

# **Engaging the Age-Diverse Workforce: The Interplay between Personal and Contextual Resources**

## **Abstract**

### **Purpose**

The purpose of this study was to advance research on work-related well-being and age by using a life-span approach to investigate the relationship between mastery goal orientation and work engagement during various age periods. We further tested whether a perceived motivational climate moderated the proposed relationships, and whether the nature of the moderation differed between age groups.

### **Design/methodology/approach**

We utilized a two-wave, web-based questionnaire survey and collected data from 838 employees in the financial sector in Norway. Multiple regressions and PROCESS macro were used to test our hypotheses.

### **Findings**

We found that both work engagement and mastery goal orientation differed across age groups and that the relationship between mastery goal orientation and work engagement was stronger for older than for younger ages. Our results further support the moderating role of a motivational climate. Whereas a perceived mastery climate moderated the relationship between mastery goal orientation and work engagement for older workers, a perceived performance climate moderated the suggested relationship for younger workers.

### **Originality**

Our study extends research on work engagement in an age-diverse workforce by applying a life-span approach to the interplay between person and contextual elements in fostering work engagement. Furthermore, our study involved investigating factors that may inhibit or

enhance the link between mastery orientation and work engagement for various age groups, which is important given work engagement's link to central work outcomes.

**Keywords:**

Age-diverse workforce; work engagement; mastery goal orientation; perceived motivational climate

The increase in today's age-diverse workforce presents new challenges for organizations (Belin et al., 2016; Kim and Kang, 2016). For example, in Norway, we have witnessed an overall increase in workforce participation during the past 20 years, including in groups of people 60 years and older (Statistics Norway, 2018). Similar trends are found in other countries, such as Japan and the U.S. (cf. Kim and Kang, 2016; Kollmann et al., 2020). One of the biggest concerns for organizations and their leaders that arise with this development is how to enhance work engagement across all life stages. This is important because work engagement can increase vital aspects of organizational success and reduce detrimental outcomes, such as turnover intentions and accidents (Harter et al., 2002; Kim et al., 2013b; Saks, 2006; Jackson and Rand, 2010; Müller et al., 2015). Work engagement tends to change across the life span (e.g., Hakanen et al., 2019; James et al., 2011; Kim and Kang, 2016), and according to the life-span approach, the factors contributing to work engagement vary at different ages (Salmela-Aro and Upadyaya, 2018; Baltes et al., 1980; Baltes et al., 1999). However, how various drivers of work engagement vary across the stages of life remains unclear (cf. James et al., 2011; Kollmann et al., 2020). Thus, the purpose of our study was to extend research on work engagement in an age-diverse workforce by examining the role of individual and contextual resources in influencing work engagement across age groups.

Prior research relying on achievement goal theory (AGT - Ames, 1992b; Nicholls, 1989) recognized mastery goal orientation as an important individual resource for enhancing work engagement (Jones et al., 2017; Vandewalle et al., 2019). In essence, this is largely due to the nature of mastery goal orientation as an individual disposition that drives work engagement, as mastery-oriented individuals are predisposed to “strive for goals related to further developing their abilities rather than simply displaying their current ability” (Jones et al., 2017: 392). Still, these studies did not address the role of age groups in this relationship.

This is an interesting issue because goal orientation tends to change across the life span (Caldwell et al., 2004; Kunst et al., 2018), implying that the importance of a mastery goal orientation in predicting work engagement also changes across the life span.

According to AGT, goal orientations are a function of the situation, where the interplay of goal orientation and perceived motivational climate influence behavior (mastery and performance climates - Ames, 1992b; Buch et al., 2016). According to AGT, such a climate is defined as the extant criteria of success and failure in the work context (Nerstad et al., 2013a). A mastery climate emphasizes learning, growth, effort, and cooperation, whereas a performance climate stresses normative ability and interpersonal rivalry (Ames, 1992b). However, relatively few studies emphasize the contextual conditions under which motivational processes occur (Zacher and Yang, 2016). This is important to take into account when one looks into the age-differentiated links between mastery orientation and work engagement, as AGT emphasizes the interacting role of the achievement context with goal orientations (Roberts, 2012).

In this paper, we thus investigate whether the link between mastery orientation and work engagement is different across age groups. We ask: Given that mastery orientation is a significant resource for increased work engagement but changes across the life span, does its significance in predicting work engagement also change across the life span? Furthermore, in our study, we sought to clarify the contextual contingencies that may influence the link between mastery orientation and work engagement across age groups. In this paper, we ask: Will a motivational climate serve as a contextual contingency for the proposed age-differentiated relationship between mastery orientation and work engagement? Drawing on the life-span theory of socio-emotional selectivity (Carstensen et al., 1999) and the AGT (Ames, 1992b; Nicholls, 1989), we argue that a perceived motivational climate serves as a

contingency by acting as an important moderator for the link between mastery orientation and work engagement across age groups.

In the current study, we aimed to contribute to the literature on work engagement in an age-diverse workforce by focusing on the interplay between person and contextual elements in fostering work engagement. In addition, given work engagement's links to central work outcomes (e.g., Alfes et al., 2013; Harter et al., 2002; Kim et al., 2013a), it was vital to investigate factors that may inhibit or enhance the link between mastery orientation and work engagement for different age groups (cf. Zacher and Yang, 2016). Our findings may provide a theory-based approach to develop age-specific measures for increasing work engagement in age-diverse organizations.

## **Theory and hypotheses**

### **Age and Work Engagement**

Because a lack of consensus exists regarding who is an “older worker” versus a “younger worker,” definitions tend to vary (James et al., 2011). According to the life-span perspective, the human life span can be divided into discrete and normative stages, which create differences among employees in terms of work expectations and experiences (James et al., 2011; Zacher and Froidevaux, 2021). According to James et al. (2011) and Sterns and Miklos (1995), the current knowledge of age norms and expectations about work and career cycles can be applied to interpret five age intervals. Early-career employees, for example, are often referred to as emerging adults (18-24 years - Arnett, 2006). Then, we have settling-in adults (25-39 - Arnett, 2006) and those who are in their prime working years (40-54 - Sterns and Huyck, 2001). Older workers are often referred to as those approaching retirement (55-62 - James and Spiro, 2007) and those who are retirement eligible (63 years and above - James et

al., 2011). How to engage all of these workers has become an increasingly important question for businesses today (Salmela-Aro and Upadyaya, 2018).

Work engagement has attracted considerable interest from both practitioners and researchers in recent years. Although several definitions and operationalizations exist, there seems to be some agreement that work engagement involves high levels of personal investment in work tasks (Christian et al., 2011). Additional commonalities include enthusiasm, involvement, meaningfulness, and energy (Bakker et al., 2011; Kahn, 1990). In this paper, we rely on one of the most frequently used definitions of work engagement, which Schaufeli et al. (2004: 295) proposed: “a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption.” Some studies have shown that age is curvilinear in relation to work-related well-being, with a dip occurring in the mid-career stage (Zacher et al., 2014), and that work engagement decreases with age, particularly when one is dissatisfied with one’s coworkers (Avery et al., 2007). However, most studies cannot confirm that older workers are generally less engaged than younger workers are. Rather, most studies find that work engagement tends to increase with age (Zacher and Froidevaux, 2021; James et al., 2011; Kim and Kang, 2016).

The socio-emotional selectivity theory (SST; Carstensen et al., 1999) may explain the positive links between age and work engagement. This life-span theory of motivation posits that differences in goals according to age result from the alteration of time perceptions. According to this theory, older adults experience time as a limited resource and therefore prefer emotional information to non-emotional information, as well as positive emotional information to negative emotional information (Sims et al., 2015; English and Carstensen, 2016; Carstensen et al., 1999). Thus, older employees should focus on the positive aspects of their jobs to a bigger extent and thereby experience more work engagement (Goštautaitė and Bučiūnienė, 2015). Previous empirical studies supported this trend, showing positive

correlations between age and work engagement (e.g., Goštautaitė and Bučiūnienė, 2015; Schaufeli and Bakker, 2004; Schaufeli et al., 2006; Kim and Kang, 2016; Hakanen et al., 2019). Thus, we expected that:

*Hypothesis 1: Older employee work groups will show significantly higher levels of work engagement than younger employee work groups will.*

### **Age and Goal Orientation**

The potential changes that occur in an individual's functioning (psychological, biological, social, and societal) during the cycle of life represent *aging* (Kooij et al., 2011). Drawing upon SST (Carstensen et al., 1999) and AGT (Nicholls, 1989), age-related changes in motives and value orientation are likely to occur and to affect employees' motivation at various ages during the life span (Kooij and Zacher, 2016). Employees' goal orientations and strivings are important aspects of organizational life because they give meaning to work activities and therefore serve as foundations for employees' work-related well-being (Poortvliet et al., 2015; DeShon and Gillespie, 2005; Vandewalle, 1997). According to Nicholls' (1989) AGT, employees are predisposed to act in a mastery- or performance-oriented manner. Such personal predispositions are so called goal orientations and are defined as dynamic cognitive schemas, which although relatively stable, may change throughout childhood and life in general (Roberts, 2012; Nicholls, 1989). Mastery-oriented (the initial personal disposition of young children) employees' self-cognitions are characterized by the belief that success follows effort, interest, mastery, and attempts to develop (Nicholls et al., 1985; Nicholls, 1989; Nerstad et al., 2020a). A mastery orientation is connected with personal growth and well-being, as well as with an individual's interest in others' welfare and concern for society (Ntoumanis and Biddle, 1999; Roberts and Nerstad, 2020; Vandewalle et al., 2019). When employees are performance oriented, their self-cognitions are characterized by beliefs that success depends on attempts to perform better than colleagues do, to demonstrate

normative ability, and to seek favor from leaders or significant others (Nicholls, 1989; Nicholls et al., 1985; Nerstad et al., 2020a). A performance orientation preoccupies the individual with winning and makes him or her approach (work) life in a cynical way to achieve success (Nicholls, 1989). Previous research has investigated changes in employees' goal orientations over time (e.g., Kooij and Zacher, 2016; Parker et al., 2012; Potosky, 2010; Praetorius et al., 2014; Tönjes and Dickhäuser, 2009). The results of these studies suggest that a mastery orientation is less stable compared with a performance orientation. In addition, a mastery orientation seems to have more favorable outcomes in terms of affect and behavior (Kooij and Zacher, 2016; Vandewalle et al., 2019; Nicholls, 1989). Therefore, the main emphasis in our study was on the role of a mastery orientation; however, we decided to control for workers' performance orientations. Although AGT clarifies that goal orientation is susceptible to being manipulated and may change as a result of the perceived motivational climate (Nerstad et al., 2020a; Roberts et al., 2018), we also draw on SST (Carstensen et al., 1999) to explain in greater depth why employees' mastery orientations may vary at different ages across the work-related life span.

According to SST (Carstensen et al., 1999), individuals' goals change with the perception of time as being either expansive (or open ended) or limited. When time is perceived as expansive, individuals pursue instrumental goals related to the acquisition of knowledge (i.e., geared toward learning, pursuing knowledge-related goals, preparing for the future). Meanwhile, when time is perceived as limited, goals that are emotionally meaningful are pursued and prioritized (i.e., satisfying emotional needs, desiring to find meaning in life, emotional regulation). SST posits that older workers perceive time as more limited and therefore focus less on future-oriented goals, such as development and learning, in comparison with younger workers. That is, the approach of an ending triggers an increased focus on emotional regulation in one's work life, causing older workers to prioritize goals that



satisfy their emotional needs rather than goals concerned with learning and development (Carstensen et al., 1999). Thus, their focus shifts from the future to the present. In light of this, compared with younger employees, older employees are less likely to have a strong focus on mastery-oriented goals (Kunst et al., 2018). Supporting these theoretical arguments, empirical evidence shows that older workers are less oriented toward development and learning—an important characteristic of a mastery orientation (Maurer, 2001). Furthermore, compared with younger adults, older adults have been found to have less of a desire to learn, and older workers have been shown to be less motivated to learn (De Lange et al., 2010a; Kanfer and Ackerman, 2000). Meta-analytical evidence (Kooij et al., 2011) also shows that work-related growth motives, such as learning something new, decrease with age. Ebner et al. (2006) furthermore found that compared with younger adults, who have primary goal orientations toward maximizing growth, with higher age seems to come a shift to focusing on maintaining and counteracting loss. In another study on aging and goal mastery/ goal orientation, Kooij and Zacher (2016) found that because older employees view time as more limited, their mastery orientations were lower when compared with younger employees. We thus expected the following:

*Hypothesis 2: Older employee work groups will show significantly lower levels of mastery-oriented goal orientations than younger employee work groups will.*

### **Goal Orientation and Work Engagement across Age Cohorts**

The influence of goal orientation on well-being has been addressed and investigated in numerous studies in various contexts (Adie et al., 2010; Job et al., 2015). In line with AGT, such studies indicated that a mastery orientation typically is positively related to well-being outcomes, including positive affect, satisfaction, and engagement (Gillet et al., 2014; Payne et al., 2007; Ntoumanis and Biddle, 1999). In a cross-sectional study of 345 working adults from a variety of industries, Jones et al. (2017) found that employees' mastery orientations were

positively related to work engagement. Supporting these findings, Adriaenssens, De Gucht, and Maes (2015) investigated emergency nurses from 13 secondary Belgian hospitals and found that a mastery orientation was related to higher levels of work engagement and lower levels of burnout.

Still, these studies did not address the role of ages in this relationship, which is an interesting issue because the age differences found in goal orientations and work engagement may indicate that mastery orientation is not as important for predicting work engagement for older employees as it is for younger employees.

According to SST (Carstensen et al., 2000) younger employees perceive time as expansive, and they consequently are motivated by mastery-oriented goals (i.e., growth, learning, social interactions). Therefore, younger employees, such as emerging adults (18-24 years old) and settling-in adults (25-39) (cf. Sterns and Miklos, 1995), are more likely than those in older age groups to be mastery oriented (de Lange et al., 2010; Kunst et al., 2018). This, in turn, is likely to positively predict their work engagement. For example, employees in their prime working years (40-54 years old, cf. Sterns and Miklos, 1995) have been found to have high levels of learning-related behavior (De Lange et al., 2010b), which indicate that these middle-aged employees alongside younger employees can be expected to be more mastery oriented than older employees are. In turn, this may be an important factor for their work engagement experiences. Older employees, such as those approaching retirement (55-62 years) and those who are retirement eligible (63+) (cf. Sterns and Miklos, 1995), are likely to perceive time as a constraint and are therefore more motivated to achieve short-term emotion-related goals (e.g., developing existing relationships). Thus, older workers should focus on emotion rather than on the learning- and growth-related aspects of their work situations (de Lange et al., 2010). Given their potentially lower levels of motivation to learn new skills, as well as their higher levels of work engagement compared with their younger colleagues (Kim

and Kang, 2016; Carstensen and Charles, 1998), older workers should be less dependent on a high mastery orientation to experience work engagement. We therefore hypothesized the following:

*Hypothesis 3: A more positive relationship exists between mastery goal orientation and work engagement for younger workers (i.e., emerging adults and settling-in adults) and workers in their prime working years (middle-aged) compared with older workers (i.e., workers approaching retirement and retirement-eligible workers).*

### **The Moderating Role of the Perceived Motivational Climate**

AGT (Ames, 1992a; Nicholls, 1989) proposes that goal orientations are a function of the environment, where the interplay of an individual's goal orientation—a dispositional variable—and the perceived motivational climate—a contextual variable—influence affective (e.g., work engagement), behavioral, and cognitive outcomes (Ames, 1992a; Buch et al., 2016; Roberts and Nerstad, 2020; Roberts et al., 2018). An individual's mastery orientation (i.e., how they personally define success) is susceptible to change (Nerstad et al., 2020a). Therefore, when one is testing the relationship between a mastery goal orientation and work engagement across life-span periods, it is vital to account for the moderating role of context in the form of the perceived motivational climate—for example, how success is defined in the work situation (Johns, 2006; Johns, 2018; Roberts and Nerstad, 2020). Otherwise, according to AGT, important contextual information would be missing regarding the role of the individual–context interplay in predicting outcomes (Ames, 1992b; Buch et al., 2016; Nicholls, 1989; Roberts and Nerstad, 2020). The perceived motivational climate is defined as the existing criteria of success or failure that are stressed through the work situation's policies, practices, and procedures (Nerstad et al., 2013a). Two basic types of motivational climate exist: (1) a mastery climate, which emphasizes learning, skill development, cooperation, and

effort, and (2) a performance climate, which emphasizes interpersonal rivalry and social comparison (Ames, 1992a; Nerstad et al., 2013a).

Prior research indicated that a mastery climate predicts adaptive outcomes, such as work engagement, intrinsic motivation, better performance, felt trust from leaders, and knowledge sharing (Buch et al., 2017; Nerstad et al., 2013a; Nerstad et al., 2018b). A performance climate is typically associated with maladaptive outcomes, such as performance anxiety, burnout, negative affect, extrinsic motivation, turnover intentions, reduced knowledge sharing, and poorer performance (Abrahamsen et al., 2008; Lemyre et al., 2008; Nerstad et al., 2018b; Roberts et al., 2018; Ntoumanis and Biddle, 1999).

Researchers have typically investigated goal orientations and the perceived motivational climate in isolation (Roberts, 2012; Roberts and Nerstad, 2020), although according to the AGT, it makes theoretical sense to examine their interaction (Ames, 1992a; Buch et al., 2016; Lau and Nie, 2008). In line with AGT (Ames, 1992b; Nicholls, 1989), when the individual's value orientation matches the work situation's value orientation, more beneficial outcomes may become evident. For example, a mastery-oriented employee is likely to prosper more in a mastery climate compared with a performance climate. Relying on such an AGT interactionist perspective (Lau and Nie, 2008; Ames, 1992a), we assume that the relationship between a mastery orientation and work engagement is contingent upon the perceived mastery or performance climate in the work environment. Accordingly, a mastery climate is likely to strengthen the desirable relationship between mastery goal orientation and work engagement. This means that when a match exists between an individual's goal orientation and a particular motivational climate, this will lead to beneficial outcomes, such as work engagement (Buch et al., 2017; Nerstad et al., 2020a). Given that both younger workers (emerging adults and settling-in adults) and employees in their prime working years, according to SST, are mastery oriented, it is likely that the relationship between mastery

orientation and work engagement is strengthened for these workers when they perceive higher levels of mastery climate. This may be explained by the emphasis on learning and development in a mastery climate, which is then perceived to match the personal values of employees who are mastery oriented. Although older employees (workers approaching retirement and retirement-eligible employees) are proposed to take on a reduced time perspective, which results in lower levels of motivation for learning and skill development (Carstensen & Charles, 1998; de Lange et al., 2010), we expect that a mastery climate strengthens the relationship between mastery goal orientation and work engagement for these workers as well. This means that when the criteria of success in the environment emphasize learning, development, effort, and cooperation, older employees should get the extra push they need to pursue new learning and challenges despite having reached high tenure at the company (cf. de Lange et al., 2010). Furthermore, although older employees tend to choose and prefer to maintain social ties with colleagues who are familiar to them, according to SST (Carstensen et al., 1999), the emphasis on collaboration in a mastery climate may help them to also experience predictable and positive emotions with those colleagues who are not so familiar to them. In line with these arguments, previous research has shown that a mastery climate facilitates the satisfaction of the need for belongingness (e.g., to colleagues) and positive emotions (Nerstad et al., 2020a; Nerstad et al., 2018a). We therefore hypothesized the following:

*Hypothesis 4: For all age groups (emerging adults, settling-in adults, workers in their prime working years, workers approaching retirement, and retirement-eligible workers), the mastery climate moderates the relationship between a mastery orientation and work engagement. The higher the mastery climate, the more positive the relationship.*

On the contrary, and in line with AGT, due to the main emphasis on rivalry and the demonstration of superior ability, a performance climate is likely to weaken the positive relationship between mastery orientation and work engagement. This is particularly so for the groups of people who are younger (emerging adults and settling-in adults) and in their prime working years, as they value learning- and development-oriented behavior (cf. de Lange 2010; Lau & Nie, 2008). Given their anticipated motivation, and given that they most likely have achieved their career goals, older employees (workers approaching retirement and retirement-eligible workers) may not necessarily become triggered by the criteria of success, which value rivalry and social comparison (De Lange et al., 2010b; Hansson et al., 1997). Also, older workers perceive time as limited and therefore pursue goals that are less future focused (Carstensen et al., 1999). Consequently, older workers should focus less on demonstrating success by engaging in rivalry and should focus more on avoiding low performance and failure in their regular work tasks (Kunst et al., 2018). Older employees furthermore tend to seek more secure and familiar connections with colleagues, and they strive to avoid negative states, as experiencing positive emotions are more important to them than it is to their younger peers (Carstensen et al., 1999). Thus, their secure connections with familiar colleagues are likely to support their need for belongingness despite the performance climate. We therefore hypothesized the following:

*Hypothesis 5: For employees who are younger (emerging adults and settling-in adults) and in their prime working years, the performance climate moderates the relationship between mastery orientation and work engagement. The higher the performance climate, the weaker the positive relationship.*

## **Methods**

### **Sample and Procedure**

Our study adopted a scientific (epistemological) realist perspective on research methods. Scientific realism is usually based on two assumptions: (1) that we are a part of a real world, and (2) that we, by the use of scientific methods, can generate knowledge about both observable and unobservable features of that world (Haig, 2018). That is, we assumed that the theories and constructs we used were a representation of reality (Shadish, 1995), and we applied the hypothetico-deductive method to test our hypotheses. We thus tested our hypotheses indirectly by deriving predictions that were possible to investigate directly with empirical tests (Haig, 2018).

We used simple non-probability convenience sampling, where the sample was drawn from an easily accessible study group. Specifically, we obtained our data by distributing web-based questionnaires via personalized e-mails to employees in a Norwegian financial-sector organization. We gained access to this organization through a student who was enrolled in an executive master class at the university where one of the authors is employed. Along with the link to the questionnaire, the emails included a cover letter informing them that the Norwegian Centre for Research Data (NSD - an independent national center for research data), had evaluated and approved the study. In addition, management had approved the study. The cover letter also explained that strict confidentiality was guaranteed, and the results were to be used solely for academic research purposes.

In line with expert advice (Podsakoff et al., 2012), the questionnaires were distributed in two waves to reduce the potential influence that common-method variance would have on our results. We measured both the predictor variables and the mediator variables at Time 1, and we measured the dependent variable at Time 2. We specified a three-week time lag between the first and second waves. Using a web-based tool (Conformit), we sent the survey to 2,800 employees. The e-mail included a cover letter with written assurances of informed consent, confidentiality, and aggregate reporting. To assure anonymity (Podsakoff,

MacKenzie, Lee, & Podsakoff, 2003), we informed the respondents that their identifying information—such as email addresses—and responses would be stored separately in encrypted files for data-matching purposes (matching data collected during the two time periods). Furthermore, we informed the respondents that all personal identifying information (e.g., e-mail addresses) would be deleted at a predetermined date. We then asked the respondents to answer the survey questions honestly and assured them that there were no right or wrong answers (Podsakoff et al., 2003).

We received 1,075 completed responses from the first wave (38%) and 838 completed responses from the second wave (78%). Of the participants, 48% were female. The mean age was 48 years, and 25% held a master's degree or higher. About 24% reported managerial responsibility, and 98% held permanent positions.

## **Measures**

### ***Age categories***

Initially, we wanted to follow the advice of James et al. (2011) and Sterns and Miklos (1995) to code age into five categories. However, due to the small number of respondents in the youngest age category (18-25 years old), we combined this category with the category including ages 25-39. The two combined groups did not differ significantly for any of the relevant variables. Thus, we examined differences in employee engagement among four groups: 1 = 18-39 years old (n = 177); 2 = 40-54 years old (n = 387); 3 = 55-62 years old (n = 234); and 4 = 63 years and older (n = 32).

### ***Mastery orientation***

Mastery orientation was measured with five items adapted from the Norwegian version (Dysvik and Kuvaas, 2010) of the work-domain goal orientation scale, which Vandewalle (1997) validated. To align with Nicholls' AGT (Nicholls, 1989), we asked all participants to indicate their perceptions of when they feel successful at work (e.g., "I enjoy



challenging and difficult tasks where I'll learn new skills"). The items were scored on a seven-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The Cronbach's alpha for the scale was .79.

### ***Work engagement***

Work engagement was measured with a short version of the Utrecht Work Engagement Scale (UWES-9 - Schaufeli et al., 2006). Responses were rated on a Likert scale ranging from 1 (*never*) to 7 (*every day*). Sample items included "At my work, I feel bursting with energy" and "I feel happy when I am working intensely." The Cronbach's alpha for the scale was .95

### ***Perceived motivational climate***

We applied the motivational climate at work questionnaire (MCWQ) that Nerstad and colleagues (2013a) developed and validated to measure the perceived mastery (six items) and performance climates (eight items). The questionnaire consisted of 14 items focusing on how employees perceived success to be defined in their work situations. Employees were asked about the extents to which they perceived a mastery climate (e.g., "In my department/work group, each individual's learning and development is emphasized") or a performance climate (e.g., "In my department/work group, rivalry between employees is encouraged") at work. The response options ranged from 1 (*completely disagree*) to 7 (*completely agree*). The Cronbach's alpha for a perceived mastery climate was .85, whereas it was .88 for a perceived performance climate.

### ***Control variables***

To control for relevant variables that could extraneously affect the hypothesized relationships, we identified and managed several non-focal variables. This is essential for "ensuring the generalizability that allows empirical research to benefit individuals, organizations, and society as a whole" (Bernerth and Aguinis, 2016: p. 230).

Goal orientations are often regarded as orthogonal constructs, meaning that individuals can have high or low scores in both mastery and performance orientations simultaneously (Nerstad et al., 2018a; Payne et al., 2007). We therefore decided to control for a performance orientation. We adapted four items (e.g., “I am concerned with showing that I can perform better than my coworkers can”) from the Norwegian version (Dysvik and Kuvaas, 2010) of the work-domain goal orientation scale, which was validated by Vandewalle (1997). The items were scored on a seven-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Furthermore, we chose to control for gender (1 = *female*; 2 = *male*) because prior evidence indicated that women are more engaged than men are (e.g., Rothbard, 2001; Mauno et al., 2005; Avery et al., 2007). We also controlled for tenure (measured as the number of years spent in one’s current position) because employees with greater tenure may have stabilized their development and therefore experienced lower work engagement compared with those with less positional tenure (Allen, Poteet, & Russell, 1998). Similar results may exist for leader responsibility, which we therefore controlled for as well (measured with the question “*Do you have leader responsibility?*”; 1 = *no*; 2 = *yes*). We also controlled for employment (1 = *full-time employed*; 2 = *temporarily employed*; 3 = *part-time employed*) because part-time employees typically report lower levels of job involvement and could therefore be less engaged than full-time employees are (cf. Avery et al., 2007). Finally, we controlled for education because education tends to enhance work engagement (Avery et al., 2007). We coded education in five categories (1 = *secondary education degree*; 2 = *high school education degree*; 3 = *university education, bachelor’s degree*; 4 = *university education, master’s degree*; 5 = *university education, doctor’s degree – PhD*).

### **Analytical Approach**

The first step of the analyses was to conduct a one-way analysis of variance (ANOVA) to examine the hypothesized differences in work engagement and mastery goal orientation

among the age categories (hypotheses 1 and 2). ANOVA has been found to be quite robust against the normality assumption (cf., Kirk, 1995). Investigations conducted via Monte Carlo simulation have shown that ANOVA can tolerate skewed distributions and that the power curves converge to that of a normal distribution (e.g., Donaldson, 1966). Still, as far as skewness is concerned, relatively minor deviations from the critical value of 1.96 were found for work engagement in our sample ( $< 1.06$ ). The deviations in terms of kurtosis were likewise not very serious ( $< 1.06$ ). We therefore considered it to be appropriate to proceed with ANOVA.

We then used linear hierarchical regression to test the influence of mastery goal orientation on work engagement across age groups (hypothesis 3). Finally, to test our moderated hypotheses (hypotheses 4 and 5), we used an extension of Preacher et al. (2007) macro created by Hayes (2013). By means of a bootstrapping procedure, this macro determines 95% bias-corrected confidence intervals (CIs) for the conditional direct influences at various levels of the moderator (Preacher and Hayes, 2008). We used 5,000 iterations (with replacement) for our analyses.

## **Results**

Prior to testing the proposed hypotheses, we performed confirmatory factor analysis (CFA) of the latent variables involved in our study. Because our data were ordinal, we applied the weighted least square with a mean- and variance-adjustment (WLSMV) estimator for categorical data using *Mplus* 7.3. (Brown, 2006; Muthén and Muthén, 1998-2014). To evaluate whether an acceptable fit existed, we applied common guidelines (e.g., the root mean square error of approximation [RMSEA] of  $< 0.08$ , the comparative fit index [CFI] of  $> 0.95$ , the Tucker-Lewis index [TLI] of  $> 0.95$ , and the standardized root mean square residual [SRMR] of  $< 0.10$ ) (Hu and Bentler, 1999).

Our research model has five latent variables (i.e., a correlated-traits model): mastery goal orientation, performance goal orientation, mastery climate, performance climate, and work engagement. All factor loadings ranged from .56 to .96, well beyond the acceptable factor loadings that Tabachnick and Fidell (2014) suggested. The CFA indicated an acceptable model fit,  $\chi^2(588) = 2800.68; p < .001; \chi^2/df = 4.76; RMSEA = .06; CFI = .96; TLI = .96$ . Table 1 summarizes the descriptive statistics and Pearson correlations among the study's variables.

The results of a one-way ANOVA indicated significant differences in work engagement among the age groups of ages 39 and younger, 40-54, 55-62, and 63 and older,  $F(3, 834) = 5.49, p < .001$ . In support of hypothesis 1, post hoc pairwise comparisons of the four means with the Bonferroni multiple comparison adjustment of the  $p$ -values indicated that those aged 39 and younger had a significantly lower mean work engagement score (5.23) than the rest of the age groups did ( $p < .001$ ). The other age categories (ages 40-54, 55-62, 63 and older) did not differ significantly from one another. We also applied ANOVA to test the hypothesis that mastery goal orientation was significantly lower among the older than the younger age groups. The analysis indicated significant differences,  $F(3, 834) = 22.85, p < .001$ . Post hoc pairwise comparisons of the four means with the Bonferroni multiple comparison adjustment of the  $p$ -values indicated that those aged 21-39 had a significantly higher mean mastery goal orientation score (5.76) than the rest of the age groups did ( $p < .001$ ). Mastery goal orientation seems to decrease somewhat with age because those aged 40-54 also had a significantly higher mean mastery goal orientation score (5.58) than the two remaining older age groups did ( $p < .001$ ). The age group of 55-62 did not differ significantly from those aged 63 and above. Thus, hypothesis 2 was supported.

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Insert Table 1 about here

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To investigate the influence of mastery goal orientation on work engagement across the age groups (hypothesis 3), we conducted a separate regression analysis for each of our four age categories. The results are presented in Table 2. In the first step, the control variables were entered. Mastery goal orientation was then entered in the second step. The results indicated that mastery goal orientation significantly influenced work engagement for all age groups. We then identified effect-size differences in the independent variables on the dependent variable using the standardized coefficient,  $\beta$ . The results indicated that differences existed in the influence of mastery goal orientation among the age groups, as the importance of mastery goal orientation in influencing work engagement seemed to increase with age (those aged 39 and younger:  $\beta = .16, p < .05$ ; those aged 40-54:  $\beta = .31, p < .001$ ; those aged 55-62:  $\beta = .26, p < .001$ ; and those aged 63 and older:  $\beta = .51, p < .01$ ). Thus, hypothesis 3 was not supported.

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Insert Table 2 about here

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Finally, to test our moderation hypotheses (hypothesis 4 and hypothesis 5), we used hierarchical regression analyses with the macro that Hayes (2013) created for each of the age groups. For our hypothesis proposing that a perceived mastery climate for all age groups would moderate the relationship between mastery goal orientation and work engagement (hypothesis 4), we entered the control variables in the first step; mastery goal orientation and perceived mastery climate in the second step; and finally, the product of the mean centered mastery goal orientation and the mean centered perceived mastery climate as an additional predictor in the third step. For age groups 3 (55-62) and 4 (63 and older), no variance was found in employment, as all participants reported to be employed full time. Thus, this variable

was removed as the control for these two age groups. The interaction term emerged as a significant predictor for the two oldest age groups (55-62:  $\beta = -.21, p < .01, \Delta R^2 = .02$ ; 63 and older:  $\beta = -.66, p < .01, \Delta R^2 = .26$ ), thus partially supporting hypothesis 4. The results are depicted in Table 3. Figure 1 and Figure 2 illustrate the interactions of the two age groups by depicting the regression lines of the relationship between mastery goal orientation and work engagement at high, medium, and low (+1 SD, mean, -1 SD) scores for perceived mastery climate.

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Insert Table 3 about here  
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We then used the Johnson-Neymann (J–N) technique to further characterize the nature of these interactions. Specifically, we used this technique to find the value of the moderator variable for which the ratio of the conditional influence on its standard error was equal to the critical t score. The J–N technique enables one to directly identify points in the range of the moderator variable where the influence of the predictor on the outcome goes from being statistically significant to nonsignificant. We followed the suggestions and used the Statistical Package for the Social Sciences (SPSS) script that Hayes and Matthes (2009) provided. The conditional influence of mastery goal orientation on work engagement transitioned in significance for the age group of 55-62 years at a perceived mastery climate mean score of

3.92,  $b = .17$ ,  $SE = .09$ ,  $t = 1.97$ ,  $p = .05$ , 95% CI [.00, .34], at the 90th percentile of the distribution in our sample. The relationship between mastery goal orientation and work engagement was significant at perceived mastery climate mean scores below this threshold, and it was nonsignificant at perceived mastery climate scores above this threshold. For employees aged 63 and older, the conditional influence of mastery goal orientation on work engagement transitioned in significance at a perceived mastery climate mean score of 3.31,  $b = .41$ ,  $SE = .20$ ,  $t = 2.06$ ,  $p = .05$ , 95% CI [.00, .84], at the 90th percentile of the distribution in our sample. The relationship between mastery goal orientation and work engagement was significant at perceived mastery climate mean scores below this threshold, and it was nonsignificant at perceived mastery climate scores above this threshold.

For our hypothesis proposing that a perceived performance climate for the younger age groups would moderate the relationship between mastery goal orientation and work engagement would (hypothesis 5), we followed the same procedure as for testing hypothesis 4. We entered the control variables in the first step; mastery goal orientation and perceived performance climate in the second step; and finally, the product of the mean centered mastery goal orientation and the mean centered perceived performance climate as an additional predictor in the third step. For age groups 3 (55-62) and 4 (63 and older), no variance was found in employment, as all participants reported to be employed full time. Thus, this variable was removed as the control for these two age groups. The interaction term emerged as a significant predictor only for the youngest age group (21-39:  $\beta = -.22$ ,  $p < .05$ ,  $\Delta R^2 = .02$ ). Thus, hypothesis 5 was supported. The results are depicted in Table 4. The results of the J–N technique indicated that the conditional influence of mastery goal orientation on work engagement transitioned in significance at a perceived performance climate mean score of 4.16,  $b = .28$ ,  $SE = .14$ ,  $t = 1.97$ ,  $p = .05$ , 95% CI [.00, .56], at the 90th percentile of the distribution in our sample. The relationship between mastery goal orientation and work

engagement was significant at perceived performance climate mean scores below this threshold, and it was nonsignificant at perceived performance climate scores above this threshold. Figure 3 illustrates the interaction for the youngest age group by depicting the regression lines of the relationship between mastery goal orientation and work engagement at high, medium, and low (+1 SD, mean, -1 SD) scores for perceived performance climate.

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Insert Table 4 about here  
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Insert Figure 3 about here  
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## **Discussion**

In the current study, we drew on AGT (Ames, 1992b; Nicholls, 1989) and SST (SST - Carstensen et al., 1999) and argued that because work engagement and mastery goal orientation change across the life span (cf., De Lange et al., 2010b; Kim and Kang, 2016), the link between mastery goal orientation and work engagement also differs between age periods. We further argued that perceived motivational climate would moderate the proposed relationships. Thus, the purpose of this study was to contribute to our understanding of factors related to engaging the aging workforce.

Our findings suggest that predicting work engagement across age groups is complex and contingent upon individual as well as contextual factors. Our results support the notion that contextual variables are vital for understanding individual experiences across the life span (Johns, 2006; Zacher and Yang, 2016). Although some of our hypotheses were not supported, the current results revealed some interesting relationships among age, mastery goal



orientation, motivational climate, and work engagement. These findings should make several contributions to the extant literature, which are discussed below.

### **Theoretical Implications**

Our study has important theoretical implications for the work engagement literature (Schaufeli and Bakker, 2004), SST (Carstensen et al., 1999) and AGT (Nicholls, 1989). First, with regard to the work engagement literature, the observed positive relationship between age and work engagement suggests that the older one gets, the more engaged one becomes. Thus, the general myth that older workers are “checked out” was not supported. On the contrary, those aged 63 and older had the highest mean score for work engagement. It is possible that “the healthy worker effect” may have impacted this result, as aged employees who are more engaged typically tend to stay active in the workforce longer than less engaged older workers do (cf. Hakanen et al., 2019). SST can explain this finding (Carstensen et al., 1999), as SST suggests that older adults might experience more work engagement because they, as a result of perceiving that time is limited, prefer positive emotional information over negative emotional information (Sims et al., 2015; English and Carstensen, 2016; Carstensen et al., 1999). This also receives support from previous research suggesting that work engagement and age are positively correlated (e.g., Goštautaitė and Bučiūnienė, 2015; Schaufeli and Bakker, 2004; Schaufeli et al., 2006; Kim and Kang, 2016; Hakanen et al., 2019). The positive correlation typically found between age and work engagement can be explained by findings that older workers report lower levels of vocational, psychological, physical, and interpersonal strain than younger workers do (Zacher and Froidevaux, 2021; Hertel et al., 2015; Osipow et al., 1985). This may be because older workers make better use of effective coping strategies, which include active problem-focused coping and excluding emotion-focused coping (cf., Zacher et al., 2021). Findings suggesting that older workers seem to be

better able to regulate their emotions compared with younger workers also support this (Doerwald et al., 2016).

Second, our results provide insight into the importance of applying AGT and SST in concert to better understand goal orientation from a life-span perspective. Specifically, we found that mastery goal orientation tends to decrease with age. This finding supports the premises of SST (Carstensen et al., 1999) assuming that older workers perceive time as more limited and therefore focus less on future-oriented goals, such as development and learning, and focus more on short-term goals, such as social interactions and maintaining a good work atmosphere (Kunst et al., 2018; Carstensen et al., 1999). Previous research also supports this finding (e.g., De Lange et al., 2010b; Kunst et al., 2018).

Contrary to our expectations, a novel finding was that mastery goal orientation was more important for work engagement among the older than the younger age groups. This finding indicated that although older work groups tend to have lower mastery goal orientations, mastery goal orientation might be of relevance when one is engaging older workers. This finding is interesting and contributes to advancing current knowledge from the literature on aging and motives, which draws on SST (Kooij et al., 2011; Kooij and Zacher, 2016). According to AGT, mastery goal-oriented individuals actively seek to learn new competencies no matter which age groups they belong to. Thus, mastery goal-oriented individuals will typically experience *more meaning* in their work and make themselves *more available* for work roles they find fulfilling, thus satisfying two of the psychological antecedents of work engagement (Jones et al., 2017). The idea that this appears to be particularly important for older workers' engagement could be seen in light of life-span theory, which argues that the need for psychological resources actually increases with age because the older we are, the more we need such resources to maintain high levels of functioning. However, psychological resources' efficacy decreases with age (Baltes et al.,

1999). According to this point of view, one could argue that it is not that older workers do not need to be mastery goal oriented to increase their work engagement; however, it takes more effort to maintain a mastery goal orientation, perhaps because the older one gets, the more effort it may take to attain the same learning gains (Baltes et al., 1999). In addition, one must consider the various reasons older employees have for working. As elders remain healthy and live longer than previous generations did, they are facing new pressures to delay retirement (Munnell & Soto, 2005). The motivation to continue to work may indeed differ: some work for the joy of it, and others work to maintain their health benefits or because they cannot afford retirement (cf. James et al., 2011). For those who continue to work because they have to and not because they want to, mastery goal orientation may especially be important for maintaining high levels of work engagement (Kooij and Zacher, 2016).

In light of AGT and SST, our study findings have contributed to another interesting and unexpected insight. Mastery goal-oriented workers aged 55-62 and 63 and older were found to report more work engagement when perceiving less of a mastery climate. Although we found a significant interaction between the variables, the direction was not what we initially expected: the higher the mastery climate, the more positive the relationship between mastery goal orientation and work engagement. For older employees, the “added well-being value” of a low mastery climate may suggest that being personally dispositioned toward being mastery oriented is sufficient for facilitating greater work engagement. In line with a person-centered AGT perspective (Maehr and Zusho, 2009), this may perhaps be because these older and highly mastery-oriented workers do not feel the need for an additional contextual emphasis on learning, development, collaboration, and effort beyond what they themselves engender through their high mastery orientations. Rather, perceiving less of a mastery climate may encourage and facilitate the expression of their individual mastery dispositions to a greater extent (Hirst et al., 2009). From an SST perspective, an additional potential

explanation may be that because mastery orientation engenders positive emotions (Ntoumanis and Biddle, 1999) and trusting relationships (Matzler and Mueller, 2011; Poortvliet et al., 2009), older employees may already experience sufficient resources (e.g., social support, self-efficacy). This is true despite the fact that the context of which they are a part facilitates such resources to a lower degree. Thus, their personal dispositions may be sufficient for experiencing higher levels of work engagement.

The person-centered AGT perspective may also explain the finding suggesting a weaker positive relationship between mastery goal orientation and work engagement, with stronger perceptions of a mastery climate existing (Maehr and Zusho, 2009). This implies that highly mastery-oriented (an individual disposition) older individuals demonstrate higher levels of work engagement (a motivational state) mainly due to their individual dispositions. From an SST perspective, older employees, who prefer more secure and familiar connections with colleagues, and who strive to avoid negative states (e.g., feelings of pressure to constantly grow and learn), may find that the emphasis placed on collaboration in a mastery climate is too much of a good thing. This is because it may give them a feeling of having to constantly develop their skills as well as reach out and collaborate with colleagues who are not necessarily perceived as secure and familiar connections to them. Accordingly, negative emotional states can be triggered, which they ideally want to avoid as they strive to experience positive emotions (Carstensen et al., 1999). This may potentially explain the weaker relationship between older workers' mastery orientation and work engagement under conditions of a high mastery climate.

In contrast, less mastery-oriented older individuals seem to respond more positively to experiencing higher levels of a mastery climate in terms of work engagement. One possible explanation for this finding may be that higher-mastery-climate conditions probably satisfy individuals' needs for autonomy, mastery, and relatedness (Nerstad et al., 2020b), particularly

among less mastery-oriented older workers. Thus, the presence of a high mastery climate may compensate for what less mastery-oriented employees “lack” in terms of resources to help them to experience higher levels of work engagement. Supporting such an argumentation, the interplay between an age-related person (i.e., being less mastery oriented) and contextual characteristics (i.e., a high perceived mastery climate) has been suggested to lead to strengthened or compensatory influences on outcomes such as work engagement (Ackerman and Kanfer, 2020; Zacher and Froidevaux, 2021). Furthermore, and in line with SST, less mastery-oriented older workers may need such high-mastery-climate conditions to compensate for their low mastery orientations (e.g., through facilitating opportunities to build secure relationships and optimizing emotional regulation) to experience higher levels of work engagement.

Our findings regarding the person-context interplay were as expected for the younger mastery-oriented employees. We found a positive relationship between mastery orientation and work engagement for individuals with lower perceptions of a performance climate. This finding may indicate that when the criteria of success place less emphasis on rivalry, the demonstration of ability, and public recognition, younger employees are better able to translate their high mastery orientations into higher levels of work engagement. This is in line with a situated AGT perspective (Nicholls, 1989; Ames, 1992a), as it suggests that the alignment of a person’s disposition and the context in which he or she operates is beneficial in terms of enhancing well-being (Nerstad et al., 2013b). Our finding is also supportive of SST, as it suggests that younger employees are more likely to prosper under conditions that do not inhibit their urges to gain knowledge and prepare for their future (Carstensen et al., 1999).

Furthermore, our findings suggest that stronger perceptions of a performance climate cancel out the positive relationship between mastery goal orientation and work engagement, particularly among younger workers. These findings are also supportive of the situated AGT

perspective (Ames, 1992a) (Ames, 1992; Nicholls, 1989) by demonstrating how high-performance-climate conditions can prevent young mastery-oriented employees from experiencing high levels of work engagement. Thus, the emphasis on “winning” at all costs seems to be detrimental, particularly for younger workers who see time as expansive and strive to attain new knowledge and growth to enhance their future possibilities (Carstensen et al., 1999).

Although several of our findings were unexpected and surprising in terms of the AGT perspective, they were also novel. Specifically, our results underline the importance of clarifying how the concepts that are inherent in AGT (goal orientation and motivational climate) may operate differently in various age groups. Our study findings contribute to illustrating the value of applying AGT and SST in an integrative way to better explain the goal orientation–motivational climate interplay across various ages during the life span.

### **Practical Implications**

Our study holds potentially important practical implications. Specifically, our results delineate two main routes for older workers to experience increased work engagement. First, the results suggest that older mastery-oriented individuals display higher levels of work engagement independent of their levels of a perceived mastery climate. Because empirical research on the antecedents of goal orientations remains limited (Vandewalle et al., 2019), organizations may draw on this finding to tailor selection practices toward mastery-oriented individuals.

Second, the findings of this study imply that mastery climate perceptions can be particularly crucial for older individuals, who show lower levels of mastery orientation. That is, with fewer intrinsic reasons to increase their engagement at work, a mastery climate at work may make a critical difference in encouraging older workers to exert engagement and effort in the job. Organizations and their leaders could draw on this finding and aim to aid in

the development of a mastery climate. Important factors that facilitate a mastery climate include ensuring employees' autonomy; recognizing employees' progress improvement and self-referenced ability (cf. Ames, 1992b; Ames, 1992a; Nerstad et al., 2017); taking actions that emphasize the value of helping behavior; ensuring that employees have time and opportunities for growth (Ames, 1992b; Ames, 1992a; Nerstad et al., 2017); training on leadership behavior (Pensgaard and Roberts, 2002); and finally, developing a commitment-based human resource management climate (Nerstad, 2012).

Finally, the finding suggesting a positive relationship between mastery goal orientation and work engagement for younger workers only when the relationship is combined with low perceptions of a performance climate implies that introducing a performance climate can be an undermining motivational strategy for younger employees. This is because it attenuates the positive relationship between a mastery orientation and work engagement. This is a tentative interpretation, as more evidence is needed. However, it is probably safe to argue that organizations should strive to facilitate a mastery climate rather than a performance climate to facilitate and maintain worker engagement across all ages.

### **Limitations and Future Research Directions**

This study provides potentially important theoretical and practical contributions; still, the results need to be interpreted in light of its limitations. First, although our cross-lagged design is an improvement compared with a cross-sectional design, causal relationships between the variables cannot be inferred from the present results, nor can reverse causality be ruled out. For those purposes, future experimental studies are necessary (Shadish et al., 2001). It should also be noted that we collected our data over a short time period, and thus, we do not know how working in a low-mastery climate over time may shape the relationship between older workers' mastery orientations and their work engagement over time. Employing a longitudinal design, or at least including a longer span between the various data collections

would make our data even more potent. For the purpose of remedying these shortcomings, future studies should engage other methods and methodological procedures when investigating the interplay among goal orientations, motivational climates, and work engagement. We acknowledge that the added variance ( $R^2$ ) of the interaction term in the current study was rather low. However, moderator influences are normally difficult to detect, and even those explaining a very low variance should be deemed important (cf., Schmidt et al., 2007). Moreover, research has shown that moderator influences cannot be artifacts of common method variance (CMV). Rather, they should be severely deflated through CMV, which would make them more difficult to detect through statistical means (Siemsen et al., 2009). Also, a low  $R^2$  is common in similar studies investigating interactions (cf. Schmidt et al., 2007). Therefore, we believe that despite the low  $R^2$ , the additional amount of variance explained by the interaction in our study is theoretically and practically relevant.

Beyond improving the research design and conducting similar studies across other cultures, countries, and occupations, future researchers could investigate why low perceptions of a mastery climate increase the relationship between mastery goal orientation and work engagement among older employees. Although we did not find that high levels of a perceived mastery climate diminished the link between mastery goal orientation and work engagement, it could be that a perceived mastery climate acts as a substitute for goal orientation for older workers. Similarly, it would be interesting to investigate mediating factors explaining why mastery goal-oriented younger employees are more engaged when they perceive a low performance climate.

## **Conclusion**

Overall, our study makes two main contributions to the literature. First, our results demonstrate that although mastery orientation has previously been found to influence work engagement, the strength of the relationship varies across age groups. Our results therefore



contribute to the work engagement literature by addressing how facilitating factors may differ with age. Second, by focusing on the interplay between person and contextual elements in fostering work engagement across age groups, our study adds complexity to the discussion on how to engage an age-diverse workforce. The study does this by highlighting that the variables thought to foster work engagement differ across age groups. Thus, our results contribute to AGT and SST by arguing the importance of applying these two theories in concert to better understand motivational climates, goal orientation, and work engagement from a life span perspective. Our findings have implications for organizations and leaders, as our results show that engaging employees across the life span is not a straightforward process. In addition, age should be an important factor to consider when one is initiating actions to increase work engagement.

**Data availability statement:**

Data are available upon request due to privacy/ethical restrictions.

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Table 1. Zero-Order Correlations and Descriptive Statistics<sup>a</sup>

	Mean	SD	1	2	3	4	5	6	7	8	9	10
1. Gender	1.52	.50	-									
2. Tenure	8.20	9.26	-.02	-								
3. Leader-responsibility	1.21	.41	.09**	-.15**	-							
4. Employment	1.00	.05	.02	-.03	-.03	-						
5. Education	2.89	.81	.19**	-.31**	.22**	-.01	-					
6. Performance goal orientation	4.89	.98	-.01	-.07*	.04	.02	.13**	<b>(.77)</b>				
7. Mastery goal orientation	5.51	.78	.02	-.19**	.18**	-.02	.34**	.37**	<b>(.79)</b>			
8. Mastery climate	5.20	.88	-.04	-.06	.23**	-.04	-.04	.01	.12**	<b>(.85)</b>		
9. Performance climate			.01	.06	.11*	.01	.04	.29**	.10**	.01	<b>(.88)</b>	
10. Work engagement	5.50	1.14	-.02	-.01	.17**	-.03	-.04	.07	.24**	.42**	.02	<b>(.95)</b>

<sup>a</sup>  $n = 838$ ; Scores for performance goal orientation, mastery goal orientation, mastery climate and work engagement reflect responses on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Coefficients in parentheses and in bold refer to Cronbach's  $\alpha$ . Gender: 1 = female, 2 = males; tenure: years in current position; leader responsibility: 1 = no, 2 = yes; employment: 1 = permanent employed, 2 = temporary employed, 3 = part-time employed; education: 1 = junior high school; 2 = high school; 3 = bachelor's degree; 4 = master's degree; 5 = PhD;

\* $p < .05$ .

\*\* $p < .01$



Table 2. Regression Analyses Testing the Influence of Mastery Goal Orientation on Work Engagement across Age Groups<sup>a</sup>

Age groups	<= 39 years		40-54 years		55-62 years		>= 63 years	
	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2	Step 1	Step 2
Gender	.09	.07	-.08	-.05	-.07	-.07	.07	.08
Tenure	-.15*	-.14	.01	.04	-.12	-.10	.06	-.01
Leader responsibility	.23**	.23**	.16**	.11*	.19**	.16*	.05	.11
Employment	-.02	-.01	-.04	-.04	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>
Education	-.18*	-.20**	-.01	-.10	-.04	-.08	-.13	-.22
Performance goal orientation	-.06	-.11	.08	-.02	.18**	.09	.01	-.02
Mastery goal orientation		.16*		.31**		.26**		.51**
Adj. $R^2$	.32	.36	.02	.09	.07	.12	-.16	.09
$F$	3.35	3.57	2.46	6.61	4.60	6.39	.13	1.52
$\Delta R^2$		.02*		.07**		.05**		.24**
$n =$	177		387		234		32	

<sup>a</sup> Gender: 1 = female, 2 = males; tenure: years in current position; leader responsibility: 1 = no, 2 = yes; employment: 1 = permanent employed, 2 = temporary employed, 3 = part-time employed; education: 1 = junior high school; 2 = high school; 3 = bachelor's degree; 4 = master's degree; 5 = PhD;

\*  $p < .05$

\*\*  $p < .01$

Table 3. Regression Analyses Testing the Moderating Effects of Perceived Mastery Climate<sup>a</sup>

Age groups	<= 39 years	40-54 years	55-62 years	>= 63 years
<i>Step 1</i>				
Gender	.10	-.09	-.05	-.05
Tenure	-.05	.00	-.01	-.01
Leader responsibility	.48**	.07	.18	.09
Employment	.28	-.94	<i>n.a.</i>	<i>n.a.</i>
Education	-.35**	-.09	-.05	-.29
Performance goal orientation	-.11	-.03	.05	-.16
<i>Step 2</i>				
Mastery goal orientation	.28*	.40**	.26**	.28
Perceived mastery climate	.40*	.50**	.56**	.10
<i>Step 3</i>				
Mastery goal orientation x Perceived mastery climate	.06	-.05	-.21**	-.66**
<i>Adj. R</i> <sup>2</sup>	.22	.23	.36	.57
<i>F</i>	5.37**	12.61**	16.10**	4.13**
$\Delta R^2$	.00	.00	.02**	.26**
<i>n</i> =	177	387	234	32

<sup>a</sup> Gender: 1 = female, 2 = males; tenure: years in current position; leader responsibility: 1 = no, 2 = yes; employment: 1 = permanent employed, 2 = temporary employed, 3 = part-time employed; education: 1 = junior high school; 2 = high school; 3 = bachelor's degree; 4 = master's degree; 5 = PhD;

\*  $p < .05$

\*\*  $p < .01$

Table 4. Regression Analyses Testing the Moderating Effects of Perceived Performance Climate<sup>a</sup>

Age groups	<= 39 years	40-54 years	55-62 years	>= 63 years
Step 1				
Gender	.11	-.13	-.14	.12
Tenure	-.07*	.01	-.01	.00
Leader responsibility	.64*	.30*	.48*	.40
Employment	-.09	-.99	<i>n.a.</i>	<i>n.a.</i>
Education	-.33**	-.15	-.11	-.28
Performance goal orientation	-.14	-.03	.11	.06
Step 2				
Mastery goal orientation	.29*	.47**	.33**	.64*
Perceived performance climate	.07	.01	-.05	-.17
Step 3				
Mastery goal orientation x Perceived performance climate	-.22*	.01	.03	.07
<i>R</i> <sup>2</sup>	.16	.11	.15	.30
<i>F</i>	3.53**	5.14**	4.86**	1.38
$\Delta R^2$	.02*	.00	.00	.01
<i>n</i> =	177	387	234	32

<sup>a</sup> Gender: 1 = female, 2 = males; tenure: years in current position; leader responsibility: 1 = no, 2 = yes; employment: 1 = permanent employed, 2 = temporary employed, 3 = part-time employed; education: 1 = junior high school; 2 = high school; 3 = bachelor's degree; 4 = master's degree; 5 = PhD;

\*  $p < .05$

\*\*  $p < .01$

Figure 1. Moderation of the Effect of Mastery Goal Orientation on Work Engagement at Values of the Moderator Mastery Climate, Ages 55-62

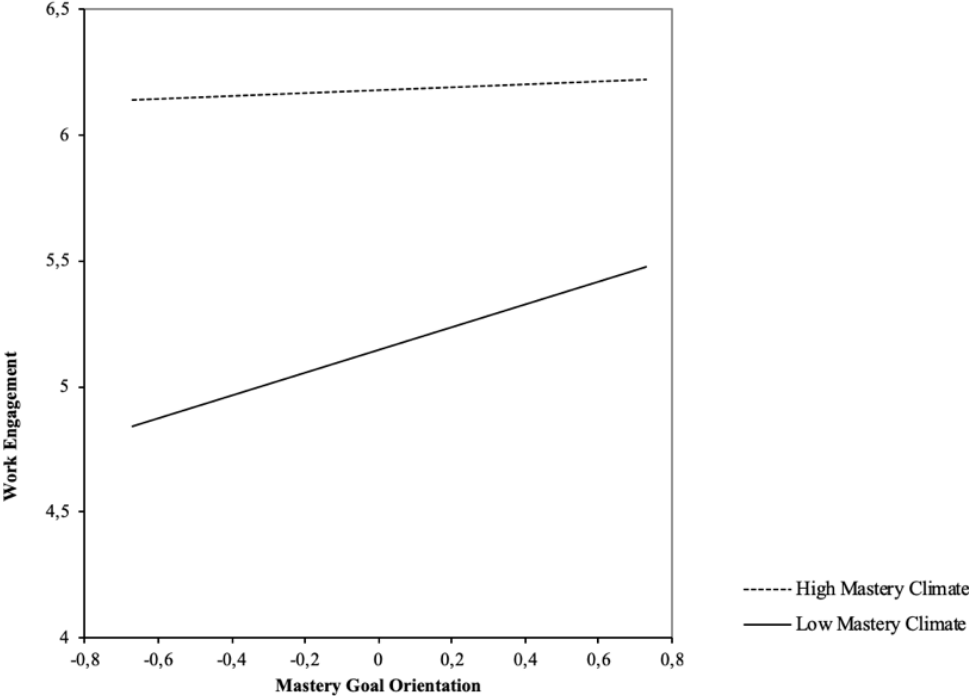


Figure 2. Moderation of The Effect of Mastery Goal Orientation on Work Engagement at Values of the Moderator Mastery Climate, Ages  $\geq 63$

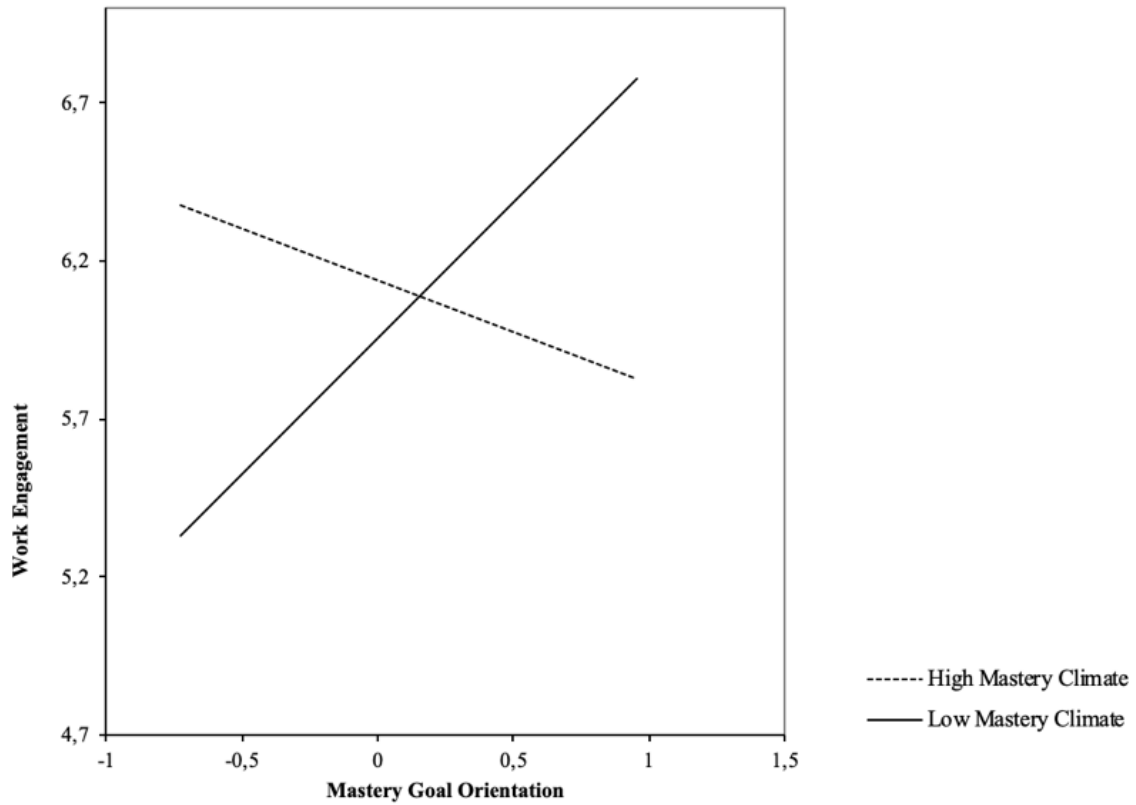


Figure 3. Moderation of The Effect of Mastery Goal Orientation on Work Engagement at Values of the Moderator Performance Climate, Ages  $\leq 39$

