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Changes in Employers' ways of dealing with older workers, 2009–2017

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Abstract

Studies suggest that organizations across countries are more likely to send older staff members to early retirement than retain them, but there are signals that employers are increasingly showing support for longer working lives. However, a large-scale, longitudinal perspective on how organizations have reacted to demographic challenges is missing in the literature. In this study we fill this gap and ask how organizations approach older workers, how these approaches change over time, and in which sectors of the economy and in what types of organizations the changes were most profound. Data come from two large-scale employer surveys: 2009 (n=1,077) and 2017 (n=1,358) representative for the Netherlands. We use a three-step group-comparison latent class analysis (LCA) combined with multinomial logistic model.

We distinguish four clusters of organizations based on their practices regarding older workers—those trying to activate and develop their employees (active), focusing on exit measures (exit), implementing all age management practices (all), and practicing no age management (none). We demonstrate a major shift in employers' approaches to aging workforces between 2009 and 2017, with strong decreases in those that offered no age management (47% to 30%) and those focusing on exit measures (21% to 6%), and an increase in active organizations (19% to 52%). That active measures are no longer concentrated in large and developing organizations, but have become standard HR resources tools economy-wide. The greatest increase in active approaches occurred among small entities and knowledge-intensive organizations. By using LCA, we are able to analyse organisations without any specific policies toward older workers, which has not appeared in extant studies. We discuss reasons of the proactive shift in The Netherlands and argue that similar progress in other countries may be expected.

Introduction

        Due to demographic changes, labor markets in developed countries are ageing. Threat of diminishing labor supplies and increasing costs of pension systems has forced governments to implement policies to promote longer working lives, leading to increasing ages of retirement and more complex retirement processes for older individuals. It is often argued that these changes force organizations to adjust their policies and practices to avoid staff shortages and improve a firm's competitiveness (Henkens et al., 2018; Silverstein, 2008; Steenstra et al., 2017; Walker, 2005). Most studies suggest that organizations across countries are more likely to send older staff members to early retirement than retain them (Harper et al., 2006; Van Dalen, Henkens, & Schippers, 2009), but there are signals that employers are moving away from early exit and are instead increasingly showing support for longer working lives (Conen, Henkens, & Schippers, 2014; Moen, Kojola, & Schaefers, 2017). However, a large-scale, longitudinal perspective on how organizations have reacted to such demographic challenges is missing in the literature.

        The employer side of the employment relationship has traditionally received less attention in the literature than the employee side has, though an increasing number of studies on organizational approaches toward an aging workforce has appeared in the literature in recent years. Some such studies focus on human resources (HR) practices for older workers, such as flexible work hours, ergonomic measures, and training (e.g., Conen, Henkens, & Schippers, 2012; Remery et al., 2003), and others investigate broader age management policies or bundles of theme-driven practices, most commonly aimed at accommodation or development (Kooij et al., 2014; Kooij & Voorde, 2015; van Dalen, Henkens, & Wang, 2015). While providing

insights into types of age management, these studies lack a comprehensive view on how

organizations approach the aging workforce generally. For example, whether particular

approaches are concentrated in some segments of the economy, or whether there are specific

groups of organizations that implement different types of approaches simultaneously, are

unknown. All extant studies do not assess an important group of organizations that offer no

specific practices for older workers. Research also offers limited evidence on the evolution of

organizational policies. Panel surveys repeated on the same sample of organizations are missing

in the field, and a longitudinal perspective of cross-sectional research repeated across time is

scarce (Conen, Henkens, & Schippers, 2011).

We fill this gap by addressing two research questions. First, we ask how organizations

approach older workers, with a focus on whether some types of policies are implemented

simultaneously or uniquely, and which organizations do not apply any specific policies. Second,

we examine whether such organizational approaches change over time. By using data from two

large-scale employer surveys, eight years apart, we demonstrate a major shift in employers'

approaches to aging workforces and study for which types of organizations the changes are most

profound.

This study contributes to the literature in three ways. First, to obtain a comprehensive

view of organizational approaches toward older workers, we use latent class analysis (LCA),

which enables us to distinguish clusters of organizations with similar bundles of practices that

are implemented simultaneously (Kooij et al., 2014; Mulders, Henkens, & Schippers, 2015).

LCA allows us to study whether specific approaches are concentrated in some types of

organizations. We are also able to distinguish organizations without any specific policies toward

older workers, which has not appeared in extant studies. Second, we offer a longitudinal

perspective on employers' ways of dealing with older and aging workforces. Most research

assesses employers' HR policies and practices at only one point in time, but a long-term

perspective is necessary to judge the ways employers respond to changing contexts that affect

them (Bohlmann et al., 2018). A longitudinal perspective allows us to study how the prevalence

of different types of employers, based on their implementation of HR policies, has changed over

time, and in which sectors of the economy and in what types of organizations the changes were

most profound. Third, we study changes to employers' practices toward older workers over time

in The Netherlands, a country that is at the forefront of implementing policies to stimulate and

facilitate longer working lives. Retiring early was common until the early 2000s, but

employment in older ages has increased strongly since then. The employment rate for 60 to 64

year olds changed from 22% in 2003 to 51% in 2015, and the average age at labor force exit

changed from 61 in 2006 to 65 in 2018 (Statistics Netherlands, 2019). This extension of working

lives is largely attributable to the Dutch government's policy reforms, such as limiting early

retirement opportunities in 2006 and gradually increasing the pension age from 65 in 2013 to 67

in 2024 (Sonnet, Olsen, & Manfredi, 2014). Although such reforms were largely successful

from a policy perspective, there has been backlash from both employees, who feel forced to

continue working (van Solinge & Henkens, 2017) and employers who feel forced to continue

employing older workers (van Dalen, Henkens, & Oude Mulders, 2019).

Organizational Policies for Older Workers

Types of Approaches and Practices

Organizations approach older workers in different ways, and from a broad perspective,

they either reduce or stimulate work in older ages. Human capital theory provides an economic

framework for analyzing organizational policies. Derived from analysis of relationships between wages and marginal productivity across careers, classic human capital theory assumes that these two factors correlate closely, and that the degree of an individual's general and specific human capital determines marginal productivity (Becker, 1964; Mincer, 1964). At older ages, due to a decrease of skills or lack of investment in human capital, a drop in productivity is likely. Many studies find, however, that older workers earn more than their marginal productivity would suggest, creating a wage-productivity gap (Polachek & Siebert, 1993). From a human capital perspective, organizations that want to avoid such costly gaps can either cut costs by pushing older workers out of employment or invest in human capital development. Most economic studies focus on the former, treating age-related decreases to productivity as unavoidable (Greller & Simpson, 1999). A deferred payment model (Lazear, 1979), explains the gap as the result of a long-term contract between employee and employer; late-career overpayments balance earlier underpayments and thus motivate workers to stay with a company. A functional consequence of this model is retirement, which is necessary when long-term costs exceed profits. According to human capital theory, enhancement of productivity in older ages by investing in training is cost-ineffective because of the proximity of retirement and lower expected returns from investment (Hutchens, 1988). Organizations are thus more willing to train young workers.

Numerous studies of employers' attitudes and organizational approaches accord with assumptions of human capital theory; organizations are reluctant to train older workers, and the early-exit policy has been the most common, easiest, and most accepted solution for dealing with aging employees (Conen et al., 2011; Kooij et al., 2010; Perek-Białas & Turek, 2012; Remery et al., 2003; Van Dalen et al., 2009; van Dalen et al., 2015). Exit policies comprise measures that enable earlier or some form of gradual retirement. Early retirement schemes are in principal

defined by the pension system, but employers might encourage older workers to take this option

by, for example, offering extra benefits or providing administrative support. Gradual retirement

refers to a situation in which a worker engages in paid employment on a limited scale during the

period between full-time work and full retirement. A simple reduction of work hours at the same

job is sometimes called phased retirement. More attention has been paid to partial retirement,

often referred to as bridge employment, which means changing to a different job that has fewer

hours (Beehr & Bennett, 2014). A route into a bridge job often leads through early retirement,

and employers can force such solutions to optimize employment costs and provide more

flexibility (Dingemans & Henkens, 2014).

Psychological and management studies criticize some elements of human capital

theory as being too general and simplistic. Contemporary approaches refrain from

treating individual productivity as the most important worker attribute, and instead either

focus on productivity measured at the organizational level or consider aspects of

individual performance (Ng & Feldman, 2008). The relationship between productivity

and age is not necessarily negative, with strong evidence suggesting it is zero, on

average, and diverse across job types (Sturman, 2003); management and work

arrangements can also increase individual performance at older ages (Silverstein, 2008).

Deferred payment models overestimate the role of long-term work relationships when

accounting for investment return. Younger workers often have greater propensities to

leave an organization unexpectedly, retirement of older workers is a more predictable

event, and distributions of employer-sponsored training often depart from what the

human capital model predicts (Gielen & Van Ours, 2005).

These findings point to HR management as essential to understanding and shaping employment at older ages. Contrary to a cost-reduction, human capital approach, HR management models suggest proactive ways of dealing with potential wage-productivity gaps. Two popular models address the idea behind age management well. The Job Demands-Resources model focuses on adjustments to job demands, job environments, and individual resources to enhance employee performance (Kooij et al., 2010, 2014), and the Ability Motivation and Opportunities model suggests that work at older ages can be facilitated by HR practices that increase employee abilities, stimulate motivation, and provide opportunities to perform (Bal, Kooij, & De Jong, 2013). In line with these models, most organizational policies research regarding older workers distinguishes two proactive approaches—development and accommodation.

The goal of developmental HR is to increase workers' functioning, and employer-provided training is the most common way for workers to improve their human capital (Hansson, 2008), the core element of developmental HR. A common argument is that continuous acquisition and adjustment of workers' skills is as important to extending working lives (Picchio & van Ours, 2013) as improving an organization's productivity and competitiveness (Barabasch, Dehmel, & Loo, 2012). However, as mentioned above, evidence suggests that older people are offered fewer opportunities for training. Besides a cost–benefit calculation, another reason for employers' aversion is prevailing negative stereotypes of older workers regarding their lower willingness and ability to learn (Posthuma & Campion, 2009).

Accommodation policies address the problem of declines to capacities related to aging by adjustment of work environments (Kooij et al., 2014). Some measures might allow working at lower levels (e.g., reducing physical requirements), maintaining the current level of functioning

(e.g., flexible arrangements), or helping workers use their potential (e.g., changing tasks). The

most popular and important accommodative measures include flexible working arrangements

and implementing ergonomic measures (Conen et al., 2012; Van Dalen et al., 2009). Flexible

working times allow employees to co-decide when they start and end their work days, and such

arrangements are commonly used to balance work with leisure activities, private lives, and care

obligations. They also facilitate positive work-related attitudes in older age and might attract

older individuals to an organization (Rau & Adams, 2005). Some research suggests a

relationship between flexible working arrangements and both higher individual performance

(Kelly & Moen, 2007) or firm productivity (de Menezes & Kelliher, 2011). The purpose of

ergonomics is to redesign physical and technological aspects of jobs and work environments to

support health, wellbeing, safety, and productivity in older workers (Truxillo et al., 2012). Many

physical capabilities, including strength, agility, speed of movement, and motor skills, decline

with age, affecting the ability to work and increasing work-related risks and stress. The literature

discusses ergonomic interventions that compensate for such declines, such as improvements to

seating designs, worksite illumination, and safety equipment, and reductions to lifting, carrying,

repetitive tasks, and background noise (Roper & Yeh, 2007).

Factors That Affect Age Management Approaches

Research suggests that the type and scope of age-related policies depend on several

organizational characteristics (Conen et al., 2012; Fleischmann, Koster, & Schippers, 2015;

Moen et al., 2017; Van Dalen, Henkens, & Schippers, 2010; van Dalen et al., 2015). Larger

organizations tend to implement more measures of different types, and those with higher shares

of older employees focus on exit policies but implement small or ineffective active approaches.

Labor-union involvement relates positively to early retirement schemes and accommodation strategies. Organizations in knowledge-intensive and high-skill sectors invest more in development (Cascio, 2019), though not necessarily in older workers. Staff shortages and difficulties with recruitment also encourage organizations to adapt accommodation and development approaches (Taylor et al., 2012).

Methods

Data

Data came from two large-scale surveys conducted among Dutch employers in 2009 (n=1,077) and 2017 (n=1,358). Both surveys were similar in design and focused on personnel policies, HR management, and employment practices regarding older workers, samples were stratified by size and sector. Only organizations from agricultural sectors and those with fewer than 10 employees were excluded from the sample. Poststratification weights were used to correct for sample stratification, so results are representative for the population of Dutch organizations with more than 10 employees. Surveys were sent by post and the 2017 study also featured an online response option. Response rates were the same for both surveys at 23%, which is acceptable during organizational research (Baruch & Holtom, 2008).

Missing Values

In a pooled sample of 2,435 organizations, there were 4.3% observations with no values for all latent class indicators, which were consequently excluded, leaving 2,331 cases for analysis. In the final sample, 186 cases (8%; 40 in 2009 and 146 in 2017) had at least one missing value in covariates of the regression model (between 0.4% for organizational size to 4.3% for recruitment problems). These missing values were imputed iteratively using

multivariate imputation with chained equations (MICE) with additional auxiliary predictors, conditioned on year (50 imputations) and based on the full sample. Imputation and analyses were performed using Stata 15.

Analytical Approach

We used a three-step approach to LCA. During the first step, we estimated the unconditional group-comparison LCA model (grouped by wave) using only indicators of class membership. As the literature recommends, we did not include predictors of membership at the same stage as the classification model to provide more stable categorization (Asparouhov & Muthén, 2014). The group-comparison model was specified so that LCA was conducted on the pooled sample, constraining measurement to be equal in both waves yet allowing for the constant, related to the size of the cluster, to vary by year. This approach allowed us to compare the distribution of clusters between years, ensuring they were measured similarly. We estimated several models using a different number of clusters, and the decision of which solution was best was based on fit measures and theoretical interpretation (Collins & Lanza, 2010; Tofighi & Enders, 2008). During the second step, we used a standard approach to determine each subject's most likely class membership by predicting membership based on the highest probability for all clusters, resulting in a categorical variable. An alternative and commonly recommended approach is crisp membership association, which simultaneously models probabilities of membership in all classes as multiple dependent variables (Asparouhov & Muthén, 2014; Vermunt, 2010). However, for a group-comparison model, the categorical approach is the optimal solution because it allows comparison of the effects of predictors and changes between years. The classification accuracy of the model was satisfactory (i.e., entropy > 0.7), and the structure of clusters by year using the crisp and categorical approach was similar (Appendix

Table A1). During the third step, we included covariates to predict most likely class membership using multinomial logistic regression analysis. A model was estimated separately for each wave, allowing coefficients and error variances to differ by group. To estimate whether the distribution of classes changed between 2009 and 2017 in relation to predictors, we compared predicted probabilities of most likely class membership for pooled-mean values of predictors (Long & Mustillo, 2018).

Measures

Application of policies that address older workers was measured using a list of items that was based on extant research on age-conscious personnel policies (Remery et al., 2003) and applied in other studies (Perek-Białas & Turek, 2012; Van Dalen et al., 2009; van Dalen et al., 2015). During both waves, employers were asked, "Which of these policies are applied in your organization?" (1 if applied; zero if not), for six measures—ergonomic measures, training of older employees, flexible work hours, part-time retirement, gradual retirement, and early retirement (Table 1). These items represent a mix of HR practices concerning development, accommodation, and early exit.

--- TABLE 1 ---

Control Variables

We controlled for several organizational characteristics during multinomial logistic regression analysis, including size, sector, percentage of females, workers 50 years and older, perceived knowledge and training intensity of work, extent to which the organization experienced recruitment problems, and influence of unions on personnel policies (Table 1).

Results

Identification of Clusters

Table 1 shows descriptive information on how many organizations had applied HR practices that address older workers. Between 2009 and 2017, the popularity of most measures changed significantly. Application of proactive practices increased greatly, with the largest change being training of older workers (from 8.1% to 41.5%) and a nearly double increase to ergonomic measures and flexible work hours. Part-time and early retirement practices decreased by more than half, and gradual retirement remained at the same level.

These HR practices served as indicators for the LCA model. Table 2 shows fit statistics for the estimated models with up to six latent classes. To select the optimal solution, we used statistical and theoretical criteria. The most commonly used measures, Bayesian Information Criterion (BIC) and sample size adjusted BIC (SABIC), were lowest for the 4-cluster solution (Tofighi & Enders, 2008). Entropy (0-1) was calculated based on posterior probabilities of membership, with larger values suggesting better latent class separation (Collins & Lanza, 2010: 75). All models demonstrated a similar level of entropy, between 0.7 and 0.78. The Bootstrapped Likelihood Ratio Test (BLRT) suggested no increase to fit between 4- and 5-class solutions (Nylund, Asparouhov, & Muthén, 2007). We considered the number of small (below 10% of organizations in a given year) and very small (below 5%) clusters, which can hinder interpretation and further analyses. The first small cluster appeared in the 4-classes solution, and later their numbers increased. Based on fit criteria, parsimony, and interpretability, the 4-class model offered the best representation of data.

--- TABLE 2 ---

Table 3 shows item-response profiles for the 4-class model, with values representing the average probability that organizations that belonged to that class applied particular HR practices. The first cluster of organizations was characterized by no specific practices regarding older workers (i.e., "none"). The item-response probability was close to zero, except flexible work hours (0.24), which was one of the most popular practices during both waves. The second cluster included organizations that focused on exit practices (i.e., "exit"), with the strongest coefficients for part-time (0.60) and early retirement (0.80). Gradual retirement was estimated to have been applied in 43% of organizations in this class. The third class was labelled "active" because it was characterized by a combination of accommodation (i.e., ergonomic measures and flexible hours, with probability over 0.6) and development (i.e., training, with probability 0.48). The last group was characterized by diverse policy strategies, with application of all practices with high probability (i.e., "all").

--- TABLE 3 ---

Change in the Prevalence of Classes

The four clusters were identified for both waves in the same way by imposing equal measurement, but the parameter that represented their prevalence was unconstrained, which allowed us to investigate whether the size of a cluster changed between 2009 and 2017 (Figure). In 2009, 47% of Dutch organizations belonged to the *none* cluster, but the group significantly decreased ($p < 0.001$) to 30% by 2017. A significant reduction was also observed for the *exit*

class, from 21% to 6%. The share of *active* organizations more than doubled over the period,

from 19% to 52%, and the prevalence of the *all* cluster remained the same at 13%.

--- FIGURE 1 ---

Besides population-level changes, we are also interested in what happened across sectors

and within types of organizations. To address this question, we conducted multinomial logistic

regression analyses on the 4-category variable, indicating most likely class membership. Model

coefficients appear in Table A2, yet due to their complexity, results of a multinomial model are

more accessible in the form of predicted probabilities for cluster membership, shown in Table 4

(Long & Mustillo, 2018). Estimates were for pooled-mean values of predictors. Given the

model's nonlinearity, other reference values produced different predictions, and thus the row

with *Total* values differs from the Figure 1 but led to similar conclusions regarding relative

differences between predictors.

Table 4's rows contain control variables with organizational characteristics for which

probabilities were estimated. There are three columns for each cluster—probability of cluster

membership in 2009 and 2017, and changes across years expressed in percentage points (p.p.).

For example, in 2009, the active approach was applied in 12% of organizations in the service

sector. In 2017, this share changed to 54%, indicating an increase of 43 p.p., which is much

higher than the increase in the industrial sector (24 p.p.) but similar to that in the public sector

(40 p.p.). Prevalence in the *none* group decreased in the service sector from nearly 60% to 32%

(-27 p.p.) but did not change significantly in other sectors.

--- TABLE 4 ---

Exit policies decreased (Column 5) and active policies increased (Column 8) significantly in all types of organizations. Regarding organizational size, the most proactive shift occurred among small organizations, experiencing a 39 p.p. increase to *active* and 22 p.p. decrease to *none* approaches. Particularly meaningful is the latter trend, since the share of small organizations with the *none* approach changed from 60% to 39% in comparison to nearly no change in large organizations from 11% to 14%. Knowledge-intensive organizations increased their *active* approaches by 43 p.p. in comparison to 23 p.p. for non-knowledge-intensive entities, and decreased their *none* clusters by -23 p.p. and -3 p.p., respectively. There was, however, no such effect for training-intensity. Organizations with a strong role of unions experienced a more profound decrease in *exit* strategies (26 pp. vs. 12 pp.). Trends for organizations that had experienced shortages were nearly the same as those that did not, and no clear effect from the share of workers aged 50 or over and women in an organization was evident.

Discussion

Although organizations play a strong role in offering employment opportunities to older workers, it was unclear to what extent they adapted age management practices in response to demographic changes and policy reforms in recent years. We distinguish four clusters of organizations based on their practices regarding older workers—those trying to activate and develop their employees (active), focusing on exit measures (exit), implementing all age management practices (all), and practicing no age management (none). The sizes of these clusters changed dramatically between 2009 and 2017, with strong decreases in those that

offered no age management (47% to 30%) and those focusing on exit measures (21% to 6%),

and an increase in active organizations (19% to 52%).

In comparison to the 2000s, when age management was not a priority for organizations

(Conen et al., 2011), we observed a proactive shift since the *active* cluster comprised more than

half of Dutch organizations in 2017. Active organizations used various accommodative and

developmental measures to adjust jobs and individual resources in ways that stimulated work in

older-age workers. So far, these two types of active policies were largely treated separately (van

Dalen et al., 2015). As this study shows, accommodative practices tended to be implemented

with developmental measures. The great increase in development practices is striking, since for

decades it was common to assume that individual productivity only declined at older ages, and

thus employers were reluctant to train older workers (Karpinska et al., 2015). This study

suggests that in comparison to 2009, the prevalence of training older workers grew by a factor of

five, reaching as much as 41% in organizations by 2017. This change accords with evidence that

suggests The Netherlands experienced one of the greatest improvements in older-age training

attendance in Europe, with the share of people aged 55 to 64 who participated in non-formal

education or training in the previous 12 months rising from 36% in 2007 to 51% in 2016 (Adult

Education Survey, 2016). Such improvements would be impossible without changes to

organizational approaches because opportunities and stimuli provided by organizations are the

driver of training in older age (Hansson, 2008). We demonstrate that training has become a more

common tool for age management.

Combined with a proactive shift, a strong decline in the prevalence of *exit* policies was

also evident, and until recently, they represented primary choices for employers when dealing

with older workers (Conen et al., 2011). This is no longer true in The Netherlands, since the

cluster reduced to only 6% of organizations. Employers use part-time and early retirement measures less often, partly because policy reforms mean that fiscally attractive early retirement opportunities are no longer available to older workers (Sonnet et al., 2014). Another finding is a cluster of organizations that had no policies for older workers. Extant studies commonly neglected this group, but in 2009, it represented the largest cluster, comprising nearly half of Dutch organizations. It remained substantial in 2017, though reduced to 30%, a change that suggests that an increasing number of organizations can no longer ignore demographic challenges and must develop policies that target aging staff members.

Results suggest that *active* measures are no longer concentrated in large and developing organizations, but have become standard HR resources tools economy-wide. The greatest shift in proactive age-management occurred among small entities, an important and populous group that so far was least interested in retaining older workers. Small organizations usually have less-developed management structures and less-diverse workforces. This change is especially significant because it signals a strong supply-driven reaction to the changing labor market. Among knowledge-intensive organizations, the cluster without age management was replaced by the *active* approach. Innovative and high-skill sectors have been primarily interested in younger employees, but with tightening labor markets and increased education of next generations, they recognized older workers as worth investing in and retaining (Barabasch et al., 2012). The *exit* approach reduced in organizations with strong labor unions, a departure from the model in which unions opted for exit routes as safe solutions under risk of mass layoffs (van Dalen et al., 2015).

The proactive shift in organizations' age-management practices was likely the result of four processes (Cascio, 2019; Henkens et al., 2018; Walker, 2005). First, demographic changes in the labor force became a tangible challenge across the entire economy, and employers, aware

of it, reacted accordingly. Faced with an increasing number of older workers in the workforce,

and coupled with the fact that such workers were, on average, more highly educated than

previous cohorts, organizations became accustomed to sustaining older workers' employability

and productivity. Second, organizations reacted to policy reforms. Governments confronted

with demographic challenges realized that early exit from the labor force, which for decades

represented a viable solution, was too risky to social security and health systems. Like many

other countries, The Netherlands cut early retirement opportunities and increased the statutory

retirement age. A need to remain longer in employment increased the return on investment

period for human capital investments. Montizaan, Cörvers, and De Grip (2010) show that a rise

in the expected retirement age had a positive influence on older workers' participation in

development.

Third, increased understanding of the labor market's aging was followed by increased

knowledge about the benefits of age management. Worker retention and development became

crucial to organizations' stability and competitiveness (Armstrong-Stassen & Ursel, 2009;

Barabasch et al., 2012), a conclusion corroborated by qualitative studies (Conen et al., 2014;

Moen et al., 2017). Conen et al. (2014) argue that the debate regarding pension reforms made

employers realize that the extension of working lives was unavoidable. New cohorts entered

older age with different attitudes toward work, and tight labor markets provided them a stronger

position with which to negotiate job requirements. One of these was opportunities for

continuous development, which contributed to more interesting work and higher employability

when changing jobs (Cascio, 2019). Additionally, workplaces were becoming more older-age

friendly, with progress toward counteracting age discrimination (Lahey, 2010). Fourth was an

improving economic situation. The first wave of this study was conducted during an economic

slowdown, and the financial crisis of 2007/2008 was one reason for low participation in adult education, especially among older groups (Munnell & Rutledge, 2013). During crises, demand for work decreases and enterprises consequently cut costs, which stimulates policies focused on exit rather than retention of older workers (Armstrong-Stassen & Cattaneo, 2010).

Some limitations of the current study should be acknowledged. Although we selected several HR practices that demonstrate organizational approaches to age management, other research assesses broader lists of such practices (Kooij et al., 2014; van Dalen et al., 2015). Although the longitudinal perspective used in this study was unique, we were unable to use a panel approach and trace changes at the organizational level, instead relying on population-averaged results. We assess employers in The Netherlands, where organizations provide, on average, better work organization, more opportunities to develop, and more supportive management (OECD, 2017). This might have made changes over time more pronounced than in other countries, limiting generalizability. Future cross-country comparative studies would increase insights in age management.

The success of public policies that increase effective exit age depends on employers' actions and attitudes (Henkens et al., 2018; Vickerstaff, Cox, & Keen, 2003). Organizations must be willing and capable of providing opportunities for extended employment and manage older labor forces efficiently. This study suggests that organizations in The Netherlands took a proactive approach to older workers, and there are reasons to expect similar progress in other countries.

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Tables and Figures

Table 1

Control Variables and Indicators of Latent Classes

		2009	2017	Significance of change
Sector (%)	Industrial	24.7	29.2	
	Services	59.0	57.4	
	Public	16.3	13.4	
Size (%)	10-49	79.9	76.7	
	50-249	16.0	18.1	
	250+	4.1	5.2	
Strong role of labor unions (%)		16.2	15.1	
Knowledge intensive (%)		68.6	72.5	
Requires regular training (%)		59.0	50.7	*
Experienced shortages (%)		48.3	69.3	***
Share of workers 50+ (%)	0–9	26.97	12.07	***
	10–19	22.59	22.06	***
	20–29	22.49	19.47	***
	30–39	10.47	16.57	***
40–49		8.97	12.05	***
50–59		5.43	9.36	***
60–100		3.09	8.42	***
(average)		20.4	28.8	***
Share of women (%)	0–9	18.05	19.48	
	10–19	22.07	20.34	
	20–39	16.2	18.85	
40-59		19.64	17.31	
60-79		12.53	13.14	
80-100		11.51	10.89	
(average)		37.0	35.1	
Practices toward older workers (%)				
Ergonomic measures		28.0	50.4	***
Training older		8.1	41.5	***
Flexible hours		31.5	55.1	***
Part-time retirement		28.5	12.8	***
Gradual retirement		20.4	20.1	
Early retirement		31.8	14.9	***

Significance of the differences between years: *p < .05. **p < .01. p < .001

Table 2

Model Fit Evaluation Information (6 Predictors)

Number of classes	LL	BIC	SABIC	Entropy	BLRT *p*-value	df	Clusters[1] < 5%	Clusters[1] <10%
2	-7493.04	15086.9	15045.6	0.777	-	13	0	0
3	-7269.87	14694.8	14631.3	0.746	0.000	20	0	0
4	-7221.81	14653.0	14567.2	0.702	0.000	27	0	1
5	-7211.22	14686.1	14578.1	0.713	0.280	34	1	2
6	-7205.97	14729.8	14599.6	0.769	0.810	41	2	4

[1]Number of clusters with estimated size lower than 5% or 10% in a given year.
[2]*P*-value for the Bootstrapped Likelihood Ratio Test that compared the k-classes model with a k-1 classes model. Significant results suggested improvement. Test performed on unweighted data in Mplus 8.3.

Table 3

Latent Classes Profiles

Indicator	Clusters			
	None	Exit	Active	All
Ergonomic measures	0.02	0.30	0.68	0.82
Training older	0.01	0.04	0.48	0.61
Flexible hours	0.24	0.26	0.64	0.65
Part-time retirement	0.03	0.60	0.05	0.74
Gradual retirement	0.02	0.43	0.12	0.76
Early retirement	0.00	0.80	0.05	0.85

Table 4

Average Probability of Cluster Membership in 2009 and 2017 and Change Over Time (in p.p.)

with Adjusted Results Based on Multinomial Logistic Regression

		Exit			Active			All			None		
		2009	2017	Change	2009	2017	Change	2009	2017	Change	2009	2017	Change
1	2	3	4	5	6	7	8	9	10	11	12	13	14
	Industrial	0.22	0.05	-0.18***	0.13	0.37	0.24***	0.08	0.11	0.03	0.41	0.34	-0.07
Sector	Services	0.11	0.01	-0.10***	0.12	0.54	0.43***	0.07	0.05	-0.03	0.60	0.32	-0.27***
	Public	0.25	0.03	-0.22***	0.11	0.52	0.40***	0.16	0.04	-0.12**	0.35	0.33	-0.02
	1-49	0.14	0.02	-0.12***	0.11	0.50	0.39***	0.07	0.04	-0.03	0.60	0.39	-0.22***
Size	50-249	0.27	0.02	-0.25***	0.17	0.49	0.32***	0.15	0.19	0.03	0.24	0.18	-0.07
	250+	0.17	0.03	-0.14***	0.09	0.35	0.26***	0.46	0.30	-0.15*	0.11	0.14	0.03
Knowledge intensity	0	0.16	0.02	-0.14***	0.14	0.37	0.23***	0.08	0.07	-0.02	0.49	0.46	-0.03
	1	0.15	0.02	-0.14***	0.12	0.54	0.43***	0.09	0.06	-0.03	0.52	0.28	-0.23***
Requires regular training	0	0.16	0.02	-0.14***	0.09	0.46	0.37***	0.06	0.04	-0.02	0.59	0.39	-0.20**
	1	0.16	0.02	-0.14***	0.15	0.52	0.37***	0.11	0.08	-0.03	0.44	0.28	-0.16**
Experienced shortages	0	0.17	0.02	-0.15***	0.10	0.43	0.33***	0.09	0.07	-0.02	0.53	0.37	-0.16**
	1	0.15	0.01	-0.13***	0.14	0.53	0.39***	0.08	0.05	-0.03	0.49	0.31	-0.19***
Strong role of labor unions	0	0.14	0.02	-0.12***	0.12	0.49	0.37***	0.08	0.05	-0.03	0.55	0.35	-0.21***
	1	0.28	0.02	-0.26***	0.13	0.50	0.37***	0.11	0.09	-0.02	0.28	0.25	-0.03
	0-9	0.08	0.01	-0.07**	0.14	0.34	0.19**	0.03	0.04	0.01	0.70	0.56	-0.14
	10-19	0.15	0.01	-0.14***	0.16	0.51	0.35***	0.08	0.03	-0.05	0.53	0.38	-0.15
	20-29	0.15	0.03	-0.12***	0.17	0.60	0.43***	0.11	0.04	-0.08**	0.44	0.28	-0.16*
Perc. older	30-39	0.23	0.04	-0.20**	0.07	0.56	0.49***	0.09	0.11	0.01	0.48	0.19	-0.29**
	40-49	0.23	0.04	-0.19**	0.07	0.53	0.46***	0.22	0.14	-0.08	0.31	0.17	-0.14
	50-59	0.22	0.01	-0.21**	0.12	0.39	0.27*	0.16	0.14	-0.03	0.35	0.39	0.04
	60-100	0.17	0.03	-0.14*	0.07	0.46	0.39***	0.08	0.13	0.05	0.63	0.30	-0.33*
	0-9	0.34	0.04	-0.30***	0.07	0.44	0.37***	0.15	0.09	-0.05	0.32	0.31	-0.02
	10-19	0.21	0.02	-0.19***	0.15	0.47	0.32***	0.08	0.07	-0.02	0.45	0.33	-0.12
Perc. women	20-39	0.13	0.01	-0.12***	0.14	0.48	0.34***	0.06	0.03	-0.03	0.59	0.41	-0.18
	40-59	0.07	0.02	-0.05*	0.12	0.52	0.40***	0.10	0.06	-0.04	0.63	0.32	-0.31**
	60-79	0.10	0.02	-0.07*	0.20	0.52	0.32**	0.11	0.04	-0.07	0.48	0.33	-0.15
	80-100	0.17	0.01	-0.16***	0.08	0.56	0.47***	0.05	0.08	0.03	0.65	0.27	-0.39***
Total		0.16	0.02	-0.14***	0.12	0.49	0.37***	0.09	0.06	-0.03	0.51	0.33	-0.18***

Note. Based on probabilities predicted from regression model, including all predictors and with multiple imputation of missing values. Prediction for the pooled-mean values of predictors.
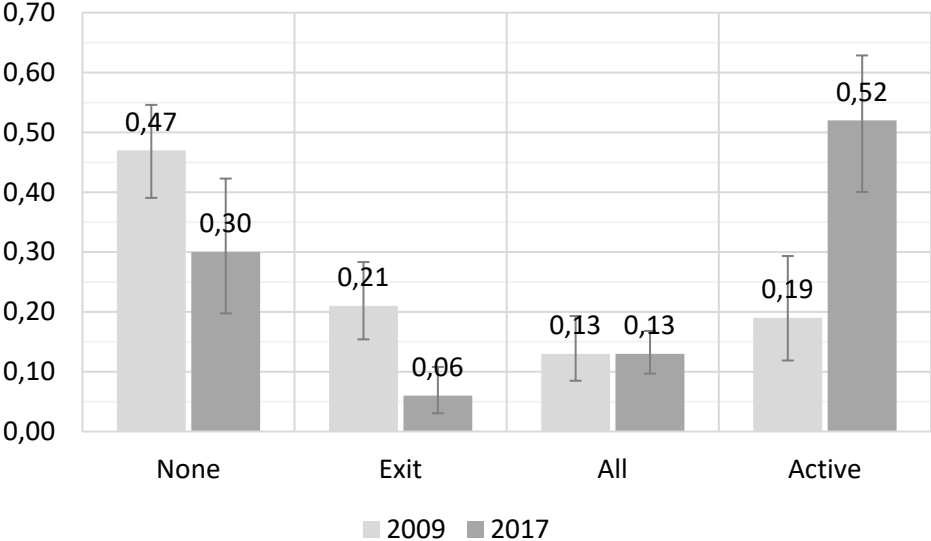
*p < .05. **p < .01. p < .001

Figure 1. **Share of clusters by year (%).**

Appendix

Table A1

Change Within Categories: Unadjusted Results (Likelihood of Being in the Cluster in 2017

versus 2009; Logit Coefficients)

		Exit	**Active**	**All**	**None**
Sector	Industrial	-1.561***	1.325***	0.452	-0.205
	Services	-2.183***	1.974***	-0.258	-1.231***
	Public	-2.675***	2.213***	-0.767**	-0.388
Size	1–49	-1.674***	1.941***	-0.379	-0.904***
	50–249	-1.947***	1.340***	0.352	-0.554**
	250+	-1.548***	1.609***	-0.474*	-0.0951
Knowledge intensity	0	-1.508***	1.277***	0.129	-0.339
	1	-1.794***	2.007***	-0.192	-1.014***
Requires regular training	0	-1.489***	1.841***	0.237	-0.783***
	1	-1.975***	1.922***	-0.170	-1.013***
Experienced shortages	0	-1.750***	1.932***	-0.0342	-0.745**
	1	-1.650***	1.632***	-0.178	-0.767***
Strong role of labor unions	0	-1.545***	1.828***	-0.129	-0.946***
	1	-2.230***	1.718***	0.0379	-0.194
Perc. older	0–9	-1.882*	1.264***	0.344	-0.737*
	10–19	-3.277***	1.546**	-1.086*	-0.230
	20–29	-1.461***	2.020***	-0.915**	-0.913**
	30–39	-1.793***	2.732***	0.230**	-1.141**
	40–49	-1.450*	2.461***	-0.414	-0.807
	50–59	-2.722***	1.687*	0.00212	-0.262
	60–100	-1.594*	2.241**	0.389	-1.168
Perc. women	0–9	-1.901***	1.932***	0.00476	-0.0236
	10–19	-1.526**	1.419***	0.365	-0.683*
	20–39	-2.572***	1.746***	-0.313	-0.859*
	40–59	-0.794	2.069***	-0.243	-1.479***
	60–79	-1.678**	1.589**	-1.045*	-0.592
	80–100	-3.238***	2.683**	0.552	-1.539***
Overall change 2009-2017		-1.704***	1.811***	-0.099	-0.814***
Change in share of clusters	2009	0.21	0.19	0.13	0.47
	2017	0.06	0.52	0.13	0.30

Note. Estimates based on separate logistic regression models for each dependent variable interacting with year.

Table A2

Multinomial Logistic Regression on Predicted Membership Separated by Year. Reference

Category is Class "Exit"

	Active		All		None	
	2009	2017	2009	2017	2009	2017
sector3 (Ref= Industrial)						
Services	0.55	2.05***	0.46	0.84	1.05*	1.68**
Public	-0.36	1.11	0.43	-0.07	-0.37	0.8
size3 (Ref= 1-49)						
50–249	-0.43	-0.49	0.2	1.08*	-1.67***	-1.26**
250+	-0.80*	-1.14*	1.39***	1.14*	-2.36***	-1.94***
1.knowlint	-0.13	0.45	0.11	-0.05	0.1	-0.41
1.trainint	0.34	0.22	0.52	0.83	-0.39	-0.23
1.recrpr	0.57	0.59	0.09	0.01	0.13	0.22
1.unions	-0.64	-0.28	-0.29	0.15	-1.44***	-0.66
Perc. older (Ref.=0-9)						
10–19	-0.54	0.96	0.42	0.54	-0.93*	0.17
20–29	-0.56	-0.54	0.73	-0.94	-1.25**	-1.75*
30–39	-1.72**	-0.78	0.23	-0.07	-1.52**	-2.33**
40–49	-1.86**	-0.93	0.94	0.12	-2.11***	-2.5*
50–59	-1.29	-0.14	0.77	1.07	-1.89**	-0.65
60–100	-1.48	-0.77	0.19	0.3	-0.94	-1.7
Perc . women (Ref=0-9)						
10–19	1.15*	0.49	-0.14	0.11	0.81	0.5
20–39	1.62**	1.93**	-0.1	0.65	1.62**	2.14**
40–59	2.05***	0.76	0.97	0.16	2.26***	0.64
60–79	2.27***	0.74	0.79	-0.21	1.71**	0.66
80–100	0.98	2.04	-0.47	1.65	1.59**	1.67
const	-1.08	0.69	-2.02**	-0.31	1.08*	2.75**

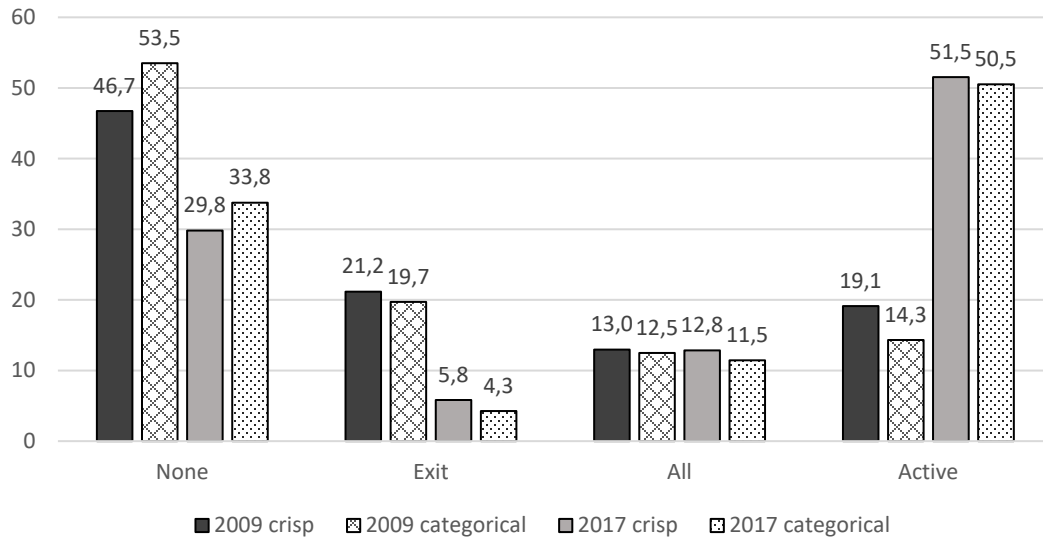*Note.* 2009=1058; 2017= 1273; MI (imputations with 50 m; 185 missing values imputed).

Figure A1. **Sensitivity analysis: Comparison of the crisp based on probability of membership to each class and categorical based on the most probable class membership solution.**