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Age separation and voluntary turnover: Asymmetric effects for collective turnover rates and individual turnover intentions depending on age

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Abstract

The aging population implies a wider age range within a workforce, increasing the risk of age diversity as separation (the clustering into age-based subgroups), which is considered a turnover stimulator. We provide a new theoretical perspective to age diversity and turnover research, arguing that age separation may not only increase turnover through perceived age discrimination (i.e., a self-categorization perspective), but can also reduce it through increased perceived belongingness (i.e., a social identity perspective). Following the idea of asymmetric diversity effects, we propose the workforce's average age as a crucial moderator. A longitudinal sample of 2,393 Belgian organizations (2012–2015) reveals that firm-level age separation stimulates firm-level collective voluntary turnover, but only in firms with an older average age (Study 1). Data from a representative sample of 4,764 employees from six European countries are consistent with the idea that perceived age separation stimulates aging workers' turnover intention through increased perceived discrimination and reduced belongingness, and reduces younger workers' turnover intention through increased belongingness (Study 2). These findings support that age diversity conceptualized as separation is not as unmistakably detrimental for turnover as previously assumed and affects younger and older

employees and workforces differently. From a practical perspective, understanding the role of age in the age separation–turnover relationship may help organizations to prevent the loss of valuable knowledge through the departure of both older and younger employees.

KEYWORDS
age discrimination, age separation, asymmetric effects, belongingness, voluntary turnover

1 | INTRODUCTION

Because of the rapid aging population trend, many firms are challenged with an aging workforce. Additionally, many older employees (have to) delay their retirement, expanding the workforce's age range (Kunze et al., 2021). This also increases the risk of age separation or the clustering of the workforce into age-based subgroups (Harrison & Klein, 2007). As age-based subgrouping can reduce social integration and cohesion at work (O'Reilly et al., 1989; Wagner et al., 1984), age separation potentially stimulates employees' desire to leave the firm (Godthelp & Glunk, 2003; Heavey et al., 2013; Schneid et al., 2016). Because voluntary employee turnover causes an unexpected loss of valuable human capital, which is harmful and costly for firms (Hancock et al., 2017; Hom et al., 2017), a clear understanding of the age separation–voluntary turnover link is important (Schneid et al., 2016).

The current literature has not developed such a cohesive theoretical understanding. At the individual level, age is considered an embedding force as individuals tend to be more settled in their professional and personal lives and have developed investments associated with tenure (Rubenstein et al., 2018). Aggregated at the organizational level, the workforce's average age conforms to a similar negative relationship with turnover rates (Heavey et al., 2013). However, age is not merely an individual characteristic; the effects of age in the workplace involve complex perceptual, interpersonal, and intergroup dynamics (O'Reilly et al., 1989). Though explicit theoretical grounding is missing, scholarship in this vein suggests that because age separation is likely associated with differences in beliefs and value systems that create conflict, it stimulates employee turnover (Heavey et al., 2013; Schneid et al., 2016; Tsui et al., 1992). This dynamic can be grounded in *self-categorization theory* (Turner, 1987), arguing that age separation makes employees categorize themselves and others into age-based in- and out-groups (De Meulenaere et al., 2016; Harrison & Klein, 2007) that hold negative stereotypes and discriminate against one another (Kunze et al., 2011), ultimately stimulating voluntary turnover (Griffin et al., 2016; Schneid et al., 2016).

We challenge the prevailing perspective that age separation stimulates turnover. The effects of age separation emerge from affective, behavioral, and cognitive processes between and within groups (Carton & Cummings, 2012; Harrison & Klein, 2007). Whereas the social categorization processes relied upon the alienation between separated age groups, using a *social identity* lens (Chattopadhyay et al., 2004; Tajfel & Turner, 1979, 1986), we suggest that age separation could potentially reduce employee turnover through higher perceived belongingness–the extent to which employees positively identify themselves with an in-group within the firm (Hornsey & Hogg, 2000; Shore et al., 2011). Research has shown that employees in age-separated work units identify with their age group rather than with the team or workforce as a whole (Chattopadhyay et al., 2004; Hogg & Terry, 2000; Liebermann et al., 2013). Employees in age-separated workforces can identify with age peers (Carton & Cummings, 2012; Sammarra et al., 2021) and dissociate from colleagues that are very different in age. Thus, age separation may foster their belongingness to a positive and distinct age-based social identity (Hornsey & Hogg, 2000), potentially reducing their willingness to leave (Avery et al., 2008; Shore et al., 2011; van Knippenberg & van Schie, 2000).

Additionally, we build on the concept of asymmetric diversity effects (Chattopadhyay, 1999; Chattopadhyay et al., 2004) to argue that our two proposed mediation routes between age separation and turnover, that is, increased perceived discrimination and belongingness–are potentially asymmetric for members of different ages. Because negative age stereotypes mainly persist for aging employees (Posthuma & Campion, 2009), older employees are not only more sensitive to age discrimination compared to their younger colleagues, they also tend to develop a negative age-based identity, triggering them to dissociate themselves from their age peers as a self-protective or defensive motivation strategy (Chattopadhyay et al., 2004; de Hoog, 2013). Therefore, age separation is potentially more likely to trigger perceived age discrimination and less likely to stimulate a sense of belonging for older workers than for younger employees with a more positive age-based identity. We, therefore, introduce workforce age as a potential moderator for both conceptual routes between workforce age separation and turnover.

We completed two complementary studies to investigate the age separation–turnover relationship and the moderating role of age. First, using a longitudinal database linking employee- and firm-level information of 2,393 Belgian firms (2012–2015), we examine the interplay between workforce age separation and average age in predicting organizational-level collective employee voluntary turnover (Study 1). Second, for an examination of our theorized mechanisms—perceived age discrimination and belongingness—we used a representative dataset of 4764 employees from six European countries to test how perceived age separation affected the turnover intention of employees depending on their age (Study 2).

This paper extends current research on age diversity and turnover in multiple ways. Thus far, diversity scholars have primarily relied on a self-categorization perspective on age separation, resulting in an over-simplified, often pessimistic view on its implications (Chattopadhyay et al., 2004; Harrison & Klein, 2007; Sammarra et al., 2021). We introduce a social identity perspective to shift this consensus and test if workforce age separation indeed increases perceptions of age-related discrimination and turnover or could be associated with perceptions of belongingness and reduced turnover. By integrating these perspectives, we introduce a positive perspective on age separation and potentially separation of other demographics, too, thereby extending the current view that age separation stimulates turnover (Leonard & Levine, 2006; Schneid et al., 2016). In addition, age has been primarily considered an embedding factor of turnover, that is, older employees are less likely to quit (Rubenstein et al., 2018)–and is most commonly treated merely as a control variable in turnover research (Godthelp & Glunk, 2003). Using an asymmetrical diversity perspective (Chattopadhyay, 1999), we show that the role of age is more fundamental and complex: workforce age helps explain firm-level relationships between age separation and turnover rates, and individual age helps explain how employees experience and respond to perceived age separation. Understanding the role of age is also practically relevant as it informs several aspects of age and age separation in the workplace that may help organizations to prevent the loss of valuable knowledge through the departure of both older and younger employees. For example, we show that workforce age separation relates differently with voluntary turnover rates in older compared to younger workforces, and that older and younger employees perceive age discrimination and belongingness differently when faced with age-based subgroups at work.

2 | THEORY AND HYPOTHESES

2.1 | Age separation and employee turnover

Age diversity can be meaningfully conceptualized in three ways; as separation (i.e., the clustering of the workforce into distinct age groups), variety (i.e., the uniform spread of employees over a rich number of ages), and disparity (i.e., the disproportionate age distribution in which one employee is much older than the rest; Harrison & Klein, 2007). These concepts refer to different age distributions that need different operationalizations and are associated with different theoretical consequences (De Meulenaere et al., 2016; Harrison & Klein, 2007). To date, most studies have conceptualized and measured age diversity as separation. For example, the five most cited articles on age diversity from the last

fifteen years in management research have all used separation measures and arguments to explain the effects of age diversity on team (Hoch et al., 2010; Nishii & Mayer et al., 2009; Wegge et al., 2008) and company performance (Kunze et al., 2011, 2013). To give a more structured view on the focus on age separation in past age diversity research, we performed a short but systematic research review illustrated in Table 1.[1] The review first indicates that in 11 of the 16 studies, age diversity was conceptualized and/or measured as separation, emphasizing the focus on age diversity as separation in the literature. Second, nine out of the 11 studies on age separation found a harmful effect on team- or firm-level processes and performance indicators, including age discrimination (Kunze et al., 2011, 2013) and turnover (Kunze et al., 2021; Riekhoff et al., 2020).

Popular concepts explaining these harmful effects are the organizational demography approach (Pfeffer, 1983) and the relational demography approach (Tsui et al., 1992).[2] Both assume that age differences affect employees' social integration, influencing their work-related behaviors (Chattopadhyay et al., 2004). As such, diversity researchers (e.g., O'Reilly et al., 1989; Schneid et al., 2016; Wagner et al., 1984) and turnover scholars (e.g., Heavey et al., 2013) agree that a separation perspective on age diversity is useful, including for considering turnover as an outcome. An age-separated workforce creates disparities in employee beliefs and values that harm the quality of relations at work (Heavey et al., 2013), complicate communication (Wagner et al., 1984), and create conflicts (Jehn et al., 1999), which in turn might affect turnover.

A limited number of empirical studies support this negative link between age separation and turnover. Three decades ago, several scholars (e.g., Jackson et al., 1991; Wagner et al., 1984; Wiersema & Bird, 1993) found that age separation in executive teams leads to higher turnover rates. In their recent meta-analysis, Schneid et al. (2016) identified a positive relationship between age diversity conceptualized as age separation and turnover based on eight studies. A meta-analysis of the predictors of collective turnover (Heavey et al., 2013) shows that age diversity increased employee turnover, based on information from three studies of top management teams. More recently, Riekhoff et al. (2020) found that firm-level age separation stimulates individuals' labor market exit for a large-scale Finish sample. Finally, Kunze et al. (2021) established an indirect relationship between firm-level subjective age separation and turnover intention through the reduction of bonding social capital (see Table 1). These studies corroborate our assumption that age separation is associated with turnover, but they exclusively reveal that age separation stimulates turnover. The potential beneficial effects of age separation for reducing turnover have been systematically neglected.

To explain how the firm-level effects of age separation on turnover can unfold, we apply two theoretical perspectives–self-categorization theory (Tajfel & Turner, 1979) and social identity theory (Hornsey & Hogg, 2000; Tajfel & Turner, 1986). Although interrelated, these perspectives provide distinct implications regarding age separation and turnover. As both perspectives build on the notion of subgroups in the workplace, they are consistent with our age separation view, which assumes that the workforce splits up in age-based subgroups (Harrison & Klein, 2007). In the extreme, maximum age separation means that the workforce is composed of two equally-sized subgroups that are extremely different from one another, for example, when half of the firm members are 20 years old and the other half are older than 60 years (De Meulenaere et al., 2016). Such age separation makes age-related differences between subgroups and similarities within age groups highly salient (Carton & Cummings, 2012; De Meulenaere et al., 2016; Harrison & Klein, 2007), providing the basis for the competing self-categorization and social identity implications for collective turnover processes in organizations.

2.1.1 | Self-categorization perspective

Building on self-categorization theory (Tajfel & Tuner, 1979), it is plausible that age separation can stimulate employee turnover. Research has shown that employees of different ages systematically differ in values, beliefs (Smola & Sutton, 2002), and preferences (Carstensen, 1991). According to self-categorization theory (Tajfel & Turner, 1979), in age-separated workforces in which age differences are very salient (De Meulenaere et al., 2016; Harrison & Klein, 2007), in- and out-group classifications based on age are likely to occur (Chattopadhyay, 1999; Kunze et al., 2011). A

TABLE 1 Web of science published studies examining the effects of age diversity in the field of management (2010–2021)

Authors	Conceptualization	Measurement	Level	*N*	Effect
Backes-Gellner and Veen (2013, HRMJ)	Not specified	*SD (and CV)*	Organization	15,000	(−) firm productivity
Choi et al. (2017, IJHRM)	Not specified	*SD*	Organization	256	(−) innovative climate
De Meulenaere et al. (2016, JOB)	Separation Variety	*Polarization index* *Blau*	Organization	5,892	(−) labor productivity (for separation measure) (+) labor productivity (for variety measure)
De Meulenaere and Kunze (2021, HRM)	Variety	*Blau*	Organization	3,336	(+) labor productivity
Gerpott et al. (2021, IJRHM)	Not specified	*SD*	Work group	18	(0) knowledge sharing (0) learning outcome
Kunze et al. (2011, JOB)	Separation	*SD*	Organization	128	(+) perceived age discrimination climate (−) collective affective commitment (indirect) (−) performance (indirect)
Kunze et al. (2013, JMS)	Separation	*SD*	Organization	147	(+) negative age discrimination climate (−) organizational performance (indirect)
Kunze et al. (2021, JOB)	Separation	*SD*	Organization	96	(−) social capital (+) turnover intention (indirect) (−) engagement (indirect)
Lee and Kim (2020, HRM)	Variety	*Entropy index*	Organization	189	(−) relational coordination (0) operating profit (0) firm competitiveness
Li et al. (2021, JAP)	Variety	*Blau*	Organization	3,888	(+) Human capital (+) Social capital (+) Organizational performance (indirect)
Li et al. (2011, HRM)	Variety	*Entropy index*	Organization	68	(+) ROA (0) Employee productivity (sales per employee)
Liebermann et al. (2013, JOOP)	Separation	*4-item scale*	Individual	1,214	(−) health of young and old employees (0) health of middle-aged employees

(Continues)

TABLE 1 (Continued)

Authors	Conceptualization	Measurement	Level	*N*	Effect
Riekhoff et al. (2020, WAR)	Separation	*SD*	Multilevel (age separation measured on the firm-level)	35,576	(+) labor market exit of older workers (53 to 68 years old)
Seong and Hong (2018, HRMJ)	Separation	*SD*	Work group	99	(−) performance (curvilinear) (−) organizational citizenship behavior (curvilinear)
Seong et al. (2015, JOM)	Not specified	*SD*	Work group	116	(+) perceived supplementary fit in the team (+) perceived complementary fit in the team
Sung and Choi (2021, IJRHM)	Variety	*Standardized Blau*	Organization	178	(0) innovation (but positive for high-tech firms)

Note. $N = 16$.

significant implication of this social clustering is that it "produces prototype-based depersonalization of self and others" (Hogg & Terry, 2000: 123). Specifically, employees define themselves by the positive attitudes they ascribe to their own age group while emphasizing negative age stereotypes toward other age groups (Kunze et al., 2011). Examples of such negative stereotypes are that younger employees are disloyal and older employees slow and resistant to change (Snape & Redman, 2003). Justified or not, the presence of such stereotypes sets the stage for age-based discrimination between age groups (Kunze et al., 2011; Posthuma & Campion, 2009), such as lower communication and cooperation (Godthelp & Glunk, 2003) and mutual distrust (O'Reilly et al., 1989).

When employees feel unfairly treated because of their age, they have been shown to feel undervalued, rejected, and socially excluded (Griffin et al., 2016; Kunze et al., 2011), and they may adopt a defensive motivation leading to ever greater attention to negative group-related information (de Hoog, 2013). This generates multiple negative attitudes like poor commitment to the firm and colleagues (Kunze et al., 2011; Snape & Redman, 2003), reduced work engagement (Bayl-Smith & Griffin, 2014), and reduced identification to the firm (Snape & Redman, 2003). Beyond work-related outcomes, perceived discrimination also has been associated with workplace stress (Luo et al., 2012), reduced emotional and physical health (Pavalko et al., 2003), and depression (Pascoe & Richman, 2009). It makes sense that in firms in which workforce members suffer from these negative experiences, employees are more likely to leave (Godthelp & Glunk, 2003; Griffin et al., 2016; Schneid et al., 2016). In line with this assumption, Griffin et al. (2016) empirically demonstrated in a longitudinal Australian sample that perceived age discrimination resulted in actual job withdrawal.

Although we discuss many of these processes regarding effects on individual employees, they relate to firm-level turnover in at least two ways. One is that personal turnover decisions directly translate into unit-level turnover rates; a phenomenon that increases individual turnover increases total turnover as well. Another is that the self-categorization perspective is grounded into in- and out-group classifications and age-based social clustering. These processes do not only affect the turnover of individual employees; perceptions of unfair treatment based on age-subgroup membership might spread throughout organizations (Kunze et al., 2013) via contagion (Salanova et al., 2005) and socialization (Schneider, 1987). For similar reasons, Heavey et al. (2013) classified age diversity in terms of the quality of workgroup relationships in their meta-analysis of collective turnover. They argued that age diversity would be associated with disparities in beliefs and values that would generate conflict and ultimately result in higher collective turnover (and found corrected r with collective voluntary turnover = .19, k = 3 studies). Therefore, from a self-categorization perspective, we hypothesize that workforce age separation can increase collective employee voluntary turnover, leading to the following hypothesis:

Hypothesis 1a. Organizational-level age separation increases collective voluntary employee turnover.

2.1.2 | Social identity perspective

Diversity scholars have also drawn from social identity theory (Tajfel & Turner, 1986) in hypothesizing about the effects of age separation (e.g., De Meulenaere et al., 2016; Kunze et al., 2011). Whereas the general assumptions of social identity and self-categorization theories overlap—they both imply that age differences trigger the formation of in- and out-groups based on age—their theoretical focus is different (Hornsey & Hogg, 2000). Specifically, the self-categorization perspective focuses on harmful intergroup processes, whereas the social identity perspective focuses on why social categorizations occur (Hogg & Terry, 2000)–that is, people's fundamental desire for a positive social identity through their belongingness to a distinct social in-group (Sammarra et al., 2021; Shore et al., 2011). This calls for a different and ultimately more nuanced view on the link between age separation and turnover.

According to social identity theory (Tajfel & Turner, 1986), employees in age-separated firms can build their social identity on their membership in the firm or in their age group (Chattopadhyay et al., 2004; Liebermann et al., 2013; Sammarra et al., 2021). The greater the age-based dissimilarities, the more likely firm members will target their age

group as a source of identification, that is, this enables them to form a more distinct and, thus, stronger social identity (Brewer, 1991; Chattopadhyay et al., 2004; Liebermann et al., 2013; van Knippenberg & van Schie, 2000). This is most likely in highly separated firms in which employees have many colleagues with similar age-based values and beliefs, while they also experience strong dissimilarities with colleagues that are much younger or much older (Liebermann et al., 2013; Sammarra et al., 2021). By emphasizing differences with members of the out-group and similarities with the in-group, for example through positive in-group stereotyping and negative out-group stereotyping and discrimination, employees can build a distinct, positive identity around their age (Hogg & Terry, 2000; Hornsey & Hogg, 2000).

In sum, from a social identity perspective, age separation gives employees a context in which they can identify strongly with a subgroup of similarly aged peers. The high sense of belonging resulting from this age group membership makes employees willing to maintain their in-group membership, rendering them less likely to leave the firm (Avery et al., 2008; Randel et al., 2018; Shore et al., 2011; van Knippenberg & van Schie, 2000). Again, we think that these processes are not limited to individual employee turnover decisions but translate to firm-level turnover. Individual turnover decisions necessarily aggregate into unit-level turnover. Additionally, the social identity perspective is inherently grounded in-group identification processes that are likely to develop as a collective phenomenon via contagion processes (Salanova et al., 2005) and socialization (Schneider, 1987). Thus, we can formulate the alternative hypothesis that age separation may reduce turnover from a social identity perspective:

Hypothesis 1b. Organizational-level age separation decreases collective voluntary employee turnover.

2.2 | Asymmetric implications of age separation

Our competing hypotheses show that age separation in organizations comes with a trade-off between perceived age discrimination (between age subgroups) and perceived belongingness (to the age-based in-group). To provide additional nuance and insight to the nature of the age separation–turnover relationship, we use the concept of asymmetric diversity effects (Chattopadhyay, 1999; Harrison & Klein, 2007; Liebermann et al., 2013) to argue that the relationship differs for employees of different ages. Thus, we assume that whether age separation is associated with age-related discrimination and with higher turnover (Hypothesis 1a) or is associated with a sense of belonging and with lower turnover (Hypothesis 1b), depends on the general age composition of the workforce. Two firms can have similar levels of age separation, but the separated age groups may be located differently across the entire continuum of ages. For example, one firm with two equally sized subgroups of employees aged 20 and 40, and the other firm with two subgroups of employees aged 40 and 60. Although both firms have the same level of age separation, the first one has a younger workforce, that is, the members of the young and the old subgroups are much younger than the members of young and old subgroups in the second firm. From an asymmetric effects perspective, we can assume that age separation in older workforces (i.e., in workforces in which members of both subgroups are relatively old) creates different effects than age separation in younger workforces (i.e., in workforces in which members of both subgroups are relatively young).

The idea behind asymmetric effects is that people of different ages differ in constructing a positive social identity around their age (Chattopadhyay, 1999; Sammarra et al., 2021; Zacher et al., 2019). Although age-based stereotypes exist against both younger and older employees (Kunze et al., 2011; Snape & Redman, 2003), multiple studies indicate that most negative stereotypes target the oldest age groups (Finkelstein et al., 1995; Gordon & Arvey, 2004). For example, more senior employees are systematically considered less productive, less flexible, more resistant to change, harder to train, and more costly, despite empirical evidence that fails to support most of these stereotypes (Posthuma & Campion, 2009). Justified or not, the persistence and dominance of negative stereotypes toward older employees will likely sensitize them more than their younger colleagues to age-based discrimination within the workplace (Chattopadhyay, 1999; de Hoog, 2013). Thus, the older the 'old' subgroup is in an age-separated workforce, that is, the older

the workforce is on average–the more salient age-based stereotypes are that stimulate perceptions of age discrimination and turnover-related behaviors (cf. Hypothesis 1a).

As a result of the negative age-related stereotypes permeating organizational life, especially members from relatively old age-based subgroups might perceive their age-based social identity as being threatened (Branscombe et al., 1999). Group members can respond in various ways to identity-related threats, including defending their social identity or, on the contrary, adjusting their own in-group and out-group perceptions, stereotyping, and identification (Branscombe et al., 1999; De Hoog, 2013). We argue that members of older subgroups in age-separated workplaces will react by adjusting rather than defending. This is because people generally avoid being associated with a group that is associated with an unfavorable social identity (Ellemers et al., 1997). Especially in age-separated workforces in which negative stereotypes towards older workers prevail, older employees are less likely to build their social identity around their age (Liebermann et al., 2013), that is, they will be more likely to hold a negative age-based identity (Chattopadhyay et al., 2004; Zacher et al., 2019). This may trigger older members to dissociate themselves from their age group, rather than identify with them, as a self-protective strategy to maintain a positive general social identity (Chattopadhyay et al., 2004; Weiss & Lang, 2012). For example, they may adopt the younger age group's values and beliefs or even denigrate those of their own age group (Chattopadhyay et al., 2004; Zacher et al., 2019). In line with this thought, Weiss and Lang (2012) found for a sample of 68 respondents older than 65 years that they psychologically dissociated more from their age group as negative age-based stereotypes became more salient. On the contrary, younger subgroups—who are less associated with negative age-related attributes—might feel superior to the negatively perceived older age group, such that identifying with their own age-based in-group will satisfy their need for a positive social identity (Liebermann et al., 2013; Tajfel & Turner, 1986). This is also in line with Chattopadhyay's (1999) finding that age dissimilarity positively affected the self-esteem of younger but not older employees.

The notion of 'aged heterogeneity' (Nelson & Dannefer, 1992) provides an additional argument why older age groups are less likely than younger groups to build a strong and positive social identity based on age. It suggests that older groups are much more heterogenous than younger groups, because they have had more time to be influenced by multiple different environmental factors and to develop unique abilities and preferences (Bal & Boehm, 2019; Kooij et al., 2008). This heterogeneity further hinders older subgroups to build a strong social identity based on age, whereas the homogeneity in younger subgroups facilitates the positive identification with age peers.

In sum, the potential to build a positive age-based social identity is more favorable for younger than for older subgroups. Thus, we expect that the mitigating effect of age separation on turnover through increased perceived belongingness (i.e., Hypothesis 1b) is more likely to occur in younger than older workforces. Age separation is more likely for older workforces to trigger perceptions of age-based discrimination and withdrawal as one strategy for coping with identity threats (i.e., Hypothesis 1a). As the average age of the workforce captures the difference between relatively young and old workforces with age separation, we hypothesize:

Hypothesis 2. Workforce average age moderates the relationship between age separation and voluntary employee turnover. The older the workforce, the more likely age separation will be positively related with turnover; the younger the workforce, the more likely age separation will be negatively related with turnover.

3 | METHOD STUDY 1

3.1 | Sample study 1

We used a longitudinal linked employer-employee database constructed from two data sources (2012–2015) to test our hypotheses.[3,4] First, SDWorx Belgium, an international company that generates HR and payroll software and services provided us with demographic employee information from more than 38,000 private Belgian firms. This

allowed us to calculate the average age and the level of age separation within these organizations. In line with previous diversity studies (e.g., Grund & Westergaard-Nielsen, 2008), we included firms with at least 20 employees *and* for which we have information for at least 20 employees to avoid biased calculations of separation (Biemann & Kearney, 2010). Because many small companies are included in the database (e.g., more than 18,400 of the companies employ only five employees or fewer), about 13 percent of the firms had 20 employees or more ($N = 5175$) and, thus, remained included. Second, for this selection of firms, we collected supplementary firm-level information on the collective voluntary turnover rates (and other relevant variables like firm size, age, and industry) via BEL-first, a comprehensive database comprising annual financial accounts of all Belgian organizations. We included firms that appeared in both databases and for which we have information on all variables. Moreover, as part of the data cleaning process for our turnover variable, we removed another eight percent of the firm observations (see voluntary turnover measure below). This resulted in a final sample of 2,393 firms (2012–2015),[5] which is almost 11 percent of the entire population of private Belgian organizations with at least 20 employees. We compared the key organizational characteristics (firm size, firm age, profitability, and industry) between our sample and the population sample of firms with at least 20 employees (see Appendix 1). The descriptive comparison indicates that we have a representative sample of Belgian firms.[6]

3.2 | Measures study 1

3.2.1 | Employee voluntary turnover

Following multiple turnover scholars (e.g., Allen et al., 2010; De Winne et al., 2019), we measured firm-level voluntary turnover by dividing the number of full-time equivalent firm members that left the firm at their own initiative by the total number of full-time equivalent employees. To ensure that our measure captures *voluntary* turnover, it excludes departures due to (early) retirement, dismissal, and the end of a fixed-term or replacement contract.[7] In line with other authors (e.g., De Meulenaere et al., 2021; De Winne et al., 2019), who also used the BEL-first data warehouse for retrieving turnover information, our turnover variable had several outliers (with values up to 160). Similar to De Winne et al.'s (2019) approach, we cleaned our turnover variable in two steps. First, we removed firms that did not accurately register the inflow and outflow of their workforce. To check this, we calculated for each firm the deviance between the reported number of employees in a given year from the reported number of employees in the previous year minus the number of departures plus the number of incoming employees in the current year. We excluded firms when they reported a deviation greater than 10 percent (i.e., 3 percent of our observations). Second, we removed the top 5 percent of turnover values (De Winne et al., 2019). Our sample's resulting average voluntary turnover rate is 12 percent, but there is wide variability across firms (between 0 and 53 percent). We took the logarithm of this measure to account for the remaining skewness.

3.2.2 | Firm-level age separation

Our conceptualization of age diversity as separation requires a measure that considers (1) the extent to which employees cluster themselves into few, equally sized age groups, and (2) that are very different in age. In line with previous age diversity research (De Meulenaere et al., 2016), we used Esteban and Ray's (1994) index of polarization of ages, because this index considers both properties. It is calculated as $ER_{age} = \sum_{i=1}^{N}\sum_{j\neq i}^{N}(\pi_i^{1+\alpha}\pi_j|a_i - a_j|)$. π_i and π_j reflect the share of employees with age i and j, respectively. Thus, ER_{age} increases when organizational members become more clustered into two age groups, that is, it is maximal if $\pi_i = \pi_j = .5$. $|a_i - a_j|$ is the age difference between all pairs of employees. ER_{age} thus increases as employees become more different from one another in terms of age. α is the

polarization sensitivity parameter, which determines how sensitive the measure is to the clustering in age groups and can take values between 0 and 1.6. As the formation of subgroups is key to our conceptualization of age diversity as separation, our choice of α should be sufficiently high. Esteban and Ray (1994) systematically analyzed the desired behavior of their index to narrow down the range of potential values for α to [1, 1.6].[8] The closer to 1.6, the more weight is given to the clustering into subgroups, and the less weight is given to the age difference between these age groups. We set α equal to 1 to ensure that our measure gives weight to both the formation of subgroups and the difference between these subgroups. Note, however, that our findings are robust for higher values of α, that is, when we give more weight to the clustering of the organizational workforce into age groups.

3.2.3 | Workforce age

We want to capture the difference between firms with similar levels of age separation but with age groups located differently on the possible age range between 18 and 65 years. For example, imagine two age-separated firms, one with two equally sized subgroups of members of 20 and 40 years old, respectively, and the other firm with two subgroups of employees of 40 and 60 years old. Both firms have similar levels of age separation, but the latter has an older workforce. To capture this difference, we calculated the average age of all firm members (Grund & Westergaard-Nielsen, 2008). In firms with similar levels of age separation but a different average age, the firm with the lowest average age is characterized by younger subgroups on average. Similarly, the firm with the highest average age has older subgroups. Note that our findings are similar when we used other operationalizations of workforce age, such as the median age and the share of employees older than 40 (analyses available on request).

3.2.4 | Controls

Following previous research, we considered several firm-level control variables that may influence the implications of age separation and/or affect voluntary collective turnover. First, we controlled for *firm size* measured by the number of employees. Research has established that it reinforces the effects of age diversity in general and separation in specific (Boehm, Dwertmann et al., 2014; De Meulenaere et al., 2016; Wegge et al., 2008). More people involved implies a greater visibility of age differences and fewer opportunities for personalized employee interactions that can prevent members from categorizing the workforce into age-based subgroups (Boehm, Dwertmann et al., 2014). Therefore, larger firms could be more prone to the social-categorization outcomes of age separation, such as perceived discrimination (Boehm, Dwertmann et al., 2014) and reduced belongingness. For the same reason, we also included the *share of part-time employees*. Part-time workers interact less with their colleagues than full-time members (Lepak & Snell, 1999). Thus, the share of part-time workers potentially influences how a workforce reacts to age separation. Third, we also control for *knowledge intensity*, measured as the share of workers with a masters' degree, because research has shown that knowledge workers tend to have more employment opportunities outside of their organization (Allen et al., 2010), making them more likely to leave when their sense of belongingness or discrimination is affected by the level of age separation within their workforce. Fourth, we control for the *average share of male workers*, as males tend to be more embedded in the job as they experience fewer work-family-related issues than female workers (Heavey et al., 2013). Finally, we controlled for the firm's *industry* through four dummies reflecting the primary sector, the production sector, the tertiary sector (commercial services), and the quaternary sector (noncommercial services), and we included the observation *year* (2012–2015).

3.3 | Data analysis approach study 1

We used a panel regression technique ('xtreg' in STATA) that is robust for the intra-firm correlation between repeated firm observations and has been used in previous studies (e.g., De Meulenaere et al., 2016). We favored a random-effects design with robust standard errors over a fixed-effects approach for four reasons. First, we are interested in the between-organization effects rather than the within-firm effects of organizational age separation on collective turnover over a limited period of 4 years (Bell & Jones, 2015). Second, our dataset is unbalanced (i.e., one in three firms is not represented in all years), complicating the testing of within-organization effects (Fredrickson et al., 2010). Third, the Intraclass Correlation Coefficient (*ICC1* = .93) shows that firms in our dataset vary little in their level of age separation over the four observation years, such that testing for within-firm effects would make little sense. Fourth, the Hausman test ($\chi^2 = 17.93$; $p = .118$) confirms that a random-effects approach is more adequate than a fixed-effects approach. As random effects regressions do not deliver model fit statistics in STATA, we reran all analyses with maximum likelihood estimators and requested the likelihood ratio (LR) statistics for that purpose (Nakagawa & Schielzeth, 2013).

4 | RESULTS STUDY 1

In Table 2, we show the minima, maxima, means, and standard deviation of all variables used in our analyses, as well as their pairwise correlations. To avoid multicollinearity issues, we mean-centered the interaction terms, that is, age separation and average age.

Table 3 reveals the regression coefficients. Model 1 includes control variables only and reveals that firm size ($B = -.01$; $p < .001$) and the share of men ($B = -.04$; $p < .001$) are negatively associated with firm-level voluntary turnover rates. Firms in the tertiary ($B = .02$; $p < .001$) and quaternary sectors ($B = .10$; $p < .001$) are associated with higher voluntary turnover as compared to firms in secondary industry activities (i.e., production firms). Model 2 shows that the average age, our moderator, is negatively related to voluntary turnover ($B = -.01$; $p < .001$).

In Model 3 , we test for the competing effects of firm-level age separation. Hypothesis 1a argued that age separation would be positively associated with turnover, whereas Hypothesis 1b assumed a negative association. The positive and significant coefficient of age separation ($B = .06$; $p < .001$) reveals that higher levels of age separation are associated with higher levels of collective voluntary turnover, in favor of Hypothesis 1a.

In Model 4 , we test for the moderating effect of the average age of the workforce. In Hypothesis 2, we assumed that age separation was more likely to increase (decrease) voluntary turnover rates for firms with older (younger) workforces. The positive and significant interaction coefficient ($B = .01$; $p = .017$) supports Hypothesis 2. The higher the average age, the stronger the positive association between age separation and voluntary turnover.

To interpret this interaction effect, we estimated the regression coefficients of age separation for firms with low, mean, and high average age. Table 4 reports the simple slopes, revealing that age separation stimulated voluntary turnover only in firms with a mean ($B = .06$; $p < .001$) to high average age ($B = .08$; $p < .001$). The higher the average age, the stronger the link between age separation and turnover. Based on these simple slopes, we calculated that in firms with a high average age (i.e., 44.68; the mean average age plus one *SD*), an increase in age separation with .50 was associated with an increase in voluntary turnover by 4.08 percent (= exp[.50*.08]). In firms with a mean average age (i.e., 40.58), the same increase in age separation resulted in a turnover increase of 3.05 percent. In firms with low average age (i.e., 36.48), firm-level age separation did not significantly affect voluntary turnover ($B = .03$; $p = .133$). Based on these simple slopes, we calculated that age separation starts stimulating voluntary turnover from an average age of 37. In total, 18 percent of the firms in our database have an average age below this threshold, implying that for almost one in five firms, age separation had no effect on firm-level voluntary turnover.

TABLE 2 Minima, maxima, means, standard deviations, and correlations of variables used (Study 1)

Variable	Min	Max	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Voluntary turnover rate (log)	0	.43	.11	.10	–											
2. Firm size (log)	3.00	9.10	4.26	.89	−.16***	–										
3. Part-time (%)	0	.98	.15	.13	.09***	.05***	–									
4. Knowledge intensity	0	1	.41	.37	.08***	−.03**	−.05***	–								
5. Gender (% men)	0	1	.71	.22	−.16***	.01	−.58***	−.28***	–							
6. Industry: Primary	0	1	.005	.07	−.01	.03*	−.03*	−.04***	.06***	–						
7. Industry: Secondary	0	1	.39	.49	−.18***	.17***	−.16***	−.33***	.34***	−.05***	–					
8. Industry: Tertiary	0	1	.59	.49	.13***	−.16***	.07***	.34***	−.28***	−.08***	−.95***	–				
9. Industry: Quaternary	0	1	.02	.14	.16***	−.04**	.34***	−.02	−.25***	−.01	−.11***	−.17***	–			
10. Age separation[A]	−.21	.92	0	.15	.16***	−.76***	−.02	−.05***	.03*	−.03*	−.12***	.11***	.02	–		
11. Average age[A]	−16.53	15.29	0	4.10	−.28***	.03*	.11***	−.24***	.16***	.04**	.20***	−.19***	−.06***	.04***	–	
12. Age separation* Average age[A]	−3.21	6.51	.03	.60	.06***	−.07***	.01	.04***	−.04**	−.02	−.09***	.10***	−.03*	.11***	.01	–

Note. Linked employer-employee data ($N = 2{,}393$).

[A]The variables that constitute the indirect and interaction effects (i.e., age-status link, age discrimination climate, and environmental dynamism) are mean centered.

*$p < .05$.

**$p < .01$.

***$p < .001$ (two tailed).

TABLE 3 Regression coefficients revealing the relationship between organizational age separation and firm-level voluntary turnover and the moderating role of average age (Study 1)

	Model 1	Model 2	Model 3	Model 4
Predictor	**B (SE)**	**B (SE)**	**B (SE)**	**B (SE)**
Intercept	.19*** (.01)	.17*** (.01)	.14*** (.01)	.14*** (.01)
Firm size	−.01*** (.00)	−.02*** (.00)	−.01** (.00)	−.01** (.00)
Part-time (%)	−.00 (.02)	.05*** (.02)	.05** (.02)	.05** (.02)
Knowledge intensity	.00 (.00)	−.00 (.00)	−.00 (.00)	−.00 (.00)
Gender (% men)	−.04*** (.01)	−.02 (.01)	−.02 (.01)	−.02 (.01)
Primary sector	.01 (.02)	.02 (.02)	.02 (.02)	.02 (.02)
Tertiary sector	.02*** (.00)	.01*** (.00)	.01*** (.00)	.01*** (.00)
Quaternary sector	.10*** (.01)	.08*** (.01)	.08*** (.01)	.08*** (.01)
Average age		−.01*** (.00)	−.01*** (.00)	−.01*** (.00)
Age separation			.06*** (.02)	.06*** (.02)
Age separation*Average age				.01* (.00)
χ^2	352.00***	593.99***	606.86***	638.91***
LR test (model compared to)		245.17*** (1)	19.64*** (2)	26.87*** (2) 7.23** (3)

Note. Dependent variable: logarithm of firm-level voluntary turnover. Source data of a Belgian HR consultancy firm with expertise in HR, payroll, and tax and legal activities, financial data from annual reports. Robust standard errors, clustered for firm ID, are in parentheses. Observation years are controlled for. $N = 2{,}393$.
*$p < .05$.
**$p < .01$.
***$p < .001$ (two tailed).

TABLE 4 Simple slopes of the effect of age separation on voluntary turnover for low, mean, and high average age (Study 1)

Average age	$B_{AgeSeparation}$	SE	z	p > |z|	95% Conf. Interval	
μ − 1SD (36.48)	.03	.02	1.58	.114	−.01	.07
μ (40.58)	.06***	.02	3.50	.000	.02	.09
μ + 1SD (44.68)	.08***	.02	4.54	.000	.05	.12

Note. Dependent variable: logarithm of firm-level voluntary turnover. Source data of a Belgian HR consultancy firm with expertise in HR, payroll, and tax and legal activities, financial data from annual reports. Robust standard errors are clustered for firm ID. Observation years are controlled for. $N = 2{,}393$.
*$p < .05$.
**$p < .01$.
***$p < .001$ (two tailed).

5 | STUDY 2

The findings of Study 1 support our hypothesis that age separation in the workplace has different implications for firms with older and younger workforces. However, the administrative data used in Study 1 did not allow us to test underlying mechanisms. Using employee-level data on a representative set of 4,764 employees from six European countries, we can test for the assumption that younger and older employees react differently to firm-level age separation in terms of perceived age discrimination and belongingness which, in turn, affects their turnover intention. Building on

our previous theorizing, we expect two mediation routes between perceived workplace age separation and employees' turnover intention. First, from the social categorization view, we argue that the more employees perceive their workplace as clustered in age groups (i.e., age separation), the more likely they will experience age discrimination by members of the other age group, stimulating their intention to leave. As older employees are more prone to negative stereotypes against their age group, the positive link between perceived age separation and turnover intention will be stronger for older than for younger workers.

Hypothesis 3. Perceived workplace age separation increases employees' turnover intention through perceived age discrimination. This mediation is stronger for older than for younger employees.

Second, following the social identity perspective, we alternatively argue that higher perceived age separation might induce employees' belongingness to their age peers who are omnipresent, which reduces their willingness to leave. Building on our theoretical argument that younger employees are more likely to build a positive social identity around their age, we expect this negative age separation-turnover intention link will occur especially for younger employees:

Hypothesis 4. Perceived workplace age separation decreases employees' turnover intention through perceived belongingness. This mediation is stronger for younger than for older employees.

6 | METHOD STUDY 2

6.1 | Sample study 2

To test our individual-level hypotheses, we retrieved individual-level data from the Europe LTD survey. This questionnaire is part of a broader research project of SDWorx Belgium, the HR company that provided us with the data for Study 1. It deals with topical work-related issues relevant to employee engagement, involvement, and motivation. The survey is carried out annually to a representative set of European employees–2,500 Belgium employees and 500 employees from Germany, the Netherlands, Austria, France, and the UK. In 2018, we could add a few questions for this study's purpose, which enabled us to measure perceived age separation, discrimination, and belongingness for a representative set of 5,000 European employees. Including respondents that provided information on all variables led to a final sample of 4,764 European workers. As the data was collected anonymously, no ethical screening was needed.

6.2 | Measures study 2

6.2.1 | Turnover intention

Respondents rated two questions on a scale of 1 (completely disagree) to 6 (completely agree): "I intend to stay with the organization for a long, indeterminate period" and "I would prefer to remain in the organization, even if I received a comparable offer from outside" (Mone, 1994). We reverse coded the items and calculated their mean ($\alpha = .87$). Higher values imply a lower willingness to remain and, thus, a greater turnover intention.

6.2.2 | Perceived workplace age separation

Based on previous measurements of perceived diversity (e.g., Homan & Greer, 2013; Jehn & Bezrukova, 2010), we asked respondents to rate the question "To what extent do your colleagues split into subgroups based on age at work?"

on a scale of 1 (to a very low extent) to 6 (to a very high extent). Note that a single-item measure is common in research on perceived (age) diversity (e.g., Cunningham, 2007) and is especially appropriate for our study as we narrowed down our scope to one particular aspect of age diversity, that is, the formation of age-based subgroups which is the core idea behind our conceptualization of age diversity as separation (Shemla et al., 2016).

6.2.3 | Perceived age discrimination

Several scales for perceived age discrimination exist (Bayl-Smith & Griffin, 2014; Kunze et al., 2011). In this study, we are interested in employees' perceived age discrimination from their colleagues, rather than from their managers or firm (e.g., through promotion decisions). One question in the survey allowed for measuring this dimension of age discrimination–that is, respondents had to rate on a scale of 1 (completely disagree) to 6 (completely agree) "I have not yet experienced any age discrimination by other employees in my organization" (reverse scored).

6.2.4 | Perceived belongingness

Past studies have either used a single-item scale, asking respondents to rate their general sense of belongingness with their colleagues (or team, supervisor, or firm, depending on the focus, e.g., Thau et al., 2007), or a specific set of items related to their research question (e.g., Den Hartog et al., 2007). Combining both approaches, we first asked respondents to directly rate on a scale of 1 (completely disagree) to 6 (completely agree) the classic statement "I belong with my colleagues". We also added two extra statements that allowed us to assess employees' general sense of belongingness in the workplace: "I feel strongly involved in the organization" and "I feel at home in the firm". Cronbach's alpha was .86.

6.2.5 | Controls

We included similar control variables as in Study 1 (translated to the individual level), to the extent they were available in the dataset. We included a dummy variable for *educational level*, indicating whether respondents were highly educated, that is, had a bachelor or master's degree (value 1) or not (value 0). We also included dummies for *gender*, *part-time* (vs. full-time) work, and the country of residence (Austria, Belgium, France, Germany, The Netherlands, and the UK). We were not able to control for the size or industry of the firm respondents worked for as these variables were filled out very inaccurately by the respondents (i.e., 16 percent of the respondents could not guess the size and/or industry of their organization).

6.3 | Data analysis approach study 2

To test for the proposed moderated mediation effects in Hypotheses 3 and 4, we ran OLS regressions with the SPSS PROCESS macro (Model 7), developed by Preacher and Hayes (2004). This application follows Baron and Kenny's (1986) procedure for analyzing mediators and it uses the Sobel test to estimate significance. The PROCESS macro also provides bias-corrected 95% confidence intervals based on 5,000 bootstrapped samples, thereby eliminating the unrealistic assumption of normally distributed indirect effects (MacKinnon et al., 2004).

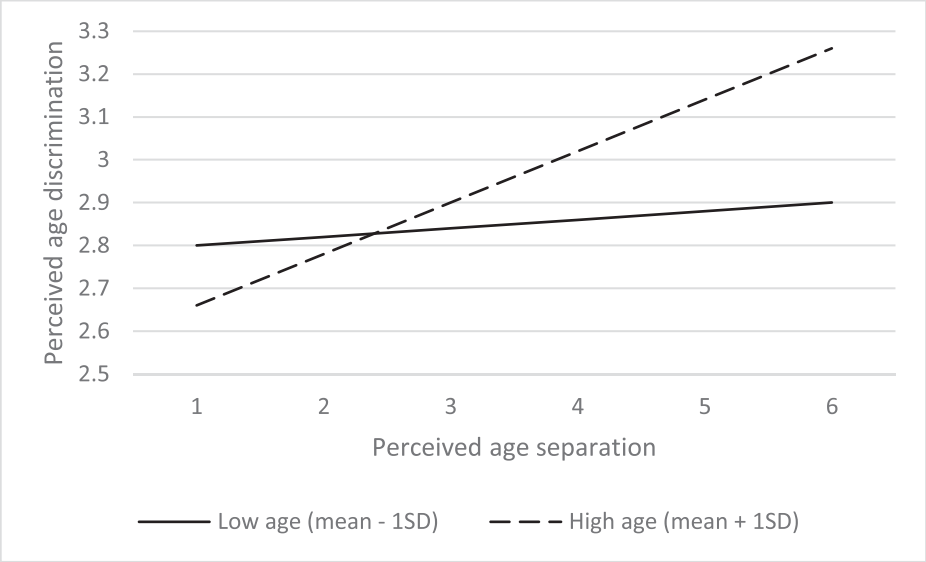

FIGURE 1 The moderating role of age on the effect of perceived age separation on perceived age discrimination (Study 2).

6.4 | Results study 2

Table 5 shows the minimum, maximum, mean, and standard deviation of each variable and the correlations between them. Tables 6 and 7 provide the regression coefficients for the moderated mediations we proposed in Hypotheses 3 and 4.

Hypothesis 3 proposed that perceived age separation increases employees' turnover intention through perceived age discrimination, particularly for older employees. Table 6 shows a positive, significant interaction effect between employee age and perceived age separation on perceived age discrimination ($B = .004$; $p = .000$). To interpret this interaction, we requested the simple slopes of perceived age separation for different conditional values of employee age, that is, low age (i.e., 32.94), mean age (45.03), and high age (57.12). This revealed that age separation was positively associated with perceived age discrimination for older-aged ($B = .12$; $p = .000$) and mean-aged ($B = .07$; $p = .000$) employees, but not for younger employees ($B = .02$; $p = 331$). Figure 1 illustrates this interaction. Next, Table 7 reveals the indirect conditional effects of employees' perceived age separation on their turnover intention. Perceived age separation stimulates turnover intention through perceived age discrimination, particularly for employees with high age (indirect effect = .007; 95% *CI* = [.00; .01]). For employees with a mean age (indirect effect = .004; 95% *CI* = [.00; .01]), the indirect effect size is smaller. For young employees, age separation does not have an indirect effect on turnover intention through discrimination (indirect effect = .001; 95% *CI* = [−.00; .00]). These findings and the significant index for moderated mediation all support Hypothesis 3.

Hypothesis 4 proposed that perceived age separation decreases employees' turnover intention through perceived belongingness, particularly for younger employees. Table 6 reveals a negative interaction effect between age and perceived age separation on perceived belongingness ($B = -.004$; $p = .000$). In line with our expectations, the conditional effects show that age separation increased perceived belongingness for young employees ($B = .04$; $p = .008$) but decreased perceived belongingness for employees with high age ($B = -.04$; $p = .007$). Figure 2 illustrates this interaction effect and clearly shows opposite effects for older and younger workers. Table 7 further reveals that perceived age separation stimulated turnover intention through reduced perceived belongingness for older employees (indirect effect = .04; 95% *CI* = [.01; .06]), but reduced turnover intention through increased perceived belongingness for younger employees (indirect effect = −.04; 95% CI = [−.06; .-01]), all empirically supporting Hypothesis 4.

TABLE 5 Minima, maxima, means, standard deviations, and correlations of variables used (Study 2)

Variable	Min	Max	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Turnover intention	1	6	2.69	1.52	–													
2. Education	0	1	.38	.49	.01	–												
3. Gender	1	2	1.48	.50	.02	.05***	–											
4. Part-time	1	2	1.24	.43	.01	−.10***	.29***	–										
5. Country: Austria	0	1	.10	.30	.10***	−.14***	−.01	−.02	–									
6. Country: Belgium	0	1	.50	.50	−.15***	.10***	−.00	.01	−.33***	–								
7. Country: Germany	0	1	.10	.30	.03*	−.10***	−.00	−.02	−.11***	−.33***	–							
8. Country: France	0	1	.10	.30	.11***	.04*	.01	−.10***	−.11***	−.33***	−.11***	–						
9. Country: The NL	0	1	.10	.30	−.03*	−.01	.00	.10***	−.11***	−.34***	−.11***	−.11***	–					
10. Country: UK	0	1	.10	.30	.05**	.05***	.01	.01	−.11***	−.34***	−.11***	−.11***	−.11***	–				
11. Age	18	75	45.47	12.07	−.12***	−.09***	−.20***	.06***	−.13***	−.33***	−.06***	−.13***	−.15***	−.08	–			
12. Perceived age separation	1	6	2.74	1.67	.02	.02	−.01	−.01	.08***	−.28***	.10***	.04*	.12***	.12	−.17***	–		
13. Perceived age discrimination	1	6	2.42	1.59	.41***	−.06***	−.02	−.01	.08***	−.09***	.04**	.06***	−.05***	.01	−.02***	.06***	–	
14. Perceived belongingness	1	6	4.41	1.36	−.74***	.03	.00	.01	−.08***	.07***	−.03	−.10***	.10***	−.01	.01	.01	−.49***	–

Note. Individual-level data ($N = 4{,}764$) from six countries (Belgium, Austria, The Netherlands, Germany, UK, and France).
*$p < .05$.
**$p < .01$.
***$p < .001$ (two tailed).

TABLE 6 Moderated mediation analysis part 1 (Study 2)

Perceived age discrimination					
Predictor	**B**	**SE**	**t**	**p**	**95% CI**
Constant	3.11***	.12	14.40	.000	[2.69; 3.54]
Perceived age separation	−.12*	.05	−2.33	.020	[−.22; −.02]
Age	−.01**	.00	−2.92	.004	[−.02; −.00]
Perceived age separation * Age	.004***	.00	3.82	.000	[.00; .01]
Education	−.16***	.05	−3.31	.001	[−.25; −.06]
Gender	−.03	.06	−.70	.483	[−.13; .06]
Part time	.04	.06	.63	.529	[−.08; .15]
Country: Belgium	−.43***	.08	−5.18	.000	[−.59; −.27]
Country: Germany	−.21*	.10	−2.08	.038	[−.41; −.01]
Country: France	−.07	.10	−.68	.495	[−.27; .13]
Country: The Netherlands	−.54***	.10	−5.32	.000	[−.74; −.34]
Country: UK	−.22*	.10	−2.14	.033	[−.42; −.02]
Conditional effects of perceived age separation on perceived age discrimination					
Age	**B**	**SE**	**T**	**p**	**95% CI**
M − 1SD (32.94)	.02	.02	.97	.331	[−.02; .06]
M (45.03)	.07***	.01	4.99	.000	[.04; .10]
M + 1SD (57.12)	.12***	.02	6.24	.000	[.08; .16]
Perceived belongingness					
Predictor	**B**	**SE**	**t**	**p**	**95% CI**
Constant	3.46***	.18	19.12	.000	[3.10; 3.81]
Perceived age separation	.16***	.04	3.72	.000	[.08; .25]
Age	.01***	.00	3.21	.001	[.00; .02]
Perceived age separation * Age	−.004***	.00	−3.87	.000	[−.01; −.00]
Education	.07	.04	1.73	.083	[−.01; .15]
Gender	.04	.04	1.10	.273	[−.04; .12]
Part time	−.06	.05	−1.28	.200	[−.15; .03]
Country: Belgium	.47***	.07	6.69	.000	[.33; .60]
Country: Germany	.15	.08	1.83	.067	[−.01; .32]
Country: France	−.06	.09	−.71	.478	[−.23; .11]
Country: The Netherlands	.64***	.08	7.53	.000	[.47; .80]
Country: UK	.18*	.09	2.17	.030	[.02; .35]
Conditional effects of perceived age separation on perceived belongingness					
Age	**B**	**SE**	**t**	**p**	**95% CI**
M − 1SD (32.94)	.04**	.02	2.64	.008	[.01; .08]
M (45.03)	−.00	.01	−.04	.965	[−.02; .02]
M + 1SD (57.12)	−.04**	.02	−2.70	.007	[−.08; −.01]

Note. Individual-level data ($N = 4{,}764$) from six countries (Belgium, Austria, The Netherlands, Germany, UK, and France).
*$p < .05$.
**$p < .01$.
***$p < .001$ (two tailed).

TABLE 7 Moderated mediation analysis part 2 (Study 2)

Turnover intention					
Predictor	**B**	**SE**	**t**	**p**	**95% CI**
Constant	5.94***	.10	58.25	.000	[5.74; 6.14]
Perceived age separation	−.02	.01	−1.87	.060	[−.04; .00]
Perceived age discrimination	.06***	.01	5.32	.000	[.04; .08]
Perceived age belongingness	−.80***	.01	−62.88	.000	[−.83; −.78]
Education	.13***	.03	4.16	.000	[.07; .19]
Gender	.08*	.03	2.52	.012	[.02; .14]
Part time	−.01	.04	−.22	.823	[−.08; .06]
Country: Belgium	−.25***	.05	−4.81	.000	[−.36; −.15]
Country: Germany	−.06	.07	−.88	.378	[−.19; .07]
Country: France	.06	.07	.94	.335	[−.07; .19]
Country: The Netherlands	.09	.07	1.44	.150	[−.03; .22]
Country: UK	.06	.07	.91	.362	[−.07; .19]
Direct effect of perceived age separation on turnover intention					
	B	**SE**	**t**	**p**	**95% CI**
	−.02	.01	−1.87	.062	−[.04; .00]
Conditional indirect effects of perceived age separation through perceived age discrimination					
Age	**Boot B**		**Boot SE**		**Boot 95% CI**
M - 1SD 32.94)	.001		.00		[−.00; .00]
M (45.03)	.004		.00		[.00; .01]
M + 1SD (57.12)	.007		.00		[.00; .01]
Index of moderated mediation					
	Index		**Boot SE**		**Boot 95% CI**
	.00		.00		[.00; .00]
Conditional indirect effects of perceived age separation through perceived belongingness					
Age	**Boot B**		**Boot SE**		**Boot 95% CI**
M - 1SD (32.94)	−.04		.01		[−.06; −.01]
M (45.03)	.00		.01		[−.02; .02]
M + 1SD (57.12)	.04		.01		[.01; .06]
Index of moderated mediation					
	Index		**Boot SE**		**Boot 95% CI**
	.00		.00		[.00; .00]

Note. Individual-level data ($N = 4{,}764$) from six countries (Belgium, Austria, The Netherlands, Germany, UK, and France).
*$p < .05$.
**$p < .01$.
***$p < .001$ (two tailed).
The bootstrapping procedure does not generate p-values for the conditional indirect effects. The significance for these estimates are not indicated by asterisks but can be derived from the confidence intervals.

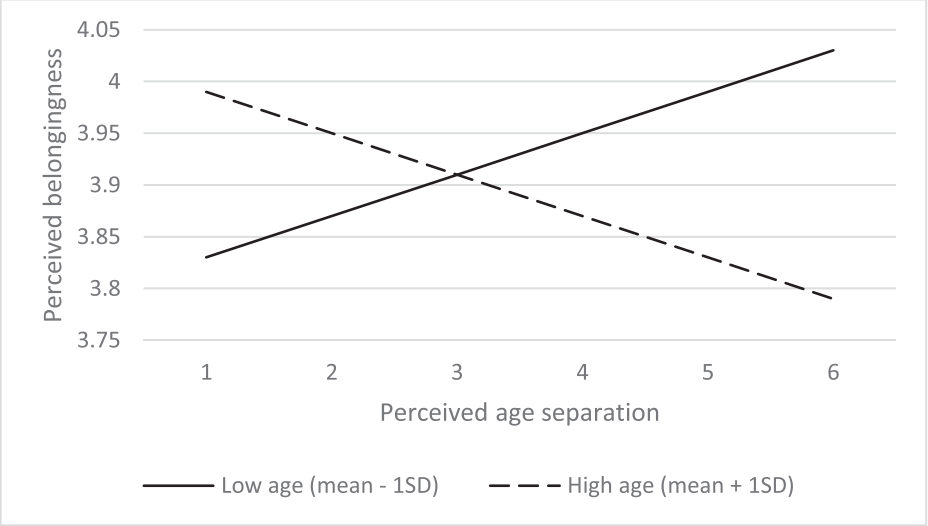

FIGURE 2 The moderating role of age on the effect of perceived age separation on perceived belongingness (Study 2).

7 | DISCUSSION

We researched how workforce age structures relate to employee turnover. We proposed that workforce age separation (the clustering of the workforce into age-based subgroups) might relate differently to collective voluntary turnover depending on the average age of the employees in a company, and to individual turnover intention depending on employees' age. Theoretically, such an age asymmetric effect is grounded in social identity (Tajfel & Turner, 1986) and social categorization theories (Turner, 1987), suggesting that age separation induces different perceptions and processes for employees of varying age groups. Supporting these assumptions, we find in Study 1 that age separation increases employee turnover, but only if predominately older employees are present in the workforce in a longitudinal sample of 2,393 Belgian firms. Supporting our theoretical reasoning, Study 2 shows in a sample of 4,764 employees from six European countries that perceptions of age separation increase the turnover intentions of older employees via perceptions of age discrimination and reduced belongingness. In contrast, younger employees have lower turnover intentions via impressions of increased belongingness.

7.1 | Theoretical implications

First, we add to the literature on the consequences of age diversity in organizations. This literature stream has considerably evolved in recent years (De Meulenaere et al., 2016; De Meulenaere & Kunze, 2021; Grund & Westergaard-Nielsen, 2008; Kunze et al., 2011, 2013), but it has so far focused on performance consequences of age diversity. In line with limited meta-analytic evidence (e.g., Schneid et al., 2016), we show that workforce age separation is associated with turnover intentions and turnover behavior. We also add a substantial piece to the theoretical puzzle to explain why age diversity conceptualized as separation might simultaneously increase and decrease turnover outcomes and potentially other organizational outcomes. We integrate self-categorization theory (Turner, 1987) and social identity theory (Tajfel & Turner, 1986) to argue that age separation can spur negative perceptions of discrimination for some employees, but positive impressions of belongingness for others. In particular, Study 2 shows that these opposite effects of age separation can be triggered contingent on the employees' age. Especially the potential of age separation to instill positive consequences—a higher sense of belongingness and lower turnover—for at least some employees (i.e., younger employees in this study) is a valuable addition to the age diversity literature on both the team and organizational level. This literature stream has so far mainly conceptualized and reported adverse effects of age separation,

relying on a self-categorization perspective. The positive effects have been predominantly ascribed to another, different type of age diversity, that is, age variety (De Meulenaere et al., 2016; Harrison & Klein, 2007). As such, our research shifts consensus in this literature to a more nuanced view of age-separated workforces by integrating a social-identity perspective, beyond the currently dominating social-categorization perspective. In addition, based on our findings that older and younger employees experience and react differently to age diversity as separation, one could expect that age diversity as variety, too, can be experienced differently by people of different ages, which can be interesting to examine in future research.

Note that our novel, positive perspective on separation through a social-identity lens is also relevant beyond the field of age diversity research, as the separation of other variables than age (such as tenure, gender, religion, values, and beliefs) has also been associated with harmful outcomes only (Çakmaklı et al., 2017; Harrison & Klein, 2007). It is, therefore, an interesting future research avenue to examine whether other separation types can also create potential benefits for employees and organizations.

Furthermore, we also add to the literature on the asymmetric effects of diversity in the workplace (Chattopadhyay, 1999; Chattopadhyay et al., 2004). This literature has shown that diversity effects do not occur uniformly for all demographic groups, but that depending on demographic characteristics, some individuals might be more vulnerable than others in diverse settings. Our research shows that this idea can help us to understand the implications of age diversity for turnover, and potentially other performance outcomes such as labor productivity, too. Future studies might build on this new perspective on age diversity research and can further extend the asymmetric perspective on age diversity in organizations. One example might be the potential to design and implement interventions in age-diverse organizations (e.g., awareness or development training programs) tailored to employees' specific perspectives from different age groups (Burmeister et al., 2021). Younger employees might profit from receiving support and training that further strengthens their age identity, and older employees should be supported to reduce their subjective perceptions of age separation or discrimination.

In particular, it might seem counterintuitive at first glance that based on our results, older workforces are associated with more actual voluntary turnover in age-separated workforces (Study 1) and older employees have a greater intention to quit their job in age-separated firms (Study 2). Prior meta-analyses have shown a small but negative effect of employee age on voluntary turnover (e.g., Healy et al., 1995; Ng & Feldman, 2009; Rubenstein et al., 2018) as well as a negative relationship of the workforce's average with turnover rates (Heavey et al., 2013). These prior findings are explained by assuming that older employees might be less willing to quit their job, given their lower attractiveness in external labor markets resulting in potential age-based discrimination in finding a new job (Weller, 2007). Our study sheds light on an important boundary condition, that is, workforce age separation–which may induce even older workers to consider quitting their job by creating low perceptions of belongingness and high perceptions of age discrimination.

Finally, we also contribute to turnover theory. So far, this literature has considered age as an embedding factor for turnover, suggesting that older employees are less likely to quit (Rubenstein et al., 2018). Moreover, many studies in the turnover literature have treated age merely as a control variable (Godthelp & Glunk, 2003; Jackson et al., 1991) without building and testing theoretical ideas for the potential effect of employees from different age groups leaving the organization. Our research shows that complex collective social-identity and social-categorization processes need to be considered to make sense of the role of age in turnover processes. We hope that our study also inspires turnover researchers to explore complex age diversity dynamics for understanding their role for employees quitting their job.

7.2 | Practical implications

Our research suggests age diversity should be actively managed by executives and Human Resource (HR) functions in companies. More precisely, we show that age separation has practical relevance for turnover rates of employees

in Study 1. Specifically, though age separation has little to no effect on voluntary turnover in young workforces, we found that in older workforces, an increase in age separation of .50 results in an increase in voluntary turnover of more than four percent (Study 1). As research has established that voluntary turnover generates unanticipated procedural disruptions and productivity losses (Hancock et al., 2017), companies should develop strategies to lower the adverse effects of an age-separated workforce. Based on Study 2, the resources might be best focused on older employees, as they tend to have a higher likelihood of perceiving age discrimination and low belongingness when age subgroups are formed in their workplace, increasing their turnover intentions. For example, firms can create an age-inclusive climate through HR practices (e.g., training and career paths) free of any age bias (Boehm, Kunze et al., 2014), offer diversity and inclusion training to all age groups of employees (Burmeister et al., 2021), or implement inclusion training programs to reduce age bias behaviors of top executives which sensitizes them for their role modeling behavior (Kunze et al., 2013).

Furthermore, we would advise companies to install early warning systems to track age biases in their workforce before it affects turnover behavior. If certain employees are already leaving the company, it is already too late to start any intervention. That can be especially critical if experienced employees with essential implicit knowledge for processes, services, and products, leave the company (DeLong & Storey, 2004). Companies should, therefore, have a clear idea about the age structure of their workforce and regularly perform aging profile analyses and projections (Jonker & Ziekemeier, 2005). Additionally, we would recommend that questions about perceptions of age discrimination should be part of regular employee surveys to have the potential to intervene before employees ultimately leave the company.

Finally, the extent to which employees perceive age separation will play a major role in the effects on turnover, as employees' behavior is driven by their perception of reality rather than reality (Shemla et al., 2016). Therefore, besides monitoring the actual age distribution, which is not easily malleable, employers could benefit from trying to forge perceived age separation. Management interventions and training programs that are oriented to facilitate collaboration and interactions between employees of different age groups (e.g., mentoring and reverse mentoring; Burmeister et al., 2021) could be especially beneficial to reduce perceptions of age separations in workforces that are clustered in distinct age groups.

7.3 | Limitations and future research directions

Our study has multiple strengths, such as testing our hypotheses in two large-scale datasets from Belgium (Study 1) and six European countries (Study 2). Furthermore, we combine evidence from a large administrative and longitudinal dataset in Study 1, enabling us to test the existence of our hypothesized relationships on an organizational macro-level, with a survey-based dataset that allows us to test our theoretical arguments in more detail.

Still, our research has some limitations that need to be considered when interpreting our findings. One is that we were unable to test our complete model at one time with these data. That is, Study 1 assessed firm-level relationships with turnover rates without capturing the discrimination and belongingness mechanisms, and Study 2 captured these mechanisms at the individual level but assessed turnover intentions without capturing actual turnover behaviors. In the first place, this may raise questions about alternative explanations. For example, Study 1 does not directly and unequivocally demonstrate that the oldest group of workers is responsible for the higher collective turnover rates in age-separated workforces. Without the insights from Study 2, one could also speculate that the workforce's youngest (and not the oldest) employees are the ones leaving. For example, to the extent that older employees occupy the highest ranks in the firm, especially younger workers might want to change jobs to get better and faster chances to advance in their career. Though the link between age and hierarchical status is reducing (Kunze & Menges, 2017) and the combination of the findings of Study 1 and study 2 allow us to have confidence in the proposed mediation routes between age separation and turnover (Spector, 2019), we cannot rule out such alternative explanations as neither of our research designs allow us to strongly infer the direction of causality proposed by our theory and hypotheses.

Additionally, Study 2 relied on cross-sectional self-report data. Although common method bias cannot explain our moderation results (Siemsen et al., 2010), we cannot rule out the possibility of a common method biasing our direct effect and mediation findings in Study 2. The challenges of acquiring the necessary data to comprehensively test all of these processes at multiple levels are significant; nevertheless, we encourage researchers to explore possibilities for exhaustively testing the proposed model. Relatedly, in addition to the firm level and individual level processes we study, our theorizing considers complex inter- and intra-group dynamics that we only capture through the lens of individual perceptions of these dynamics (e.g., perceived age discrimination). Thus, a fruitful avenue for future research would be to capture in-group and out-group stereotyping and identification processes in age-separated firms.

Relying on large-scale third-party data provided some measurement constraints. For example, we were limited in Study 2 to a very small number of questionnaire items, compelling us to rely on single-item or very short measures to tap perceived discrimination, belongingness, and turnover intentions. Although we believe these measures reflect existing literature and adequately capture the intended construct domains, future research that can study these relationships with multi-item scales that have received additional construct validation evidence could provide additional confidence regarding the conclusions.

Beyond these methodological suggestions for improvement, some theoretical avenues are worthwhile to explore in future research. One is to investigate contextual factors other than firms' average age influencing the extent to which age-based social categorization and social identity mechanisms predict turnover in age-separated workforces (Guillaume et al., 2017). For example, building on intergroup contact research (Pettigrew, 1988), the more employees of different age groups (need to) interact and collaborate, the more they will get to know colleagues of different ages, reducing stereotypes they hold about one another. Therefore, factors determining how much time employees spend in the firm (e.g., the share of full-time workers) and how many opportunities they have to genuinely connect with employees from a distinct age group (e.g., the degree to which teams are diverse in ages and to which inter-age collaborations are required) can reduce perceptions of discrimination and, ultimately, the stimulating effect of age separation on turnover, even for older employees. Relatedly, it is relevant to examine if factors related to the age-inclusive climate or policy of a firm (e.g., through age-inclusive trainings or interventions) affect how age separation is related to (older) employees' turnover behavior. Additionally, future research can test if our findings can also be observed in societies that are less affected by the demographic change (e.g., Asian or African countries) and in which older workers might have a stronger tendency to accept unsatisfying work. Finally, we show that the high sense of belonging for young employees in age-separated workforces reduces their turnover intention. It is interesting to study to what extent this high belongingness for one group of employees but not for other employees might backfire in terms of organizational performance, for instance through seriously reduced interaction and collaboration with out-group members.

7.4 | Conclusion

With this study, we integrate the literatures of age diversity and turnover of organizational workforces. In two complementary empirical studies, we find support for our hypotheses that an age-separated workforce has both the potential to increase and to lower employee turnover, depending on employees' age. Through a combination of social categorization and social identity perspectives, we argue and show that two different conceptual routes—increased discrimination for older employees and increased belongingness for younger employees—exist for the relationship between age separation and turnover. Our findings imply that the effect of age separation on turnover is asymmetric for different age groups of employees. Organizations can, thus, both profit and suffer from an age-separated workforce. Executives and HR managers are therefore well advised to regularly track their companies' age structures and prevent the appearance of perceptions of age discrimination if age separation is present.

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NOTES

[1] We selected studies registered in the Web Of Science Database using the following four inclusion criteria: (1) search terms "age diversity", "age separation", "age polarization", or "age heterogeneity" in the title; (2) measure age diversity as independent variable (i.e., no meta-analyses or conceptual papers); (3) published between 2010 and 2021; and (4) classified as 'Management' research by the Web of Science. These selection criteria resulted in a set of 16 peer-reviewed age diversity studies.

[2] Note that the organizational demography approach studies diversity on the work unit-level of analysis, whereas the relational demography approach focuses on demographic differences at the dyadic level.

[3] The data used for Study 1 were collected as part of a larger data collection and have been previously used in one other published paper (De Meulenaere & Kunze, 2021).

[4] This study is part of a larger research project funded by the Research Foundation of Flanders (FWO). We performed an ethics self-assessment when we applied for project funding, revealing that no further ethical screening was required.

[5] The total number of firm observations over the four observation years (2012–2015) is 6,844. This implies that not all 2,393 firms are included in the database in every year (i.e., this is an unbalanced panel dataset).

[6] In our study sample, the proportion of firms from the production sector is slightly greater and the share of service sector firms is smaller than in the population sample, probably because service firms are less likely than production firms to outsource their HR services to agencies such as SDWorx, the company that provided us with the data. Note, however, that in both samples, the service sector is the largest industry, followed by the production, retail, construction, and agrarian sectors.

[7] Unfortunately, our data did not allow us to account for the departures of employees due to death. As the data is collected pre-COVID19, we expect that this will have a negligeable impact on our measure.

[8] For $\alpha \geq 1$, the polarization index satisfies the four axioms that Esteban and Ray (1994) identified. For a technical discussion of these axioms and the resulting choice of α, we refer to their seminal paper.

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DATA AVAILABILITY STATEMENT

The SDWorx data used for Study 1 are not publicly available due to privacy restrictions. The BEL-first data used for Study 1 are available in the BEL-first data warehouse [https://belfirst.bvdinfo.com/version-2022120/Home.serv?product = belfirstneo], but restrictions apply to the availability of this data source, which were used under license (obtained via the University of Antwerp) for this study. The LTD Europe survey data that support the findings of Study 2 are owned by a third party, SDWorx Belgium. Data are available from the authors upon reasonable request with the permission of SDWorx Belgium for each separate request.

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APPENDIX

Comparison of key organizational characteristics between study sample and population sample (2012–2015) (Study 1)

	Study sample mean	Population mean
Firm size	116.0	107.5
Firm age	28.4	27.3
Net profit margin before taxes	3.7%	3.5%
Main industry clusters:		
primary (agrarian sector)	0.5%	1.0%
Production	32.5%	20.1%
construction	7.2%	11.2%
retail	23.7%	21.0%
services	36.1%	46.5%
N	6,844	64,050

Note. Source data of BEL-first. Our dataset includes information on 2,393 firms. For this comparison, we used the total number of firm observations over the four observation years (2012–2015), which is 6,844. Note that not all 2,393 firms are included in the database in every year (i.e., this is an unbalanced panel dataset).