Recharging or Retiring Older Workers?

Uncovering the Age-Based Strategies of European Employers

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Abstract

Purpose of the study: We offer an empirically based taxonomy of the human resource policies of European employers in relation to older workers. In particular, three age-based strategies are discussed and analyzed in a simultaneous fashion: a focus on exit through retirement, workplace accommodation measures and employee development measures.

Design and methods: A sample of 3,638 organizations in six European countries (Denmark, Germany, Italy, the Netherlands, Poland and Sweden) is analyzed to discover which of the six antecedents investigated herein are associated with the implementation of these human resource strategies. The key predictors are the proportion of older workers (aged 50 or over), organization size, seniority-based compensation, labor union involvement, training requirement, recruitment problems and knowledge intensity. Structural equation modeling is used to assess whether these predictors are associated with the three latent factors.

Results: The seven key predictors of the three strategies show that these strategies are used simultaneously, but that the employers clearly use exit policies more intensively than they use development measures. Organizations thus use a dual approach to managing the employment of older workers. They may sort older workers either upwards (e.g., by encouraging career development and training) or outwards (by promoting early retirement). The same division can be detected when examining the effects of labor union involvement and seniority-based wages. When recruitment problems are encountered, more effort is directed towards accommodation and investment.

Implications: Despite the warnings of policymakers about the possible consequences of an aging population, European employers are not yet formulating strategies that promote active aging, often still opting for the easy way out, via exit strategies.

Key words: early retirement, training, employers, older workers

Introduction

In response to recent pension and social security reforms, the age at which people retire from the labor force is gradually increasing (D'Addio, Keese, & Whitehouse, 2010). The Great Recession may add more pressure on workers to extend their working career (Szinovacz, Martin, & Davey, 2014), although at the same time unemployment may hamper realizing those intentions (Cahill, Giandrea, & Quinn, 2013). Effective management of an aging workforce, with a particular focus on older workers, is therefore a key challenge (Walker, 2005). Understanding the position of older workers in an aging labor force demands an exploration of how employers behave. In particular, researchers must identify which human resource policies are being designed and applied to older workers.

Over the past three decades, firms have become aware of the need to adapt to an aging workforce (Clark & Ogawa, 1996; Philip E. Taylor, 2002), and certain practices are now specifically targeted at their older workers. However, the literature on employers' policies and behavior towards older workers is often fragmented, viewing each policy separately and not inter-related. Some studies of older workers focus on employers' policies with regard to training (Zwick, 2011), phased retirement (Hutchens & Grace-Martin, 2006; Johnson, 2011), early retirement (Munnell & Sass, 2008; Vickerstaff, Cox, & Keen, 2003), and workplace accommodation (McMullin & Shuey, 2006), but few authors have thus far examined such policies in an inter-related and comprehensive way. As such, it is unclear from previous findings whether emerging policies are isolated initiatives or tied together with personnel policies.

Furthermore, previous studies of age-based policies are mostly descriptive in nature, enumerating the wide variety of policies that deal with older workers but not going onto uncover the drivers of these policies. Moreover, studies that have comprehensively focused on age-based policies often rely on qualitative case studies (Frerichs, Lindley, Aleksandrowicz, Baldauf, & Galloway, 2012; Fuertes, Egdell, & McQuaid, 2013; Timmons, Hall, Fesko, & Migliore, 2011) or on focus groups (Loretto & White, 2006). While these authors describe a variety of approaches to age-based management, their findings cannot easily be generalized to other organizations, particularly when the cases have been selected as so-called 'best practices'. Finally, studies that use employers' surveys that cover a number of policy measures are often country-specific (Midtsundstad, 2011; Taylor & Walker, 1994), which limits insights into the

degree to which employers' policies are tied to domestic institutions and the prevailing socioeconomic contexts.

The present paper contributes to the body of knowledge on this topic in three ways. First, this study reviews practices targeted at older workers and provides a three-factor conceptual taxonomy – measures aimed at accommodation, development, and exit routes - to organize and interpret the findings presented in the literature. In theory, each of these specific strategies has its own internal logic, but just as production can be characterized as the combination of various inputs, so a human resource practice can be seen as the clustering of individual practices (Ichniowski, Shaw, & Crandall, 1995). To offer an encompassing and theory-driven view, we use structural equation modeling (SEM) to analyze organizational policies targeted at older workers. The use of SEM enables us to examine firms' age-based strategies as latent variables that account for various age-related human resource practices. As such, we clearly capture the interrelatedness of age-related human resource practices following our conceptual taxonomy, rather than arbitrarily treating them as empirically derived composites.

The second contribution of this study is an examination of the various antecedents or predictors of practices related to older workers. Previous studies have generally identified a number of practices with referral to older workers, but few have classified these practices. As such, we know little about which factors influence organizational decision-making in this regard.

Third, this study broadens empirical research on older workers by presenting the first comprehensive study of European employers' age-based policies for older workers. By studying older worker-related policies in a representative sample of organizations in six European countries (France, Germany, Sweden, Poland, the Netherlands and Italy), our database offers a variety of work and welfare state cultures. To our knowledge, no employer-related studies have provided a similar examination on such a large scale.

In summary, to address the foregoing gaps in our understanding, we offer an empirically based taxonomy of the policies of European employers in conjunction with an analysis of the various predictors of practices related to older workers. The analysis is based on archival data derived from an EU project (blinded for review) the aim of which was to collect employer-based data on practices with respect to older workers. The pooling of these diverse experiences provides more robust and clearer perspectives on how aging and labor market institutions affect employers' behavior.

Older Worker-Related Policies

The lens through which to view firm policies targeted at older workers is quite diverse. Different disciplines focus on different aspects of the challenges that older employees face in the workplace. Gerontological, demographic, and occupational health studies primarily examine the occupational needs and capacities of older workers. With this view human resource strategies aim to accommodate these needs as far as possible (for an overview, see Crawford, LePine, and Rich (2010), and to alleviate the stress that may arise as a result of the skills gap between job demands and the capabilities of the employee. Job strain has been conceptualized as a health risk by some authors (Bakker & Demerouti, 2007; Karasek Jr, 1979; Siegrist, 1996). Economic studies stress the importance of long-run investment in human capital in order to develop and maintain individual capabilities and maximize productivity (Skirbekk, 2008) and resolving incentive problems and keeping workers motivated over the lifetime of an employee (Lazear, 1979). In contrast to the previous perspective, this stream of the literature explicitly focuses on the divergence of productivity and wages over the life of the worker as means of aligning the interests of the employee and the firm; a central element which was neglected by the non-economic disciplines. Upward sloping age earning profiles implicitly increase the cost of shirking and act thereby as a motivator. Although there are clear signs that the implicit contract is being eroded with respect to employment protection (Hallock, 2009; Kahn, 2010), it is still is relevant in understanding career incentive structures and pension issues (Lazear, 2000). Economic studies also take account of the fact that mismatches between firms and workers occur over time as labor market institutions change (e.g., when the retirement age increases), or when worker productivity declines unexpectedly. Based on the foregoing, it is clear that organizations implement a number of policies specifically to recharge or dismiss older workers. In the remainder of this section, we review the following three main strategies in this regard: accommodation practices, development practices and offering an exit route to retirement.

Accommodation practices

Accommodation practices comprise workplace measures that compensate for the possible fall in the physical and cognitive capacities that accompany the process of aging. Meta-studies or reviews of aging show that the relationship between age and productivity in the workplace is

diverse (cf. Posthuma and Campion (2009)). For instance, OECD (2006) concluded that any decline in the physical and mental abilities of workers aged 50 or over is gradual and that there is substantial variation among individuals; indeed, other functions may remain unchanged or even improve. For example, Crawford et al. (2010) found that physical and psychological deterioration can be moderated by increases in physical activity, intellectual activity and other lifestyle factors. In short, physical and cognitive changes associated with aging are modifiable (Koopman-Boyden & Macdonald, 2003; Prenda & Stahl, 2001; Schaie, 1996; Schalk et al., 2010; Skirbekk, 2004), and the impact of these changes on productivity and performance is primarily dependent on the work environment and on how job-related tasks are organized (Bloom & Reenen, 2011). Measures used to compensate for aging generally include reductions to working hours, decreases in workload, and preventing older workers from working overtime or irregular shifts.

Development practices

Development practices are those measures that aim to increase the productive capacity of older workers. The process of investing in human capital is becoming more formalized within human resource practices by means of annual reviews and career development planning. In particular, strategies for older workers merit special research attention thanks to a number of related factors, including problems with recruitment, unexpected technological advances that destroy accumulated knowledge (Daveri & Maliranta, 2007), and low investment in human capital.

In the context of career development planning, the provision of specific training measures is often mentioned as a firm policy that can stimulate the productivity of older employees. In knowledge-intensive sectors in particular, constantly updating workers' knowledge of the latest technologies is vital (Göbel & Zwick, 2012). The promotion of internal job mobility is another career development option that not only allows the firm to 'groom' its own talent but also facilitates the allocation of workers to positions that make the most of their individual capabilities. Encouraging job mobility within the firm is more likely in large organizations, which can mimic an internal labor market (Doeringer & Piore, 1971).

Offering exit options

Finally, early retirement measures enable older workers to retire from the labor force either fully or partially, by taking up some form of bridge employment. Dismissing or retiring older workers suggests that the benefit of keeping them engaged in the organization no longer offsets the costs of employing them for the remainder of their careers, which officially end at the mandatory retirement age (65 in most countries), or on the date at which an occupational pension starts to pay out.

The use of a wage structure based on seniority, in conjunction with a mandatory retirement age, is one reason for adopting a proactive approach towards dismissal and early retirement, because these types of seniority-based contracts come under increasing pressure where the workforce in general is aging (Lazear, 1990). Contracts which use wage structures based on seniority imply a redistribution of income from younger to older workers. An aging workforce tends to disrupt the balance in this regard, making it difficult for organizations to uphold their promise or implicit contract. Another reason why managers prefer using early retirement as a policy instrument is that they suppose that more recent technologies, to which younger workers more easily adapt, are only learned and used by older workers at a prohibitive cost. Offering an exit route through early retirement has for many years therefore been the easy and well-accepted route. Only recently have institutional changes made dismissing older workers a more difficult option for employers, because exit routes are now becoming increasingly restrictive (OECD, 2011).

Predictors of Older Worker-Related Policies

In this section, we focus on three categories of antecedents that are often viewed in the literature as determining the makeup of older worker-related policies: organization characteristics, job requirements within the organization and management restrictions in dealing with older workers.

Organization characteristics

In terms of organizational characteristics, we focus on the effects of the number of older employees in the establishment and firm size, in addition to the industry sector in which organizations operate. First, having a higher percentage of older workers increases the likelihood that the employer has first-hand experience of the challenges faced by older workers. Second, employers accustomed to a relatively old workforce are likely to be more active in

accommodating their needs or investing in improving their capabilities, but at the same time employers may also consider for specific employees that investing in the human capital of older workers or accommodating their needs may not be worth the costs and early retirement may the preferable action to take

The second organizational characteristic that deserves attention is firm size, as measured by the number of employees. Like most organizational domains, personnel policies are expected to be subject to economies of scale. For example, while older worker-related policies in small organizations are bound by government regulations on implementing certain measures that facilitate the interests of workers, they are often still of an informal nature. However, the flexibility—in terms of time and financial funds—to accommodate workers or offer opportunities for training and educational programs is expected to be lower among small businesses than among larger firms. The same may apply to offering exit options within small organizations because exit of older workers may imply an abrupt loss of valuable firm-specific knowledge.

Job requirements

Technological change is one of the most important drivers of productivity growth (Bosworth & Collins, 2003; Easterly & Levine, 2001). Organizations that operate in dynamic environments, typically characterized by those in which the state of knowledge changes at a continuous and rapid rate, face the challenge of keeping their workers up-to-date and innovative. Knowledge can be divided into two types: firm-specific and general. Firm- or sector-specific knowledge refers to the type of knowledge necessary to function in the firm as well as in the industry sector. General knowledge (e.g., ICT know-how), however, transcends the firm or sector in question and can in principle easily be transferred to another organization.

Both firm-specific and general knowledge can be acquired by employees through extensive training. When training requirements are high, organizations may be more likely to invest actively in, and accommodate, older workers, who have accumulated significant amounts of knowledge and are hard to replace within short timeframes or when training resources are limited. Similarly, when knowledge intensity in an organization is high, they may be more likely than not to invest in their older employees and provide facilities to help maintain the

organization-specific knowledge embedded in the most experienced staff members. Forcing the retirement of older employees serves as a measure of last resort.

Employer's restrictions

The ability of managers to deal with older workers is often restricted by institutional characteristics such as the strength and influence of labor unions and the prevailing structure of incentives, but also the restrictions which become binding when managers encounter the problems of a tight labor market. In particular, employers in western European countries typically encounter the seniority wage system when tackling the consequences of an aging labor force (D'Addio et al., 2010). The responses of employers to workforce aging can run in two directions. On the one hand, they may perceive age-related productivity and the firm's wage structures as entrenched and believe that the only way to sustain the organization is by offering exit routes to older workers. On the other hand, the alternative response is to invest in building the knowledge and thereby the productivity of older workers in order to ensure that the wage–productivity gap does not widen as the workforce ages. We hypothesize that because accommodation measures, like extra paid leave or ergonomic measures, are likely to increase the wage costs of older workers, employers facing steep age–wage profiles are less tempted to offer those measures than those facing flat age–wage profiles.

In addition, labor union involvement is expected to influence personnel policies by stimulating management to develop formal systems and procedures that aim to improve efficiency and organizational effectiveness. For instance, the review by Verma (2005) of the various channels through which unions affect the workplace concluded that this effect can be seen most clearly in the higher incidence of formal training programs in unionized organizations. Previous studies, however, also suggest that unions are tempted to opt for exit routes in the face of downsizing operations or mass layoffs (Kalwij, Kapteyn, & De Vos, 2010).

Finally, the state of the business cycle within a sector is known to affect personnel decisions as pool of potential workers is larger when it is a buyer's market than when it is a seller's market (blinded for review). In case employers encounter problems in recruiting new personnel they may be more likely to back away from retiring older employees and shift their attention towards accommodation and investment measures.

Methods and Data

Data

Data on employers' policies and behaviors were collected between March and November 2009. The countries included in this study were geographically dispersed throughout Europe and represented different types of European welfare states. Sweden and Denmark represent Esping-Andersen's (1990) social-democratic welfare state, the Netherlands, Germany and France stand for the continental welfare state. Italy represents the Mediterranean type of welfare state. Finally, Poland is a representative of the 'new' EU-member States from Eastern Europe. In each country a stratified sample was drawn according to size and sector covering establishments with 10 employees or more in all sectors of the economy, excluding the agricultural sector. Within countries, samples were randomly selected with respect to geographic area. The questionnaire used in the different countries was identical. However, the interview techniques differed across countries, depending on what was perceived to be the best mode to address respondents in a particular country. Denmark used computer-assisted web interviewing (CAWI); Germany, the Netherlands and Sweden used paper and pencil interviewing (PAPI); and Italy and Poland used computer-assisted telephonic interviewing (CATI). The surveys were addressed to directors, owners and heads of HR departments (blinded for review). The response rates of the survey for the respective sample countries were 11% (Germany), 17% (Italy), 23% (the Netherlands), 23% (Poland), 28% (Denmark) and 53% (Sweden). These rates were lower than the average response rates for individual surveys but in line with those generally found in corporate surveys. In Europe and the United States, for instance, response rates are generally found to be 20-30% at most (Baruch & Holtom, 2008; Brewster & Hegewisch, 1994; Kalleberg, Knoke, Marsden, & Speath, 1996;blinded for review). The total sample covered 3,780 observations of employers. The survey was completed by directors (32%), general managers (28%), human resource managers (34%) and other employees (6%).

Since we created a stratified sample of the characteristics of the sectors and sizes of the investigated business units, we carried out multivariate analyses using weights accounting for the sampling design. Weights are constructed according to the population of establishments from the national statistical bureaus. We pooled the data for the six countries and constructed a weighting factor that takes the net sample size of the different countries into account. This was done to prevent large samples from influencing the results more than countries with smaller sample sizes.

All countries were given an equal weight. We did not weight the data according to population size of the country, because in that case results for Germany – the largest country – would dominate the findings.

Measures

Dependent variables – As discussed earlier, organizations' age-based policies consist of three measures aimed at early retirement, development and accommodation. These latent variables are based in turn on a number of firm strategies. Exit route measures are based on two items, namely 'Part-time retirement' and 'Early retirement schemes'. Development measures consist of the following age-based policy measures: 'Training plans for older workers', 'Promoting internal job mobility' and 'Continuous career development'. Finally, accommodation measures comprise 'Reduction of working time', 'Decreasing workload', 'Ergonomic measures' and 'Age limit for irregular work or shifts'.

Independent variables – The influence of the following six antecedents are central to this study (the exact wording of the questions is presented in Table 1):

- Proportion of older workers (aged 50 years and older).
- Organization size.
- Importance of seniority-based compensation.
- The perceived influence of unions over human resource policies.
- The knowledge intensity of the organization as approximated by (i) the need for training and (ii) the perceived level of knowledge intensity.
- Recruitment problems.

TABLE 1 HERE

Further, in order to control for the influences of industry sector and the country in which the firm is located, we added a set of dummy variables.

Results

Descriptive statistics

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Table 1 shows the usage of various employer strategies. On average, approximately one-third of the sampled employers have applied some form of policy within each of the three studied strategies: 31% offer early retirement schemes, 32% continuous career development and 33% ergonomic measures. Nonetheless, barely 1% of European employers use all three strategies to the full, whereas 20% use at least one of the measures of each of the three age-based strategies. In short, this finding signifies that age-based policies directed towards 'active aging' are the exception in the organizations concerned.

Age-based policies

As a first step in the analysis, we performed a confirmatory factor analysis with categorical indicators in order to examine the construct validity of the three age-based policies. A three-factor model was tested by loading items on their respective latent variables. The results showed that the items were all significantly loaded on their respective latent factors (standardized factor loadings ranged from .66 to .85 and were all statistically significant). The information criteria of the three-factor model were also obtained (AIC = 23958.91, BIC = 24089.10, sample-sized adjusted BIC = 24022.37). An alternative one-factor model was also specified by loading all items on the same latent factor (AIC = 24311.20, BIC = 24422.79, sample-size adjusted BIC = 24365.59). Since all three information criteria of the three-factor model are smaller than those of the one-factor model, the former model shows the better fit and therefore this was used for further analysis.

Predictors of Age-based HR Strategies

Next, we specified a structural equation model by regressing the set of control variables (i.e., country and industry sector) in Step 1 and the key predictors (i.e., proportion of older workers, organization size, seniority-based compensation, labor union involvement, training requirement, knowledge intensity and recruitment problems) in Step 2 against the three latent factors obtained in the confirmatory factor analysis model above. Table 2 presents the coefficients of the estimated models of Steps 1 and 2. The first step reveals that sector and country-specific factors are important. E.g., public-sector organizations were more age-conscious than private-sector firms. And between countries it becomes clear that Italian employers are across the board less set on dealing with an aging work force than other countries. But the main

focus of this paper is on the key predictors which apply to organizations in general. We show that the key predictors included in the model explain 6%, 5% and 7% of the additional variances beyond the control variables in the organization's use of early retirement schemes, accommodation strategies and development strategies, respectively.

TABLE 2 HERE

In particular, the proportion of older workers was positively correlated with the use of exit schemes ($\gamma_E = 2.73$), development strategies ($\gamma_D = 1.86$), and accommodation strategies ($\gamma_A = .79$), indicating that organizations with a high percentage of older workers offered all three of the strategies discussed more often than those with a low percentage of older workers. Organization size, however, was not significantly correlated with any of these three strategies. Moreover, the use of seniority-based compensation was only positively related to accommodation strategies ($\gamma_A = .20$). Labor unions involvement was positively related to both early retirement schemes ($\gamma_E = .22$) and accommodation strategies ($\gamma_E = .19$). Training requirement was related to all three types of strategies ($\gamma_E = .23$, $\gamma_A = .17$, $\gamma_D = .35$). Knowledge intensity was only positively related to development strategies ($\gamma_D = .34$). As a final observation, recruitment problems were positively related to both accommodation strategies ($\gamma_A = .33$) and development strategies ($\gamma_D = .23$).

Table 3 compares the predictive effects of each key antecedent across the three dependent variables. Predictive effects were examined by comparing the likelihood ratio-based χ^2s of the free model (i.e., the model estimated with both covariates and predictors as in Step 2, Table 2) with those of a constrained model in which the predictive effects of a particular antecedent on two dependent variables were constrained to be equal. Significant $\Delta\chi^2$ means that the constrained model fitted the data significantly worse than the free model, indicating that the predictive effects of the particular antecedent on the two dependent variables were significantly different.

TABLE 3 HERE

The results shown in Table 3 reveal that the proportion of older workers was a better predictor of the organization's use of exit schemes compared with accommodation strategies and

development strategies as well as of its use of accommodation strategies compared with development strategies. In addition to the degree of workforce aging, the other predictive variables also shed light on the foci of employers' strategies. Labor union's involvement was a better predictor of organization's use of early retirement schemes and accommodation strategies than of development strategies. Finally, there was no difference in the predictive effect of recruitment problems for all three age-based strategies.

Discussion and Conclusion

We have herein offered an empirically based taxonomy of the age-based strategies of European employers in relation to older workers. Three strategies were discerned that focused on the use of accommodation measures, development measures and exit through early retirement. We found that the higher the proportion of older workers in an organization, the more likely it was to use the three investigated strategies for older workers. Further, the presented results showed that organizations in which the compensation is strongly related to seniority, where the influence of labor unions is highly visible in personnel measures, and where training requirements are high, are more likely to adopt these three strategies than those that do not share these particular characteristics.

Another important finding is that the key predictors examined in the present study influence the three age-based strategies to differing degrees. For instance, having a higher percentage of older workers is associated with a higher likelihood of formulating development policies for this age group but is much more strongly related to the use of exit measures. Meanwhile, the impact of workforce aging on accommodation measures takes an intermediate position. These results suggest that workforce aging is a cause of highly divergent HR policy responses. Specifically, this finding suggests that organizations use a dual approach towards managing the employment of older workers. In simple terms, enterprises may sort older workers either upwards (e.g., encourage career development and training) or outwards (promote early retirement packages); however, given a straightforward choice between these two alternatives, employers have a clear preference for offering older workers exit routes.

The same division can be detected when we examine the effects of labor union involvement and seniority-based wages. Although we find that labor union involvement increases the likelihood of the provision of development programs for older workers, it has an

even stronger association with the use of exit and accommodation policies. The same finding holds for seniority-based wage systems, namely that exit strategies and accommodation measures are much more likely to be deployed for older workers than measures aimed at the development of human capital. Finally, we note that when employers encounter recruitment problems, their effort is directed more towards accommodation and investment and less so in the direction of early exit arrangements. In other words, when the labor market changes from a state of excess supply to one of excess demand this may offer a positive stimulus to the position of the older worker.

This paper has a number of noteworthy strengths. First, considering the policy responses of employers in such an all-encompassing way increases our insights into the divergent organizational consequences of changing management restrictions. Making the seniority-based wage systems less prominent, as suggested by the OECD (2006), for improving the relative position of older workers in the employee hierarchy, is indeed likely to result in lower exit rates. However, employers are also likely to reduce their provision of training and development programs for older workers when wage profiles flatten. Second, the use of a large European sample of employers covering all industry sectors improves the empirical base of age-related personnel policy research and shows that substantial policy-related differences between organizations remain in place. We believe that the results offer insights as to the strategy choices of employers in continental European welfare states. With respect to Anglo-Saxon welfare states it remains an open question whether the results are generalizable.

Another limitation is the cross-sectional nature of the data used in this study. It restricts us from analyzing whether employers are gradually changing their attitudes towards older workers and thus evolving their policy directions over time. Current human resources strategies should be seen as the result of current conditions and causality issues cannot be uncovered. Furthermore, a number of the key predictor variables are based on one-item indicators. Future research could aim to develop independent variables in order to reduce the bias in the estimation results.

The retirement landscape is undergoing rapid change. The strong tendency of employers to choose exit strategies for older workers is a legacy of past organizational strategies which were until recently firmly embedded in the institutional arrangements of social security and pensions (cf. Wise (2010)) and the employer's mindset (blinded for review). In most European

countries, a transition is currently taking place in which the incentive to leave the labor force at a relatively young age is being curtailed and alternative exit routes (e.g., disability insurance and early retirement programs) are gradually disappearing. As a result, employers are being challenged to find new avenues to keep older workers motivated and productive (blinded for review). The present findings confirm that employers have thus far been relatively inactive in this area up to now. The fact that organizations that have a relatively large percentage of aging workers and are more inclined to recharge them—or at least to consider policies that aim to lengthen their working lives—is a positive sign, as well as a possible indication of a future in which older workers and their benefits for organizations can no longer be ignored.

Table 1: Descriptive statistics

	Mean	SD	Wording
Exit measures			"Are the following measures regarding older workers currently implemented in your establishment?" (0 = no; 1 =yes)
Part-time retirement	.26	.44	
Early retirement schemes	.31	.46	
Development measures			
Training programs for older workers	.20	.40	
Promoting internal job mobility	.28	.45	
Continuous career development	.32	.47	
Accommodation measures			
Reducing working time before retirement	.24	.43	
Decreasing workload for older workers	.20	.40	
Ergonomic measures	.34	.47	
Age limit for irregular work/shift work	.11	.31	
Predictor variables			
Proportion of older workers	24.65	17.26	"What percentage of employees is 50 years or older?"
Organization size	544.17	8102.17	"Approximately how many people are currently employed in this establishment?"
Importance of seniority-based compensation	2.55	.81	"To what degree do wages rise with tenure? (i.e. number of years employees have worked in your establishment)" (1 = not at all; 2 = fairly low extent; 3 = some extent; 4 = high extent
Labor union involvement	2.71	1.28	"The influence of labor unions on personnel policies is clearly visible in this establishment" 1 = completely disagree to 5 = completely agree
Training requirement	3.50	1.19	"Working in our establishment requires regular additional training" 1 = completely disagree to 5 = completely agree
Knowledge intensity	3.55	1.10	"The knowledge intensity in our establishment is high" 1 = completely disagree to 5 = completely agree
Recruitment problems	1.52	.61	"Has your establishment experienced recruitment problems in the last two years?" 1 = no, generally not; 2= Yes, with some vacancies; 3 = Yes, with relatively many vacancies
Control variables			
Industry sector			"Within which of the following industry sectors does your establishment operate?"
Public Sector	.14	.34	
Industry	.36	.48	
Service	.30	.46	
Health and Education	.20	.40	
Sector Information Missing	.01	.11	
Country			
Netherlands	.22	.41	
Italy	.18	.39	
Denmark	.13	.34	
Sweden	.09	.28	
Poland	.20	.40	
Germany	.18	.39	

N = 3,638

Table 2: Coefficients of the Estimated Structural Equation Model

Predictor	Exit strategies			Accommodation strategies			Development strategies		
	Est.	*Beta*	*SE*	*Est.*	*Beta*	*SE*	*Est.*	*Beta*	*SE*
Step 1: only control variables									
Sector (public sector = ref.)									
Industry[1]	-.69**	-.13**	.24	-.91**	-.16**	.26	-.97**	-.23**	.23
Service[1]	-1.38**	-.29**	.29	-1.28**	-.26**	.30	-1.11**	-.29**	.24
Health and Education[1]	-.94**	-.15**	.25	-.58*	-.09*	.27	-.45	-.09	.23
Sector Information Missing[1]	.22	.01	.63	-.85	-.05	.66	-1.42**	-.10**	.55
Country (Germany = ref.)									
Italy[2]	-1.51**	-.26**	.29	-2.02**	-.33**	.39	-1.33**	-.28**	.31
Denmark[2]	-.89**	-.16**	.28	1.46**	.24**	.33	-.07	-.02	.24
Sweden[2]	.27	.04	.33	1.33**	.19**	.32	.41	.08	.27
Poland[2]	1.74**	.22**	.31	.65**	.08**	.25	.89**	.14**	.25
Netherlands[2]	1.75**	.29**	.32	1.45**	.23**	.27	.05	.01	.22
R^2		.29			.29			.14	
Step 2									
Key predictors									
Proportion of older workers[3]	2.73**	.22**	.46	1.86**	.14**	.54	.79*	.07*	.40
Organization size[4]	.01	.02	.01	.01	.02	.01	.02	.04	.01
Seniority-based compensation	-.02	-.01	.09	.20*	.06*	.10	.02	.01	.08
Labor union' s involvement	.22**	.12**	.06	.19**	.10**	.07	.00	.00	.06
Training requirement	.23**	.12**	.07	.17*	.08*	.08	.35**	.21**	.08
Knowledge intensity	-.08	-.04	.09	.19	.09	.10	.34**	.18**	.09
Recruitment problems	.19	.05	.11	.33**	.08**	.12	.23*	.07*	.11
Control variables									
Sector (public sector = ref.)									
Industry[1]	-.32	-.06	.24	-.52*	-.09*	.25	-.67**	-.15**	.23
Service[1]	-.97**	-.21**	.28	-.89**	-.15**	.27	-.95**	-.24**	.25
Health and Education[1]	-.88**	-.14**	.25	-.55*	-.08*	.27	-.48	-.09	.25
Sector Information Missing[1]	.50	.03	.62	-.60	-.03	.61	-1.20*	-.08*	.55

Country (Germany = ref.)									
Italy[2]	-1.17**	-.20**	.31	-1.34**	-.22**	.38	-.07	-.01	.27
Denmark[2]	-.82**	-.14**	.27	1.41**	.24**	.33	.17	.04	.26
Sweden[2]	.09	.01	.32	1.20**	.17**	.35	.55	.10	.29
Poland[2]	1.75**	.23**	.30	.64*	.08*	.25	1.00**	.15**	.27
Netherlands[2]	1.92**	.32**	.32	1.48**	.23**	.28	.31	.06	.23
R^2			.35			.34			.21
ΔR^2			.06			.05			.07

Note. $* p < .05.$ $** p < .01.$ N = 3,638

Table 3: Model Comparisons for Free Model and Constrained Models

Model	-2Loglikelihood	$\Delta\chi^2(1)$	Conclusion
Free model	22509.87		
Predictive Effect Comparisons			
Proportion of older workers			
γ_E vs. γ_D	22537.16	27.30**	$\gamma_E > \gamma_D$
γ_E vs. γ_A	22514.89	5.02*	$\gamma_E > \gamma_A$
γ_D vs. γ_A	22520.79	10.93**	$\gamma_A > \gamma_D$
Labor union's involvement			
γ_E vs. γ_D	22529.41	19.54**	$\gamma_E > \gamma_D$
γ_E vs. γ_A	22510.16	.29	$\gamma_E = \gamma_A$
γ_D vs. γ_A	22529.67	19.80**	$\gamma_A > \gamma_D$
Training requirement			
γ_E vs. γ_D	22512.85	2.98	$\gamma_E = \gamma_D$
γ_E vs. γ_A	22510.88	1.01	$\gamma_E = \gamma_A$
γ_D vs. γ_A	22517.98	8.11**	$\gamma_D > \gamma_A$
Recruitment problems			
γ_E vs. γ_D	22510.07	.20	$\gamma_E = \gamma_D$
γ_E vs. γ_A	22512.01	2.14	$\gamma_E = \gamma_A$
γ_D vs. γ_A	22511.04	1.18	$\gamma_D = \gamma_A$

Note. γ_E = the structural coefficient in predicting exit strategies. γ_D = the structural coefficient in predicting development strategies. γ_A = the structural coefficient in predicting accommodation strategies. * $p < .05$, ** $p < .01$.

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