AGE-BASED METASTEREOTYPES AND OCCUPATIONAL SELF-EFFICACY: LMX AND SUBJECTIVE AGE AS MODERATORS

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ABSTRACT

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Abstract
The global trend of an aging society highlights the importance for management to maintain the abilities and motivation of older workers to continue working. Occupational self-efficacy of older workers has been connected to various favorable organizational and individual outcomes, making it an important research topic. However, older workers are often associated with a plethora of stereotypes, which have been shown to be related to various negative organizational outcomes. While the effects of age stereotypes are widely studied, age metastereotypes, i.e., what older workers think others to believe about them, is a perspective that is often overlooked (Finkelstein, King & Voyles, 2015). This study aims to explore how positive and negative age metastereotypes relate to the occupational self-efficacy of older workers. Additionally, the roles of subjective age and LMX in this dynamic are considered. Building on the age metastereotype activation model, self-categorization theory, stereotype embodiment theory and LMX theory it is hypothesized that positive age metastereotypes are positively related to occupational self-efficacy of older workers while negative age metastereotypes and self-efficacy is negatively related. A higher subjective age is expected to strengthen these relationships meanwhile LMX is expected to strengthen the positive relationship and weaken the negative relationship.

The study was conducted as a survey study and the data was collected from a target organization that operates in the religious organizations industry in Finland. The online questionnaire was sent to members of the target organization aged 50 or older. The results showed that negative age metastereotypes were negatively associated with occupational self-efficacy of older workers while association between positive metastereotypes and occupational self-efficacy was not found. Higher subjective age was associated with weaker occupational self-efficacy but did not moderate the relationship between metastereotypes and occupational self-efficacy. LMX was not found to be associated with age metastereotypes or occupational self-efficacy. These results offer support to the existing literature regarding negative stereotypes but question the usefulness of positive stereotypes in an organizational context. Moreover, the findings demonstrate the importance of subjective experiences of ageing at work.

Key words
Age-based metastereotypes, Occupational self-efficacy, Subjective age, LMX

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Tiivistelmä
Väestön ikääntyminen on globaali trendi, joka korostaa organisaatioiden johdon tärkeyttä ikääntyvien työntekijöiden työkyvyn ja -motivaation ylläpitämisessä. Ammatillinen minäpystyvyys on yhteydessä moniin myönteisiin organisatorisiin ja yksilöllisiin seurauksiin tehden siitä tärkeän tutkimusaiheen. Ikääntyviin työntekijöihin liitetään kuitenkin useita stereotypioita, joilla on havaittu olevan monia kielteisiä vaikutuksia yksilö- ja organisaatiotasoilla. Ikästereotypiat ovat laajasti tutkittu aihe, kun taas ikämetastereotypiat eli se, mitä ikääntyvät työntekijät uskovat muiden ajattelevan heistä, on harvemmin tutkittu näkökulma (Finkelstein, King & Voyles, 2015). Tämä tutkimus tarkastelee positiivisten ja negatiivisten ikämetastereotypioiden yhteyttä ikääntyvien työntekijöiden ammatilliseen minäpystyvyyteen. Lisäksi tutkitaan subjektiivisen iän ja LMX:n roolia tässä dynamiikassa. Ikämetastereotypioiden aktivointimalliin, itsekategorisoinnin teoriaan, stereotype embodiment -teoriaan sekä LMX-teoriaan tukeutuen positiivisten ikämetastereotypioiden odotetaan olevan positiivisesti yhteydessä ikääntyvien työntekijöiden minäpystyvyyteen, kun taas negatiivisten ikämetastereotypioiden ja minäpystyvyyden yhteys on vastakkainen. Subjektiivisen iän odotetaan vahvistavan näitä yhteyksiä, kun taas LMX:n odotetaan vahvistavan positiivista suhdetta ja heikentävän negatiivista suhdetta.

Tutkimus toteutettiin kyselytutkimuksena, ja aineisto kerättiin seurakunta-alalla toimivan suomalaisen kohdeorganisaation 50-vuotiailta ja sitä vanhemmilta jäseniltä. Tulokset osoittivat negatiivisten ikämetastereotypioiden olevan negatiivisesti yhteydessä ikääntyvien työntekijöiden ammatillisen minäpystyvyyteen, kun taas positiivisilla metastereotypioilla yhteyttä ei ollut. Korkeamman subjektiivisen iän havaittiin olevan yhteydessä heikompaan minäpystyvyyteen, mutta moderoivaa vaikutusta subjektiiviselta iältä ei löytynyt. LMX ei ollut yhteydessä ikämetastereotypioihin tai minäpystyvyyteen. Negatiivisten metastereotypioiden osalta tulokset ovat yhtenäisiä aiemman tutkimuksen kanssa, mutta tulosten voidaan nähdä kyseenalaistavan positiivisten stereotypioiden hyödyllisyyden. Lisäksi tulokset havainnollistavat subjektiivisen ikääntymisen merkitystä.

Asiasanat
Ikämetastereotypiat, Ammatillinen minäpystyvyys, Subjektiivinen ikä, LMX

Säilytyspaikka
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1 INTRODUCTION

1.1 Background and rationale for the research topic

Although the aging of society through decreasing natality and increasing life expectancy is a global trend that may pose various challenges for pension systems and public finances, increasing longevity is also associated with healthy aging, meaning that the physical and mental capabilities of older individuals are increasing (Andersen, 2021, 41; 50). From the organizational point of view this implies that while older workers are playing an increasingly important role in achieving organizational goals, they are also more capable of performing that role than ever before. From the societal point of view healthy aging can be seen to counteract the challenges posed by the aging of society. For these reasons, older workers and their well-being at work can be seen as a relevant and interesting subject for research, both for organizations and for society as a whole.

Even though the physical and mental capabilities of older individuals are increasing (Andersen, 2021, 41), older workers are often associated with negative stereotypes (Posthuma & Campion, 2009). Negative age stereotypes, whether accurate or not, have been linked to various negative organizational outcomes (e.g., Weber, Angerer & Müller, 2019; Snape & Redman, 2003). People are staying in the workforce longer than ever before, meaning that an individual worker can identify up to half of their career as an ageing worker (Davenport, Ruffin, Oxendahl, McSpedon & Beier, 2022). This increases the relevance of age stereotypes at work as a research topic, as exposure to them is more prolonged.

Finkelstein, King and Voyles (2015) argue that in order to fully understand the dynamics of age at work, attention should be focused, in addition to age stereotypes, to a closely related phenomenon termed age *metastereotypes*, that is what older workers think others to believe about them. The authors maintain that the role of age-based metastereotypes in the interactions of age-diverse workforce is under explored (Finkelstein et al., 2015). Finkelstein, Ryan and King (2013)

argue that age metastereotypes stem from age stereotypes and maintain that what people believe others to think of them may be more relevant than how they view themselves and for this reason suggest age-based metastereotypes at work to be an important research topic. For these reasons, instead of focusing on age stereotypes, this study aims to increase knowledge on age-based metastereotypes at work. Age stereotypes have been found to be stronger in certain industries such as finance, insurance, retail, and information technology (Posthuma & Campion, 2009), making it important to study age stereotypes in the context of various industries. Moreover, the effects of stereotypes may vary in strength across different areas of work life (Frasca, Schellaert and Derous, 2022; Murphy & DeNisi, 2022a) making it important to study the effects from various perspectives. This study takes the perspective of occupational self-efficacy.

Occupational self-efficacy, which refers to employees' beliefs about their abilities to perform tasks related to their work, has been linked to a multitude of organizational and individual outcomes such as job motivation and satisfaction (Paggi & Jopp, 2015) and organizational commitment (Liu & Huan, 2019). Self-efficacy has also been connected to successful aging of older workers (e.g., Tovel & Carmel, 2014), that is older workers' high ability and motivation to continue working (Kooij, Zacher, Wang & Heckhausen, 2020). For these reasons, the occupational self-efficacy of older workers can be seen as an important organizational goal as well as a worthy research subject. However, negative age metastereotypes have been suggested to be negatively related to employees' occupational self-efficacy (Chiesa, Toder, Dordoni, Henkens, Fiabane & Setti, 2016). As society and workforce age and age stereotypes and metastereotypes become an increasingly relevant issue, the association between age metastereotypes and occupational self-efficacy is a topic that needs to be further examined. Accordingly, this study aims to investigate the association between age-based metastereotypes and occupational self-efficacy of older workers.

According to Kotter-Grühn, Kornadt and Stephan (2016), scholars have recently begun to emphasize the subjective experiences associated with aging and the psychological and physiological processes and outcomes related to it. The authors identify subjective age, or how old an individual feels, to be a frequently used construct among these scholars. The authors believe subjective age to be a promising alternative approach to aging that can provide important insights into the physical and psychological aging of individuals (Kotter-Grühn et al., 2016). A more comprehensive approach to aging has also been called for by scholars in the field of age stereotype research (Gioaba & North, 2022). For these reasons, the current research intends to investigate the role of subjective age in relation to age-based metastereotypes and occupational self-efficacy. The aim is to investigate whether self-categorization as younger or older than one's chronological age moderates the relationship between age-based metastereotypes and occupational self-efficacy.

Ilmarinen, Lähteenmäki and Huuhtanen (2003, 14-15) describe organizations as a crossroad where societal and individual levels of society meet. According to this view, the challenges of ageing are experienced the strongest at the

organizational level, as organizations simultaneously face the challenges of all three levels of society. For this reason, organizations can also be seen to play a key role in addressing the challenges of ageing, as changes at the organizational level can be seen to have an impact at the individual and societal levels as well (Ilmarinen et al., 2003, 14-15). This dynamic may be better understood through an example. Discrimination in the workplace at the individual level is suggested to be associated with poorer physical and mental well-being, which is often suggested to lead to higher health care costs at the societal level in the long term (Petery & Grosch, 2022). Poor physical and mental well-being of individuals in an organization are widely accepted to contribute to poorer organizational performance. Moreover, the long-term effects on societal healthcare costs can be seen to have negative effects on organizations, for example in the form of higher tax rates. Thus, the negative effects of discrimination on individual and societal levels may also put a strain on organizations. Based on this dynamic between the three levels of society, the role of organizations and their management in the maintenance and promotion of the occupational self-efficacy of employees can be seen as a worthy research topic. The current study attempts to shed light on the role of management in relation to age-based metastereotypes and occupational self-efficacy of older workers by incorporating the quality of leader-member exchange (LMX) into the research model. Good leader-member interaction has been found to be associated with many positive individual and organizational outcomes. However, the role of LMX in the context of occupational self-efficacy seems to be scarcely documented even though the concept of LMX has been studied for nearly 50 years with major growth in number of publications since 2010, as reported by Bauer and Erdogan (2015, 4). The current study aims to increase the research knowledge on this matter by investigating the moderating role of LMX in the relationship between age-based metastereotypes and occupational self-efficacy of older workers.

1.2 Research objectives

The aim of the current study is to investigate the relationship between age-based metastereotypes and occupational self-efficacy of older workers. In addition, the objective is to examine the role of subjective age of older workers and the quality of leadership in the relationship between age-based metastereotypes and occupational self-efficacy of older workers. Quality of leadership will be examined through leader-member exchange (LMX). The research focuses on a case organization that operates in the religious organizations industry in Finland.

The research objective can be summarized in three research questions:

1. To what extent are older workers' age-based metastereotypes associated with the occupational self-efficacy of older workers?

2. What is the role of leader-member exchange in the association between older workers' age-based metastereotypes and their occupational self-efficacy?
3. What is the role of subjective age in the association between older workers' age-based metastereotypes and their occupational self-efficacy?

1.3 Structure of the research report

The research report is structured as follows. Chapter 2 outlines the theoretical background of the research by first introducing the key concepts – age, aging, older worker, occupational self-efficacy, age-based stereotypes and metastereotypes, self-categorization and stereotype embodiment as well as leader-member exchange – after which the hypotheses of the research are developed utilizing various theories that include age metastereotype activation model, stereotype embodiment theory, self-categorization theory and LMX theory. Chapter 3 describes the adopted methodology. The chapter begins with an introduction to the research design and the underlying philosophical assumptions related to it. Next, the data collection method and methods for data analysis are detailed. The chapter ends with a consideration regarding the validity and reliability of the research.

In chapter 4 the results of the research are reported. The chapter begins with an account of the descriptive statistics of both respondents and the measures used after which the correlations among the study variables are analyzed. Lastly, the results of hypotheses testing using hierarchical regression analysis are presented. Chapter 5 discusses the results of the study, their implications and possible explanation for them. The chapter, as well as the whole research report, ends with a consideration of the contributions, ethical aspects and limitations of the research and an identification of possible future directions in the field of age metastereotypes and occupational self-efficacy.

2 THEORETICAL BACKGROUND

This chapter introduces the theoretical background that forms the base of the study. First, different conceptions of age, older worker, and aging are introduced as these are concepts that may be more ambiguous as one might initially assume. Additionally, conception of age as a subjective experience is introduced. Similarities and differences between age stereotypes and age metastereotypes are also discussed as they are closely related and intertwined yet distinct concepts that may need clarification. Additionally, occupational self-efficacy is defined, and its antecedents are introduced as they can be seen to interweave with the phenomena under investigation.

Lastly, the theoretical constructs used in this study are introduced after which the hypotheses of the study are developed based on these theories as well as prior research findings. The association between metastereotypes and occupational self-efficacy is reflected through age metastereotype activation model by Finkelstein and colleagues (2015) while the role of subjective age is considered using self-categorization theory by Turner and Hogg (1987) and stereotype embodiment theory by Levy (2009). The role of quality of leadership is examined through LMX theory introduced by Dansereau, Graen and Haga in 1975.

2.1 Key concepts

2.1.1 Approaches and definitions of age

The age of an individual is a more complex concept than one might initially assume and can be conceptualized in a variety of ways. Sterns and Doverspike (1989) proposed five different approaches to conceptualizing the aging of a worker: chronological age, functional age, subjective age, organizational age, and lifespan age. De Lange, Van der Heijden, Van Vuuren, Furunes, De Lange and Dikkers (2021) discuss these approaches in more detail. Firstly, according to the authors the chronological age of an individual is defined as the calendar age of

an individual calculated in years, months, and days. Chronological age is the most widely known and used way of conceptualizing age. Second, functional age represents the worker's performance and considers differences in functioning both between and within age groups (De Lange et al., 2021). For instance, an ailment may cause an individual to have a level of functioning that is typical for chronologically older individuals making the individual functionally older than others of the same chronological age.

Third, subjective or psychosocial age refers to an individual's age as perceived by the individual or society. Subjective age can be based on how old an individual feels, looks, acts, and identifies as, as well as how old the individual desires to be (De Lange et al., 2021). An individual may perceive himself or herself as younger, older or the same age as his or her chronological age. According to Rubin and Berntsen (2006), subjective age generally decreases as chronological age increases. The authors conducted a study that investigated the subjective ages of individuals of 20-97 years of age and concluded that adults younger than 25 tend to have older subjective ages while adults older than 25 tend to feel themselves as increasingly younger. Moreover, the results suggest that after the age of 40, the discrepancy between chronological and subjective age no longer increases, but rather all age groups after the age of 40 feel on average 20 % younger than their chronological age (Rubin & Berntsen, 2006). This could be due to, for example, age-group dissociation. Weiss and Lang (2012) postulate that older adults are more likely to dissociate from their chronological age group if strong age stereotypes are present. Studies conducted by the authors suggest that older adults dissociate themselves from old age in order to avoid an age prototypical self-image (Weiss & Lang, 2012).

Fourth, De Lange et al. (2021) define organizational age to be based on the job or organizational tenure and seniority of an individual: individuals who have worked for an organization longer are seen as organizationally older than individuals that are newer to the organization. Lastly, the lifespan age of an individual refers to behavioral changes that occur in different points in the life cycle. According to this approach, significant events in life, such as getting married and having children, cause shifts in the positions an individual holds in his or her life cycle (De Lange et al., 2021). The effects of lifespan age have been demonstrated in a study by Carstensen and Fredrickson (1992) where the decision-making of young HIV-positive symptomatic individuals, young HIV-positive asymptomatic individuals and young healthy individuals was examined and compared. The study found that HIV-positive symptomatic individuals tended to make decisions typical for older individuals while HIV-positive asymptomatic individuals' decision-making was similar to that of middle-aged individuals and healthy individuals made decisions typical to their own age group (as cited in Carstensen, 1995, 154-155). The young HIV-positive symptomatic individuals can be seen to have perceived themselves as being older than the young healthy individuals in terms of their lifespan.

The literature on age stereotypes at work has recently begun to call for a shift from a one-dimensional view of age as purely chronological to a more

holistic view (e.g., Gioaba & North, 2022; Kotter-Grühn et al., 2016). The present study does not attempt to incorporate all the five approaches to conceptualizing age. Rather, as an attempt to conform to the multidimensionality request, the present study aims at a more comprehensive conception of age by addressing both the chronological and subjective age of an individual. As mentioned in chapter 1.1, Kotter-Grühn et al. (2016) suggest subjective age to be a frequently used alternative way of conceptualizing age.

2.1.2 Older worker and aging

Ilmarinen et al. (2003, 39-40) identify two forms of aging: chronological and subjective aging. According to the authors chronological aging of an individual can be accurately measured in years, months and days meanwhile subjective ageing is a process that depends on the genetics and living environment and is unique to each individual (Ilmarinen et al., 2003, 39-40). Chronological aging spans across an individual's whole lifespan making everyone in the workforce an aging worker (Ilmarinen, 2001). Generally, however, the term aging worker is not perceived this way but rather used synonymously with the term older worker.

McCarthy, Heraty, Cross and Cleveland (2014) point out, however, that existing research does not provide any explicit definition of an older worker. According to Ilmarinen (2001), the threshold for an ageing or older worker is commonly thought to be the ages of 45 or 50. According to the author this is due to the fact that human functional capacities begin to decline after the age of 30 and work ability peaks before the age of 50 (Ilmarinen, 2001). According to McCarthy et al. (2014) public policies utilize a cut-off of either 55 or 65 years of age to describe an older worker depending on the policy in question. The authors conducted an empirical study aimed at understanding how organizational decision makers perceive the term "older worker". The results showed that the age at which a worker can be considered an older worker ranged from 28 to 75 years of age with a mean of 52,40 and the most common indicator being 50 years of age (McCarthy et al., 2014). Based on the findings of McCarthy et al. (2014) as well as the insights into aging at work provided by Ilmarinen (2001), a cut-off of 50 years was chosen in the present study to distinguish older workers from the rest of the workforce. Moreover, this cutoff has been used in a previous study on age-based metastereotypes and occupational self-efficacy by Chiesa et al. (2016).

2.1.3 Age-based stereotypes

Gray and Bjorklund (2014, 524) define stereotypes as sets of knowledge or beliefs that are associated with particular groups of people. According to the authors, people tend to ignore individual differences and make generalizations especially about groups to which they do not belong, so-called outgroups (Gray & Bjorklund, 2014, 524). According to Hilton and von Hippel (1996), stereotypic thinking is believed to serve multiple purposes depending on the contexts in which they emerge. The authors postulate that one of the purposes of stereotypes is to simplify information processing as stereotyping allows individuals to rely

on existing knowledge when interpreting incoming information, making the processing of new information more efficient (Hilton & von Hippel, 1996). While stereotypes play an important role in cognitive processing, they may also distort judgements individuals make about different outgroups, by amplifying differences that are in reality very small, and cause biased behavior towards them such as discrimination (Bordalo, Coffman, Gennaioli & Shleifer, 2016).

Older workers are associated with a multitude of stereotypes. According to a literature review by Posthuma and Campion (2015), older workers are often seen as less motivated, more resistant to change, more unadaptable and inflexible, less skilled with fewer abilities and learning and development potential, as well as less productive. Negative age stereotypes are suggested to be related to decreases in job satisfaction, organizational commitment, and occupational learning and development intentions of older workers as well as increases in intentions of older workers to retire and resign (Weber et al., 2019; Snape & Redman, 2003). Dordoni and Argentero (2015) recognize that older workers are not only associated with negative stereotypes, but positive stereotypes about older workers exist as well. In addition to the negative stereotypes demonstrated in the study by Posthuma and Campion (2015), older workers are also often perceived as more reliable, loyal, committed, and accurate than younger workers as well as more socially skilled (Dordoni & Argentero, 2015). Generally, negative age stereotypes have been found to be negatively related to the performance and overall behavior of older individuals while positive stereotypes have been found to improve them (e.g., Levy & Leifheit-Limson, 2009; Meisner, 2012; Hess, Auman, Colcombe & Rahhal, 2003; Levy, 2003).

However, the extent to which age stereotypes ultimately affect older workers is considered debatable. In their commentary, Murphy and DeNisi (2022a) argue that the scientific evidence illustrating the link between age stereotypes and personnel decisions is limited and contradictory. According to the authors, while it is plausible that age stereotypes have an impact on some evaluations and decisions made within an organization, the evidence on the impact of age stereotypes on higher-level personnel decisions, particularly recruitment, performance appraisals and promotions, is weak and at a larger scale non-existent (Murphy & DeNisi, 2022a). Indeed, age has been shown to be unrelated to, for example, number of interviews and job offers (Wanberg, Kanfer, Hamann & Zhang, 2016) as well as performance evaluations (McEvoy & Cascio, 1989; DeNisi & Murphy, 2017).

However, Davenport et al. (2022) state cross-sectional studies to provide only a narrow snapshot of the effects of age stereotypes. According to the authors, the effects of age stereotypes may cumulate over time, causing larger negative effects in the long run. Scientific evidence on the cumulative nature of age stereotype effects has been provided. Age stereotypes have been found to have a cumulative effect on mental health and retirement intentions of older workers (Gonzales, Lee & Marchiondo, 2021), job satisfaction and perceived health (Marchiondo, Gonzales & Williams, 2019), as well as on employees' organizational integration and organizational productivity (Kunze, Boehm &

Bruch, 2011). It is also considered possible that as life expectancy and thus careers lengthen, the effects of age stereotypes may become more pronounced as they can accumulate longer over a single career (Davenport et al., 2022).

2.1.4 Age-based metastereotypes

Whereas stereotypes were defined as sets of knowledge or beliefs that are associated with outgroups (Gray & Bjorklund, 2014, 524), metastereotypes can be defined as individuals' beliefs about the stereotypes that others hold about them or their ingroup (Keating & Heslin, 2022). Metastereotypes are a micro concept of a broader phenomenon that has been termed metaperceptions (Finkelstein et al., 2013). Metaperceptions can be defined as individuals' beliefs regarding what others think of them (Frey & Tropp, 2006). What differentiates metastereotypes from metaperceptions is that metaperceptions can be unique to individuals whereas metastereotypes may show similarities among a group of people and should be consistent with stereotypes associated with that group (Finkelstein et al., 2013). In the case of older workers, age-based metastereotypes should be, to some extent, similar to the age stereotypes introduced in chapter 2.1.3.

Metastereotypes may not, however, exactly match the stereotypes but rather exaggerate them. Finkelstein et al. (2013) conducted a study that aimed to examine the accuracy of age-based metastereotypes at work. The accuracy of metastereotypes was evaluated by assessing the extent to which the metastereotypes corresponded to the actual stereotypes held by other members of the organization. The results showed older workers to hold metastereotypes that were generally more negative than the actual stereotypes held by other members of the organization. Similar results were obtained from younger and middle-aged workers as well (Finkelstein et al., 2013).

Finkelstein and colleagues (2015) introduce a model of age metastereotype activation. The model postulates that in order for age-based metastereotypes to impact thoughts, feelings and interactions at work, they must be activated. According to the authors, merely being aware of the existence of metastereotypes is not enough to activate them but activation is rather determined by appraisal based on various individual and contextual factors. The theory further postulates that activated positive and negative age metastereotypes can produce various responses depending on these individual and contextual factors (Finkelstein et al., 2015). The model is extensive making it challenging to incorporate to a study in its entirety. Thus, a simplified version of the model is used in the current study to better suit the research objectives. This simplified model of age metastereotype activation is depicted in figure 1. In the current study, the threat response to negative age metastereotypes and the boost response to positive age metastereotypes are considered of interest and are discussed in more detail below.

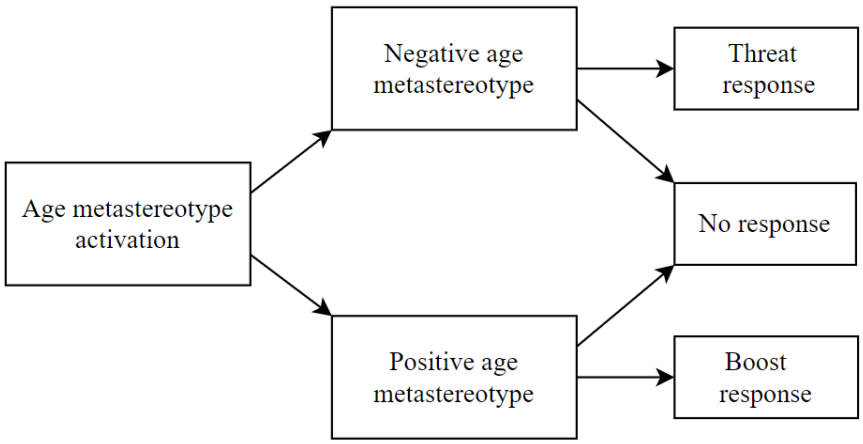

FIGURE 1 Simplified version of the age metastereotype activation model used in the current study.

According to Finkelstein et al. (2015), after an age metastereotype is activated in a work context, a reaction including a cognitive appraisal of and emotional reaction to the metastereotype is proposed to take place that determines the response to the metastereotype. If the metastereotype is deemed irrelevant by the individual, there may be no response at all. If the metastereotype has personal relevance, different reactions are proposed based on whether the metastereotype is negative or positive. In the case of a negative age metastereotype, the response may be to see the metastereotype as a threat which can cause fear and worry and decrease performance (Finkelstein et al., 2015). This threat response is more commonly known as stereotype threat. Gray and Bjorklund (2014, 407; 512; 542) define stereotype threat as a phenomenon in which an individual, who is aware of negative stereotypes associated with himself or herself or the social group to which he or she belongs, performs, or behaves in a way that confirms the stereotypes. It is suggested that awareness of negative stereotypes induces fear of confirming them as true through one's own actions, and stereotypes can thus act as a self-fulfilling prophecy (Gray & Bjorklund, 2014, 407; 512; 542). Age metastereotype activation model further suggests that positive age metastereotypes that are considered relevant and are thus activated may produce a boost for the individual in the form of, for example, happiness, pride, and confidence, which is suggested to positively affect performance (Finkelstein et al, 2015).

However, the effects of age metastereotypes may not be as straightforward as this model implies. For example, reactions to stereotype threat may not always be negative as some research has found experiencing stereotype threat to improve performance for example in the case of older adults' memory (Barber & Mather, 2013) and training (Fritzsche, DeRouin & Salas, 2009). Similarly, it is also possible for positive age metastereotypes to cause a threat reaction if the individual is not confident about the accuracy of the metastereotype resulting in fear of disconfirming it (Finkelstein et al., 2015).

Moreover, it may be possible for an age metastereotype, positive or negative, to produce positive and negative reactions simultaneously (Finkelstein et al., 2015).

2.1.5 Occupational self-efficacy

Self-efficacy, a key concept in social cognitive theory, was introduced by Bandura in the 1970's. Self-efficacy can be defined as an individual's beliefs about his or her own ability to perform a given task with a certain outcome. Self-efficacy should be differentiated from outcome expectations associated with an activity, as an individual may believe that a particular activity will lead to a particular outcome, but at the same time experience uncertainty about their own ability to perform that activity as intended (Bandura, 1977). Moreover, Lane, Lane and Kyprianou (2004) differentiate self-efficacy from self-esteem. The authors point out the main difference between self-efficacy and self-esteem to be that self-esteem refers to an individual's sense of self-worth i.e., the extent to which an individual values or likes himself or herself (Lane et al., 2004). According to Maurer (2001) self-confidence, on the other hand, is a term that can be used as a synonym for self-efficacy. Maurer (2001) distinguishes between general self-efficacy, domain-specific self-efficacy, and task-specific self-efficacy. General self-efficacy encompasses all domains of life, while domain-specific self-efficacy considers one specific area of an individual's life. Task-specific self-efficacy is even further specified and considers individual's self-efficacy regarding a certain activity within a certain domain (Maurer, 2001).

In this study, the focus is on a specific domain of life. More specifically, self-efficacy is limited to beliefs about one's abilities to perform tasks related to work i.e., occupational self-efficacy. Occupational self-efficacy has been found to be associated with higher job motivation, job satisfaction and satisfaction with life in general (Paggi & Jopp, 2015). Job satisfaction and job motivation, on the other hand, have been found to be associated with performance and retirement intentions (Judge, Thoresen, Bono & Patton, 2001; van den Berg, 2011). Occupational self-efficacy has also been found to be associated with higher organizational and job commitment (Liu & Huang, 2019) and lower job stress (Prahara & Indriani, 2019).

Self-efficacy is believed to be more malleable than, for example, personality or intelligence, which are believed to be relatively immutable (Maurer, 2001). The antecedents of self-efficacy can be divided into four categories: mastery experiences, vicarious experiences, social persuasion, and physiological and affective states (Bandura, 1977). Figure 2 illustrates these antecedents of self-efficacy. Bandura (1977) and Maurer (2001) define mastery experiences as the individual's previous personal experiences of the activity in question. These experiences must be relevantly related to the activity being assessed in order to have an impact on self-efficacy. According to the authors, vicarious experiences, on the other hand, are obtained by observing others perform the activity being assessed (Bandura, 1977; Maurer, 2001). According to Maurer (2001), age stereotypes and beliefs about ageing can also indirectly influence self-efficacy of older individuals. The author further postulates that social persuasion can be

used to persuade individuals to believe in their own abilities. Social persuasion can refer, for example, to support, encouragement and positive feedback from family, friends, colleagues or a significant other. The author further recognizes that physiological and affective factors, such as health factors and various emotional states related to the activity, such as fear of failure, anxiety, and enthusiasm, may influence self-efficacy (Maurer, 2001).

The phenomena examined in this study can be seen to be linked to these antecedents of self-efficacy identified by Bandura (1977) in multiple ways. The present study examines the relationship between age metastereotypes - a vicarious experience - and occupational self-efficacy. In addition, the quality of leader-member exchange is examined, which can be seen to be linked to the category of social persuasion among the antecedents of self-efficacy presented above. Moreover, subjective age is considered, which can be seen to some degree relate to the physiological and affective states experienced by the individual.

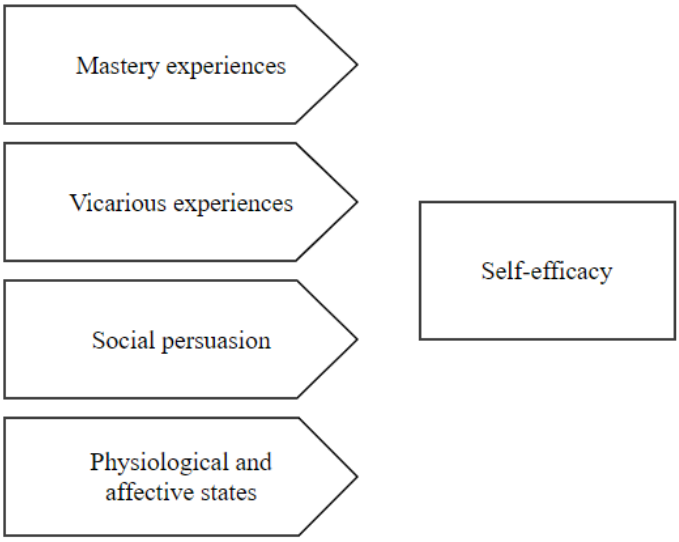

FIGURE 2 Antecedents of self-efficacy (Bandura, 1977).

2.1.6 Self-categorization and stereotype embodiment

Self-categorization theory, a theory introduced by Turner and Hogg (1987), posits that identity is constructed through personal identity and social identity, and people tend to categorize themselves and others into groups based on their similarities and differences. The theory suggests that an individual's social identity is aligned with the individuals in the group to which he or she feels he or she belongs and personal identity, on the other hand, is the identity that is more distinctive to the individual and distinguishes the individual from others (Hornsey, 2008). The theory is based on Tajfel's (1978) theory of social identity which postulates that an individual's sense of self is constructed through personal and social identity. According to this theory, individuals perceive themselves as belonging to a variety of social groups, for example, based on their occupation and preferences, and evaluate themselves and their social groups by

comparing them with groups to which they do not belong (Trepte & Loy, 2017). The main difference between social identity theory and self-categorization theory is that whereas social identity theory sees personal and social identities as the extremes of a single continuum, self-categorization theory argues that personal and social identity can simultaneously influence an individual's behavior (Trepte & Loy, 2017).

Stereotype embodiment theory is a theory introduced by Levy (2009) and shares features with social identity theory and self-categorization theory. According to this theory, individuals are unconsciously exposed to stereotypes and incorporate them into their way of thinking throughout their lifespan (Levy, 2009). Moreover, generational stereotypes are reinforced throughout life through media and literature (Petery & Grosch, 2022). Levy's (2009) stereotype embodiment theory suggests that the more stereotypes are perceived to be directed towards the self, the more strongly they influence an individual's psyche, behavior, and physiological health. According to the theory, as the worker ages, age stereotypes related to work become increasingly relevant to the self and are eventually internalized as part of the self (Levy, 2009).

2.1.7 Leader-member exchange (LMX)

LMX (Leader-Member Exchange) is a relationship-based approach to leadership introduced by Dansereau and colleagues (1975). According to Schyns, Paul, Mohr and Blank (2005), LMX theory also suggests leadership to be built on a two-way relationship between leader and employee and postulates that there are as many leadership styles as there are leader-member relationships. The leader's relationship with each employee is therefore unique, and the leader implements his or her leadership in different ways in different leader-member relationships (Schyns et al., 2005). The key message of LMX theory is that the way in which leadership is implemented affects the quality of the leader-member relationship (Martin, Guillaume, Thomas, Lee & Epitropaki, 2016).

Schriesheim, Castro and Cogliser (1999) have provided a comprehensive review of the evolution of LMX and state that the approach has undergone interesting changes since its infancy. According to the authors, the approach was initially termed the Vertical Dyad Linkage (VDL) model of leadership. Before VDL approach was formulated, the dominant approach to leadership was the so-called Average Leadership Style (ALS) which assumed leaders' behavior towards all their employees to be consistent. VDL, on the other hand, proposes that leaders do not use a single leadership style towards all employees. The authors continue that after the development of VDL the approach evolved into two different lines of development: the first being what is now commonly called the LMX approach and the second being Individualized Leadership (IL) approach (Schriesheim et al., 1999). According to Schriesheim et al. (1999), IL approach takes the idea of VDL approach further and proposes that all leaders and employees are unique individuals, and leaders treat every employee independently of other employees or any collective context. According to this approach, the linkage or dyad between each leader and employee is unique and

independent of other dyads (Schriesheim et al., 1999). LMX approach seems to have many similarities with VDL and IL but what differentiates LMX from VDL and IL is that leaders and employees are seen as active participants of a process to develop and improve this relationship (Norvapalo, 2014).

LMX has become a mature research area and has experienced explosive publication growth (Bauer & Erdogan, 2015, 3). Today, the literature on LMX is vast and increasing continuously: LMX as a search word provided approximately 6010 results in Google Scholar in the year 2022 alone. In 2021 the number was around 5610. For the purposes of this study, literature especially on the causes and effects of LMX can be seen to be of interest. Dulebohn, Bommer, Liden, Brouer and Ferris (2012) conducted a meta-analysis of 247 studies on the antecedents and consequences of LMX. The study identified the quality of the relationship between leader and subordinate to be impacted by 21 antecedents while contributing to 16 organizational outcomes (Dulebohn et al., 2012). These findings are illustrated in figure 3. According to the findings of Dulebohn et al. (2012), the quality of LMX is affected by characteristics of the subordinate, characteristics of the leader and characteristics of the interpersonal relationship between the leader and subordinate. Moreover, the study found subordinate perceptions of LMX to be significantly related to, among other things, overall organizational citizenship behavior, organizational commitment, general job satisfaction, turnover intentions, and job performance (Dulebohn et al., 2012). Many of these outcomes of LMX have been identified in other research findings as well (e.g., Mumtaz & Rowley, 2020).

LMX relationships can be asymmetrical in nature meaning that the quality of the leader-member relationship can be perceived differently by both parties involved in the relationship (Norvapalo, 2014). This study emphasizes the perspective of older workers by focusing on effects of age-based stereotypes as perceived by the older workers themselves (i.e., age metastereotypes). In accordance with this positioning of the study, LMX is considered from the perspective of employees as well instead of emphasizing the point of view of the manager or the views of both actors. In this study, LMX is considered as a moderator between age metastereotypes and occupational self-efficacy. LMX is frequently examined as a moderator (Epitropaki & Martin, 2015), but its moderating role in this kind of setting has not been explored before.

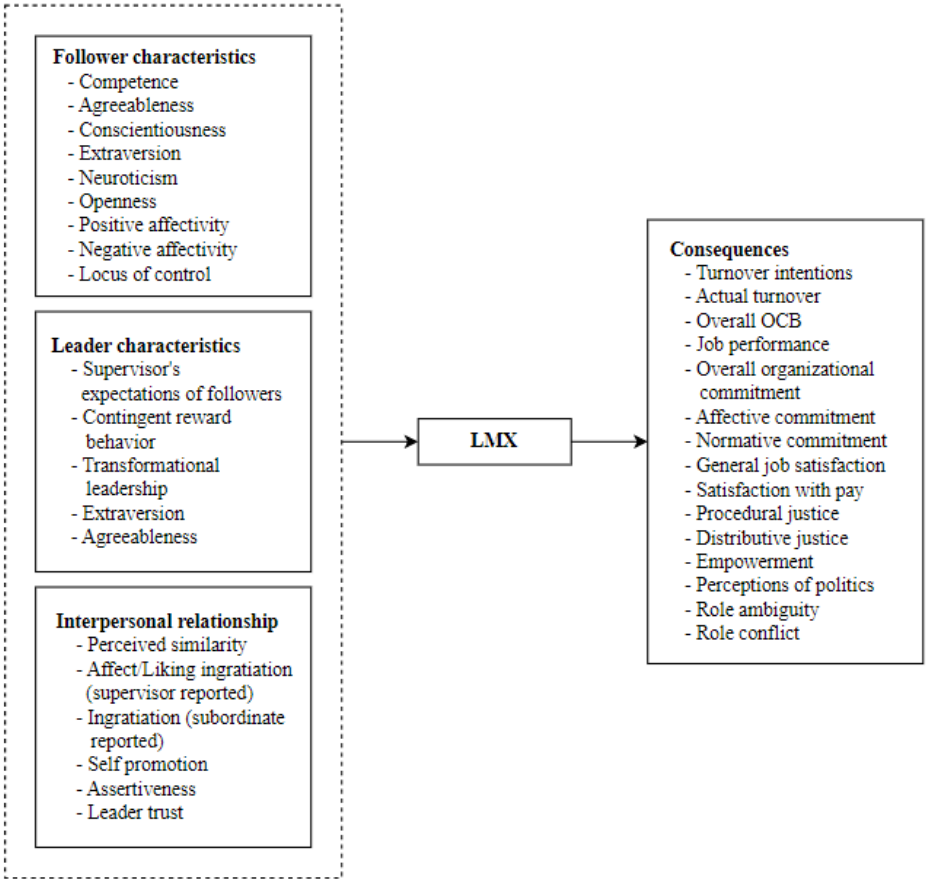

FIGURE 3 Antecedents and consequences of LMX (Dulebohn et al., 2012).

2.2 Hypotheses development

The research model of the current study consists of eight hypotheses illustrated in figure 4. The relationships between age-based metastereotypes and occupational self-efficacy are justified based on age metastereotype activation model by Finkelstein and colleagues (2015). The role of subjective age in this relationship is explained by self-categorization theory (Turner & Hogg, 1987) and stereotype embodiment theory (Levy, 2009), while the connections made between LMX, age-based metastereotypes and occupational self-efficacy are based on LMX theory (Dansereau et al., 1975). Additionally, prior research findings are provided to support the hypotheses.

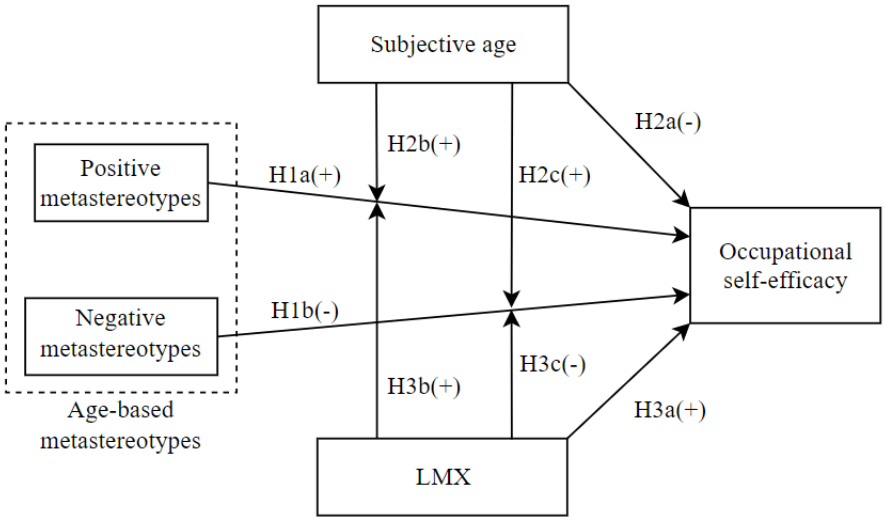

FIGURE 4 Research model and hypotheses.

2.2.1 Age-based metastereotypes and occupational self-efficacy

Links between age-based metastereotypes and occupational self-efficacy can be drawn from research on metastereotype activation, stereotype threat and other research on stereotypes and self-efficacy. The effects of stereotypes have been widely studied but research on ageing and occupational self-efficacy is scarce (Chiesa et al., 2016). Gender and minority stereotypes (Brown & Lent, 2012) and older workers' own attitudes towards ageing (Paggi & Jopp, 2015) have been found to relate to occupational self-efficacy. Moreover, age stereotypes have been found to be related to, for example memory-related self-efficacy (Maurer, 2008).

The age metastereotype activation model posits positive age metastereotypes to give rise to boost or threat response or no response at all depending on various individual and contextual factors that may impact the way an individual assesses the metastereotype in the given situation (Finkelstein et al., 2015). In line with the boost response to age metastereotypes, positive metastereotypes regarding older people's competence has been linked to higher well-being (Fasel, Vauclair, Lima & Abrams, 2021). Moreover, a study by Weber and colleagues (2020) on the effects of age stereotypes on self-efficacy, subjective work ability and irritation supports the notion that positive age stereotypes may be associated with higher self-efficacy. Positive age-based stereotypes and metastereotypes can be seen to activate a boost response and increase the confidence of older workers and thus improve their occupational self-efficacy. The association between positive age metastereotypes and occupational self-efficacy is supported by evidence as Chiesa et al. (2016) found positive age-based metastereotypes to be associated with improvements in older workers' occupational self-efficacy. Based on metastereotype activation model and the research findings presented above it can be hypothesized that

H1a Positive metastereotypes are positively related to occupational self-efficacy of older workers.

The metastereotype activation model further suggests negative age-based metastereotypes to cause a challenge or threat reaction or no reaction at all depending on a multitude of individual and contextual factors affecting the assessment of the metastereotype (Finkelstein et al., 2015). Especially the threat response of older workers to negative age metastereotypes, more commonly known as stereotype threat, has been demonstrated in various research findings. A study by von Hippel, Kalokerinos and Henry (2013) found older workers' feelings of stereotype threat to relate to negative job attitudes and lower work mental health which in turn were associated with increased intentions to resign and retire. Moreover, research findings suggest negative age-based metastereotypes to obstruct overall thriving of employees through age-based stereotype threat (Oliveira, 2022). Negative age-based metastereotypes have also been found to be associated with lower self-perceived employability (Peters, Van der Heijden, Spurk, De Vos & Klaassen, 2019). Von Hippel, Kalokerinos, Haanterä and Zacher (2019) found both younger and older workers to experience stereotype threat but older workers to be less likely to perceive it as a challenge making stereotype threat more problematic for older workers. Based on age metastereotype activation model and prior research findings on stereotype threat, it can be hypothesized that

H1b Negative metastereotypes are negatively related to occupational self-efficacy of older workers.

2.2.2 The role of subjective age

The role of subjective age in the relation to occupational self-efficacy can be explored through self-categorization theory. According to Gilleard (2022), subjective age should be seen as one aspect of self-categorization, meaning that an individual's subjective age may be related to the extent to which the individual categorizes himself or herself as part of the group of older workers. Older workers with subjective age similar or older to their chronological age can be seen to self-categorize themselves more strongly as an older worker and align their social identity accordingly while individuals with a younger subjective age may construct a social identity that deviates more from the social identity of an older worker. In fact, higher subjective age has been linked to various negative organizational outcomes such as decreased job crafting (Nagy, Johnston & Hisrchi, 2019), lower work motivation (Akkermans, de Lange Van der Heijden, Kooij, Jansen & Dikkers, 2016) as well as lower individual goal accomplishment and organizational performance (Kunze, Raes & Bruch, 2015). Moreover, younger subjective age has been shown to be associated with higher memory self-efficacy (Stephan, Caudroit & Chalabaev, 2010) and higher self-efficacy related to physical activity (Caudroit, Stephan, Chalabaev & Le Scanff, 2012). Based on this line of argument, it is hypothesized that

H2a Higher subjective age is negatively related to occupational self-efficacy of older workers.

In addition to self-categorization theory, the role of subjective age in the relationship between age metastereotypes and occupational self-efficacy can be examined through stereotype embodiment. According to Levy's (2009) stereotype embodiment theory, stereotypes must be relevant to the self in order to have an impact on individual's behavior. Moreover, the author points out that, unlike many other stereotypes, age stereotypes are characterized by the fact that they become self-relevant for all individuals over time (Levy, 2009). However, when an individual starts to feel that they belong to the ageing workforce, or that age stereotypes are directed at the individual themselves, can be very situational and differ greatly from person to person.

In chapter 2.1.1 it was established that older adults often adopt a younger subjective age. Cary and Chasteen (2015) suggest this disengagement from one's chronological age to be a coping strategy used to deal with age stigma. Adopting a younger subjective age may allow one to think that the negative stereotypes and prejudices associated with older age do not apply to them (Cary & Chasteen, 2015). It could be argued that if an individual does not categorize himself or herself as part of the group of older workers, then, in line with stereotype embodiment theory, he or she will not perceive age stereotypes as being directed towards himself or herself, thus inhibiting the effects of these stereotypes. In terms of metastereotype activation model this would suggest that adopting a younger subjective age inhibits the responses to age-based metastereotypes as they are considered less self-relevant. Conversely, adopting an older subjective age could be seen to strengthen the response to age-based metastereotypes as they are considered more strongly directed towards the self.

Bal, de Lange, Van der Heijden, Zacher, Oderkerk and Otten (2015) found the relationship between age-based metastereotypes and perceived occupational future and retirement intentions to be moderated by whether the individual perceives himself or herself as part of the collective of older workers and thus suggests that the effects of age-based metastereotypes on behavior are linked to self-categorization. Other studies have also found self-categorization as an aging individual to be associated with, for example, work-related attitudes (Dordoni & Argentero, 2015) and performance on clinical memory tests (Haslam, Morton, Haslam, Varnes, Graham & Gamaz, 2012). A study by Chiesa et al. (2016) found chronological age to moderate the relationship between age-based metastereotypes and occupational self-efficacy such that the relationship between age metastereotypes and occupational self-efficacy was significant only for older workers. As chronological and subjective age are closely related concepts, it can be seen reasonable to expect older subjective age to produce similar results. Based on the theory of self-categorization, the theory of stereotype embodiment and the previous research presented in this chapter, it can be hypothesized that

H2b Higher subjective age has a positive moderating effect on the relationship between positive metastereotypes and occupational self-efficacy of older workers such that the higher the subjective age, the stronger the relationship between positive metastereotypes and occupational self-efficacy.

H2c Higher subjective age has a positive moderating effect on the relationship between negative metastereotypes and occupational self-efficacy of older workers such that the higher the subjective age, the stronger the relationship between negative metastereotypes and occupational self-efficacy.

2.2.3 The role of LMX

Occupational self-efficacy is not included as one of the outcomes of LMX in the meta-analysis by Dulebohn et al. (2012) introduced in chapter 2.1.7. However, as stated in chapter 2.1.5, occupational self-efficacy has been suggested to relate to many organizational outcomes such as job motivation, satisfaction, performance, organizational and job commitment, and retirement intentions, all of which have been identified to be impacted by LMX (Dulebohn et al., 2012). Based on this, it could be seen reasonable to expect LMX and occupational self-efficacy to be associated as well. In fact, this relationship has been found in previous research (e.g., Schyns & von Collani, 2002; Schyns, 2004; Walumbwa, Cropanzano & Goldman, 2011). Schyns (2004) argues leadership to influence employees' self-efficacy through three of the antecedents of self-efficacy identified by Bandura (1977) discussed in chapter 2.1.5. The author maintains that supervisors can provide opportunities for mastery experiences by delegating difficult and important tasks to employees. Moreover, the author believes supervisors to be able to influence the self-efficacy of employees through vicarious experiences by serving as a model and performing difficult tasks. Lastly, supervisor's social persuasion in the form of daily interaction and verbal motivation may enhance the self-efficacy of employees (Schyns, 2004). Accordingly, Schyns and von Collani (2002) found LMX to correlate with occupational self-efficacy and argue high-quality LMX to include high supervisor support and encouragement for the subordinate which in turn improves the subordinate's occupational self-efficacy. Walumbwa et al. (2011) found LMX to account for 27 % of the variance in employees' self-efficacy. Based on these research findings on LMX and occupational self-efficacy it can be hypothesized that

H3a LMX is positively related to occupational self-efficacy of older workers.

In addition to directly relating to occupational self-efficacy, LMX may moderate the relationship between age-based metastereotypes and occupational self-efficacy of older workers through social support. Khalifa (2019) found perceived supervisor support to significantly predict LMX. This finding further supports the notion by Schyns and von Collani (2002) that high-quality LMX is related to

supervisor support. It could be argued that a leader that is supportive, encouraging and recognizes the potential of an individual may persuade the individual to believe in his or her abilities. In the context of age metastereotype activation, this could mean that high-quality LMX in the form of supervisor support may inhibit the threat response to negative age metastereotypes while promoting the boost response to positive age metastereotypes which, in turn, may result in enhanced occupational self-efficacy in both cases.

This dynamic between stereotype threat, social support and self-efficacy has been demonstrated in research studying academic self-efficacy. Bao, Xue, Zhang and Xu (2023) found the relationship between academic stereotype threat and academic self-efficacy to be moderated by teacher support such that the negative effects of stereotype threat were weaker when teacher support was perceived to be high. Moreover, Hampel and Kunze (2023) found supervisor support to play a role in the relationship between negative age stereotypes, chronological age, and digital self-efficacy. The study showed supervisor support to weaken the moderating effect of negative age stereotypes on the negative relationship between chronological age and digital self-efficacy. The study demonstrated that older workers who perceived high negative age stereotypes, but low supervisor support perceived lowest levels of digital self-efficacy while older workers who experienced high negative age stereotypes as well as high supervisor support experienced greater digital self-efficacy (Hampel & Kunze, 2023). Based on these findings on LMX, age stereotypes, perceived supervisor support and self-efficacy, it seems justified to hypothesize that

> H3b LMX has a positive moderating effect on the relationship between positive metastereotypes and occupational self-efficacy such that the stronger the LMX, the stronger the relationship between positive metastereotypes and occupational self-efficacy.
>
> H3c LMX has a negative moderating effect on the relationship between negative metastereotypes and occupational self-efficacy such that the stronger the LMX, the weaker the relationship between negative metastereotypes and occupational self-efficacy.

3 METHODOLOGY

This chapter begins by briefly outlining the research design and the philosophical assumptions underlying it, after which the data collection method and the items, scales and translation processes used are described. The present study is an explanatory survey study of quantitative nature, and therefore functionalist from its philosophical positioning.

Next, the methods used for data analysis are outlined. In the present study, Cronbach's alpha and factor analysis were used for reliability analysis. Associations between age metastereotypes, subjective age, LMX, and occupational self-efficacy were explored through hierarchical regression analysis. The chapter ends with an examination of the validity and reliability of the study.

3.1 Research design and philosophical assumptions

The purpose of a study can be to explore, explain, describe, or predict a phenomenon. Explanatory research usually seeks to identify causal relationships between the phenomena that are being studied (Hirsjärvi, Remes & Sajavaara, 2009, 138). This study can be said to be of an explanatory nature, as it aims to find links between age-based metastereotypes, occupational self-efficacy, subjective age, and the quality of leader-member relationship. Explanatory research can be conducted using quantitative or qualitative methods (Hirsjärvi et al., 2009, 138). In this study, a quantitative approach was chosen as it best serves the purposes of the study. Quantitative research emphasizes cause and effect relationships (Hirsjärvi et al., 2009, 139). Although causal relationships cannot be drawn due to the cross-sectional research design, the exploration of associations between the phenomena under investigation can be seen to favor a quantitative approach.

According to Hirsjärvi et al. (2009, 132-134), research strategy refers to the methodological choices made in the research and depends on the chosen objectives. The authors identify three traditional research strategies: experimental study, survey study and case studies. In a survey study, data are

collected from a group of people in a standardized form using a questionnaire or structured interviews (Hirsjärvi et al., 2009, 132-134). Standardized form signifies that in a questionnaire or interview, each person is asked the same questions in exactly the same form (Hirsjärvi et al., 2009, 193). This study was conducted as a survey study, where data was collected using an online questionnaire. Questionnaires are useful for reaching a larger audience and preserving the anonymity of respondents (Vilkka, 2007, 289). Case studies aim to produce more detailed information regarding a specific case such as a particular individual, group of individuals or a community (Hirsjärvi et al., 2009, 134-135). The present study can also be said to be a case study as the data was collected from members of a specific target organization.

Scientific research is based on certain latent assumptions, for example, about people, the world, and the acquisition of knowledge; so-called philosophical assumptions of research (Bell, Bryman & Harley, 2019, 25-26). One way of structuring these assumptions is the four paradigms of social theory introduced by Burrell and Morgan (1998). According to this approach, social theories can be divided into two dimensions. These dimensions are the subjective-objective dimension and the regulation-radical change dimension. The authors suggest that these two dimensions form four paradigms: the radical humanist, the radical structuralist, the interpretive, and the functionalist paradigm. All these paradigms approach social theories and their study from different premises and with different underlying assumptions. The authors state that the four paradigms are mutually exclusive, meaning that no study can be placed simultaneously in more than one paradigm (Burrell & Morgan, 1998, 21-25). Figure 5 illustrates Burrell and Morgan's (1998) paradigms of social theories.

The philosophical assumptions of the current study can be said to be rooted in the functionalist paradigm. In the regulation-radical change dimension, functionalism represents a view that sees the world as a relatively unchanging and stable object of study, whereas proponents of radical change perceive modern society as characterized by major changes and structural conflicts and contradictions (Burrell & Morgan, 1998, 17). On the subjective-objective dimension Burrell and Morgan (1998, 25) identify functionalism to adopt an objective approach. This objectivist approach is ontologically realistic (Burrell & Morgan, 1998, 3-5). Ontology is concerned with the nature of reality, while epistemology deals with the origin and nature of knowledge (Bell et al., 2019, 26-29). According to Burrell and Morgan (1998, 4), the realist ontological position assumes that reality is concrete, tangible, perceptible and the same for everyone, or universal, in nature whereas the subjective nominalist view posits that reality is constructed in the minds of individuals (Burrell & Morgan 1998, 4).

Epistemology follows from ontology so that a certain ontological position indicates a certain epistemological position (Bell et al., 2019, 29). The current study's epistemological position can be seen as positivist. Burrell and Morgan (1998, 5) state positivism to assume that it is possible to explain and predict the social world by looking for regularities and causal relations in it meanwhile the

anti-positivist view sees the world as relativistic in which regularities do not exist and predictions cannot be made (Burrell & Morgan 1998, 5).

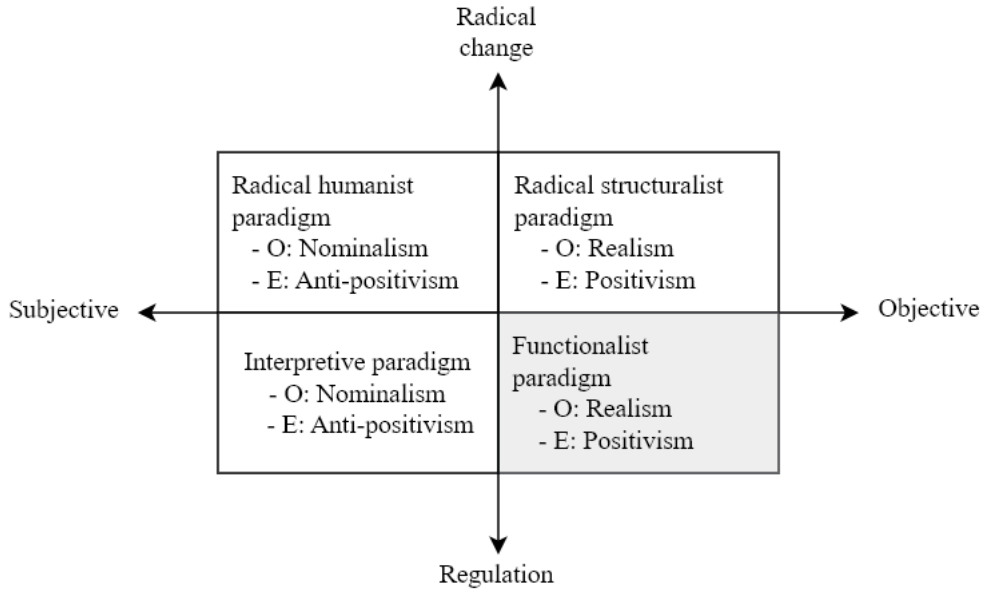

FIGURE 5 Sociological paradigms and the philosophical positioning of the current study.

3.2 Data collection method and the questionnaire

The data was collected from a target organization that operates in the religious organizations industry in Finland. Permission to conduct research was acquired by contacting the organization's human resource manager and data protection manager who, in turn, informed the rest of the executive team and confirmed their consent to participate in the study. Data collection was carried out according to the data privacy instructions by University of Jyväskylä (https://www.jyu.fi/en/university/data-privacy/tietosuojaohjeet/students). The data was collected through an online questionnaire constructed using Webropol 3.0 survey tool. The cover letter (appendix 2) included links to the research notification and privacy notice that the participant was asked to familiarize themselves with before opening the link to the questionnaire. This cover letter was shared to the target group by the occupational safety and health manager of the target organization using the organization's intranet. The questionnaire was only sent to workers aged 50 and older in accordance with the research objective. The questionnaire was first sent 27.2.2023 and a reminder to all recipients of the initial invitation was sent 7.3.2023. The questionnaire was closed 13.3.2023. A total of 220 responses were collected during this time.

The questionnaire (appendix 3) included a variety of questions regarding the background information of the respondent. At the beginning of the questionnaire, among other things, the chronological age, gender, educational background, as well as duration of both current work role and entire career were

asked. Additionally, the respondents were asked to estimate the age of their current manager in relation to themselves as well as the length of their leader-member relationship with their current manager.

In addition to these background variables, the questionnaire aimed to measure the age-based metastereotypes and occupational self-efficacy of older workers as well as the quality of the leader-member relationship as experienced by the older workers. Age-based metastereotypes were measured using a 15-item stereotypes towards older workers scale adopted from Chiesa et al. (2016). Five of the items in this scale regarded the positive stereotypes towards older workers and 10 regarded the negative stereotypes held against older workers. In the original study by Chiesa et al. (2016), negative metastereotypes were measured using two variables: adaptability metastereotype and productivity metastereotype. The current study, however, combined these variables into one, as factor analysis suggested these items to load into one factor instead of two as discussed later in chapter 3.4.2.

Following the study by Chiesa et al. (2016), the scale was transformed to measure metastereotypes instead of stereotypes by adding the phrase "my organization thinks that…" in the beginning of each item. Respondents were asked to assess the statements using a 5-point response scale (1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree). The original items were translated from English to Finnish. Dictionaries were utilized in the translation process, and the translated items were assessed by two other fluent English and Finnish speaking individuals. For example, the statement "my organization thinks that older workers are more loyal than younger workers" was translated as "organisaatiossani ajatellaan, että ikääntyvät työntekijät ovat lojaalimpia kuin nuoremmat työntekijät". All the original items as well as their Finnish translations are listed in appendix 4.

Occupational self-efficacy was measured using a short version of the occupational self-efficacy scale developed by Rigotti, Schyns and Mohr (2008). Respondents were asked to assess six statements using a 5-point response scale (1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree). The items used are summarized in appendix 4 along with their Finnish translations. The translation process of these items was similar to that of the items measuring age-based metastereotypes. For example, the statement "I can remain calm when facing difficulties in my job because I can rely on my abilities" translated into "kohdatessani haasteita työssäni pysyn rauhallisena, sillä voin luottaa kykyihini".

Subjective age can be measured from several perspectives. Barak (1987) developed a measurement that included four dimensions: the respondent's feel-age (how old one feels), look-age (how old one looks), do-age (how old one feels based on their activities) and interest-age (how old one feels based on their interests). Teuscher (2009), on the other hand, used nine items to measure subjective age in different life domains such as bodily fitness, interests, and mental abilities as well as overall general subjective age. Only the item that measures subjective age on a general level, was adopted to the present study in

order to keep the length of the survey reasonable. The original question "If you compare yourself to people your age, how old do you feel in general?" was translated to Finnish and a 5-point response scale similar to that of Teuscher (2009) was provided to assess the question (1 = much younger, 2 = somewhat younger, 3 = same age, 4 = somewhat older, 5 = much older).

The quality of the leader-member relationship was measured through a Finnish version of the widely used LMX 7, a scale developed by Graen and Uhl-Bien (1995). The scale consists of 7 items which are assessed using a 5-point response scale (1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree). The original items and their Finnish counterparts are visible in appendix 4. The translated items were derived from Norvapalo (2014). The translations were obtained through back translation. Back translation is a method of translating in which the translated item is re-translated into the original language after which the original version and back translation are compared (Behr, 2017).

In order to increase the reliability of measures, the order of items in the questionnaire can be randomized. In partially individualized item randomization, the instruments are presented in the same order for everyone but the items in each instrument are randomized for each respondent, whereas in complete individual randomization the order of all items is completely randomized (Loiacono & Wilson, 2020). According to some studies, complete randomization results in more accurate measurements (e.g., Loiacono & Wilson, 2020). However, it has also been argued, that intermixing items may confuse respondents and reduce the quality of measures (Goodhue & Loiacono, 2002). In the present study, partial randomization was used as some questionnaire items required instructions for answering and complete randomization of items would have resulted in unreasonable amount of repetition of instructions and unnecessary additional reading for the respondents.

3.3 Data analysis

The data was analyzed using IBM SPSS Statistics 28.0 software. The first step in the analysis process was data anonymization. One approach to anonymizing quantitative data is to aggregate or reduce the precision of variables that can potentially lead to identification of respondents (UK Data Service, n.d.). In the current study, data anonymization was attained by re-coding respondents' chronological age, job tenure and entire career as well as length of leader-member relationship with current manager into bigger categories. Before computing composite variables, a few items that were negatively worded were reverse coded so that on the five-point scale 1 was recoded into 5, 2 into 4, 4 into 2 and 5 into 1.

Before computing composite variables, reliability analysis was also performed using Cronbach's alpha and factor analysis. The results of reliability analysis are reported in chapter 3.4.2. After confirming the appropriateness of

items in each composite variable, the composite variables were computed. Next, initial analysis of the data was performed using descriptive statistics in order to get an overall picture of the data. The characteristics of respondents were investigated and described by exploring the distribution and means of answers on control variables. Similarly, the descriptives of other measures used in the questionnaire were explored using distributions, means and standard deviation.

Correlations among study variables were examined using Spearman's rho. Hypotheses regarding main effects of negative and positive age metastereotypes as well as subjective age and LMX on occupational self-efficacy were tested using hierarchical regression analysis. Additionally, subjective age and LMX were tested as moderating variables in the relationship between age-based metastereotypes and occupational self-efficacy. A moderating variable is a variable that influences the magnitude of the effect of an independent variable on a dependent variable (Aguinis, Edwards & Bradley, 2017). A moderator can either strengthen, weaken, or reverse the relationship between independent and dependent variables (Gardner, Harris, Li, Kirkman & Mathieu, 2017). The results of hypotheses testing are reported in detail in chapter 4.

3.4 Validity and reliability of the research

3.4.1 Validity

Validity refers to the integrity of conclusions that can be derived from a research study (Bell et al., 2019, 46). There are multiple types of validity (Hair, Wolfinbarger, Money, Samouel, & Page, 2015, 257-259), but generally they can be divided into two main categories: internal and external validity (Metsämuuronen, 2011, 65). According to Metsämuuronen (2011, 65; 74), internal validity refers to a measure's ability to measure a certain concept or phenomenon as well as the appropriateness and proper construction of the theoretical background it is based on, while external validity considers the generalizability of the research results. The current study can be seen to enjoy relatively strong internal validity whereas the external validity of the research may be limited.

Internal validity of the study can be seen to be high as the hypotheses of the study were developed based on relevant theoretical constructs and prior research findings and all the measures used have been validated by other researchers. Moreover, the effects of gender, chronological age and educational background were controlled for, further increasing the internal validity. However, translating a measure to another language may pose a threat to the internal validity of the measure as the meanings of items can change thus altering its ability to measure a given phenomenon. To avoid this, a careful translating process was followed (see chapter 3.2). Additionally, in order to avoid confusion, the questionnaire included answering instructions for respondents. However, despite using previously validated measures, instructing respondents, and carefully translating the items, it cannot be fully confirmed whether the respondents

interpreted the questions the intended way. The questionnaire included an open-ended question at the end where respondents were able to freely comment and express their impressions of the questionnaire. A few of the respondents indicated the phrase "my organization thinks that" to be confusing as they could never know what an organization of that size would think or if organizations can think at all. In the beginning of those questions, the respondents were instructed to answer based on their own feelings or experiences regarding the statements. However, this may not have been clearly conveyed to all respondents, which may decrease the internal validity of the study.

The external validity of the present study, or generalizability of the results to wider population, can be seen as limited. The study was conducted in the context of one target organization. This makes it problematic to generalize any of the findings outside of the target organization. The generalizability of the results inside the target organization, however, seems stronger. The questionnaire was sent to all members of the organization aged 50 or older. In this case, 506 people received the invitation from which 220, that is 43,5 %, took part in the research. Baruch (1999) conducted a study to explore what could be considered an adequate response rate and found the average overall response rate to be 55,6 %. Richardson (2005) stated 50 % to be a reasonable response rate. The current study does not reach these standards but can nevertheless be thought to enjoy relatively strong external validity inside the target organization.

3.4.2 Reliability

According to Hirsjärvi et al. (2009, 231), reliability generally refers to the repeatability of research results and the ability of the research to produce results that are not accidental or random. In quantitative studies, the trustworthiness of measures can be assessed through various statistical procedures (Hirsjärvi et al., 2009, 231). In the beginning of reliability analysis of the current study, the internal consistency of four composite variables, LMX, occupational self-efficacy, positive metastereotypes, and negative metastereotypes, was evaluated by calculating the Cronbach's alpha for each composite variable. The results are compiled in appendix 1. A value of 0,6 is often thought of as the lowest acceptable alpha value and occasionally it may be necessary to delete items from the measure in order to reach this minimum (Metsämuuronen, 2011, 549). All the measures reached an alpha value of more than 0,8. Moreover, all the original items were retained as deleting any of the items would not have further increased the attained alpha values.

While the calculated Cronbach's alpha values imply strong internal consistency among the items in each measure, factor analysis was performed to further investigate the reliability of the measures. Factor analysis is an often used means of testing whether items can be computed into composite variables and requires Kaiser-Meyer-Olkin (KMO) test for sampling adequacy and Bartlett's test of sphericity to be performed in order to confirm the adequacy of factor analysis (Karjaluoto, 2007, 40-44). For factor analysis to be appropriate, KMO value should reach a minimum of 0,6 while Bartlett's test should return a p-value

of 0,05 or lower. These conditions were met as shown in table 1. The KMO test returned a value of 0,885 giving good conditions for factor analysis to be performed. Moreover, Bartlett's test of sphericity returned a p-value of less than 0,001 further confirming that the data is suited for factor analysis.

TABLE 1 KMO and Bartlett's Test.

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	,885
Bartlett's Test of Sphericity	
Approx. Chi-Square	3114,811
Df.	378
Sig.	< ,001

After confirming the adequacy, an exploratory factor analysis was conducted using principal axis factoring as method of extraction, with the rotation method being VARIMAX. These extraction and rotation methods were chosen based on recommendations by Karjaluoto (2007, 45-46). VARIMAX is one of the most popular factor rotation methods and is considered a superior method in achieving a simplified factor structure (Hair, Black, Babin & Anderson, 2010, 94). Eigenvalues of greater than 1 were used as a cutoff for extraction, as it is suggested that factors with eigenvalues less than 1 are considered insignificant and should be disregarded (Hair et al., 2010, 109).

The results showed the communalities of all variables to range from 0,345 to 0,847. Communalities indicate the extent to which the items can be considered to reliably measure the factors (Metsämuuronen, 2011, 661) and items that reach a value less than 0,3 may need to be excluded from the factor analysis (Karjaluoto, 2010, 48). Based on this, no items were excluded from the analysis. Moreover, the results showed that five factors exceeded the eigenvalue of 1, explaining 53,6 % of total variance. Factor 1 explained 16,7 % of the variance, while factors 2, 3, and 4 explained 13,4 %, 12,4 %, and 9,3 % respectively. Factor 5 only explained 1,8 % of the variance.

Table 2 depicts the rotated factor matrix with factor loadings of 0,3 or greater. It can be seen from this table that variables measuring LMX load to factor 1 while variables measuring occupational self-efficacy and positive metastereotypes load mostly to factors 3 and 4 respectively. Variables measuring negative metastereotypes seem to mostly load into one factor as well. However, three items, R4, N8 and N9, load into factor 5 as well. Factor loading of 0,3 is often thought of as a threshold for significant loadings (e.g., Karjaluoto, 2007, 51; Metsämuuronen, 2011, 664). Hair et al. (2010, 117), however, suggest that factor loadings should be evaluated at a stricter level and provide guidelines for identifying significant factor loadings based on sample sizes. According to the authors, a factor loading of 0,3 is significant only for sample sizes of 350 and greater, and for sample sizes of 200 a factor loading of 0,4 can be considered significant (Hair et al., 2010, 117). The sample size of the current study is 220 meaning that based on the guidelines provided by Hair et al. (2010), the loadings

on factor 5 are not significant. Moreover, it was established that the total variance explained by factor 5 is only 1,8 percent, which is relatively low when compared to the other factors. Consequently, the present study excludes factor 5 from the analysis thus resulting in four factors that explain 51,8 % of total variance.

TABLE 2 Rotated factor matrix.

Variable	Factor				
	1	2	3	4	5
LMX1	,753				
LMX2	,841				
LMX3	,708				
LMX4	,817				
LMX5	,736				
LMX6	,726				
LMX7	,875				
OSE1			,728		
OSE2			,737		
OSE3			,751		
OSE4			,672		
OSE5			,653		
OSE6			,778		
R1				,624	
R2				,747	
R3				,723	
R4				,655	,310
R5				,750	
N1		,674			
N2		,553			
N3		,546			
N4		,531			
N5		,677			
N6		,565			
N7		,508			
N8		,566			,310
N9		,522			-,363
N10		,548			

4 RESULTS

This chapter summarizes the descriptive statistics regarding the characteristics of respondents in terms of gender, chronological age, educational background and subjective age, as well as the means, standard deviations, and ranges regarding positive and negative age metastereotypes, occupational self-efficacy and LMX. Next, correlations among study variables are examined using Spearman's rho after which the results to hypotheses testing using hierarchical regression analysis are presented. The results show negative age-based metastereotypes to have a negative relationship with occupational self-efficacy while positive age-based metastereotypes have no relationship at all. Subjective age is also related to occupational self-efficacy while LMX is not. Moderating relationships were not found.

4.1 Descriptive statistics and correlations

Descriptives of respondent were examined by looking at frequencies. From the 220 respondents 76,4 % (n=168) were female and 21,8 % (n=48) male while 0,9 % (n=2) answered other and 0,9 % (n=2) preferred not to answer at all. Of the respondents 26, 8 % (n=59) were 50-54 years old, 30 % (n=66) 55-59 years old, 36,4 % (n=80) 60-64 years old and 6,8 % (n=15) were 65 years or older. The mean age for the respondents was 58. Regarding their educational background 3,2 % (n=7) had completed primary and lower secondary education, 38,6 % (n=85) upped secondary education, 17,7 % (n=39) a bachelor's degree, 35,9 % (n=79) a master's degree and 2,3 % (n=5) a doctoral degree, while 2,3 % (n=5) answered other. When asked about their subjective age, 12,3 % (n=27) considered themselves as much younger when compared to others of their chronological age, and 48,2 % (n=106) as somewhat younger, while 36,4 %(n=80) considered themselves as same age and 3,2 % (n=7) answered somewhat older. None of the respondents considered themselves to be much older than others of their chronological age.

Descriptives of age metastereotypes, occupational self-efficacy and LMX were examined by looking at their means, standard deviations, and minimum and maximum values. Regarding positive age metastereotypes, the values ranged from 1 to 4,6, with a mean of 2,9 and standard deviation of 0,7. The mean for negative age metastereotypes was 2,6, with standard deviation of 0,7 and values ranging from 1 to 4,4. Occupational self-efficacy was evaluated to be considerably strong as the mean for occupational self-efficacy was 4,3 with values ranging from 1,17 to 5 with standard deviation of 0,6. The quality of leader-member relationship was evaluated relatively highly as well as the mean for LMX was 3,8 with a standard deviation of 0,9 and values ranging from 1,14 to 5. The descriptive statistics of positive and negative metastereotypes, occupational self-efficacy and LMX are presented in more detail in appendix 5.

After examining descriptive statistics and before hypotheses testing, the correlations among study variables were calculated. Correlation analysis is a commonly used preliminary statistical analysis that helps to determine linear dependencies between variables as well as the strength and direction of those dependencies (Karjaluoto, 2007, 36). Noteworthy is, however, that correlation cannot be used to determine causality (Karjaluoto, 2007, 36). Correlations were calculated using Spearman's rho (ρ), as it can be used to calculate correlations between ordinal and interval variables (Bell et al., 2019, 322). The results of the analysis are summarized in table 3. The value of the correlation coefficient can range from –1 to 1, with -1 indicating a perfect negative relationship and 1 indicating a perfect positive relationship while 0 indicates no relationship (Hair et al., 2010, 156-157). When variables are positively correlated, an increase in one variable is related to an increase in the other variable as well whereas in the case of negative correlation, as the value of one variable increases, the value of the other variable decreases (Karjaluoto, 2007, 36).

Respondents' chronological age is shown to have various statistically significant correlations. Chronological age positively correlates with educational background (ρ = 0,17) and positive metastereotypes (ρ = 0,15) while negatively correlating with subjective age (ρ = -0.19) and negative metastereotypes (ρ = -0,15). Gender is shown to negatively correlate with educational background (ρ = -0,15) such that male respondents were more likely to be more highly educated. Subjective age correlated negatively with LMX (ρ = -0,20) and occupational self-efficacy (ρ = -0,27) meaning that higher subjective age was related to lower quality in leader-member interaction and lower occupational self-efficacy. A positive correlation between positive and negative metastereotypes was found (ρ = 0,13). Moreover, negative metastereotypes were found to negatively correlate with LMX (ρ = -0,41) and occupational self-efficacy (ρ = -0,36), while correlations between positive metastereotypes and LMX or occupational self-efficacy were not present. Lastly, LMX and occupational self-efficacy were found to positively correlate (ρ = 0,36) suggesting higher LMX to be related to higher occupational self-efficacy.

TABLE 3 Means, standard deviations and correlations among variables.

Variable	M	SD	1	2	3	4	5	6	7	8
1. Age	58,00	4,68	-							
2. Gender	1,81	,48	,03	-						
3. Educational background	3,02	1,08	,17*	-,15*	-					
4. Subjective age	2,30	,72	-,19**	,11	-,05	-				
5. Positive metastereotypes	2,93	,73	,15*	-,06	-,01	-,04	-			
6. Negative metastereotypes	2,58	,69	-,15*	-,08	-,01	,08	,13*	-		
7. LMX	3,78	,91	,10	-,03	,10	-,20**	,11	-,41**	-	
8. Occupational self-efficacy	4,28	,63	-,01	-,01	,07	-,27**	,04	-,36**	,36**	-

*p < ,05
**p < ,01

4.2 Hypotheses testing

The hypotheses were tested using hierarchical regression analysis. The results are summarized in table 4. In hierarchical regression, independent variables are entered into the analysis in steps based on theory and prior research findings enabling the evaluation of the predictive contribution of variables on each step (Mitzi, 2007, 9). In the current study, hierarchical regression was performed in three steps. In the first step, the contribution of control variables, chronological age, gender, and educational background to occupational self-efficacy of older workers was evaluated. The second step considered the main effects, that is the relation of positive age metastereotypes (H1a), negative age metastereotypes (H1b), subjective age (H2a) and LMX (H3a) to occupational self-efficacy. The last step evaluated two moderating roles: subjective age (H2c) and LMX (H3c) in the relationship between occupational self-efficacy and negative age metastereotypes. In the beginning of each step, the fit of the model was examined. In regression analysis, Adjusted R Square (R^2) represents the explanatory power of the regression model (Karjaluoto, 2007, 54). The explanatory power of the first model that included the control variables was not statistically significant (R^2 = 0,006; p = 0,65) implying that the model did not fit the data and that chronological age, gender and educational background did not predict occupational self-efficacy.

The second step evaluated the contribution of positive age metastereotypes, negative age metastereotypes, subjective age, and LMX to occupational self-efficacy of older workers. This model was found to be statistically significant (p < 0,001) with Adjusted R Square of 0,195. The R^2 value indicates the percentage of total variation explained by the regression model (Hair et al., 2010, 209),

meaning that in this case the model explains 19,5 % of the variation in occupational self-efficacy of older workers. The standardized regression coefficient (B) represents the change in the dependent variable for each unit change in the independent variable (Hair et al., 2010, 211). Positive age metastereotypes were not related to occupational self-efficacy of older workers in a statistically significant way ($p = 0,97$), meaning that hypothesis H1a is rejected. However, support for hypothesis H1b was found, as negative age metastereotypes were found to be negatively related to occupational self-efficacy of older workers ($B = -0,32$; $p < 0,001$). Hypothesis H2a was also accepted, as subjective age was found to negatively relate to occupational self-efficacy of older workers ($B = -0,23$; $p < 0,001$). Contrary to the hypothesis, LMX did not significantly relate to occupational self-efficacy of older workers ($p = 0,08$), resulting in the rejection of hypothesis H3a.

Because the main effect between positive age metastereotypes and occupational self-efficacy was not found in step 2 and hypothesis H1a was rejected, positive age metastereotypes were excluded from the last step in the hierarchical regression analysis. Instead, the third step evaluated the moderating role of subjective age and LMX in the relationship between negative age metastereotypes and occupational self-efficacy, a relationship that was found significant in step 2 of the analysis. Subjective age was hypothesized to positively moderate the relationship between negative age metastereotypes and occupational self-efficacy such that higher subjective age strengthens the relationship between negative age metastereotypes and occupational self-efficacy (H2c). LMX was hypothesized to negatively moderate (i.e., weaken) the relationship between negative age metastereotypes and occupational self-efficacy such that higher LMX weakens the relationship between these variables (H3c).

At the beginning of moderation analysis, a procedure called mean centering is often recommended as it makes the interpretation of results simpler by reducing multicollinearity between the independent and interaction variables and thus making it easier to distinguish the unique effects of each variable (Memon, Cheah, Ramayah, Ting, Chuah & Cham, 2019). This is recommended even though the results are likely to remain unchanged even though variables are not mean centered (Arguinis et al., 2017). Mean centering was achieved by computing three new variables, mean centered negative age metastereotypes (centerNEG), mean centered subjective age (centerSUBJ) and mean centered LMX (centerLMX) by subtracting the mean of the original variable from the new variable. For example, the mean for negative age metastereotypes variable was 2,58 meaning that the new variable was calculated as centerNEG = NEG – 2,58. Mean centering is done correctly when the mean for the new variable is zero. After mean centering, interaction variables were created by multiplying the mean centered negative metastereotypes variable and the mean centered moderator variable. Two variables were formed: NEGxSUBJ = centerNEG * centerSUBJ and NEGxLMX = centerNEG * centerLMX. The interaction variable represents the

joint effect of the two variables, negative metastereotypes and subjective age, and negative metastereotypes and LMX.

After creating the interaction variables, the last step of the hierarchical regression analysis was performed using the two interaction variables as predictors of occupational self-efficacy. The model fit the data as it was found statistically significant ($p < 0,001$) with Adjusted R Square value of 0,191 meaning that the last model explains 19,1 % of the variation in occupational self-efficacy of older workers. This is 0,4 % less than the model in step 2 indicating that the additional predictors in model 3 (i.e., the moderators) did not explain additional variance in occupational self-efficacy of older workers. Moreover, the regression coefficients for these predictors were not statistically significant. According to these results, both hypothesis H2c and H3c are rejected as no statistically significant moderation was found.

Table 5 summarizes the hypotheses of the study and their outcomes. Hypothesis H1a regarding positive age metastereotypes as a predictor of occupational self-efficacy of older workers was rejected while hypothesis H1b about the negative relationship between negative age metastereotypes and occupational self-efficacy of older workers was accepted. Of the three hypotheses regarding subjective age, only H2a was accepted as subjective age was found to be a significant predictor of occupational self-efficacy of older workers. All three hypotheses regarding LMX were rejected as results showed these relationships to be non-significant.

TABLE 4 Hierarchical regression analysis.

	Occupational self-efficacy		
Predictor	B	SE	β
Step 1: Control variables			
Chronological age	-,04	,28	-,18
Gender	-,07	,54	-,54
Educational background	,03	,24	,10
R^2 = ,006			
Step 2: Main effects			
Positive metastereotypes (P)	,00	,07	,00
Negative metastereotypes (N)	-,32***	,04	-,18
Subjective age (SUBJ)	-,23***	,05	-1,19
LMX	,12	,04	,07
R^2 = ,195***			
Step 3: Two-way interactions			
N x SUBJ	-,05	,05	-,04
N x LMX	,00	,00	-,00
Total R^2 = ,191***			

***p < ,001

TABLE 5 Summary of hypotheses and their outcomes.

Hypothesis		Outcome
H1a	Positive metastereotypes are positively related to occupational self-efficacy of older workers.	Rejected
H1b	Negative metastereotypes are negatively related to occupational self-efficacy of older workers.	Accepted
H2a	Subjective age is negatively related to occupational self-efficacy of older workers.	Accepted
H2b	Higher subjective age has a positive moderating effect on the relationship between positive metastereotypes and occupational self-efficacy of older workers such that the higher the subjective age, the stronger the relationship between positive metastereotypes and occupational self-efficacy.	Rejected
H2c	Higher subjective age has a positive moderating effect on the relationship between negative metastereotypes and occupational self-efficacy of older workers such that the higher the subjective age, the stronger the relationship between negative metastereotypes and occupational self-efficacy.	Rejected
H3a	LMX is positively related to occupational self-efficacy of older workers.	Rejected
H3b	LMX has a positive moderating effect on the relationship between positive metastereotypes and occupational self-efficacy such that the stronger the LMX, the stronger the relationship between positive metastereotypes and occupational self-efficacy.	Rejected
H3c	LMX has a negative moderating effect on the relationship between negative metastereotypes and occupational self-efficacy such that the stronger the LMX, the weaker the relationship between negative metastereotypes and occupational self-efficacy.	Rejected

5 DISCUSSION

This study aimed to investigate the relationship between age-based metastereotypes and occupational self-efficacy of older workers. In addition, the objective was to examine the role of subjective age and the quality of leadership (LMX) in the relationship between age-based metastereotypes and occupational self-efficacy of older workers. In this chapter, theoretical conclusions and practical implications of the research findings are discussed in light of relevant literature and the three research questions posed at the beginning of the report: 1) to what extent are older workers' age-based metastereotypes related to the occupational self-efficacy of older workers, 2) what is the role of subjective age in the relationship between older workers' age-based metastereotypes and their occupational self-efficacy and 3) what is the role of leader-member exchange in the relationship between older workers' age-based metastereotypes and their occupational self-efficacy. To conclude, the ethical elements and limitations of the study as well as future research avenues in the field of age metastereotypes and occupational self-efficacy are considered.

5.1 Theoretical conclusions

5.1.1 Age-based metastereotypes and occupational self-efficacy

Negative age metastereotypes were, as hypothesized, negatively related to occupational self-efficacy of older workers such that stronger negative metastereotypes were associated with weaker occupational self-efficacy. These results are not surprising as the adverse effects of negative stereotypes and negative metastereotypes on various individual and organizational outcomes are well documented (see chapters 2.1.3 and 2.2.1). For example, Bal et al. (2015) reported a negative association between negative age-based metastereotypes and occupational future time perspective and retirement intentions. The result is also, to a degree, in accordance with the age metastereotype activation model

introduced by Finkelstein and colleagues (2015) in which negative age metastereotypes were expected to lead to stereotype threat which, in turn, may have various impairing effects. As stereotype threat was not directly examined, no relation can be drawn between age metastereotypes and stereotype threat. Instead, the current study provides support for the model only in that negative age metastereotypes were found to be related to a negative organizational outcome.

Contrary to the hypothesis and previous research findings, a significant association between positive metastereotypes and occupational self-efficacy was not found. Chiesa et al. (2016) found positive metastereotypes regarding the reliability, adaptability, and productivity of older workers to be associated with stronger occupational self-efficacy of older workers. Similarly, Weber et al. (2020) found positive views on older workers to be related to higher self-efficacy of workers of 42 years of age and older. In terms of age metastereotype activation model, the results of the current study suggest positive age metastereotypes to elicit no response instead of a boost response. Finkelstein et al. (2015) propose age metastereotype to evoke no response if the metastereotype is not considered self-relevant. This implies that the respondents, for some reason, evaluated positive age metastereotypes to be less relevant than negative age metastereotypes.

These differing evaluations could be connected to the organizational and larger cultural context the study took place in. It could be that the culture of the target organization, the religious organizations industry or the larger cultural context of Finland is inherently unfavorable for the prevalence of positive stereotypes. It could be, for example, that the communication or accepting of compliments is different in the particular cultural context in which the study was conducted. Indeed, modesty and humility, reservedness and taciturnity are traits that are considered to be basic Finnish values (Lewis, 2005, 61-62). Moreover, it may be plausible that older workers pay more attention to the negative attributes that others associate to them than the positive attributes thus diminishing the magnitude of positive age metastereotypes and the effects thereof. In fact, the phenomenon in which negative information has a stronger effect on, for example, individuals' perception, attention, and behavior, than positive information, has been termed as the negativity bias and is a widely studied effect with a plethora of supporting empirical evidence (Norris, 2021). Even though the results regarding positive age metastereotypes oppose the majority of previous research findings, support for this conclusion can also be found. For example, Stein et al. (2002) found that the memory performance of older adults did not improve when exposed to positive stereotypes.

5.1.2 The role of subjective age

Subjective age was found to relate to occupational self-efficacy such that higher subjective age was associated with weaker occupational self-efficacy. From the point of view of self-categorization and stereotype embodiment, this result could suggest higher subjective age to be associated with stronger self-categorization

as an older worker and stronger internalization of age stereotypes as part of the self. Moreover, this finding is in line with previous research findings as older subjective age has been shown to be linked to various unfavorable outcomes such as lower work motivation (Akkerman et al., 2019), and poorer goal accomplishment and organizational performance (Kunze et al., 2015), while younger subjective age has been demonstrated to associate with favorable outcomes such as higher self-efficacy regarding memory (Stephan et al., 2010) and physical activity (Caudroit et al., 2012).

Chronological age did not seem to have a similar relationship with occupational self-efficacy as subjective age as the chronological age of workers aged 50 and older was not related to occupational self-efficacy in a statistically significant way. This finding is in line with existing literature. According to Carstensen (2006), as individuals age, subjective sense of time becomes more important than chronological age. Akkermans and colleagues (2016) conducted a study that aimed to test the value of subjective age as a determinant of successful aging and found, in line with Carstensen (2006), subjective age to be a much more important predictor of successful aging than chronological age. The current study found chronological age to negatively correlate with subjective age, meaning that higher chronological age predicted lower subjective age. This finding has also been demonstrated in previous research. Rubin and Berntsen (2006) found subjective age to generally decrease as chronological age increases. This phenomenon has been suggested to be a coping mechanism used to avoid age stigma and retain a positive self-image as aging is often thought to be associated with negative outcomes (Cary & Chasteen, 2015).

Contrary to what was hypothesized, subjective age was not found to moderate the relationship between age-based metastereotypes and occupational self-efficacy of older workers. An explanation for these results may be found from the theoretical background the hypothesis was based on, self-categorization theory and stereotype embodiment theory. According to stereotype embodiment theory, for stereotypes to have an impact on the behavior of an individual they must be self-relevant (Levy, 2009) meaning in the context of this study that the respondents must categorize themselves as an older worker for stereotypes towards older workers to impact their occupational self-efficacy. Although subjective age can be seen as an aspect of self-categorization (Gilleard, 2022), it may not fully measure it and thus may not have similar outcomes.

5.1.3 The role of LMX

LMX was found to neither relate to occupational self-efficacy nor moderate the relationship between age-based metastereotypes and occupational self-efficacy of older workers. This finding opposes the hypotheses of the study, as well as the findings of previous research. As in the case of subjective age, possible reasons for the unexpected results may be found from the theoretical background from which the hypotheses were derived. LMX has been found to relate to various individual and organizational outcomes (Dulebohn et al., 2012) and seems to have a multifaceted role in organizational life. Schyns and von Collani (2002)

suggested high-quality LMX to improve occupational self-efficacy of employees as it is associated with supervisor support and encouragement which is in turn recognized as an antecedent of occupational self-efficacy (Maurer, 2001). However, similar to the case of subjective age and self-categorization, supervisor support may be an aspect of LMX, but LMX may not fully measure supervisor support thus explaining the conflicting results.

Explanations for the unexpected results regarding LMX can also be sought from the cultural context the study was conducted in. In the open-ended question at the end of the questionnaire, a few respondents indicated that the organization has undergone major changes during recent years including transformations at the managerial level. Moreover, for example, the COVID-19 pandemic may have altered cultural dynamics of the organization in ways that are not accounted for by the current study. Remote work has been suggested to have several implications for LMX, for example, in the form of limited interactions and the obstacles related to communications via technology such as difficulty in interpreting body language and other non-verbal cues (Varma, Jaiswal, Pereira & Kumar, 2022). These are all elements that may have implications for both LMX and occupational self-efficacy of older workers but are not accounted for by the current study.

5.2 Practical implications

The results of this study can be seen to have several practical implications for management. First of all, the study demonstrates that in addition to age stereotypes, organizations need to address age metastereotypes in their operations as the results suggest that the mere belief regarding the prevalence of age stereotypes is negatively related to the occupational self-efficacy of older workers. The finding seems to be especially true in the case of negative age metastereotypes, and has been frequently demonstrated in research. Moreover, the results suggest positive age metastereotypes to not be as desirable for organizations as indicated by other research findings. For example, Chiesa et al. (2016) urge organizations to discourage negative age stereotypes but to emphasize positive age stereotypes as they may provide positive organizational outcomes. The current study found no relation between positive age metastereotypes and occupational self-efficacy, suggesting that, at least in the context of occupational self-efficacy, positive age metastereotypes may not serve a purpose.

Moreover, in addition to potentially having no favorable outcomes, positive stereotypes may, in fact, have insidious harmful implications. Research by Kay, Day, Zanna and Nussbaum (2013) implies that the usage of positive stereotypes may facilitate and reinforce the application of harmful negative stereotypes and beliefs. The authors believe that the adverse effects of positive stereotypes may even be stronger than the effects of negative stereotypes as people tend to be less skeptical and vigilant to information acquired through often flattering and

humorous positive stereotypes than more hostile negative stereotypes (Kay et al., 2013). Thus, people may be less aware of the influence positive stereotypes may have on the ways they perceive certain stereotyped groups. Based on the findings of the current study and the insights by Kay et al. (2013), it would seem, that individualized leadership free of the constraints of stereotypes is more advantageous than leading age groups or any other group of individuals joined together based on stereotypes, positive or negative. Moreover, fostering inclusion and inclusive behavior throughout the organization and discouraging the use of stereotypes appears as a worthwhile endeavor. Management plays a key role in addressing these cultural changes.

Another practical implication of the current study is that instead of focusing on the chronological age of older workers, attention should be shifted to the subjective experiences of age as subjective age was found to relate to occupational self-efficacy while chronological age did not. The results also showed aging workers to feel increasingly younger, which is also an important conclusion for organizations. The results imply that instead of being concerned about the chronological aging of workforce, organizations should invest in measures directed at the subjective aging of employees. Subjective age has been shown to be malleable by, for example, age-inclusive HR practices such as equal opportunities for training and promotion as well as age diversity training for managers (Kunze, Raes & Bruch, 2015).

5.3 Ethical considerations

While the nature of the current study may not include many ethical concerns, it is important to contemplate the research process as a whole and acknowledge the responsibility and ethical dimensions it entails. Finnish National Board on Research Integrity (TENK, 2012) provides guidelines for responsible conduct of research. The following chapter outlines the ways in which the current study adheres to these guidelines. First, research should exercise integrity, meticulousness, accuracy, and openness in the overall research process as well as in recording, presenting, and evaluating research results (TENK, 2012, 30). The current study attempted to achieve this in various ways. The hypotheses of the study were based on widely studied theories and previous research findings. Moreover, the questionnaire was constructed from previously validated measures and the translating process was conducted in a careful manner as described earlier in this report. In addition to this, the analysis of data and the interpretations made of it were based on appropriate source material and they were communicated in an honest and responsible way.

Second, data acquisition should be carried out in an ethically sustainable manner and in accordance with scientific criteria including appropriate briefing of participants on, for example, archiving and accessing of data and other relevant issues (TENK, 2012, 30). In the current study, the distribution of the questionnaire to potential participants was carried out by the target organization

such that the researcher had no access to person registers or other sensitive information. The cover letter included a research notification and a privacy notice including relevant information required for informed consent. The participants were asked to read these notices before continuing with the questionnaire. The collected data was stored on a network drive of the university of Jyväskylä which is a more secure location than, for example, the personal computer of the researcher. At the beginning of analysis, the data was anonymized such that a single respondent could not be singled out or identified.

Lastly, according to the guidelines of responsible research conduct, the researcher must give due credit and respect to the achievements of other researchers by appropriately citing their publications (TENK, 2012, 30). The current study attempts to highlight contrasting viewpoints regarding age stereotypes and their effects on older workers and give credit to the differing views and research findings in a precise manner. Moreover, hypotheses development, data analysis and evaluation of results make use of existing literature and research findings, all of which are duly credited. Overall, the current study can be seen to conform to the guidelines provided by TENK (2012) throughout the entire research process.

5.4 Limitations

The main limitation of this research can be thought to be its cross-sectional research design that prevents the investigation of cumulative effects as well as the identification of causal relationships. Another limitation of this research can be seen to be the lack of intersectionality, as the study fails to recognize the multifaceted nature of social identities and the potential combined effects thereof. Moreover, the current research fails to take into account various other factors that are suggested to impact the effects of age-based stereotypes, such as organizational structure and hierarchy (Turek et al., 2022), organizational and social climate (Chang et al., 2022), organizational culture (Marcus, 2022), and various individual factors (Chang et al., 2022; Marcus, 2022). Limitations regarding the internal and external validity of the research were discussed in chapters 3.4.1. The translating process as well as confusing phrasing of items may have undermined the internal validity of the study. Moreover, data collected from a target organization has limited generalizability outside of the organization.

Limitations regarding using subjective age and LMX as moderators were briefly discussed in chapter 5.1. For the purposes of the current study, the utilization of a self-categorization scale and a supervisor support scale could have been more advantageous and resulted in findings that are more in line with the theoretical background and previous research findings. Moreover, the scales used may be problematic due to limited scale points. In the present study, subjective age and LMX were measured using 5-point Likert scales. However, a 7-point Likert scale is suggested to measure moderator variables as fewer scale

points may result in information loss which can prevent the detection of moderation effect (Memon et al., 2019). Thus, it is possible for the moderation effect of subjective age and LMX to have been lost. Moreover, Memon et al. (2019) state that the choice of moderators should be based on extensive theoretical and literature support. It may be appropriate to question whether the theoretical background of the current study is substantial enough to draw assumptions regarding moderation effect.

Lastly, as stated in chapter 3.1, the quantitative nature of the current research is inherently tied to certain ontological and epistemological assumptions, which guide the research and the conclusions drawn from it. As such, the results of the current study should be interpreted in the context of its philosophical positioning in the functionalist paradigm.

5.5 Future research directions

The future directions of age stereotype research are widely agreed upon (Murphy & DeNisi 2022b) and the current study can be seen to respond to many of these demands. Going forward interest should not be limited to personnel decisions, but age discrimination should be studied from a variety of perspectives to better understand the underlying mechanisms (Turek, Mulders & Stypińska, 2022). The research perspective should also be further broadened from the perspective of those who utilize age stereotypes to that of their targets, older workers, as this is an aspect that has received less attention in previous research (Turek et al., 2022; Marchiondo, 2022). Studying age stereotypes from the perspective of older workers is believed to provide a more holistic picture of age discrimination (Turek et al., 2022) and stronger and more consistent research findings (Marchiondo, 2022). In the future, it is thought to be useful to combine the perspectives of users and targets of age stereotypes (Marchiondo, 2022). Age stereotyping research should also increasingly take into account factors such as organizational structure and hierarchy (Turek et al., 2022), organizational and social climate (Chang, Liu & Zhang, 2022), organizational culture (Marcus, 2022) and individual factors (Chang et al., 2022; Marcus, 2022).

In future research on age stereotypes, it could be beneficial to understand age as a broader concept than merely chronological age as a more holistic understanding of age can provide more accurate measures and thus contribute to research in the field (Gioaba & North, 2022). In addition, age could be viewed from an intersectional perspective: individuals have complex social identities (Marcus, 2022; Thrasher, 2022), so dividing individuals into only young and old is not sufficient and may lead to mixed results (Marcus, 2022). An individual's social identity is influenced by chronological age, subjective age, gender, ethnicity, and sexuality, among other factors, and work-related age stereotypes may manifest and affect differently different intersectional subgroups, such as ageing women or ageing sexual minority members (Marcus, 2022; Thrasher, 2022). The effects of age stereotypes and ageism are identified as a challenging

area of research (Petery & Grosch, 2022; Murphy & DeNisi, 2022a; 2022b) and should be examined holistically (Petery & Grosch, 2022).

Societal culture has not been found to be related to age stereotypes, but rather age stereotypes and their effects have been found to be largely universal (Marcus, 2022; Marcus & Sabuncu, 2016; Reeves, Fritzsche, Marcus, Smith & Ng, 2021). This is thought to be because ageing at work is a process that is repeated in relatively similar ways across societies (Rudolph, Marcus & Zacher, 2018). Marcus (2022) therefore argues that instead of studying macro-level culture, research on age stereotypes should focus on meso- and micro-level i.e., organizational culture and individual factors. Other researchers have also stressed the importance of considering organizational culture and climate as well as individual factors in age stereotype research (e.g., Turek et al., 2022; Chang et al., 2022).

While the present study can be seen to meet many of these current demands identified by scholars in the field of age stereotype research in general, there are various ways in which research on the specific phenomenon the study focused on could be improved in the future. First, as discussed earlier, using self-categorization and supervisor support as moderating variables instead of subjective age and LMX may provide results that are more in line with the theoretical background, hypotheses of the research as well as previous research findings and could be seen as a fruitful avenue for future research. Self-categorization could be measured using, for example, a pictorial measure by Schubert and Otten (2002) that involves rating oneself in relation to older workers on a 7-point scale from furthest away to closest to the group of older workers. An example of a measure for supervisor support could be an adapted version of the Survey of Perceived Organizational Support (SPOS) used in various studies investigating supervisor support (e.g., Eisenberger, Stinglhamber, Vandenberghe, Sucharski & Rhoades, 2002).

Second, in order to capture the cumulative effects of age stereotypes on occupational self-efficacy and establish causality, longitudinal research design could be adopted. Longitudinal studies on occupational self-efficacy seem scarce and could therefore be an important and beneficial approach to study successful aging at work. Third, adopting an intersectional perspective and considering, for example the combined effects of ethnicity, sexuality, and age stereotypes on occupational self-efficacy, may produce interesting and valuable results. Fourth, in order to improve the external validity of the research, larger scale studies could be carried out. Lastly, a deep dive into the contextual and individual factors surrounding the dynamic of age-based stereotypes and occupational self-efficacy of older workers could be beneficial. To achieve this, the use of qualitative research methods or mixed methods research may be appropriate.

5.6 Conclusions

This study aimed to contribute to research in this field in several ways. Firstly, in line with the suggestions for further research, the study focused on older workers' experiences of age stereotypes in their organization, i.e., age metastereotypes, meaning that the focus was on the targets of age stereotypes. Age metastereotypes have been identified by Finkelstein et al. (2015) to be an important yet understudied form of age stereotypes at work. In line with further research proposals, the study approached age stereotypes from a different perspective as the focus was on occupational self-efficacy, rather than personnel decisions. Moreover, as suggested, age was treated in this study not only in terms of chronological age but also in terms of subjective age. The examination of subjective age aimed to enrich the research results and to produce a more comprehensive picture of a complex research subject. In this study, in line with the suggestions for further research, the focus was on meso- and micro-level factors: age stereotypes at the organizational level, the quality of the leader-member relationship and the subjective age of individuals.

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APPENDICES

APPENDIX 1: Cronbach's alpha values of measures.

Measure	**α if item deleted**
LMX (α = .929)	
LMX1	,918
LMX2	,913
LMX3	,923
LMX4	,917
LMX5	,925
LMX6	,921
LMX7	,908
Occupational self-efficacy (α = .879)	
OSE1	,856
OSE2	,860
OSE3	,853
OSE4	,863
OSE5	,868
OSE6	,850
Positive metastereotypes (α = ,827)	
P1	,813
P2	,781
P3	,789
P4	,809
P5	,771
Negative metastereotypes (α = ,849)	
N1	,826
N2	,837
N3	,836
N4	,839
N5	,842
N6	,833
N7	,837
N8	,838
N9	,840
N10	,836

APPENDIX 2: Cover letter

Arvoisa vastaanottaja,

Teen Pro gradu -tutkielmaa Jyväskylän yliopiston kauppakorkeakoulussa. Vastaamalla tähän kyselyyn autat minua tutkimusaineiston keräämisessä.

Tutkimuksen tarkoituksena on tutkia koettujen organisaatiossa vallitsevien ikästereotypioiden yhteyttä ikääntyvien työntekijöiden ammatilliseen minäpystyvyyteen kohdeorganisaatiossa. Lisäksi tavoitteena on tutkia esihenkilön ja työntekijän välisen vuorovaikutussuhteen laadun roolia tässä yhteydessä.

Kyselyyn vastataan nimettömänä ja vastaukset käsitellään ehdottoman luottamuksellisesti. Aineisto käsitellään tilastollisin menetelmin eikä yksittäisen ihmisen vastauksia voida erottaa tuloksista. **Vastaamiseen kuluu aikaa noin 10-15 minuuttia**. Pyydän teitä vastaamaan kyselyyn mahdollisimman pian, viimeistään 13.3.2023 mennessä.

Tutustuthan ennen vastaamista tutkimuksen tiedotteeseen ja tietosuojailmoitukseen. Osallistumalla tutkimukseen hyväksyt tiedotteessa ja tietosuojailmoituksessa annetut tiedot.

Tiedote tutkimuksesta
Tietosuojailmoitus

Kiitos osallistumisestasi!

Ystävällisin terveisin,
Saara Liimatainen
saara.m.liimatainen@student.jyu.fi

APPENDIX 3: Online questionnaire

1. Sukupuoli *

- ◯ Mies
- ◯ Nainen
- ◯ Muu
- ◯ En halua vastata

2. Ikä, vuosissa *

_____ vuotta

3. Kun vertaat itseäsi muihin ikäisiisi, kuinka vanhaksi tunnet itsesi? *

- ◯ Paljon nuoremmaksi
- ◯ Jokseenkin nuoremmaksi
- ◯ Samanikäiseksi
- ◯ Jokseenkin vanhemmaksi
- ◯ Paljon vanhemmaksi

4. Mikä on korkein suorittamasi koulutustaso? *

- ◯ Perusasteen tutkinto
- ◯ Toisen asteen tutkinto
- ◯ Alempi korkeakoulututkinto
- ◯ Ylempi korkeakoulututkinto
- ◯ Tohtorintutkinto
- ◯ Muu

5. Toimitko organisaatiossa esihenkilöasemassa? *

- ◯ Kyllä
- ◯ En

6. Työskenteletkö organisaatiossa jonkin seurakunnan vai yhteisten palveluiden työntekijänä? *

- ◯ Seurakunnan työntekijänä
- ◯ Yhteisten palveluiden työntekijänä (esim. hallinnon tehtävissä)

7. Mikä on työsuhteesi pituus vuosissa nykyisessä työtehtävässäsi? *

_____ vuotta

8. Mikä on koko työurasi pituus vuosissa? *

_____ vuotta

9. Millainen on nykyisen työsuhteesi laatu? *

- ○ Toistaiseksi voimassa oleva / vakituinen
- ○ Määräaikainen
- ○ Vuokratyö
- ○ Oppisopimuskoulutus, työharjoittelu tai vastaava

10. Millainen on nykyinen työaikasi? *

- ○ Kokoaikainen
- ○ Osa-aikainen

11. Minkä ikäiseksi arvioisit nykyisen esihenkilösi sinuun verrattuna? *

- ○ Nuorempi
- ○ Samanikäinen
- ○ Vanhempi
- ○ En osaa sanoa

12. Kuinka pitkään arvioisit nykyisen esihenkilösi toimineen esihenkilönäsi? Anna vastaus vuosissa. *

_____ vuotta

13. Koetut organisaatiossa vallitsevat ikästereotypiat *

Seuraavaksi sinulle esitetään väittämiä ikääntyvistä työntekijöistä. Valitse kunkin väittämän kohdalla yksi vaihtoehto, joka kuvaa parhaiten omaa näkemystäsi. 1= täysin eri mieltä, 2= jokseenkin eri mieltä, 3= ei samaa eikä eri mieltä, 4= jokseenkin samaa mieltä ja 5= täysin samaa mieltä.

	1 Täysin eri mieltä	2 Jokseenkin eri mieltä	3 Ei samaa eikä eri mieltä	4 Jokseenkin samaa mieltä	5 Täysin samaa mieltä
Organisaatiossani ajatellaan, että ikääntyvien työntekijöiden keskuudessa poissaolot ovat yleisempiä kuin nuorempien työntekijöiden keskuudessa.	○	○	○	○	○
Organisaatiossani ajatellaan, että ikääntyvät työntekijät ovat vähemmän kiinnostuneita teknologisista muutoksista kuin nuoremmat työntekijät.	○	○	○	○	○
Organisaatiossani ajatellaan, että ikääntyvät työntekijät kestävät stressiä huonommin kuin nuoremmat työntekijät.	○	○	○	○	○
Organisaatiossani ajatellaan, että ikääntyvät työntekijät ovat vähemmän tuotteliaita kuin nuoremmat työntekijät.	○	○	○	○	○
Organisaatiossani ajatellaan, että ikääntyvät työntekijät ovat vähemmän luovia kuin nuoremmat työntekijät.	○	○	○	○	○
Organisaatiossani ajatellaan, että ikääntyvät työntekijät suoriutuvat yhtä hyvin kuin nuoremmat työntekijät.	○	○	○	○	○
Organisaatiossani ajatellaan, että ikääntyvät työntekijät ovat lojaalimpia kuin nuoremmat työntekijät.	○	○	○	○	○
Organisaatiossani ajatellaan, että ikääntyvät työntekijät sopeutuvat huonommin teknologisiin muutoksiin kuin nuoremmat työntekijät.	○	○	○	○	○
Organisaatiossani ajatellaan, että ikääntyvät työntekijät ovat vähemmän kiinnostuneita osallistumaan koulutusohjelmiin kuin nuoremmat työntekijät.	○	○	○	○	○
Organisaatiossani ajatellaan, että ikääntyvät työntekijät eivät mielellään ota tehtävänantoja nuoremmilta työntekijöiltä.	○	○	○	○	○
Organisaatiossani ajatellaan, että ikääntyvillä työntekijöillä on paremmat sosiaaliset taidot kuin nuoremmilla työntekijöillä.	○	○	○	○	○
Organisaatiossani ajatellaan, että ikääntyvät työntekijät ovat yhtä yritteliäitä ja aloitteellisia kuin nuoremmat työntekijät.	○	○	○	○	○
Organisaatiossani ajatellaan, että ikääntyvät työntekijät ovat luotettavampia kuin nuoremmat työntekijät.	○	○	○	○	○
Organisaatiossani ajatellaan, että ikääntyvät työntekijät ovat tarkempia kuin nuoremmat työntekijät.	○	○	○	○	○
Organisaatiossani ajatellaan, että ikääntyvät työntekijät ovat huolellisempia kuin nuoremmat työntekijät.	○	○	○	○	○

14. Ammatillinen minäpystyvyys *

Seuraavaksi sinulle esitetään väittämiä omasta ammatillisesta minäpystyvyydestäsi. Valitse kunkin väittämän kohdalla yksi vaihtoehto, joka kuvaa parhaiten omaa näkemystäsi. 1= täysin eri mieltä, 2= jokseenkin eri mieltä, 3= ei samaa eikä eri mieltä, 4= jokseenkin samaa mieltä ja 5= täysin samaa mieltä.

	1 Täysin eri mieltä	2 Jokseenkin eri mieltä	3 Ei samaa eikä eri mieltä	4 Jokseenkin samaa mieltä	5 Täysin samaa mieltä
Tunnen olevani valmistautunut useimpiin vaatimuksiin työssäni.	○	○	○	○	○
Kohdatessani ongelman työssäni, pystyn yleensä löytämään sille useita ratkaisuja.	○	○	○	○	○
Mitä tahansa työssäni tuleekaan vastaan, pystyn yleensä selviytymään siitä.	○	○	○	○	○
Aiemmat kokemukseni työssäni ovat valmistaneet minut hyvin ammatillista tulevaisuuttani varten.	○	○	○	○	○
Saavutan tavoitteet, jotka asetan itselleni työssäni.	○	○	○	○	○
Kohdatessani haasteita työssäni pysyn rauhallisena, sillä voin luottaa kykyihini.	○	○	○	○	○

15. Organisaatioon sitoutuminen *

Seuraavaksi sinulle esitetään väittämiä, jotka koskevat sitoutuneisuuttasi organisaatioosi. Valitse kunkin kysymyksen/väittämän kohdalla yksi vaihtoehto, joka kuvaa parhaiten omaa näkemystäsi. 1= täysin eri mieltä, 2= jokseenkin eri mieltä, 3= ei samaa eikä eri mieltä, 4= jokseenkin samaa mieltä ja 5= täysin samaa mieltä.

	1 Täysin eri mieltä	2 Jokseenkin eri mieltä	3 Ei samaa eikä eri mieltä	4 Jokseenkin samaa mieltä	5 Täysin samaa mieltä
Vaikka tällä organisaatiolla menisikin taloudellisesti huonosti, en haluaisi vaihtaa työpaikkaa.	○	○	○	○	○
En tunne erityistä kiintymystä työpaikkaani kohtaan.	○	○	○	○	○
Kuuluminen tähän organisaatioon merkitsee minulle henkilökohtaisesti paljon.	○	○	○	○	○
Kun teen työtä, haluan tuntea ponnistelevani paitsi itseni myös organisaationi hyväksi.	○	○	○	○	○
Työskentelisin mieluummin jossakin toisessa työpaikassa kuin nykyisessä.	○	○	○	○	○
Työskentelen mielelläni juuri tässä organisaatiossa.	○	○	○	○	○
Olisin hyvin onnellinen, jos voisin työskennellä tässä organisaatiossa eläkkeelle asti.	○	○	○	○	○

16. Esihenkilön ja työntekijän välinen vuorovaikutussuhde *

Seuraavaksi sinulle esitetään väittämiä, jotka koskevat sinun ja esihenkilösi välistä vuorovaikutussuhdetta. Valitse kunkin kysymyksen/väittämän kohdalla yksi vaihtoehto, joka kuvaa parhaiten omaa näkemystäsi. 1= täysin eri mieltä, 2= jokseenkin eri mieltä, 3= ei samaa eikä eri mieltä, 4= jokseenkin samaa mieltä ja 5= täysin samaa mieltä.

	1 Täysin eri mieltä	2 Jokseenkin eri mieltä	3 Ei samaa eikä eri mieltä	4 Jokseenkin samaa mieltä	5 Täysin samaa mieltä
Esihenkilöni ymmärtää työhöni kuuluvia ongelmia ja tarpeita.	○	○	○	○	○
Tiedän yleensä, kuinka tyytyväinen esihenkilöni on siihen, mitä teen työssäni.	○	○	○	○	○
Luotan esihenkilööni niin, että puolustaisin hänen tekemiään päätöksiään, vaikka hän ei itse olisi paikalla.	○	○	○	○	○
Esihenkilöni tietää hyvin, mihin pystyn työssäni.	○	○	○	○	○
Työsuhteeni esihenkilööni on toimiva ja tuloksekas.	○	○	○	○	○
Voin luottaa siihen, että esihenkilöni auttaa minut hankalasta työtilanteesta tarvittaessa omalla kustannuksellaan.	○	○	○	○	○
Esihenkilöni käyttäisi todennäköisesti valta-asemaansa auttaakseen minua ratkaisemaan työtehtävissäni olevia ongelmia.	○	○	○	○	○

17. Lopuksi

Halutessasi voit antaa palautetta tai kertoa mielipiteesi kyselyyn tai tutkimukseen liittyen.

APPENDIX 4: Original items and Finnish translations

Age-based metastereotypes	
Original items (Chiesa et al., 2016)	**Finnish translations**
(R1) My organization thinks that older workers are more loyal than younger workers.	Organisaatiossani ajatellaan, että ikääntyvät työntekijät ovat lojaalimpia kuin nuoremmat työntekijät.
(R2) My organization thinks that older workers are more reliable than younger workers.	Organisaatiossani ajatellaan, että ikääntyvät työntekijät ovat luotettavampia kuin nuoremmat työntekijät.
(R3) My organization thinks that older workers are more meticulous than younger workers.	Organisaatiossani ajatellaan, että ikääntyvät työntekijät ovat tarkempia kuin nuoremmat työntekijät.
(R4) My organization thinks that older workers have greater social skills than younger workers.	Organisaatiossani ajatellaan, että ikääntyvillä työntekijöillä on paremmat sosiaaliset taidot kuin nuoremmilla työntekijöillä.
(R5) My organization thinks that older workers are more careful than younger workers.	Organisaatiossani ajatellaan, että ikääntyvät työntekijät ovat huolellisempia kuin nuoremmat työntekijät.
(N1) My organization thinks that older workers are less interested in technological change than younger workers.	Organisaatiossani ajatellaan, että ikääntyvät työntekijät ovat vähemmän kiinnostuneita teknologisista muutoksista kuin nuoremmat työntekijät.
(N2) My organization thinks that older workers are less able to adapt to technological change than younger workers.	Organisaatiossani ajatellaan, että ikääntyvät työntekijät sopeutuvat huonommin teknologisiin muutoksiin kuin nuoremmat työntekijät.
(N3) My organization thinks that older workers are less capable of coping with stress than younger workers.	Organisaatiossani ajatellaan, että ikääntyvät työntekijät kestävät stressiä huonommin kuin nuoremmat työntekijät.
(N4) My organization thinks that older workers are less interested in participating in training programs than younger workers.	Organisaatiossani ajatellaan, että ikääntyvät työntekijät ovat vähemmän kiinnostuneita osallistumaan koulutusohjelmiin kuin nuoremmat työntekijät.
(N5) My organization thinks that older workers are less productive than younger workers.	Organisaatiossani ajatellaan, että ikääntyvät työntekijät ovat vähemmän tuotteliaita kuin nuoremmat työntekijät.
(N6) My organization thinks that older workers are less creative than younger workers.	Organisaatiossani ajatellaan, että ikääntyvät työntekijät ovat vähemmän luovia kuin nuoremmat työntekijät.
(N7) My organization thinks that older workers keep up just as well as younger workers.	Organisaatiossani ajatellaan, että ikääntyvät työntekijät suoriutuvat yhtä hyvin kuin nuoremmat työntekijät.
(N8) My organization thinks that absenteeism is higher among older workers than among younger workers.	Organisaatiossani ajatellaan, että ikääntyvien työntekijöiden keskuudessa poissaolot ovat yleisempiä kuin nuorempien työntekijöiden keskuudessa.

(N9) My organization thinks that older workers are just as enterprising as younger workers.	Organisaatiossani ajatellaan, että ikääntyvät työntekijät ovat yhtä yritteliäitä ja aloitteellisia kuin nuoremmat työntekijät.
(N10) My organization thinks that older workers prefer not to be as-signed tasks by younger workers.	Organisaatiossani ajatellaan, että ikääntyvät työntekijät eivät mielellään ota tehtävänantoja nuoremmilta työntekijöiltä.

Occupational self-efficacy	
Original items (Rigotti et al., 2008)	**Finnish translations**
(OSE1) I can remain calm when facing difficulties in my job because I can rely on my abilities.	Kohdatessani haasteita työssäni pysyn rauhallisena, sillä voin luottaa kykyihini.
(OSE2) When I am confronted with a problem in my job, I can usually find several solutions.	Kohdatessani ongelman työssäni, pystyn yleensä löytämään sille useita ratkaisuja.
(OSE3) Whatever comes my way in my job, I can usually handle it.	Mitä tahansa työssäni tuleekaan vastaan, pystyn yleensä selviytymään siitä.
(OSE4) My past experiences in my job have prepared me well for my occupational future.	Aiemmat kokemukseni työssäni ovat valmistaneet minut hyvin ammatillista tulevaisuuttani varten.
(OSE5) I meet the goals that I set for myself in my job.	Saavutan tavoitteet, jotka asetan itselleni työssäni.
(OSE6) I feel prepared for most of the demands in my job.	Tunnen olevani valmistautunut useimpiin vaatimuksiin työssäni.

Leader-member exchange (LMX)	
Original items (Graen & Uhl-Bien, 1995)	**Finnish translations (Norvapalo, 2014)**
(LMX1) Do you know where you stand with your leader (follower) . . .do you usually know how satisfied your leader (follower) is with what you do?	Tiedän yleensä, kuinka tyytyväinen esihenkilöni on siihen, mitä teen työssäni.
(LMX2) How well does your leader (follower) understand your job problems and needs?	Esihenkilöni ymmärtää työhöni kuuluvia ongelmia ja tarpeita.
(LMX3) How well does your leader (follower) recognize your potential?	Esihenkilöni tietää hyvin, mihin pystyn työssäni.
(LMX4) Regardless of how much formal authority your leader (follower) has built into his or her position, what are the chances that your leader (follower) would use his or her power to help you solve problems in your work?	Esihenkilöni käyttäisi todennäköisesti valta-asemaansa auttaakseen minua ratkaisemaan työtehtävissäni olevia ongelmia.

(LMX5) Again, regardless of the amount of formal authority your leader (follower) has, what are the chances that he or she would "bail you out" at his or her expense?	Voin luottaa siihen, että esihenkilöni auttaa minut hankalasta työtilanteesta tarvittaessa omalla kustannuksellaan.
(LMX6) I have enough confidence in my leader (follower) that I would defend and justify his or her decision if he or she were not present to do so.	Luotan esihenkilööni niin, että puolustaisin hänen tekemiään päätöksiään, vaikka hän ei itse olisi paikalla.
(LMX7) How would you characterize your working relationship with your leader (follower)?	Työsuhteeni esihenkilööni on toimiva ja tuloksekas.

APPENDIX 5: Descriptives of measures

Positive metastereotypes	**1 Strongly disagree**	**2 Disagree**	**3 Neither agree nor disagree**	**4 Agree**	**5 Strongly agree**	**Mean (SD)**
P1: Older workers are more loyal	7,3 % (n=16)	11,8 % (n=26)	45,0 % (n=99)	30,5 % (n=67)	5,5 % (n=12)	3,15 (0,95)
P2: Older workers are more reliable	8,6 % (n=19)	21,8 % (n=48)	36,8 % (n=81)	30 % (n=66)	2,7 % (n=6)	2,96 (0,99)
P3: Older workers are more meticulous	9,1 % (n=20)	19,5 % (n=43)	51,4 % (n=113)	19,1 % (n=42)	0,9 % (n=2)	2,83 (0,87)
P4: Older workers have greater social skills	12,3 % (n=27)	23,6 % (n=52)	39,5 % (n=87)	22,3 % (n=49)	2,3 % (n=5)	2,79 (1,0)
P5: Older workers are more careful	10% (n=22)	18,2 % (n=40)	45,5 % (n=100)	25 % (n=55)	1,4 % (n=3)	2,90 (0,94)
Negative metastereotypes	**1 Strongly disagree**	**2 Disagree**	**3 Neither agree nor disagree**	**4 Agree**	**5 Strongly agree**	**Mean (SD)**
N1: Older workers are less interested in technological change	6,4 % (n=14)	23,6 % (n=52)	20% (n=44)	40,9 % (n=90)	9,1 % (n=20)	3,23 (1,10)
N2: Older workers are less able to adapt to technological change	4,1 % (n=9)	21,4 % (n=47)	19,5 % (n=43)	47,7% (n=105)	7,3 % (n=16)	3,33 (1,02)
N3: Older workers are less capable of coping with stress	24,5 % (n=54)	42,3 % (n=93)	21,8 % (n=48)	10,5 % (n=23)	0,9 % (n=2)	2,21 (0,96)
N4: Older workers are less interested in participating in training programs	17,7 % (n=39)	26,8 % (n=59)	22,7 % (n=50)	26,4 % (n=58)	6,4 % (n=14)	2,77 (1,20)
N5: Older workers are less productive	20,9 % (n=46)	37,3 % (n=82)	22,3 % (n=49)	17,7 % (n=39)	1,8 % (n=4)	2,42 (1,06)
N6: Older workers are less creative	21,4 % (n=47)	33,2 % (n=73)	22,7 % (n=50)	20,9 % (n=46)	1,8 % (n=4)	2,49 (1,10)
N7: Older workers keep up just as well (reverse coded)	22,3 % (n=49)	44,1 % (n=97)	18,6 % (n=41)	14,1 % (n=31)	0,9 % (n=2)	2,27 (0,99)
N8: Absenteeism is higher among older workers	27,3 % (n=60)	34,1 % (n=75)	25,5 % (n=56)	10,9 % (n=24)	2,3 % (n=5)	2,27 (1,05)
N9: Older workers are just as enterprising (reverse coded)	14,1 % (n=31)	40 % (n=88)	19,5 % (n=43)	24,1 % (n=53)	2,3 % (n=5)	2,60 (1,07)
N10: Older workers prefer not to be assigned tasks by younger workers	28,6 % (n=63)	31,4 % (n=69)	26,8 % (n=59)	13,2 % (n=29)	0 % (n=0)	2,25 (1,01)
	1	**2**	**3**	**4**	**5**	

Occupational self-efficacy	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree	Mean (SD)
OSE1: I can remain calm when facing difficulties in my job because I can rely on my abilities	1,4 % (n=3)	3,6 % (n=8)	4,1 % (n=9)	52,7 % (n=116)	38,2 (n=84)	4,23 (0,80)
OSE2: When I am confronted with a problem in my job, I can usually find several solutions	1,8 % (n=4)	3,2 % (n=7)	5% (n= 11)	48,2 % (n=106)	41,8 % (n=92)	4,25 (0,84)
OSE3: Whatever comes my way in my job, I can usually handle it	0 % (n=0)	5,9 % (n=13)	2,3 % (n=5)	47,7 % (n=105)	44,1 % (n=97)	4,30 (0,78)
OSE4: My past experiences in my job have prepared me well for my occupational future	0,9 % (n=2)	4,1 % (n=9)	3,2 % (n=7)	34,5 % (n=76)	57,3 % (n=126)	4,43 (0,82)
OSE5: I meet the goals that I set for myself in my job	0,5 % (n=1)	4,1 % (n=9)	3,6 % (n=8)	57,7 % (n=127)	34,1 % (n=75)	4,21 (0,74)
OSE6: I feel prepared for most of the demands in my job	1,4 % (n=3)	4,5 % (n=10)	3,6 % (n=8)	50,5 % (n=111)	40 % (n=88)	4,23 (0,83)
LMX	**1 Strongly disagree**	**2 Disagree**	**3 Neither agree nor disagree**	**4 Agree**	**5 Strongly agree**	**Mean (SD)**
LMX1: I usually know how satisfied my leader is with what I do	4,5 % (n=10)	11,4 % (n=25)	15,5 % (n=34)	46,8 % (n=103)	21,8 % (n=48)	3,70 (1,07)
LMX2: My leader understands well my job problems and needs	5 % (n=11)	10,5 % (n=23)	6,4 % (n=14)	44,5 % (n=98)	33,6 % (n=74)	3,91 (1,13)
LMX3: My leader recognizes my potential well	2,3 % (n=5)	11,4 % (n=25)	8,2 % (n=18)	40,5 % (n=89)	37,7 % (n=83)	4,00 (1,06)
LMX4: My leader would be likely to use his or her power to help me solve problems in my work	5 % (n=11)	7,7 % (n=17)	19,1 % (n=42)	41,4 % (n=91)	26,8 (n=59)	3,77 (1,08)
LMX5: My leader would be likely to "bail me out" at his or her expense	10 % (n=22)	15 % (n=33)	31,8 % (n=70)	29,1 % (n=64)	14,1 % (n=31)	3,22 (1,17)
LMX6: I have enough confidence in my leader that I would defend and justify	2,7 % (n=6)	8,6 % (n=19)	17,3 % (n=38)	40 % (n=88)	31,4 % (n=69)	3,89 (1,03)

his or her decision if he or she were not present to do so						
LMX7: My working relationship with my leader is effective and productive	2,7 % (n=6)	8,6 % (n=19)	12,3 % (n=27)	40,5 % (n=89)	35,9 % (n=79)	3,98 (1,04)