

Who is Engaged at Work?

A Large-Scale Study in 30 European Countries

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Objective: The aim was to investigate differences in the levels of work engagement across demographic and work- and organization-related factors, and their relative importance for work engagement. **Methods:** The study was on the basis of a sample of 17,498 male and 17,897 female employees from the sixth European Working Conditions Survey collected in 2015. Linear regression models and dominance analysis were used. **Results:** Several significant differences were observed between the levels of work engagement in different demographic and work- and organization-related groups. Employees working in human service occupations reported higher levels of work engagement than employees in other industries. Relatively, occupational group (68%) and industry (17%) contributed most to work engagement. **Conclusion:** It is important to focus on enhancing work engagement, particularly among less educated employees, among those with nonpermanent contracts, and in certain occupations.

Keywords: employee well-being, employment arrangements, epidemiology, Europe, population study, work engagement

Work engagement—also called employee engagement—is an important and popular issue, in both academia and business. For instance, since its introduction at the turn of the century, the number of scientific papers on the topic has increased steadily year by year and currently amounts to over 7000 (Google Scholar). However, despite the overwhelming number of scientific publications, valid and reliable information on the epidemiology of work engagement is lacking. So far, scientific research has focused on specific occupational samples or organizations rather than on the workforce as a whole. The current study fills this gap by using epidemiological data on work engagement from the sixth European Working Conditions Survey (EWCS) carried out in 2015.

Work engagement is defined as “a positive, fulfilling state of mind that is characterized by vigor, dedication, and absorption,” and operationalized by the Utrecht Work Engagement Scale (UWES).¹ Vigor refers to high levels of energy and mental resilience while working, the willingness to invest effort in one’s work, and

Learning Objectives

- Define the concept of work engagement and discuss previous evidence for its beneficial effects.
- Summarize the new findings on factors associated with work engagement in a large sample of European workers.
- Identify categories of factors with a greater or lesser impact on work engagement.

persistence in the face of difficulties. Dedication refers to a sense of significance, enthusiasm, inspiration, pride, and challenge. The third defining characteristic of engagement is absorption, which is characterized by being fully concentrated on and happily engrossed in one’s work, a sense that time passes quickly, and possible difficulties in detaching oneself from one’s work.

The antecedents and consequences of work engagement have been intensively investigated using the Job Demands-Resources (JD-R) model.^{2–5} This research has shown that different job resources (eg, skill variety, job control, learning opportunities) and personal resources (eg, self-efficacy, proactivity, optimism) are the main drivers of work engagement, whereas job demands (eg, workload, role conflicts, emotional demands) play a minor role.^{6,7}

Multiple studies suggest that work engagement is beneficial for both employees and organizations. For instance, work engagement has been associated with better mental and physical health among employees in terms of low levels of depression⁸ and anxiety,⁹ healthy cardiac autonomic activity,¹⁰ better workability,¹¹ better cortisol suppression in response to dexamethasone,¹² lower systolic blood pressure,¹³ and better sleep quality.¹⁴ In addition, work engagement has been found to predict less from work to family conflicts and more positive from work to home enrichment experiences.¹⁵

Research also suggests that work engagement is beneficial for employee performance, and hence also for organizations. For instance, work engagement is related to a low risk of sickness absences,^{16,17} several indicators of job performance,^{18–22} and workplace safety.⁷

As work engagement seems to be valuable for both organizations and employees, knowledge regarding the prevalence of work engagement in different occupational groups would be important to be able to take specific, targeted measures to increase it. Identifying (dis)engaged employees is not only important at the European and national governmental level (eg, “Engaging for success” in Britain,²³ but also for employers, trade unions, and nongovernmental organizations such as the ILO. However, very little is known about how demographic and occupational factors (other than immediate working conditions) relate to work engagement. According to the validation study of the UWES, which used samples from 10 countries,²⁴ work engagement was weakly positively related to age, whereas the relation with gender varied across countries. Of occupational groups, educators, managers, and police officers reported the highest levels of work engagement, whereas groups such as blue-collar workers and social and health care workers reported the lowest levels.²⁴ However, these results are based on nonrepresentative studies conducted at different times and

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Clinical Significance: This study helps e.g. occupational health services and other practitioners to identify those occupational groups that are less likely to experience a positive state of employee well-being, i.e., work engagement which is known to relate to many positive health and organizational outcomes.

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in different occupational and organizational samples. In addition, the present dataset showed that work engagement differs across countries, and that these differences are related to various economic, cultural, and governance indicators.²⁵ Generally speaking, the workforce is more likely to be engaged at work in well-governed, individualistic countries with a strong democracy, low corruption, and gender inequality.

The aim of this current, unique paper is to investigate the prevalence of work engagement at the individual level across different sociodemographic, work (eg, type of contract, working hours), and organizational (eg, size of the company, sector) groups in 30 European countries. Another aim is to compare the relative importance of these factors to the level of work engagement to determine the most important contributors to feeling engaged at work.

METHODS

Participants and Study Design

We used the data of the 6th EWCS, collected in 2015.²⁶ EWCS is collected every 5 years from random samples of the workforce and focuses on their occupation, working conditions, and health. The target population for the EWCS consists of all residents from EU countries aged 15 years or above and in employment at the time of the survey. A stratified (by region and degree of urbanization) multistage, random sample is drawn in each country, using individual-, household-, and address-level registers. In each stratum, primary sampling units are randomly selected, in proportion to the size of the country. Subsequently, a random sample of households is drawn in each of these units. Finally, in each household, the selected respondent is the working person whose birthday is next. More details on sampling can be found elsewhere.²⁶

The survey interviews were carried out face-to-face using computer-assisted personal interviewing. The average duration of these interviews was 45 minutes. The minimum sample size per country was 1000. The overall response rate was 43%, ranging from 11% in Sweden to 78% in Albania, and resulting in a total of 43,850 responses. All 28 EU Member States were included, as well as Norway and Switzerland. EWCS' quality assurance²⁴ meant that five EU-associated countries had to be excluded. The EWCS is representative of those aged 15 years and above (16 and above in Bulgaria, Norway, Spain, and the UK) who are in employment and are resident in the country that is being surveyed. We also excluded those not working at the time of the data collection. Table 1 presents the demographic details of the participants as well as the mean levels of work engagement in the different groups.

Measurements

Work engagement was assessed using three items from the UWES²⁴: "At my work, I feel full of energy" (vigor), "I am enthusiastic about my work" (dedication), and "Time flies when I am working" (absorption). Recently, a similar three-item version of the UWES was validated and shown to be psychometrically as sound as the nine-item version (UWES-3).²⁷ The present survey uses two items that differ from UWES-3.²⁷ However, using the third author's database, which includes 109,975 employees from 25 countries, both the slightly different three-item UWES versions correlated at 0.88.²⁷ Across countries, the correlations varied between 0.68 and 0.92. In eight countries, the correlations were 0.90 or higher (> 80% shared variance). In short, both the ultra-short three-item versions of the UWES were similar. The items were rated on a five-point scale, ranging from 1 (always) to 5 (never). We reversed the scale so that the higher value referred to higher work engagement.

In addition, we utilized sociodemographic and work-related factors regarding gender, age, highest level of education (ISCED), and country, and included design weights to adjust for different selection probabilities, sectors of economic activity (NACE),

occupational groups (ISCO), part-time versus full-time work, being self-employed, type of labor contract, public or private sector, size of workplace, length of tenure, restructuring during the last 3 years (yes/no), and number of work hours/week. These were categorized in accordance with the EU working time directive into four classes: less than 35 hours/week, 35 to 40 hours/week, 40 to 48 hours/week, and more than 48 hours/week. The purpose of using weights was to ensure that the samples were comparable and representative of each country.

Statistical Analyses

The statistical analysis included three steps. First, we studied each demographic and occupation-related factor separately, both unadjusted and adjusted for age and gender, in linear regression models to predict work engagement. Second, we investigated that all factors were simultaneously as independent variables in the same model to predict work engagement. As some of the sociodemographic categories included less than 500 individuals, which might add bias or chance to the estimations, we chose to present only the categories with 500 or more individuals, to add comparability and reliability. However, to avoid losing information and to maximize the number of individuals in the models, we retained these categories in the models but did not present the results. Consequently, we did not use them for making any interpretations. Third, to assess the relative importance of different demographic and work-related factors, we conducted dominance analysis (DA) to determine the most important contributors to work engagement.²⁸ This analysis compares all independent variables in the model to each other and ranks them by their relative importance in predicting work engagement.²⁹

DA is used to overcome methodological difficulties, such as the multicollinearity related to traditional regression models with several correlated predictors. Regression, including stepwise and hierarchical approaches with several overlapping independent variables, may overestimate the importance of the strongest predictors, underestimate the importance of the less important predictors, reverse the signs of predictors (ie, suppressor effect), and allow slight differences in interpredictor correlations to change the pattern of derived regression weights.²⁸ In addition to overcoming multicollinearity problems, DA is particularly useful when the number of predictors is large.²⁹ We also reported the dominance value, which means the proportion of each factor's explained variance (%) of the variance explained (100%) by the whole model.

In all analyses, the reference category for demographics and work-related factors was the largest category (ie, including most employees). In addition, we weighted all the analyses with design weights to adjust for different selection probabilities of EWCS to control for the impact of the country. We used Stata 14.0 software (Stata Corporation LLC, College Station, TX) and its DOMIN – module to conduct the analyses.³⁰

RESULTS

Table 2 presents the crude and age- and gender-adjusted associations between demographic and work-related factors and work engagement. Women and workers over 60 years of age were significantly more engaged than men and those in younger age groups, respectively. After adjusting for age and gender, the results remained similar, indicating a clear linear trend in education: the lower the educational attainment, the lower the level of work engagement. For example, those with primary education were clearly less likely to feel engaged at work [Exp(coef) = 0.89, 95% confidence interval (95% CI) 0.83 to 0.96], whereas those with a doctorate or equivalent education were more likely to feel engaged [Exp(coef) = 1.39, 95% CI 1.24 to 1.57].

Of the work-related factors, longer tenure in the same company and being self-employed were positively related to work engagement. Working more than 48 hours/week was also associated with work engagement [Exp(coef) = 1.12, 95% CI 1.08 to 1.16]

TABLE 1. Work Engagement by Sociodemographic and Work-Related Factors (Including Only Those Reporting Being at Work and Limited to EU 28 Countries, Excluding Candidate Countries but Switzerland and Norway Included)

	Work Engagement		
	n	Mean	SD
All	35,395	3.95	0.70
Gender			
Men	17,498	3.94	0.70
Women	17,897	3.96	0.70
Age groups			
< 30 years	5,221	3.91	0.72
30–40 years	8,240	3.94	0.71
40–50 years	9,645	3.95	0.70
50–60 years	8,924	3.96	0.70
> 60 years	3,080	4.03	0.68
Education			
Early childhood education	164	3.76	0.84
Primary education	1,083	3.76	0.84
Lower secondary education	4,443	3.87	0.77
Upper secondary education	14,542	3.91	0.72
Postsecondary nontertiary education	2,903	3.94	0.70
Short-cycle tertiary education	3,511	4.04	0.63
Bachelor or equivalent	4,393	4.05	0.64
Master or equivalent	3,706	4.06	0.61
Doctorate or equivalent	372	4.14	0.59
Years worked in the company			
1 year	1,986	3.96	0.75
2–5 years	9,196	3.92	0.71
5–10 years	7,037	3.96	0.69
10–15 years	4,282	3.96	0.66
15–20 years	2,964	3.97	0.69
Over 20 years	5,557	4.02	0.67
Employment contract (main job)			
Contract of unlimited duration	24,181	3.94	0.69
Contract of limited duration	3,366	3.85	0.78
A temporary agency contract	380	3.79	0.86
An apprenticeship or other training schedule	141	3.98	0.76
No contract	1,721	3.82	0.72
Other	228	3.83	0.81
Working hours (limits by EU Working time directive)			
< 35 hours/week	8,021	3.98	0.72
35–40 hours/week	17,727	3.94	0.69
40–48 hours/week	4,172	3.90	0.69
>48 hours/week	4,451	4.00	0.71
Part-time work	7,178	3.95	0.73
Full-time work	27,965	3.95	0.70
Self-employed	5,294	4.11	0.66
Employee	29,839	3.92	0.71
Occupational group			
Plant and machine operators, and assemblers	2,445	3.74	0.79
Elementary occupations	3,365	3.76	0.82
Clerical support workers	3,228	3.88	0.69
Service and sales workers	7,411	3.91	0.73
Craft and related trades workers	4,248	3.94	0.70
Skilled agricultural, forestry, and fishery workers	958	3.97	0.73
Technicians and associate professionals	4,267	4.03	0.63
Professionals	6,760	4.09	0.60
Managers	2,353	4.15	0.61
Industry			
Manufacturing	4,982	3.85	0.74
Transport, storage, and communication	2,372	3.88	0.72
Wholesale and retail trade	5,267	3.89	0.72
Hotels and restaurants	1,823	3.93	0.74
Agriculture, hunting, and forestry	1,380	3.94	0.73
Real estate activities	4,126	3.94	0.71
Public administration and defense	2,058	3.94	0.69
Construction	2,220	3.97	0.67
Financial intermediation	1,011	4.00	0.63
Health and social work	3,778	4.04	0.64

(continues)

TABLE 1. (Continued)

	Work Engagement		
	n	Mean	SD
Other service activities	2,011	4.09	0.69
Education	2,825	4.13	0.60
Sector			
Private sector	24,276	3.93	0.72
Public sector	8,509	4.00	0.67
A joint private-public organization or company	1,254	4.00	0.68
Other	630	4.01	0.69
Not-for-profit sector or NGO	385	4.03	0.65
Size of the company			
1 (participant works alone)	552	4.05	0.72
2–4	1,149	3.99	0.70
5–9	1,480	3.95	0.69
10–49	4,172	3.94	0.69
50–99	1,802	3.90	0.70
100–249	1,753	3.91	0.71
250–499	1,002	3.90	0.71
500 and over	1,672	3.91	0.70
During last year, restructuring, or reorganizing (yes)	8,053	3.93	0.70
No	26,067	3.96	0.70

TABLE 2. Crude and Age- and Gender-Adjusted Regression Coefficients With 95% Confidence Intervals (CI) for Demographic and Work-Related Factors Predicting Work Engagement

	Work Engagement			
	Crude		Age- and Gender-Adjusted	
	Regression Coefficient*	95% CI	Regression Coefficient*	95% CI
Gender (men as reference)	1.03	1.01–1.06	1.03	1.01–1.06
Age groups (40–50 years as reference)				
< 30 years	0.99	0.95–1.03	1.05	0.97–1.15
30–40 years	0.99	0.96–1.03	1.03	0.97–1.08
50–60 years	1.01	0.98–1.05	0.98	0.93–1.03
> 60 years	1.09	1.04–1.14	1.02	0.94–1.12
Education (Upper secondary education as reference)				
Early childhood education	0.86	0.70–1.05	0.86	0.70–1.05
Primary education	0.89	0.83–0.96	0.89	0.83–0.96
Lower secondary education	1.01	0.96–1.05	1.01	0.96–1.05
Postsecondary nontertiary education	1.04	1.00–1.09	1.04	0.99–1.09
Short-cycle tertiary education	1.14	1.04–1.19	1.09	1.10–1.19
Bachelor or equivalent	1.15	1.10–1.20	1.15	1.10–1.19
Master or equivalent	1.20	1.15–1.24	1.19	1.15–1.24
Doctorate or equivalent	1.39	1.24–1.57	1.39	1.24–1.57
Years worked in the company (2–5 years as reference)				
1 year	1.01	0.95–1.09	1.02	0.95–1.09
5–10 years	1.04	1.00–1.08	1.04	1.00–1.08
10–15 years	1.02	0.98–1.06	1.02	0.98–1.07
15–20 years	1.05	1.00–1.10	1.05	1.00–1.10
Over 20 years	1.10	1.06–1.15	1.11	1.06–1.15
Working hours (limits by EU Working time directive, 35–40 hours/week as reference)				
< 35 hours/week	1.03	1.00–1.06	1.02	0.99–1.05
40–48 hours/week	0.99	0.96–1.03	1.00	0.96–1.03
>48 hours/week	1.11	1.07–1.15	1.12	1.08–1.16
Employment contract (main job, Contract of unlimited duration as reference)				
Contract of limited duration	0.94	0.90–0.98	0.93	0.89–0.97
A temporary agency contract	0.83	0.73–0.94	0.83	0.73–0.94
An apprenticeship or other training schedule	1.05	0.81–1.35	1.05	0.81–1.36
No contract	0.92	0.87–0.98	0.92	0.86–0.98
Other	0.81	0.71–0.92	0.80	0.70–0.91
Part-time work (Full-time work as reference)	0.97	0.94–1.00	0.95	0.92–0.98
Self-employed (Employee as reference)	1.21	1.17–1.25	1.21	1.17–1.25
Occupational group (Technicians and associate professionals as reference)				

(continues)

TABLE 2. (Continued)

	Work Engagement			
	Crude		Age- and Gender-Adjusted	
	Regression Coefficient*	95% CI	Regression Coefficient*	95% CI
Plant and machine operators, and assemblers	0.75	0.71–0.80	0.76	0.72–0.81
Elementary occupations	0.74	0.70–0.79	0.74	0.70–0.78
Skilled agricultural, forestry, and fishery workers	1.05	0.97–1.14	1.06	0.98–1.14
Clerical support workers	0.87	0.82–0.91	0.86	0.82–0.91
Service and sales workers	0.91	0.87–0.95	0.91	0.87–0.95
Craft and related trades workers	0.95	0.91–1.00	0.97	0.92–1.01
Professionals	1.09	1.04–1.13	1.08	1.04–1.13
Managers	1.16	1.10–1.23	1.17	1.11–1.23
Industry (Wholesale and retail trade as reference)				
Agriculture, hunting, and forestry	1.12	1.04–1.20	1.12	1.04–1.20
Activities of households	0.92	0.83–1.02	0.92	0.83–1.03
Manufacturing	0.92	0.88–0.97	0.92	0.88–0.97
Transport, storage, and communication	0.93	0.87–0.98	0.92	0.87–0.98
Hotels and restaurants	1.07	1.00–1.15	1.07	1.00–1.15
Electricity, gas, and water supply	1.02	0.90–1.16	1.02	0.90–1.15
Real estate activities	0.99	0.94–1.04	0.99	0.94–1.04
Public administration and defense	1.00	0.94–1.06	1.00	0.94–1.06
Construction	1.05	0.99–1.12	1.05	0.98–1.12
Financial intermediation	1.11	1.03–1.20	1.11	1.02–1.20
Health and social work	1.14	1.09–1.24	1.15	1.09–1.20
Other service activities	1.16	1.09–1.24	1.16	1.09–1.24
Education	1.25	1.19–1.32	1.25	1.19–1.32
Sector (Private sector as reference)				
Public sector	1.07	1.04–1.10	1.06	1.00–1.13
A joint private-public organization or company	1.06	1.00–1.13	1.05	0.96–1.14
Other	1.14	1.03–1.26	1.14	1.03–1.26
Not-for-profit sector or NGO	1.05	0.96–1.15	1.07	1.04–1.10
Size of the company (10–49 as reference)				
1 (participant works alone)	1.16	1.05–1.29	1.10	0.98–1.23
2–4	1.08	0.99–1.17	1.02	0.93–1.12
5–9	1.06	0.98–1.14	0.95	0.88–1.02
50–99	1.00	0.94–1.06	0.95	0.88–1.02
100–249	0.99	0.92–1.06	0.94	0.86–1.02
250–499	0.97	0.88–1.06	0.92	0.83–1.02
500 and over	0.98	0.92–1.05	0.94	0.86–1.01
During last year, restructuring, or reorganizing (no as reference)	0.97	0.94–1.00	0.97	0.94–1.00

95% CI, 95% confidence interval.

*Statistically significant regression coefficients and 95% CIs in boldface.

both in the crude and age- and gender-adjusted models. In regard to the type of employment contract, a clear trend was observed, as contracts with a limited duration [Exp(coef) = 0.93, 95% CI 0.89 to 0.97], temporary agency contracts [Exp(coef) = 0.83, 95% CI 0.73 to 0.94], no contract [Exp(coef) = 0.92, 95% CI 0.86 to 0.98], or other type of contract [Exp(coef) = 0.80, 95% CI 0.70 to 0.91] were all associated with lower work engagement in comparison to permanent work contracts.

The differences between industries indicated that working in health care and social work [Exp(coef) = 1.15, 95% CI 1.09 to 1.20] and other service activities [Exp(coef) = 1.16, 95% CI 1.09 to 1.24], and in education [Exp(coef) = 1.25, 95% CI 1.19 to 1.32] were associated with higher levels of work engagement. In contrast, working in manufacturing and transport, storage, and communications [Exp(coef) = 0.92, 95% CI 0.88 to 0.97] was associated with lower levels of work engagement. Of the occupational groups, managers [Exp(coef) = 1.17, 95% CI 1.11 to 1.23] and professionals [Exp(coef) = 1.08, 95% CI, 1.04 to 1.13] reported higher levels of work engagement, whereas plant and machine operators [Exp(coef) = 0.76, 95% CI 0.72 to 0.81] and elementary occupations [Exp(coef) = 0.74, 95% CI 0.70 to 0.78] reported lower work engagement. Moreover, in the private sector, the likelihood of work

engagement was somewhat lower than in other sectors. We found no association between work engagement and the size of the company, nor between work engagement and recent company restructuring or reorganization.

In the multivariate analysis (Table 3), being a worker over 60 years of age [Exp(coef) = 1.18, 95% CI 1.06 to 1.18] was positively associated with work engagement. In addition, working in health care and social work [Exp(coef) = 1.17, 95% CI 1.07 to 1.28], education [Exp(coef) = 1.15, 95% CI 1.03 to 1.30], and agriculture, hunting, or forestry [Exp(coef) = 1.22, 95% CI 1.01 to 1.48] increased the likelihood of work engagement. In contrast, working in manufacturing and transport, storage, and communications [Exp(coef) = 0.92, 95% CI 0.88 to 0.97] was associated with lower levels of work engagement. Of the different occupations, plant and machine operators and assemblers [Exp(coef) = 0.80, 95% CI 0.72 to 0.89], elementary occupations [Exp(coef) = 0.77, 95% CI 0.69 to 0.85], clerical support workers [Exp(coef) = 0.91, 95% CI 0.84 to 0.99], and service and sales workers [Exp(coef) = 0.91, 95% CI 0.85 to 0.98] were likely to be less engaged, and managers [Exp(coef) = 1.16, 95% CI 1.06 to 1.26] were more likely to feel engaged at work. Finally, working in the public sector was positively related to work engagement

TABLE 3. Multivariate Regression Coefficients With 95% Confidence Intervals (CI) for Demographic and Work-Related Factors Predicting Work Engagement and Standardized Dominance Estimates (Domin = % R^2 Explained) and the Position in the Ranking of Dominance Analysis (Domin Rank)

	Work Engagement			
	Multivariate Model		Domin	Domin Rank
	Regression Coefficient*	95% CI		
Gender (men as reference)	1.04	0.95–1.13	2.1%	6
Age groups (40–50 years as reference)			0.4%	10
< 30 years	1.04	0.97–1.12		
30–40 years	1.03	0.97–1.09		
50–60 years	1.05	0.99–1.11		
> 60 years	1.18	1.06–1.29		
Education (Upper secondary education as reference)			2.5%	5
Early childhood education	1.27	0.85–1.89		
Primary education	1.12	0.97–1.29		
Lower secondary education	1.04	0.96–1.13		
Postsecondary nontertiary education	0.98	0.91–1.05		
Short-cycle tertiary education	1.06	1.00–1.13		
Bachelor or equivalent	1.05	0.98–1.12		
Master or equivalent	1.04	0.97–1.12		
Doctorate or equivalent	1.06	0.88–1.26		
Years worked in the company (2–5 years as reference)			0.4%	9
1 year	1.06	0.94–1.20		
5–10 years	1.03	0.97–1.10		
10–15 years	1.03	0.96–1.10		
15–20 years	0.98	0.90–1.06		
Over 20 years	1.03	0.95–1.11		
Working hours (limits by EU Working time directive, 35–40 hours/week as reference)			1.2%	7
< 35 hours/week	1.02	0.93–1.11		
40–48 hours/week	0.98	0.93–1.04		
>48 hours/week	1.05	0.99–1.12		
Employment contract (main job, Contract of unlimited duration as reference)			3.0%	4
Contract of limited duration	0.95	0.88–1.02		
A temporary agency contract	0.89	0.73–1.09		
An apprenticeship or other training schedule	1.08	0.85–1.37		
No contract	0.90	0.77–1.04		
Other	0.86	0.68–1.08		
Part-time work (Full-time work as reference)	1.04	0.95–1.14	0.7%	8
Self-employed (Employee as reference)	0.99	0.92–1.05	0.0%	13
Industry (Wholesale and retail trade as reference)			17.1%	2
Agriculture, hunting, and forestry	1.22	1.01–1.48		
Activities of households	1.23	0.88–1.73		
Manufacturing	0.94	0.86–1.03		
Transport, storage and communication	1.01	0.91–1.11		
Hotels and restaurants	1.04	0.92–1.18		
Electricity, gas, and water supply	1.07	0.91–1.25		
Real estate activities	0.96	0.87–1.05		
Public administration and defense	1.02	0.92–1.14		
Construction	1.00	0.89–1.12		
Financial intermediation	1.10	0.99–1.22		
Health and social work	1.17	1.07–1.28		
Other service activities	1.08	0.94–1.25		
Education	1.15	1.03–1.30		
Occupational group (Technicians and associate professionals as reference)			68.0%	1
Plant and machine operators, and assemblers	0.80	0.72–0.89		
Elementary occupations	0.77	0.69–0.85		
Skilled agricultural, forestry, and fishery workers	0.89	0.69–1.16		
Clerical support workers	0.91	0.84–0.99		
Service and sales workers	0.91	0.85–0.98		
Craft and related trades workers	1.04	0.94–1.14		
Professionals	1.01	0.94–1.09		
Managers	1.16	1.06–1.26		
Sector (Private sector as reference)			4.3%	3
Not-for-profit sector or NGO	0.99	0.92–1.07		
Public sector	1.10	1.00–1.20		
A joint private-public organization or company	0.88	0.78–1.00		
Other	1.15	0.94–1.38		

(continues)

TABLE 3. (Continued)

	Work Engagement				
	Multivariate Model			Domin	Domin Rank
	Regression Coefficient*	95% CI			
Size of the company (10–49 as reference)				0.1%	12
1 (participant works alone)	0.98	0.84–1.14			
2–4	0.98	0.90–1.08			
5–9	0.94	0.87–1.01			
50–99	0.94	0.87–1.01			
100–249	0.92	0.85–1.01			
250–499	0.93	0.84–1.03			
500 and over	0.91	0.83–0.99			
During last year, restructuring, or reorganizing (no as reference)	0.95	0.91–0.99		0.2%	11
				100%	

95% CI, 95% confidence interval.
 *Statistically significant regression coefficients and 95% CIs in boldface.

[Exp(coef) = 1.10, 95% CI 1.00 to 1.20], and working in a company with 500 or more employees was negatively [Exp(coef) = 0.91, 95% CI 0.83 to 0.99] related to work engagement. We found no other significant associations.

DA (Table 3) revealed that occupational group and industry were relatively the most important factors associated with work engagement, explaining 68.1% and 17.1% of all the explained variance of the model, respectively. Far less important were sector (4.3%) and employment contract (3.0%), followed by education (2.5%) and gender (2.1%). Individual factors such as age, job tenure, employment contract (part-time/full-time and self-employed/salaried employee), and similarly organization-related factors such as size of the company, and restructuring or reorganization during the last 12 months played almost no role in explaining the variance of work engagement.

DISCUSSION

The purpose of this large-scale study in 30 European countries among over 35,000 employees was twofold: to examine the prevalence of work engagement in different sociodemographic and work- and organizational-related groups, and to investigate the relative importance of these factors for work engagement. To the best of our knowledge, this is the first prevalence study on work engagement to be based on national representative data from various countries.

Our study found that work engagement, a positive affective-motivational state at work, was related to many sociodemographic and work-related factors, particularly to educational attainment, employment contract, occupation, industry, and sector. In addition, the results of DA indicated that occupation and industry made the strongest contribution to work engagement.

We found a clear social gradient related to the prevalence of work engagement: those who had better educational attainment were also more likely to be engaged at work, whereas less educated employees were less engaged. Research on social inequalities in health, which indicates that poor socioeconomic status (education, social class) is associated with mortality and morbidity, is abundant. Already two decades ago, Marmot et al³¹ suggested that the inequality gap in health and health promotive mechanisms may be much more profound and persistent than was assumed on the basis of mere mortality and register-based disease studies. Previously, it was found that the origins of job burnout may lie in childhood socioeconomic status.³² Our study suggests that a positive state of employee well-being, that is, work engagement may also indicate an inequality gap. Previous research has also found a

positive relation between work engagement and physical and mental health^{8–14} and work-family balance,¹⁵ and thus, (lack of) work engagement may be one mechanism linking socioeconomic status differences to poorer health in the long term.

Similarly, employment contract was related to work engagement, so that those with permanent employment contracts were more likely to report higher levels of work engagement than those with other types of contract or no contract at all. Those with no permanent contract may experience work stress due to several reasons. For instance, they may be considered peripheral workers, and employers may not be willing to invest in them by, for example, providing training. They also may lack job control and social supported have monotonous jobs with less challenges^{33–35}—all these job characteristics are known to influence work engagement.³⁶ More research is needed that both compares stable, permanent and increasingly untypical, precarious employment contracts, and their impacts on work engagement.

Interestingly, we also found curvilinear relationship between working hours and work engagement, meaning that particularly not only those working more than 48 hours per week but also those working less than 35 hours per week were more likely to be engaged than those working between 35 and 48 hours per week. Previously, work engagement has been found to correlate positively with working hours.³⁷ As engaged employees have high levels of energy and are enthusiastic about their work, they also often work voluntarily more hours than required by their organizations. In the present study, among those who worked more than 48 hours per week, there were relatively more managers (12%) than in the whole sample (4%) and also more self-employed (42% vs 14%)—both occupational groups scored high in work engagement in the present study. The higher likelihood of feeling engaged among those working less than 35 hours is likely to be explained by the fact that it was more typical to work shorter hours in highly engaged industries, that is, in social and health care (16% in the group working less than 35 hours per week vs 11% in the whole sample) and in education (14% vs 8%). Indeed, the (curvilinear) association between working hours and work engagement disappeared after controlling the impact of other factors, such as occupational group and industry.

The DA results showed that the most important contributors to work engagement were occupation and industry, explaining 68% and 17% of the variance of work engagement, respectively. This left only 15% for all remaining factors, such as economic sector (4.3%), employment contract (3%), and education (2.5%). As regards occupations, not surprisingly, managers and professionals were clearly more engaged than, for example, plant and machine

operators, assemblers, other elementary occupations, and clerical support workers. These differences are likely due to variances in the job resources available in these jobs. Several studies^{3–5} have confirmed the assumptions of the Job Demands-Resources model²: that job demands are the primary antecedents of job burnout, and that job resources (eg, job autonomy, skill variety, feedback, social support) are the main drivers of work engagement. Managers, professionals, and many other well-educated employees are more likely to be able to draw upon these resources, whereas other jobs may lack resources.

Employees in human service jobs such as health and social care and education, as well as those in agriculture, hunting, and forestry reported more work engagement than employees in other types of industries such as manufacturing, transport, storage, and communication. Interestingly, chronic job burnout was long considered typical only among human service professionals because of the emotional and interpersonal stressors in these jobs.³⁸ According to this study, those employed in human services may feel particularly highly engaged in their work. Working with and for people, and helping them, is often experienced as meaningful and many may consider these jobs a calling. These jobs often also include many job resources such as skill variety, professional development, receiving immediate feedback, good climate, and colleague support, which all positively impact work engagement.^{3,39,40}

A possible explanation for the likelihood of higher work engagement in agriculture, hunting, and forestry is that these fields have a high ratio of self-employed people (60% in the present sample). Self-employed individuals have been found to be more engaged in their work than salaried employees.⁴¹ This may be because individuals in entrepreneurial jobs are usually proactive and have achievement-related personality characteristics, and/or because the self-employed—by definition—have more autonomy.

Finally, being over 60 years of age was positively related to work engagement. The healthy worker effect may have impacted this result, in that the more engaged aged employees stay longer in the labor force, whereas those who are less engaged and less healthy drop out at an earlier age. Interestingly, women reported slightly more work engagement than men. This is surprising, as research usually shows that although women live longer, they report more symptoms and suffer from more diseases than men.⁴² However, positive and negative feelings and states of ill-being and well-being are not necessarily opposites. Research on employee well-being (work engagement vs job burnout) and on general mental well-being (emotional, social and psychological well-being vs depression) has shown that positive and negative well-being constitute separate although correlated unipolar dimensions.^{4,43} More research is needed on the mechanisms that explain why employed women may be more engaged than men.

Many large private companies have human resource policies to assess and boost work engagement. However, not all organizations have such policies. As work engagement is beneficial for all types of organizations and for employees themselves, it is important that particular attention is paid to developing more resourceful working conditions (eg, more job autonomy, skill variety, and job security), especially among those who lack higher education, have blue-collar jobs, and no permanent contract.

Strengths and Limitations

The major strength of this study was its large and representative sample size, which consisted of employees from 30 European countries. In addition, the response rate was satisfactory (43%). Although work engagement is currently widely investigated all over the globe, very little is known about its prevalence. This unique dataset enabled us to investigate this prevalence and to assess the relative importance of various individual, work-related, and

organizational factors for work engagement after controlling for the impact of country.

Our study also has some limitations. First, as it was cross-sectional, it was not possible to investigate how different factors predicted future work engagement, or how changes in these factors (eg, in job status and employment contract) would influence engagement over time. Second, it was based on self-reports. However, we assume that common method bias did not considerably influence the results, as work engagement was the only variable based on subjective experiences; all the other variables (eg, age, employment contract, and sector) were more factual by nature. Third, despite the large sample size, some of the socio-demographic categories included less than 500 employees, so we were restricted in making any interpretations based on these if we wished to maintain comparability with the categories with up to 4000 employees. Hence, an even larger and representative sample would be needed to confirm findings across all sociodemographic categories with sufficient statistical confidence. Finally, although the study included 30 countries, they were all European, so it is uncertain how far our results can be generalized to other parts of the world.

CONCLUSION

According to this first large-scale prevalence study on work engagement, an employee's level of work engagement depends on individual (eg, education), work-related (eg, contract), and contextual (eg, occupation, industry) factors. Job-related and contractual factors seem to be the most significant determinants of work engagement. In the changing world of work, it is important to strive for enhancing work engagement, especially among those who lack higher education, have blue-collar jobs, and have no permanent contract.

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