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Company Policies on Working Hours and Night Work in Relation to Older Workers' Work Ability and Work Engagement: Results From a Dutch Longitudinal Study with 2 Year Follow-Up

Laudry van der Meer[1] · Fenna R. M. Leijten[1,3] · Swenneke G. Heuvel[1] · Jan F. Ybema[2] · Astrid de Wind[1,4] · Alex Burdorf[3] · Goedele A. Geuskens[1]

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Abstract *Purpose* To longitudinally investigate (1) whether lower work ability and work engagement predict the use of company policies on reduced working hours and exemption from evening/night work among older workers, and (2) whether using such policies subsequently contribute to higher work ability and work engagement. *Methods* In total 6922 employees (45–64 years) participating in the first three waves of the Study on Transitions in Employment, Ability and Motivation were included. Participants yearly filled out an online questionnaires. Regression analyses were applied to study the influence of baseline work ability and work engagement on the incident use of policies during the first year of follow-up, and the incident use of these policies on work ability and work engagement during the second year of follow-up. *Results* Employees with a higher work ability were less likely to start using the policy 'reduced working hours' [OR 0.91 (95 % CI 0.83–0.98)]. Starting to use this policy was in turn related to lower work ability 1 year later [B −0.28 (95 % CI −0.47 to −0.08)]. Starting to use the policy 'exemption from evening/night work' was related to higher work engagement 1 year later [B 0.23 (95 % CI 0.07–0.39)]. *Conclusions* Low work ability precedes the use of some company policies aiming to support sustainable employability of older workers. Further research is needed to explore whether company policies result in a (longstanding) improvement, or reduced deterioration, of older workers' employability.

Keywords Longitudinal study · Policy · Work engagement · Work ability · Older employees

✉ Laudry van der Meer
laudry.vandermeer@tno.nl

[1] TNO Work and Employment, Schipholweg 77-89, 2316 ZL Leiden, The Netherlands

[2] Department of Social and Organisational Psychology, Utrecht University, PO Box 80140, 3508 TC Utrecht, The Netherlands

[3] Department of Public Health, Erasmus MC, University Medical Center Rotterdam, PO Box 2040, 3000 CA Rotterdam, The Netherlands

[4] Department of Public and Occupational Health, the EMGO+ Institute for Health and Care Research, VU University Medical Center, Amsterdam, The Netherlands

Introduction

The world population is aging rapidly due to longer life expectancy and lower birth rates. The aging of the population increases the pressure on the social security systems in Europe. Therefore, in many European countries the official retirement age has been raised and prolonged careers are promoted. For example, in the Netherlands, the age persons start receiving state old age pension will gradually increase from 65 in 2012 to 67 in 2023. However, most employees still exit the workforce before the official retirement age [1]. At the same time, due to globalization and increased competitiveness among companies, companies need highly skilled and motivated workers to maintain high productivity. Hence, to ensure that older employees work productively, in good health and engaged at least until their official retirement age, it is important to promote sustainable employability [2–4].

Research has shown that work ability, defined as the degree to which an employee is mentally and physically capable of executing his or her current job [5], is related to different facets of sustainable employability. Namely, lower work ability is related to decreased productivity at work [6], increased long term sickness absence [7–10],

early (non-disability) retirement [11], and work disability [7]. Motivational factors such as work engagement, which can be defined as a positive and fulfilling work state of mind [12], are also important for sustainable employability. Higher work engagement and work commitment have been found to relate to better physical and especially mental health [13], higher work ability [14], a lower likelihood of long-term sickness absence [15], and lower turnover intentions [16]. Work engagement may also suppress the influence of age discrimination on intended retirement [17]. Moreover, higher work engagement has been related to business outcomes, such as higher customer satisfaction, loyalty, profitability, and business-unit productivity [18]. Hence, high work ability and work engagement may contribute to both organizational effectiveness and prolonged healthy work participation.

Company policies could support workers' work ability and work engagement. In the Netherlands, 37 % of employers provide company policies aiming to support the prolongation of working lives, e.g. exemption from evening and night work, working fewer hours per week, alleviation of strenuous working tasks, and stimulation of education and training [19]. The availability of some of these policies depends on the age of the employee, and company policies are more often provided in larger organizations than smaller organizations [19]. Company policies can be considered a job resource. According to the job-demands-resources model (JD-R model), high job demands can lead to the exhaustion of mental and physical resources, and can subsequently result in stress and ill health (impairment process). In contrast, job resources may foster work engagement and productivity (the motivational process), and may buffer the impact of job demands on stress-reactions [20–22]. In line with this model, high physical job demands and high mental job demands have previously been related with lower work ability [23], whereas job resources such as higher autonomy, higher social support and organizational justice have been related with higher work engagement [20, 24] and work ability [23, 25–27]. In addition to the JD-R model, the signaling theory [28] proposes that company policies that offer support or function as 'signals' of the organization's good intentions will result in stronger feelings of obligation to show positive attitudes and behaviors toward the organization [29, 30]. In a study by Kooij [31] older workers were indeed more motivated to work until higher ages or postpone early retirement in organizations that offered policies on working fewer hours per week, alleviation of strenuous working tasks, and education and training than in organizations that did not offer such policies. Despite the fact that almost two out of five work organizations in the Netherlands offer company policies that aim to support the prolongation of working lives [19], it has barely been investigated whether these policies positively influence older workers' work ability and work engagement, as would be postulated in line with the JD-R model and signaling theory.

Therefore, this study wanted to shed light on the relation between work ability and work engagement and company policies. We focused on 'reduced working hours per week for older workers' and 'exemption from evening or night work for older workers' because these policies are relatively prevalent [19]. More specifically, the goals of this longitudinal study were to investigate the following research questions: (1) Do lower work ability and work engagement predict the use of company policies on reduced working hours and exemption from evening/night work among older workers, and (2) does using such policies subsequently contribute to higher work ability and work engagement?

Methods

Study Population

A prospective study was conducted within the Study on Transition in Employment, Ability, and Motivation (STREAM) [22]. STREAM is a longitudinal study among 15,118 employees, including employees (n = 12,055), self-employed persons (n = 1029), and persons without paid employment (n = 2034) aged 45–64 years in the Netherlands. The study population was stratified by age and employment status. Participants were recruited via the Intomart GfK internet panel, and yearly filled out an online questionnaire in 2010 (T1), 2011 (T2), 2012 (T3), and 2013 (T4). The questionnaire included items on individual characteristics, job characteristics, health, skills and knowledge, financial and social factors, opportunity, ability and motivation to work, productivity, and transitions in employment status. A detailed description of the study can be found elsewhere [32].

In the present study, we used data from the first three waves of STREAM. From the 12,055 baseline employees, 3303 persons were excluded as they did not participate after one and/or 2 years of follow-up, 1373 were excluded as they stopped working or became self-employed, and 457 were excluded because they changed employer during follow-up. In total 6922 employees were included in the present study.

Persons who were lost-to-follow-up were slightly older (54.2 vs. 53.7 years) and more often female (44 vs. 43 %), reported a slightly lower work ability (7.85 vs. 7.97) and work engagement (4.47 vs. 4.52), and more often used the company policy 'reduced number of working hours per week' (12.5 vs. 11.5 %) and 'exemption from evening or

night work' (3.6 vs. 35 %) at baseline compared to persons who participated in all measurements.

Measurement

Company Policies for Sustainable Employability of Older Workers

Employees indicated whether different policies for older workers, including "reduced number of working hours per week" and "exemption from evening or night work", were *available* in their company and whether they *used* them. Answer categories were (1) yes, I'm using it, (2) yes, I'm not using it, (3) yes, but not applicable to me, (4) no, (5) don't know. Employees reporting the policy was available and they were using it (answer category 1) were classified as 'using the policy'. All other employees were classified as 'not using the policy'. Because this information was available at T1 and T2, not using the policy both years (0–0) could be compared to "incidence", defined as not using a policy at T1 and using a policy the following year at T2 (0–1).

Work Ability and Work Engagement

Work ability was measured using the first item of the Work Ability Index [33] in which individuals are asked to compare their current work ability to their lifetime best with answers ranging from completely unable to work (0) to work ability at life time best (10). This item "If you would rate your work ability in the best time of your life at 10 points, at how many points would you rate your work ability at this moment?" has been found to represent overall work ability well [34, 35].

Work engagement was measured with six items from the Utrecht Work Engagement Scale (UWES), combining the two dimensions vigor and dedication (Cronbach's alpha = 0.93). Examples of the items are 'At my work, I am bursting with energy' and 'When I get up in the morning, I feel like going to work' [12]. Participants answered the questions using a six-point scale ranging from 'never' to 'always/daily'.

Covariates

Age, gender, and work-related factors at baseline were included as covariates in the current study. Company size was measured by a question on the number of persons working in the organization. Answers were categorized into 1–49 employees, 50–249 employees, 250 employees or more, and I don't know. Physical workload was measured using a scale consisting of five items derived from the Dutch Musculoskeletal Questionnaire, reflecting regular use of force, use of vibrating tools, awkward postures, prolonged standing, and prolonged squatting (Cronbach's alpha = 0.86) [36, 37]. Job demands were assessed with four items from the Job Content Questionnaire (JCQ; Cronbach's alpha = 0.87) [38]. An example of a question is "Do you have to work very fast?". Social support from colleagues and the supervisor was measured using four items of the Copenhagen Psychosocial Questionnaire (Cronbach's alpha = 0.81). Employees indicated how often their colleagues or supervisor helped or supported them and how often they were willing to listen to their work-related problems [39]. Questions on physical workload, job demands and social support were answered using a five-point scale ranging from '(almost) never' to 'always'. Age discrimination was measured with four items derived from the Nordic Age Discrimination Scale (Cronbach's alpha = 0.87), e.g. 'Older workers do not have equal opportunities for training during work time' [40]. A five-point answer scale was used ranging from 'disagree' to 'agree', with higher scores indicating more age discrimination.

Statistical Analysis

Descriptive statistics were used to characterize the study population. Logistic regression analyses were conducted to answer the first research question, i.e. to assess whether work ability and work engagement at baseline (T1) predicted incident policy use between baseline (T1) and 1 year of follow-up (T2) (0–0 vs. 0–1). Separate models were estimated for the policies 'reduced number of hours of work per week' and 'exemption of evening and night work'. First, univariate logistic regression analyses were performed to study the association between work ability, work engagement, and the covariates separately with policy use. Second, multivariate logistic regression analyses were carried out with work engagement, work ability and all covariates as independent variables. Odds ratios (OR) and 95 % confidence intervals (95 % CI) were calculated.

To answer the second research question on the influence of incident policy use starting between baseline (T1) and 1 year follow-up (T2) on work ability and work engagement after 2 years of follow-up (T3), linear regression analyses were applied. Separate models were estimated with work ability and work engagement as outcome variables and the incident use of 'reduced number of hours per week' and 'exemption of evening and night work' as independent variables. Similarly to the analyses described above, both univariate and multivariate regression analyses were performed. Baseline (T1) values of work ability and work engagement were included in all analyses, and hence, these analyses pertain to the influence of incident policy use on changes in work ability and work engagement during follow-up. Unstandardized regression coefficients (B) and their 95 % CI were calculated.

All analyses were performed using version 20.0 of the Statistical Package of Social Sciences for windows (SPSS, IBM Corp, Armonk, NY, USA), released in 2011.

Results

Table 1 presents the descriptive statistics of the study population. There was a slight increase in annual use of the policy 'reduced number of working hours per week' (from 11.5 to 12.7 to 13.4 %) and 'exemption from evening or night work' (from 3.5 to 3.8 to 4.3 %). Between baseline and 1 year of follow-up, 253 persons started to use the policy on reduced working hours and 117 persons on exemption of evening or night work. During follow-up, work ability and work engagement slightly decreased. Figure 1 shows the mean score on work ability and work engagement by policy use over time.

Relation of Work Ability and Work Engagement with Incident Policy Use

Table 2 shows that employees with a higher work ability at baseline (T1) less often started to use the policy 'reduced number of working hours per week' in multivariate regression analysis [OR 0.91 (95 % CI 0.83–0.98)]. Older employees [OR 1.19 (95 % CI 1.15–1.22)] and employees with higher job demands [OR 1.23 (95 % CI 1.04–1.46)], and higher social support [OR 1.22 (95 % CI 1.01–1.47)] more often started to use the policy on reduced working hours. Work engagement was not significantly related. The findings from univariate and multivariate models did not substantially differ from one-another.

Work ability and work engagement did not predict the incident use of the policy 'exemption from evening or night work'. In the multivariate analysis, older employees [OR 1.21 (95 % CI 1.16–1.27)] and employees in large companies [OR 3.02 (95 % CI 1.74–5.26)] and with a higher physical workload [OR 1.79 (95 % CI 1.47–2.19)] more often started to use the policy on exemption of evening and night work.

Relation of Incident Policy Use with Subsequent Work Ability and Work Engagement

Table 3 shows that employees who started to use the policy 'reduced number of working hours per week' had an almost 3 % lower work ability in the subsequent year [multivariate regression analysis: B −0.28 (95 % CI −0.47 to −0.08)]. The use of this policy was not related to work engagement in the subsequent year. Men and employees experiencing higher physical workload and age

Table 1 Characteristics of the study population (n = 6922)

Variable (range)	T1 (2010) M (SD)	T2 (2011) M (SD)	T3 (2012) M (SD)
Age (45–64 years)	53.74 (5.12)	–	–
Gender, %			
Men	56.7 %	–	–
Women	43.3 %	–	–
Company size, %			
1–49 employees	27.3 %	27.7 %	28.1 %
50–250 employees	26.0 %	26.5 %	26.1 %
More than 250 employees	45.1 %	44.7 %	44.4 %
Physical workload (1–5)	1.78 (0.87)	1.76 (0.86)	1.77 (0.87)
Job demands (1–5)	3.14 (0.76)	3.11 (0.77)	3.11 (0.79)
Social support (1–5)	3.59 (0.75)	3.58 (0.77)	3.55 (0.78)
Age discrimination (1–5)	2.39 (0.78)	2.45 (0.81)	2.51 (0.82)
Company policies, %			
Reduced number of working hours per week (annual prevalence)	11.5 %	12.7 %	13.4 %
Incident use T1–T2 (0–1), n	253		
No use T1–T2 (0–0), n	5880		
Exemption from evening or night work (annual prevalence)	3.5 %	3.8 %	4.3 %
Incident use T1–T2 (0–1), n	117		
No use T1–T2 (0–0), n	6540		
Work ability (1–10)	7.97 (1.48)	7.93 (1.48)	7.85 (1.59)
Work engagement (0–6)	4.52 (1.16)	4.47 (1.19)	4.45 (1.22)

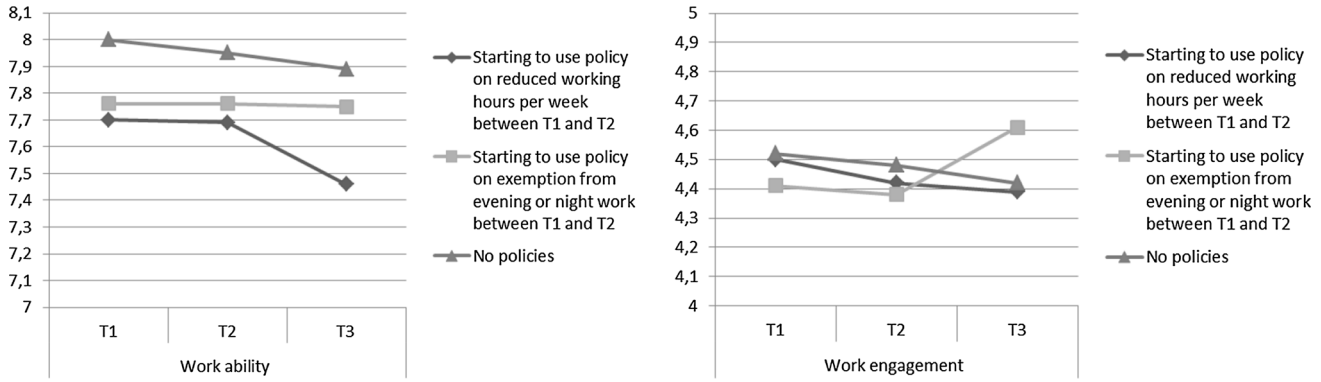

Fig. 1 Mean score on work ability (range 1–10) and work engagement (range 0–6) over time by company policy use

Table 2 Predictors of the incident use of company policies for the sustainable employability of older employees (aged 45–64 years) during 1-year follow-up

	Sustainable employability policy (between T1–T2)							
	Reduced number of working hours per week (0–0 vs. 0–1)				Exemption from evening or night work (0–0 vs. 0–1)			
	Univariate		Multivariate		Univariate		Multivariate	
	OR	95 % CI	OR	95 % CI	OR	95 % CI	OR	95 % CI
Age (years) (T1)	1.18*	1.14–1.21	1.19*	1.15–1.22	1.19*	1.14–1.24	1.21*	1.16–1.27
Men versus women (T1)	0.81	0.62–1.04	0.79	0.61–1.04	0.73	0.50–1.07	0.77	0.52–1.13
Company size (T1)								
50–250 employees versus 1–49 employees	1.23	0.88–1.74	1.25	0.88–1.79	2.03*	1.12–3.67	2.19*	1.19–4.03
More than 250 employees versus 1–49 employees	1.10	0.81–1.51	1.17	0.84–1.63	2.42*	1.42–4.14	3.02*	1.74–5.26
Physical workload (T1)	0.99	0.85–1.14	0.99	0.85–1.12	1.58*	1.31–1.91	1.79*	1.47–2.19
Job demands (T1)	1.08	0.92–1.28	1.23*	1.04–1.46	1.07	0.84–1.36	1.02	0.79–1.32
Social support (T1)	1.04	0.88–1.23	1.22*	1.01–1.47	0.90	0.71–1.15	1.17	0.89–1.53
Age discrimination (T1)	1.16	0.99–1.36	1.03	0.86–1.23	1.50*	1.19–1.88	1.16	0.89–1.49
Work ability (T1)	0.89*	0.83–0.97	0.91*	0.83–0.98	0.91	0.82–1.02	0.98	0.87–1.11
Work engagement (T1)	1.01	0.91–1.13	0.99	0.87–1.12	0.93	0.79–1.08	0.91	0.77–1.08

* Statistically significant at the $p < 0.05$ level

discrimination reported a lower work ability at follow-up, whereas higher social support was related with a higher work ability (Tables 3, 4).

Employees who started to use the policy 'exemption from evening and night work' had an almost 4 % higher work engagement in the subsequent year [multivariate regression analysis: B 0.23 (95 % CI 0.07–0.39)]. Besides, working in a larger company and higher physical workload predicted a higher work engagement, whereas age discrimination was related with a lower work engagement (Tables 3, 4). No relation between the policy on evening and night work and work ability in the subsequent year was found (Table 3). For these analyses, again, no substantial differences were seen between the univariate and multivariate models.

Discussion

Company policies that depend on age, such as 'reduced number of hours per week' and 'exemption from evening or night work', aim to support sustainable employability of older workers. In the present study, respectively 11.5 and 3.5 % of the employees aged 45–64 years used these policies at baseline. A lower work ability was related to an increased likelihood of incident use of the company policy 'reduced number of working hours', whereas incident use of this policy in turn predicted a decreased work ability. Neither work ability nor work engagement were related to the incident use of the policy 'exemption from evening or night work'. However, incident use of this policy was related to an increase in subsequent work engagement.

Table 3 The relation between incident use of the policy: 'reduced number of hours of work per week' and work ability and work engagement in linear regression analyses

	Work ability (T3)				Work engagement (T3)			
	Univariate[a]		Multivariate[b]		Univariate[a]		Multivariate[b]	
	B	95 % CI	B	95 % CI	B	95 % CI	B	95 % CI
Age (years) (T1)	−0.01*	−0.02 to −0.00	−0.01	−0.01 to 0.00	0.00	−0.00 to 0.01	0.01	0.00 to 0.01
Men versus Women (T1)	−0.07	−0.15 to 0.01	−0.09*	−0.16 to −0.01	0.00	−0.04 to 0.05	0.00	−0.04 to 0.05
Company size (T1)								
50–250 employees versus 1–49 employees	0.06	−0.05 to 0.16	0.05	−0.05 to 0.16	0.09*	0.04 to 0.16	0.11*	0.05 to 0.17
More than 250 employees versus 1–49 employees	0.01	−0.08 to 0.10	0.00	−0.09 to 0.09	0.02	−0.03 to 0.08	0.04	−0.02 to 0.09
Physical workload (T1)	−0.07*	−0.11 to −0.02	−0.06*	−0.09 to −0.01	0.02	−0.00 to 0.05	0.03*	0.01 to 0.06
Job demands (T1)	−0.03	−0.08 to 0.02	−0.01	−0.07 to 0.04	0.00	−0.03 to 0.03	0.01	−0.02 to 0.04
Social support (T1)	−0.09*	0.05 to 0.15	0.07*	0.02 to 0.12	0.02	−0.01 to 0.05	0.01	−0.02 to 0.04
Age discrimination (T1)	−0.12*	−0.17 to −0.07	−0.09*	−0.15 to −0.04	−0.04*	−0.07 to −0.01	−0.05*	−0.09 to −0.02
Reduced number of working hours per week (T1–T2)	−0.33*	−0.52 to −0.14	−0.28*	−0.47 to −0.08	−0.05	−0.17 to 0.06	−0.07	−0.18 to 0.04
Work ability (T1)	0.40*	0.38 to 0.43	0.38*	0.36 to 0.41				
Work engagement (T1)					0.72*	0.69 to 0.74	0.71*	0.69 to 0.73

'Reduced number of working hours per week' categorized as not present (0–0) versus incident (0–1)

[a] Univariate analysis corrected for the outcome at T1

[b] Multivariate analysis corrected for the following variables at T1: age, gender, physical work load, job demands, social support, age discrimination, company size, and the outcome

* Statistically significant at the $p < 0.05$ level

The finding that workers with a lower work ability more often started to use the policy 'reduced number of working hours per week' shows that using this policy does not only depend on age, but also on the employability of the worker. Employees who started to use the policy reported a (further) decreased work ability during follow-up. Several processes may underlie this. First, the policy on reduced hours per week may not be tailored to the needs of some older employees. In a recent qualitative study among selected workers from this study population, employees with health problems reported that policies not tailored to their needs or implemented without their consultation did not sufficiently tackle the specific imbalance in their job demands and resources [41]. Second, after having started working less hours, employees may have felt less productive, as was seen in the qualitative study by Leijten et al. [41]. As a consequence, they may have rated their work ability as lower. Third, research of Kooij [31] suggests that when older workers are eligible for company policies, this can have a negative influence on their work ability because it may give older workers a feeling of being superfluous in the organization. In the present study, incident use of the policy 'reduced number of working hours per week' was not related with work engagement. An explanation could be that older employees perceive this company policy as normal and self-evident [31]. In future research, it would be interesting to gain more in depth (qualitative) information on why workers adopt these policies and whether such decisions are voluntary, and how making use of a policy influences their perception of different indicators of sustainable employability (e.g. work ability and work engagement).

The use of the company policy 'exemption from evening or night' work did not depend on work ability or work engagement. This suggests that this company policy may depend on arrangements on a sectorial level for specific workers rather than on circumstances of individual workers. For example, higher physical workload, which could be a proxy for occupation, was related to the use of this policy. Being exempt from evening or night work did have a positive influence on work engagement, in line with the JD-R model. Possibly older workers are experiencing an increased vitality if they have recently stopped with evening and night work shifts. Research of Buja et al. [42] has shown that night shifts of nurses were associated with various symptoms, such as exhaustion. As night shifts are thus related to poorer health, exemption from them may lead to better health, which is strongly related to work engagement [11, 13]. However, a positive influence on work ability would then be expected as well, but was not

Table 4 The relation between incident use of the policy: 'exemption from evening or night work' during 1 year follow-up and work ability and work engagement at 2 year follow-up

	Work ability (T3)				Work engagement (T3)			
	Univariate[a]		Multivariate[b]		Univariate[a]		Multivariate[b]	
	B	95 % CI	B	95 % CI	B	95 % CI	B	95 % CI
Age (years) (T1)	−0.01*	−0.02 to −0.00	−0.01	−0.02 to 0.00	0.00	−0.00 to 0.01	0.00	−0.00 to 0.01
Men versus Women (T1)	−0.07	−0.14 to 0.00	−0.09*	−0.16 to −0.01	−0.01	−0.05 to 0.04	−0.00	−0.05 to 0.04
Company size (T1)								
50–250 employees versus 1–49 employees	0.08	−0.02 to 0.10	0.07	−0.03 to 0.17	0.08*	0.03 to 0.14	0.09*	0.03 to 0.15
More than 250 employees versus 1–49 employees	0.02	−0.07 to 0.31	0.01	−0.08 to 0.09	0.04	−0.01 to 0.09	0.05*	0.00 to 0.11
Physical workload (T1)	−0.07*	−0.11 to −0.03	−0.06*	−0.11 to −0.02	0.02	−0.01 to 0.04	0.03*	0.00 to 0.05
Job demands (T1)	−0.03	−0.08 to 0.01	−0.02	−0.07 to 0.03	0.00	−0.03 to 0.03	0.00	−0.03 to 0.03
Social support (T1)	0.11*	0.06 to 0.15	0.07*	0.02 to 0.13	0.02	−0.01 to 0.05	0.01	−0.02 to 0.04
Age discrimination (T1)	−0.12*	−0.17 to −0.07	−0.09*	−0.14 to −0.04	−0.05*	−0.08 to −0.02	−0.06*	−0.09 to −0.03
Exemption from evening or night work (T1–T2)	−0.02	−0.29 to 0.25	0.05	−0.22 to 0.33	0.25*	0.09 to 0.41	0.23*	0.07 to 0.39
Work ability (T1)	0.41*	0.38 to 0.43	0.39*	0.36 to 0.41				
Work engagement (T1)					0.72*	0.71 to 0.74	0.71*	0.69 to 0.73

'Exemption from evening or night work' categorized as not present (0–0) versus incident (0–1)

[a] Univariate analysis corrected for the outcome at T1

[b] Multivariate analysis corrected for the following variables at T1: age, gender, physical work load, job demands, social support, age discrimination, company size and the outcome

* Statistically significant at the $p < 0.05$ level

found. Again, making use of the company policy may also make employees feel less productive and superfluous to the organization, which might have counterbalanced a positive impact of the policy. In future research, it would be of interest to investigate whether the influence of exemption of evening or night work on work engagement remains during a longer follow-up period, and who benefits most.

A strength of the current study is the longitudinal data of STREAM which allowed us to follow employees who started to use company policies over time. The following limitations should be noted as well. First, relatively few older employees started using a policy during the 1 year follow-up period. However, due to our large sample size and high response, we are confident we still had sufficient power to robustly answer our research questions. Second, we studied the influence of policy measures in an observational study, and not in a randomized controlled trial. Therefore, policy measures were not assigned randomly. The fact that the policy 'reduced number of hours' depended partly on work ability shows that confounding by indication played a role, i.e. especially employees at risk for a reduced employability started to use the company policy. Although we controlled for the dependent variable at baseline, it is conceivable that this may have influenced our findings on the impact of policy measures. Third, the influence of incident policy measure use (T1–T2) on work ability and work engagement (T3) was investigated with a 1-year time-lag. However, 3.4 % (reduced hours) and 3.8 % (night work) of those whom at first (T1–T2) did not use the policy, did do so at 2 years of follow-up (T3), consequently the same wave as when the outcomes work ability and work engagement were assessed. Additional analyses showed that excluding these employees did not substantially change our findings. Fourth, this study only addressed the individual perception level, as data on an organizational level were not available. As employees may not be aware of the policies available in their organization, we could not take into account in our analyses that policies were present but not used. In order to investigate differences between employees working in organizations offering policies and organizations not offering policies, additional analyses were performed in which employees who responded that policies were not available in their organization or that they did not know were excluded. When excluding these employees the essence of our findings did not change, only the effects of using the policy reduced working hours per week on work ability were smaller and no longer statistically significant. This could be related to employees' perceptions of the availability of policies in their organization. In further research, it would

be interesting to have employer information on the availability and use of policies. Fifth, participants had to fill in questions regarding their own perception of their work ability and work engagement. As a result, common source variance may have occurred [43]. However, given the fact that this research promised to guarantee the anonymity and was filled in online, employees may have reported more honestly than in a survey whereby the employer is involved [44]. Therefore, we are confident the common source variance is not a threat for the quality of this study. Sixth, the present study focused on company policies in relation to work ability and work engagement. In future research, it would be of interest to study the relation with other determinants of prolonged work participation as well, e.g. productivity at work and self-rated health. The company policies investigated in the present study are especially designed for older workers and aim to support their sustainable employability. Various factors influenced whether workers started to use these policies, which might reflect general arrangements on a company or sectorial level. However, employees at risk for a reduced sustainable employability, i.e. those with a lower work ability, more often started to use the policy on reduced working hours as well. The mixed findings with respect to the consequences of using company policies stresses the importance of tailoring measures to the individual, and continuous communication between the employee and his/her manager about the fit between the demands of the job and the individual worker. In future research, we would recommend more frequent and fine-grained measurements before and after the use of company policies to shed additional light on the development of sustainable employability, e.g. whether a reduction in work ability precedes or follows the use of a company policy. Besides, in addition to observational studies, quasi-experimental studies on the impact of using company policies would be of interest. Furthermore, we would recommend to study a wider array of company policies. The two policies addressed in the present study were aimed at reducing job demands of older employees. However, policies that increase older employees' employability instead of reducing their work load, such as training and education, may be (more) beneficial [31] and more relevant as policies reducing work load of older workers are (partly) disappearing.

In conclusion, workers with a lower work ability are more likely to make use of some company policies aiming to support sustainable employability of older workers, though other factors influence the use of such policies as well. Further research is needed to explore whether using such policies in turn result in a (longstanding) improvement, or reduced deterioration, of older workers' sustainable employability.

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Compliance with Ethical Standards

Conflict of interest All authors declare that they do not have conflicts of interest.

Ethical Standard The Medical Ethical Committee of the VU University Medical Centre (Amsterdam) declared that the Medical Research Involving Human Subjects Act (abbreviation in Dutch: WMO) does not apply to the STREAM study and had no objection to the executive research. In the information that accompanied the online questionnaire, it was emphasized that the privacy of participants was guaranteed, that all data would be treated confidentially and stored in secured computer systems.

References

1. OECD. Ageing and employment policies: Netherlands. Working Better with Age, OECD Publishing; 2014. doi:10.1787/9789264208155-en
2. Barnes-Farrell J, Matthews R. Age and work attitudes. In: Shultz K, Adams G, editors. Aging and work in the 21st century. Mahwah: LEA Laurence Erlbaum Associates; 2007. p. 139–62.
3. Ilmarinen J. Aging workers. Occup Environ Med. 2001;58:546–52.
4. Stattin M. Retirement on grounds of ill health. Occup Environ Med. 2005;62:135–40.
5. Ilmarinen J. Work ability: a comprehensive concept for occupational health research and prevention. Scand J Work Environ Health. 2009;35(1):1–5.
6. Van den Berg TI, Robroek SJ, Plat JF, Koopmanschap MA, Burdorf A. The importance of job control for workers with decreased work ability to remain productive at work. Int Arch Occup Environ Health. 2011;84:705–12.
7. Alavinia SM, de Boer AG, van Duivenbooden JC, Frings-Dresen MH, Burdorf A. Determinants of work ability and its predictive value for disability. Occup Med (Lond). 2009;59:32–7.
8. Burdorf A, Frings-Dresen MH, van Duivenbooden C, Elders LA. Development of a decision model to identify workers at risk of long-term disability in the construction industry. Scand J Work Environ Health. 2005;3(2):31–6.
9. Salonen P, Arola H, Nygard CH, Huhtala H, Koivisto AM. Factors associated with premature departure from working life among ageing food industry employees. Occup Med (Lond). 2003;53:65–8.
10. Sell L, Bultmann U, Rugulies R, Villadsen E, Faber A, Sogaard K. Predicting long-term sickness absence and early retirement pension from self-reported work ability. Int Arch Occup Environ Health. 2009;82:1133–8.
11. de Wind A, Geuskens GA, Ybema JF, Blatter BM, Burdorf A, Bongers PM. Health, job characteristics, skills, and social and financial factors in relation to early retirement—results from a longitudinal study in the Netherlands. Scand J Work Environ Health. 2014;40(2):186–94.
12. Schaufeli WB, Bakker AB, Salanova M. The measurement of work engagement with a short questionnaire: a cross-national study. Educ Psychol Meas. 2006;66:701–16.
13. Leijten FRM, van den Heuvel SG, van der Beek AJ, Ybema JF, Robroek SJ, Burdorf A. Associations of work-related factors and work engagement with mental and physical health: a 1-year follow-up study among older workers. J Occup Rehabil. 2014. doi:10.1007/s10926-014-9525-6.

14. Airila A, Hakanen JJ, Punakallio A, Lusa S, Luukkonen R. Is work engagement related to work ability beyond working conditions and lifestyle factors? Int Arch Occup Environ Health. 2012;85(8):915–25.
15. Rongen A, Robroek SJW, Schaufeli W, Burdorf A. The contribution of work engagement to self-perceived health, work ability, and sickness absence beyond health behaviors and work-related factors. Occup Environ Med. 2015;56(8):892–7.
16. Allen DG, Shore LM, Griffeth RW. The role of perceived organizational support and supportive human resource practices in the turnover process. J Manag. 2003;29:99–118.
17. Bayl-Smith PH, Griffin B. Age discrimination in the workplace: identifying as a late-career worker and its relationship with engagement and intended retirement age. J Appl Psychol. 2014; 44(9):588–99.
18. Harter JK, Schmidt FL, Hayes TL. Business-unit-level relationship between employee satisfaction, employee engagement, and business outcomes: a meta-analysis. J Appl Psychol. 2002;87(2): 268–79.
19. Oeij PRA, de Vroome EMM, Kraan K, Goudswaard A, van den Bossche S. Werkgevers Enquête Arbeid 2012. Methodologie en beschrijvende resultaten [Employers' Labour Survey 2012. Methodology and descriptive results]. Hoofddorp, The Netherlands [Dutch]: TNO; 2013.
20. Bakker AB, Demerouti E. The job demands-resources model: state of art. J Manag Psychol. 2007;22(3):309–28.
21. Demerouti E, Bakker AB, Nachreiner F, Schaufeli WB. The job demands-resources model of burnout. J Appl Psychol. 2001;86: 499–512.
22. Schaufeli WB, Bakker AB. Job demands, job resources, and their relationship with burnout and engagement: a multi-sample study. J Organ Behav. 2004;25:293–315.
23. van den Berg TI, Elders LA, de Zwart BC, Burdorf A. The effects of work-related and individual factors on the Work Ability Index: a systematic review. Occup Environ Med. 2009;66(4):211–20.
24. Saks AM. Antecedents and consequences of employee engagement. J Manag Psychol. 2006;21(7):600–19.
25. Fisher FM, Matinez MC. Individual features, working conditions and work injuries are associated with work ability among nursing professionals. Work. 2013;45(4):509–17.
26. von Bonsdorff ME, von Bonsdorff MB, Zhou ZE, Kauppinen M, Miettinen M, Rantanen T, Vanhala S. Organizational justice, selection, optimization with compensation, and nurses' work ability. J Occup Environ Med. 2014;56(3):326–30.
27. Alavinia SM, van Duivenbooden C, Burdorf A. Influence of work-related factors and individual characteristics on work ability among Dutch construction workers. Scand J Work Environ Health. 2007;33(5):351–7.
28. Ostroff C, Bowen DE. Moving HR to a higher level: HR practices and organizational effectiveness. In: Klein KJ, Kozlowski SWJ, editors. Multilevel theory, research, and methods in organizations: foundations, extensions, and new directions. San Francisco: Jossey-Bass; 2000. p. 211–66.
29. Shore LM, Wayne SJ. Commitment and employee behavior: comparison of affective commitment and continuance commitment with perceived organizational support. J Appl Psychol. 1993;78:774–80.
30. Shore LM, Shore TH. Perceived organizational support and organizational justice. In: Cropanzano R, Kacmar KM, editors. Organizational politics, justice, and support: managing social climate at work. Westport: Quorum Press; 1995. p. 149–64.
31. Kooij D. Motiveren van oudere werknemers: De rol van leeftijd, werk gerelateerde motieven en personeelsinstrumenten [Motivating older workers: The role of age, work-related motives and personnel instruments]. Tijdschrift voor HRM 2010;4:37–50 [Dutch].
32. Ybema JF, Geuskens GA, van den Heuvel SG, de Wind A, Leijten FRM, Joling C, et al. Study on Transitions in Employment, Ability and Motivation (STREAM): the design of a four-year longitudinal cohort study among 15,118 persons aged 45 to 64 years. Br J Med Med Res. 2014;4(6):1383–99.
33. Tuomi K, Ilmarinen J, Jahkola A, Katajarinne L, Tulkki A. Work Ability Index. 2nd Revised. Helsinki: Finnish Institute of Occupational Health; 1998.
34. Ahlstrom L, Grimby-Ekman A, Hagberg M, Dellve L. The work ability index and single-item question: associations with sick leave, symptoms, and health—a prospective study of women on long-term sick leave. Scand J Work Environ Health. 2010;36: 404–12.
35. Tengland P. The concept of work ability. J Occup Rehabil. 2011;21:275–85.
36. Hildebrandt VH, Bongers PM, van Dijk FJ, Kemper HC, Dul J. Dutch Musculoskeletal Questionnaire: description and basic qualities. Ergonomics. 2001;44:1038–55.
37. Koppes LLJ, de Vroome EMM, Mol MEM, Janssen BJM, van den Bossche SNJ. Nationale Enquête arbeidsomstandigheden 2010: Methodologie en globale resultaten [Netherlands working conditions survey 2009: methodology and overall results]. Hoofddorp: TNO; 2010.
38. Karasek R, Brisson C, Kawakami N, Houtman I, Bongers P, Amick B. The Job Content Questionnaire (JCQ): an instrument for internationally comparative assessments of psychosocial job characteristics. J Occup Health Psychol. 1998;3(4):322–55.
39. Kristensen TS, Borg V. Copenhagen Psychosocial Questionnaire (COPSOQ). Copenhagen: National Institute of Occupational Health; 2010.
40. Furunes T, Mykletun RJ. Age discrimination in the workplace: validation of the Nordic Age Discrimination Scale (NADS). Scand J Psychol. 2010;51:23–30.
41. Leijten FRM, van den Heuvel SG, Ybema JF, Robroek SJW, Burdorf A. Do work factors modify the association between chronic health problems and sickness absence among older employees? Scand J Work Environ Health. 2013;39(5):477–85.
42. Buja A, Zampieron A, Mastrangelo G, Petean M, Vinelli A, Cerne D, Baldo V. Strain and health implications of nurses' shift work. Int J Occup Med Environ Health. 2013;26(4):511–21.
43. Podsakoff PM, MacKenzie SM, Lee J, Posdakoff NP. Common method variance in behavioral research: a critical review of the literature and recommended remedies. J Appl Psychol. 2003;88: 879–903.
44. Siemsen E, Roth A, Oliveira P. Common method bias in regression models with lineair, quadratic, and interaction effects. Organ Res Methods. 2010;13:456–76.