupational well-being literature, this researched study examined the relationship between work engagement and age, and the perceived value of job resources to young, midlife and old workers. Also found, was the indication that age and work engagement are positively related, which challenges preconceptions of older workers as less motivated and disengaged from work. Most importantly, evidence was provided regarding the differences between the way job resources are valued in accordance to age. Addressing age-related differences is a way to study older

workers but also young and middle-aged employees, and therefore contribute to retain and motivate employees to stay longer in the workforce regardless of their age.

## **2.2 STUDY 2. THE SHOW MUST GO ON PERSON-JOB FIT ACROSS THE WORK LIFESPAN – THE CASE OF CLASSIC BALLET DANCERS<sup>1</sup>**

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<sup>1</sup> In a Revision Process (R3): Journal of Vocational Behavior.

**THE SHOW MUST GO ON  
PERSON-JOB FIT ACROSS THE WORK LIFESPAN – THE CASE OF CLASSICAL  
BALLET DANCERS**

**ABSTRACT**

This study examines how employees assess demands-abilities and needs-supplies across their work lifespan, and how they better adjust to their work. Based on person-environment fit theory, the job design and the lifespan literatures, and using interviews with a sample of 40 professional ballet dancers, our research shows how the interplay between demands, abilities, needs, organizational resources, and regulation strategies contributes to a process of adjustment, and consequently enhances psychological well-being across the work lifespan. Additionally, we contribute to literature on well-being by presenting evidence of how organizational resources are perceived differently across the work lifespan and why. We also extend theory on job crafting by showing that crafting is partly a function of the phases of one's lifetime and by presenting evidence of forms of crafting among older workers. With increased longevity, individuals will need to remain working or recraft a career after reaching retirement age. Addressing age-related changes and considering the importance of organizational resources to well-being can help promote active aging.

*Keywords:* aging; crafting; person-job fit; work lifespan; grounded-theory

### 2.2.1 Introduction

Psychological well-being at work is achieved through a process of adjustment between organizational members and their work environments (Feldman & Vogel, 2009). Aging constitutes one of the most influential reasons for misalignments between individuals and their workplaces (Feldman & Vogel, 2009), since it affects a person's abilities, goals, and needs (Baltes & Baltes, 1990; Carstensen, 1995; Kanfer & Ackerman, 2004). Individuals can play an agentic role in order to increase their person-job fit and maintain their well-being by engaging in different regulation strategies (Baltes & Baltes, 1990; Wrzesniewski & Dutton, 2001). With the expected career lengthening caused by an increasingly aging workforce, three questions arise: (1) how do workers assess their job demands, their abilities, and their needs across their work lifespan?, (2) what regulation strategies do workers engage in to better fit and why?, and finally (3) which organizational resources are perceived to contribute to the process of adjustment and why?

The purpose of the current study is to build and enrich theory by providing evidence of how workers better adjust to their work in the process of aging. We selected a short physical career (ballet) in which the process of aging is intensified, and examined the differences at three career life stages: young, middle, and old. Specifically, we addressed the question of *how* workers assess demands, abilities, needs, and organizational resources, and *what* regulation strategies they adopt to better adjust to their work. By conducting this study, we respond to the calls for: (1) empirical evidence about the differences in needs and motives among individuals throughout their working life (Bal, Kooij, & Rousseau, 2015); (2) studies that integrate aging, person-environment fit, and well-being (Zacher, Feldman, & Schulz, 2014); (3) empirical evidence of crafting among older workers (Kooij, Tims, & Kanfer, 2015).

The context of professional ballet dancers was selected for two main reasons. First, the depletion of a dancer's main physical capital (Bourdieu, 1984), the body, is inevitable and visible. The decline of physical strength is especially difficult for the dancer because it is a means of expression and part of a dancer's self-identity (Wainwright & Turner, 2006). Therefore, regulation strategies are expected to emerge. Second, dancing professionally ends prematurely when compared to other careers in terms of lifespan (i.e., it lasts no longer than 20 years). Hence, dynamics of resource losses and gains are more pronounced among ballet dancers, as they have relatively short careers in which they have to cope with these changes. What we can learn from these short careers is how workers better adjust to their work and sustain psychological well-being by engaging in different regulation mechanisms across their work lifespan. Dancers deal with the perception of being too old to continue to dance while they are still too young to stop working. This perception of being too old and simultaneously too young is a reality for the workforce in general. With increased longevity, most individuals will either extend their careers and work longer or will find new careers before or after reaching retirement age (Eurostat, 2015).

Our primary contribution is a framework that shows how the interplay between demands, abilities, needs, organizational resources, and regulation strategies across the work lifespan contributes to a process of adjustment, and consequently enhances psychological well-being at work. Additionally, we contribute to literature on well-being by presenting evidence of how organizational resources are perceived differently across the work lifespan and why. Finally, our study extends the theory on job crafting (Kooij et al., 2015; Wrzesniewski & Dutton, 2001) by showing that crafting is partly a function of the phases of one's lifetime and by providing evidence of forms of crafting among older workers. By studying how workers assess fit or misfit between demands and abilities, needs and supplies, and better adapt to their work environment during the aging process, our study helps organizational behavior

scholars and practitioners to manage an increasingly age-diverse workforce and contributes to the challenge of how to promote active aging (Eurostat, 2015). The purpose of our research is to study how employees better adjust to work in order to sustain psychological well-being across their work lifespan.

### **2.2.2 Theoretical Framework**

Psychological well-being at work is experienced as a sense of fulfillment, the realization of human potential, and meaningfulness (Ryan & Deci, 2001; Wrzesniewski & Dutton, 2001). Workers' psychological well-being can be affected when they lack personal or organizational resources to meet the demands of work (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Hobfoll, 2011) or when rewards fall short of their needs or goals (Edwards, 1992). Thus, inherent to psychological well-being is the perception of congruence between the demands of the job and the resources of the employee (i.e., demands-abilities fit), as well as the resources provided by the organization and the needs and goals of the employee (i.e., needs-supplies fit; Edwards, 1991; Scroggins, 2008).

Equally important to psychological well-being is the perception of correspondence between work task and work role (Kahn, 1990; Scroggins, 2008). Work is experienced as meaningful when it is consistent with an individual's perceptions of who they are or who they want to become (Scroggins, 2008). Pratt, Rockmann, and Kaufmann (2006) named this concept "work identity integrity", the "consistency between what one is and what one does" (p. 241). The strong identification to the work role resonates in accordance to living as the true self, thereby establishing a sense of authenticity that enables full engagement (Kahn, 1990). Alignment or misalignment between work content and work role influences emotions and behaviors, such as frustration and coping reactions (Kira, van Eijnatten, & Balkin, 2010; Tims, Derks, & Bakker, 2016). As careers progress, work role and identity changes will

occur, and demands related to the self will emanate (Billett & Pavlova, 2005; Pratt, Rockmann, & Kaufmann, 2006).

Aging, in its multiple conceptions (Kooij & Van de Voorde, 2015; Sterns & Miklos, 1995), is the major motive for the need of adjustments between individuals and their work environments (Feldman & Vogel, 2009). For instance, the performance-based conception of age analyzes the gains and losses in abilities to complete a task, such as the decline in physical strength or the increase in experience (Kanfer & Ackerman, 2004). From the perspective of organizational age, as seniority increases and professionals' competencies enhance (Eraut et al., 2000), demands become more intense and greater extrinsic rewards are expected (Noonan, 2005). Additionally, psychosocial age affects the perception of time (e.g., remaining in a career), which will have as a consequence the reorganization of priorities and goals. On the other hand, the lifespan conception of age evaluates the changes resulting from the combination of career and life events (Baltes, Staudinger, & Lindenberger, 1999; Sterns & Miklos, 1995). For example, middle-aged employees experience more work-family conflict than young and older employees (Zacher & Winter, 2011). Even though age is central to person-environment fit, there is scarce research that integrates aging, well-being, and person-job fit. Furthermore, there is still the need to answer the "when", "how", and "what" strategies employees adopt to establish person-job fit (Zacher et al., 2014).

Since life-span theories consider biological, psychological, and social changes that occur throughout life, they constitute a pivotal framework for the study of how age affects psychological well-being at work. Kanfer and Ackerman's (2004) framework suggests that aging involves losses in fluid intelligence (i.e., working memory, attention, and processing of novel information) and gains in crystallized intelligence (i.e., general knowledge, extent of vocabulary, and verbal comprehension). As a result, individuals engage in regulation strategies, such as avoidance (aversion to fluid intelligence tasks) or compensation (increased



interest in crystalized intelligence tasks). The socioemotional selectivity theory (SST; Carstensen, 1995) states a reorganization of goals as a result of the perception of time, age, or when endings are salient. When perceived as an open-ended future time perspective (“life lived from birth”), social interactions are driven by resource acquisition goals (i.e., learning technical skills). However, when time is perceived as limited (“life left”), emotional goals are prioritized (i.e., meaningful experiences). The model of selection, optimization, and compensation (SOC; Baltes & Baltes, 1990) suggests that individuals adopt processes of adjustment toward three goals in life: growth (i.e., reaching higher levels of functioning), maintenance (i.e., preserving current level of functioning), and regulation of loss (i.e., functioning at lower levels). Goals are selected (over others), either to achieve a desired state (elective selection) or in response to resource loss (loss-based selection). To reach an optimal level of functioning in the selected goals, resources need to be acquired, allocated, and refined (optimization). Finally, when confronted with loss or decline in goal-relevant means, compensatory strategies (compensation) are needed to replace the loss of resource by using new or an unused resource (e.g., taking additional breaks, asking for help or rehabilitation following injury).

In a similar way, the crafting literature (Wrzesniewski & Dutton, 2001) stresses that employees proactively engage in self-initiated actions (i.e., bottom-up approach) to change tasks or relational boundaries of their work in order to improve person-job fit, meaning, work identity (Wrzesniewski & Dutton, 2001), or to balance job demands and job resources with their personal abilities and needs (Tims, Bakker, & Derks, 2012). Not all employees will resort to crafting, but those who feel that their needs are not being met are more likely to do so (Wrzesniewski & Dutton, 2001). As job crafting is a type of proactive person-job fit behavior (Niessen, Weseler, & Kostova, 2016; Tims, Derks, & Bakker, 2016; Wrzesniewski & Dutton, 2001), it is also a way to adapt to age-related changes. In fact, Kooij et al. (2015)

have suggested that crafting is important for successful aging since it offers older workers mechanisms to continuously adjust their job to their intrapersonal changes that occur in the aging process. Kooij et al. (2015) have suggested three primary forms of job crafting among older workers: (1) developmental crafting toward growth, such as attending training to sharpen knowledge and skills; (2) utilization crafting toward the optimization of resources, such as taking on tasks that activate unused skills; (3) accommodative crafting toward regulation of losses, such as hiring an assistant or looking for alternative ways to achieve goals. However, the authors built upon the SOC model (Baltes & Baltes, 1990) and Kanfer and Ackerman's (2004) framework to suggest forms of crafting among older workers. The way older workers *effectively* craft lacks empirical evidence (Kooij et al., 2015).

Taken together, life-span theories and job crafting (i.e., job design literature; Baltes & Baltes, 1990; Carstensen, 1995; Kanfer & Ackerman, 2004; Kooij et al., 2015) advocate that individuals proactively adopt different behaviors toward effective functioning and well-being throughout life. These regulation strategies toward a better fit involve various levels of action: selecting and changing goals, allocating resources, increasing tasks, reducing demands, prioritizing social interactions, and enriching roles. Yet it is still not clear what strategies employees adopt to establish person-job fit and why, and how organizational resources contribute to the process of adjustment over time.

### **2.2.3 Method**

#### *Research design and context*

With the aim of examining how workers assess demands, abilities, and needs, and how they better adjust to their work environments, from a phenomenological perspective, we adopted an inductive approach and followed the precepts of grounded theory (Glaser & Strauss, 1967; Strauss & Corbin, 1990).

We searched for a context that could serve as an “extreme case” (Eisenhardt, 1989) by offering a transparent view of the phenomenon under study. Professional ballet dancers embrace “embodied careers”, that is, those careers in which bodies are crafted for work and in which workers perform physically with their bodies (Coupland, 2015). Success and the length of their careers are dictated by their bodily capital (Bourdieu, 1984). Inevitably, aging implies a decline in physical strength, and slows the recovery from injuries (Wainwright & Turner, 2006).

Professional ballet dancers are typically highly intrinsically motivated, driven by their passion for dance and/or by a sense of calling (Wainwright & Turner, 2006). The decision to embrace ballet is taken at a very early age, mostly during infancy, leading to a strong self-identification with the role. Daily dedication is so demanding that it constrains the consideration of alternative selves. The strong identification to the role and the lack of alternative selves make endings of ballet dancing difficult career transitions (Coupland, 2015). The short-term career has two main implications. First, most dancers need to (re)create a new career after retiring from ballet (Coupland, 2015). Second, it generates a pressure to obtain and sustain resources, especially those related to physical capital.

### *Setting*

The ballet company investigated is a state-owned Portuguese company existing since 1977. Its classical, contemporary, and author’s repertoire constitute an appealing context for dancers from all over the world. Hierarchy is composed of five rungs: intern, corps de ballet, demi-soloist, soloist, and principal. The higher in the structure, the greater the amount of time performing alone on stage, and the greater the importance of the character. From the 80 dancers that comprise the company’s workforce, approximately 40 are not dancing either because they are suffering from physical injuries, or they are considered too old to perform but too young to retire. Some of the older dancers decide to stay in the company and perform

acting roles (i.e., interpretative roles that do not demand physical strength), while others embrace different careers. They may engage careers that represent an extension of ballet such as choreographer, *répétiteur* (i.e., tutor or coach of ballet dancers), physical trainer, or not (e.g., management).

### *Empirical material*

The first three months were dedicated to observation, for a total of approximately 150 hours. Because the organization gave the researchers full access to the site, the first author was able to attend classes, rehearsals, meetings, and performances. Observations indicated that there was a difference in the dancer's routine depending on age. The majority of "older" dancers would stay only for a class in the morning. The exception was for those interpreting acting roles.

Forty formal semi-structured interviews were conducted with 32 dancers (80 percent of the active workforce), 6 ex-dancers who continue to work at the organization, 1 prima ballerina who is now retired, and 1 prima ballerina who was responsible for managing the company. Sixty-five percent are women. Hierarchically, the sample is composed of 3 percent internship, 44 percent corps de ballet, 15 percent demi-soloist, 16 percent soloist, and 22 percent principal.

Differences were examined in three age groups: young age, dancers under 25 years of age (n=7; ranging from 20 to 25); middle age, dancers between 26 and 35 years of age (n=12; ranging from 2 to 35); and old age, dancers and ex-dancers who are above the age of 36 (n=21; ranging from 36 to 60). In this way, we were able to cover the perceptions of the dancers during their entire career, as well as of those who embraced different careers. As the cut-off between young and old workers is not fixed, thresholds were defined based on the information provided through the interviews, which were then confirmed within the literature (Wainwright & Turner, 2006).

We draw primarily on the data that emerged from the 40 semi-structured interviews to support our arguments. Depending on the dancer's availability, interviews lasted between 30 minutes and 1.5 hours, were recorded, and transcribed *verbatim*. These interviews were semi-structured, deliberately broad in scope, and covered topics such as the career trajectory of the dancers, positive and negative aspects of their jobs, and the company's functioning. Intentionally, we did not refer to aging. An interview guide is presented in Appendix A.

Because of the first author's previous experience as a ballet dancer (11 years cumulative, not professionally), we were able to leverage some of the benefits of insider/outsider research in these conversations (Bartunek & Louis, 1996). Overall, the raw data amounted to about 300 pages (double-spaced). The final number of interviews resulted from a state of conceptual saturation (O'Reilly, 2012).

#### *Data Analysis*

Data analysis progressed in three steps as recommended by grounded theory (Gioia, Corley, & Hamilton, 2012).

*Step 1: Producing provisional categories and first-order codes.* In an iterative fashion, data were simultaneously coded and analyzed (Glaser & Strauss, 1967). Informants' statements were organized according to their commonalities, forming provisional categories and first-order codes. Three members of the research team coded the first interviews together. Agreement was calculated based on the number of agreements divided by the total number of statements (i.e., meaning units) in a given transcript. The level of agreement between the coders did not fall below 85% at any point. We used the NVivo 2.0 software program to enter quotes and organize codes; 258 meaning units were coded from the 40 interviews. In this phase it became clear that young, middle-aged, and older dancers emphasize different aspects of their psychological well-being at work. Therefore, we decided to split the analysis into three age groups, which led us to exclude codes that are common to the three groups. For

example, when making sense of how they decided to become ballet dancers, most dancers relied on the calling dimension (e.g., “I didn't choose the ballet. The ballet chose me”). The code “calling” generated 52 meaning units and was equally representative in the three groups of age. By removing common aspects, the final meaning units amount to 185 codes, allowing us to focus on the objects of the study.

*Step 2: Creating theoretical themes.* First-order concepts were transformed into second-order themes, relying upon the interpretation of data collected as well as the revision of existing theory. Then, by travelling back and forth between the data and an emerging structure of theoretical arguments, categories were consolidated (Locke, 2001). Categories were discussed among the full research team and consensus was achieved after a few meetings.

*Step 3: Aggregating theoretical dimensions.* We looked for dimensions underlying these categories in an attempt to understand how different categories fitted together into a coherent picture. Some categories seemed more like behaviors (e.g., “developing”, “crafting”), others more like demands (e.g., “self-confidence”), or abilities (e.g., “physical strength”, “technical skills”).

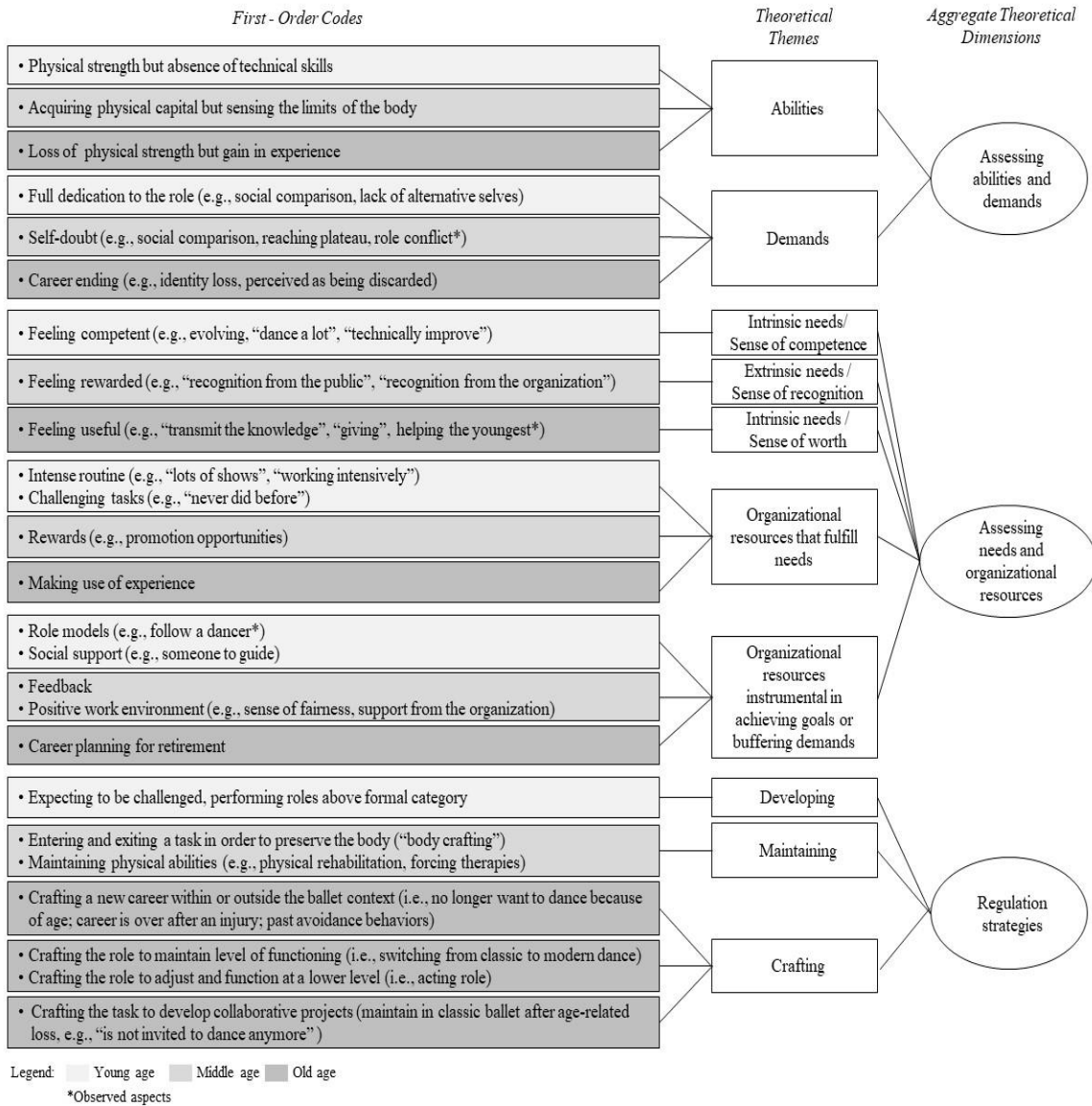


Figure 3. Data Structure

Figure 3 provides a graphic depiction of how we progressed from raw data to first-order codes, theoretical themes, and aggregate theoretical dimensions (Gioia et al., 2012). The aggregated theoretical dimensions explain how dancers assess abilities *versus* demands, and their needs *versus* organizational resources, and what regulation strategies were adopted to better adjust to their work. We use light to dark grey to differentiate among the three cohort groups.

## 2.2.4 Results

As we analyzed the data from each group of dancers, it became evident that dancers in our study assessed the demands of their work, their abilities to perform, their needs, and their goals differently according to age. Distinct regulation mechanisms were adopted to enhance person-job fit. Following the literature (Dawis, 2002), we asked which supplies (i.e., organizational resources) would be useful to dancers at that specific moment in order to sustain well-being. Distinct organizational resources emerged for each life stage. Figure 2 provides a framework of the interplay of demands and abilities, needs and organizational resources, and regulation strategies in the three groups of age leading to the process of adjustment. Assessing abilities and demands refers to how dancers in our study perceive the congruence between the demands that emanate from the work role and the work task, and their abilities (e.g., skills and resources) to fulfill those demands. Assessing needs and organizational resources relates to how dancers evaluate the correspondence between the resources provided by the organization and their needs and goals at that life stage. Regulation strategies are self-initiated actions that dancers adopt when a misfit between demands *and* abilities or needs *and* organizational resources is appraised. To orient the reader, we now summarize our findings by age cohorts.



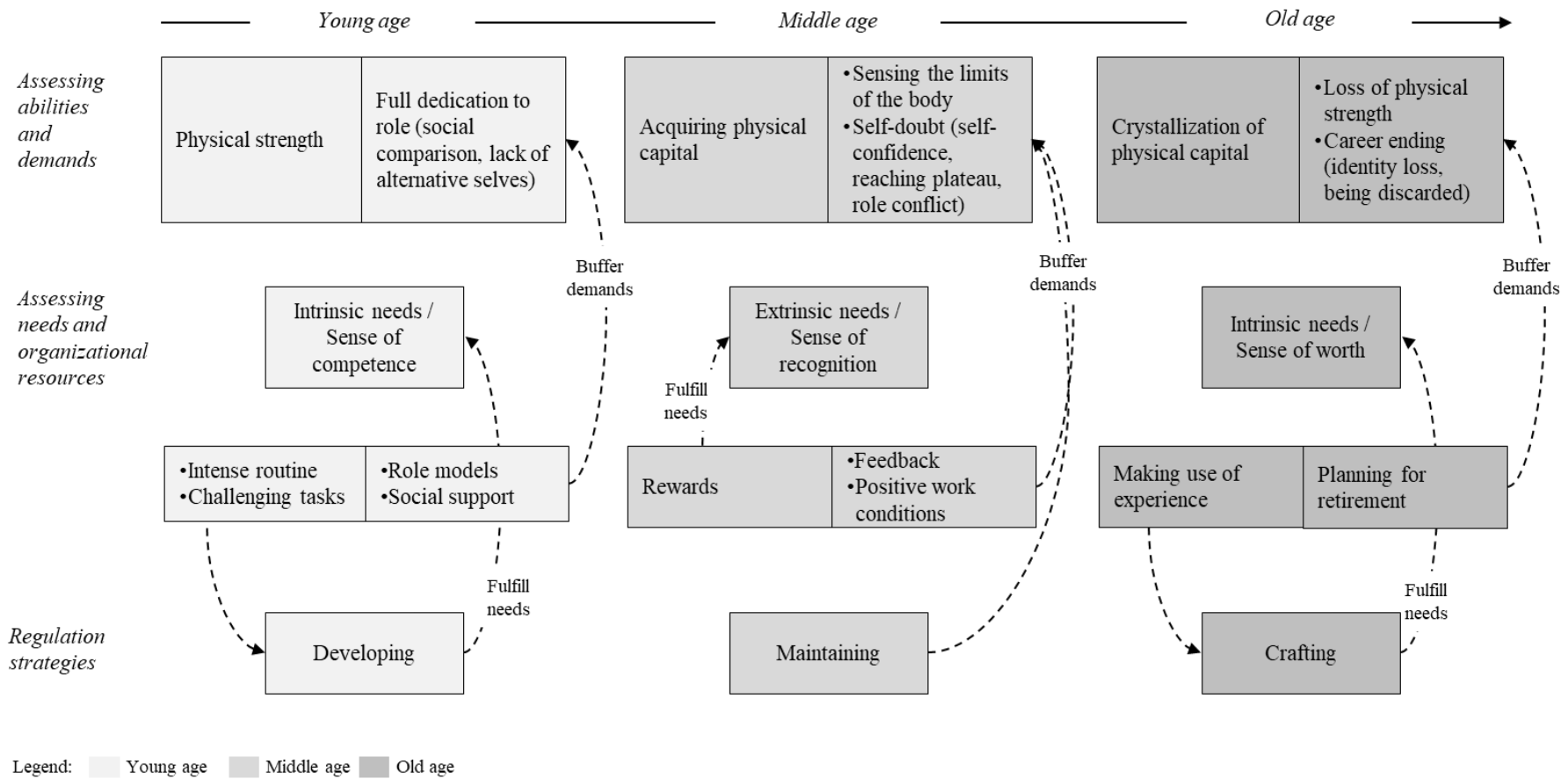


Figure 4. The interplay of demands-abilities, organizational resources-needs, and regulation strategies

## **Young age (dancers under 25 years of age)**

The young dancers in this study feel intrinsically motivated to dance. They see ballet as a vocation rather than a job. Dancing technically well is a goal and a requirement in ballet, so young dancers in this study engage in developing strategies in order to increase their technical skills and to dominate their “wild horses”.

### *Assessing abilities and demands*

*Physical strength.* Young dancers in this study feel full of physical strength. Physical demands seem to reinforce that ability:

*I feel my body is strong. I love to jump. I feel powerful.* [Corps de ballet, female, 19 years old]

*Full dedication to role (social comparison, lack of alternative selves).* Young dancers in this study struggle with the emerging identity of becoming professional ballet dancers, and compare their lives with others who are not in ballet, questioning their career choice:

*Because I am 20... For the moment the least positive thing...It is true that ballet took away part of my childhood... you don't have a life like other people... There are some days that I wonder if it is right to live like this, if I shouldn't be like the others, and be with my family...*  
[Corps de ballet, female, 20 years old]

Ballet demands full dedication from a very early age. The full dedication to ballet affects the possibility of alternative selves. This may be especially prominent in the case of ballet dancers, as they will need to re-craft a career after retiring from ballet, and they are so dedicated and absorbed that they lack time to consider and invest in alternatives.

*I should have started thinking about this [about what to do after finishing the career] but I feel very young and have so much to do ... It was impossible to start planning but now I feel that I should. I am still too absorbed.* [Corps de ballet, female, 25 years old]

### Assessing needs and organizational resources

*Intrinsic needs / Sense of competence.* In our study, professional dancers in their early ages seem to be driven by intrinsic needs such as the need to dance well, evolve, and feel technically prepared. Young dancers' main goal, in our study, is to perform. When asking the dancer what drives her as a dancer and what she aims to achieve, intrinsic motives emerged. The lack of extrinsic goals to achieve the highest level is evident:

*Becoming a principal, I don't think I want this... I want to dance, that's for sure.* [Corps de ballet, female, 20 years old]

*Intense routine and challenging tasks.* Important to young dancers in our study are those organizational resources that enable the acquisition of technical skills, since they are especially important to perform classical ballet (i.e., increasing the abilities to perform). Even an intense routine, which would be typically perceived as a demand, is assessed positively:

*I feel fulfilled when I had a class with an invited professor, and a rehearsal, and another... When I go home feeling that I worked intensively.* [Corps de ballet, female, 21 years old]

Job complexity and challenging tasks seem to give meaning to work since they fulfill the need to perceive competence:

*I enjoy being challenged, doing difficult performances, things I have never tried before, dancing with someone I have never danced with.* [Corps de ballet, female, 23 years old]

Challenge is so important for young dancers in our study that the possibility of breaking the relationship with the employer emerged when dancers perceived that they were not being challenged enough.

*Role models and social support.* Young dancers in this study also refer to a role model as important for them to feel motivated at work as it can help in their identity construction as professional ballet dancers, creating an ideal to emulate. In fact, the first author observed that during classes young dancers followed older dancers that they consider to be an example. Social support seems to be important to young dancers in our study, especially because the ballet context is characterized by the absence of a formal leader-follower relationship:

*I feel abandoned sometimes. We have the material [the body] ... and it depends on you to happen. I think it is important to have someone to guide you, for you to know where to go.*

[Corps de ballet, female, 25 years old]

### Regulation strategies

*Developing.* Dancers in this study adopt what we interpreted as a developing strategy, toward growth. Growth is achieved with the feeling of accomplishment, a sense of competence:

[Describing a good day at work] *...I have worked hard and well. I had rehearsals all day long, and I feel pain from the top of my head. But I feel I did things correctly and that I had evolved in something.* [Corps de ballet, female, 25 years old]

Performing roles above their hierarchical level is assessed as positive since it gives responsibility and a sense of evolving. To illustrate:

*For example, I am corps de ballet and I already performed as a soloist, and this is important because it gives responsibility.* [Corps de ballet, female, 24 years old]

### **Middle age (dancers between 26 and 35 years of age)**

In this study, middle-aged dancers perceive limitations in their bodies at the same time they acquire physical capital to know how to control their bodies. Perceiving physical constraints as well as reaching a plateau in their career makes dancers engage in maintenance behaviors. Midlife dancers in this study are extrinsically motivated and expect to be recognized.

#### *Assessing abilities and demands*

*Acquiring physical capital.* Middle-aged dancers in this study start to realize the extent of the limitations of their bodies. Bodily cues give the dancer immediate feedback on their ability and boundaries, which may be perceived positively, as a source of competence (i.e., physical capital), that will allow a better control over the body:

*The most positive aspect is that through ballet you learn the limits of your body, and you know more than anyone else how to use it... For example, if an old person falls down... if he is a dancer, he would react in a different elaborated manner, just as a gymnast or an athlete would.* [Soloist, male, 29 years old]

*Sensing the limits of the body.* There are dancers in this study who perceive the limitations in their bodies negatively:

*The negative side of ballet is the pain that I have started to feel.* [Corps de ballet, male, 29 years old]

*Self-doubt (self-confidence, reaching plateau, role conflict).* Middle-aged dancers in this study struggle with the lack of self-confidence, which may be related to the awareness of the limitations of the body and the anticipation of future losses in physical strength. This is visible in the extract below, in which a dancer alludes to the negative aspects of dancing professionally:

*Less positive is the constant struggle with criticism... You are never perfect....you are not good enough. So, it is a little bit of a fight. It is finding a balance between doing your best and coping with people's criticism. [Corps de ballet, male, 29 years old]*

Middle-aged dancers in this study also feel the pressure for reaching a plateau in their careers. As the career is short, this demand is amplified:

*I had a tough time last year because you come to a time in your career when you have a realization of either you are not going to achieve what you are hoping for or you are getting to an age and think of doing something else. [Corps de ballet, male, 29 years old]*

Additionally, role conflicts emerge from the accumulation of roles from inside and outside working lives, such as being a dancer and a mother, and lacking time to dedicate to family. This was observed by the authors, who saw children watching their father and mother performing during their school break.

#### Assessing needs and organizational resources

*Extrinsic needs / Sense of recognition.* Middle-aged dancers in this study appear to be motivated by extrinsic motives, in the form of recognition from either the public or the organization. Recognition is fundamental in this stage to their motivation. The following quote gives an example of a dancer who feel recognized by the organization and by his public (i.e., needs-supplies fit):

*I feel good working here. They recognize my talent and make me go further..... I have always been lucky to never have had "normal" roles, I have always performed as a soloist or principal dancer and these are the most rewarding. And I came to this company looking for the recognition of the public, of my name as an individual. In the company where I was*

*before, it was the appreciation of the group by the public, while here the appreciation of the public is for the dancer... [Demi-soloist, male, 27 years old]*

*Rewards.* In contrast to young dancers to whom performing roles above their formal categories was perceived as positive because it reinforced their sense of competence, middle-aged dancers in this study expect to be formally compensated:

*I was evolving. I got roles of principals and soloist... But then, I got no promotion so I don't feel recognized. [Corps de ballet, male, 34 years old]*

Middle-aged dancers in this study emphasize the fit (or misfit) between what the job offers them and what they are looking for in a job. The following statement represents how a prima ballerina perceives the misfit, and how it causes her a sense of frustration:

*Even though I have a huge passion for ballet, I know that the organization is not going to promote me, I will not perform a lot of shows... All my ambitions will not be reached. I have a salary, a profession, but it is my basic need, what I wish I will not get. [Principal, female, 33 years old]*

*Feedback and positive work conditions.* Dancers in this study receive short-term feedback during classes and rehearsals, but they lack general performance feedback, which seems to be instrumental for them to climb the ladder:

*There should be feedback individually because it is never too late to become a better dancer. It's never too late to achieve the next level. [Corps de ballet, male, 29 years old]*

Additionally, positive work conditions, such as stability from the organization, the infrastructure, and constant support to the dancer, are mentioned as supplies that support the dancers in their daily work.

### Regulation strategies

*Maintaining.* Midlife dancers in this study sense limitations in their bodies and so they adopt an active behavior toward maintenance of their current functioning. We named this mechanism “body crafting”, that is, intentionally balancing between attaching or detaching the body in specific circumstances in order to preserve it. It seems that the knowledge that they have acquired of their bodies is what makes “body craft” possible, resulting in a sense of control over the body:

*When I joined the company, I wanted to show what I was able to do. Now I can control what I do... If the show is in two months, I am not going to kill myself today...The body will evolve until then.* [Corps de ballet, male, 27 years old]

Middle aged dancers in this study emphasize that they do not need to do every act as they used to do in the past. This is because now “they know”, meaning that they have acquired the skills needed to control their bodies and that they are conscious that they have to look after their physical condition by making decisions to preserve it:

*We have to realize that it ends up not being about giving less, it is knowing how to use the dynamics. It's the same thing if I know that I have a 100-kilometer marathon, I am not going to run like crazy the first 50-kilometers.... When I say I'm in a new phase, it is because I now realize that I do not have to do all the acts anymore, not that I would not enjoy it but I do not need to anymore.* [Corps de ballet, female, 34 years old]

### **Old aged (dancers and ex-dancers with age of 36 years old or above)**

Older dancers in this study perceive the loss of physical strength but the crystallization of the physical capital. They aim to make use of the accumulated experience to still be part of the workforce when dancing is not possible anymore. They engage in four different crafting strategies, compensating for the loss of physical strength.



### Assessing abilities and demands

*Crystallization of physical capital.* Physical literacy, that is, physical confidence, competence, and tacit knowledge is a resource gained through experience. In our study, physical literacy resides in the knowledge and the control that dancers exert over their bodies. Losses in physical strength seem to be compensated by gains in experience and maturity:

*The most negative part of it is to accept that your body has limits and that at a certain age, and even though your “head” is at a higher stage and you have a different perception of your body, the body responds less.* [Soloist, male, 40 years old]

*Loss of physical strength.* Older dancers in this study experience the loss of physical strength and perceived it negatively. Pain is now inherent to this stage of their careers. In this study, dancers’ self-appraisal is that, when young they have physical strength but lack the knowledge that would allow dancers to take full advantage of their bodies. This feeling generates a sense of frustration, as can be interpreted from this retrospective account:

*In a career of a dancer, we reach an age when we have all the knowledge to perform in a way but we are not physically able anymore...it is frustrating.... when I was evolving, I had the physical capacity but not the knowledge.* [Soloist, male, 44 years old]

*Career ending (identity loss, being discarded).* In this study, older dancers’ psychological well-being is affected mostly by the perception of limited time left as dancers. This seems to be especially traumatic for those who combine *what they are* with *what they do*, to whom the identification with ballet came at a very early age:

[The transition to the end of the career] ... *was very hard. My life has always been the dance. Always on stage. I started at a very early age because my parents were also dancers. They had a school and choreographed for me. I was already dancing when I was 7 years old*

*things made just for me. And that is my life. I do not know how to explain it. There is nothing else I enjoy as much as ballet. [Principal, female, 41 years old]*

Expressions such as “sense of loss” and “sense of emptiness” emerged:

*There are people who go through that [the transition to retirement] without any problems. For me it was the opposite. Also for "Matilda" and "Claire". "Matilda" had a deep depression and was not able to recover. It happens to whom dancing was everything. I asked the help of a psychologist who told me that I have to find myself again as a woman. But I don't know how to be a woman. I just know how to be a dancer. I was a prima ballerina. One day I have everything and the next day I don't exist anymore. It is too violent... I have a child but it is not the same thing. [Principal, female, 41 years old]*

Additionally, older dancers in this study feel that they are being discarded as they are not invited to dance anymore, and no support is given to dancers in their transition to retirement. However, there are dancers to whom the transition to retirement constitutes a natural part of life. They make a clear separation in time (“time for dance and time to stop dancing”), and transfer meaning from inside to outside work, for example by giving support to their families.

#### Assessing needs and organizational resources

*Intrinsic needs / Sense of worth.* In this study, older dancers, like younger dancers, are intrinsically motivated. However, they differ in the sense that they want to continue to feel useful. This feeling of self-worth and being a valuable member of the organization, seems to be crucial for their intention to continue working:

*I am very close [to retirement] but I will stay as long as I feel I am useful and wanted.*

[Répétiteur, past: soloist, female, 53 years old]

Older dancers in this study reorient their goals through meaningful work, such as transmitting the experience that they have acquired to the youngest, teaching, mentoring colleagues or “giving back” (i.e., generativity). To quote:

[Important for me in that stage] *is to give. When you cannot give in a way [dancing], you find another way to give...teaching, helping, choreographing, transmitting your knowledge to others.* [Soloist, female, 40 years old]

*Making use of experience.* By making use of the experience acquired over the years, dancers in this study can compensate and adjust their tasks more easily to their current capabilities:

[What is necessary for people to be fully engaged] *...This possibility of having projects where people can be used, taking full advantage of their potential... We should have creative labs to develop projects... we can include old dancers.* [Demi-soloist, male, 36 years old]

*Planning for retirement.* During the transition to the retirement stage, older dancers in this study need guidance in finding a new direction after ballet:

*I think a good transition would be to prepare the dancer with psychological help at least a year or two before. And help the person to have something else to follow so as not to fall into a void.* [Principal, female, 41 years old]

### Regulation strategies

*Crafting.* Older dancers in this study adopt different strategies to cope with age-related changes. From our data, four strategies emerged. The first form of crafting we called “career crafting”, the case of dancers who no longer want to dance because of age, and craft a new career within or outside the context of ballet. The new career represents a new goal, following losses in physical strength (i.e., loss-based selection). When the new career is within the context of ballet, it gives a dancer the sense of continuity:

*Teaching is an extension of my passion for dance. In fact, everything in my life is influenced or will be by ballet. I think I could not radically change my life... I feel the need to stay close to dancers even if they do not dance anymore, and close to the stage, even if it is backstage.*

[Corps de ballet, female, 40 years old]

However, the re-crafted career does not generate the same level of fulfillment. It seems to be a way to extend employability:

*The longing that I felt...not as much for dance or being on stage, but for that joy that I felt when getting up in the morning to go to work. Honestly, I never felt it again... The passion for teaching is not even half of the passion that I have for ballet.* [Retired, past: principal, female, 56 years old]

During career crafting (i.e., the transition to a new career), and when dancers in this study perceive the loss in their ability to perform classical ballet (when compared to what they were able to do in the past), they protect their self-concept by adopting avoidance behaviors toward classical performances. An example is presented by a prima ballerina:

*I am not telling you that I will not dance. I will, except classical dance. I know that if I do, I will not dance as I danced before, so I prefer not to dance classical anymore...I want people to remember me as I was once. I don't have the same conditions anymore.* [Principal, female, 41 years old]

The second form of crafting is what we call “role activating crafting” toward modern dance. Dancers in this study compensate physical decline by moving to modern dance, maintaining their level of functioning. Modern dance is less physically demanding, roles are not influenced by age (e.g., performing the princess in classical ballet requires a young dancer), and is not regulated by formal hierarchies (as is classical ballet, the princess being a prima ballerina). Dancers can take

full advantage of their unused skills (i.e., their accumulated experience and physical capital), falling back on the autonomy provided by modern ballet to create their own pieces. The first author was able to attend initial rehearsals in classical and modern dance. While in classical ballet dancers must watch a ballet on the TV and replicate it; in modern dance the choreographer and the dancers brainstorm and create a new piece together. This idea is reflected in the extract below:

*When we start getting older, it becomes easier to perform modern dance because of the pain. Classical is too demanding, so anti-nature ... In most modern dances, we are the ones to create the story.* [Demi-soloist, female, 36 years old]

Role identification emerged as a validation mechanism to the shift to modern dance:

*I would say that I identify myself more in this period of my career with modern dance, as opposed to the beginning of my career when I identified myself only with the technical aspect of classical dance.* [Demi-soloist, male, 36 years old]

The third form of crafting among older workers we named “role adjusting crafting” toward character roles, which means that they will not need to dance anymore but to accept acting roles, lowering the level of functioning. It is a process of regulation after the loss of physical strength:

*I am this old and I will not be the prince anymore but I can do other roles... I was an obsessed classical dancer and that has always been my path. I started to try other things because I couldn't anymore. It forced me to look at dance in another way.* [Principal, male, 48 years old]

Role enrichment validates the shift to character roles and gives meaning to work:

*I am lucky because I am still active by playing character roles.... I persevere... They are also very demanding roles and imply study...When you are younger you don't realize that it*

*is equally important and enriching...It is not just executing steps... Knowing how to tell a story is the key point in ballet.* [Soloist, female, 47 years old]

The fourth strategy we named “collaborative crafting”. In our study a group of older dancers developed a project to perform in several public schools, with three main objectives in mind: to dance, to make use of their extended knowledge, and to stimulate art in children (as they may be the audience for ballet in the near future). Based on their shared experience, they have created something specific for children, answering to their intrinsic need to feel self-worth.

### **2.2.5 Discussion**

This study has shown how workers assess abilities and demands, needs and organizational resources, and how they better adjust to their work environments through different regulation strategies across their work lifespan. Our primary contribution is a framework that presents how the interplay between demands *and* abilities, needs *and* organizational resources, *and* regulation strategies contributes to a process of adjustment, consequently enhancing psychological well-being. We argue that psychological well-being at work depends on the level of correspondence between demands and abilities and needs and supplies, which varies according to age (e.g., chronological or organizational). When a misfit is perceived, workers engage in different self-initiated strategies to better adjust to their work environment. Our work contributes to the scant literature that integrates aging, well-being, and person-job fit (Zacher et al., 2014).

Moreover, our study has shown that, as needs change with age, organizational resources will be valued differently in each life stage, leading to the process of adjustment as long as they respond to specific career stage needs. For example, in an initial stage, an intense routine and

challenging tasks impact positively on the well-being since these demands (i.e., intense routine and challenging tasks) enhance the sense of competence (through developing). However, in a later stage, an intense workload would help to reinforce the decline in physical strength, causing a negative impact on the need to feel useful. Midlife workers are extrinsically oriented, and focus on what the job has to offer them in reward. It seems that the effort to obtain self-efficacy from the previous life stage is now expected to be compensated through recognition, a sense of return on investment (Kahn, 1990). Older workers need to compensate for age-related losses making use of their experience so they can fulfill their intrinsic need to feel self-worth (through crafting). In line with Demerouti et al. (2001), our study has shown that organizational resources can be classified in accordance to its purpose: those that fulfill needs (in our study intrinsic and extrinsic needs), and those that are instrumental to achieve work goals or buffer the impact of demands on well-being. An intense routine, challenging tasks, rewards, and making use of experience are critical because they fulfill needs. Role models, social support, feedback, positive work conditions, and planning for retirement emerge as buffers of stress in the relationship between demands-abilities and well-being. Our study contributes to the job demands-resource (JD-R) model (Demerouti et al., 2001) by showing that organizational resources will be valued differently in each life stage, since they will respond to specific goals that lead to the process of adjustment.

Our study further suggests different regulation strategies according to life stage. Young workers' motivation to increase abilities (i.e., technical skills) drives developing strategies, which is in line with growth orientation and resource acquisition goals from the SOC and SST models (Baltes & Baltes, 1990; Carstensen, 1995). We did not consider developing as crafting since it is not a proactive bottom-up approach (we interpreted *expecting to be challenged* as a

non-proactive top-down approach). Our findings may indicate that young workers do not actively craft for developing because they do not feel prepared to. In fact, there is recent evidence of the need to feel self-confident as an antecedent of crafting (Niessen et al., 2016). In a similar vein, Eraut et al. (2000) found that confidence is a requirement to proactively seek learning opportunities in the workplace, especially for novices and experienced workers in mid-career. The authors found a triangular relationship between confidence, support, and challenge. Confidence arises from successfully meeting challenges at work, and confidence to take on such challenges depends on feeling supported (Eraut et al., 2000). Our work has shown that support and challenge are important organizational resources for young workers.

During midlife, perceiving the remaining time in their careers, workers engage in a preserving behavior in order to maintain their current level of functioning. Maintenance goals are consistent with the SOC model (Baltes & Baltes, 1990). Different from what earlier research suggested, our study shows that detaching the body in specific circumstances to preserve it (what we named “body crafting”) does not express lack of engagement (Kahn, 1990). The preservation of the body may generate an increase in psychological well-being by enhancing a dancer’s sense of discretion, which is a basic human need and motive to craft (Wrzesniewski & Dutton, 2001). Maintaining is a source of control over one’s career and secures longer employability. Thus, we argue that maintaining strategies will lead to psychological well-being.

Our research further contributes to the literature on crafting by providing evidence of four forms of crafting among older workers. The first is career crafting. Workers engage in a new career, taking advantage of the knowledge accumulated over the years in their past profession. This career crafting is consistent with loss-based selection (Baltes & Baltes, 1990) since it follows age-related losses. Avoidance behaviors emerged, in line with SST (Carstensen, 1995).



The second form of crafting among older workers is role activating crafting, through which workers maintain their level of functioning, using resources that are not being optimized. There are two main advantages of adopting this type of role crafting: (1) role is chosen according to expertise, not age; (2) workers are involved in the decision process (choreographing in the case of ballet). By doing so, the impact of age dilutes. The third form is role adjusting crafting, lowering the level of functioning, what Kooij et al. (2015) consider accommodative crafting. The last type of crafting among older workers is task collaborative crafting. By adopting this regulation strategy, older workers, who feel that they are being discarded, better adjust by developing a shared meaningful project, fulfilling their need to feel self-worth. This goes in line with the concept of compensation for losses in the SOC model (Baltes & Baltes, 1990). Different from what Kooij et al. (2015) argued, our study does not provide evidence for developmental crafting among older workers.

Our results show that young workers focus on *enhancing* their personal resources via increasing demands in order to grow. They increase abilities in order to adjust the demands-abilities (D-A) equation. Midlife workers focus on *preserving* their personal resources so they can maintain D-A. Older workers focus on *compensating* for their losses in personal resources by finding a new goal (e.g., starting a new career), using an inactivated resource or by changing their task. These results are consistent with the SOC model (Baltes & Baltes, 1990): when young, individuals focus on growth (higher level of functioning), during midlife on maintenance (preserving the same level of functioning), and when older on regulation of losses via compensation (lowering the level of functioning). However, our work further suggests that, via “role activating crafting”, workers are able to maintain the same level of functioning when older. “Role activating crafting” appears as a strategy to adapt to age-related losses and to stay longer

in the workforce. Role enrichment and role identification arise as mechanisms of validation for role crafting (Pratt et al., 2006). Thus, our study gives examples of behavioral (role crafting) and cognitive crafting (role enrichment or role identification), and shows that cognitive and behavioral crafting can be deployed simultaneously.

### **2.2.6 Limitations and Future Research**

The study's findings are potentially limited by several factors. First, the specific context in which our proposed relationships were examined may restrict the generalizability of the findings. Resources that are valued in one context might not be beneficial in another setting. Second, our study focuses on inter-individual differences, making possible the evaluation of cohort differences. Future research may be necessary to analyze intra-individual differences. Third, professional ballet dancers progress in traditional linear careers. Future research may consider boundaryless careers (DeFillippi & Arthur, 1994) or protean careers (Hall, 1996). By disentangling age and tenure, it will be possible to understand how workers assess fit or misfit when embracing a new career. Last, our study focused on the concept of crafting introduced by Wrzesniewski and Dutton (2001) and further developed by Tims et al. (2012). However, it is important to have in mind that other authors had previously noticed that employees proactively change their jobs via self-initiated actions to change tasks or relational boundaries of their work in order to improve person-job fit, meaning, and work identity, giving it different labels, such as social shaping, workplace learning, or self-directed learning (see for example Ellinger, 2004; Kulik, Oldham, & Hackman, 1987).

### **2.2.7 Theoretical Implications**

This study has several implications for theory. First, crafting emerges as an adaptive process to respond to lifespan changes and is partly a function of the phases of one's lifetime. As far as we know, no other study has empirically differentiated crafting across the work lifespan. Second, and in line with Baltes, Staudinger, and Lindenberger (1999), our study has shown that the dynamic of gains and losses is conditioned by an individual's career stage. Third, we contribute to literature on well-being by showing that organizational resources may be central to fulfill intrinsic needs that are specific to life stages. In line with other well-being theories (e.g., the Job-Demands model; Demerouti et al., 2001), our work shows that organizational resources may fulfill intrinsic needs, be instrumental to achieve goals, or buffer the impact of demands on well-being (Demerouti et al., 2001). Our study presents evidence of how organizational resources are perceived across the work lifespan and why.

### **2.2.8 Implications for Practice**

Simultaneously, this study also has several implications for practice. Consistent with both lifespan psychology and organizational psychology literatures (Baltes & Baltes, 1990; Wrzesniewski & Dutton, 2001), our work has shown that when experiencing the loss in a main resource, other resources may be re-activated through crafting. Thus, even employees in embodied careers actively shape their work environment in order to better adapt to it. The importance of this is more evident for older workers to whom the loss of the physical capital is inevitable, and other careers in which age is determinant (e.g., fashion models, professional athletes, manual occupations). Both maintaining and crafting may be important strategies to extend employability and to promote active aging. Further, our framework will help HR

managers to track their employees' fit perceptions across time. Moreover, our study has presented evidence of age-related changes that derive not only from the task itself, but also from the role performed. HR managers may clarify role expectations and provide employees with career planning, in which expectations and accomplishments are monitored and adjusted over time. Practitioners should support employees in their transition to retirement, smoothing this transition and helping to envision *what is next*.

### **2.2.9 Conclusion**

This paper has three main contributions. First, by proposing an interplay of demands and abilities, needs and organizational resources, and regulation strategies that work in tandem to the process of adjustment, sustaining psychological well-being at work. The study has found that a process of adjustment between individuals and organizations is dynamic and involves variables that are related to the work task, to the work role, and to individuals' needs and goals. Second, by showing that organizational resources contribute differently across the work life span since they respond to specific goals that lead to the process of adjustment. Finally, we provide empirical evidence of forms of crafting across the work lifespan and among older workers.

### **2.3 STUDY 3. DAILY USE OF SELECTION, OPTIMIZATION, AND COMPENSATION STRATEGIES AND WELL-BEING: THE MEDIATING ROLE OF JOB CRAFTING<sup>2</sup>**

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<sup>2</sup> In a Revision Process (R1): Human Relations.

## **DAILY USE OF SELECTION, OPTIMIZATION, AND COMPENSATION STRATEGIES AND WELL-BEING: THE MEDIATING ROLE OF JOB CRAFTING**

### **ABSTRACT**

Based on the lifespan literature, job design theory, and conservation of resources theory, we tested a model in which daily job crafting mediates the relationship between daily use of selection, optimization, and compensation (SOC) strategies and daily well-being (work engagement and burnout). Hypotheses were tested using a daily diary study in which employees filled out a questionnaire for a period of ten consecutive workdays (N=72; 656 daily entries). Results of multilevel structural equation modeling analysis supported our mediation hypotheses, showing that job crafting mediates the relationship between daily SOC and daily work engagement and daily burnout, within and between individuals. Therefore, employees make greater use of job crafting on days that they adopt SOC strategies, and consequently, show higher positive levels of well-being at work. Additionally, we found that age was unrelated to the variables under analysis, indicating that self-directed strategies are important regulated mechanisms at any age. Knowing *how* to sustain well-being at work through the effective use of personal and contextual resources is critical, especially in times of extended working lives and increased burnout.

*Keywords:* regulation strategies; work engagement; burnout; aging; diary study; multilevel analysis

### 2.3.1 Introduction

Organizational researchers and practitioners have become increasingly interested in how to help workers remain healthy and productive, and how to stimulate them to continue working for a longer time (Bal, Kooij, & Rousseau, 2015). Sustaining well-being and functioning at work depends not just on the resources provided by organizations but also on how effectively individuals manage their available and future resources (Kooij, Tims, & Kanfer, 2015). Employees will maintain well-being and effective functioning if they have enough resources to meet job demands, such as long working hours, fast-paced work or low levels of autonomy (Baker & Demerouti, 2007; Hobfoll, 2011). Thus, individuals have a general tendency to invest in protecting against resource loss, recovering from losses, and gaining and accumulating resources (Hobfoll, Halbesleben, Neveu, & Westman, 2018). Previous research in the fields of lifespan theory and job design indicates that individuals take initiative to function effectively and adapt to work (Baltes & Baltes, 1990; Wrzesniewski & Dutton, 2001). For instance, they adopt strategies of selection, optimization, and compensation (SOC; Baltes & Baltes, 1990) to facilitate the optimization of resource allocation. Because personal resources are limited, individuals have to *select* a set of goals (over others), *optimize* available resources to meet these goals, and *compensate* for lost resources by acquiring or activating unused resources to facilitate goal achievement. SOC strategies help individuals to adapt to limited resources and achieve work goals, thus, resulting in increased performance and well-being (Bajor & Baltes, 2003; Freund & Baltes, 1998; Moghimi, Zacher, Scheibe, & Van Yperen, 2017; Venz & Sonnentag, 2015). In fact, there is evidence that the use of SOC strategies predicts work engagement (Weigl et al., 2014) and moderates the relationship between burnout and performance (Demerouti, Bakker, & Leiter, 2014).

Other form of self-regulation is job crafting. The job crafting literature (Wrzesniewski & Dutton, 2001) stresses that employees proactively engage in self-regulatory actions to change tasks or the relational and cognitive boundaries of their work. Job crafting involves changing the form or number of activities in a task, with whom one interacts while doing the job, or how one sees the job. Employees will act as “job crafters” when they feel that their job does not meet their needs (Wrzesniewski & Dutton, 2001), or to balance demands with resources (Tims & Bakker, 2010). Because such actions affect how individuals experience their work, they will enhance meaning, person-job fit, and work identity. Support was found for the relationship between job crafting and work engagement (Bakker, Tims, & Derks, 2012; Rudolph et al., 2017; Tims, Bakker, & Derks, 2013) and job crafting and burnout (Tims et al., 2013).

In this paper, we consider that SOC strategies predict employees’ well-being (i.e., engagement and burnout) through job crafting. To optimize resource allocation, employees adopt job crafting strategies, experiencing higher well-being. Whereas SOC focuses on the optimal combination of goals and *personal* resources (Zacher, Chan, Bakker, & Demerouti, 2015), job crafting refers to changes made to *contextual* resources. Personal and contextual resources constitute a set of raw materials employees dispose to achieve work goals and to have a better experience of their work. Moreover, whereas the driver of SOC use is the optimal functioning, job crafting is motivated by the need to enhance meaning and person-job fit (Demerouti, 2015). Therefore, we argue that SOC and job crafting are important self-initiated strategies to regulate resources and enhance well-being at work. Specifically, we expect that daily SOC use will have a positive impact on daily work engagement and daily burnout because employees who effectively manage their available resources experience better levels of well-being at work (Nahrgang, Morgeson, & Hofmann, 2011; Venz, Pundt, & Sonnentag, 2017; Weigl et al., 2014).



Further, we suggest that job crafting mediates the relationship between SOC use and work engagement and burnout. The adoption of SOC strategies at work ignites a motivational process during which individuals will enhance their personal resources, and, as a consequence, will feel that they can better craft at work (Baltes & Dickson, 2001; Zacher & Frese, 2011). Support for this argument can be found in the job demands-resources model (JDR; Demerouti et al., 2001) and conservation of resources theory (COR; Hobfoll, 1988), which predict that the more employees activate their personal resources, the higher their capability to deal successfully with work demands and enhance work engagement (Hobfoll, 1988; Xanthopoulou et al., 2007). As far as we know, there are no studies analyzing the mediation role of job crafting in the relationship between SOC use and well-being. Testing such a model contributes to understand the mechanisms through which SOC strategies affect employees' well-being, and also enriches the literature about the antecedents of job crafting (Petrou, Demerouti, & Schaufeli, 2015).

Our study also considers that age may operate as a boundary condition. According to the COR theory (Hobfoll et al., 2018), the salience of resource gain increases in the context of resource loss (Hobfoll, 2002; Hobfoll et al., 2018). Considering the “inevitable loss of resources that accompanies aging (...) a realignment of available resources to compensate for failing ones” is necessary (Hobfoll et al., 2018, p. 105). Therefore, possessing resource reserves and optimizing them will become critical for older workers to better adapt to age-related losses (Freund & Baltes, 1998, 2002; Hobfoll & Wells, 1998). We expect that SOC use will be higher among older workers (Baltes & Baltes, 1990; Kooij et al., 2015) since the use of SOC strategies helps to minimize age-related losses and maximize age-related gains (Freund & Baltes, 2002). For instance, loss-selection helps older employees to focus on those goals that they still can

achieve, whether through compensation older workers use alternative means after the loss in goal-relevant resources.

To test our moderated mediating model (Figure 1), we used a daily diary study design and tested the relationships between the variables at both the *within*- and the *between*-person levels. The vast majority of research on SOC use has focused on between-person level, presuming that the use of SOC strategies is stable rather than fluctuating over time (Moghimi et al., 2017; exceptions are Schmitt, Zacher, & Frese, 2012; Yeung & Fung, 2009; Zacher et al., 2015). Most behaviors fluctuate on a daily basis and are dependent on personal and contextual conditions (Ohly et al., 2010). It is timely to extend research by analyzing *within*-person variations, especially because studies have concluded that variances in daily SOC are associated with changes in daily work engagement (Zacher et al., 2015). Data was collected from 72 participants recruited through personal and professional contacts, who completed a general questionnaire (baseline) and one daily questionnaire over ten consecutive workdays (total sample observations= 656).

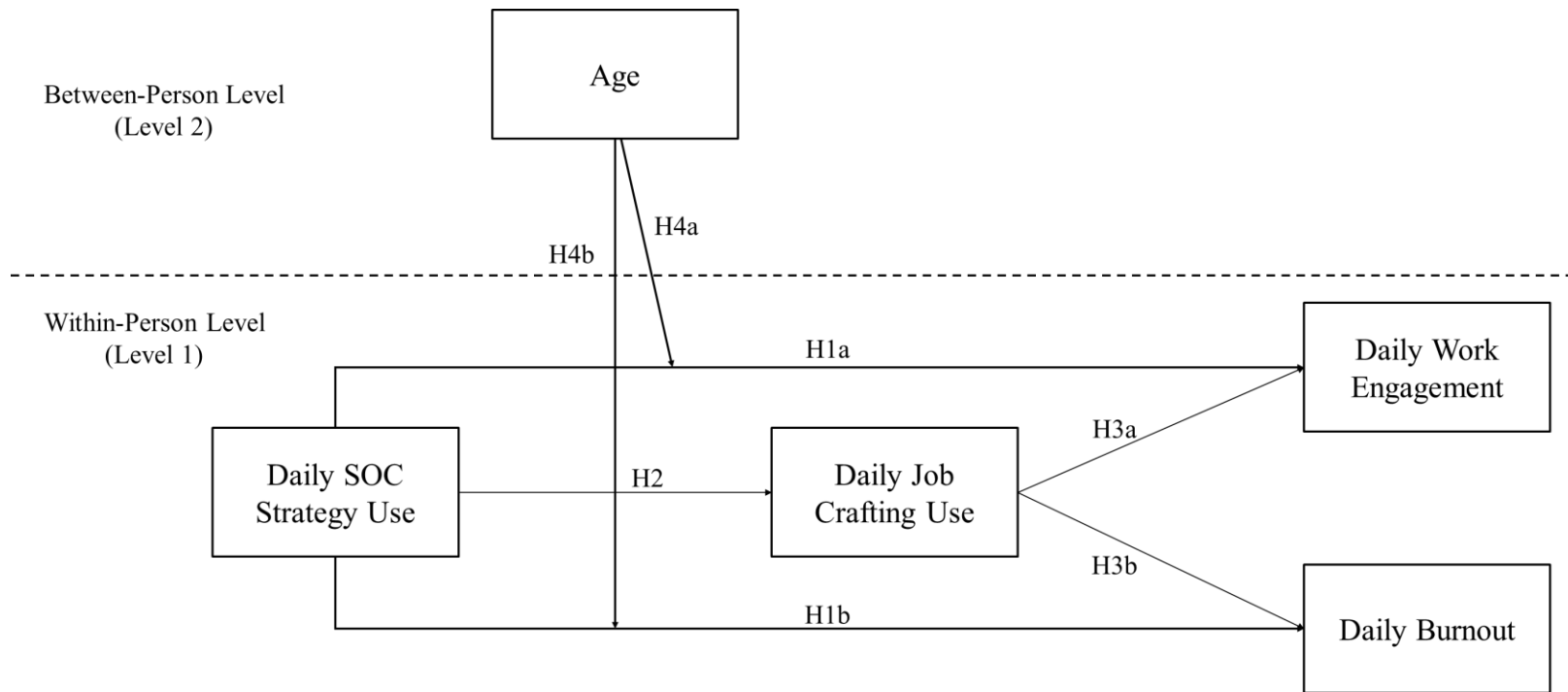


Figure 5. Conceptual Model

We aim to contribute to the literature on well-being and job design by showing that the effective use of SOC and job crafting contributes to enhance well-being at work at the *within* and *between*-person levels. Knowing *how* to effectively optimize resources in order to sustain well-being at work is critical specially to respond to two main challenges that individuals and organizations currently face. First, studies reveal increasing levels of burnout in many countries (Eurofound, 2018). Ten percent of the workforce in thirty-five European countries feels burned-out today (Schaufeli, 2018). Second, a longer working life is expected (Eurofound, 2019) since retirement age is being linked to life expectancy as a way to ensure the sustainability of pension systems in Europe.

### **2.3.2 Theoretical Background and Hypotheses Development**

#### ***Resources and well-being***

Resources are those personal characteristics, objects, conditions, or energies that are either valued in their own right (e.g., health, self-esteem, positive sense of the self), or because they act as a means for attainment or protection of valued resources. Since resources are a key operating mechanism by which well-being is influenced, individuals strive to obtain, retain, foster, and protect resources (Hobfoll, 1988; Hobfoll et al., 2018). Those with greater resources are less vulnerable to resource loss and more likely to gain additional resources, whereas those with fewer resources are more vulnerable to resource loss (Hobfoll, 1988, 2001; Hobfoll et al., 2018). Thus, individuals tend to accumulate resources, forming resources caravans that will help them to deal with situations in life, such sickness or aging (Hobfoll, 2002). Strain and burnout occur when individuals lose resources, are unable to regenerate resources after substantial investment, or when resources are threatened (Hobfoll & Wells, 1998).

Consistent with COR theory, the job demands-resources model states that resources are critical because they fulfill intrinsic needs, such as the need for personal growth, learning, and development, or because they help to buffer the impact of job demands and to achieve work goals (JD-R model; Bakker & Demerouti, 2007; Demerouti et al., 2001; Schaufeli & Bakker, 2004). Studies have suggested that job resources are related to work engagement through a process of work motivation, and there is full evidence that job resources (e.g., autonomy, feedback, social support) are the main predictors of work engagement (Hakanen, Bakker & Schaufeli, 2006; Llorens, Bakker, Schaufeli, & Salanova, 2006; Schaufeli & Bakker, 2004). Instead, demands are the most important predictors of burnout because they require sustained physical, emotional, or cognitive effort (Demerouti et al. 2001), and thus, are associated with physiological and psychological costs (Bakker, Demerouti, & Sanz-Vergel, 2014). Employees are at risk of developing burnout when confronted with high job demands and insufficient job resources. Nevertheless, individuals who experience a mismatch between their demands and resources may adopt self-initiated actions to maintain effective functioning and well-being (Zacher, 2015).

### **Regulation strategies of SOC and well-being**

The model of selection, optimization, and compensation (SOC; Baltes & Baltes, 1990) suggests that individuals adopt processes of developmental regulation toward three different goals in life: growth (i.e., reaching higher levels of functioning), maintenance (i.e., maintaining current level of functioning), and regulation of loss (i.e., functioning at lower levels). The SOC model states that the constraint of resources inherent to human existence demands an optimal prioritization of goals and allocation of means (i.e., resources). Elective selection involves the choice of goals based on preference, importance, or urgency. For example, an employee might

decide to not attend a conference in order to meet a project deadline (Moghimi et al., 2017). Loss-based selection refers to the reorganization of goals when individuals cannot pursue a goal anymore given the loss of a relevant mean, and when compensation is not possible. A physically injured ballet dancer, deciding to be a choreographer, is an example of this type of selection. Optimization involves the allocation, acquisition, or re-activation of necessary resources to reach selected goals and achieve a higher level of functioning. For instance, an employee may have additional training on leadership to be prepared to start a management position. Compensation is related to the regulation of loss and refers to obtaining substitute means when confronted with (potential) loss or decline in goal-relevant means. For example, an older employee who lost physical strength may ask for the help of coworkers (Freund & Baltes, 2000; Moghimi et al., 2017). Thus, whereas selection (either elective or loss-based) prevents workers of inefficient dispersion across multiple goals (Weigl et al., 2014), optimization and compensation are strategies to regulate personal resources. Personal resources are aspects of the self that refer to individuals' sense of their ability to control and impact the work environment (Hobfoll et al., 2003), such as efficacy beliefs (Bandura, 1997). SOC use is related to subjective indicators of well-being because by focusing and committing to a subset of goals, behavior is organized over time, contributing to a sense of purpose and meaning (Freund & Baltes, 2002). Since SOC use facilitates the optimal allocation of resources (Freund & Baltes, 2002), and resources are critical to sustain well-being (Hobfoll, 1989), we expect that daily SOC strategy use will be positively related to daily work engagement.

Work engagement is conceptualized as a “positive, fulfilling, work-related state of mind characterized by vigor, dedication, and absorption” (Schaufeli, Salanova, González-Roma, & Bakker, 2002, p. 74). Engaged employees feel physically strong, activated, and energized, very

enthusiastic about their work, cognitively focused, and fully immersed in their jobs (Kahn, 1990; Schaufeli, & Bakker, 2004). Evidence has been found linking an engaged workforce to several beneficial outcomes, such as employee well-being and performance (Schaufeli & Bakker, 2004; Schaufeli & Salanova, 2008). Although considered a stable variable across time, there is evidence of daily fluctuations in work engagement (Bledow, Schmitt, Frese, & Kühnel, 2011; Culbertson, Mills, & Fullagar, 2012; ten Brummelhuis & Bakker, 2012). Based on the theoretical arguments above, we expect that daily SOC strategy use will be positively related to daily work engagement.

*Hypothesis 1a:* Daily SOC use is positively related to daily work engagement.

Burnout is characterized by symptoms of exhaustion, cynicism and reduced professional efficacy (Demerouti, Bakker, & Leiter, 2014; Maslach, Jackson & Leiter, 1996; Schaufeli, 2018), and is caused by a long-term process of resources loss, following significant resource investment of time and energy (Gorgievski & Hobfoll, 2008; Hobfoll, 2001). The COR theory suggests that burnout does not only appear when situations are threatening, but also when individuals fail to gain additional resources (Hobfoll, 2001). Empirical research has shown substantial daily variations in burnout (Biron & Van Veldhoven, 2012; Xanthopoulou, Bakker, & Ilies, 2012; Xanthopoulou & Meier, 2014). Because SOC use optimize resources or compensate for the loss of resources, and helps individuals to deal with diminished resources, we propose that daily SOC use will relate negatively to daily burnout.

*Hypothesis 1b:* Daily SOC use is negatively related to daily burnout.

## **Job crafting as a mediating mechanism**

Job crafting refers to the self-initiated changes that individuals make in certain aspects of the job aimed at improving person–job fit, meaning and work identity (Tims, Bakker, & Derks, 2012; Wrzesniewski & Dutton, 2001). Not all employees will craft, but those who feel that their needs are not being met are more likely to do so (Wrzesniewski & Dutton, 2001). Job crafting is initiated by employees (i.e., bottom-up) and not explicitly authorized by the employer (Hornung et al., 2010). Wrzesniewski and Dutton (2001) introduced three forms of job crafting. Task crafting involves altering the content of a task, the scope of the tasks, or by changing the means of task accomplishment. An example is delegating tasks that interfere with the attainment of a deadline (Niessen et al., 2016; Tims, Bakker, & Derks, 2012). Relational crafting addresses interactions that individuals have at work, to the change of the quality and/or amount of interactions with others at work (Niessen et al., 2016). An example is talking more with colleagues who are helpful (Kooij et al., 2015). Cognitive crafting relates to how individuals alter their perception of the job, such as a hospital cleaner seeing his job as more than simply cleaning (Tims, Bakker, & Derks, 2012; Wrzesniewski & Dutton, 2001). Tims, Bakker, and Derks (2012) framed their definition of job crafting in the job demands–resources model (JD–R; Bakker & Demerouti, 2007; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001), and defined job crafting as the changes that employees may make to balance their demands and resources with their personal abilities and needs. To the authors, employees craft by increasing structural and social job resources (e.g., autonomy and feedback, respectively), increasing challenging job demands (e.g., start a new project), and decreasing hindering job demands (e.g., shortening working hours). Studies have shown that results will depend on the type of crafting. Increasing job resources and challenging job demands related positively to work engagement, whether



reducing demands and challenge resulted in a lower level of engagement (Petrou et al., 2012). Moreover, studies have demonstrated that job crafting varies along the day, and that daily job crafting is associated with daily work engagement (Petrou et al., 2012; Tims, Bakker, & Derks, 2014).

We argue that SOC use, as a goal-oriented approach (Freund & Baltes, 2002), will be positively related to job crafting strategies since in order to make changes in the job, individuals need to be focused and concentrated on a subset of goals. SOC use will start a motivational processes of goal selection and goal pursuit. Individuals may use SOC at work to select a subset of goals and optimize or compensate personal resources, and then craft in order to achieve work goals. We expect this relationship to hold at the day level because changes in behavior can be proceeded by changes in the context, in goals and means that occur in a daily-level. Moreover, employees who feel full of personal resources on a specific day may be more likely to regulate their actions at work to better adapt to it. Indeed, there is evidence that daily self-efficacy is positively associated to daily job crafting (Tims, Bakker, & Derks, 2014).

*Hypothesis 2: Daily SOC use is positively related to daily job crafting.*

We further hypothesize that the use of daily job crafting mediates the relationship between daily SOC and daily well-being, such that there will be a significant indirect effect of SOC on work engagement and burnout through job crafting. Support for this argument can be found in the job demands–resources model (JD–R; Bakker & Demerouti, 2007; Demerouti et al., 2001) and in the COR theory (Hobfoll, 1998, 2001). SOC strategies use results in an effective allocation of resources (to reach selected goals) and instigate a motivational process towards

crafting the work task to gain additional resources or to avoid the loss of resources, generating higher level of psychological well-being.

*Hypothesis 3a:* Daily job crafting mediates the relationship between daily SOC and daily work engagement.

*Hypothesis 3b:* Daily job crafting mediates the relationship between daily SOC and daily burnout.

### **Age as a moderator**

Aging involves changes in biological, psychological, and social functioning over time, in a dynamic process of resource loss and gain (Kanfer & Ackerman, 2004). For example, losses in fluid intelligence (i.e., working memory, abstract reasoning, attention, and processing of novel information) and gains in crystallized intelligence (i.e., general knowledge, extent of vocabulary, and verbal comprehension; Kanfer & Ackerman, 2004). The SOC model states that with increasing age, adults are pressured to be committed to a set of goals, and thus they will use more SOC strategies than young adults that are in a phase of exploring different life domains (Freund & Baltes, 2002). Although multiple studies in various professional contexts show that employees in general (i.e., irrespective of their age) benefit from the application of SOC at work (e.g., Demerouti et al. 2014; Müller et al. 2013; Schmitt et al. 2012; von Bonsdorff et al. 2014), the SOC model states that the use of SOC strategies is especially important to older adults through the regulation of loss (i.e., functioning adequately at lower levels; Baltes, Staudinger, & Lindenberger, 1999; Baltes & Baltes, 1990). To minimize losses and maximize gains, older individuals select fewer goals to remain productive or compensate for losses in age-related

means (Baltes & Baltes, 1990; Baltes, 1997). Therefore, we suggest that SOC strategies use and its positive impact on well-being will be higher among older employees.

*Hypothesis 4a:* Age moderates the relationships of daily SOC strategy use with daily work engagement, such that these relationships will be stronger among older compared to younger employees.

*Hypothesis 4b:* Age moderates the relationships of daily SOC strategy use with daily burnout, such that these relationships will be stronger among older compared to younger employees.

### **2.3.3 Method**

#### **Participants and procedure**

We used a daily diary study research design to test our hypotheses (Bolger, Davis, & Rafaeli, 2003; Ohly et al., 2010). Data were collected from 72 employees (71% female; age range: 21-63 years,  $M_{age}=38.07$ ,  $SD=9.81$ ), recruited through personal and professional contacts. Participants came from a broad range of jobs and occupations, including ballet dancers, elementary teachers, professors, lawyers, engineers, and IT managers. Participation involved completion of a baseline online survey in a first day, and completion of the same daily online survey at the end of each day, assessing daily SOC and job crafting use, work engagement and burnout. On average, participants completed the daily surveys on seven out of ten possible days, providing 656 entries. To measure SOC, job crafting, work engagement and burnout, we used a five-point scale from 1 (strongly disagree) to 5 (strongly agree).

## Measures

**Daily SOC.** We measured the daily use of SOC strategies with 12-item developed by Freund and Baltes (2002) and adapted to the work context by Zacher and Frese (2011). We adjusted the items to the day-level. Schmitt et al. (2012) and Yeung and Fung (2009) suggested that the use of SOC strategies can be reliably assessed at the day-level by adapting the items of the original scale in this way. Sample items for selection are “Today at work, I committed myself to one or two important goals” (elective selection) and “Today, when I couldn't do something at work as well as I used to, I thought about my priorities and what exactly is important to me” (loss-based selection). Sample items for optimization and compensation, respectively, are “Today at work, I made every effort to achieve a given goal”, and “Today, when something at work wasn't working as well as it used to, I asked others for advice or help”. Cronbach's  $\alpha$  ranged from .66 to .88 over the ten days ( $M = .82$ ).

**Daily work engagement.** Day-level work engagement was measured with the state 9-item day-level version (cf. Breevaart, Bakker, Demerouti, & Hetland, 2012) of the UWES (Schaufeli et al., 2006). Sample items are: “Today at work, I felt bursting with energy” (vigor), “Today, I was enthusiastic about my job” (dedication), and “Today, I got carried away when I was working.” (absorption). Cronbach's  $\alpha$  ranged from .90 to .96 over the ten days ( $M = .94$ ).

**Daily burnout.** Day-level burnout was measured with the state 10-item Burnout - Maslach Burnout Inventory- General Survey (Maslach, Jackson, & Leiter, 1996), which was then adapted to the day-level by referring to “today” in each item and writing the items in past tense (cf. Breevaart et al., 2012) Examples of items are: “Today, I felt emotionally drained from my work”, “Today, I became less interested in my work since I started working”, and “Today, I have

doubt the significance of my work”. Cronbach's  $\alpha$  ranged from .87 to .92 over the ten days ( $M = .90$ ).

**Daily job crafting.** Day-level job crafting was measured with the 9-item job crafting scale (Niessen, Weseler, & Kostova, 2016), adapted to the day-level by referring to “today” in each item and writing the items in past tense (cf. Breevaart et al., 2012). Examples of items are: “Today, I concentrated on specific tasks at work”, “Today, I invested in relationships with people whom I get along with the best”, and “Today, I viewed my tasks and responsibilities as being more than just part of my job”. Cronbach's  $\alpha$  ranged from .73 to .90 over the ten days ( $M = .81$ ).

### **Statistical analyses**

We used Mplus (Muthén & Muthén, 2012) to test our mediation model using structural equation modeling. The data collected had a multilevel structure, with days (level 1,  $N=656$ ) nested in individuals (level 2,  $N=72$ ). 47% of the total variance in work engagement resided at the *between*-person level, and 53% of the variance resided at the *within*-person level. For burnout, the percentages were 57 and 43, respectively. For job crafting, the percentages were 61 and 39, respectively. Finally, for SOC use, the percentages were 49 and 51, respectively. These results suggest that hierarchical linear modeling was appropriate (Hofmann, Griffin, & Gavin, 2000).

### **2.3.4 Results**

#### **Descriptive Statistics, Correlations, and Variance Components**

Table 7 shows means, standard deviations, and both *within* and *between*-person correlations for the study variables. At the within-person level, daily SOC use was positively related to daily

job crafting ( $r = .49, p < .01$ ) and to daily work engagement ( $r = .42, p < .01$ ), and negatively related to daily burnout ( $r = -.15, p < .01$ ). Furthermore, daily job crafting use was positively correlated with daily work engagement ( $r = .54, p < .01$ ), and was negatively related to daily burnout ( $r = -.36, p < .01$ ). Daily work engagement was negatively related to daily burnout ( $r = -.62, p < .01$ ). At the between-person level, SOC was positively related to job crafting ( $r = .50, p < .01$ ), and to work engagement ( $r = .47, p < .01$ ) but not to burnout ( $r = -.22, p > .05$ ). Moreover, job crafting was positively related to work engagement ( $r = .54, p < .01$ ) and negatively related to burnout ( $r = -.37, p < .01$ ). Work engagement was negatively related to burnout ( $r = -.73, p < .01$ ). Age was not correlated to the study variables.

Variables	M	SD	1	2	3	4	5
1. Daily SOC use	3.49	.52	1	.49**	.42**	-.15**	
2. Daily job crafting use	3.39	.58	.50**	1	.54**	-.36**	
3. Daily work engagement	3.66	.75	.47**	.54**	1	-.62**	
4. Daily burnout	2.23	.68	-.22	-.37**	-.73**	1	
5. Age	39.67	9.24	-.12	-.21	-.20	-.16	1

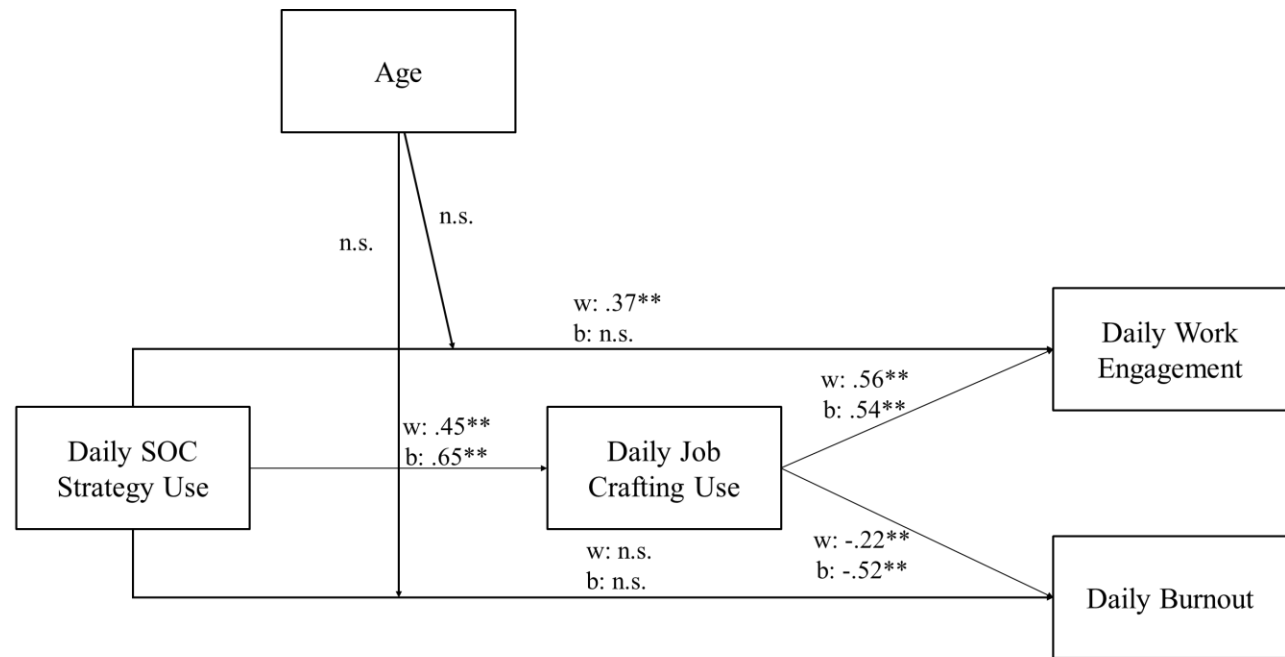
Note. Correlations above the diagonal are based on within-person (level 1) data (N=656), and correlations below the diagonal are based on between-person (level 2) data (N=72).

\* $p < .05$ ; \*\*  $p < .01$ .

Table 7. Means, (M), Standard deviations (SD), and correlations between study variables

## Mediation results

We followed Preacher, Zhang and Zyphur's (2011) guidelines to test a 1-1-1 multilevel SEM mediation, with age as a covariate. SOC strategy use was positively associated with daily work engagement at the within-person level ( $b = .37, SE = .07, p < .001; 95\% CI [.13, .50]$ ) but not at the between-person level ( $b = .29, SE = .25, p > .05; 95\% CI [-.34, .93]$ ). Thus, hypothesis H1a was partially supported. Additionally, daily SOC strategy use was unrelated to daily burnout at both levels of analysis (within:  $b = -.12, SE = .07, p > .05; 95\% CI [-.32, .07]$ ; between: ( $b = .09, SE = .26, p > .05; 95\% CI [-.57, .76]$ ). Thus, hypothesis H1b was not supported. Furthermore, results showed a positive and significant effect of daily SOC use on daily crafting both at the within ( $b = .45, SE = .05, p < .001; 95\% CI [.32, .57]$ ), and the between person levels ( $b = .65, SE = .16, p < .001; 95\% CI [.25, 1.0]$ ). Therefore, hypothesis H2 was supported. Results showed an indirect effect of SOC use and work engagement through daily job crafting both at the within ( $b = .56, SE = .08, p < .001, 95\% CI [.36, .75]$ ), and the between levels ( $b = .54, SE = .16, p = .000, 95\% CI [.13, .94]$ ), providing support for Hypothesis 3a. Moreover, results showed an indirect effect of daily SOC on daily burnout through daily job crafting at the within ( $b = -.22, SE = .07, p < .001, 95\% CI [-.40, -.04]$ ), and the between levels ( $b = -.52, SE = .16, p < .000, 95\% CI [-.93, -.11]$ ), providing support for Hypothesis 3b. Therefore, on days when employees make greater use of SOC strategies, they will engage more in crafting, which enhances their well-being (Figure 6).



Within-Person Level (w)

Ind Effect (WE) = .25\*\*

Ind. Effect (Bout) = -.10\*\*

Between-Person Level (b)

Ind. Effect (Bout) = -.42\*\*

Ind Effect (WE) = .40\*\*

Figure 6. Within and between-level analyses



The mediation model fits the data well ( $\chi^2[12] = 444.129$ ; CFI = 1.000; TLI = 1.000; RMSEA = 0.0000; SRMR value for within = 0.000; SRMR value for between = 0.000) and explains, (1) at the within-level, 15% of variance of daily job crafting, 17% of variance of employees' daily work engagement, and 22% of variance of daily burnout; (2) at the between-level, 15% of variance of daily job crafting, 15% of variance of employees' daily work engagement and 18% of variance of daily burnout.

### **Moderation results**

Hypotheses 4a and 4b predicted that age moderates the relationships of daily SOC strategy use with daily work engagement and daily burnout, such that these relationships will be stronger among older compared to younger employees. Cross-level interaction effects of daily SOC and age on daily work engagement and daily burnout were tested. As shown in tables 8 and 9, the moderation of age is not significant in the relationship with daily work engagement and daily burnout ( $\gamma = .00, p >.05, \gamma = 0, p >.05$ , respectively). Thus, Hypotheses 4a and 4b were not supported. Since there were no variances in slopes in daily SOC, we then tested the moderation of age in work engagement and burnout at the individual level (level 2). Results for the moderation effect were not significant ( $\beta = -.02; p >.05; \beta = .03; p >.05$ ; respectively).

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
<u>Fixed Effects</u>					
Intercept	3.65***	1.47***	1.71***	1.73***	1.76***
SOC use		0.62***	0.56***	0.54***	0.54***
Age				0.01**	
SOC * Age					0.00
<u>Variance Components</u>					
Level-1 or Within- individuals	0.31***	0.25***	0.22***	0.25***	0.25***
Level-2 or Between- individuals					
In intercept	0.27***	0.26***	0.21***	0.21***	0.21***
In slope SOC			0.00***	0.00	0.00
<u>Goodness of fit</u>					
Loglikelihood	-621.50	-558.56	-559.41	-509.61	-511.31
2xDeviance	-	-65.94***	0.84	-49.80***	1.70

Note. p<.10; \* p<.05; \*\* p<.01; \*\*\* p<.001

Table 8. Cross-level moderation results for work engagement

Predictor	Model 1	Model 2	Model 3	Model 4	Model 5
<u>Fixed Effects</u>					
Intercept	2.24***	3.01***	3.01***	2.94***	2.94***
SOC use		-0.22**	-0.22**	-0.20**	-0.21***
Age				-0.01	
SOC * Age					0.00
<u>Variance Components</u>					
Level-1 or Within- individuals	0.21***	0.20***	0.20***	0.25***	0.20**
Level-2 or Between- individuals					
In intercept	0.28***	0.27***	0.25***	0.21***	0.24***
In slope SOC			0.00	0.00	0.00
<u>Goodness of fit</u>					
Loglikelihood	-507.40	-496.916	-496.87	-465.40	-465.70
2xDeviance		-10.48	-.05	-31.47	.30

Note. p<.10; \* p<.05; \*\* p<.01; \*\*\* p<.001

Table 9. Cross-level moderation results for burnout

We ran an additional analysis splitting age in three different groups. Following De Lange et al. (2006), age sub-group analyses utilize the subsequent age cut-offs: young workers (under age 35), middle-aged workers (35 to 49 years of age) and old workers (aged 50 or older). One way analysis of variance (ANOVA) indicated that there were not significant differences among the groups in terms of SOC use [ $F(2,69) = .73, p >.05$ ], job crafting use [ $F(2,69) = 1.26, p >.05$ ], work engagement [ $F(2,69) = 1.17, p >.05$ ] and burnout [ $F(2,69) = 1.3, p >.05$ ].

### **2.3.5 Discussion**

We found support for our mediation model, showing that daily job crafting mediates the relationship between daily SOC and well-being. Mediation effects deliver insights into the process through which SOC might affect well-being at work. Although our study design does not allow us to make conclusions about causality, the present study demonstrated that changes in the level of SOC use will result in fluctuations of job crafting and well-being indicators.

### **2.3.6 Theoretical Implications**

Our study revealed that job crafting was an important mediating mechanism in the relationship between SOC and well-being at both the within-person and the between-person levels. These results support the proposition of COR theory (Hobfoll, 2001), which states that burnout does not only appear when situations are threatening, but also when individuals fail to gain additional resources, after investing on it. SOC, as an action-behavioral strategy to maximize gains and reduce losses, appears to have a negative association with burnout because additional (contextual) resources are obtained through job crafting. Moreover, our results suggested that SOC strategy use was positively related to work engagement at the *within*-person level. However, results were greater with the indirect effect of job crafting. An indirect effect

was observed at the *between*-person level. Therefore, the *combined* use of SOC strategies may be particularly important for work engagement but not for burnout. It may be that a positive impact on burnout will depend on the strategy adopted. Support for this argument can be found in Demerouti et al. (2014). Their study on the three different SOC strategies found that compensation was the most successful strategy in buffering the negative effects of burnout, but selection strategies intensified the negative effect of the exhaustion dimension of burnout.

Our main contribution is that our study showed how employees can effectively manage and gain additional resources. When employees actively regulated their personal resources (i.e., SOC strategy use), they were more likely to invest in job-related resources (i.e., job crafting). Consistent with COR theory and the job demands-resources model (Bakker & Demerouti, 2007; Hobfoll, 1998, 2001) our research revealed that when employees were resourceful, they were more likely to build on additional resources, resulting in a positive cycle of resource gain. It may be that SOC use, as a strategy to select reachable goals and allocate means, creates a *can do* motive to craft. Burnout comes from a helplessness feeling towards demands, and it can be that this “can do motive” may help individuals feel more in control and acting on the environment leading to less feelings of burnout. Niessen et al. (2016) studied antecedents of job crafting by examining can do (i.e., self-efficacy) and reason to (i.e., need for control and for positive self-image) factors. Self-efficacy was positively related to job crafting (task crafting and cognitive crafting). There is empirical evidence that relates positively the third component of burnout, personal accomplishment, to problem-focused coping, suggesting that a problem focused response and a positive self-appraisal may be mutually reinforcing (Lazarus & Folkman, 1984). Thus, our study gives also insights into antecedents of job crafting. As job crafting is initiated by employees and not explicitly authorized by the employer (Hornung et al., 2010; Wrzesniewski &

Dutton, 2001), it may be that individuals need to feel they are *capable of* before engaging in actively changing and customizing their jobs.

We showed that intraindividual fluctuations in SOC use and job crafting explain part of the total variance in well-being indicators. Whereas the between-person level refers to the way individuals generally behave, a day-level analysis gives insights into possible events that occurred that day and that triggered that behavior (Sonnentag, 2003; Xanthopoulou et al., 2009). In our study, daily SOC use was directly related to work engagement at the within-person level, but only indirectly (through job crafting) at the between-person level. This is consistent to the notion that psychological processes do not necessarily generalize across within- and between-person levels (Dalal, Bhave & Fiset, 2014).

Additionally, we found that age was unrelated to the variables under analysis, indicating that self-directed strategies are important regulated mechanisms at any age. This is in line with multiple studies in various professional contexts, which show that employees benefit from the application of regulation strategies irrespective of their age (Demerouti et al., 2014; Freund & Baltes, 1998; Kooij et al., 2017; Müller et al., 2013; Schmitt et al., 2012; Tims et al., 2013; von Bonsdorff et al. 2014). Our results may have been influenced by the fact that we used the combined measure of SOC, and according to the SOC model, older workers express a stronger focus on compensation strategies, while young workers concentrate on optimization (Freund, 2006).

### **2.3.7 Implications for Practice**

Studying daily fluctuations and how resources are accumulated offers a granular understating of the process through which well-being at work is maintained. Employees who targeted goals

and allocated their resources effectively were more likely to engage in job crafting, increasing their levels of well-being at work. Both SOC and job crafting are bottom-up initiatives that do not depend of management. Thus, individuals are under control of their own well-being at work. However, SOC and job crafting strategies should be acknowledged and stimulated by the management of organizations and practitioners. As strategies of success adaptation, SOC and job crafting should be even more important in a context of fast-paced business, extending working lives, and geographic dispersion. Fast-paced businesses increase job demands. Extending working lives requires constant adaptation to the working environment as individuals age. Geographic dispersion put more emphasis on how individuals proactively manage their resources. In order for SOC and job crafting to be stimulated by management (and to have a positive impact on both employees and employers), individual and organizational goals must be discussed and aligned, to guarantee that self-regulation actions to change the job will result in positive consequences for the organization. The strategies of SOC and job crafting should not replace top-down, organizational approaches. Rather, they should be combined with organizational initiatives such as job redesign that aim to improve working conditions and to provide a better experience at work.

### **2.3.8 Limitations and Future Research**

Despite the contributions of this study, we must acknowledge its limitations. First, our study does not allow conclusions about causal processes within and across days, and other causalities are possible. For example, engaged employees are more likely to use SOC and job crafting strategies at work. In a similar way, workers burned-out (i.e., with fewer resources) may be less capable of resource gain (Hobfoll, 2001), resulting in lower level of SOC use. Future research

should therefore use longitudinal designs or cross-lagged panel studies to replicate and extend our findings. Second, the use of self-reports may have introduced common method bias. Nevertheless, as the variables under analysis fluctuate on a daily basis, it would be impossible to have them reported by colleagues or supervisors. Response bias is reduced with diary studies because workers report their behavior in close proximity to what was experienced (Beal & Weiss, 2003; Bolger, Davis, & Rafaeli, 2003; Podsakoff, MacKenzie, & Podsakoff, 2012). Furthermore, participants are mainly highly educated professionals with senior hierarchical positions. This may cause problems of external validity since age-related losses may not be predominant among them. Additionally, participants come from broader contexts, such as academic or cultural. We could expect that academics may have much more job autonomy than classical ballet dancers. Further research should include other contexts and occupations with significant age-sensitive demands, and should control for job resources such as job autonomy, which are critical to the adoption of self-regulation mechanisms. Finally, the results considering age as a moderator should be interpreted with caution due to our limited number of participants aged above 50 years old.

### **2.3.9 Conclusions**

We aim to contribute to the literature on well-being and job design by showing that the effective use of regulation strategies contributes to enhance well-being at work at the within and between-person levels. The primary contribution of our study is that it demonstrated *how* employees can effectively manage and gain additional resources. We found support for our theoretical model, showing that when employees actively regulate their personal resources (i.e., SOC strategy use), they are more likely to invest in job-related resources (i.e., job crafting).



Therefore, employees are able to influence their daily well-being through self-regulated strategies of SOC and job crafting. Additionally, SOC use relates positively with burnout only when additional (contextual) resources were obtained through job crafting. Moreover, our study showed that SOC use and job crafting at within- and between-person levels of analysis may follow different paths. Finally, we found that age was not correlated to SOC nor to job crafting, indicating that self-directed strategies of SOC and job crafting are important regulation mechanisms at any age.

## **CHAPTER 3. DISCUSSION AND CONCLUSION**

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### **3.1 THEORETICAL IMPLICATIONS AND CONTRIBUTIONS**

The overall aim of this thesis was to offer a more integrated perspective on how workers better adapt to work during the aging process, while taking insights from lifespan developmental theories, job design, stress theory and person-environment fit literature. This thesis addresses unresolved issues stemming from earlier research in this area. In this chapter, the main findings related to each key issue will be summarized and discussed in terms of their theoretical, as well as their practical relevance. This thesis contributes to the fields of aging, well-being and job crafting. A summary of key issues, main findings and theoretical and practical implications is provided in Figure 7.

<i>Key Issues</i>	<i>Main Findings</i>	<i>Theoretical Implications</i>	<i>Practical Implications</i>
<p><b>Key Issue 1 (study 1): How age and work engagement relate</b></p> <p>(1) Are old workers disengaged?  (2) What job resources are perceived as important to young, middle-aged and old workers?  (3) Are job resources perceived differently among age cohorts?</p>	<ul style="list-style-type: none"> <li>• Age and work engagement are positively related, contradicting preconceptions of disengagement among employees in a pre-retirement phase. Midlife workers present the lowest level of engagement;</li> <li>• Job resources of development are perceived as more important among young workers. Job resources of a positive work environment are perceived as more relevant among young and midlife workers. Recognition and meaningful work are important to work engagement regardless of age.</li> </ul>	<ul style="list-style-type: none"> <li>• Contribution to aging and career theories: older workers of today, the “third age”, have a new perspective about work and retirement;</li> <li>• Contribution to the job demands-resource model by showing that organizational resources will be valued differently across age.</li> </ul>	<ul style="list-style-type: none"> <li>• Older workers can be engaged even when approaching retirement age;</li> <li>• Maintaining an engaged workforce implies investments in job resources such as development, meaningful work, recognition and a positive work environment;</li> <li>• Young employees value development and a positive work environment more than old employees.</li> </ul>
<p><b>Key Issue 2 (study 2): How person-job fit is achieved during the process of aging</b></p> <p>(1) How do workers assess fit or misfit across time?  (2) What regulation strategies do workers engage in to better fit and why?  (3) Is crafting different among older workers?</p>	<ul style="list-style-type: none"> <li>• Psychological well-being at work depends on the level of correspondence between demands and abilities and needs and supplies, which varies according to age (e.g., chronological or organizational);</li> <li>• Organizational resources will be valued differently in each life stage, leading to the process of adjustment as long as they respond to specific career stage needs;</li> <li>• Evidence of four forms of crafting among older workers.</li> </ul>	<ul style="list-style-type: none"> <li>• Contribution to well-being theories: a framework of demands and abilities, needs and organizational resources, and regulation strategies across the work life span; evidence of how resources are perceived differently across the work lifespan and why;</li> <li>• Contribution to job design by empirically presenting forms of job crafting among older workers.</li> </ul>	<ul style="list-style-type: none"> <li>• Both maintaining and crafting as important strategies to extend employability and to promote active aging;</li> <li>• Our framework may help HR managers to track their employees’ fit perceptions across time.</li> </ul>
<p><b>Key Issue 3 (study 3): How SOC and Job crafting relate and affect well-being</b></p> <p>(1) How SOC use relates to job crafting?  (2) Is job crafting a mediator in the relationship between SOC use and work engagement and burnout ?  (3) Is the relationship between SOC use and well-being stronger among older individuals?</p>	<ul style="list-style-type: none"> <li>• Job crafting mediates the relationship between daily SOC and daily work engagement and daily burnout, within and between individuals. Employees make greater use of job crafting on days that they adopt SOC strategies, and consequently, show higher positive levels of well-being at work;</li> <li>• Self-regulated mechanisms are important at any age.</li> </ul>	<ul style="list-style-type: none"> <li>• Contribution to lifespan theories and job design literature: job crafting has an important role in the relationship between SOC use and work engagement and burnout;</li> <li>• Contribution to well-being theories: intraindividual fluctuations in SOC use and job crafting explain part of the total variance in well-being indicators.</li> </ul>	<ul style="list-style-type: none"> <li>• Knowing how to sustain well-being at work through the effective use of personal and contextual resources is critical, especially in times of increased burnout and extended working lives;</li> <li>• SOC and job crafting strategies should be acknowledged and stimulated by the management of organizations and practitioners.</li> </ul>

Figure 7. Key issues, Main findings, Theoretical and Practical Implications

*Key Issue 1: How age and work engagement relate*

*Contribution to aging and career theories: older workers of today, the “third age”, have a new perspective about work and retirement.* Our research contributes to the literatures on well-being and aging by showing that older workers are engaged employees. It seems that past career theories that argue for a decline in engagement with age are out-of-date. Older workers of today, the “third age”, have a new perspective about work and retirement. Since they have a longer lifespan along with good health, they want to remain longer in the workforce. Additionally, our work brings insights about the inconsistency in results regarding work engagement and age. The utilities sector is one with the lowest level of engagement (Quantum workplace, 2017). However, our site shows that it is possible to have higher levels of work engagement in manufacturing and production jobs, even among older workers. Thus, more than occupation type, to study work engagement and age, researchers need to understand if the organization provides employees the job resources they need. If the organization provides the resources that allow older workers to effectively perform, this will affect positively well-being. Further, our research includes middle-aged employees who have received less attention from researchers who have privileged to study age differences among two groups: young and old workers (exceptions for James et al., 2011; Pitt-Catsouphes & Matz-Costa, 2008, 2009).

*Contribution to the job demands-resource model by showing that organizational resources will be valued differently across age.* Our study contributes to the job demands-resource model (JD-R; Demerouti et al., 2001) by showing that organizational resources will be valued differently across age. Not only different working contexts affect the importance allocated to

specific job characteristics as proposed by the JD-R model, but also within working contexts across different life stages. This may happen because resources will answer to different goals and needs that are specific to a life stage. The job demand-resources model posits that individuals will maintain well-being and optimal functioning at work if they have enough resources to meet job demands (Demerouti et al., 2001). Yet calendar age causes the loss of resources to deal with demands, affecting work ability. Organizational age (i.e., tenure) increases demands through increased responsibility from a more senior position or through the need to better conciliate work and life. Consequently, age impacts well-being. Further, the job demands-resource model (Demerouti et al., 2001) stresses the importance of job resources because they fulfill intrinsic needs, such as the need for personal advancement and growth. However, age affects intrinsic needs. Learning and a positive work environment will be more important to the young than to the older workers. Thus, to fully comprehend aging, it is important to consider not only what is occurring at a specific context (as emphasized by the JD-R model; Bakker, & Demerouti, 2007), but also what is happening with individuals within that specific context at that moment in life.

*Key Issue 2: How person-job fit is achieved during the process of aging*

*Contribution to well-being theories by showing how person-job fit is achieved throughout the work lifespan.* Our primary contribution is a framework that presents how the interplay between demands *and* abilities, needs *and* organizational resources, *and* regulation strategies, contributes to a process of adjustment, consequently enhancing psychological well-being. In line with Baltes, Staudinger, and Lindenberger (1999), our study has shown that the dynamic of gains and losses is conditioned by an individual's career stage. We argue that psychological well-being at work depends on the level of correspondence between demands and abilities and needs and supplies, which varies according to age (e.g., chronological or organizational). When a misfit is

perceived, workers engage in different self-initiated strategies to better adjust to their work environment. Our work contributes to the scant literature that integrates aging, well-being and person-job fit (Zacher et al., 2014).

*Contribution to literature on well-being by presenting evidence of how organizational resources are perceived differently across the work lifespan and why.* We contribute to literature on well-being by showing that organizational resources may be central to fulfill intrinsic needs that are specific to life stages. This research presents evidence of how organizational resources are perceived across the work lifespan and why. As needs change with age, organizational resources will be valued differently in each life stage, leading to the process of adjustment as long as they respond to specific career stage needs. For example, in an initial stage, an intense routine and challenging tasks impact positively on the well-being since these demands (i.e., intense routine and challenging tasks) enhance the sense of competence (through developing). However, in a later stage, an intense workload would help to reinforce the decline in physical strength, causing a negative impact on the need to feel useful. Midlife workers are extrinsically oriented, and focus on what the job has to offer them in reward. Older workers need to compensate for age-related losses making use of their experience so they can fulfill their intrinsic need to feel self-worth (through crafting).

*Contribution to job design by empirically presenting forms of job crafting among older workers.* Our research contributes to the literature on crafting by showing that job crafting emerges as an adaptive process to respond to lifespan changes and is partly a function of the phases of one's lifetime. Additionally, we provide evidence of four forms of crafting among older workers, closing this gap in the literature on crafting. The first form is career crafting. Workers engage in a new career, taking advantage of the knowledge accumulated over the years

in their past profession. This career crafting is consistent with loss-based selection (Baltes & Baltes, 1990) since it follows age-related losses. Avoidance behaviors emerged, in line with SST (Carstensen, 1995). The second form of crafting among older workers is role activating crafting, through which workers maintain their level of functioning, using resources that are not being optimized. There are two main advantages of adopting this type of role crafting: (1) role is chosen according to expertise, not age; (2) workers are involved in the decision process (choreographing in the case of ballet). By doing so, the impact of age dilutes. The third form is role adjusting crafting, lowering the level of functioning, what Kooij et al. (2015) consider accommodative crafting. The last type of crafting among older workers is task collaborative crafting. By adopting this regulation strategy, older workers, who feel that they are being discarded, better adjust by developing a shared meaningful project, fulfilling their need to feel self-worth. This goes in line with the concept of compensation for losses in the SOC model (Baltes & Baltes, 1990). Figure 8 shows how the four forms of job crafting among older workers relate to previous lifespan theories.

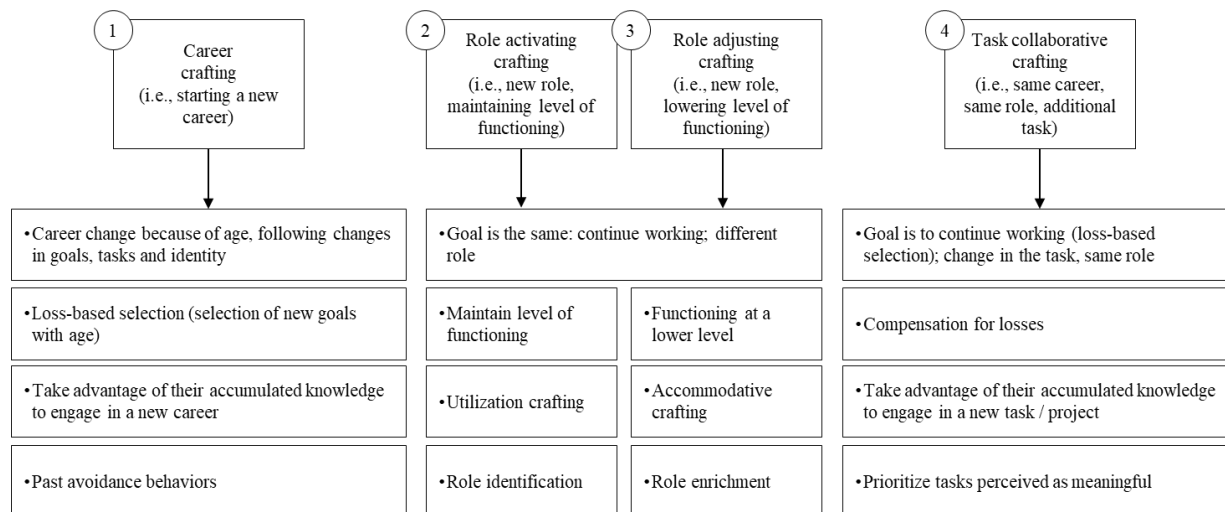


Figure 8. Job crafting among older workers and its relation to lifespan theories

### Key Issue 3: How SOC and Job crafting relate and affect well-being

*Contribution to lifespan theories and job design literature: job crafting has an important role in the relationship between SOC use and work engagement and burnout.* The main contribution of this study is the evidence found regarding how employees can effectively manage and gain additional resources. That is, we showed that when employees actively regulated their personal resources (i.e., SOC strategy use), they are more likely to invest in job-related resources (i.e., job crafting). This shows how resources are built. Consistent with COR theory and the JD-R model (Bakker & Demerouti, 2007; Hobfoll, 1998, 2001) our research shows that when employees are resourceful, they are more likely to build on additional resources, resulting in a positive cycle of resource gain. It may be that SOC use, as a strategy to select reachable goals and allocate means, creates a *can do* motive to craft. Thus, our study gives also insights into antecedents of job crafting. As job crafting is initiated by employees and not explicitly authorized by the employer



(Hornung et al., 2010; Wrzesniewski & Dutton, 2001), it may be that individuals need to feel resourceful before engaging in actively changing and customizing their jobs.

*Contribution to lifespan theories: intraindividual fluctuations in SOC use and job crafting explain part of the total variance in well-being indicators.* We showed that intraindividual fluctuations in SOC use and job crafting explain part of the total variance in well-being indicators. Whereas the between-person level refers to the way individuals generally behave, a day-level analysis gives insights into possible events that occurred that day and that triggered that behavior (Sonnentag, 2003; Xanthopoulou et al., 2009). In our study, daily SOC use was directly related to work engagement at the within-person level, but only indirectly (through job crafting) at the between-person level. This is consistent to the notion that psychological processes do not necessarily generalize across *within-* and *between-*person levels (Dalal, Bhawe & Fiset, 2014).

### **3.2 PRACTICAL IMPLICATIONS**

This thesis has important practical implications. We show that approaching retirement does not mean disengaging from work, or counting the time until employees retire. Indeed, our study shows that older workers have the highest level of work engagement. Older employees can be active, enthusiastic and dedicated to their work. Organizations, especially those who need to retain older workers to avoid the loss of accumulated knowledge, wisdom and experience, should elucidate their workforce to avoid negative attitudes and stereotypes about old workers. Nonetheless, maintaining an engaged workforce implies investments in job resources that do play a central role in maintaining a worker's well-being and successful aging. Investing in job resources that are valued mean creating a perception that the organization is concerned with the

employees' well-being. The employee will then put extra effort and dedication to his/her work. Further, while there are job resources that are equally valued by employees across their work lives, such as *recognition* and *meaningful work*, the importance given to some job resources differ in accordance to age. Thus, organizations may segment resources in order to better influence psychological well-being at work. Young workers place a higher importance to career development, and so organizations need to invest on creating stimulating career paths. Midlife and old workers place less value in acquiring new skills, which can represent an additional challenge for HR managers in order to maintain employability and deal with obsolete skills, especially in face of the digital challenges confronting organizations. HR managers may focus on *acquired* skills rather than on *acquiring* skills, and allocate older workers to more rewarding roles, such as mentoring or teaching. Employers can use intergenerational activities to exchange knowledge between younger and older workers. Although development is more important among young workers, middle-aged and old employees still value learning opportunities. But as young employees are in today's context no longer expecting to work in a single organization for a long period of time and are less committed than previous young workers (Harrington & Hall, 2007), organizations offering career development opportunities might be more likely to attract and retain young workers. A supportive environment is especially important among young and midlife workers. HR professionals are in a unique position to create a supportive culture through the implementation of HR practices and policies that signal to the employees that they are treated fairly and with respect.

Consistent with both lifespan psychology and organizational psychology literatures (Baltes & Baltes, 1990; Wrzesniewski & Dutton, 2001), our work has shown that when experiencing the loss in a main resource, other resources may be re-activated through crafting. The importance of

this is more evident for older workers to whom the loss of the physical capital is inevitable, and other careers in which age is determinant (e.g., fashion models, professional athletes, manual occupations). Both maintaining and crafting may be important strategies to extend employability and to promote active aging. Further, our framework of demands-abilities, needs-resources, will help HR managers to track their employees' fit perceptions across time. Moreover, our study has presented evidence of age-related changes that derive not only from the task itself, but also from the role performed. HR managers may clarify role expectations and provide employees with career planning, in which expectations and accomplishments are monitored and adjusted over time. Practitioners should support employees in their transition to retirement, smoothing this transition and helping to envision *what is next*.

Our findings show that job crafting mediates the relationship between SOC use and well-being. Studying daily fluctuations and how resources are accumulated offers a granular understating of the process through which well-being at work is maintained. Employees who targeted goals and allocated their resources effectively were more likely to engage in job crafting, increasing their levels of well-being at work. Both SOC and job crafting are bottom-up initiatives that do not depend of management. Thus, individuals are under control of their own well-being at work. However, SOC and job crafting strategies should be acknowledged and stimulated by the management of organizations and practitioners. As strategies of success adaptation, SOC and job crafting should be even more important in a context of fast-paced business, extending working lives, and geographic dispersion. Fast-paced businesses increase job demands. Extending working lives requires constant adaptation to the working environment as individuals age. Geographic dispersion put more emphasis on how individuals proactively manage their resources. In order for SOC and job crafting to be stimulated by management (and

to have a positive impact on both employees and employers), individual and organizational goals must be discussed and aligned, to guarantee that self-regulation actions to change the job will result in positive consequences for the organization. The strategies of SOC and job crafting should not replace top-down, organizational approaches. Rather, they should be combined with organizational initiatives such as job redesign, that aims to improve working conditions and to provide a better work experience.

### **3.3 LIMITATIONS**

Despite the contributions of these three empirical studies, we must acknowledge some limitations. Each study (presented in chapter 2) has a section dedicated to limitations. We present the main limitations of our three empirical studies next.

Our first and second studies were conducted in specific contexts – an utility organization and a classical ballet company - which may restrict the generalizability of the findings. Resources that are valued in one context might not be beneficial in another setting. Results from study one could have been different in an occupation physically demanding, in which age-related changes are more problematic to compensate. Additionally, our first and second studies focused on inter-individual differences, making possible the evaluation of cohort differences. A longitudinal study may be necessary to analyze intraindividual differences.

In our third study, results from structural equation modeling cannot be used to assume that the causal ordering in our model is the correct one. It may be possible that engaged employees are more likely to use SOC and job crafting strategies at work. In a similar way, workers burned-out (i.e., with fewer resources) may be less capable of resource gain (Hobfoll, 2001), resulting in lower level of SOC use. Additionally, the use of self-reports may have introduced common

method bias. Response bias is reduced with diary studies because workers report their behavior in close proximity to what was experienced. Furthermore, participants are mainly highly educated professionals with senior hierarchical positions. This may cause problems of external validity since age-related losses may not be predominant among them. Additionally, participants come from broader contexts, such as academic or cultural. We could expect that academics may have much more job autonomy than classical ballet dancers. Further research should include other contexts and occupations with significant age-sensitive demands, and should control for job resources such as job autonomy, which are critical to the adoption of self-regulation mechanisms. Finally, the results considering age as a moderator should be interpreted with caution due to our limited number of participants aged above 50 years old.

### **3.4 FUTURE RESEARCH**

The findings from the studies reported in this thesis suggest several directions for future research.

Crafting emerges as an adaptive process to respond to lifespan changes and is partly a function of the phases of one's lifetime. We found evidence of four forms of job crafting among older workers that contribute to stay longer in the workforce and to an active aging. Future research should be devoted to study other forms of crafting across the work lifespan. Qualitative studies may be fundamental to the identification of forms of crafting. Our studies give also insights into antecedents of job crafting. As job crafting is initiated by employees and not explicitly authorized by the employer (Hornung et al., 2010; Wrzesniewski & Dutton, 2001), it may be that individuals need to feel resourceful before engaging in actively changing and

customizing their jobs. Future research should explore other antecedents of crafting, and especially forms of cognitive crafting that have been unexplored so far.

Our studies focused mainly on traditional, linear careers. Future research may consider boundaryless careers (DeFillippi & Arthur, 1994) or protean careers (Hall, 1996). By disentangling age and tenure, it will be possible to understand how workers assess fit or misfit when embracing a new career. It may be that even someone old, if initiating a new career, could value similar resources as young workers in the same stage.

Age is a broad concept and should be studied through different perspectives besides chronological age. For example, the inconsistencies in empirical studies regarding learning and intention to learn among older employees may result from other conceptions of age rather than just calendar age. It may be that the stage within a career or the perception of time left have a stronger impact on the motivation to learn. Support for this argument can be found in a study, conducted by Kooij and colleagues (2013), which showed that it is not age in terms of years per se but future time perspective that determined work motives to continue to work. Therefore, age must be studied from different standpoints than just calendar age. Future research should explore other conceptions of age, such as psychosocial age.

### **3.5 CONCLUSION**

As the aging of the workforce constitutes one of the major challenges facing organizations, it is timely to study how to provide a healthy workplace to young, middle-aged, and old workers. This thesis offers an integrated view of streams of research – lifespan developmental theories, job demands-resources model, person-job fit, and job design – that have been disconnected so far. Lifespan theories explain what constitutes the aging process, and how aging affects abilities,

needs and motives. The job demands-resources model is a framework to the study of well-being at work, and demonstrates how resources contribute to enhance work engagement (and reduce burnout). Finally, job crafting (i.e., job design theory) shows how workers initiate self-regulated strategies to enhance person-job fit. We showed that the aging process and its losses and gains demand a constant interplay of personal and contextual resources. Job resources will be valued differently and in accordance to specific needs that change over time. SOC use and job crafting are crucial mechanisms to reach higher levels of well-being at work. We hope that the results of this thesis will lead to changes in the preconceptions of older workers and will inspire more theoretical as well as practical attention to the needs of workers across the work lifespan.

### 3.6 REFERENCES

- Armstrong-Stassen, M. (2008). Organisational practices and the post-retirement employment experience of older workers. *Human Resource Management Journal*, 18(1), 36-53
- Avery, D. R., McKay, P. F., & Wilson, D. C. (2007). Engaging the aging workforce: The relationship between perceived age similarity, satisfaction with coworkers, and employee engagement. *Journal of Applied Psychology*, 92(6), 1542.
- Bajor, J. K., & Baltes, B. B. (2003). The relationship between selection optimization with compensation, conscientiousness, motivation, and performance. *Journal of Vocational Behavior*, 63(3), 347-367.
- Bakker, A. B., & Demerouti, E. (2007). The job demands-resources model: State of the art. *Journal of Managerial Psychology*, 22, 309–328.
- Bakker, A. B., Demerouti, E., & Sanz-Vergel, A. I. (2014). Burnout and work engagement: The JD–R approach. *Annual Review of Organizational Psychology and Organizational Behavior*, 1(1), 389-411.
- Bakker, A. B., Tims, M., & Derks, D. (2012). Proactive personality and job performance: The role of job crafting and work engagement. *Human Relations*, 65(10), 1359-1378.
- Bal, P. M., Kooij, D. T., & Rousseau, D. M. (2015). Introduction to aging workers and the employee-employer relationship. In P. M. Bal, T. A. M. Kooij, & D. M. Rousseau (Eds.), *Aging workers and the employee-employer relationship* (pp. 1-9). Amsterdam: Springer.
- Bal, P. M., Kooij, D. T., & Rousseau, D. M. (Eds.) (2015). *Aging workers and the employee-employer relationship* (pp. 129-144). Amsterdam: Springer.



- Baltes, B. B., & Dickson, M. W. (2001). Using life-span models in industrial-organizational psychology: The theory of selective optimization with compensation. *Applied Developmental Science, 5*(1), 51-62.
- Baltes, M. M., & Lang, F. R. (1997). Everyday functioning and successful aging: The impact of resources. *Psychology and Aging, 12*(3), 433.
- Baltes, P. B. & Baltes, M. M. (1990). Psychological perspectives on successful aging: The model of selective optimization with compensation. In P. B. Baltes & M. M. Baltes (Eds.), *Successful aging: Perspectives from the behavioral sciences* (pp. 1-34). New York: Cambridge University Press.
- Baltes, P. B., Staudinger, U. M., & Lindenberger, U. (1999). Lifespan psychology: Theory and application to intellectual functioning. *Annual Review of Psychology, 50*(1), 471-507.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: Freeman
- Bartunek, J. M. & Louis, M. R. (1996). *Insider/outsider team research*. Thousand Oaks, CA: Sage.
- Beal, D. J., & Weiss, H. M. (2003). Methods of ecological momentary assessment in organizational research. *Organizational Research Methods, 6*(4), 440-464.
- Billett, S. & Pavlova, M. (2005). Learning through working life: Self and individuals' agentic action. *International Journal of Lifelong Education, 24*(3), 195-211.
- Biron, M., & Van Veldhoven, M. (2012). Emotional labour in service work: Psychological flexibility and emotion regulation. *Human Relations, 65*(10), 1259-1282.
- Bledow, R., Schmitt, A., Frese, M., & Kühnel, J. (2011). The affective shift model of work engagement. *Journal of Applied Psychology, 96*(6), 1246.

- Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual Review of Psychology, 54*(1), 579-616.
- Bourdieu, P. (1984). *Distinction: A Social Critique of the Judgement of Taste*. London: Routledge.
- Breevaart, K., Bakker, A. B., Demerouti, E., & Hetland, J. (2012). The measurement of state work engagement. *European Journal of Psychological Assessment*.
- Carstensen, L. L. (1995). Evidence for a life-span theory of socioemotional selectivity. *Current Directions in Psychological Science, 4*(5), 151-156.
- Carstensen, L. L. (2006). The influence of a sense of time on human development. *Science, 312*(5782), 1913-1915.
- Charles, S. T., & Carstensen, L. L. (2010). Social and emotional aging. *Annual Review of Psychology, 61*, 383-409.
- Coupland, C. (2015). Entry and exit as embodied career choice in professional sport. *Journal of Vocational Behavior, 90*, 111-121.
- Crawford, E. R., LePine, J. A., & Rich, B. L. (2010). Linking job demands and resources to employee engagement and burnout: a theoretical extension and meta-analytic test. *Journal of Applied Psychology, 95*(5), 834–848.
- Culbertson, S. S., Mills, M. J., & Fullagar, C. J. (2012). Work engagement and work-family facilitation: Making homes happier through positive affective spillover. *Human Relations, 65*(9), 1155-1177.
- Dalal, R. S., Bhawe, D. P., & Fiset, J. (2014). Within-Person Variability in Job Performance: A Theoretical Review and Research Agenda. *Journal of Management, 40*(5), 1396–1436.

- Dawis, R. (2002). Person-Environment-Correspondence Theory. In S. D. Brown & Associates (4th ed.). *Career choice and development*. San Francisco, CA: Jossey-Bass.
- De Lange, A. H., Taris, T. W., Jansen, P., Smulders, P., Houtman, I., & Kompier, M. (2006). Age as a factor in the relation between work and mental health: results from the longitudinal TAS survey. *Occupational health psychology: European perspectives on research, education and practice, 1*, 21-45.
- Deci, E., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.
- DeFillippi, R. J. & Arthur, M. B. (1994). The boundaryless career: A competency-based perspective. *Journal of Organizational Behavior, 15*(4), 307-324.
- Demerouti, E. (2015). Strategies used by individuals to prevent burnout. *European Journal of Clinical Investigation, 45*(10), 1106-1112.
- Demerouti, E., Bakker, A. B., & Leiter, M. (2014). Burnout and job performance: The moderating role of selection, optimization, and compensation strategies. *Journal of Occupational Health Psychology, 19*(1), 96.
- Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology, 86*(3), 499-512.
- Dychtwald, K., Erickson, T. J., & Morison, R. (2006). *Workforce crisis: How to beat the coming shortage of skills and talent*. Boston: Harvard Business School Press.
- Economist. (2006, February). Turning boomers into boomerangs. *Economist, 378*, 65-67.
- Retrieved from: <https://www.economist.com/special-report/2006/02/16/turning-boomers-into-boomerangs>

- Edwards, J. R. (1991). Person-job fit: A conceptual integration, literature review and methodological critique. In C. L. Cooper & I. T. Robertson (Eds.), *International Review of Industrial and Organizational Psychology* (Vol6, pp 283-357). London: Wiley.
- Edwards, J. R. (1992). A cybernetic theory of stress, coping, and well-being in organizations. *Academy of Management Review*, 17, 238-274.
- Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of Management Review*, 14(4), 532-550.
- Ellinger, A. D. (2004). The concept of self-directed learning and its implications for human resource development. *Advances in Developing Human Resources*, 6(2), 158-177.
- Eraut, M. (1998). Concepts of competence. *Journal of Interprofessional Care*, 12(2), 127-139.
- Eraut, M. (2004). Informal Learning in the Workplace. *Studies in Continuing Education*, 26(2), 247–273.
- Eraut, M., Alderton, J., Cole, G., & Senker, P. (2000). Development of knowledge and skills at work. In F. Coffield (Ed.). *Differing Visions of a Learning Society, 1* (Bristol, Policy Press), 231-262.
- Erikson, E. (1997). *The life cycle completed: Extended version*. New York: W. W. Norton & Company.
- Eurofound (2018), *Burnout in the workplace: A review of data and policy responses in the EU*, Publications Office of the European Union, Luxembourg.
- Eurofound (2019, April 15<sup>th</sup>). *Retirement*. Retrieved June, 2019, from <https://www.eurofound.europa.eu/topic/retirement>.
- European Union (2015). Review of recent policy reforms. *Social Protection Committee*. Retrieved December, 2016, from: <http://europa.eu>

- Eurostat (2015). *People in the EU: who we are and how do we live?* Retrieved October, 2017, from: <http://ec.europa.eu/eurostat/documents/3217494/7089681/KS-04-15-567-EN-N.pdf/8b2459fe-0e4e-4bb7-bca7-7522999c3bfd>
- Feldman, D. C. & Vogel, R. M. (2009). The aging process and person-environment fit. In S. G. Baugh & S. E. Sullivan (Eds.), *Research in careers* (pp. 1-25). Charlotte, NC: Information Age.
- Finegold, D., Mohrman, S., & Spreitzer, G. M. (2002). Age effects on the predictors of technical workers' commitment and willingness to turnover. *Journal of Organizational Behavior* 23(5), 655-674.
- Freund, A. M. (2006). Differential motivational consequences of goal focus in younger and older adults. *Psychology and Aging*, 21, 240–252.
- Freund, A. M., & Baltes, P. B. (1998). Selection, optimization, and compensation as strategies of life management: Correlations with subjective indicators of successful aging. *Psychology and Aging*, 13, 531–543.
- Freund, A. M., & Baltes, P. B. (2000). The orchestration of selection, optimization and compensation: An action-theoretical conceptualization of a theory of developmental regulation. *Control of human behavior, mental processes, and consciousness: Essays in honor of the 60th birthday of August Flammer*, 35-58.
- Freund, A. M., & Baltes, P. B. (2002). Life-management strategies of selection, optimization and compensation: Measurement by self-report and construct validity. *Journal of Personality and Social Psychology*, 82(4), 642.

- Gallup (2013). State of the American workplace: Employee engagement insights for U.S. business leaders. Retrieved from <http://gallup.com/services/178514/state-american-workplace.aspx>
- Gallup (2016). *How millennials want to work and live*. Retrieved August, 2018, from: <https://www.gallup.com/workplace/238073/millennials-work-live.aspx>
- Gegenfurtner, A., & Vauras, M. (2012), Age-related differences in the relation between motivation to learn and transfer of training in adult continuing education. *Contemporary Educational Psychology, 37*, 33-46.
- Gioia, D.A., Corley, K.G., & Hamilton, A.L. (2012). Seeking qualitative rigor in inductive research: Notes on the Gioia methodology. *Organizational Research Methods, 16*(1), 15-31.
- Glaser, B. G. & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Chicago: Aldine.
- Gorgievski, M. J., & Hobfoll, S. E. (2008). Work can burn us out and fire us up: Conservation of resources in burnout and engagement. In J. R. B. Halbesleben (Ed.), *Handbook of stress and burnout in health care* (pp. 7–22). Hauppauge, NY: Nova.
- Goštautaitė, B., & Bučiūnienė, I. (2015). Work engagement during life-span: The role of interaction outside the organization and task significance. *Journal of Vocational Behavior, 89*, 109-119.
- Gratton, L. (2011). Workplace 2025—What will it look like? *Organizational Dynamics, 40*(4), 246-254.
- Hackman, J. R. & Oldham, G. R. (1980). *Work redesign*. Reading, MA: Addison-Wesley.

- Hakanen, J. J., Bakker, A. B., & Schaufeli, W. B. (2006). Burnout and work engagement among teachers. *Journal of School Psychology, 43*(6), 495-513.
- Hale, N. (1990). *The older worker: Effective strategies for management and human resource development*. San Francisco, CA: Jossey-Bass.
- Hall, D.T. (1996). *The career is dead long live the career*. San Francisco: Jossey-Bass.
- Hobfoll, S. E. (1988). *The ecology of stress*. Washington, DC, US: Hemisphere Publishing Corp.
- Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist, 44*(3), 513.
- Hobfoll, S. E. (2001). The influence of culture, community, and the nested-self in the stress process: Advancing Conservation of Resources theory. *Applied Psychology: An International Review, 50*(3), 337–370.
- Hobfoll, S. E. (2002). Social and psychological resources and adaptation. *Review of General Psychology, 6*(4), 307-324.
- Hobfoll, S. E. (2011). Conservation of resource caravans and engaged settings. *Journal of Occupational and Organizational Psychology, 84*(1), 116-122.
- Hobfoll, S. E., & Wells, J. D. (1998). Conservation of resources, stress, and aging. In *Handbook of aging and mental health* (pp. 121-134). Springer, Boston, MA.
- Hobfoll, S. E., Johnson, R. J., Ennis, N., & Jackson, A. P. (2003). Resource loss, resource gain, and emotional outcomes among inner city women. *Journal of Personality and Social Psychology, 84*(3), 632.
- Hobfoll, S.E. (1998). *Stress, culture, and community: The psychology and philosophy of stress*. New York: Plenum Press.

- Hobfoll, S.E. (2001). The influence of culture, community, and the nested-self in the stress process. Advancing conservation of resources theory. *Applied Psychology: An International Review*, 50, 337-370.
- Hobfoll, S. E., Halbesleben, J., Neveu, J. P., & Westman, M. (2018). Conservation of resources in the organizational context: The reality of resources and their consequences. *Annual Review of Organizational Psychology and Organizational Behavior*, 5, 103-128.
- Hofmann, D. A., Griffin, M. A., & Gavin, M. B. (2000). The application of hierarchical linear modeling to organizational research. In K. J. Klein and S. W. J. Kozlowski (eds.), *Multilevel Theory, Research, and Methods in Organizations* (pp. 467-511). San Francisco: Jossey-Bass.
- Hornung, S., Rousseau, D. M., Glaser, J., Angerer, P., & Weigl, M. (2010). Beyond top-down and bottom-up work redesign: Customizing job content through idiosyncratic deals. *Journal of Organizational Behavior*, 31(2-3), 187-215.
- James, J. B., McKechnie, S., & Swanberg, J. (2011). Predicting employee engagement in an age-diverse retail workforce. *Journal of Organizational Behavior*, 32(2), 173-196.
- Kahn, W. A. (1990). Psychological conditions of personal engagement and disengagement at work. *Academy of Management Journal*, 33(4), 692-724.
- Kaliterna, L., Larsen, Z. P., & Brkljacic, T. (2002). Chronological and subjective age in relation to work demands: Survey of Croatian workers. *Experimental Aging Research*, 28(1), 39-49.
- Kanfer, R. & Ackerman, P. L. (2004). Aging, adult development, and work motivation. *Academy of Management Review*, 29(3), 440-458.
- Kanfer, R., & Ackerman, P. L. (2000). Individual differences in work motivation: Further explorations of a trait framework. *Applied Psychology*, 49(3), 470-482.



- Kira, M., van Eijnatten, F. M., & Balkin, D. B. (2010). Crafting sustainable work: Development of personal resources. *Journal of Organizational Change Management*, 23(5), 616-632.
- Kooij, D. T. (2015a). Clarifying and discussing successful aging at work and the active role of employees. *Work, Aging and Retirement*, 1(4), 334-339.
- Kooij, D. T. (2015b). Successful aging at work: The active role of employees. *Work, Aging and Retirement*, 1(4), 309-319.
- Kooij, D. T., De Lange, A. H., Jansen, P. G., Kanfer, R., & Dikkers, J. S. (2011). Age and work-related motives: Results of a meta-analysis. *Journal of Organizational Behavior*, 32(2), 197-225
- Kooij, D. T., Guest, D. E., Clinton, M., Knight, T., Jansen, P. G., & Dikkers, J. S. (2013). How the impact of HR practices on employee well-being and performance changes with age. *Human Resource Management Journal*, 23(1), 18-35.
- Kooij, T. A. M., Tims, M., & Kanfer, R. (2015). Successful aging at work: the role of job crafting. In P. M. Bal, T. A. M. Kooij, & D. M. Rousseau (Eds.), *Aging workers and the employee-employer relationship* (pp. 145-161). Amsterdam: Springer.
- Kooij, D. T., & Van de Voorde, K. (2015). Strategic HRM for older workers. In P. M. Bal, T. A. M. Kooij, & D. M. Rousseau (Eds.), *Aging workers and the employee-employer relationship* (pp. 57-72). Amsterdam: Springer.
- Kooij, D. T., van Woerkom, M., Wilkenloh, J., Dorenbosch, L., & Denissen, J. J. (2017). Job crafting towards strengths and interests: The effects of a job crafting intervention on person–job fit and the role of age. *Journal of Applied Psychology*, 102(6), 971-981.

- Korunka, C., Kubicek, B., Schaufeli, W. B., & Hoonakker, P. (2009). Work engagement and burnout: Testing the robustness of the Job Demands-Resources model. *The Journal of Positive Psychology, 4*(3), 243-255.
- Kulik, C. T., Oldham, G. R., & Hackman, J. R. (1987). Work design as an approach to person-environment fit. *Journal of Vocational Behavior, 31*(3), 278-296.
- Kulik, C. T., Perera, S., & Cregan, C. (2016). Engage me: The mature-age worker and stereotype threat. *Academy of Management Journal, 59*(6), 2132-2156.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer publishing company.
- Leiter, M. P., & Maslach, C. (2004). Areas of worklife: A structured approach to organizational predictors of job burnout. In P. Perrewé & D. C. Ganster, (Eds.), *Research in occupational stress and well-being* (Vol. 3, 91-134). Oxford, UK: Elsevier.
- Llorens, S., Bakker, A. B., Schaufeli, W., & Salanova, M. (2006). Testing the robustness of the job demands-resources model. *International Journal of Stress Management, 13*(3), 378.
- Llorens, S., Schaufeli, W., Bakker, A., & Salanova, M. (2007). Does a positive gain spiral of resources, efficacy beliefs and engagement exist? *Computers in Human Behavior, 23*, 825–841.
- Locke, K. (2001). *Grounded theory in management research*. London: Sage.
- Maslach, C., Jackson, S., & Leiter, M. (1996). *Maslach burnout inventory manual* (3rd Ed.). California: Consulting Psychologist Press.
- Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology, 52*(1), 397-422.

- Miller, J., & Adkins, A. (2016). Women lead men on key workplace engagement measures. *Gallup Business Journal*. Retrieved from <https://news.gallup.com/businessjournal/197552/women-lead-men-key-workplace-engagement-measures.aspx>
- Moen, P., & Altobelli, J. (2007). Strategic selection as a retirement project: Will Americans develop hybrid arrangements? In J. James & P. Wink (Eds.), *The Crown of life: Dynamics of early postretirement period*. (pp 61-81). New York: Springer.
- Moghimi, D., Zacher, H., Scheibe, S., & Van Yperen, N. W. (2017). The selection, optimization, and compensation model in the work context: A systematic review and meta-analysis of two decades of research. *Journal of Organizational Behavior*, 38(2), 247-275.
- Moliner, C., Martínez-Tur, V., Peiró, J. M., Ramos, J., & Cropanzano, R. (2005). Relationships between organizational justice and burnout at the work-unit level. *International Journal of Stress Management*, 12(2), 99-116.
- Müller, A., Heiden, B., Weigl, M., Glaser, J., & Angerer, P. (2013). Successful aging strategies in nursing: The example of selective optimization with compensation. In *Age-differentiated work systems* (pp. 175-199). Springer, Berlin, Heidelberg.
- Muthén, L.K., & Muthén, B.O. (2012). *Mplus Version 7*. Los Angeles, CA: Muthén & Muthén.
- Nahrgang, J. D., Morgeson, F. P., & Hofmann, D. A. (2011). Safety at work: A meta-analytic investigation of the link between job demands, job resources, burnout, engagement, and safety outcomes. *Journal of Applied Psychology*, 96(1), 71-94.
- Ng, T. W., & Feldman, D. C. (2010). The relationships of age with job attitudes: A meta-analysis. *Personnel Psychology*, 63(3), 677-718.

- Ng, T. W., & Feldman, D. C. (2012). Evaluating six common stereotypes about older workers with meta-analytical data. *Personnel Psychology*, *65*(4), 821-858.
- Niessen, C., Weseler, D., & Kostova, P. (2016). When and why do individuals craft their jobs? The role of individual motivation and work characteristics for job crafting. *Human Relations*, *69*, 1287-1313.
- Noonan, A. E. (2005). "At this point now": Older workers' reflections on their current employment experiences. *International Journal of Aging and Human Development*, *61*(3), 211-241.
- Ohly, S., Sonnentag, S., Niessen, C. & Zapf, D. (2010), Diary studies in organizational research. *Journal of Personnel Psychology*, *9*, 79-93.
- O'Reilly, K. (2012). *Ethnographic methods*. London: Routledge.
- Petrou, P., Demerouti, E., Peeters, M.C.W., Schaufeli, W. & Hetland, J. (2012). Crafting a job on a daily basis: Contextual correlates and the link to work engagement. *Journal of Organizational Behavior*, *33* (8), 1120-1141.
- Petrou, P., Demerouti, E., & Schaufeli, W. B. (2015). Job crafting in changing organizations: Antecedents and implications for exhaustion and performance. *Journal of Occupational Health Psychology*, *20*(4), 470-480.
- Pitt-Catsouphes, M., & Matz-Costa, C. (2008). The multi-generational workforce: Workplace flexibility and engagement. *Community, work and Family*, *11*(2), 215-229.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, *88*(5), 879.

- Podsakoff, P. M., Mackenzie, S. B. & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology*, 63, 539–569.
- Pordata (2019, March). Total fertility rate. Retrieved from <https://www.pordata.pt/en/Europe/Total+fertility+rate-1251>
- Posthuma, R. A., Wagstaff, M. F., & Campion, M. A. (2012). Age stereotypes and workplace age discrimination. In W.C. Borman & J. W. Hedge (Eds.), *The Oxford handbook of work and aging*, (pp. 298-312). New York. Oxford University Press.
- Pratt, M. G., & Ashforth, B. E. (2003). Fostering meaningfulness in working and at work. In K. Cameron, J. E. Dutton, & R. E. Quinn (Eds.), *Positive organizational scholarship: Foundations of a new discipline* (pp. 308–327). San Francisco: BerrettKoehler.
- Pratt, M. G., Rockmann, K. W., & Kaufmann, J. B. (2006). Constructing professional identity: The role of work and identity learning cycles in the customization of identity among medical residents. *Academy of Management Journal*, 49(2), 235-262.
- Preacher, K. J., Zhang, Z., & Zyphur, M. J. (2011). Alternative methods for assessing mediation in multilevel data: The advantages of multilevel SEM. *Structural Equation Modeling*, 18(2), 161-182.
- Quantum Workplace (2017). Employee engagement trends among America’s best places to work. Retrieved from <https://www.quantumworkplace.com/2018-employee-engagement-trends-report>
- Quantum Workplace (2018). Engaging utilities employees. *Industry Report*. Retrieved from <https://www.quantumworkplace.com/utilities-employee-engagement>

- Raemdonck, I., Beausaert, S., Fröhlich, D., Kochoian, N., & Meurant, C. (2015). Aging workers' learning and employability. In P. M. Bal, T. A. M. Kooij, & D. M. Rousseau (Eds.), *Aging workers and the employee-employer relationship* (pp. 1-9). Amsterdam: Springer.
- Rudolph, C. W., Katz, I. M., Lavigne, K. N., & Zacher, H. (2017). Job crafting: A meta-analysis of relationships with individual differences, job characteristics, and work outcomes. *Journal of Vocational Behavior, 102*, 112-138.
- Ryan, R. M. & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology, 52*(1), 141-166.
- Schaufeli, W.B. (2018). Burnout in Europe: Relations with national economy, governance, and culture. *Research Unit Occupational & Organizational Psychology and Professional Learning* (internal report). KU Leuven, Belgium
- Schaufeli, W. B., & Bakker, A. B. (2004a). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior, 25*(3), 293-315.
- Schaufeli, W. B., & Bakker, A. B. (2004b). Utrecht work engagement scale: Preliminary manual. *Occupational Health Psychology Unit, Utrecht University, Utrecht, 26*.
- Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and Psychological Measurement, 66*(4), 701-716.
- Schaufeli, W. B., & Salanova, M. (2008). Enhancing work engagement through the management of human resources. In K. Näswall, J. Hellgren, & M. Sverke (Eds.), *The individual in the changing working life* (pp. 380–402). New York: Cambridge University Press.

- Schaufeli, W. B., Salanova, M., González-Romá, V., & Bakker, A. B. (2002). The measurement of engagement and burnout: A two sample confirmatory factor analytic approach. *Journal of Happiness Studies*, 3(1), 71-92.
- Schmitt, A., Zacher, H., & Frese, M. (2012). The buffering effect of selection, optimization, and compensation strategy use on the relationship between problem solving demands and occupational well-being: A daily diary study. *Journal of Occupational Health Psychology*, 17(2), 139.
- Scroggins, W. A. (2008). Antecedents and outcomes of experienced meaningful work: A person-job fit perspective. *Journal of Business Inquiry*, 7(1), 68-78.
- Smyer, M., & Pitt-Catsouphes, M. (2007). The meanings of work for older workers. *Generations*, 31(1), 23-30.
- Sonnentag, S. (2003). Recovery, work engagement, and proactive behavior: A new look at the interface between non-work and work. *Journal of Applied Psychology*, 88, 518-528.
- Sterns H.L. & Doverspike D., (1989). Aging and the retraining and learning process in organizations. In (eds) Goldstein I. & Katznel R. *Training and development in work organizations* (pp. 229-332). San Francisco: Jossey-Bass.
- Sterns, A. A., Sterns, H. L., & Hollis, L. A. (1996). The productivity and functional limitations of older adult workers. In W.C. Crown (Ed.), *Handbook on employment and the elderly*, 276-303. Westport, CT: Greenwood Press.
- Strauss, A. & Corbin, J.M. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Newbury Park, CA: Sage.
- Super, D. E. (1980). A life-span, life-space approach to career development. *Journal of Vocational Behavior*, 16(3), 282-298.

- ten Brummelhuis, L. L., & Bakker, A. B. (2012). A resource perspective on the work–home interface: The work–home resources model. *American Psychologist*, *67*(7), 545.
- Tims, M., & Bakker, A. B. (2010). Job crafting: Towards a new model of individual job redesign. *SA Journal of Industrial Psychology*, *36*(2), 1-9.
- Tims, M., Bakker, A. B., & Derks, D. (2012). Development and validation of the job crafting scale. *Journal of Vocational Behavior*, *80*(1), 173-186.
- Tims, M., Bakker, A. B., & Derks, D. (2013). The impact of job crafting on job demands, job resources, and well-being. *Journal of Occupational Health Psychology*, *18*(2), 230.
- Tims, M., B., Bakker, A., & Derks, D. (2014). Daily job crafting and the self-efficacy–performance relationship. *Journal of Managerial Psychology*, *29*(5), 490-507.
- Tims, M., Derks, D., & Bakker, A. B. (2016). Job crafting and its relationships with person–job fit and meaningfulness: A three-wave study. *Journal of Vocational Behavior*, *92*, 44-53.
- Towers Perrin (2005), *Winning Strategies for a Global Workforce: Attracting, Retaining, and Engaging Employees for Competitive Advantage*, Towers Perrin Global Workforce Study, Executive Report TP440-05, Towers Perrin, Stamford, CT.
- Warr, P. (1992). Age and occupational well-being. *Psychology and Aging*, *7*(1), 37.
- Venz, L., & Sonnentag, S. (2015). Being engaged when resources are low: A multi-source study of selective optimization with compensation at work. *Journal of Vocational Behavior*, *91*, 97-105.
- Venz, L., Pundt, A., & Sonnentag, S. (2017). What matters for work engagement? A diary study on resources and the benefits of selective optimization with compensation for state work engagement. *Journal of Organizational Behavior*. doi:10.1002/job.2207
- Vol. 9 No. 2, pp. 79-93.



- von Bonsdorff, M. E., von Bonsdorff, M. B., Zhou, Z. E., Kauppinen, M., Miettinen, M., Rantanen, T., & Vanhala, S. (2014). Organizational justice, selection, optimization with compensation, and nurses' work ability. *Journal of Occupational and Environmental Medicine*, 56(3), 326-330.
- Wainwright, S. P. & Turner, B. S. (2006). 'Just crumbling to bits'? An exploration of the body, ageing, injury and career in classical ballet dancers. *Sociology*, 40(2), 237-255.
- Warr, P. (1997). Age, work and mental health. In *The impact of work on older adults*, eds. K.W. Schaie & W.I.E. Schooler, pp. 252-296. New York: Springer.
- Warr, P. (2001a). Age, work, and mental health. In K. W. Schaie, & C. Schooler (Eds.), *Handbook of industrial and organizational psychology* (2<sup>nd</sup> ed., Vol 4, pp. 485-559). New York, NY: Springer Publishing Company.
- Warr, P. (2001b). Age and work behaviour: physical attributes, cognitive abilities, knowledge, personality traits and motives. In C. L. Cooper & I. T. Robertson (Eds.), *International Review of Industrial and Organizational Psychology*. London: Wiley Publishing.
- Warr, P., & Birdi, K. (1998). Employee age and voluntary development activity. *International Journal of Training and Development*, 2(3), 190–204.
- Weigl, M., Müller, A., Hornung, S., Leidenberger, M., & Heiden, B. (2014). Job resources and work engagement: The contributing role of selection, optimization, and compensation strategies at work. *Journal for Labour Market Research*, 47(4), 299-312.
- Westerhof, G. J., Barrett, A. E., & Steverink, N. (2003). Forever young? A comparison of age identities in the United States and Germany. *Research on Aging*, 25(4), 366-383.
- Whitehead, M. (Ed.). (2010). *Physical literacy: Throughout the lifecourse*. Hoboken: Taylor & Francis.

- Wrzesniewski, A. & Dutton, J. E. (2001). Crafting a job: Revisioning employees as active crafters of their work. *Academy of Management Review*, 26, 179–201.
- Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2007). The role of personal resources in the job demands-resources model. *International Journal of Stress Management*, 14(2), 121.
- Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2009). Work engagement and financial returns: A diary study on the role of job and personal resources. *Journal of Occupational and Organizational Psychology*, 82(1), 183-200.
- Xanthopoulou, D., Bakker, A. B., & Ilies, R. (2012). Everyday working life: Explaining within-person fluctuations in employee well-being. *Human Relations*, 65(9), 1051-1069.
- Xanthopoulou, D., & Meier, L. L. (2014). Daily burnout experiences: Critical events and measurement challenges. In *Burnout at Work* (pp. 88-109). Psychology Press.
- Yeung, D. Y., & Fung, H. H. (2009). Aging and work: How do SOC strategies contribute to job performance across adulthood? *Psychology and Aging*, 24(4), 927-940.
- Zacher, H. (2015). Successful aging at work. *Work, aging and retirement*, 1(1), 4-25.
- Zacher, H., Chan, F., Bakker, A. B., & Demerouti, E. (2015). Selection, optimization, and compensation strategies: Interactive effects on daily work engagement. *Journal of Vocational Behavior*, 87(1), 101-107.
- Zacher, H., Feldman, D. C., & Schulz, H. (2014). Age, occupational strain, and well-being: A person-environment fit perspective. In *The role of demographics in occupational stress and well-being* (pp. 83-111). Bingley: Emerald

- Zacher, H., & Frese, M. (2011). Maintaining a focus on opportunities at work: The interplay between age, job complexity, and the use of selection, optimization, and compensation strategies. *Journal of Organizational Behavior*, 32(2), 291-318.
- Zacher, H., Jimmieson, N. L., & Bordia, P. (2014). Time pressure and coworker support mediate the curvilinear relationship between age and occupational well-being. *Journal of Occupational Health Psychology*, 19, 462–475.
- Zacher, H., Kooij, D. T. A. M., & Beier, M. E. (2017). Active aging at work: Contributing factors and implications for organizations. *Organizational Dynamics*, 47(1), 37-45.
- Zacher, H. & Winter, G. (2011). Eldercare demands, strain, and work engagement: The moderating role of perceived organizational support. *Journal of Vocational Behavior*, 79(3), 667-680.
- Zacher, H., & Schmitt, A. (2016). Work characteristics and occupational well-being: the role of age. *Frontiers in Psychology*, 7, 1411.
- Zaniboni, S., Fraccaroli, F. & Truxillo, D. M. (2015) Older workers and sustainable late careers: job characteristic effects. In A. De Vos & B. I. J. M. Van der Heijden (Eds.) *Handbook of Research on Sustainable Careers* (pp. 272 -285). Cheltenham, UK: Edward Elgar.