

THESIS

SUBJECTIVE AGE AND PERFORMANCE BASED DECISIONS: MEDIATING EFFECTS
OF RATER GOALS

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ABSTRACT

SUBJECTIVE AGE AND PERFORMANCE BASED DECISIONS: MEDIATING EFFECTS OF RATER GOALS

The present study examined whether subjective age of the rater was associated with an occupational future time perspective (OFTP) and goal orientation, and whether variations in OFTP and goal orientation predicted performance-based recommendations for older employees. Life-span theories, such as Selection, Optimization and Compensation Theory and the Socioemotional Selectivity Theory, suggest that as we age our goals shift from a future focus to a maintenance focus. However, this future versus maintenance orientation may be associated with one's subjective age. That is, individuals who perceived themselves as subjectively younger may have greater future orientation (and lower maintenance orientation) than individuals with subjectively older ages. Using a performance appraisal context, this study investigated whether this re-orientation of goals leads to differing ratings for older employees. A sample of 305 participants provided performance-based recommendations regarding promotions, developmental training, flextime, and regular performance appraisals for vignettes of older employees. Results showed that subjective age was not a significant predictor of performance recommendations although was correlated with both occupational future time perspective and rating goals. Further the relationship between OFTP and performance recommendations was mediated by rating goals. Although subjective age may be a useful alternative age measure, rater OFTP may be more meaningful in understanding variations in ratings of older employees.

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Introduction

As the largest generation of the United States is aging, the baby boomers' continued participation in the workforce has been a topic of research in the past years (e.g., Kiyonaga, 2004; Szinovacz, 2011). Due to a variety of reasons, e.g., economic policy changes, as well as individual, family, and work factors, the United States, as well as Europe, is currently experiencing a shift toward an increasing retirement age (Fisher, Chaffee, & Sonnega, 2016), and it is therefore of utmost importance to study the aging workforce.

Performance appraisal is an important tool in the workplace, which is used for administrative decisions, as well as employee development, feedback, and the allocation of training opportunities (Murphy & Cleveland, 1995). The context it is used in, as well as the rater who uses it, influences the results of this tool. Biases are likely associated with the goal-driven features of the performance evaluation process (Murphy & Cleveland, 1995). This makes the examination of goal orientation meaningful.

Historically, researchers have used chronological age in work settings to examine a plethora of work variables. Schwall (2012) criticized the use of chronological age because it is a measure of time, and therefore may not reflect actual age-related changes and development. The consideration of other age measures that integrate age perceptions has emerged. There has been a recent call to look beyond using solely chronological age in an organizational setting (Kanfer & Ackerman, 2004; Kooij, de Lange, Jansen, & Dijkers, 2013; Kunze, Raes, & Bruch, 2015; Schwall, 2012). Similarly, Rudolph (2016) stressed the importance of increased attention to the measurement of life-span constructs in the work domain in order to inform aging research in the work context.

Subjective age is an example of an age-related life-span construct that influences how old one feels in comparison to one's actual chronological age (Kleinspehn-Ammerlahn, Kotter-Grühn, & Smith, 2008). Kleinspehn-Ammerlahn and colleagues (2008) state that subjective age is an important construct that should be used more frequently as a tool in the workplace in order to assess age perceptions. Perceptual age measures may provide more insight and information regarding age-linked work outcomes in comparison to chronological age (Cleveland & Shore, 1992).

The Present Study

The goal of the present study is to examine how the subjective age of the rater is associated with different goal orientations, which may lead to varying performance-based recommendations. Theories of aging suggest that personal goals regarding the allocation of resources in certain life circumstances change as one subjectively ages by shifting from a future-oriented focus to a more maintenance-oriented focus (Baltes & Baltes, 1993; Carstensen, 1991, 1992, 1993, 1995; Carstensen, Isaacowitz, & Charles, 1999). Furthermore, Beal, Weiss, Barros, and MacDermid (2005) suggest that streams of experiences that make up our daily lives are composed of coherent and organized episodes that are largely based on the context as well as our goals at that time. Goals are therefore expected to influence many facets of our lives, and this study will examine the impact of such goal orientation on performance appraisal ratings.

Overall, prior research on subjective age informs the present study and the decision-making processes of raters in a performance appraisal context. Raters make decisions regarding the allocation of resources, e.g. salary or training, in the appraisal process, and I proposed that the subjective age of the rater influences this. More specifically, this study aimed to test whether the characteristics of the rater can influence personal goals and whether such goal orientations spill over to affect rating behavior towards other employees. This has important implications for future HR practices, and it is helpful to gain insight on what characteristics of the rater (i.e., subjective age) and the ratee (i.e., age) can influence performance appraisal ratings.

To begin, I discuss the construct of subjective age and how it differs from the traditional concept of chronological age. I then describe the Selection, Optimization, and Compensation theory literature, as well as the Socioemotional Selectivity theory and Super's Career theory to

explain differences in one's personal perception of how much time and opportunities one has left. Such differences in future time perspectives will be examined in a workplace, more specifically the performance appraisal context. I also examined the different goals that can be pursued with performance appraisals and how one's goal orientation can shift from a future-orientation to a maintenance-orientation. I then elaborate on the link between personal goals and rating behavior and how this overall affects ratings for older employees.

Subjective Age

The construct of subjective age is not well-defined throughout the literature, and often different terms and definitions are used interchangeably, making an exact distinction difficult. Generally, subjective age is a construct that determines how old one feels in comparison to one's chronological age (Kleinspehn-Ammerlahn, Kotter-Grühn, & Smith, 2008). Much past research has suggested that subjective age refers to the age one feels, looks, acts, and the age that reflects the person's overall interests (e.g., Barak, Guiot, Mathur, Zhang, & Lee, 2011; Stephan, Caudroit, & Chalabaev, 2011). Related concepts include age identity, which Kaufman and Elder (2003) suggest consists of desired age, subjective age, perceived old age, and desired longevity. Nevertheless, the term 'cognitive age' is often used interchangeably with 'subjective age' (e.g., Mathur & Moschis, 2005), and other related concepts include psychological age (Petery, 2015), awareness of age-related change (AARC; Diehl & Wahl, 2010), and successful aging at work (Kooij, 2015), which has derived from the construct of general successful aging (Baltes & Baltes, 1993). Successful aging describes the process of how we successfully cope with age-related changes and is guided by the allocation of resources and compensation of diminishing resources.

Subjective age stands in contrast to the traditional measure of chronological age, which refers to age with respect to time since birth (Rudolph, 2016). Essentially, it is a measurement of time, and due to individual difference across the life span, it does not reflect age-related changes and development (Schwall, 2012). Cleveland and Shore (1992) suggest that alternative age measures, such as subjective age, can give more insight regarding work outcomes in comparison to chronological age.

Goals and Aging

Theories of (chronological) aging can help inform research concerning subjective aging. The Selection, Optimization, and Compensation model, as well as Socioemotional Selectivity theory can help shed light on personal goal orientation and development, as one perceives her/his own aging.

Selection, optimization, and compensation. The Selection, Optimization, Compensation (SOC) model by Baltes and Baltes (1993) offers a theoretical framework for how subjective aging can influence an aging person. It conceptualizes one's coping with age-related changes and describes how strategies are used to maximize one's potential for successful aging. It integrates one's hierarchy of personal goals, which guides one's behavior regarding the allocation of personal resources. The model explains the resilience and developmental change across the lifespan of the aging person, which can be split into three components. These three components help individuals master situations they encounter over a lifespan and furthermore handling limitations regarding personal resources.

The three components are as follows: selection, optimization, and compensation. Selection refers to one's strategic selection of how resources (e.g., time or energy) are focused and how one requires adaptation in terms of outcomes, contexts, and goal structures. Such

selection is necessary because resources are limited, and it directs one's behavior according to the hierarchy of personal goals. Optimization refers to one's endeavors to optimize potential by maximizing all gains possible and the allocation of resources in order to achieve the highest level of functioning. The compensation component of this theory refers to the compensation when loss sets in. When resources are lost and means that are relevant for a certain goal decline, the aging person will engage in substitutive processes in order to maintain a given level of functioning for a particular domain (Baltes & Baltes, 1993).

Heckhausen, Dixon, and Baltes (1989) found that when adults were asked about their expectations of change due to aging, adults perceived the ratio of expected gains to losses increasingly less favorable and less controllable with age. This theory suggests that younger adults are more concerned with maximizing gains and minimizing losses, which is reflected in behavior that is oriented towards preservation and the counteraction of losses. A study by Freund (2006) supported this model by instructing younger and older adults to perform the same sensorimotor task. The task involved two conditions: one emphasized the optimization of skills and the other emphasized the compensation for poor performance. As Freund (2006) predicted, younger adults were more persistent when the task offered the possibility to optimize performance in comparison to compensating for losses. The theory also held up for older adults, as they were more likely to persist when the task involved compensation rather than optimization of performance.

Heckhausen (1997) found comparable results when examining the goal orientation of her participants. With increasing age, the awareness of reduced potential for growth and control of resources increased, and goals were generally more oriented towards the avoidance of developmental losses. Also, with increasing age, the focus on age-appropriate goals increased.

Ogilvie, Rose, and Heppen (2001) examined adolescents, middle-aged, and older adults by asking them to describe their rationale for engaging in personal projects. A desire for a future positive outcome was prevalent in all groups, but with declining prevalence in the older participants. Generally, older adults reported more maintenance orientations for their projects.

Ebner, Freund, and Baltes (2006) offered further support for the SOC model by examining the goal orientation of younger and older adults. Younger adults generally reported future-orientated goals geared towards growth and development. In comparison, older adults reported more maintenance-oriented goals, which were characterized by loss prevention. Important to notice is that in their study, goals were categorized into domains (e.g., physical functioning). The domain of physical functioning did not indicate age-related differences, and the authors suggest that this might be due to the fact that the older adults in their study were relatively healthy and physically fit. Participants therefore had not experienced losses with respect to their physical fitness and believed they had potential for growth, as did the younger adults.

Findings that the personal perception of health matters for preventative behaviors creates an important link of the SOC model to subjective aging. Studies have examined the antecedents of subjective age and have found that physical and mental health influence subjective age (Bergland, Nicolaisen, & Thorsen, 2013; Kotter-Grühn, Neupert, & Stephan, 2015). Mathur and Moschis (2005) suggest that certain experiences in life, which serve as important factors for one's grouping into social roles, as well as health-related experiences (e.g., chronic illness) affect the subjective age of a person. Such experiences include biological changes and transitional life-stage changes. Therefore, adults with better physical health often experience a younger

subjective age, and the results of Ebner et al.'s (2006) study support the notion that subjective age may be an important factor in the application of the SOC model.

SOC in applied and work-related settings. Furthermore, SOC has been studied within the work context. Zacher, Chan, Bakker, and Demerouti (2014) and Weigl, Müller, Hornung, Leidenberge, and Heiden (2014) examined SOC strategies and found that these were positively related to work engagement. Baltes and Heydens-Gahir (2003) found that SOC behaviors were related to lower amounts of job and family stressors. As a consequence, conflicts between work and family were also reduced. Additionally, SOC has been integrated into the concept of sustainability at work, which is associated with workers' ability, health, and motivation to work longer (De Lange, Kooij, & Van Der Heijden, 2015). The researchers argue that in order to achieve work sustainability, it is important to take SOC into consideration because as losses start to outnumber gains, the way younger versus older adults allocate their resources differs with increasing age. De Lange et al. (2015) therefore proposed a framework that uses four broad bundles of HR practices that align with life goals according to the SOC model. They suggest that through the shift in one's allocation of resources with increasing age, the utility of developmental HR practices will decrease, and in return the utility of utilization, maintenance, and accommodative HR practices will increase. This is yet more support for the importance of integrating the SOC model in HR practices, as for example in performance appraisal settings.

SOC and subjective age. Another link between the SOC model and subjective aging is offered by Diehl and Wahl's (2010) elaboration on the multidimensional construct of Awareness of Age-Related Changes (AARC). AARC refers to the awareness of having grown older as a subjective experience during the adult years (Diehl & Wahl, 2010). The authors describe that SOC relies on the subjective experience of loss and individuals' AARC, but does not explicate

the role these experiences play. They therefore suggest the integration of AARC into the SOC model in order to fill that theoretical void. In the past, the awareness of your own aging has been referred to as “subjective age” or “age identity” (e.g., Barrett, 2003; Westerhof & Barrett, 2005). AARC and subjective age are closely related concepts and both refer to your own subjective awareness and feeling of age and aging, whereas Diehl and Wahl (2010) suggest that AARC is a more overarching construct that captures more facets of subjective experiences in regards to aging. The integration of the SOC model is therefore most likely advantageous for both AARC as well as subjective aging when considering the strong overlaps of these two constructs.

Past studies have linked subjective age with a number of significant personal and work related outcomes including health (Barrett & Toothman, 2014; Bowling, See-Tai, Ebrahim, Gabriel, & Solanki, 2005), recovery after illness (Boehmer, 2006; 2007), and life satisfaction and positive affect (Westerhof & Barrett, 2005). SOC theory has mostly been applied to chronological aging rather than subjective aging, but as Diehl and Wahl (2010) suggest, it may apply to subjective experiences of aging when considering the many outcomes that align with subjective age, as well as chronological age.

Socioemotional selectivity theory. Another theory relevant to understanding the role of subjective aging in the workplace is Socioemotional Selectivity Theory (SST). Kooij and Van De Voorde (2011) argue that due to the shift from growth-oriented to loss-focused goals across the lifespan, differential health outcomes related to age could covary with future time perspective (FTP) as SST defines it. This theory offers additional support for the reorientation of goals with age (Carstensen, 1991, 1992, 1993, 1995; Carstensen, Isaacowitz, & Charles, 1999), and it elaborates on how one’s perception of time changes when aging becomes more prominent to

mind. This is termed future time perspective (FTP) and can be described as open-ended or constrained (Rudolph, 2016).

A general measure of FTP has been developed by Carstensen and Lang (1996) and examines two factors: remaining opportunities and remaining time. Since then, Zacher and Frese (2009) have adapted this scale to fit the work-domain and therefore assess occupational future time perspective (OFTP). Zacher (2013) reported a 10-item scale that taps three factors of OFTP: focus on remaining time, opportunities, and limitations. Regardless of the dimensionality of this construct, all variations of this scale are designed so that a higher score indicates a more open-ended (occupational) future time perspective (Rudolph, 2016).

The aging process influences the decisions people make and the selection and pursuit of social goals. Younger people view the future as more distant than older people, which leads to varied motivations and differential goal seeking behaviors. When people are younger, they emphasize future investment more, whereas as people age, they begin to emphasize current relationships and events. With younger age one is more focused on knowledge-related goals, such as the acquisition of knowledge, career planning, or the development of new social relationships that will potentially pay off in the future (Carstensen, 1991). Older people on the other hand put more emphasis on emotion-related goals and the regulation of those emotions. As one ages, the interest in novel information reduces, and new social contacts are not as desired anymore due to the fact that with age and experience the information obtained by social contacts is less likely to be novel.

With age one also becomes more aware of time running out and begins to value close relationships more than a number of superficial relationships. Older people therefore often reduce their social interaction with new acquaintances and seek to increase their time with

emotionally meaningful people in their life. Summarizing, younger adults tend to focus more on the opportunity to develop, acquire new skills and knowledge, and novelty, whereas older adults tend to be driven by socio-emotional outcomes, such as the maintenance of current relationships (Carstensen, 1991).

SST in applied settings. SST has been supported by empirical evidence. Carstensen and Turk-Charles (1994) examined the salience of emotion in adults ranging from 20 to 83 years. The researchers used a memory paradigm and exposed the participants to emotional and neutral information. They then examined the salience of differential information by testing what phrases participants recalled more. Results confirmed the salience of emotion related material to older adults, which lends support for SST. Penningroth and Scott (2012) also examined the goal orientation of adults. Older as well as younger adults were instructed to list their goals in this study, which were then coded by independent raters. Generally, SST, as well as SOC was confirmed by showing that older adults displayed more maintenance and loss prevention-oriented goals, whereas younger participants indicated more goals related to knowledge acquisition and future-orientation.

Lang and Carstensen (2002) also examined goal construal among participants and found that individuals whose FTP was expansive displayed more instrumental and knowledge-seeking goals. This is yet more support that goals change as you age. The change of such goals is caused by a changing perception of time according to SST. Similarly, subjective age is closely linked to the concept that the age you feel will change with the awareness of age related changes (Diehl & Wahl, 2010). Teuscher (2009) presented more empirical evidence for SST by including a measure of recently learned things in a study examining subjective age. Learning new tasks can be considered a knowledge- and future-oriented goal. Results confirmed that subjectively

younger participants indicated more things that they had recently learned, which indicates a less limited FTP. Phan (2009) also found similar relationships between FTP and goal-orientation, so that FTP showed relationships to mastery goals, as well as performance-avoidance goals.

SST in applied and work related settings. Similar results have also been provided in advertisement research. Stephens (1991) found that cognitively younger consumers were more likely to express interest in trying new services or goods, and their willingness to do so was higher than in cognitively older participants. Similarly, Szmigin and Carrigan (2001) argue that older consumers should not be categorized by their chronological age and that people's lives should be dechronologized due to individual differences. Their study provided evidence in support of more prevalent future-orientations in older consumers with a younger subjective age.

Another important link between subjective age and SST is presented by a study conducted by Carstensen and Fredrickson (1998). This study examined the presence of different goals in adults, ranging from 18 to 88 years old. They confirmed the salience of emotion-related goals for older adults in comparison to future- and knowledge-oriented goals, which were more prominent in younger adults. In the second part of this study, the same examination of goal orientation was undertaken with gay men all similar in age. They differed in their health status, so that one group was HIV negative, one group HIV positive and asymptomatic, and the last group HIV positive and displaying symptoms. Age was held constant, and similar results as in study 1 were displayed in this sample. Participants who were healthiest (HIV negative) displayed more future-oriented goals, whereas HIV positive and symptomatic participants displayed more emotion and maintenance-related goals. The authors suggest that this is due to the perception of limited time for HIV and symptomatic participants, which shows that their FTP is more meaningful than their chronological age. This perception of a shrunken time horizon and limited

time left therefore was the driving factor for goal orientation. This closely relates to subjective age, as health status is more meaningful in shaping one's perception of time left than chronological age. Therefore, this study will utilize subjective age measures rather than the measure of chronological age because this provides a more accurate estimate of one's perception of time left.

SST has also been examined in the work context. Gielnik, Zacher, and Frese (2012) linked OFTP to small business owners' decisions regarding the development of their company. Their study only measured the focus on occupational opportunities dimension of OFTP, and the results showed that the business owners' age had a negative indirect effect on venture growth. This effect was mediated by their occupational focus on opportunities, which was positively related to venture growth and negatively related to the participants' age. The relationship between business owner's age and occupational focus on opportunities was non-significant, but in the case of low mental health, there was a strong negative effect of age on occupational focus of opportunities. Business owners exhibited an occupational focus on opportunities, which was related to higher intentions for venture growth, but only when they possessed high levels of mental health.

This has two important implications for the present study. First, it creates a link between goal orientation and subjective age. Past studies have shown that general health, including mental health, influences the subjective aging process (e.g., Bergland, Nicolaisen, & Thorsen, 2014; Chua, Cote, & Leong, 1990; Kotter-Grühn, Neupert, & Stephan, 2015). Mental health was an important factor in Gielnik et al.'s (2010) study because it moderated the effect of age on focus on occupational opportunities. Past research has linked health and subjective age, which offers support for the present study to investigate subjective age rather than chronological age in

order to assess goal orientations. Second, these results demonstrate that SST and (O)FTP have certain work outcomes that should be examined.

More research concerning SST in the workplace by Zacher, Heusner, Zwierzanska, and Frese (2009) examined 168 employees working for 41 different organizations in Germany. They demonstrated that occupational focus on opportunities of the employees acted as a mediator of the relationship between work performance and age. The relationship between age and work performance was non-significant, but when occupational focus on opportunity was held constant, this relationship became positive and significant. This again demonstrates the importance of investigating SST in a work context.

Super's career theory. Super's (1980) life-span approach to career development provides more evidence for a change in goal orientation with age. According to Super (1980), a career is defined by the combinations and sequences of roles played during one's lifetime. His life-career rainbow gives insight into the many aspects of life stages and career throughout the life span. His conceptualization includes nine roles a person can adopt throughout a lifetime: (1) child, (2) student, (3) leisurite (which describes your role as you are engaged in leisure-time activities), (4) citizen, (5), worker, (6) spouse, (7) homemaker, (8) parent, and (9) pensioner. Not everyone plays all roles, and initiating and abandoning roles differs for every individual. Specific behaviors exhibited in each role change as age increases. The role of the worker for example changes as an employee progresses through the hierarchy of an organization, changes jobs, or changes occupations. The domains in which roles are adopted include (1) home, (2) community, (3) school, and (4) the workplace, which Super termed "theaters". Roles become more and less important within each life stage a person is experiencing.

Super (1980) conceptualizes importance as temporal importance and emotional importance. Temporal importance is a function of time and how long you are required to play a role and how long it is desirable to play that role. For example, the role of the worker does not become temporally demanding until one is finished with their education as a student. Emotional involvement refers to the psychological involvement a given person experiences within each role. Such involvements change throughout your role as for example a worker, depending on your success at or added challenge of the job. Super termed the types of roles, as well as the width and depth of these roles a “life-style”.

Furthermore, Super’s (1980) model depicts decision points that happen before and at the time of taking on a new role, when giving up a role, as well as when making important changes to an existing role. Decision points across roles can be related, and many of them are age related and fairly standard within a culture or society (Super, 1980). Super focused specifically on career development with his model and describes career behaviors that result from an individual’s decision-making process, which are in alignment with the life stages of growth, exploration, establishment, maintenance, and decline. The cycle of career development begins with the awareness of impending career decisions, which refers to the growth stage of an individual. Next, one moves into the exploration stage in which they gain an understanding of the situation by seeking out new information and identifying alternative actions in order to make a decision. Then people experience the establishment stage in which alternatives are weighed in regards to objectives and values, a preferred plan of action is decided, and then pursued. Decline then forces one to encounter another decision point in order to engage in another plan of action, (e.g., training or retirement).

Examples for each stage are as follows: a need for growth may occur when one has recognized a need for more training for the job in order to develop. During exploration one then makes the decision to seek out new information about the job, and establishment can occur when trying to make a place for oneself in a new job. Maintenance can refer to holding a position within a new employment status, and decline can occur when someone becomes unable to meet job demands and requirements and are forced to make a decision (e.g., retirement).

Decision points and adjustment needs guide the decision-making process. These time intervals can vary, and the decision points are influenced by personal and situational determinants. Personal determinants refer to the interaction between environment and genetics. For example, self-knowledge and/or subjective age can result from chronological age and influences of the environment that alter someone's personal feeling of age. Situational determinants refer to historic, geographic, social, and economic conditions that influence the individual.

Whereas Super (1980) refers to the stages of growth, establishment, maintenance, and decline within a career development path, his career-life rainbow also depicts these stages across the entire lifespan of a given individual. These stages reflect progression through life in general, but can also be applied to specific roles. The stages that influence decision-making processes, specifically in the role of a worker, offer further support for a shift in goal-orientation with age. As one moves towards the maintenance and decline phases, the decision-making process of an adult changes and can influence whether it is worth pursuing training opportunities and/or a progression up through the hierarchy of an organization.

Based on this gathered evidence provided by SOC, SST, and Super's (1980) life-span approach to career development, I accordingly expect a greater occupational future time perspective in participants with a younger subjective age.

H1: The subjective age of participants will be inversely related to occupational future time perspective such that individuals with younger subjective ages will have higher occupational future time perspectives while individuals with older subjective ages will have lower occupational future time perspectives.

Performance Appraisal

Performance appraisals are evaluations conducted within the workplace for different purposes, which include administrative uses, research, development of employees, and motivation of employees (Farr & Levy, 2007). It is an important and frequently used tool, and Murphy and Cleveland (1995) state that performance appraisal is often also used for legal and political purposes.

One of the most prevalent uses is the administrative use, which aids decisions regarding promotions, pay, or placement within the organization (Murphy & Cleveland, 1995). Such decisions should be based on performance, which is why high-quality measures of performance are critical to making good decisions. Allocating promotions can be viewed as a future-oriented goal because it represents an investment in a worker for the future, but such opportunities are often denied to older workers (Posthuma & Campion, 2008). Decisions regarding the allocation of developmental training is another purpose of performance appraisal, which when given properly can lead to substantial improvements in performance (Murphy & Cleveland, 1995). This purpose can also be considered a future-oriented goal of performance appraisal because it focuses on the advancement of employees for the future within an organization.

Other purposes of performance appraisal include systems maintenance uses such as workforce planning. One strategy in workforce planning is flextime, which refers to flexible work arrangements in which employees can decide when to complete work-related tasks. Flextime has been linked to greater job satisfaction and lower turnover intentions (McNall, Masuda, & Nicklin, 2009). De Lange and colleagues (2015) mention the importance of flexible work hours for older employees and have categorized them as a maintenance-oriented HR practice because they can help workers maintain current levels of functioning.

Lastly, Kooij and colleagues (2013) examined bundles of HR practices in their study and describe the act of having a formal performance appraisal process for feedback purposes in place as a maintenance-oriented HR practice. This helps an older employee receive information about her/his performance and helps monitor changes in performance. This is useful in aiding the maintenance of current performance.

Due to its significance and high impact at the workplace, it is important to study potential influences on performance appraisal, and how these can change ratings and even distort them. The rating process is influenced by its context (Ferris, Munyon, Basik, & Buckely, 2008), and as mentioned above, performance appraisal is considered a social and communication process (Murphy & Cleveland, 1995). The rater may use the performance evaluation process to advance her/his own goals because the rater is not a passive measurement instrument tool (Murphy & Cleveland, 1995). It is therefore important to examine how personal goals for performance appraisal develop and change, and how goal orientation affects ratings.

Cleveland and Murphy (1995) offer four general categories of the most frequently pursued goals of the rater: (1) task-performance goals, (2) interpersonal goals, (3) strategic goals, and (4) internalized goals. Task-performance goals refer to using performance appraisal in order

to increase or maintain the ratees' performance levels by influencing the motivation of the ratee or offering feedback in order to correct counterproductive behavior. Interpersonal goals refer to those that are aimed at improving or maintaining the relationship between the supervisor and ratee, e.g., by creating a positive work environment. Strategic goals refer to performance appraisal behavior that has the purpose of increasing the supervisors' and workgroups' standing in the organization by for example assigning promotions or other opportunities to your employees. Lastly, internalized goals emerge from the raters' beliefs and values. A rater who values honesty might be more motivated to provide accurate ratings rather than allocating rewards to her/his subordinates.

Goals are complex and ambiguous though, and people are not always aware of all aspects of goals. They are acquired through a variety of ways, including direct experiences, vicarious learning, and as a reflection of values and experiences of the individual (Murphy & Cleveland, 1995). Experiences and major factors in life can be accounted for by age. Cleveland and Shore (1992) found that the age of the ratee, as well as the average age of their workgroup influenced performance ratings.

As described above, studies examining SST have found that OFTP is related to goal orientation, (e.g., Carstensen & Fredrickson, 1998; Gielnik et al., 2012). The more participants indicated having high (O)FTP, the more likely they were to rate future-oriented goals, e.g., knowledge acquisition, as important. Because aging and a changing (O)FTP is an experience every worker/rater makes, it is valuable to examine whether raters' (O)FTP will influence their rating behavior. Also, it is worth investigating whether this personal experience influences ratings that are meant for other recipients than yourself, e.g., when providing ratings that pursue future-oriented goals such as promotions for older employees.

Based on the empirical evidence described above, I expect a positive relationship between a rater's OFTP and the degree to which her/his goals are future-oriented.

H2a: There will be a positive correlation between rater's occupational future time perspective and future-oriented goals of the rater.

Also, I suspect a negative relationship between the rater's OFTP and the degree to which her/his goals are maintenance-oriented.

H2b: There will be a negative correlation between rater's occupational future time perspective and maintenance-oriented goals of the rater.

Furthermore, past research has shown that actual ratings can be altered depending on the raters' goals, so that they intend to provide ratings that are consistent with these goals (Murphy, Cleveland, Skattebo, & Kinney, 2004). Murphy and colleagues (2004) examined performance ratings of students for their instructors. Results showed correlations between ratings of goal importance obtained at the beginning of the semester before students had observed the actual performance of the instructor and the ratings provided at the end of the semester. Students therefore pursued ratings based on their goals, even when all of them observed the same performance of the instructors. Disagreements among raters therefore reflected systematic differences in the raters' goal orientation within the appraisal context, rather than measurement error.

Similarly, Wong and Kwong (2007) manipulated goal orientations in raters and found that ratings depended on these orientations. Raters who pursued harmony-related goals increased mean ratings and decreased the discriminability of these ratings. Wang, Wong, and Kwong (2010) also found evidence that performance appraisals differ depending on the goals of the raters. Ratings were generally inflated when raters pursued goals to increase harmony, fairness,

or motivation. This effect was stronger, the more the performance levels of the ratees decreased. This shows that depending on personal attributes, such as goal orientation, these goals are likely to be reflected in the rating behavior of raters. Accordingly, most likely the rating behavior will depend on the goal orientation of the raters. As personal goals differ, so will most likely the rating behavior of the rater.

H3: There will be a positive correlation between future-oriented goals and ratings for allocations of H3a: promotions and H3b: developmental training, to/for older workers.

H3: There will be a positive correlation between maintenance-oriented goals and ratings for allocations of H3c: flextime and H3d: the use of formal performance appraisals for feedback purposes, to/for older workers.

Overall, the previous hypotheses have therefore argued for two factors that mediate the relationship between the subjective age of the rater and rating behavior (Figure 1). As your OFTP changes, so do your personal goals, and therefore lastly one's actual rating behavior in a performance appraisal context.

H4: The relationship between the subjective age of the rater and rating behavior will be mediated by occupational future time perspective and the goals of the rater.

Methods

Participants

Power analysis. A power analysis was conducted by entering the proposed mediation model into MPlus and specifying the expected path effect sizes as they have been found in past research. Based on results by Lang and Carstensen (2002), who found a correlation of $r = -.70$ between FTP and the age cohort of the participants, a large effect was predicted for the relationship between subject age and OFTP. Further, moderate effects between OFTP and PA goals were expected because Phan (2009) found moderate to strong relationships between FTP and goal orientations ($\beta = .25 - .30$). On the other hand, Kooij and Van De Voorde (2011) found small to moderate relationships between FTP and goal orientation ($\beta = .08 - .10$). Therefore, I was conservative and used moderate effect sizes ($\beta = .23$). Based on research by Wong and Kwong (2007) who found $\eta^2 = .24$ for the relationship between goal orientation and rating behavior, I estimated the paths between these two variables between .15 and .30. Based on a Monte Carlo simulation analysis, the minimum sample size was determined by ensuring that I have at least 80% power to detect significant paths. Therefore, I aimed to recruit 300 participants to detect the effects in the proposed model. In order to ensure a large enough n , 10% of additional data was collected for the case that data has to be deleted due to careless responding or outliers.

MTurk. Participants were recruited via Amazon's Mechanical Turk (MTurk; www.mturk.com). Survey data from MTurk is more representative of the U.S. population than undergraduate samples and tends to be of comparable quality as other data sources (Behrend, Sharek, Meade, & Wiebe, 2011; Buhrmester, Kwang, & Gosling, 2011).

The compensation for participants in MTurk is typically small (e.g., 5 – 10 cents for 5 – 10 minute tasks) (Buhrmester et al., 2011). Buhrmester and colleagues (2011) also examined differences in quality of data derived from MTurk with varying compensation levels. The quality of the data did not vary, but data collection speed did. In order to ensure timely data collection, participants were compensated \$1.00 for the survey. Pilot testing of the survey indicated a completion time of approximately 15 minutes. Non-graduate students were used for the pilot test, as most MTurk participants will also not be graduate students. Three simple attention checks were randomly included in this study in order to exclude participants who indicate careless responding.

By first conducting a screening survey, participants without rating experience in a workplace context and participants without any managerial experience in a work context were excluded. Participants were also excluded if self-employed.

Procedure

Once each participant consented to voluntary participation, she/he completed measures of demographics, including gender, race, chronological age, and current occupation. Research has shown that placing demographic questions at the beginning of a survey increases item response rates for these items without affecting the response rates for other items (Teclaw, Price, & Osatuke, 2012). Then participants answered items measuring their occupational future time perspective, goal-orientations, and their subjective age. Participants also reviewed six (four older workers and two younger workers; only results from older workers' vignettes were included in analysis) performance appraisal rating sheets, which had been completed by hypothetical managers in order to assess the older employees' work performance. Below each vignette, the participants answered their likelihood to promote this employee, their likelihood to allocate

developmental training to that employee, their likelihood to recommend flexible work hours for that employee, and their likelihood to recommend regular, formal performance appraisals for feedback purposes for that employee using Likert-scales.

Measures

Subjective age. Subjective age was assessed in two ways. The first method used a format similar to the one used by several studies examining this construct (e.g., Barak et al., 2011; Kaliterna, Larsen, & Brkljacic, 2002; Stephan et al., 2011), which assesses the age the participant feels, act, looks, and the age that generally reflects her/his interests. Participants were asked to specify in years, how old they feel (“I feel as if I was ...years”), how old they act (“I act as if I was...years”), how old they look (“I look as if I was... years”), and the age that reflects their interests (“My interests are those of someone who is...years”). Consistent with Stephan et al. (2011), their answers were averaged into an overall subjective age score, and the alpha for this scale was .87 in previous research. In the current study, this scale also had an alpha of .87.

Another subjective age scale was included using a format similar to Shore, Cleveland, and Goldberg (2003). Participants were asked to indicate the age on the following scale that most closely corresponds to the age “you generally feel”, “you look”, “of people whose interests and activities are most like your own”, and “you would most like to be.” The response scale was altered so that participants could enter how old they were in terms of number of years for each item; the original scale used a 5-point Likert scale (1 = 16-25 years, 2 = 26-35 years, 3 = 36-45 years, 4 = 46-55 years, 5 = 56-75 years). This change was made to keep the response scale format the same as the alternative subjective age scale described above and so that the discrepancy between chronological and subjective age could be assessed more precisely. This scale indicated an alpha of .79 in previous research. In this study, the alpha for this scale was .84.

Occupational future time perspective. This was measured with six items, which have been adapted by Zacher and Frese (2009) from Carstensen and Lang's (1996) Future Time Perspective scale to fit a work context. Due to the fact that this study examined work-related goals, it was most useful to measure FTP in relation to work. This OFTP scale measured both dimensions of this construct (remaining opportunities and remaining time), but all scores were aggregated to an overall OFTP score. The items to assess remaining opportunities were "Many opportunities await me in my occupational future", "I expect that I will set many new goals in my occupational future", and "My occupational future is filled with possibilities". Zacher and Frese (2009) assessed an alpha of .94 for this subscale.

The items assessing remaining time are "Most of my occupational life lies ahead of me", "My occupational future seems infinite to me", and "As I get older, I begin to experience time in my occupational future as limited" (reverse coded). This subscale had an alpha of .81.

Participants gave their answers on a 7-point Likert scale ranging from 1 (Very untrue of me) to 7 (Very true of me). The responses were averaged in order to attain an overall score for OFTP. In this study, the alpha for the 6 item scale was .87. One item was dropped which resulted in an alpha of .89 for the 5 item scale.

Future-oriented goals. In order to measure future-oriented goals, items used by Kooij and Van De Voorde (2011) were used: "How important is the opportunity for personal development for you?", "How important is having challenging work for you?", "How important is the opportunity to learn something new for you?", and "How important is being able to fully use your skills and abilities for you?". Participants gave their answers on 7-point Likert scales ranging from 1 (Not at all important) to 7 (Extremely important). This scale had an alpha of

.80 at time point one and .84 at time point two in previous research. In this study, the alpha for the scale was .84.

Maintenance-oriented goals. In order to measure maintenance-oriented goals, five items were generated and modeled after Kooij and Van De Voorde's (2011) items described above. They are as follows: "How important is it for you to focus on maintaining the skills that you do well?", "How important is it for you to maintain the skills you currently have?", "How important is it to obtain work assignments that utilize the skills you currently do well?", "How important is it to seek out work conditions that help you maintain your current work performance?", and "How important is it for you to receive regular performance evaluations so you can maintain your work performance?". Participants gave their answers on 7-point Likert scales ranging from 1 (Not at all important) to 7 (Extremely important). In this study, this 5 item scale had an alpha of .71. One item was dropped which resulted in an alpha of .78 for the 4 item scale.

Attention-Check Items. Three attention check items were included randomly throughout the survey to identify participants who responded carelessly. An example of one item was "Please select the response Disagree", and participants gave their answers on a 7-point Likert scale ranging from 1 (Strongly Agree) to 7 (Strongly Disagree). The response scale was chosen in a similar format to that of the rest of the survey to blend in with the other questions. Participants who failed one of the attention check items were excluded from the study and were not compensated.

Materials

Experimental Vignette Methodology (EVM) consists of presenting participants with realistic and carefully constructed scenarios in order to measure the effects of the independent variable on the dependent variable. One type of EVM is paper people studies (Aguinis &

Bradley, 2014). Such studies present participants with vignettes, which are typically in written form, and participants are afterwards asked to make explicit decisions or judgments. In this study, participants reviewed such vignettes and provided ratings regarding performance appraisal decisions for these hypothetical employees. In order to avoid carryover effects, these materials were counterbalanced.

The vignettes described four older workers (2 male, 2 female) and two younger workers (1 male, 1 female). Younger workers were included so that the focus upon older workers was not obvious to the participants. This study aimed at investigating how different goals that might derive from the (subjective) aging process may influence ratings for older employees. Allocating resources becomes a more critical process with age and therefore vignettes of older employees were chosen. Please see the Appendix for an example of a vignette. All workers showed comparable work performances, which were indicated with numerical ratings of a hypothetical manager on several work performance dimensions. The ratings were indicated on a Likert scale ranging from 1 to 7 (1 – “Requires considerable improvement”; 2 – “Approaches performance requirements”; 3 – “Meets performance requirements”; 4 – “Occasionally meets performance requirements”; 5 – “Frequently exceeds performance requirements”; 6 – “Often exceeds performance requirements”; 7 – “Always exceeds performance requirements”). Quantitatively, the performance scores of all hypothetical employees added up to the same number (35) on this rating sheet, although the marked values varied minimally between the paper people in order to reflect expected variability among different employees. The manipulation check completed by five graduate students validated that all vignettes indicated comparable work performances. Furthermore, the manipulation check confirmed that the intended employees were recognized as older.

The occupations of all six hypothetical older employees were selected based on results by Goldberg, Finkelstein, Perry, and Konrad (2004). The authors examined various industries by having 22 graduate students rate the age-type and gender-type on Likert scales (1 = younger person's job; 1 = feminine job to 7 = older person's job; 7 = masculine job). The authors also calculated average mean deviation indexes in order to assess inter-rater agreement, and all three industries resulted in an index score lower than 1.2, which has been proposed as an upper limit cut-off score by Burke and Dunlap (2002). The three industries that showed greatest neutrality regarding gender- and age-types were advertising market services (age-type mean = 3.37; gender-type mean: 3.59), entertainment/leisure/tourism (age-type mean = 3.64; gender-type mean: 3.52), and sales (age-type mean = 3.45; gender-type mean: 3.80).

In order to obtain specific occupations, the following job titles were selected from O*Net within the industries listed above: Public Relations Specialist, Food Service Manager, Lodging Manager, and Sales Representative. Furthermore, according to the Bureau of Labor Statistics (BLS; United States Department of Labor), all four occupations' median pay rates are within comparable earnings. This controls for prestige of the occupation, which can often be associated with the age-type of the job (Cleveland & Hollmann, 1990). The degree of age-neutrality and gender-neutrality of the occupations was tested and confirmed with the manipulation check.

At the end of each rating sheet, the participants provided ratings. These questions were created in alignment with the bundles of HR practices suggested by De Lange and colleagues (2015), as well as Kooij and colleagues (2013), which were created by these authors in alignment with SOC theory. Their bundles are as follows: development HR practices, maintenance HR practices, utilization HR practices, and accommodative HR practices. Accordingly, the authors indicated promotion and developmental training as a development HR practice (and therefore

future-oriented), and they specify offering flexible work hours and providing regular, formal performance appraisals as maintenance-oriented HR practices.

Analyses

In order to test hypotheses 1 - 3, correlational analyses were conducted. To test hypothesis 4, mediation analysis was performed. This study utilized Structural Equation Modeling (SEM) in order to test the proposed model (Figure 3), which was conducted in MPlus statistical software, version 8 (Muthén & Muthén, 1998 – 2012). I observed the measurement models of the latent variables (i.e., subjective age, occupational future time perspective, and goal orientations). The generated survey items served as indicators for their respective latent variables, and I assessed the relationships between the variables in the model. In order to assess the mediating effects of OFTP and goal orientation, I utilized the product of coefficients method. To quantify the indirect effect, the mediating pathways were multiplied. The further the product of the paths is from zero, the stronger the mediating effect is (Preacher & Hayes, 2008). If either pathway is zero, then the resulting product will be zero, which indicates that there is no mediation.

Bootstrapping. In order to retrieve confidence intervals, I utilized bootstrapping. This method is more useful than the Sobel test, which is plagued by making assumptions about the shape of the sampling distribution of the indirect effect. Additionally, no standard error is needed with bootstrapping, and because it is a very general approach, it can make inferences about indirect effects in any intervening variable model, even with numerous paths between X and Y (Hayes, 2009).

Bootstrapping treats the obtained sample size n as a representation of the population in miniature (Hayes, 2009). By doing this, this method generates an empirical representation of the

sampling distribution of the indirect effect to be tested. This sample is repeatedly resampled with replacement during the analysis in order to mimic the original sampling process. By utilizing replacement while resampling, a new sample of size n is built, and once this is constructed, a and b are estimated and the product of the path coefficients recorded. This process is repeated k times (typically at least 1000 times and in this study 5000 times). Once completed, I received 5000 estimates of the indirect effect, the distribution, which functions as an empirical approximation of the indirect effect in my sample. These 5000 estimates were used to produce percentile-based bootstrap confidence intervals.

Control Variables. Two control variables were included for the analyses in order to reduce the possibility that these variables impacted the results of this study. Control variables must be chosen carefully and should only be included in the analyses when expected to influence the relationships between the variables of interest (Spector & Brannik, 2011).

Gender. Results on gender differences in subjective age are mixed, but have been confirmed in previous studies. Results showed that women tended to experience greater subjective and chronological age discrepancies (Linn & Hunter, 1979; Montepare & Lachman, 1989; Ward, 1977). Some research has also shown that the gender of the rater can affect rating behavior (Benedict & Levine, 1988; Huber, Neale, & Northcraft, 1987). Therefore, rater gender was included as a control variable.

Chronological Age. Chronological Age was examined in its relationships with the other variables of interest of this study. It showed a high correlation with subjective age ($r = .85$). Past research has also shown that chronological age is related to OFTP (Gielnik et al., 2012).

Therefore, chronological age was added as a control variable.

Evidence of Adequate Model Fit. Model fit refers to its ability to reproduce the data, and a good-fitting model is one that is reasonably consistent with the data (Kenny, 2014). It is not the primary purpose of this study to investigate the quality of measurement of the included constructs, but in order to make valid inferences about the structural model, the study should utilize a proper measurement model (Byrne, 2013).

I assessed the fit of the measurement models via the following statistics: the chi-square statistic (χ^2), comparative fit index (CFI), root mean square error of approximation (RMSEA), and standardized root-mean-square residual (SRMR). According to the recommended cut-offs of Hu and Bentler (1999), the fit statistics were assessed based on the following recommendations: CFI > .90 and SRMR < .08. MacCallum, Browne, and Sugawara (1996) suggest good fit at RMSEA < .08 and mediocre fit with an RMSEA between .08 and .10. Therefore, RMSEA < .08 was considered a sufficiently fitting model. It is important to note that a significant Chi-Square test is common in large sample sizes. For models with about 75 to 200 cases, this test is a reasonable measure of fit (Kenny, 2014). The Chi-Square statistics were listed in this study for the purpose of listing all commonly used fit statistics, but the larger sample size of $n = 300$ will most likely lead this statistic not being meaningful for assessing fit.

In order to assess the reliability of all measures utilized in this study, alpha coefficients were calculated for each scale. The evaluation of alternative models was evaluated by comparing the fit of the alternative models to that of the initial model.

Results

Data Cleaning

Prior to data analysis, I cleaned the data. Twenty-four participants were excluded due to careless responding (failed attention checks) or lack of response frequency and were therefore excluded from the statistical analysis and furthermore not compensated. Another six participants were removed because they completed the survey in an unreasonably fast amount of time compared to the rest of the sample (<5 minutes). Two more cases were removed after examining the age and subjective age measure z scores (> 3.29). This resulted in a final sample of $n = 305$.

Assumptions

After generating scale scores for all relevant measures, I screened the data and tested for several assumptions according to the recommendations of Kline (2011): outliers, non-normality, non-linearity, and heteroscedasticity.

Outliers. Outliers are scores that are different from the rest, but there is no single definition of “extreme”. The general rule is that scores that deviate from the mean more than three standard deviations might be outliers. Such univariate outliers can be found by inspecting frequency distributions of z scores, and $|z| > 3.29$ will indicate an outlier (Kline, 2011). As described above, two cases were removed after examining the age and subjective measure z scores.

Non-normality. In order to test for non-normality, I examined skewness and kurtosis by calculating the skew index (*SI*) and kurtosis index (*KI*). In large samples, the impact of departure from zero kurtosis diminishes and disappears with samples of 100 or more cases (Tabachnik & Fidell, 2012). The *SI* of subjective age indicated positive skew ($SI = .82, SE = .14$). A logarithm

transformation was performed and resulted in a normal distribution of the data ($SI = .24$, $SE = .14$). All other variables of interest (OFTP, future goal orientation, maintenance goal orientation, and performance appraisal ratings) indicated a negative skew, but if all the variables are skewed to about the same moderate extent, transformations often lead to marginal improvements (Tabachnik & Fidell, 2012). All models were tested with the non-transformed, as well as the transformed variables, and the differences in results were negligible. Therefore, the results of this study are based on the non-transformed values of these variables.

Non-linearity. I examined bivariate scatterplots to investigate linearity, and this assumption was not violated.

Heteroscedasticity. Residual scatterplots did not indicate heteroscedasticity.

Descriptive Statistics

Of the 305 participants in this sample, 49.8% identified as female, 49.5% as male, and .7% as non-binary. In regards to race, 79% were white, 7.5% Asian, 6.6% African American, 3% Latino, .3% American Indian/Alaskan, and 3.6% identified with several races. The majority of the sample (93.4%) indicated working more than 30 hours a week, and 82.3% of the sample currently has a performance appraisal system in place at their work. On average, the participants of this sample work 40.57 hours a week and have utilized a formal work performance evaluation system at their workplace on average “often”. The majority of the sample indicated working in the health care sector (12.1%), followed by professional, scientific, and technical services (11.5%), and finance and insurance (9.5%), educational services (8.5%), information (8.5%), and retail trade (7.9%). Table 1 displays the means, standard deviations, and correlations for all study variables pertinent to the study.

Measures

Subjective age. Both subjective age scales were examined for fit. The scale used by Barak and colleagues (2011) indicated insufficient fit, $\chi^2 (2) = 24.44, p < .001, CFI = .96,$ RMSEA = .19, and SRMR = .03. The alpha coefficient was .87.

The subjective age scale adapted from Shore and colleagues (2003) indicated good fit, $\chi^2 (2) = 2.06, p > .05, CFI = 1.00, RMSEA = .01, SRMR = .01.$ The alpha coefficient was .84. Both subjective age scales highly correlated with each other, $r = .93.$ Due to the better fit statistics of the scale adapted from Shore and colleagues (2003), it was retained for all further analyses.

OFTP. This scale indicated insufficient fit, $\chi^2 (9) = 38.80, p < .001, CFI = .97, RMSEA = .12,$ and SRMR = .04. The alpha coefficient was .87. Inspection of the standardized factor loadings indicated a lower factor loading for item 6 (.47) in comparison to the other factor loadings.

Fit indices were examined after removing item six from the OFTP scale. The model fit improved, $\chi^2 (10) = 972.30, p < .001, CFI = .98, RMSEA = .10,$ and SRMR = .03. The alpha coefficient increased to .89. Therefore, the scale was retained with items 1 – 5.

Future-oriented goals. The future goal orientation measure by Kooij and Van De Voorde (2011) indicated good fit, $\chi^2 (2) = 3.79, p > .05, CFI = .10, RMSEA = .05, SRMR = .01.$ The alpha coefficient was .84. Therefore this scale was retained for all further analyses.

Maintenance-oriented goals. The maintenance goal orientation measure adapted from the future orientation measure by Kooij and Van De Voorde (2011) indicated marginally acceptable fit, $\chi^2 (5) = 14.91, p < .05, CFI = .97, RMSEA = .08, SRMR = .03,$ and the alpha coefficient was sufficient at .71. Examining the standardized factor loadings indicated a lower

factor loading (0.33) for item five (“How important is it for you to receive regular performance evaluations so you can maintain your work performance?”) in comparison to the other factor loadings.

Fit indices and alpha were examined after removing item five from the maintenance goal orientation scale. The model fit improved, $\chi^2(6) = 6.20, p < .001$, CFI = .99, RMSEA = .08, and SRMR = .02. The alpha coefficient increased to .78, indicating higher reliability. The factor loadings of items 1 – 4 remained far above the acceptable cutoff of .30. Therefore, this scale was retained containing items 1 – 4.

Hypothesis Testing

Hypothesis 1. The subjective age of participants was inversely related to occupational future time perspective such that raters with younger subjective ages had higher occupational future time perspectives, while individuals with an older subjective age had lower occupational future time perspectives. The correlation between the subjective age scores and OFTP was $r = -.32, p < .001$. The hypothesis was therefore supported.

Hypothesis 2a. This hypothesis states that as raters’ OFTP is higher, so were their ratings for future-oriented goals. The correlation between the OFTP scores and ratings of future-oriented goals was $r = .41, p < .001$. The hypothesis was therefore supported.

Hypotheses 2b. This hypothesis states that as raters’ OFTP is higher, their ratings on maintenance-oriented goals are lower. The correlation between OFTP of the raters and the overall score on maintenance-oriented goals was $r = .34, p < .001$. Hypothesis 2b was therefore not supported because the relationship was positive instead of negative as hypothesized.

Hypotheses 3a & b. As there were higher ratings for future-oriented goals, raters gave higher ratings for allocations of a) promotions and b) developmental training to older workers. The correlation between ratings of future-oriented goals and actual PA ratings for the allocation of a) promotions to older workers was $r = .20, p < .001$, and for b) developmental training to older workers was $r = .26, p < .001$. The correlations between future-oriented goals and the other two outcomes (categorized as maintenance-oriented performance appraisal rating outcomes) were also significant though; for flextime recommendations $r = .22, p < .001$, and for regular performance appraisal recommendations $r = .26, p < .001$. Hypotheses 3a and b were therefore partially supported.

Hypotheses 3c & d. As there were higher ratings for maintenance-oriented goals, raters gave higher ratings for allocations of a) flextime and b) the use of formal performance appraisals for feedback purposes to older workers. The correlation between ratings of maintenance-oriented goals and actual performance appraisal ratings for the allocation of a) flextime to older workers was $r = .26, p < .001$, and for b) the use of formal and regular performance appraisals to older workers was $r = .37, p < .001$. The correlations between maintenance-oriented goals and the other two outcomes (categorized as future-oriented performance appraisal rating outcomes) were also significant though; for promotion recommendations $r = .28, p < .001$, and for training recommendations $r = .37, p < .001$. Hypotheses 3c and d were therefore partially supported.

Hypothesis 4. Mediation (indirect effect) is said to occur when the causal effect of an independent variable (X) on a dependent variable (Y) is transmitted by a mediator (M). The traditional method of testing mediation was proposed by Baron and Kenny (1987). This method was accomplished in causal steps; the dependent variable was first regressed on the independent variable (pathway c) in order to test the relationship between the predictor and outcome. If

pathway c was significant, then the mediator was regressed on the independent variable (pathway a). Lastly, the dependent variable was regressed on the mediator (pathway b), while controlling for the independent variable. If pathway c was zero, then mediation could not be tested further even though indirect effects might be present in pathways a or b.

In this data, subjective age was not significantly related to the rating outcomes. Regression analyses indicated that subjective age did not significantly predict ratings for promotions, $\beta = .08, p > .05$, and it did not significantly predict ratings for training, $\beta = .11, p = .05$. Furthermore, it did not significantly predict ratings for flextime, $\beta = .07, p > .05$ or ratings for regular performance appraisals, $\beta = .12, p > .05$. According to the Baron and Kenny approach, mediation analysis would therefore not be performed.

Recent literature has criticized this approach in that it often misses indirect effects even when they exist and that it is low in power (Hayes, 2009; Kline, 2015; Preacher & Hayes, 2008). The reason is that if the effect of X on Y is in part indirectly carried through the mediator, the causal steps approach often misses to detect that effect. This approach is not based on a quantification of the intervening effect (the product of the constituent paths), but rather infers logically whether to proceed with mediation analyses (Hayes, 2009). Also, the causal process is not holistic, which is why many researchers nowadays do not apply the first step anymore in order to move forward with mediation analyses (Kline, 2015). Lastly, this approach can miss mediating effects when testing inconsistent mediation models. These are models where at least one mediated effects has a different sign than other mediated or direct effects (MacKinnon, Fairchild, & Fritz, 2007).

Even though the traditional approach would not suggest proceeding with mediation analyses due to an insignificant relationship between the predictor (subjective age) and the

outcomes (ratings), SEM was conducted to further investigate the relationships between the variables of interest.

Measurement model. The first step of SEM is to test the measurement model in order to determine whether the relationships in the measurement model between observed variables and their underlying latent constructs are adequate (Anderson & Gerbing, 1988).

Model 1. The initial model (Figure 1) was tested and examined for model fit. The model approached acceptable fit, but was not sufficient (Table 2).

Alternative model 2. Based on the correlation matrix, maintenance goal orientation and future goal orientation were highly correlated, $r = .74, p < .001$. Therefore the second model was tested by collapsing both goal orientations into one construct. The model fit decreased slightly and was not sufficient (Table 2).

Alternative model 3. In an attempt to improve fit statistics, the correlation matrix was again examined. All types of ratings showed significant correlations with each other (see Table 1). Therefore, the outcomes were no longer aggregated into future-oriented and maintenance-oriented types of ratings, but instead treated separately. The fit statistics improved slightly and approached acceptable fit (Table 2).

Alternative model 4. Finally, a fourth model was tested in which the different ratings were treated as separate outcomes rather than aggregating them based on the fit improvement of model 3, and the goal orientations were entered again as separate mediators (maintenance-oriented vs. future-oriented) (Figure 2). This decision was based on OFTP having a stronger relationship to future-oriented goals ($r = .41$) than maintenance-oriented goals ($r = .34$), which is

in alignment with SOC and SST, therefore arguing for separate constructs. Fit statistics improved and reached acceptable fit (Table 2). This model was therefore retained for the testing of Hypothesis 4.

Structural model. The second step of SEM is to assess the structural model (Anderson & Gerbing, 1988). The purpose is to determine whether the proposed structural model fits the data. Furthermore, it determines if the hypothesized paths are supported by the data (Figure 3). Testing the structural model with the revised measurement model resulted in poor fit statistics, $\chi^2(207) = 758.62$, CFI = .86, RMSEA = .09, SRMR = .13. Therefore, an alternative structural model was tested. Based on the high correlations between both goal orientations, $r = .74$, $p < .001$, a path was added between future- and maintenance-oriented goals (Figure 4). This model fit the data well, $\chi^2(205) = 541.19$, CFI = .92, RMSEA = .07, SRMR = .07. Therefore, I proceeded in interpreting the direct and indirect effects.

Direct Effects. Subjective age did not significantly predict OFTP, $\beta = -.34$, $p > .05$. OFTP significantly predicted future goal orientation, $\beta = .50$, $p < .001$ and also significantly predicted maintenance goal orientation $\beta = .47$, $p < .001$. Future goal orientation significantly predicted ratings on promotions, $\beta = .21$, $p < .001$ and training, $\beta = .30$, $p < .001$. Also, maintenance goal orientation significantly predicted ratings for flextime, $\beta = .24$, $p < .001$ and ratings for regular performance appraisals, $\beta = .32$, $p < .001$. Future goal orientation showed a significant correlation with maintenance goal orientation, $r = .89$, $p < .001$.

Indirect Effects. Examination of the bias-corrected bootstrapped confidence intervals revealed that the indirect paths between OFTP and all outcomes were significant. The indirect paths from subjective age to either goal orientation were not significant, and finally the indirect paths leading from subjective age to any of the outcomes were not significant (Table 3). This

indicates that goal orientation mediates the relationship between OFTP and outcomes. OFTP and goal orientation do not mediate the relationship between subjective age and outcomes. Therefore, hypothesis 4 was partially supported.

Nested Model Strategy. Another strategy to test for mediation is using the nested model approach. This strategy makes use of the chi-square model fit index. While keeping sample size consistent, I tested the constrained and full model. This means that one model with only the direct paths (Figure 4) was compared to the same model including direct links between the predictor and outcomes (Figure 5). If there is mediation, the model fit statistics will not differ from each other significantly. Table 4 displays the fit indices of these models. The chi-square difference test indicated that the model fit was not significantly different after adding direct paths from the predictor to the outcomes: $\Delta \chi^2 = 6.91$, $\Delta df = 4$, $p > .05$. Therefore, these results indicate that there are indirect effects.

Effect Sizes

Preacher and Kelley (2011) offer a thorough discussion of possibilities for effect size calculations for mediation models. Indirect effects do not fit any of the classic effect size measures, which are usually reported in research, e.g., R^2 , η^2 , or Cohen's d . Mediating effects are complex because they are the product of regression coefficients and therefore do not fit into the framework of existing effect sizes. Another more commonly used type of effect size is P_M , which calculates the ratio of the indirect effect to the total effect. Unfortunately, this measure neglects any additional mediators in models and furthermore becomes unstable unless $n > 500$ (MacKinnon, Fairchild, & Fritz, 2007). The authors caution using this measure, especially when the model contains more than one mediator. Therefore, effect sizes were not calculated for this study.

Post Hoc Analyses

Past researchers have argued that subjective age is a more meaningful measure in comparison to chronological age (Cleveland & Shore, 1992; Kooij et al., 2013; Kunze et al., 2015). In the present study the correlation between chronological age and subjective age was high, $r = .85, p < .001$. Regression analysis also indicated chronological age significantly predicting subjective age, $\beta = .95, p < .001$. It was therefore expected that by including both variables in the model, they accounted for mostly the same variance.

Removing chronological age as a control. In order to investigate the unique role of subjective age as a predictor, chronological was removed as a control variable, whereas subjective age remained the predictor. The model fit decreased and only approached acceptable fit, $\chi^2 (192) = 518.64, CFI = .91, RMSEA = .08, SRMR = .08$. A proper measurement model is necessary to make valid inferences about the structural model (Byrne, 2013), and the fit statistics only approached acceptable fit. The RMSEA indicated .08, which is the cutoff for acceptable fit determined for this study. Due to the exploratory nature of the post hoc analyses and for the purpose of identifying trends of the data, the direct and indirect effects are nevertheless described below, but should be interpreted with caution.

Direct effects. Subjective age significantly predicted OFTP, $\beta = -.31, p < .001$. OFTP significantly predicted future goal orientation, $\beta = .46, p < .001$ and also significantly predicted maintenance goal orientation $\beta = .39, p < .001$. Future goal orientation significantly predicted ratings on promotions, $\beta = .21, p < .05$ and training, $\beta = .30, p < .001$. Also, maintenance goal orientation significantly predicted ratings for flextime, $\beta = .24, p < .001$ and ratings for regular performance appraisals, $\beta = .32, p < .001$. Future goal orientation showed a significant correlation with maintenance goal orientation, $r = .89, p < .001$.

Indirect Effects. Examination of the bias-corrected bootstrapped confidence intervals revealed that all indirect paths became significant as shown in Table 5.

Chronological age as a predictor while controlling for subjective age. In order to further investigate subjective age versus chronological age as a predictor, chronological age was entered into the model as a predictor while controlling for subjective age. The model fit the data well, $\chi^2(206) = 545.09$, CFI = .91, RMSEA = .07, SRMR = .07.

Direct Effects. Chronological age did not significantly predict OFTP, $\beta = .03$, $p > .05$. However, OFTP significantly predicted future goal orientation, $\beta = .50$, $p < .001$ and also significantly predicted maintenance goal orientation $\beta = .48$, $p < .001$. Future goal orientation significantly predicted ratings on promotions, $\beta = .21$, $p < .05$ and training, $\beta = .30$, $p < .001$. Also, maintenance goal orientation significantly predicted ratings for flextime, $\beta = .24$, $p < .001$ and ratings for regular performance appraisals, $\beta = .32$, $p < .001$. Future goal orientation showed a significant correlation with maintenance goal orientation, $r = .90$, $p < .001$.

Indirect Effects. Examination of the bias-corrected bootstrapped confidence intervals revealed that the indirect paths between OFTP and all outcomes were significant. The indirect paths from chronological age to either goal orientation were not significant, and finally the indirect paths leading from chronological age to any of the outcomes were not significant (Table 6).

Chronological age as a predictor without controlling for subjective age. In order to further investigate the relationships among these variables, chronological age remained the predictor, but subjective age was removed as the control variable. The model fit decreased and only approached acceptable fit, $\chi^2(136) = 412.18$, CFI = .90, RMSEA = .08, SRMR = .07. A proper measurement model is necessary to make valid inferences about the structural model

(Byrne, 2013), and the fit statistics only approached acceptable fit. The RMSEA indicated .08, which is the cutoff for acceptable fit determined for this study. Due to the exploratory nature of the post hoc analyses and for the purpose of identifying trends of the data, the direct and indirect effects are nevertheless described below, but should be interpreted with caution.

Direct Effects. Chronological age significantly predicted OFTP, $\beta = -.28, p < .001$. OFTP significantly predicted future goal orientation, $\beta = .45, p < .001$ and also significantly predicted maintenance goal orientation $\beta = .39, p < .001$. Future goal orientation significantly predicted ratings on promotions, $\beta = .21, p < .05$ and training, $\beta = .30, p < .001$. Also, maintenance goal orientation significantly predicted ratings for flextime, $\beta = .24, p < .001$ and ratings for regular performance appraisals, $\beta = .32, p < .001$. Future goal orientation showed a significant correlation with maintenance goal orientation, $r = .89, p < .001$.

Indirect Effects. Examination of the bias-corrected bootstrapped confidence intervals revealed that all indirect paths became significant (Table 7).

Multiple regression. In order to further investigate the role of subjective age and chronological age as unique predictors, multiple regression was performed. Results showed that chronological age and subjective age significantly predicted OFTP, $F(2,302) = 21.86, p < .001$. Chronological age continued to predict OFTP beyond the influence of subjective age, $\beta = -.24, p < .05$, but subjective age did not significantly predict OFTP once chronological age was accounted for (Table 8). Subjective age and chronological age were significant predictors of OFTP on their own, which means that subjective age acted as a close proxy for chronological age in this sample. Chronological age seemed to be a better predictor of OFTP than subjective age based on the results of the regression.

Alternative mediating roles. Mediation models are confirmatory of nature rather than exploratory, and therefore it is not appropriate to try all possible assignments of the variables (switching predictors and mediators) (Preacher & Hayes, 2008). Because the data was cross-sectional, one alternative option was tested because this suggestion could fit theory, as is described in the discussion. For this model, OFTP and subjective age were switched. Therefore, OFTP became the predictor, and subjective age was entered as the mediator between OFTP and both goal orientations. The model fit statistics were as follows: $\chi^2(205) = 576.27$, CFI = .91, RMSEA = .08, SRMR = .07. This model indicated mediocre fit based on the cut-off scores of MacCallum and colleagues (1996).

Direct effects. Examining the direct effects showed that some relationships indicated standardized regression coefficients greater than 1. For example, regressing subjective age on future goal orientation resulted in $\beta = -9.86$, $p < .05$, and regressing subjective age on maintenance goal orientation resulted in $\beta = -9.32$, $p < .05$. Chronological age was still a control variable, and relationships between chronological age and other variables showed similar patterns as described above. Regressing chronological age on future goal orientation resulted in $\beta = 9.08$, $p < .05$ and when regressed on maintenance goal orientation, $\beta = 9.41$, $p < .05$. Furthermore, regressing subjective age on chronological age resulted in $\beta = .98$, $p < .001$. Standardized regression coefficients greater than 1 can occur in the case of multicollinearity (Deegan, 1978).

Therefore, chronological age was removed as a control variable, and OFTP remained the predictor, whereas subjective age was the mediator. The model fit statistics were as follows:

$\chi^2 (192) = 568.14$, CFI = .89, RMSEA = .08, SRMR = .12. These fit statistics were insufficient, and in order to make valid inferences about the structural model, a proper measurement model must be utilized (Byrne, 2013). Therefore, direct and indirect effects could not be interpreted.

Discussion

The purpose of this study was to examine the mediating effects of OFTP and goal orientations on the relationship between subjective age and performance appraisal outcomes. Furthermore, this study investigated the utility of subjective age as a predictor in comparison to chronological age. For this purpose, a sample of 305 participants rated vignettes of older employees, and differences in ratings were assessed. Results showed that the mediating effects between subjective age and the outcomes were significant, but small using SEM. However, using a more conservative test of mediation (Kenny), the first step to test for mediation was not met. That is subjective age was not significantly related to performance outcomes. However, both OFTP and rater goals were significantly related to performance outcomes.

Model of OFTP and Goal Orientations as Mediators

Several changes to the model were made with the attempt at improving model fit. High correlations among the outcomes (types of ratings) indicated that aggregating them into future- and maintenance-oriented types of ratings was not appropriate. By specifying them as separate outcomes, model fit improved. Possibly, the categorization of HR practices (promotions, developmental training, flextime, and regular performance appraisals) as proposed by De Lange and colleagues (2015) and Kooij and colleagues (2013), is not as clear-cut for employees as it might be for organizations. For employees, such types of ratings and HR practices might be helpful in pursuing certain goals, whereas organizations might utilize such practices more in alignment of the authors' suggestions.

Maintenance and future goal orientations were highly correlated, but aggregating them into one construct did not improve model fit. Most likely, participants did differentiate between

the two types of goals, but having maintenance-oriented goals is also related to having more future-oriented goals.

The final model that fit the data best differentiated between the two types of goal orientations, as well as the different types of performance appraisal ratings. Even though maintenance-oriented goals were strongly related to future-oriented goals, participants still differentiated between the two. Also, as the third alternative model indicated, model fit improved when separating rating outcomes. As described above, the aggregation of promotion and developmental training ratings into future-type ratings and the aggregation of flextime and regular performance appraisal ratings into maintenance-type ratings did not fit the data well. For these participants this categorization into maintenance-type versus future-type was not as evident as suggested by De Lange and colleagues (2015) and Kooij and colleagues (2013).

Hypotheses

This current study showed a negative relationship between chronological/subjective age and OFTP and confirmed hypothesis 1. In this study, having a younger subjective age was associated with having a more expansive perception of your OFTP. This was also a finding of Gielnik and colleagues (2012) and is in alignment with SOC and SST Theory, as your perspective of time left changes with (subjective) age.

Furthermore, OFTP was positively related to goals. Although this study investigated the relationships of OFTP to future-oriented versus maintenance-oriented goals, the expected variations did not emerge. It was hypothesized that raters who report a higher OFTP would also report increased future-oriented goals and lower maintenance-oriented goals. Higher ratings on OFTP in this study were significantly associated with having future-oriented goals, $\beta = .41$,

$p < .001$ (Hypothesis 2a), but were not significantly associated with having less maintenance-oriented goals, $\beta = .34$, $p < .001$ (Hypotheses 2 b). OFTP was positively associated with both types of goals and to more goals generally. This is in alignment with past research examining the relationship between OFTP and future-oriented goals. Phan (2009) found a positive relationship between FTP and mastery goals, which in turn led to differing study behavior of students. Possibly, an expanded OFTP leads you to have both types of goals because you need both in order to handle upcoming challenges and situations in work or life. In order to continue to develop, you need to be able to maintain current performances and behaviors first. However, the fact that OFTP more strongly predicted future-oriented goals in comparison to maintenance-oriented goals was consistent with SOC and SST. Again, it makes sense though that having more OFTP would lead to more goals generally as you could argue that you need one in order to achieve the other.

Hypotheses 3 a – d were supported, in that future-oriented goals were positively related to ratings of promotions and developmental training. Furthermore, maintenance-oriented goals were positively related to ratings of flextime and regular performance appraisals for performance maintenance purposes. When examining the correlation matrix though, it is important to note that both types of goal orientations were positively related to all four types of ratings (Table 1). This is in alignment with the finding that model fit improved when separating all rating outcomes into separate outcomes. Participants with higher goals (both maintenance- and future-oriented) indicated higher ratings for these outcomes. The rating outcomes were not dichotomized into clear categories of future-type or maintenance-type ratings, but instead all four types of HR practices increased with higher goals.

One reason for this finding could be that SOC and SST do not fully apply to this data, possibly due to its application to a performance appraisal context. SOC and SST are life-span theories that mostly have been applied to overall goal development across the life-span. Most likely this shift in goals does affect work outcomes (Rudolph, 2016), but possibly a performance appraisal context is too narrow and specific to show such effects. Behaviors in alignment with SOC and SST are more broad and may affect other outcomes, such as for example turnover intentions.

Another possible reason is that personal goals of the raters do not spill over to ratings of others to the extent as expected. In this study, the performance appraisal ratings were applied to another worker (paper people), so that such ratings did not affect the participants personally. Possibly results would have been different if participants had provided ratings for themselves instead of rating other employees. Past literature on self-ratings has shown leniency effects and other biases of self-ratings (Holzbach, 1978), whereas these also vary between different cultures (Farh, Dobbins, & Cheng, 1991; Murphy, 1993). Literature from social psychology has also shown that certain personal attributes, as for example self-confidence affect self-ratings of performance (Felson, 1981). An important theoretical perspective for understanding the process of self-ratings is Control Theory. This perspective explains how goal-oriented cognitions will influence behavior based on the amount of discrepancy between an individual's current and desired standing (Campbell & Lee, 1988). Therefore, discrepancy-reducing behavior will be initiated if prioritized by the rater/ratee. Possibly, goals have more influence on self-ratings due to the process of self-evaluation and discrepancy-appraisal. This study examined ratings for others and how goals affect these outcomes, but future research should compare the strength of these goal-oriented effects and behaviors for other-ratings versus self-ratings.

Lastly, as mentioned before, maybe participants did not have the same perception of maintenance- versus future-oriented types of performance appraisal ratings as organizations might. Instead, raters with higher goals gave higher ratings generally, which is in alignment with past research that performance appraisal ratings are affected by goals (Murphy et al., 2004; Wang et al., 2010; Wong & Kwong, 2007).

According to the results of the mediation analyses (Hypothesis 4), the indirect effects of OFTP and goal orientations between subjective age and rating outcomes (recommendations for promotions, developmental training, flextime, and regular performance appraisals) were not significant. These paths became significant though when removing chronological age as a control variable. Therefore, these results will be discussed below in the post hoc analyses section.

The mediating effects of goal orientation between OFTP and rating outcomes were significant, but small. This argues for the importance of personal goals in rating decisions, which has been confirmed by past research (Wang et al., 2010; Wong & Kwong, 2007). Whereas the relevance of goals has been demonstrated, this is the only study known to examine personal goals as mediators between OFTP and rating outcomes. Theoretically it makes sense that these constructs would be related in this manner because as one's OFTP changes, so should goals because they align with OFTP (Kooij and Van De Voorde, 2011; Phan, 2009). Because goals are relevant for decision-making in a performance appraisal context (Wang et al., 2010; Wong & Kwong, 2007), this in turn should affect ratings. The fact that these indirect effects were small though argues for the relevance of other variables not included in this study that may affect these relationships. Performance appraisals are strongly affected by contextual factors and constructs

such as trust, perception of fairness, and rating biases (Murphy & Cleveland, 1995). Most likely OFTP and goals can only explain a limited amount of variance in performance appraisal ratings.

The mediating paths are also supported by the results of the nested model strategy. It utilizes the difference of chi-square test, and the insignificant difference in model fit between the model with indirect paths only and the model with both indirect and direct paths is yet more evidence for the mediating paths by showing that adding direct relationships did not significantly change the model fit.

Post Hoc Analyses

Due to the slight misfit of the model after removing chronological age as a control variable, the relationships should be interpreted with caution. Nevertheless, after removing chronological age as a control variable, subjective age became a significant predictor of OFTP. All other direct effects remained nearly the same in comparison to before removing it as a control variable. Furthermore, the indirect effects that were not significant before also became significant. Therefore, OFTP and goal orientations mediated the relationship between subjective age and rating outcomes, whereas these effects were quite small. This change in significance levels of the described relationships was not surprising, considering the strong relationship between chronological and subjective age. When controlling for chronological age, it accounted for mostly the same variance as subjective age did. This was further supported when entering chronological age as a predictor variable while controlling for subjective age. Chronological age was not a significant predictor of OFTP while controlling for subjective age, but after removing this control variable, it became a significant predictor. The same pattern emerged for the indirect effects; after removing subjective age as a control, the indirect effect between chronological age

and the outcomes became significant, yet they were small. Therefore, the data behaved in the same patterns when switching subjective age and chronological age with each other.

Further support for this was provided by the regression analyses. Subjective age and chronological age were highly correlated in this study, and multiple regressions showed that subjective age was not a better predictor of OFTP in comparison to chronological age. Separately they each predicted OFTP, but when examined together, subjective was no longer predictive. A possible explanation is that subjective age might not be a better predictor than chronological age in general. Much of past research has examined subjective age in a life-span context and in relation to health antecedents or outcomes (e.g., Bergland et al., 2013; Kotter-Grühn et al., 2015). This might not apply to a work, more specifically a performance appraisal context.

Another reason is that in this sample specifically, not enough participants experienced a great enough discrepancy between their chronological and subjective age. In this sample, the average age discrepancy was $M = -4.25$ years (feeling 4.25 younger), $SD = 5.67$. Values ranged from feeling 24.14 years younger to feeling 11.25 years older. The majority of participants showed none or small discrepancies between their chronological and subjective age though. Therefore, the measure of subjective age simply acted as a proxy variable for chronological age. Measuring subjective age in lieu of chronological age might be more meaningful in populations that experience greater discrepancies between the two, as for example populations experiencing antecedents that affect subjective age and as has been shown in past research. Carstensen and Fredrickson (1998) found that the perception of time left in HIV patients rather than chronological age was more meaningful in changing cognitive representations of social partners. These participants showed varying discrepancies between subjective and chronological age due to illness. Similarly, Boehmer (2006) found that the subjective age in cancer patients was

predictive of their perception of quality of life. The participants also showed varying discrepancies though, due to illness as an antecedent of subjective age.

Measuring subjective age can therefore be important in some circumstances, but possibly more when it deviates from chronological age so that it does not merely act as a proxy variable for chronological age. The discrepancy between chronological and subjective age most likely increases as one chronologically ages, as has been supported by past research (Barnes-Farrell & Piotrowski, 1989; Galambos, Turner, & Tilton-Weaver, 2005; Montepare & Lachman, 1989). Galambos and colleagues (2005) argue that a crossover effect occurs around (chronological) age 25, at which you no longer feel older than you actually are, but begin identifying as younger than you actually are. This turning point most likely occurs at about age twenty-five because of the process of redefining yourself around this age. These results were also supported by Rubin and Berntsen (2006), who confirmed a cross-over effect around age twenty-five in their sample. Based on these findings, it might be more meaningful to study the antecedents of subjective age as described above in a performance appraisal context. Possibly, measuring the health or exposure to stress of the raters might give more insight on how the raters' OFTP might change and lead to differing goal orientations and therefore rating outcomes. Also, OFTP might have other antecedents that have not been identified by past research, yet.

It is also important to discuss why the initial regression analyses did not show a significant relationship between rater subjective age and the outcomes. Most likely this was due to an inconsistent mediation between the variables of interest. These are models where at least one mediated effect has a different sign than another indirect or direct effect in the model, therefore cancelling out the effects. Also, inconsistent mediation is even more common in multiple mediator models (MacKinnon, Fairchild, & Fritz, 2007). Therefore, when using the

results of Table 5 as an example, we see that the mediated effects between subjective age and both goal orientations are negative. The indirect effects between OFTP and any of the ratings outcomes are positive though and of similar size (potentially slightly smaller) as the previously mentioned indirect effects. Lastly, the indirect effects from subjective age to the outcomes are again negative, but very small. Most likely these effects cancel each other out leading to some of the mediators acting as suppressor variables.

As described above, testing for mediation is a theory-driven process, and the ordering of the variables should be determined by theory. It is not appropriate to test all possible assignments of the variables, but based on past research of subjective age and its antecedents, OFTP was assigned as the predictor, whereas subjective age was entered as a mediator. Research on subjective age has determined that it has many antecedents, as for example health (Bergland et al., 2014; Petery, 2015), stressors early in life (Turner et al., 1999), or life events and social roles (Mathur & Moschis, 2005). Kunze and colleagues (2015) found that perceived meaningfulness of work could also shape age discrepancies among workers. They concluded that high work-related meaning led to generally lower subjective ages. OFTP could be important for the perception of work-related meaning, depending on the personal priorities of the individual. Possibly, a more expansive OFTP (which would be influenced by antecedents of OFTP) leads to a reduced subjective age, which in return leads to different types of goals. The results of this model showed several issues: when chronological age remained a control variable in this model, problems of multicollinearity occurred. After removing this control variable (and OFTP remaining the predictor and subjective age remaining the mediator), the model fit indices indicated a poor fit of the model and direct and indirect paths could therefore not be interpreted. The conclusion is that this model did not fit the data well, and most likely theory would have to

be revisited thoroughly in order to investigate alternative ordering and assignments of the variables of interest.

Strengths and Limitations

There were a number of strengths and limitations associated with this study. First, a noteworthy strength was the conducted analyses. Structural equation modeling (SEM) allows for the fitting of an entire model to the collected data. Therefore, I was able to assess the fit of the model as a whole when examining the proposed direct and mediating effects. Furthermore, SEM has the ability to specify latent variable models, which makes it possible to assess the psychometric properties of measures, as well as estimate relationships between variables while correcting for biases that might occur from random error (Tomarken & Waller, 2005).

Another strength was the prescreening of participants. Participants had to indicate that they have managerial experiences from their current or previous organization in for example hiring decisions and/or performance appraisal evaluations. Also, they were only able to proceed to the full survey if they were not self-employed. This strengthens the external validity of the study because the sample was likely to be more similar to actual managers who might be conducting performance appraisals in practice.

Furthermore, experimental vignette methodology allows one to implement manipulations that otherwise would not be possible (Aguinis & Bradley, 2014). With this methodology, this study was able to acquire ratings for older employees, while keeping their work performance constant. This was important because this study was aimed at examining the differences in ratings based on the (subjective) age of the rater, rather than examining the differences in ratings based on different rates. As a result, another strength of this study was the results of the manipulation check. These results indicated that all older employees indicated comparable work

performances and were furthermore recognized as older employees. The manipulation check also indicated relative age- and gender-neutrality of the chosen occupations. This was important in order to minimize possible confounding effects of age- or gender-biases.

A limitation associated with this study was that it was based on cross-sectional data. Mediation results are not necessarily meaningful when based on cross-sectional data because the mediation process requires time to unfold (Preacher, 2015). All measures were taken at a single time point, and temporal antecedence was not established. Therefore, I cannot infer causality of any of the variables (Fiedler, Schott, & Meiser, 2011; Kline, 2015). When longitudinal processes are based on cross-sectional designs as this one, analyses and parameter estimates are often biased and generally cannot be counted on as accurate and faithful representations of the actual processes (Maxwell & Cole, 2007). Therefore, the results of this study should be interpreted with caution until future research has addressed this research question with a longitudinal design.

An additional limitation to the study was the relationship between OFTP and maintenance goal orientation. This relationship was in the opposite direction as expected, which is not in alignment with SOC and/or SST. Possibly, maintenance-type goal orientations were not operationalized properly, as the scale used in this study was designed after the scale developed by Kooji and Van De Voorde (2011), but has not been tested in research before. This scale should be validated for future use in research when assessing the construct of maintenance-orientation of goals.

Another limitation of this study was that the final measurement model met acceptable cut-off values in order to be considered a fitting model, but these fit statistics were not outstanding. A better fitting model might have provided more insight on the variables of interest. Also, due to the slight misfit of the model when removing chronological age as a control

variable, the post hoc analyses investigating the meaningfulness of subjective age versus chronological age as predictor in the mediating model were limited in that the relationships should be interpreted with caution.

Future Research and Practical Implications

Future studies should investigate these relationships in a longitudinal design. It would be meaningful to investigate whether OFTP and goal orientations change when a given person experiences changes in subjective age over time. Due to subjective age's high correlation with chronological age and the life-span approach of SOC and SST, we would need measures taken in time waves rather far apart though, most likely several months or years.

Investigating different outcomes besides performance appraisal related ratings could shed more light on the effects of the investigated variables. Operationalizing types of performance appraisal ratings differently could also be useful. In order to perceive flextime as a maintenance-oriented type of performance appraisal rating, we would have to take more life circumstances of the participants into account, e.g., does the participant have children or older parents to take care of? Does this person work at a place that even offers flextime?

Future studies should continue to investigate the meaningfulness of measuring subjective age in a workplace context. Possibly, subjective age is a more relevant construct when we examine populations that indicate greater discrepancies between their chronological and subjective age. Based on research that has identified different antecedents of subjective age, as for example stress (e.g., Barnes-Farrell & Piotrowski, 1991) or mental and physical health (e.g., Bergland, Nicolaisen, & Thorsen, 2013), measuring this construct might be more meaningful for populations experiencing such antecedents.

Furthermore, future research should address differences in the discrepancies between chronological and subjective age. Additional analyses indicated increasing subjective age variability in chronologically older participants. After categorizing the data by chronological age groups (young: 18-30, middle-aged: 31- 45, and old: 45+), the youngest age group showed the lowest standard deviation ($SD=3.62$), middle-aged participants a slightly higher standard deviation ($SD= 4.79$), and finally older participants the highest standard deviation ($SD=6.73$) for subjective age scores. Future research should therefore address whether measuring subjective age is more meaningful in older populations because that is when this construct might measure self-perceptions of aging. Subjective age as a construct might have less utility in younger populations when they are not experiencing large discrepancies between chronological and subjective age, and subjective age therefore mostly serves as a proxy variable for chronological age.

Examination of the correlation matrix indicated that gender might be a relevant variable to investigate. It showed significant relationships to future goal orientation, maintenance goal orientation, and recommendations for three outcomes: promotions, trainings, and regular performance appraisals. This study controlled for gender, as it was not within its scope to investigate these relationships. Future studies should utilize gender as a variable of interest instead of controlling for it in order to investigate the intersectionality of gender and (subjective) age. Past research has shown that intersectionality is important to consider, as all genders might experience aging differently, and the construction of self-identity consists of several facets, including age, gender, race, SES, and more (Collins, 2015).

Lastly, future research should investigate other antecedents of OFTP, as for example personality variables or contextual variables that could influence this construct. Most likely, the work context is an important variable to consider, and potentially there are genetic dispositions

that lead to differing levels of OFTP, similarly to personality variables like openness. The weak links between subjective age and the outcomes argue that there are more relevant constructs that could explain variance in performance appraisal outcomes. Therefore, subjective age, as well as chronological age, may have limited utility in an applied setting for the purpose of assessing potential sources of rating biases. Most likely, OFTP is more meaningful according to the mediation results of this study. The construct of OFTP has been derived from Future Time Perspective (FTP), as Socioemotional Selectivity Theory defines it (Carstensen, 1991, 1992, 1993, 1995). Past research has found that FTP has a variety of antecedents. Kooij and Van De Voorde (2011) found that losses in subjective general health resulted in a more limited FTP, and Lang and Carstensen (2002) found that an older chronological age predicted a more limited FTP. When applying this construct to the workplace, it is important to consider contextual factors of the work environment and potential antecedents of OFTP deriving from the workplace.

Zacher and Frese (2011) demonstrated that factors such as job complexity and the use of SOC strategies at work influenced older employees' ability to maintain a focus on opportunities. Furthermore, Zacher (2013) examined older job seekers' proactive job search behavior and found the participants' perceived remaining time left explained the moderating effect of chronological age on the relationship between having a proactive personality and one's job search intensity. This shows that FTP is important to examine in the work context, and based on the results of this study, it could be useful in determining rating behavior of raters. In practice, it might be useful to consider implementing interventions or governmental policies to increase workers' OFTP. Strauss, Griffin, and Parker (2012) showed that holding a clear and accessible view of the "future work self" has positive effects on work motivation and proactive career

behavior. Therefore, positive outcomes could be achieved by increasing employees' view of having an expansive future work self and an open OFTP.

Also, OFTP might not only be relevant to examine for raters in a performance appraisal context, but also for ratees. As summarized by Levy and Williams (2004), performance appraisals are strongly affected by many contextual factors, as for example similarity effects between the rater and ratee, perceptions of trust, and the perceptions of in- and out-groups. Furthermore, past research on performance appraisal has shown that there are controlled and automatic cognitive processes during the rating process that influence ratings. In the automatic process, aspects of the employee are noted by the rater, which can lead to an unconscious categorization of the ratee by the rater. This categorization process can then bias the subsequent search for information about the ratee (Feldman, 1981). Pulakos and Wexley (1983) investigated similarity effects between managers and ratees and how this affects ratings. Their results indicated lower performance appraisals in the case of mutual perceptual dissimilarity between managers and their subordinates. Possibly, OFTP can also add to the perception of (dis)similarity between raters and ratees. Future research should investigate the salience of OFTP in ratees to managers and vice versa and if this construct adds to similarity effects in performance appraisals. An employees' OFTP might be more salient when asking a subordinate about her/his career plans and future ambitions in regards to promotions or development at the workplace. Most likely, in practice such information would be gathered by the same person conducting the performance appraisals, and it could therefore distort ratings accordingly. Organizations should therefore carefully consider if the rater should receive such information of the ratee indicating OFTP, and if the rater does receive such information, proper rater training needs to be in place to avoid biases.

By gaining a more thorough understanding of why rating differences occur (as for example due to rater characteristics), it is possible to better identify the need for improving the rating processes at organizations. As mentioned above, one example would be implementing proper training for raters, e.g., frame of reference training (FOR), which standardizes the process by providing raters with a set of standards for which behaviors of the ratees should or should not be considered in the ratings (Murphy & Cleveland, 1995). Identifying the need for such training could help lower the influence of other factors, as for example personal goals, on rating outcomes.

Furthermore, as past research has shown, subjective age may have many different antecedents. If research can establish a more thorough understanding of how subjective age, OFTP, or personal goals influence important work outcomes like performance appraisal, factors that influence subjective age (at work) could be taken into consideration when implementing rating process. By understanding the mechanisms that influence ratings, workplaces can be better equipped for counteracting such potential sources of bias or rating distortions.

Table 1

Means, Standard Deviations, and Correlations among Observed Study Variables

Variable	Mean	Min	Max	Standard Deviation														
					1	2	3	4	5	6	7	8	9	10	11			
1. Gender	0.50	0.00	1.00	0.50	--													
2. Work for more than 30 hrs a week?	0.93	0.00	1.00	0.25	-.21**	--												
3. Average amount hours worked a week	40.57	0.00	80.00	8.55	.27**	-.69**	--											
4. Chronological Age	37.96	19.32	74.47	10.82	-.05	.09	-.12*	--										
5. Subjective Age	33.72	18.75	60.25	7.75	-.09	.09	-.09	.85**	(.84)									
6. Occupational Future Time Perspective	5.08	1.20	7.00	1.25	.02	-.16**	.17**	-.35**	-.32**	(.89)								
7. Future Goal Orientation	5.91	2.25	7.00	0.86	-.22**	.00	.07	.04	.02	.41**	(.84)							
8. Maintenance Goal Orientation	6.00	3.75	7.00	0.70	-.21**	.00	.05	.12*	.09	.34**	.74**	(.78)						
9. Promotion Recommendations	5.60	1.50	7.00	0.97	-.16**	.08	-.06	.12*	.08	.14*	.20**	.28**	--					
10. Training Recommendations	5.49	2.00	7.00	1.06	-.14**	.01	.00	.16**	.11	.18**	.26**	.37**	.69**	--				
11. Flextime Recommendations	5.45	1.25	7.00	1.08	-.05	.00	.03	.12*	.07	.04	.22**	.26**	.43**	.39**	--			
12. Performance Appraisal Recommendations	5.76	1.25	7.00	1.08	-.19**	-.02	.02	.16*	.11	.10	.26**	.37**	.30**	.53**	.41**	--		

Note. For gender, female = 0, male = 1. For working more than 30 hours a week, no = 0, yes = 1. OFTP and Maintenance Goal Orientation calculated with modified scales. Reliability alphas listed in parantheses. Transformed subjective age score used for correlations. Non-transformed subjective score used for mean, min, max, and SD.

* $p < .05$ (two-tailed).

** $p < .01$ (two-tailed).

Table 2

Fit Statistics for all Measurement Models

Model	χ^2	df	CFI	RMSEA	SRMR
Model 1	495.65*	166	.91	.08	.07
Model 2	530.51*	173	.90	.08	.08
Model 3	553.98*	201	.91	.08	.07
Model 4	516.21*	192	.92	.07	.07

Note. CFI = Comparative Fit Index. RMSEA = Root Mean Square Error of Approximation. SRMR = Standardized Root Mean Square Residual. Model 1: Initial model with separate goal orientations and aggregated (maintenance vs. future oriented) rating outcomes. Model 2: Second model with aggregated goal orientations and aggregated (maintenance vs. future oriented) rating outcomes. Model 3: Third model with aggregated goal orientations and separate rating outcomes. Model 4: Fourth model with separate goal orientations and separate rating outcomes.

*p < .001

Table 3

Mediation Analyses with Subjective Age (SA) as the Predictor and Chronological Age (CA) as a Control Variable.

Path	Indirect Effect	95% CI
SA → OFTP → Future Goal Orientation	-.17	[-.48 , .09]
SA → OFTP → Maintenance Goal Orientation	-.16	[-.47 , .08]
OFTP → Future Goal Orientation → Promotion	.10	[.04 , .19]
OFTP → Future Goal Orientation → Training	.15	[.08 , .23]
OFTP → Maintenance Goal Orientation → Flexitime	.11	[.06 , .19]
OFTP → Maintenance Goal Orientation → PA	.15	[.09 , .24]
SA → OFTP → Future Goal Orientation → Promotion	-.04	[-.13 , .01]
SA → OFTP → Future Goal Orientation → Training	-.05	[-.16 , .02]
SA → OFTP → Maintenance Goal Orientation → Flexitime	-.04	[-.13 , .01]
SA → OFTP → Maintenance Goal Orientation → PA	-.05	[-.16 , .02]

Table 4

Comparison of Fit Indices using Nested Model Strategy

Model	χ^2	df	CFI	RMSEA	SRMR
Model with Indirect Paths	541.19*	205	.92	.07	.07
Model with Indirect Paths and Direct Paths Added	534.28*	201	.92	.07	.07

Note. CFI = Comparative Fit Index. RMSEA = Root Mean Square Error of Approximation.

SRMR = Standardized Root Mean Square Residual.

*p < .001

Table 5

Mediation Analyses with Subjective Age (SA) as the Predictor and without Chronological Age (CA) as a Control Variable.

Path	Indirect Effect	95% CI
SA → OFTP → Future Goal Orientation	-.14	[-.22 , -.07]
SA → OFTP → Maintenance Goal Orientation	-.12	[-.19 , -.06]
OFTP → Future Goal Orientation → Promotion	.10	[.04 , .17]
OFTP → Future Goal Orientation → Training	.14	[.08 , .22]
OFTP → Maintenance Goal Orientation → Flextime	.10	[.05 , .16]
OFTP → Maintenance Goal Orientation → PA	.13	[.07 , .20]
SA → OFTP → Future Goal Orientation → Promotion	-.03	[-.06 , -.01]
SA → OFTP → Future Goal Orientation → Training	-.04	[-.08 , -.02]
SA → OFTP → Maintenance Goal Orientation → Flextime	-.03	[-.06 , -.02]
SA → OFTP → Maintenance Goal Orientation → PA	-.04	[-.07 , -.02]

Table 6

Mediation Analyses with Chronological Age (CA) as the Predictor and Subjective Age (SA) as a Control Variable.

Path	Indirect Effect	95% CI
CA → OFTP → Future Goal Orientation	.02	[-.22 , .31]
CA → OFTP → Maintenance Goal Orientation	.02	[-.20 , .31]
OFTP → Future Goal Orientation → Promotion	.10	[.04 , .19]
OFTP → Future Goal Orientation → Training	.15	[.08 , .24]
OFTP → Maintenance Goal Orientation → Flexitime	.12	[.06 , .19]
OFTP → Maintenance Goal Orientation → PA	.15	[.09 , .24]
CA → OFTP → Future Goal Orientation → Promotion	.00	[-.05 , .07]
CA → OFTP → Future Goal Orientation → Training	.01	[-.07 , .10]
CA → OFTP → Maintenance Goal Orientation → Flexitime	.00	[-.05 , .07]
CA → OFTP → Maintenance Goal Orientation → PA	.01	[-.07 , .10]

Table 7

Mediation Analyses with Chronological Age (CA) as the Predictor and without Subjective Age (SA) as a Control Variable.

Path	Indirect Effect	95% CI
CA → OFTP → Future Goal Orientation	-.13	[-.20 , -.07]
CA → OFTP → Maintenance Goal Orientation	-.12	[-.17 , -.06]
OFTP → Future Goal Orientation → Promotion	.10	[.04 , .17]
OFTP → Future Goal Orientation → Training	.14	[.08 , .22]
OFTP → Maintenance Goal Orientation → Flextime	.10	[.05 , .16]
OFTP → Maintenance Goal Orientation → PA	.13	[.07 , .20]
CA → OFTP → Future Goal Orientation → Promotion	-.03	[-.06 , -.01]
CA → OFTP → Future Goal Orientation → Training	-.04	[-.07 , -.02]
CA → OFTP → Maintenance Goal Orientation → Flextime	-.03	[-.05 , -.01]
CA → OFTP → Maintenance Goal Orientation → PA	-.04	[-.06 , -.02]

Table 8

Results of Multiple Regression

	B	SE B	β	Sig.
Chronological Age	-0.03	0.01	-.27	.01
Subjective Age	-1.25	1.32	-.10	.34

Note: Dependent variable: Occupational future time perspective

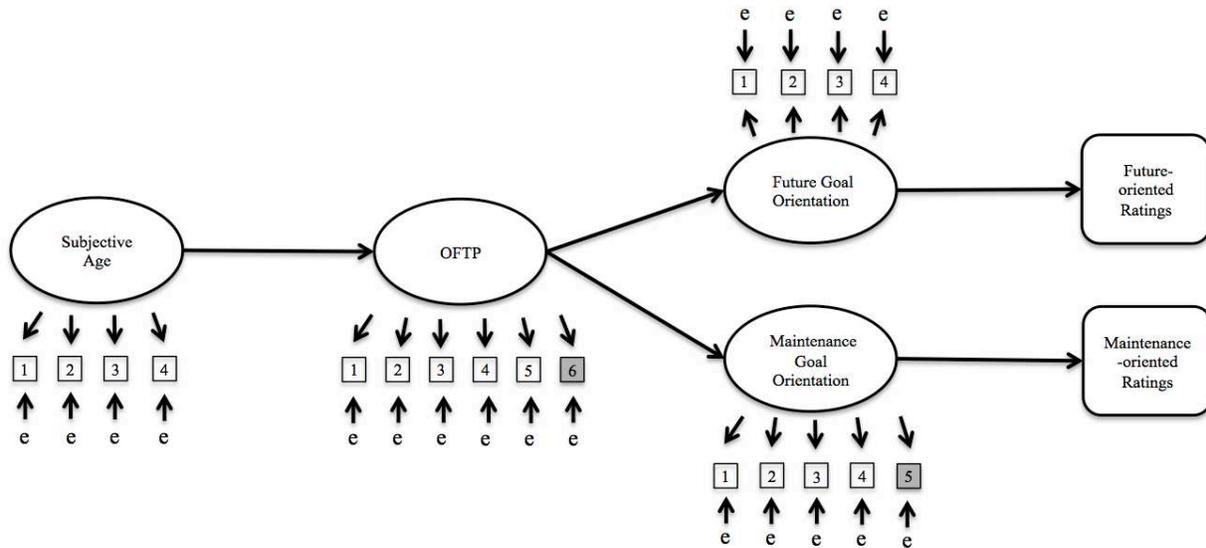


Figure 1. Initial measurement model. Future goal orientation and maintenance goal orientation as separate constructs. Types of rating outcomes are dichotomized into future-oriented ratings and maintenance-oriented ratings. Fit statistics: $\chi^2 (166) = 495.65, p < .05, CFI = .91, RMSEA = .08, SRMR = .07$

Note. Shaded items were dropped prior to evaluating the structural model based on CFAs for individual scales in order to establish good measurement fit.

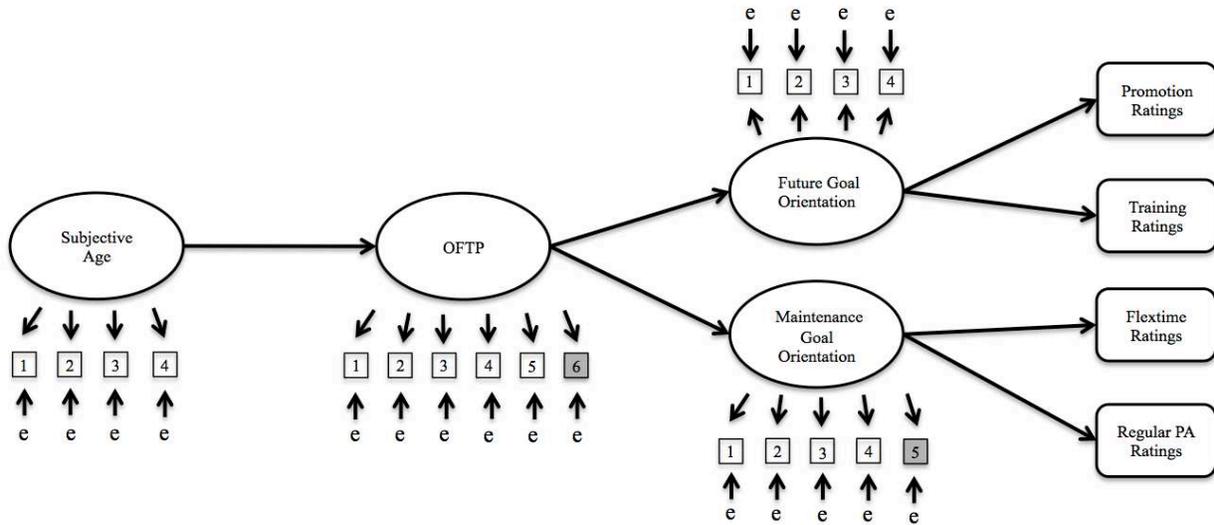


Figure 2. Fourth measurement model. Future goal orientation and maintenance goal orientation as separate constructs. Ratings are included as separate outcomes (ratings for promotion, training, flextime, and regular performance appraisals). Fit statistics: $\chi^2(192) = 516.21, p < .05$, CFI = .92, RMSEA = .07, SRMR = .07.

Note. Shaded items were dropped prior to evaluating the structural model based on CFAs for individual scales in order to establish good measurement fit.

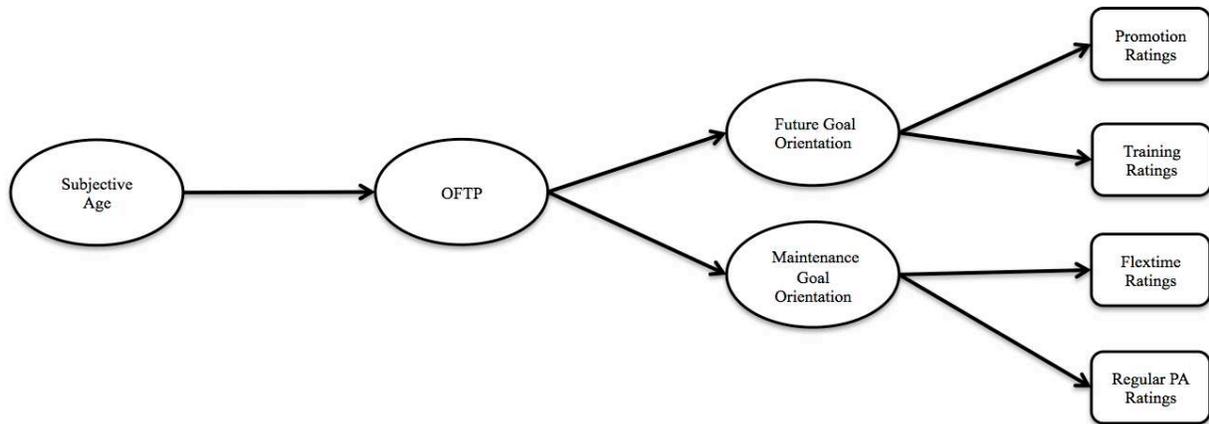


Figure 3. Initial structural model. Fit statistics: $\chi^2 (207) = 758.62, p < .05, CFI = .86, RMSEA = .09, SRMR = .13.$

Note. Path coefficients are not included because valid inferences about effects can only be made with an adequate measurement model.

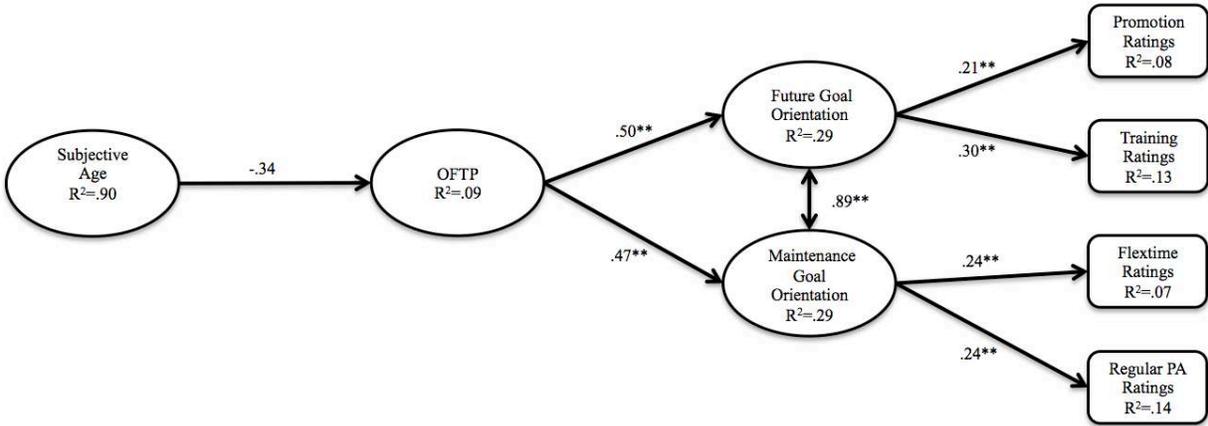


Figure 4. Second structural model with standardized path coefficients. Fit statistics: $\chi^2 (205) = 541.19, p < .05, CFI = .92, RMSEA = .07, SRMR = .07.$

Note. ** p .01 (two-tailed). MPlus automatically estimates residual covariances between dependent measures. These paths are not included in this figure.

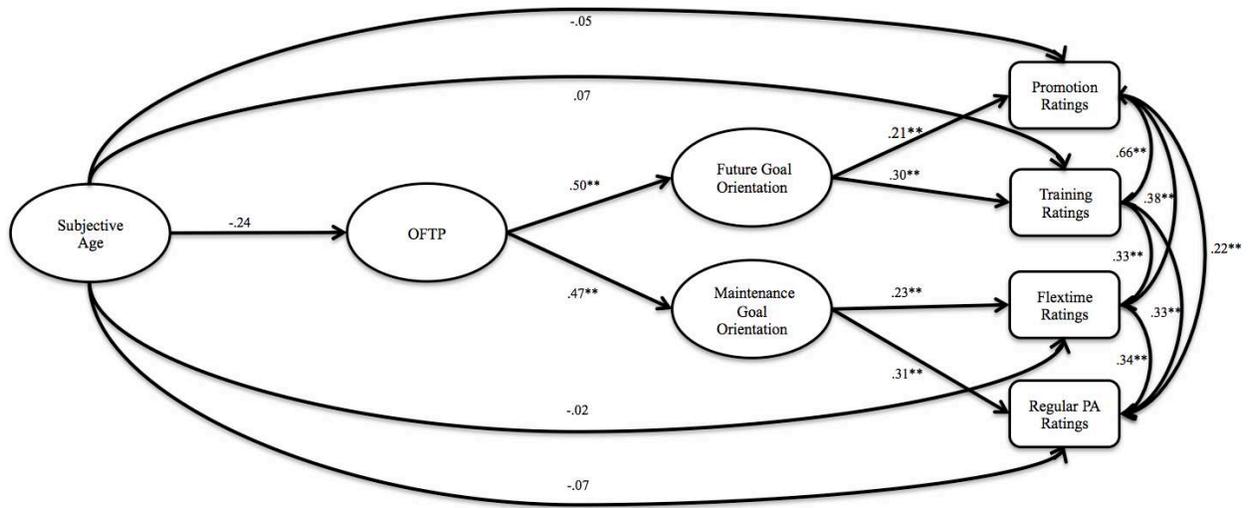


Figure 5. Structural model with added direct paths between predictor and outcomes used for the nested model approach with standardized path coefficients. Fit statistics: $\chi^2(201) = 534.28$, $p < .05$, CFI = .92, RMSEA = .07, SRMR = .07.
 Note. ** p .01 (two-tailed).

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Appendix

Employee Name: Jessica Williams
 Job Title: Lodging Manager

- 1 – Requires considerable improvement
- 2 – Approaches performance requirements
- 3 – Occasionally meets performance requirements
- 4 – Meets performance requirements
- 5 – Frequently exceeds performance requirements
- 6 – Often exceeds performance requirements
- 7 – Always exceeds performance requirements

	1	2	3	4	5	6	7
Self Development Keeps up to date in technical, professional, administrative areas; seeks knowledge and skill beyond present assignment to prepare for greater responsibility					X		
Interpersonal Relations Maintains positive work relationships with all individuals in organization; treats subordinates fairly and consistently							X
Technical Competence Complete job knowledge and understands a problem after reviewing it with others; actively searches and promotes new ideas for improvements					X		
Problem Solving Generates new and innovative ideas; uses sound and logical approach to define, analyze, and solve problems					X		
Customer Relations Maintains and develops customer relations; handles complaints tactfully; proper follow-up of customer							X
Attention to Detail Completes routine, daily activities accurately; insures maintenance of ongoing work process; follow-up paperwork is accurately completed						X	

Please sign and date to confirm that the evaluation by your supervisor has been completed. Please use the comments box below if you have comments for your supervisor regarding the evaluation process or other work-related topics.

Comments:

These evaluations are always helpful for me – they help me keep track of my performance as I pass the half-century mark with my age.

Ever since I joined this organization in my 30s, I have always found the evaluations to be fair though. I hope to work here until I retire.

Date: 08/01/17

Signature: Jessica Williams