

RESEARCH ARTICLE

Creating an age-inclusive workplace: The impact of HR practices on employee work engagement

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Abstract

Drawing on social exchange theory, our study aims to examine how age-inclusive human resource (HR) practices affect work engagement by shaping the age-diversity climate and perceived organizational support (POS). We hypothesize that diversity beliefs play a moderating role in the relationship between age-inclusive HR practices and POS. Our analysis of a sample of 983 employees from 48 organizations in China highlights the direct impact of age-inclusive HR practices on work engagement. Moreover, age-diversity climate and POS mediate the association between age-inclusive HR practices and work engagement. We further demonstrate that diversity beliefs play a moderating role in the association between age-inclusive HR practices and POS. Our findings not only contribute to the literature but also provide practical implications for managing an aging workforce.

Keywords: Age-inclusive workplace; HR practices; work engagement

Introduction

Due to increasing changes in population structure, most developed countries have become age-diverse societies, a trend that has been extended to developing countries. In Asia, the population of individuals older than 65 years is expected to reach 573 million by 2050 (UNPD (United Nations Population Division), 2019). China, the most populous country in the world, has undergone fundamental changes over the last three decades (Feng, Yeung, Wang, & Zeng, 2019). The aging population is expected to reach 36.8% of the total population by 2050 and become double the number recorded in 2020 (UNPD (United Nations Population Division), 2019). These changes will not only have a significant impact on individuals, but also entail challenges for business and government (Kooij, Zacher, Wang, & Heckhausen, 2020). Recently, scholars have adopted a positive perspective by looking for ways to leverage the potential values of age diversity to improve an organization's competitiveness (e.g., Boehm, Kunze, & Bruch, 2014; Li, Shao, Wang, Fang, Gong, & Li, 2022). Unfortunately, negative perceptions based on age continue to exist, a phenomenon which makes modern workplaces less inclusive and may prevent employees from being engaged and productive (Bayl-Smith & Griffin, 2014; Oliveira, 2021). Therefore, a key step in the process of creating an inclusive workplace requires organizations to recognize the benefits of age diversity and ensure that all members are fully engaged at work by implementing age-related organizational practices (Avery, McKay, & Wilson, 2007; Boehm, Kunze, & Bruch, 2014; Downey, Werff, Thomas, & Plaut, 2015).

Researchers have emphasized the fact that human resource management (HRM) is a critical tool that can effectively help maintain an aging workforce by aligning the organization's

objectives with employees' needs (Boehm & Dwertmann, 2015). One research area that has been underestimated, however, is the impact of HR practices on employee work engagement (Downey *et al.*, 2015). As a crucial component of general workplace well-being, work engagement is viewed as a vital predictor of employee health and job performance (Knight, Patterson, & Dawson, 2019). Accordingly, fostering employee work engagement has become a primary concern on the part of organizations, inspiring scholars to explore various causes of work engagement (Goštautaitė, Bučiūnienė, & Milašauskienė, 2022; Knight, Patterson, & Dawson, 2017). Although interest in the effects of HR practices with regard to predicting work engagement is increasing (Luu, Rowley, & Vo, 2019; Sousa, Ramos, & Carvalho, 2021), little is known about the mediating mechanisms through which age-inclusive HR practices contribute to work engagement, especially across organizational levels. As an organizational construct that includes nondiscriminatory and supportive initiatives aimed at all age groups, age-inclusive HR practices can shape employees' shared perception of age diversity (i.e., age-diversity climate) and contribute to a collective social exchange relationship with the organization (Burmeister, van der Heijden, Yang, & Deller, 2018). In turn, employees tend to reciprocate by producing positive outcomes, such as engaging energetically in their work roles (Luu, Rowley, & Vo, 2019). Thus, we assume that age-inclusive HR practices could foster work engagement and that employees' shared perception of the age-diversity climate plays a mediating role in this relationship.

In addition to theoretical support for HRM-individual outcomes, another key area in which social exchange theory (SET) can be applied pertains to employees' perceptions of organizational support (Eisenberger, Huntington, Hutchison, & Sowa, 1986; Eisenberger, Rhoades Shanock, & Wen, 2020). Due to its important role in explaining the employee-organization relationship and beneficial outcomes, perceived organizational support (POS) has been considered to be a critical mediator in the relationship between common HR practices and work engagement (Kurtessis, Eisenberger, Ford, Buffardi, Stewart, & Adis, 2017; Zhong, Wayne, & Liden, 2016). Responding to the call for research examining cross-level relationships among the HRM system, the organizational climate, employees' perceptions of organizational care and work engagement (Saks, 2022), the current study includes POS among the mechanisms underlying the relationship between age-inclusive HR practices and work engagement.

Finally, although researchers have suggested that age-related HR practices can contribute to positive employee outcomes (e.g., Korff, Biemann, and Voelpel, 2017), the results of such research have shown that different employee groups react differently to the implementation of such practices. For example, one recent study demonstrated that younger employees in academia may view age-related HR practices as inappropriate because younger employees who focus on performance and competencies want to present themselves as exhibiting strong capabilities and potential, whereas the use of such practices during the early and middle stages of one's career may lead to stigma (Van der Heijden, Veld, & Heres, 2022). In fact, this finding is novel evidence suggesting that different reactions to age-related HR practices depend on the degree to which those practices match the particular characteristics of a certain employee group (Pahos, Galanaki, Van der Heijden, & De Jong, 2021). Moreover, previous scholars have also emphasized the significance of the match between the implicit values transmitted by HR practices and individual values (Zhong, Wayne, & Liden, 2016). Building on this reasoning, this study advances beyond previous research by introducing individual difference variables (i.e., diversity beliefs) as a boundary condition that may influence the impact of age-inclusive HR practices on POS. Diversity beliefs refer to the cognitive component of individuals' attitudes regarding diversity (Van Dick, Van Knippenberg, Hägele, Guillaume, & Brodbeck, 2008). Employees with high diversity beliefs are convinced that age diversity is beneficial for the organization (Van Knippenberg, Haslam, & Platow, 2007). Based on supplies-values fit theory (Edwards, 1996), if an organization develops an age-inclusive environment that encourages employees' diversity beliefs, which causes to employees' values to align with those of the organization, employees are more likely to consider age-inclusive HR practices to be a way of showing concern for the well-being of employees

(Dumont, Shen, & Deng, 2017; Homan, Buengeler, Eckhoff, van Ginkel, & Voelpel, 2015). With regard to the individual-level construct of POS and diversity beliefs, we argue that diversity beliefs play a moderating role in the association between age-inclusive HR practices and POS.

Our study makes the following contributions to the literature. First, by verifying the role of age-inclusive HR practices in the promotion of work engagement, this study extends previous literature on the outcomes of organization-level HR practices to encompass the field of age-related HR practices using a multilevel modeling approach (Boehm, Schröder, & Bal, 2021). Second, our study explores the cross-level effects of age-inclusive HR practices on employee work engagement via age-diversity climate and POS. The current study contributes to the SET literature by exploring the mechanisms underlying the effects of organizational factors such as age-inclusive HR practices on our ability to predict work engagement. Explicating this process may improve our understanding of how HR practices create an age-inclusive workplace (von Bonsdorff, Zhou, Wang, Vanhala, von Bonsdorff, & Rantanen, 2018). Third, this research provides new insights into the boundary conditions associated with the relationship between age-inclusive HR practices and POS. By introducing the moderating effect of diversity beliefs, we address the call for research exploring the process of interaction that may influence employees' perceptions of diversity-related practices (Nishii, Khattab, Shemla, & Paluch, 2018). In summary, the current study provides an integrated framework for clarifying how and when age-inclusive HR practices contribute to positive employee outcomes.

Theory and hypotheses development

Age-inclusive HR practices and work engagement

Work engagement refers to 'a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption' (Schaufeli, Salanova, González-Romá, & Bakker, 2002: 74). In the past 20 years, scholars' interest in work engagement has grown because work engagement can offer competitive advantages to organizations (Christian, Garza, & Slaughter, 2011; Knight, Patterson, & Dawson, 2017). Scholars have explored the potential antecedents of work engagement and advanced HRM research in this context (e.g., Chen, 2018). For studies focusing on determinants of employee work engagement, it is critical to explore how HRM systems can influence work engagement (Khoreva & van Zalk, 2016). Previous researchers have noted that HR practices can effectively develop a suitable work environment that allows employees to devote resources to jobs physically and mentally (Sousa, Ramos, & Carvalho, 2021). Additionally, by meeting employees' needs for autonomy, the desire to belong, and competence, HRM practices can also facilitate employees' positive working experiences in the workplace (Marescaux, De Winne, & Sels, 2013). Thus, employees' work may create a sense of accomplishment and motivation and cause them to feel as if they have an obligation to devote their energy to the tasks at hand (Bakker, Schaufeli, Leiter, & Taris, 2008). Based on this logic, our study predicts that age-inclusive HR practices may improve employee work engagement by sending signals that organizations are trying to build and maintain an inclusive and healthy workforce.

According to Albrecht, Breidahl, and Marty (2018), HR practices that provide valuable resources could lead to gain spirals that improve employees' motivation to return to the organization. Employees who obtain resources as a result of HR practices are likely to reinvest resources in the organization (Meijerink, Bos-Nehles, & de Leede, 2020). Age-inclusive HR practices provide employees with the resources they need to complete their work assignments regardless of their age. Employees view these practices as an organizational effort to establish a long-term relationship wherein organizational benefits and resources are constantly used to support their endeavors at work (Cropanzano, Anthony, Daniels, & Hall, 2017). Thus, when employees interpret age-inclusive HR practices that have already been implemented as beneficial, they may devote more time and energy to their work and become completely engrossed in job-related tasks (Sousa, Ramos, & Carvalho, 2021).

Moreover, age-inclusive HR practices can motivate employees both internally and externally. HR practices, including age-neutral recruitment, could satisfy employees' internal motivation, in turn motivating them to invest more energy into their work. HR practices, such as equal opportunities for promotion, may also provide employees with external motivation (Boehm, Kunze, & Bruch, 2014). Therefore, age-inclusive HR practices are a critical resource that can inspire employees to engage in their work. Employees who are supported by job resources are easily energized and are more engaged at work (Luu, 2019b). Thus, we hypothesize the following:

Hypothesis 1: Age-inclusive HR practices are positively associated with work engagement.

The mediating effect of age-diversity climate

Organizational climate has been defined in terms of employees' shared perceptions of organizational practices, procedures, and policies based on the experiences that they have had or observed within the organization (Dumont, Shen, & Deng, 2017; Schneider, Ehrhart, & Macey, 2013). Consequently, the notion of the age-diversity climate refers to employees' collective perception of the extent to which organizations provide equal and nondiscriminatory treatment (e.g., policies, procedures, and practices) regardless of organizational members' age (Boehm, Kunze, & Bruch, 2014). Scholars have noted that HR practices include various ways in which the organization can send formal and informal messages to workers to enable them to develop a sense of their work environment (Veld & Alfes, 2017). Therefore, age-inclusive HR practices are likely to establish a positive age-diversity climate.

According to signaling theory, HR practices can serve as a symbol of organizations' willingness to assist group members and to establish an organizational climate that collectively shapes employee attitudes at the organizational level (Bowen & Ostroff, 2004; Den Hartog, Boselie, & Paauwe, 2004; Polat, Bal, & Jansen, 2017). When employees notice that their coworkers in the organization are members of various age groups and that all employees have access to the same opportunities for promotion and training, they consider those activities to constitute as an explicit signal that their organization intentionally attracts and retains individuals from diverse age groups (Boehm, Kunze, & Bruch, 2014). Employees interpret this situation and recognize the fact that the organization's primary objectives are to promote age diversity and prevent age-related discrimination. This process is likely to influence both their behavior toward colleagues from diverse age groups and the climate of intent regarding the organization's concern for an aging workforce (Boehm, Kunze, & Bruch, 2014; Luu, Rowley, & Vo, 2019).

The organizational climate established by the implementation of HR practices can further affect individuals' attitudes and behaviors in the context of their work tasks (e.g., work engagement) (Polat, Bal, & Jansen, 2017). With regard to SET, previous researchers have argued that employees' shared perceptions of their organization may influence individual outcomes (Schneider, Ehrhart, & Macey, 2013). Thus, social exchange relationships are suggested to occur when employees sense a climate that conveys information indicating that the organization cares about them (McKay, Avery, & Morris, 2009). In response to high-quality exchanges, employees tend to engage in more reciprocal responses with organizations (Ashikali & Groeneveld, 2015). For example, Chung, Liao, Jackson, Subramony, Colakoglu, and Jiang (2015) demonstrated that employees' collective perceptions of diversity could predict employees' loyal behavior, causing such employees to exhibit work engagement. Luu (2019a) found that a diversity climate could eliminate the pressure caused by demographic differences, which could help employees engage in activities about which they are passionate. In light of these discussions, we hypothesize the following:

Hypothesis 2: Age-diversity climate mediates the relationship between age-inclusive HR practices and work engagement.

The mediating effect of POS

SET has become a major theme in explanations of the antecedents and consequences of POS (Snape & Redman, 2010). The core assumption of SET is that individuals tend to return the favors they receive by exhibiting positive reciprocal responses when they are treated in a positive fashion (Blau, 1964; Cropanzano et al., 2017). Essentially, positive initiating actions on the part of the organization can lead to the establishment of employer-employee relationships that generate obligations that encourage employees to reciprocate organizational support in a positive manner (Settoon, Bennett, & Liden, 1996; Zhong, Wayne, & Liden, 2016).

HR practices are significant antecedents of POS (Shore & Shore, 1995). The increasing consensus in the literature that organizations must incorporate aging-related issues into the HRM system has encouraged organizations to adopt various practices to attract employees from different age groups. In this way, organizations can establish a positive working atmosphere that encourages employees to remain and keeps them engaged in their work throughout their careers (Sousa, Ramos, & Carvalho, 2021). Employees are more likely to consider organizations that offer age-inclusive HR practices to be fair, employee-invested, and sustainable because these HR practices provide all individuals (regardless of their age) with equal opportunities to develop their knowledge, skills, and abilities (KSAs) (Boehm, Kunze, & Bruch, 2014). In this way, the implementation of age-inclusive practices can instill in employees a sense of strong organizational support.

According to SET, support from organizations triggers a process associated with reciprocity norms. Accordingly, employees who consider their organization to be supportive feel themselves to be obligated to repay the organization (Eisenberger, Rhoades Shanock, & Wen, 2020). In addition, repeated interactions between employees and an organization causes employees to expect the organization to recognize and reward employees' performance improvements (Kurtessis et al., 2017). The higher the level of organizational support that employees perceive, the more social exchange with the organizations they report (Shore, Randel, Chung, Dean, Holcombe Ehrhart, & Singh, 2011). Employees who experience high levels of organizational support are more engaged in their daily work and help their organization achieve its goals (Gavino, Wayne, & Erdogan, 2012; Kurtessis et al., 2017; Zhong, Wayne, & Liden, 2016). The results of reciprocity with the organization are embodied in individual outcomes (Eisenberger, Rhoades Shanock, & Wen, 2020). Thus, we hypothesize the following:

Hypothesis 3: POS mediates the relationship between age-inclusive HR practices and work engagement.

The moderating role of diversity beliefs

Although organizations have implemented age-related HR practices to address the issue of an aging workforce, employees' attitudes toward these initiatives vary (Veth, Korzilius, Van der Heijden, Emans, & De Lange, 2019). The supplies-values fit is likely to be one reason for individual differences related to the effects of HR practices on employees' perceptions of the extent to which the organization cares about their well-being. Person-environment fit refers to the level of compatibility between the characteristics of employees and those of the organization, and this factor has been conceptualized in various ways, such as supplies-values fit (Edwards, 1996). Supplies-values fit focuses on the fit between the values of the person and the supplies that are available in the environment to help the person fulfill his or her values (Choi, 2004; Edwards, 1996). According to supplies-values fit theory, when individual values align with those of the organization, this situation may contribute to desirable employee outcomes, such as by leading to more POS (Dumont, Shen, & Deng, 2017; Edwards, 1996; Edwards & Cable, 2009).

Diversity beliefs, as a deep level of individual attributes, play a significant role in the evaluation of diversity practices (Nishii et al., 2018). Given that HR practices could serve as a symbol of an

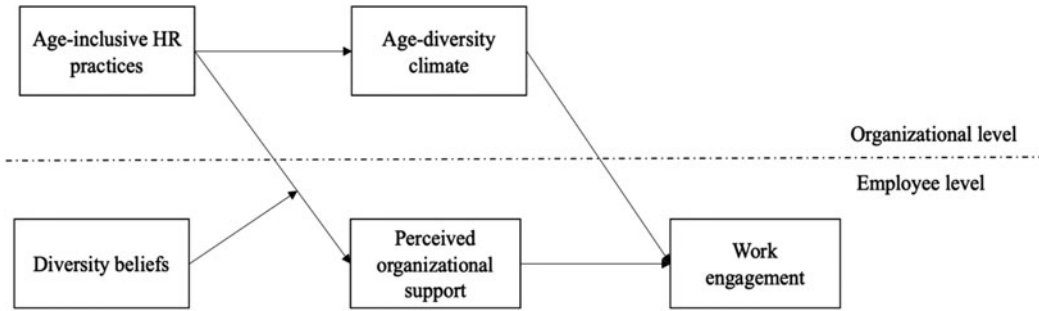


Figure 1. Research model.

organization's willingness to assist group members, age-inclusive HR practices can thus send an explicit signal that the organization intentionally attracts and retains individuals from diverse age groups (Boehm, Kunze, & Bruch, 2014). Employees judge the organization's policies and behaviors and subsequently determine whether those policies and behaviors fulfill their psychological needs (Rupp, Ganapathi, Aguilera, & Williams, 2006). In line with the supplies-values fit theory, if an organization implements age-inclusive HR practices that are conducive to employee diversity values (i.e., the employee and the organization share consistent diversity beliefs), we would expect the employee to perceive more organizational support. Conversely, if an employee's diversity beliefs do not align with the organization's values or the organization does not implement age-inclusive HR practices to satisfy employees' need for age diversity, then the employee tends to perceive less organizational support. Therefore, we expect that employees' responses to age-inclusive HR practices depend on their diversity beliefs and that POS toward age-inclusive HR practices is higher for employees with strong diversity beliefs. Thus, we hypothesize the following:

Hypothesis 4: Individual diversity beliefs moderate the relationship between age-inclusive HR practices and POS, and this relationship is more positive when individuals have strong diversity beliefs (Figure 1).

Methods

Procedure and sample

Using the method recommended by a previous study (Arain, Bhatti, Ashraf, & Fang, 2020), we used a convenience sampling strategy to collect data from 48 organizations located in Guangdong Province, China. The convenience sampling strategy has been widely used and is considered to be a quick and economical method for obtaining a large number of questionnaires (Zheng & Siu, 2009). Before distributing the questionnaires, a cover letter explaining the research purpose and guaranteeing the confidentiality of the survey was sent to the participants. Following the suggestions of previous research (Luu, Rowley, & Vo, 2019; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), a three-wave study design was used. At Time 1, we asked the employees to provide information regarding age-inclusive HR practices as well as control variables. A total of 1440 questionnaires were distributed, and 1292 questionnaires were returned. At Time 2 (four weeks later), we distributed questionnaires focusing on age-diversity climate, diversity beliefs, and POS to the employees who participated in the first-wave survey; a total of 1154 questionnaires were returned (response rate = 89.3%). At Time 3 (four weeks after Time 2), the employees who participated at Time 2 were invited to provide information on their work engagement. After eliminating nonresponse questionnaires, the final sample included 983 employees, for a response

rate of 85.2%. In addition, we conducted a nonresponse bias test, and no significant differences were found between participants and nonparticipants in terms of demographics or age-inclusive HR practices.

Given the nature of self-report questionnaires, common method variance (CMV) was likely to be a concern for this research (Podsakoff et al., 2003). First, Harman's single factor test was conducted to investigate CMV issues in the current study. All items from each of the constructs were loaded onto a single factor to determine whether one single factor accounted for a majority of the covariance. The results indicated that the generated factors explained only 35.28% of the total variance, which was lower than the threshold (Hair, Black, Babin, & Anderson, 2010). Second, the confirmatory factor analysis (CFA) marker technique was used to investigate CMV issues (Ju, Qin, Xu, & DiRenzo, 2016; Williams, Hartman, & Cavazotte, 2010). The results of the CFA marker technique revealed that CMV concerns did not influence the validity of the research. Therefore, CMV concerns were not a serious issue that could influence the validity of the research.

Among the organizations included in the sample, 21 firms (43.75%) were privately owned, 2 firms (4.17%) were state-owned, and 25 firms (52.08%) were foreign-owned. Regarding the industries of these organizations, 89.60% were in manufacturing sectors, and 10.40% were in service sectors. With respect to the employees, 51.70% were male, their average age was 36.14 years (standard deviations (SD) = 7.46), and their average organizational tenure was 7.74 years (SD = 4.05). Regarding participants' level of education, only 12.7% held a bachelor's or master's degree.

Measures

The scales used in the current research are all adopted from the extant literature. Following the back translation method developed by Brislin (1986), we translated the English versions of the scales into Chinese. Unless otherwise noted, the items were measured using a 5-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree.

Age-inclusive HR practices

We measured age-inclusive HR practices on a 5-item scale developed by Boehm, Kunze, and Bruch (2014), which ranged from 1 = very low intensity to 5 = very high intensity. A sample item was 'With how much intensity does your company foster the promotion of an age-friendly organizational culture?' The Cronbach's alpha coefficient of this scale in this study exhibited good internal reliability ($\alpha = .88$).

Age-diversity climate

We measured age-diversity climate using a four-item scale developed by Boehm, Kunze, and Bruch (2014). A sample item was 'Where I work, employees are developed and advanced without regard to the age of the individual.' The Cronbach's alpha coefficient of this scale in this study exhibited good internal reliability ($\alpha = .85$).

Perceived organizational support

We adopted a five-item scale developed by Hekman, Bigley, Steensma, and Hereford (2009). Sample items included 'My organization cares about my well-being' and 'My organization cares about my opinions.' The Cronbach's alpha coefficient of this scale in this study was .89.

Work engagement

The current study measured this construct using the short version of the Utrecht Work Engagement Scale (Schaufeli, Bakker, & Salanova, 2006). Sample items included 'At my job, I

feel strong and vigorous' and 'At my work, I feel bursting with energy.' This scale also exhibited good internal reliability ($\alpha = .95$).

Diversity beliefs

To assess employees' beliefs regarding age diversity, we slightly modified four items developed by Homan *et al.*, (2015). A sample item was 'I believe that diversity is good.' This scale also exhibited good internal reliability ($\alpha = .93$).

Control variables

Following the suggestions of previous studies (e.g., Boon & Kalshoven, 2014; Conway, Fu, Monks, Alfes, & Bailey, 2016), we controlled for demographic variables that may influence causal relationships among the variables. These control variables included employees' age, gender, education, and working tenure.

Analytic strategy

As mentioned previously, we conceptualized age-inclusive HR practices and age-diversity climate in terms of constructs representing employees' collectively experienced and shared perceptions at the organizational level. We used the referent-shift composition model approach based on the suggestion that an effective HR system can create common experiences or a collective group understanding of HR practices, thereby making age-inclusive HR practices appropriate to use a group referent (Boon, Den Hartog, & Lepak, 2019). In addition, the implementation of HR practices and the development of organizational climate occur at the organizational level (Kehoe & Wright, 2013; Schneider, Ehrhart, & Macey, 2013), in which context single-source responses from HR managers are inappropriate, especially when these responses collected at the organizational level (Cooper, Wang, Bartram, & Cooke, 2019). Using this approach, scholars have examined how employees' collective perceptions of HR systems influence individual outcomes (Cooper *et al.*, 2019; Zhang, Sun, Shaffer, & Lin, 2022).

Therefore, we examined intraclass correlations ICC(1) and ICC(2) as well as the within-group agreement of multiple items $r_{wg(j)}$ to determine whether two variables could be aggregated at the organizational level (Shen & Benson, 2016). The ICC(1) values for age-inclusive HR practices and age-diversity climate were .13 and .13, respectively. The ICC(2) values for these variables were .88 and .88. The mean r_{wg} values were .90 for the age-inclusive climate and .88 for the age-diversity climate. The results indicated that the aggregation of the two variables was supported (LeBreton & Senter, 2008).

Due to the multilevel design in our study, maximum likelihood estimation was employed for the data analyses. According to Huang and Peng (2022), maximum likelihood estimation not only allowed us to avoid the issue of combining between-group with within-group associations but also to estimate the indirect effects associated with multiple paths. Thus, we examined our hypotheses by adopting the maximum likelihood estimation approach using Mplus 8.3 statistical software (Muthén & Muthén, 2017).

Results

Measurement models

We conducted a CFA to verify the discriminant validity of the variables. As shown in Table 1, the results indicated that our five-factor model yielded a better fit ($\chi^2(314) = 462.90$, $p < .001$, CFI = .99, TLI = .99, RMSEA = .02) than alternative models. Therefore, these CFA results indicated that the proposed model exhibited good construct validity.

Table 1. Models of measurement

Model	χ^2	df	RMSEA	CFI	TLI
Five-factor model	462.90	314	.02	.99	.99
Four-factor model: age-diversity climate and POS combined	2,202.90	318	.08	.87	.86
Three-factor model: Age-inclusive HR practices, age-diversity climate and POS combined	3,825.62	321	.11	.76	.74
Two-factor model: Age-inclusive HR practices, age-diversity climate, diversity beliefs and POS combined	4,987.63	323	.12	.68	.66
One-factor model: All variables combined	6,362.85	324	.14	.59	.56

Descriptive statistics

Table 2 lists the means, SD and correlations among the variables included in the study.

Hypothesis testing

Hypothesis 1 suggested that age-inclusive HR practices were positively associated with work engagement. To examine Hypothesis 1, we calculated the effect of age-inclusive HR practices on work engagement. The results showed that age-inclusive HR practices could significantly foster employee engagement ($\beta = .78, p < .001$). Therefore, our findings supported Hypothesis 1.

Hypothesis 2 predicted that age-diversity climate mediates the association between age-inclusive HR practices and work engagement. To examine Hypothesis 2, we first estimated the effect of age-inclusive HR practices on age-diversity climate ($\beta = .61, p < .001$) and the effect of age-diversity climate on work engagement ($\beta = .30, p < .001$). Since Mplus cannot be used to generate bootstrapping results for a multilevel model (Xi, Chen, & Zhao, 2021), we employed the Monte Carlo method to estimate the 95% confidence interval (CI). As shown in Table 3, the results showed that the indirect effect of age-inclusive HR practices on work engagement via age-diversity climate was significant (*indirect effect* = .19, 95% CI = [.09–.30]). Therefore, Hypothesis 2 was supported.

Hypothesis 3 predicted that POS mediates the association between age-inclusive HR practices and work engagement. To examine Hypothesis 3, we estimated the effect of age-inclusive HR practices on POS ($\beta = .75, p < .001$) and the effect of POS on work engagement ($\beta = .29, p < .001$). Using same procedures, we employed the Monte Carlo method to estimate the mediating effect of POS. As shown in Table 3, the results indicated that the indirect effect of age-inclusive HR practices on work engagement via POS was significant (*indirect effect* = .22, 95% CI = [.10, .36]). Therefore, Hypothesis 3 was supported.

Hypothesis 4 proposed that diversity beliefs moderate the relationship between age-inclusive HR practices and POS. As shown in Table 4, the results revealed that diversity beliefs significantly moderated the relationship between age-inclusive HR practices and POS ($\beta = .56, p < .05$). Following Xi, Chen, and Zhao (2021), a simple slope test was conducted, and the results indicated that the effect of age-inclusive HR practices on POS was significant for individuals with a high level of diversity beliefs ($\beta = .89, p < .001$) but not significant for individuals with a low level of diversity beliefs ($\beta = .35, p > .05$, see Figure 2). Therefore, Hypothesis 4 was verified.

Supplemental analysis

First, a comparison of two indirect paths (i.e., the POS path and the age-diversity climate path) was performed across different levels of diversity beliefs. The results showed that the difference between the POS path and the age-diversity climate path was .02 ($p > .05$, 95% CI = [−.20 to .23]) when diversity beliefs were high. In contrast, the difference between the POS path and the age-diversity climate path was −.12 ($p > .05$, 95% CI = [−.36 to .14]) when diversity beliefs

Table 2. Means, standard deviations, and correlations

Variables	Mean	SD	1	2	3	4	5	6	7	8	9
1. Gender	.48	.50									
2. Age	36.14	7.46	-.08**								
3. Education	2.43	.93	-.01	-.01							
4. Tenure	7.74	4.05	-.08**	.82**	.02						
5. POS	3.71	.97	-.01	.05	-.03	-.00	(.89)				
6. Diversity beliefs	3.48	.89	.06	-.04	-.03	-.03	.36**	(.93)			
7. Work engagement	3.63	.89	-.04	.03	.16**	.02	.52**	.30**	(.95)		
8. Age-inclusive HR practices	3.68	.81	.03	-.03	-.02	-.04	.43**	.33**	.51**	(.88)	
9. Age-diversity climate	3.83	.83	-.02	.02	.02	.03	.14**	.09**	.39**	.16**	(.85)

Note. * $p < .05$. ** $p < .01$; two-tailed test.

Table 3. Results of direct, indirect and total indirect effects

	Estimate	SE	95% CI
Direct effect			
Age-inclusive HR practices → work engagement	.31***	.08	[.15–.47]
Indirect effect			
Age-inclusive HR practices → age-diversity climate	.19 ***	.05	[.09–.30]
→ work engagement			
Age-inclusive HR practices → POS→ work engagement	.22***	.07	[.10–.36]
Total indirect effect	.41***	.08	[.24–.57]

Note. SE, standard error; CI, confidence interval; * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 4. Moderating effect of diversity beliefs

Predictor	POS		
	Model 1	Model 2	Model 3
Gender	-.02	-.04	-.04
Age	.01	.01	.01
Education	-.04	-.04	-.04
Tenure	-.01	-.02	-.02
Age-inclusive HR practices		.67***	.62***
Diversity beliefs		.26	.25*
Age-inclusive HR practices \times diversity beliefs			.56*
R^2	.00	.42	.45
ΔR^2		.42	.03

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

were low. Although the current study did not propose to investigate moderated mediation effects, we tested the indirect and total effects of age-inclusive HR practices on work engagement at higher (+1 SD) and lower (−1 SD) values of diversity beliefs. As shown in Table 5, the results indicated that the indirect effect via POS was significant when diversity beliefs were high (*indirect effect* = .30, 95% CI = [.10–.51]), while the indirect effect via POS was not significant when diversity beliefs were low (*indirect effect* = .10, 95% CI = [−.05 to .27]). The indirect effects via POS were significantly higher when diversity beliefs were high than when diversity beliefs were low (*diff* = .18, 95% CI = [.01–.45]). Furthermore, we calculated the total effect of age-inclusive HR practices on work engagement. The results revealed that the total effect of age-inclusive HR practices on work engagement was .74 (95% CI = [.55–.95]) when diversity beliefs were high. In contrast, the total effect of age-inclusive HR practices on work engagement was .55 (95% CI = [.28–.78]) when diversity beliefs were low.

Discussion

The trend toward an aging workforce has been a crucial management issue for organizations (Kooij et al., 2020). Thus, the creation of a supportive workplace that accommodates demographic changes has become a vital factor for organizational success (Boehm, Kunze, & Bruch,



Figure 2. Interaction of age-inclusive HR practices and diversity beliefs on POS.

Table 5. Supplemental analysis

Moderator	Age-inclusive HR practices → POS → work engagement			
	Estimate	SE	<i>p</i>	95% CI
Diversity beliefs				
High	.30	.11	.00	[.10–.51]
Low	.10	.08	.08	[–.05 to .27]
Diff	.18	.11	.03	[.01–.45]

2014; Rudolph & Zacher, 2021). The present study provides an integrated framework to illustrate how an age-inclusive workplace can be created. The results of this study provide additional evidence concerning the importance of adopting age-inclusive HR practices to foster work engagement. Additionally, work engagement is influenced by age-inclusive HR practices not only directly but also indirectly via age-diversity climate and POS simultaneously. However, the results show that there are no significant differences between the POS path and age-diversity climate path across different levels of diversity beliefs. Furthermore, the results of a moderation analysis indicate that diversity beliefs are important in this context and that they strengthen the relationships among age-inclusive HR practices, POS, and work engagement. Age-inclusive HR practices can improve POS and thus increase work engagement when diversity beliefs are high. However, age-inclusive HR practices cannot facilitate POS and therefore increase work engagement in cases of low diversity beliefs.

Theoretical implications

This study has several theoretical implications. First, our study extends the age-related HRM literature by demonstrating a positive association between age-inclusive HR practices and work engagement. The task of exploring the relationship between age-inclusive HR practices and work engagement is important given the evidence suggesting that age-inclusive HR practices can play a significant role with respect to providing organizational resources for different age groups (Fasbender, Gerpott, & Unger, 2021). Although scholars have investigated the significant

role played by age-related HR practices in predicting organizational and individual outcomes (Ali & French, 2019; Bal & De Lange, 2015; Boehm, Kunze, & Bruch, 2014; Korff, Biemann, & Voelpel, 2017), studies on the impact of age-inclusive HR practices on employee well-being (i.e., work engagement) remain scarce. By identifying work engagement as a critical outcome of age-inclusive HR practices, the current study responds to the call to tailor inclusive HR practices to manage an age-diverse workforce effectively (Cooke, Schuler, & Varma, 2020).

Second, this study further expands the research on diversity climate by highlighting the mediating role played by age-diversity climate in the association between age-inclusive HR practices and individual outcomes. This result indicates that the age-diversity climate established by implementing age-inclusive HR practices can further affect the behaviors in which individuals engage when performing work tasks (e.g., work engagement) (Polat, Bal, & Jansen, 2017). Previous studies have considered diversity climate to be an important predictor of organizational and group outcomes (e.g., Madera, Dawson, & Neal, 2013; Richard, Avery, Luksyte, Boncoeur, & Spitzmueller, 2019). This study differs from this research stream because the study focuses on the antecedents of diversity climate and its impacts on individual outcomes. Accordingly, the current study also extends the nomological network of the age-diversity climate by examining how age-diversity climate at the organizational level of analysis translates into lower-level outcomes (Boehm, Kunze, & Bruch, 2014; Holmes, Jiang, Avery, McKay, Oh, & Tillman, 2021).

Third, our study contributes to the SET literature by demonstrating that POS may be a relevant mediator in the relationships between specific HR practices and individual outcomes (Mayes, Finney, Johnson, Shen, & Yi, 2017). To date, clarifications of the association between HR practices and work engagement have largely focused on job demands-resources theory and conservation of resources theory (e.g., Boon & Kalshoven, 2014; Chen, 2018; Van De Voorde, Veld, & Van Veldhoven, 2016), thus limiting our understanding of the mechanism underlying age-inclusive HR practices. Based on the process of reciprocity in SET, this study shows that organizational investment in the development of the knowledge, skills, and abilities of employees of all age groups facilitates positive social exchange with the organization and enables the spread of enthusiasm and energy among employees at work (Pohl, Vontrhon, & Closon, 2019; Saks, 2006). Meanwhile, our study contributes to the emerging research that has highlighted the necessity of exploring the relationships among HR practices, organizational climate, employees' perceptions of organizational care and work engagement (Saks, 2022). In addition, to a certain degree, our findings confirm that both POS and age-diversity climate are critical pathways associated with the mechanism through which age-inclusive HR practices affect work engagement. Thus, these findings enrich our understanding of how age-inclusive HR practices influence work engagement by examining the joint mediating effects of age-diversity climate and POS.

Fourth, our study contributes to the literature on diversity beliefs, as little is known regarding dispositional differences that may affect the relationship between organizational actions and employees' attitudes (Zhong, Wayne, & Liden, 2016). Inspired by scholars who have suggested that deeper-level individual differences may influence employees' perceptions of HR practices via assessments of 'personal relevance' (Nishii et al., 2018), we shed light on the interactive effect of the relationship between diversity beliefs and age-inclusive HR practices on POS. The current study provides evidence that diversity beliefs, understood as a contingency factor, can boost the effect of age-inclusive HR practices on POS. Furthermore, the supplemental moderated mediation analysis showed that only employees with higher diversity beliefs feel more supportive of age-inclusive HR practices, which improves their work engagement. Diversity initiatives have been considered to be ineffective by employees and have even led to backlash due to unfavorable outcomes according to some prior studies (e.g., Kidder, Lankau, Chrobot-Mason, Mollica, & Friedman, 2004; Windscheid, Bowes-Sperry, Mazei, & Morner, 2017). However, our study confirms that whether age-inclusive HR practices can promote employees' work engagement via POS ultimately depends on employees' diversity beliefs. These findings imply that scholars should not assume that age-inclusive HR practices always have the same effects on work engagement. The fit

between the practices of the organization and employees' perspectives on and the value they attribute to diversity might influence the downstream consequences. By exploring how and when age-inclusive HR practices can improve work engagement, this study opens up new avenues of future research in the age-related HRM literature.

Practical implications

Our findings have several managerial implications. The finding that work engagement is linked to age-inclusive HR practices has significant practical implications for organizations. Given the positive outcomes of age-inclusive HR practices, we first suggest that organizations should include age diversity management in their missions and vision statements at the strategic level. As core decision-makers within the organization, members of top management are considered to represent the main factor influencing the effectiveness of HRM (Shen, Chanda, D'netto, & Monga, 2009). Therefore, upper management should recognize the importance of age diversity management and allocate resources to develop age-inclusive policies.

Second, the effects of age-inclusive HR practices on work engagement suggest that organizations should implement HR practices such as age-neutral recruiting policies and promotion systems to develop the age-diversity climate and POS (Boehm, Kunze, & Bruch, 2014). Consequently, we suggest that organizations must be supported in the tasks of structuring, scheduling, and promoting age-inclusive HR practices. HR departments and managers can adopt nondiscriminatory and supportive initiatives for all age groups, which can help establish an age-diversity climate and improve employees' POS, thus promoting work engagement. Potential ways of increasing employees' work engagement include the provision of diversity training programs to improve line managers' diversity mindset and practical guidance regarding how to implement age-inclusive HR practices.

Finally, to strengthen the positive effect of age-inclusive HR practices on work engagement, it is vital for organizations to take the initiative in ensuring that employees exhibit diversity beliefs. Diversity beliefs, play a significant role in the evaluation of diversity practices (Nishii *et al.*, 2018). Therefore, on the one hand, when recruiting employees, organizations can evaluate individual diversity beliefs and communicate to potential recruits that the organization values diversity in the workplace (Meyer & Schermuly, 2012). On the other hand, it is also important for organizations to communicate their age-inclusive HR practices to employees effectively to enable employees to develop a comprehensive and accurate understanding of age-inclusive HR practices and to encourage employees to view age diversity as a potential benefit for organizational competitiveness (Dumont, Shen, & Deng, 2017).

Limitations and future research

The current research provides valuable insights into the significant role played by HR practices in the creation of an age-inclusive workplace; however, this research faces certain limitations that should be addressed in the future. First, the cross-sectional design of this research may influence the ability to make causality claims regarding the relationships among the variables. Although the causality proposed in this study is based on a theoretical rationale, the cross-sectional design does not fully support our ability to draw causal conclusions. Thus, future studies should attempt to use other research designs, such as cross-lagged panel designs or experimental designs, to investigate whether age-diversity climate and POS mediate the association between age-inclusive HR practices and work engagement. Second, the data used in this study were collected via self-report questionnaires, which may have led to issues with CMV (Podsakoff *et al.*, 2003). Future studies should focus on multiple datasets to investigate our proposed model. Third, drawing on signal theory and SET, the current study investigated the mediating mechanisms of age-diversity climate and POS in this context. Scholars have suggested that HR practices affect employee outcomes via multiple underlying mechanisms (Jiang, Lepak, Hu, & Baer, 2012). Future research could explore alternative mechanisms (e.g., AMO framework) when interpreting the mediating paths that link

age-inclusive HR practices to work engagement. Finally, our study mainly focuses on a dataset concerning the manufacturing industry, which limits its generalizability with regard to other industries, such as the technology industry. Age discrimination is prevalent in Chinese IT companies, and most Chinese IT companies do not take age-inclusive HR practices sufficiently seriously. Thus, the research model used in the current study should be reexamined in the contexts of the IT industry and other industries.

Conclusion

In this study, we drew on SET to conduct a multilevel study with the aim of theorizing about and examining the questions of how and when age-inclusive HR practices affect work engagement. The results highlight the positive relationship between age-inclusive HR practices and work engagement. Age-inclusive HR practices can foster work engagement via age-diversity climate and POS. In addition, diversity beliefs strengthen the impact of age-inclusive HR practices on POS and subsequent work engagement. We believe that our study has crucial implications for building an inclusive workplace through age-inclusive HR practices and thus to improve employee work engagement.

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