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# Exposure, participation in human resource management practices and employee attitudes

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# Exposure, participation in human resource management practices and employee attitudes[1]

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**Abstract:** Existing evidence on Human Resource Management (HRM) strategy has been limited to separate analyses of the relationship between exposure to or participation in HRM and employee attitudes which affect overall firm performance. This paper is the first to integrate the two perspectives in a single analysis. Using employer-employee matched data with both exposure and participation measures, we find that a high exposure to HRM is not sufficient to improve employee attitudes when the level of employee participation in HRM is taken into account. Furthermore, based on a Blinder-Oaxaca decomposition, the results suggest that employee involvement in HRM practices affects the value employees place on their personal, occupational and workplace characteristics.

**Keywords:** Job satisfaction; commitment; Human Resources Management; exposure; participation; employee

**JEL Codes:** J28; M12; M5; R23

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# 1 Introduction

In recent years, various scholars find that HRM practices enhance firm performance across sectors, sample characteristics, HRM practices studied, and firm performance measures (Huselid 1995; MacDuffie 1995; Ichniowski, Shaw and Prennushi 1997; Ramsay, Scholarios and Harley 2000; Cappelli and Neumark 2001; Bryson, Forth and Kirby 2005; Becker and Huselid 2006; Bloom and Van Reenen 2011; Wu, Hoque, Bacon and Bou Llusar 2015). The assumed underlying process starts with the HRM system and flows through the resulting increase of workforce skills, knowledge, empowerment, the strengthening of employee job satisfaction and commitment, to firm performance (Combs, Liu, Hall and Ketchen 2006; Macky and Boxall 2007).

To assess this underlying process, the literature focuses on the linkages between HRM practices and employee attitudes such as job satisfaction, organizational commitment or motivation. Previous research takes two perspectives. On the one hand, studies follow the organizational perspective and directly examine the *exposure* of employees to the HRM strategy (Ramsay et al. 2000; Wood and De Menezes 2011; White and Bryson 2013). The measure of exposure is based on managers' reports about the presence of HRM practices in the organization; for example, meeting between management and the staff. The evidence mainly points out that the exposure to HRM is positively related to employees attitudes. On the other hand, another strand of literature focuses on the employee perspective. From this perspective, the *participation* or involvement of employees in HRM practices is investigated (Guest 1999, 2002; Gallie, Felstead and Green 2001; Godard 2001, 2010; Macky and Boxall 2007; Kalmi and Kauhanen 2008; Mohr and Zoghi 2008; Böckerman, Bryson and Ilmakunnas 2012; Martin 2016). The measure of employee participation is obtained from employees who report their personal experience about, for example quality circles, or for some practices such as meeting between management and the staff, their assessment of the usefulness of the practices in their current job. These studies support a positive linkage between employees participation in HRM and their attitudes. This paper is the first to integrate the both perspectives in a single analysis by examining the relationships between exposure to HRM and participation in HRM with employee attitudes jointly. In particular, we seek to identify the extent to which the provision of HRM practices at the firm level, independent of the level of employee participation, can affect employee attitudes.

To examine this research question, we use recent employer-employee data collected in a small, open European country characterized by the predominance of its service sector, namely Luxembourg. The dataset constitutes a representative sample of employees of the private sector

working in workplaces of at least 15 employees. Due to the specificity of the Luxembourgish labor market characterized by a large proportion of foreign employees, the results apply not only to Luxembourgish employees but also French, Belgian, German, Portuguese and employees of other nationalities.

This paper contributes to the literature in several ways. First, using more recent data than those found in the existing empirical literature, we address the question of whether the link between HRM practices and employee attitudes is still relevant. Second, we investigate the relationships between the HRM strategy of the firm and employee attitudes using both the exposure and the participation perspectives made possible by the use of matched employer-employee data. The two attitudes examined are job satisfaction and organizational commitment. These are two facets of overall job attitudes that are key mediating variables between the HRM strategy and organizational performance (Harrison, Newman and Roth 2006). Third, we deepen the examination of differences in employee attitudes, using the Oaxaca-Blinder decomposition method, by comparing groups who face different levels of HRM exposure and who have different levels of HRM participation. More precisely, we identify how much of the difference in employee attitudes between groups is due to the fact that (i) they have different characteristics (personal, occupational and workplace) or (ii) they value job characteristics differently. The exposure and the participation in HRM can indeed modify the way that employees react to their work environment.

The results support integrating both the organizational and employee perspectives in the analysis of employee attitudes. The results indicate that a high level of exposure to HRM practices is not sufficient to improve employee attitudes when the level of employee participation in HRM is taken into account. Moreover, our results show that the extent of employees involvement in HRM practices affect the way they value their personal, occupational and workplace characteristics.

The paper proceeds as follows. Section 2 defines concepts, reviews the existing literature and develops hypotheses. Section 3 describes the data, the variables and the estimation strategy. Section 4 presents and discusses the results. Section 5 concludes.

# 2 Concepts and existing evidence

## 2.1 The HRM concept

The HRM strategy is a way for managers to convince employees that their work values and their contribution to the firm performance is recognized (Osterman 2000; Kalmi and Kauhanen 2008). By increasing employees' skills and knowledge, empowering employees to make decisions, strengthening positive employee attitudes, the HRM strategy contributes to firm-level performance.

The scope of HRM practices adopted by employers to improve economic performance does not receive either a common terminology[6] or a common view on the practices that are covered. The HRM domains used in the literature mostly cover participation in the organizational life, working in teams, development, job security, family-friendly practices, incentives and selection.

HRM practices designed to strengthen employee participation in the organizational life are practices through which employees can make their voice heard regarding their working conditions and/or the organization of the firm and actively contribute to modify them (e.g. McGovern, Hill, Mills and White 2007). They take the form of meetings organized between managers and the staff, the involvement of employees in changes affecting the firm, the collection of attitude surveys to measure the employee point of view on the current working conditions and work climate, and to obtain employee participation in concrete changes through quality circles or problem-solving groups. In return to the implementation of these HRM practices, employers expect to improve employee attitudes.

Working in a team is an HRM practice that is assumed to be a method for managers to obtain positive reactions of employees (e.g. Gallie, Zhou, Felstead and Green 2012). In most existing analyses, team work is found to play a major role in the relationship between the HRM strategy and economic performance. Team co-workers can share at least part of the responsibilities from decision-making and give more discretion to employees. Job rotation also permits employees to learn new skills and knowledge to carry out other tasks. It thus increases variability, enriches the work of employees and gives more flexibility for managers to cover for employee absences.

[6] High-Performance Work Practices - HPWP, Alternative Work Practices - AWP, Innovative Work Practices - IWP, High-Involvement Management - HIM, etc.

HRM practices dedicated to employees development are also included in the HRM strategy to increase workforce skills and implemented through training and appraisals (e.g. Boxall and Macky 2009). Moreover, skill development is necessary for firms that want to increase the involvement of employees in work decision-making. Appraisals allow managers to take time to discuss with each employee on individual work, give feedback and propose further training if needed. The appraisal can also be used to define appropriate rewards included in the incentive domain.

Practices improving job security to employees help build a stable environment in which employees can develop their skills (e.g. Ramsay et al. 2000). These HRM practices take the form of no-compulsory redundancies policies and procedures for airing grievances.

Family-friendly practices included in the HRM strategy aim to support family roles, reduce work-family conflicts and may be beneficial for employees (e.g. Ernst Kossek and Ozeki 1998). In this vein, employers can provide flexible work-time schemes and financial support to sustain family life.

In the incentive domain, individual pay incentives and fringe benefits are studied. Pay incentive is a traditional personnel management practice to reward performance. Non-monetary benefits are part of modern compensation packages. Employers resort to those benefits due to scale economies to acquire the goods, it is a sorting tool to retain key employees, and it provides status and identity sharing of a job or position (e.g. Eriksson and Kristensen 2014).

Selection of employees in the recruitment process and the monitoring of this process to ensure no discrimination by gender, ethnic background, disability, age are also included in the scope of HRM by some scholars (e.g. Combs et al. 2006; Wu et al. 2015). Through the use of sophisticated tests on personality/attitude and performance/competency, employers screen job applicants with equal opportunities. This selection process allows employers to bring external knowledge, skills, and abilities into the organization and hire applicants that appear they will be productive employees.

Most scholars emphasize that HRM practices need to be adopted together to strengthen the positive relationship with firm economic performance (Wood 1999; Bowen and Ostroff 2004; Godard 2004; Combs et al. 2006). This concept is termed ‘bundle’ since the works of Huselid (1995) and MacDuffie (1995). The hypothesis is that the greater the number of HRM practices, the greater the positive results obtained by firms.

## 2.2 Job attitudes

We focus on those attitudes that jointly form the "overall job attitudes" defined by Harrison et al. (2006). Based on a wide range of previous evidence, they conclude that job satisfaction and organizational commitment are the key mediating variables between the HRM strategy and firm performance. Job satisfaction focuses on one's position and organizational commitment on the entire organization and adequacy of values. More specifically, job satisfaction is an "emotional state resulting from the evaluation or appraisal of one's job experience" (Harrison et al., 2006, p.306). Organizational commitment is also an emotional state covering the "feeling of sharing beliefs and values with one's entire organization" (Harrison et al., 2006, p.306).

## 2.3 Existing research on HRM and overall job attitude measures[7]

Two perspectives, "organizational" and "employee", are presented in the literature. In the organizational perspective, scholars focus on the exposure of employees to the HRM strategy adopted in the firm. Most of these studies analyze directly the link between HRM employee exposure and firm performance without taking into account explicitly the reaction of employees to these practices (Huselid 1995; MacDuffie 1995; Ichniowski et al. 1997; Ramsay et al. 2000; Cappelli and Neumark 2001; Bryson et al. 2005; Wu et al. 2015).

Nonetheless, some studies that follow the organizational perspective concentrate their attention to the link between the exposure of employees to the HRM strategy (i.e. the adoption and the level of diffusion inside the workplace of HRM practices) and employee attitudes. In this perspective, it is managers that report about the adoption of HRM practices by the firm and a practice may exist but only for a minority of the staff. Ramsay et al. (2000), using employer-employee data collected in Britain in 1998, find positive links between the score of HRM practices adopted by firms and commitment. In contrast, Wood and De Menezes (2011), using a British dataset collected in 2004 on about 17,000 employees, show that HRM exposure is not statistically related to employees job satisfaction. Nevertheless, there are significant and positive links between employee perceptions about supportive, consultative, and informative management and job satisfaction. White and Bryson (2013), through a British dataset collected in 2004 of 2,295 establishments and 11,854 employees, study intrinsic job satisfaction and organizational commitment. HRM variables are introduced as the sum of practices measured at

[7] Appendix Table A1 provides an overview of the empirical findings in the literature on the links between HRM on the one hand and job satisfaction and organizational commitment on the other hand.

the workplace level about participation in the organizational life, team working, development (training), selection (recruitment practices), and incentives (bonus). They show that the relationship between the bundle of HRM and employee job attitudes is J-shaped. Exposure measures capture the managerial orientation of the firm towards HRM but not the level of employee participation.

A second stream of research focuses on the employee perspective and looks at the participation or involvement of employees in HRM practices. From this perspective, it is by winning the hearts and minds of employees that firms can improve economic performance. In this approach the best way to assess the presence of HRM practices is by asking employees to report their personal experience or for some items, such as meetings between management and the staff, to report their usefulness. Guest (1999), for 1,000 UK employees of the private sector collected in 1997, and Guest (2002), for 2,000 UK employees of the whole economy collected in 2001, find that the more employees experienced HRM practices, the more satisfied they are through a better psychological contract and involvement climate. Godard (2001), for 508 Canadian employees surveyed in 1997-1998, and Godard (2010), for 750 Canadian employees surveyed in 2003-2004, study various employee attitudes and HRM practices taken as a bundle. Their results support a positive link between the bundle of work practices on one hand and commitment and job satisfaction on the other. Gallie et al. (2001), using a sample of 3,469 British employees in 1992 and 2,224 in 1997, conclude that task discretion (employee scope for decision-making), control over work performance (supervision), forms of employee involvement, and extrinsic reward (extra payment) are important determinants of commitment. Macky and Boxall (2007), for 424 employees of New Zealand, find a positive relationship between high performance work practices and job satisfaction and organizational commitment, stressing that innovative work practices can provide win-win outcomes for both employees and employers. Mohr and Zoghi (2008), for about 25,000 employees working in Canada (1999-2002), study the linkage between seven management practices and job satisfaction. Their results show that most individual practices and the bundle of these practices are positively related to job satisfaction. Böckerman et al. (2012), using a Finish survey collected in 2003 and covering 3,755 employees, examine the relationships between the four core High Involvement Practices (HIM that are self-managed teams, information sharing, training and performance-related pay) and employee attitudes. Their results reveal positive and significant relationships between the four practices studied and various aspects of employee wellbeing, especially job satisfaction. Using the same dataset and the same HIM, and adopting a bundle approach, Kalmi and

Kauhanen (2008) also find these positive associations. Martin (2016) on Luxembourgish data collected in 2013 focuses on the association between employees participation in HIM practices and job satisfaction and finds a positive relationship. Martin and Omrani (2015) show, based on data from the European Working Condition Survey of 2005 and 2010, that most of the innovative work practices studied (team work, quality management, formal appraisal, etc.) are positively related to employee positive attitudes.

The existing literature, therefore, suggests the following hypotheses:

**H1:** The level of exposure to HRM practices is positively related to employee attitudes

**H2:** The level of participation of employees in HRM practices is positively related to employee attitudes

To our knowledge, existing work on HRM has examined only the relationship of exposure to HRM and employee attitudes or the relationship of participation in HRM and employee attitudes separately. This paper seeks to integrate both perspectives to explore the linkage between exposure and participation and employee attitudes jointly. The paper adds to the literature by filling that gap. A priori, we are not able to predict how controlling for one of the two variables will affect the relationships between the other and employee attitudes.

# 3 Data and methodology

## 3.1 Data

The data used in this paper come from a nationally representative linked employer-employee survey for Luxembourg conducted in 2013. The employer survey consists of a self-completion survey of the Human Resources Responsible of all workplaces with 15 or more employees in the private sector. The employee survey questionnaires were sent to a stratified random sample of employees aged at least 16 years, working at least six months in all workplaces with 15 or more employees in the private sector. The sample was drawn from the data register of the social security of Luxembourg and employees were contacted at their personal home addresses. This survey was an online self-completion survey. Due to the specificity of the Luxembourgish labor market characterized by a large proportion of cross border employees[8], the employee survey was conducted in four countries (Luxembourg, France, Germany and Belgium) and three languages (French, German and English). Due to the absence of linked employee or employer

[8] The cross border employees represent 53% of the working population in the private sector in 2013.

data in some cases, the effective samples used in this paper are 1,238 workplaces and 8,373 employees. The database includes weights to account for non-response and survey design probabilities and to ensure representativeness.

### 3.2 Dependent variables

We analyse very similar attitudinal measures to those of Harrison et al. (2006): job satisfaction and organizational commitment. Our overall measure of job satisfaction is similar to that used elsewhere in the literature (e.g. Clark, Georgellis and Sanfey 1998; Clark 2001). The variable is based on a question asked of employees: "*How satisfied are you with your work?*" with responses ranging on a scale from 0 ("*completely dissatisfied*") to 10 ("*completely satisfied*"). The organizational commitment measure is based on three questions asked of employees:

- *"To what extent do you agree or disagree ...I feel committed to my company"* with a four point response scale (1-4);
- "*To what extent do you dedicate yourself to your work ... because this job fulfils my career plans*" with responses ranging on a scale from 0 ("*not at all for this reason*") to 10 ("*exactly for this reason*") recode as 1-4;
- "*To what extent do you dedicate yourself to your work ... because this job fits with my personal values"* with responses ranging on a scale from 0 ("*not at all for this reason*") to 10 ("*exactly for this reason*") recode as 1-4.[9]

To compute the organizational commitment measure, the three items were summed at the employee level. Descriptive statistics about the dependent variables are shown in Table 1.

***Table 1.*** **Job satisfaction and organizational commitment measures**

| *Attitudes* | *Values taken* | *Mean* | *Standard deviation* |
|---|---|---|---|
| Job satisfaction | 0, …, 10 | 6.30 | 2.18 |
| Organizational commitment | 3, …, 12 | 8.22 | 2.02 |
| Observations | | 8,373 | |

[9] We recode these two new variables as: 0/1=1; 2/4=2; 5/8=3; 9/10=4.

### 3.3 Measures of HRM

In the literature, isolated individual practices or a system of practices referred to as a bundle have been examined and the HRM practices studied partially overlap. Based on existing research, it is becoming increasingly clear that HRM practices need to be adopted together as there is an additive advantage of adopting complementary and overlapping practices to achieve positive results. Moreover, looking at the HRM system as a whole allows taking into account the positive and negative complementarities between practices that is not possible when studying isolated individual HRM practices (Wood 1999; Bowen and Ostroff 2004; Godard 2004; Combs et al. 2006).

We use this bundle perspective to characterize the exposure of employees to HRM and the participation of employees in the HRM strategy of their employer (see Table 2). The HRM practices included in our bundle are close to those used in the literature and cover participation in the organizational life, team working, development, family-friendly and incentives domains (e.g. Macky and Boxall 2007; Mohr and Zoghi 2008; White and Bryson 2013). Appendix Table A2 provides details about the variables included in the bundles. Some HRM practices included in existing studies are not covered in our analysis mainly due to non-relevance regarding the aim of our analysis and/or the Luxembourgish context. This is the case, firstly, for the practices that refer to the screening and selection process of employees. While these practices may have an effect on performance, by selecting better employees, they should not influence incumbent employees who already work for the firm. Secondly, the equal opportunity treatment of applicants in the selection process included in some studies seems to not be relevant in the Luxembourgish context as all workplaces covered in our sample (with at least 15 employees) have, by law[10], to put in place a representative staff with one person in charge of the defense of equal treatment. Thirdly, the practices related to job security and non-compulsory redundancies policy are not relevant in the Luxembourgish context characterized by strict employment protection both at the individual and collective levels.[11]

The means presented in Table 2 measure column 1 the percentage of workplaces that offer the HRM practice and column 2 the percentage of employees who participated in such a practice.

[10] Labor code Art. L.414-3.

[11] Luxembourg appears to have highest amount of specific requirements for individual and collective dismissal. The OECD indicator of Employment Protection Legislation (EPL) provides synthetic indicator of the strictness of regulation on dismissals on regular contracts. For a comparison, in 2013, this indicator is 2.25 in Luxembourg versus 1.10 in the United Kingdom or 0.26 in the United States.
http://stats.oecd.org/Index.aspx?DataSetCode=EPL_OV

The values for "HRM bundle" are the average for the sum of the HRM practices at the workplace and the employee levels. That is, for a given workplace, HRM bundle represents the number of HRM practices offered by the employer. For a given employee, HRM bundle represents the number of practices in which the employee participated. A comparison of the means and [medians] reveal the distributions are slightly skewed.

***Table 2.*** **HRM practices included in the HRM bundle**

| *Domain name* | *Contents* | *Workplace mean* | *Employee mean* |
|---|---|---|---|
| | | (1) | (2) |
| Participation in the organizational life | Meeting between management and the staff | 79.6% | 66.8% |
| | Changes with employees involved | 87.6% | 13.4% |
| | Attitude surveys | 36.5% | 42.1% |
| | Quality circle | 31.6% | 24.3% |
| Team working | Team work | 28.3% | 30.9% |
| | Job rotation | 82.7% | 51.3% |
| Development | Development included in the strategy | 42.1% | 53.7% |
| | Training | 26.2% | 42.1% |
| | Appraisal | 46.1% | 58.3% |
| Family-friendly | Flexible working hours | 20.7% | 39.4% |
| | Work-life balance | 21.9% | 39.4% |
| | Work at home during work hours | 19.9% | 7.7% |
| Incentives | Individual pay incentive | 65.1% | 32.4% |
| | Fringe benefits | 70.8% | 49.6% |
| HRM bundle | Sum of the 14 HRM practices | 6.6 | 5.5 |
| | | (2.76) | (2.6) |
| | | [7] | [5] |
| Observations | | 1,238 | 8,373 |

*Notes*: Standard deviations are reported in parentheses and median values in brackets for non-binary variables.
*Reading guide*: In 70.8% of workplaces, a fringe benefits system, which includes at least one of these benefits (company car or car fee participation, supplementary pension or life insurance, meal vouchers), is set up for all or part of their employees (excluding senior executives). 49.6% of employees declare that they participate in this kind of system.

We separate workplaces into two groups (high and low exposure) and employees into two groups (high and low participation) using the median values of the bundles as cutoffs. Moreover, these median values are calculated at the sectoral level to take into account that HRM strategies may differ by sector as shown by Arundel, Lorenz, Lundvall and Valeyre (2007). We then define four employee-employer groups using these cutoffs: "Exposure low & participation low" (LL); "Exposure high & participation low" (HL); "Exposure low & participation high" (LH) and "Exposure high & participation high" (HH). In order to compare with previous work we also created variables indicating a high level of exposure (regardless of the level of

participation), EH, and a high level of participation, PH. We see in Table 3, that nearly 59 percent of employees work in a firm that offers a high level of exposure to HRM, and 54 percent of employees report a high participation level. We also see that 17.5 percent of employees belong to the "Exposure low & participation high" (LH) group. These employees work in a workplace where the number of HRM strategies adopted is lower than the median of the sector. They are therefore less exposed to HRM practices compared to other employees working in the same sector. But when the practices are available they actively participate and reach a level of participation that is higher than the median of the employees belonging to the same sector.

***Table 3.*** **Distribution of the exposure-participation groups**

| *Groups* | *Employee* |
|---|---|
| Exposure high (EH) | 58.74% |
| Participation high (PH) | 54.31% |
| Exposure low & participation low (LL) | 23.8% |
| Exposure high & participation low (HL) | 21.9% |
| Exposure low & participation high (LH) | 17.5% |
| Exposure high & participation high (HH) | 36.8% |
| Observations | 8,373 |

### 3.4 Control variables

The control variables, included in all the analyses, are similar to those used in the literature focusing on job satisfaction (e.g. Clark, Oswald and Warr 1996; Clark 1997; Sousa-Poza and Sousa-Poza 2000; Gazioglu and Tansel 2006; Stutzer and Frey 2008; Martin and Omrani 2015) and that focusing on organizational commitment (e.g. Mowday, Porter and Steers 1982; DeCotiis and Summers 1987; Mathieu and Zajac 1990; Gallie et al. 2001; Madsen, Miller and John 2005). Appendix Table A3 presents these variables, provides descriptive statistics and compares the characteristics of employees, their job and their workplace related to their exposure-participation group.

The figures reported in Table A3 reveal that the mean values for the high-high (HH) category of workers differ from the others for several variables. First, some differences appear in their personal characteristics. High-high employees are more likely than the others to, for example, have a post-secondary level of education. They are less likely to be Portuguese. They spend more time, each day, commuting from home to work than the employees who work in workplaces that provide a low level of HRM exposure. Second, differences appear in the characteristics of their occupation. High-high employees occupy more often a top occupation (professional and managers) and they are less likely sellers, service personals, craftsmen or

unskilled workers. Therefore, their jobs are better paid, they more intensively use ICT and they face fewer harmful working conditions. They are more likely to work full time than the low-low group. Third, they work in different types of firms. They work in larger organization (with at least 250 employees) and more often in the finance sector and less often in construction. Their firm is more often foreign owned, more often in existence for at least 20 years, less often multi-site, and with a higher percentage of graduates and a lower percentage of colleagues with the same gender or nationality as the respondent.

The differences highlighted above imply the need to carefully control for individual, occupational and workplace characteristics.

### 3.5 Estimation strategy

The measures of job satisfaction and organizational commitment are treated as continuous variables. We use linear regression to estimate the coefficients. Robust standard errors are clustered at the organization level to correct for the fact that some employees are employed by the same organization and therefore the observations may not be entirely independent. In a first step, we analyze, as previous studies, the link between employee positive attitudes and participation or exposure taken individually to see if our results are consistent with previous literature.

In a second step, we include both exposure and participation variables in the analysis. The parameters of the following model are estimated:

$$Y_i = EH_i\beta_1 + PH_i\beta_2 + X_i\beta_3 + \varepsilon_i,$$

where $Y_i$ is the level of job satisfaction (or organizational commitment) of individual i, *EHi*, and *PHi* indicate high levels of exposure or participation, respectively, $X_i$ a vector of the individual, occupational and workplace characteristics (and a constant), $\beta$ the vector of coefficients and $\varepsilon_i$ is a normally distributed random error term.

In a third step, we go further and use dummy variables indicating the exposure-participation groups ($LL_i$, $HL_i$, $LH_i$, with $HH_i$ as the reference group):

$$Y_i = LL_i\beta_1 + HL_i\beta_2 + LH_i\beta_3 + X_i\beta_4 + \varepsilon_i,$$

The high-high (HH) category is chosen as the reference group in accordance with the J-shaped relationship between the number of HRM and employees attitudes shown by White and Bryson (2013). Moreover, in our sample high-high is the most common category.

In a fourth step, we proceed to our decomposition analysis. First, we estimate the same regressions but separately by exposure-participation groups.

$$Y_{ij} = X_{ij}\beta_j + \varepsilon_{ij}$$

where $Y_{ij}$ is the level of job satisfaction (or organizational commitment) of individual *i* of group *j* (*j*=LL, LH, HL, HH), $X_{ij}$ a vector containing the values of individual, occupational and workplace characteristics for individual *i* of group *j* and the intercept, $\beta_j$ the vector of coefficients for group *j*, and $\varepsilon_{ij}$ is the random error term normally distributed.[12] In this analysis the coefficients for the characteristics (*X*) are allowed to vary across groups.

Second, the results from these models are used to decompose the employee differences in, on the one hand, job satisfaction, and on the other hand, organizational commitment, into three components following a variant of the Blinder (1973) & Oaxaca (1973) decomposition done by Daymont and Adrisani (1984). The first (the "endowments effects") is the part of the difference that is attributable to differences in individual, occupational and workplace characteristics between the groups. The second (the "coefficients effects") is the part that is attributable to differences in the coefficients ($\beta$) on those characteristics. The third (the interaction) is the part that is attributable to the simultaneous effect of differences in endowments and coefficients. Taking the example of the low-low employee group and keeping "high-high" (HH) as the reference group, the decomposition results from constructing the counterfactual asking, what would the level of job satisfaction (or organizational commitment) be for low-low employees if they had the same individual, occupational and workplace characteristics as high-high employees, and, what would the level of job satisfaction (or organizational commitment) be for low-low employees if they placed the same value on characteristics as high-high employees?

The specification for the decomposition is the following:

$$E(Y_{HH}) - E(Y_{LL}) = [E(X_{HH}) - E(X_{LL})]'\beta_{LL} + E(X_{LL})'(\beta_{HH} - \beta_{LL}) + [E(X_{HH}) - E(X_{LL})]'(\beta_{HH} - \beta_{LL})$$

The first term on the right hand side is the part attributable to differences in the outcome variable between the two groups that is due to differences in the covariates *X*. The second term is the part attributable to differences in the valuation of personal, occupational and workplace characteristics. The third part is the interaction term. We present estimates of these components for job satisfaction and organizational commitment by comparing each group with the reference

[12] The results of this step are shown in Appendix Table A6.

group (high-high). Robust standard errors are clustered at the workplace level to correct for the fact that some employees are employed by the same workplace.

It should be noted that the data are cross-sectional and so we are only able to identify the strength of conditional correlations and not causal relationships. Satisfied and committed employees can indeed be the ones that participate more in the HRM practices designed by their employer. But for the exposure level, it is not obvious that HRM practices are adopted only by employers with low satisfaction and commitment levels (see Table 3). Our analysis is also not immune to a potential self-selection issue. Satisfied and committed employees could have been attracted to work in the current firm because of the information they had when they postulated about the availability of management practices in the desired job. The available data do not permit solving this issue, but as observed in the descriptive statistics, workplaces with high exposure are distributed between those with low participation of their employees and those with a high participation (see Table 3). Thus the self-selection issue may not be too serious.

# 4 Results

## 4.1 Exposure and participation taken individually

We estimate regressions that loosely replicate the results found in the literature regarding exposure and participation taken individually. These are presented in Table 4. Appendix table A4 provides the results of all variables included in the regressions. The F-test and R-squared measures indicate that the models perform well for both dependent variables. Panel A shows the coefficients for variables measuring exposure to HRM practices, using attitudes measured at, on the one hand, the workplace level as in White and Bryson (2013) or, on the other hand, the employee level as in Wood and De Menezes (2011) or Ramsay et al. (2000). The results indicate that a High (above the median) level of exposure is positively related to both job satisfaction and organizational commitment. These results are broadly consistent with those presented in White and Bryson (2013), Wood and De Menezes (2011), and Ramsay et al. (2000).

Panel B shows the coefficients for variables measuring participation in HRM practices. Not controlling for the level of exposure, again we find results broadly consistent with the literature (Godard 2001; Mohr and Zoghi 2001). That is, a High (above the median) level of participation in HRM practices is positively associated with both job satisfaction and organizational commitment.

***Table 4.*** **Regressions of job satisfaction and organizational commitment on exposure or participation to HRM (workplace level and employee level)**

| **Panel A** | Workplace level | | Employee level | |
|---|---|---|---|---|
| | Job satisfaction | Organizational commitment | Job satisfaction | Organizational commitment |
| Exposure High | 0.18* | 0.23** | 0.17** | 0.15** |
| | (0.10) | (0.09) | (0.07) | (0.07) |
| Individual characteristics | No | No | Yes | Yes |
| Occupational characteristics | No | No | Yes | Yes |
| Workplace characteristics | Yes | Yes | Yes | Yes |
| F-test | 1.57* | 1.78** | 9.19*** | 10.60*** |
| R-squared | 0.019 | 0.019 | 0.076 | 0.092 |
| Observations | 1,238 | 1,238 | 8,373 | 8,373 |
| **Panel B** | Employee level | | | |
| | Job satisfaction | Organizational commitment | | |
| Participation High | 1.33*** | 1.15*** | | |
| | (0.06) | (0.05) | | |
| Individual characteristics | Yes | Yes | | |
| Occupational characteristics | Yes | Yes | | |
| Workplace characteristics | Yes | Yes | | |
| F-test | 25.54*** | 28.49*** | | |
| R-squared | 0.156 | 0.163 | | |
| Observations | 8,373 | 8,373 | | |

*Notes:* *Statistically significant at the .10 level; ** at the .05 level; *** at the .01 level.

## 4.2 Exposure and participation taken jointly

The results differ, however, when we include both exposure and participation variables in the analysis. The results for the key variables are presented in Table 5. Appendix table A5 provides the coefficients for all variables included in the regressions. The F-test and R-squared measures indicate that the models perform well for both dependent variables and specifications.

Note that, in columns 1 and 2, when controlling for the level of participation among employees, the level of exposure to HRM practices has a much smaller and insignificant coefficient, for both job satisfaction and organization commitment. It appears, therefore, that exposure measures may simply serve as a proxy for participation by employees in determining employee attitudes.

***Table 5.*** **Regressions of job satisfaction and organizational commitment on exposure-participation to HRM groups**

| | Job satisfaction | Organizational commitment | Job satisfaction | Organizational commitment |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Exposure High (H) | 0.04 | 0.04 | | |
| | (0.07) | (0.06) | | |
| Participation High (H) | 1.33*** | 1.15*** | | |
| | (0.06) | (0.05) | | |
| Exposure low & participation low (LL) | | | -1.38*** | -1.20*** |
| | | | (0.09) | (0.08) |
| Exposure high & participation low (HL) | | | -1.26*** | -1.10*** |
| | | | (0.08) | (0.07) |
| Exposure low & participation high (LH) | | | 0.04 | 0.01 |
| | | | (0.08) | (0.07) |
| Individual characteristics | | | Yes | Yes |
| Occupational characteristics | | | Yes | Yes |
| Workplace characteristics | | | Yes | Yes |
| F-test | 25.05*** | 28.00*** | 24.77*** | 27.72*** |
| R-squared | 0.156 | 0.163 | 0.156 | 0.163 |
| Observations | 8,373 | 8,373 | 8,373 | 8,373 |

*Notes:* *Statistically significant at the .10 level; ** at the .05 level; *** at the .01 level. Robust standard errors adjusted for 1,268 clusters (working in the same workplace) in parentheses. Weighted estimations.

This is further confirmed when the measures are combined as in columns 3 and 4. Compared with high-high employees (high exposure and high participation), a low participation in HRM irrespective of the level of exposure is negatively associated with employee job satisfaction (column 3) and organizational commitment (column 4). Conversely, a high participation in HRM while the workplace does not provide a high exposure is not statistically different from the high-high employees both in the job satisfaction and organizational commitment regressions. The results highlight that the level of participation of employee in HRM is important to take into account to understand the linkages between HRM strategy and employee attitudes. Employees need to participate in training, exercise voice during meetings between the staff and managers, participate in the decision-making process at the team level in order to support an improvement of their skills, knowledge and beyond to respond positively to the HRM system in place no matter the level of HRM exposure they face.

### 4.3 Decomposition analysis

As highlighted in the literature and in the results of control variables shown in Appendix Table A5, the high-high group has some characteristics that are positively related to job satisfaction and/or organizational commitment (top occupation, high paid job, ICT use) but also others that are negatively related to these attitudes (commuting time, level of education, work in larger organization, work in finance). Therefore, it's important to determine the extent to which the differences in the average level of job satisfaction and organizational commitment between the different groups and the high-high group can be explained by differences in characteristics and the extent to which they can be explained by differences in the weight placed on those characteristics.

Table 6 presents the results of the Blinder-Oaxaca decompositions for job satisfaction and organizational commitment. The table reports the mean differential in the dependent variables and the percentages associated with the part of the differential that is due to group differences in the characteristics, the part that is due to differences in the coefficients, and the part that is due to the interaction of the two.

***Table 6.*** **Blinder-Oaxaca decomposition results, by employees exposure-participation to HRM group**

| | HH versus LL | | HH versus HL | | HH versus LH | |
|---|---|---|---|---|---|---|
| | contribution | % | contribution | % | contribution | % |
| | **Job satisfaction** | | | | | |
| Diff | 1.47*** | | 1.33*** | | -0.09 | |
| Part diff means | 0.13 | 8.71 | 0.02 | 1.63 | 0.02 | -27.15 |
| Part diff coeff. | 1.45*** | 98.80 | 1.27*** | 95.35 | 0.00 | -7.36 |
| Part diff inter. | -0.11 | -7.51 | 0.04 | 3.02 | -0.13 | 134.51 |
| | **Organizational commitment** | | | | | |
| Diff | 1.40*** | | 1.21*** | | -0.02 | |
| Part diff means | 0.32*** | 23.31 | 0.09* | 7.66 | -0.01 | 58.97 |
| Part diff coeff. | 1.28*** | 91.01 | 1.14*** | 94.11 | 0.02 | -125.02 |
| Part diff inter. | -0.20 | -14.33 | -0.02 | -1.77 | -0.03 | 166.05 |

*Notes:* *Statistically significant at the .10 level; ** at the .05 level; *** at the .01 level. Robust standard errors adjusted for 1,268 clusters (working in the same workplace). Weighted estimations.

The results are mixed according to the categories of employees studied. For the low-low category and the high-low category, we find that it is not the differences in the characteristics

that explain the largest part of the job satisfaction or organizational commitment gap but rather the differences in the coefficients. Indeed, for these two categories of employees, the differences in coefficients explain between 91.01% and 98.80% of these gaps. This result suggests that the extent of employees involvement in HRM modifies the value they place on their personal, occupational and workplace characteristics. Applying the coefficients of the high-high to the employees who have a low participation in HRM, irrespective of the exposure level, would increase significantly their job satisfaction and their organizational commitment. No significant difference between the high-high and the low-high is found in our results for job satisfaction and organizational commitment.

### 4.4 Robustness checks

For the three first steps of our estimation strategy, robustness check regressions were performed to see if the results presented in Table 4 and 5 are sensitive to the empirical strategy or the threshold choice made to distinguish high versus low exposure and participation to HRM groups. First, we estimate ordered probit instead of linear regressions for job satisfaction and organizational commitment. The sign and significance of Table 4 results concerning the high levels of exposure and the high levels of participation are the same both at the workplace and the employee levels. The results presented in Table 5 are identical. Second, we distinguish the high exposure and the high participation groups from the low using the average taken by the bundles instead of the median as a cutoff. The sign and significance of the results of Table 4 and 5 are mostly the same. It should be noted that the Exposure High (EH) in the regression of job satisfaction at the employee level in Table 4 - Panel A is no more significant at the 0.10 level ($p = 0.14$). The group 'Exposure low & participation high', not significant in Table 5 column 3, appears to be significant and positive at the 0.05 level.

For the fourth step of our estimation strategy, sensitivity analysis has been done by applying an alternative decomposition method, the twofold decomposition method following Neumark (1988). The qualitative results are mostly the same. The results of all robustness check regressions are available from the authors upon request.

## 5 Conclusion

This paper focuses on the links between HRM strategy and job satisfaction and organizational commitment. More precisely, the paper seeks to identify the extent to which the provision of HRM practices at the firm level, independent of the level of employee participation, can affect employee attitudes. The existing literature fails to provide an answer to this issue because the

relationships between employee attitudes and the exposure of employees to the HRM strategy, on the one hand, or the level of involvement of employees in HRM practices, on the other hand, are studied separately.

This paper uses a recent employer-employee dataset collected in Luxembourg to reconcile these two perspectives. Due to the specificity of the Luxembourgish labor market characterized by a large proportion of foreign employees, the results relate not only to Luxembourgish but also French, Belgian, German, Portuguese and other nationalities. We find that a high exposure to HRM is not sufficient to improve employee attitudes when the level of employee participation in HRM is taken into account. Furthermore, based on a Blinder-Oaxaca decomposition, we find that employee involvement in HRM practices affects the value employees place on their personal, occupational and workplace characteristics.

Our results provide practical managerial implications for employers as employee attitudes are the key mediating variables between the HRM strategy and firm performance. Even if all employees do not have the same role in the value creation process of the firm, the results indicate that managers should encourage a high involvement of the staff in the HRM system they have adopted. Employees need especially to participate in training, to exercise voice during meetings with managers, to participate in the decision-making process at the team level, to strengthen their skills, knowledge and empowerment and beyond to exhibit a positive response to the HRM system in place no matter the level of HRM exposure they face.

A potential shortcoming of this paper is that the dataset is cross-sectional. Due to the fact that they are only measured one time (2013) they do not allow us to identify a causal relationship between exposure-participation to HRM and employees attitudes. Only additional research using employer-employee panel data would permit to overcome this issue.

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## Appendix

### *Table A1.* HRM, job satisfaction and organizational commitment in the empirical literature

| Authors | Data | Population studied | Managerial practices studied | Bun-dle | Employees attitudes | Link with job satisfaction and/ or organizational commitment |
|---|---|---|---|---|---|---|
| Böckerman, Bryson and Ilmakunnas (2012) | The Quality of Working Life Survey, Finland, 2003 | Employees N=3,755 | **Participation**<br>High involvement management (HIM): Performance related pay, training, self-management teams, information sharing | Yes | absenteeism, accidents, subjective well-being (non-tiredness, non-painful, etc.), job satisfaction | All four HIM practices are generally positively linked with job satisfaction |
| Gallie, Felstead and Green (2001) | Employment in Britain Survey in 1992 and Skills Survey in 1997 | Employees N=3,469 in 1992 and N=2,224 in 1997 | **Participation**<br>Supervisor, pay incentives, reports/appraisals, quality circles, information meetings, discussion meetings, task discretion | No | Organizational commitment | HRM practices are generally positively linked with organizational commitment |
| Godard (2001) | Author's survey, Canada, 1997-1998 | Employees N=508 | **Participation**<br>Alternative work practices (AWP): just-in-time, re-engineering, quality management<br>On-line AWPs: team-based work system, team autonomy, team responsibility for a good or service, multi-skilling, job rotation<br>Off-line AWPs: informational sharing, quality circles, a committee system, a joint steering committee<br>Economic AWPs: profit-sharing, group bonus | Yes | Belongingness, task involvement, empowerment, workload, stressfulness, fatigue, self-esteem, motivation, organizational citizenship behaviour, job satisfaction, commitment | Moderate levels of involvement in HRM practices are associated with increased job satisfaction and commitment. But, at higher level, the association with job satisfaction become negative. |
| Godard (2010) | Author's survey, Canada (excluding Québec), 2003-2004 | Employees N=750 | **Exposure**<br>Alternative work practices (AWPs): re-engineering, quality management, job rotation, multi-skilling, team-work, team autonomy, team responsibility, information sharing, quality circles, steering committee, group bonus, gain sharing<br>New Human Resources Practices (HRPs): values-based selection, social/team skills training, regular (developmental) appraisals, | Yes | Stress, fatigue, coercion, empowerment, job satisfaction, commitment | AWPs are positively linked with job satisfaction and commitment.<br>New HRPs are positively associated with job satisfaction and unrelated with commitment.<br>Traditional HRPs are positively linked with job satisfaction and commitment. |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | career planning, continuous learning, minimal status distinctions (i.e., "single status" policies) Traditional HRPs: skills-based selection, a formal orientation session once hired, job-based technical training, internal job ladders with seniority-based advancement, grievance or "internal justice" systems, job- and seniority-based pay, good benefits, job security rights | | | |
| Guest (1999) | Annual survey of employment relations, United Kingdom, 1997 | Employees N=1,000 | **Participation** HRM practices: opportunities to raise personal concerns, opportunities for training and development, being informed about business issues, policy of single status, systems for dealing with bullying and harassment at work, involvement in decision-making, policy of deliberately avoiding compulsory redundancies and lay-offs, pay related to performance, profit sharing, taking part in a staff attitude survey | Yes | Job security, pressure at work, motivation and job satisfaction | HRM practices have an indirect positive impact on job satisfaction through the state of the psychological contract and the high involvement climate. |
| Guest (2002) | Annual survey of employment relations, United Kingdom, 2001 | Employees N=2,000 | **Participation** HRM practices: equal opportunity practices, anti-harassment practices, information sharing, training and development, no compulsory redundancies, performance appraisal, family-friendly practices, challenging/interesting jobs, vacancies filled from inside, employee involvement activities, performance-related pay | No | Job satisfaction and life satisfaction | Equal opportunity practices, anti-harassment practices, information sharing, family-friendly practices, challenging/interesting jobs are positively related to job satisfaction. |
| Kalmi and Kauhanen (2008) | The Quality of Work Life Survey (QWLS), Finland, 2003 | Employees N=3,611 | **Participation** High involvement management (HIM): self-managed teams, information sharing, incentive pay, training, traditional teams | Yes | Job intensity, job influence, job security, wages, stress, job satisfaction | HIM practices are generally positively linked with beneficial outcomes |
| Macky and Boxall (2007) | Authors' survey, New Zealand, 2006 | Employees N=424 | **Participation** High Performance Work Practices (HPWP): performance-based pay, teams, employee involvement activities, reduced status differentials, internal promotion, performance | Yes | Trust in management, job satisfaction, (affective and behavioural) commitment | Positive relationship between a high level of participation in HPWP and job satisfaction and commitment. |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | and development appraisal, information sharing, attitude surveys, no compulsory redundancies, formal training, formal complaint resolution systems, targeted selection, merit-based promotion, formal job descriptions | | | |
| Martin (2016) | Survey on working conditions and quality of work life, Luxembourg, 2013 | Employees N=14,248 | **Participation**<br>High involvement management (HIM): Performance related pay, training, self-management teams, information sharing | Yes | Motivation at work, on-the-job-search, job satisfaction | Positive relationship between a high level of HIM participation and job satisfaction |
| Martin and Omrani (2015) | The European Working Condition Survey (EWCS), 16 European countries, 2005 and 2010 | Employees N=9,640 in 2005 and N=14,152 in 2010 | **Participation**<br>Innovative work practices: flexible work schedule, total quality management, formal appraisal, self-assessment of work, job rotation, telework, team work, performance related pay, type of control | No | Social support, extra-effort, job satisfaction | Most of the innovative work practices considered are positively related to job satisfaction |
| Mohr and Zoghi (2008) | Workplace and Employee Survey (WES), Canada, 1999-2002 | Employees N= about 25,000 | **Participation**<br>High involvement work practices:<br>employee survey, suggestion program, job rotation, informed about workplace changes, task team, quality circle, self-directed work group | Yes | Job satisfaction, stress, absenteeism filed grievance, no training | Most of the work practices considered are positively associated with job satisfaction. |
| Ramsay, Scholarios, and Harley (2000) | Workplace Employment Relations Survey (WERS), Britain, 1998 | Workplaces and employees<br><br>N=about 1,500 workplaces<br><br>N=about 16,000 employees | **Exposure**<br>High Performance Work Practices (HPWP): upward communication, performance-related pay, profit-sharing, employee share ownership, problem-solving groups, employee consultation, job control, team autonomy, investors in people accreditation, total quality management, internal labour market, induction, job security | Yes | Job discretion, management relations, pay satisfaction, perceived security, job strain, commitment | Participating in a high number of HPWP is positively associated with commitment. |

| | | | | | | |
|---|---|---|---|---|---|---|
| White and Bryson (2013) | Workplace Employment Relations Survey (WERS), Britain, 2004 | Workplaces and employees N=11,854 employees | **Exposure**<br>HRM: participation (meetings, surveys, committee), team working (including quality circle), development (training), selection (recruitment practices), incentives (bonus) | Yes | Job satisfaction, organizational commitment | Non-linear relationship between the number of HRM practices and job satisfaction and commitment (J-shaped) |
| Wood and De Menezes (2011) | Workplace employment relations survey (WERS), Britain, 2004 | Workplaces and employees N= about 17,000 employees | **Exposure**<br>HRM: supportive management, informative management, consultative management, consultation, high involvement management, internal recruitment, job security, performance-related pay (individual, group) | No | Job satisfaction, anxiety-contentment | Only supportive management, informative management, consultative management are positively related to job satisfaction |

## *Table A2.* Variables used to create the HRM bundles

| | | Workplace | Employee |
|---|---|---|---|
| **Participation in the organizational life** | Meeting between management and the staff | What is the frequency of meetings between senior management and all employees?<br>Annually, Biannually, Quarterly or Monthly = 1; Less than once per year = 0 | As regards information and communication within your company, how do you rate the usefulness of meeting(s) between employees and management?<br>Very useful or Moderately useful = 1; not useful or does not exist = 0 |
| | Changes with employees involved | From your experience, what percentage of the total duration of these meetings is used by employees in order to express themselves or ask questions?<br>Up to a quarter of the time; Up to half of the time or More than half the time = 1; No time = 0 | Do you participate in decisions concerning major changes within your company? Yes = 1; No = 0 |
| | Attitude surveys | Does senior management seek to stimulate employees' participation by Internal survey(s)?<br>Yes = 1; No = 0 | As regards information and communication within your company, how do you rate the usefulness of Internal survey(s) organized by the management?<br>Very useful or Moderately useful = 1; Not useful or Does not exist = 0 |
| **Team working** | Autonomous team work | What proportion of the employees (not senior executives) currently works in a team where the members jointly decide how work is done?<br>At least 25% = 1 ; 0-24% = 0 | Based on two survey questions: Work in a team of at least 3 people whose members supervise team work = 1; otherwise = 0 |
| | Quality circle | What proportion of employees is currently involved in groups who meet voluntarily and regularly to identify and solve problems related to their work?<br>At least 25% = 1 ; 0-24% = 0 | Are you involved in a group which meets regularly to identify and resolve problems related to its work? (quality groups or quality circles)<br>Yes = 1; No = 0 |
| | Job rotation | Are your employees (not senior executives) able to perform the tasks of other colleagues in their absence?<br>Yes, at the team level; Yes, for all positions = 1 ; Only for some strategic jobs or no = 0 | When you are absent for one week, what proportion of your tasks must you catch up on when you return?<br>Nothing or just a small proportion; Less than half = 1; More than half or Almost all my work = 0 |
| **Development** | Development included in the strategy | Does your enterprise have internal mechanisms to encourage employees to develop their skills and their career?<br>Yes = 1; No = 0 | Do you agree or disagree with the following statement: My company encourages its staff to develop their competences and their careers?<br>Agree or Strongly agree = 1 ; Strongly disagree or Disagree = 0 |
| | Training | In 2012, what proportion of employees (not senior executives) has received training days taken on working time?<br>At least 25% = 1 ; 0-24% = 0 | In the last 12 months, have you attend training related to your work paid by your company?<br>Yes = 1; No = 0 |
| | Appraisal | Among your employees (not senior executives), how many benefit from an annual appraisal?<br>At least 25% = 1 ; 0-24% = 0 | In the last 12 months, did you have at least one appraisal interview?<br>Yes = 1; No = 0 |

| | | | |
|---|---|---|---|
| **Family-friendly** | Flexible working hours | What proportion of the employees (not senior executives) can choose the time at which they begin and end their work day?<br>At least 25% = 1 ; 0-24% = 0 | Do you have flexible working hours (you decide yourself when you start and stop work, taking into account certain daily fixed time slots)?<br>Yes = 1; No = 0 |
| | Work-life balance | Does the following extra-legal benefits are offered to your employees (not senior executives)? At least one of the following: slot in a childcare centre; financial assistance for childcare; financial assistance to take care of the elderly and / or disabled; days off for family reasons above the legal minimum = 1; otherwise = 0 | Do you agree or disagree with the following statement: My company implements policies which permit a good work-life balance?<br>Agree or Strongly agree = 1; Strongly disagree or Disagree = 0 |
| | Working at home in work hours | Do the following arrangements on employees' working time (not senior executives) exist in your enterprise: Working at home in normal working hours? Yes, for most employees or yes, but only for some employees = 1; No = 0 | Does your company permit you to do working at (or from) home in normal working hours? If yes, do you make use of this possibility?<br>Sometimes or often = 1; Never=0 |
| **Incentives** | Individual pay incentive | Does your compensation system include premiums or bonuses linked to individual performance?<br>Yes = 1; No = 0 | Do you have a fixed or variable salary (depending on productivity ...)?<br>Variable or Fixed + a variable element = 1; Fixed =0 |
| | Fringe benefits | Does the following fringe benefits are offered to your employees (not senior executives)? At least one of the following: company car or car fee participation; supplementary pension or life insurance; meal vouchers = 1; otherwise = 0 | Do the following fringe benefits are offered to you? At least one of the following: company car or car fee participation; supplementary pension or life insurance; meal vouchers = 1; otherwise = 0 |

## *Table A3.* Descriptive statistics

| | Mean | | | | | T-test p-value | | |
|---|---|---|---|---|---|---|---|---|
| | Whole sample | LL | HL | LH | HH | HH versus LL | HH versus HL | HH versus LH |
| Job satisfaction (0-10) | 6.30 (2.18) | 5.46 | 5.59 | 7.03 | 6.93 | 0.00 | 0.00 | 0.10 |
| Organizational commitment (3-12) | 8.22 (2.00) | 7.41 | 7.60 | 8.83 | 8.82 | 0.00 | 0.00 | 0.74 |
| **Individual characteristics** | | | | | | | | |
| Male | 0.69 | 0.65 | 0.67 | 0.76 | 0.68 | 0.06 | 0.33 | 0.00 |
| ***Age*** | | | | | | | | |
| *16-30 years* | 0.18 | 0.17 | 0.16 | 0.18 | 0.20 | 0.00 | 0.00 | 0.03 |
| 30-49 years | 0.65 | 0.63 | 0.68 | 0.65 | 0.65 | 0.12 | 0.05 | 0.84 |
| 50 years and more | 0.17 | 0.20 | 0.16 | 0.17 | 0.15 | 0.00 | 0.26 | 0.01 |
| ***Nationality*** | | | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| *Luxembourgish* | 0.18 | 0.15 | 0.17 | 0.19 | 0.22 | 0.00 | 0.00 | 0.02 |
| German | 0.14 | 0.12 | 0.13 | 0.16 | 0.13 | 0.30 | 0.76 | 0.02 |
| Belgian | 0.15 | 0.13 | 0.14 | 0.17 | 0.16 | 0.03 | 0.16 | 0.31 |
| French | 0.31 | 0.29 | 0.36 | 0.23 | 0.32 | 0.02 | 0.01 | 0.00 |
| Portuguese | 0.14 | 0.22 | 0.13 | 0.16 | 0.08 | 0.00 | 0.00 | 0.00 |
| Other nationality | 0.08 | 0.08 | 0.07 | 0.09 | 0.09 | 0.39 | 0.05 | 0.80 |
| ***Family situation*** | | | | | | | | |
| Living with partner | 0.79 | 0.80 | 0.80 | 0.81 | 0.77 | 0.03 | 0.04 | 0.00 |
| Child | 0.59 | 0.60 | 0.61 | 0.60 | 0.56 | 0.01 | 0.00 | 0.00 |
| ***Level of education*** | | | | | | | | |
| *Less than secondary education* | 0.18 | 0.24 | 0.18 | 0.20 | 0.12 | 0.00 | 0.00 | 0.00 |
| Secondary education | 0.45 | 0.51 | 0.47 | 0.47 | 0.38 | 0.00 | 0.00 | 0.00 |
| More than secondary | 0.38 | 0.25 | 0.35 | 0.33 | 0.50 | 0.00 | 0.00 | 0.00 |
| Commuting time (1-8)[1] | 4.11 (1.98) | 4.01 | 4.22 | 3.95 | 4.17 | 0.00 | 0.42 | 0.00 |
| **Occupational characteristics** | | | | | | | | |
| ***Occupations*** | | | | | | | | |
| Professional and managers | 0.21 | 0.09 | 0.16 | 0.24 | 0.31 | 0.00 | 0.00 | 0.00 |
| Associate professionals | 0.20 | 0.15 | 0.21 | 0.17 | 0.23 | 0.00 | 0.09 | 0.00 |
| Clerical | 0.15 | 0.12 | 0.16 | 0.12 | 0.17 | 0.00 | 0.43 | 0.00 |
| Sales and service personnel | 0.10 | 0.15 | 0.11 | 0.09 | 0.07 | 0.00 | 0.00 | 0.01 |
| Craft | 0.17 | 0.23 | 0.18 | 0.19 | 0.12 | 0.00 | 0.00 | 0.00 |
| Plant operatives | 0.08 | 0.08 | 0.09 | 0.09 | 0.06 | 0.01 | 0.00 | 0.01 |
| *Non-qualified operatives* | 0.09 | 0.18 | 0.08 | 0.10 | 0.04 | 0.00 | 0.00 | 0.00 |
| Full time | 0.89 | 0.86 | 0.89 | 0.92 | 0.89 | 0.00 | 0.91 | 0.01 |
| Permanent contract | 0.93 | 0.94 | 0.93 | 0.92 | 0.93 | 0.52 | 0.90 | 0.18 |
| Tenure (months) (6-590) | 117.75 (97.96) | 113.97 | 115.44 | 119.67 | 120.64 | 0.02 | 0.07 | 0.76 |
| Unionized | 0.30 | 0.32 | 0.32 | 0.27 | 0.28 | 0.00 | 0.01 | 0.31 |
| Hourly wage (10.41-68.68) | 21.78 (11.51) | 17.67 | 20.47 | 22.65 | 24.79 | 0.00 | 0.00 | 0.00 |
| Sum of ICT (0-6)[2] | 1.78 (1.69) | 1.06 | 1.58 | 1.76 | 2.38 | 0.00 | 0.00 | 0.00 |
| Sum of harm working conditions (0-4)[3] | 0.85 (1.26) | 1.14 | 1.00 | 0.79 | 0.61 | 0.00 | 0.00 | 0.00 |
| **Workplace characteristics** | | | | | | | | |
| ***Size*** | | | | | | | | |
| *15-49 employees* | 0.31 | 0.45 | 0.28 | 0.39 | 0.20 | 0.00 | 0.00 | 0.00 |
| 50-99 employees | 0.13 | 0.14 | 0.14 | 0.16 | 0.11 | 0.00 | 0.01 | 0.00 |
| 100-249 employees | 0.18 | 0.18 | 0.17 | 0.21 | 0.17 | 0.48 | 0.93 | 0.00 |
| 250 employees and more | 0.38 | 0.23 | 0.41 | 0.24 | 0.52 | 0.00 | 0.00 | 0.00 |
| ***Sector*** | | | | | | | | |
| *Industry* | 0.14 | 0.21 | 0.11 | 0.16 | 0.09 | 0.00 | 0.05 | 0.00 |
| Construction | 0.17 | 0.17 | 0.20 | 0.19 | 0.15 | 0.01 | 0.00 | 0.00 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Trade, accommodation and food service | 0.21 | 0.20 | 0.24 | 0.20 | 0.20 | 0.78 | 0.00 | 0.78 |
| Transportation and storage | 0.07 | 0.05 | 0.09 | 0.05 | 0.09 | 0.00 | 0.33 | 0.00 |
| IT and communication | 0.05 | 0.04 | 0.04 | 0.08 | 0.04 | 0.81 | 0.50 | 0.00 |
| Finance | 0.19 | 0.10 | 0.19 | 0.17 | 0.25 | 0.00 | 0.00 | 0.00 |
| Other services | 0.17 | 0.22 | 0.13 | 0.15 | 0.18 | 0.00 | 0.00 | 0.01 |
| Foreign owned | 0.38 | 0.29 | 0.36 | 0.38 | 0.45 | 0.00 | 0.00 | 0.00 |
| Multisite firm | 0.58 | 0.71 | 0.51 | 0.73 | 0.48 | 0.00 | 0.05 | 0.00 |
| Number of concurrent on the market (1-3)[4] | 2.11 (0.78) | 2.22 | 2.04 | 2.15 | 2.06 | 0.00 | 0.43 | 0.00 |
| More than 20 years of activity | 0.72 | 0.67 | 0.74 | 0.65 | 0.77 | 0.00 | 0.03 | 0.00 |
| Percentage of graduate employees (1-4)[5] | 2.07 (1.09) | 1.60 | 2.11 | 1.91 | 2.42 | 0.00 | 0.00 | 0.00 |
| Percentage of colleagues with the same gender | 0.68 (0.25) | 0.71 | 0.67 | 0.72 | 0.65 | 0.00 | 0.00 | 0.00 |
| Percentage of colleagues with the same nationality | 0.43 (0.27) | 0.45 | 0.44 | 0.45 | 0.41 | 0.00 | 0.00 | 0.00 |
| Observations | 8,373 | 1,993 | 1,834 | 1,465 | 3,081 | | | |

*Notes*: Weighted statistics. Reference categories are in italic. Standard deviations are shown in parentheses for non-binary variables (only on the whole sample). p-value refers to a two-sided t-test of mean equality between groups.

[1] 8 categories from less than 10 minutes to 1 hour and more.

[2] Internet, email, ERP - Enterprise Resource Planning, workflow, Intranet, groupware.

[3] Adverse factor that affects the employee for a large part of the work time (noise, vibrations, extreme temperatures; radiation, rays or chemical or biological agents; lifting or moving heavy loads; performing rapid, repetitive, monotonous movements; uncomfortable working position).

[4] Coded as: 1for less than 6; 2 for 6-25; 3 for more than 25.

[5] Coded as: 1 for 0-5%; 2 for 6-24%; 3 for 25-49%; 4 for 50% and more.

***Table A4.*** **Regressions of job satisfaction and organizational commitment on exposure or participation to HRM – All results of the linear regression models of Table 4**

| | Panel A | | | | Panel B | |
|---|---|---|---|---|---|---|
| | Workplace level | | Employee level | | Employee level | |
| | Job satisfaction | Organizational commitment | Job satisfaction | Organizational commitment | Job satisfaction | Organizational commitment |
| Exposure High | 0.18* | 0.23** | 0.17** | 0.15** | | |
| | (0.10) | (0.09) | (0.07) | (0.07) | | |
| Participation High | | | | | 1.33*** | 1.15*** |
| | | | | | (0.06) | (0.05) |
| **Individual characteristics** | | | | | | |
| Male | | | -0.04 | 0.13 | -0.07 | 0.10 |
| | | | (0.08) | (0.08) | (0.08) | (0.08) |
| Age 30-49 years | | | -0.27*** | -0.16* | -0.16* | -0.06 |
| | | | (0.09) | (0.09) | (0.08) | (0.08) |
| 50 years and more | | | -0.27** | -0.26** | -0.11 | -0.11 |
| | | | (0.12) | (0.12) | (0.11) | (0.11) |
| German | | | -0.20* | -0.12 | -0.20* | -0.12 |
| | | | (0.12) | (0.10) | (0.11) | (0.09) |
| Belgian | | | 0.39*** | 0.04 | 0.37*** | 0.03 |
| | | | (0.11) | (0.09) | (0.10) | (0.08) |
| French | | | 0.05 | -0.06 | 0.10 | -0.02 |
| | | | (0.10) | (0.08) | (0.10) | (0.08) |
| Portuguese | | | 0.07 | -0.01 | 0.09 | 0.01 |
| | | | (0.14) | (0.12) | (0.13) | (0.11) |
| Other nationality | | | 0.06 | -0.22** | 0.06 | -0.21** |
| | | | (0.12) | (0.11) | (0.12) | (0.10) |
| Living with partner | | | 0.12 | 0.09 | 0.14* | 0.11 |
| | | | (0.08) | (0.07) | (0.07) | (0.07) |
| Child | | | 0.05 | 0.09 | 0.06 | 0.09 |
| | | | (0.06) | (0.06) | (0.06) | (0.06) |
| Secondary education | | | -0.30*** | -0.02 | -0.29*** | -0.01 |
| | | | (0.09) | (0.08) | (0.09) | (0.08) |
| More than secondary | | | -0.65*** | -0.35*** | -0.60*** | -0.31*** |
| | | | (0.11) | (0.10) | (0.11) | (0.09) |
| Commuting time | | | -0.04** | -0.01 | -0.03* | -0.01 |
| | | | (0.02) | (0.01) | (0.02) | (0.01) |
| **Occupational characteristics** | | | | | | |
| Professional and managers | | | 0.76*** | 1.11*** | 0.60*** | 0.98*** |
| | | | (0.18) | (0.16) | (0.17) | (0.16) |
| Associate professionals | | | 0.57*** | 0.83*** | 0.53*** | 0.80*** |
| | | | (0.17) | (0.15) | (0.16) | (0.15) |
| Clerical | | | 0.53*** | 0.62*** | 0.48*** | 0.59*** |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | (0.16) | (0.15) | (0.15) | (0.15) |
| Sales and service personnel | | | 0.44** | 0.56*** | 0.45*** | 0.57*** |
| | | | (0.17) | (0.15) | (0.16) | (0.15) |
| Craft | | | 0.73*** | 0.94*** | 0.66*** | 0.88*** |
| | | | (0.16) | (0.15) | (0.15) | (0.14) |
| Plant operatives | | | 0.77*** | 1.01*** | 0.65*** | 0.90*** |
| | | | (0.17) | (0.16) | (0.16) | (0.15) |
| Full time | | | 0.10 | 0.36*** | 0.11 | 0.37*** |
| | | | (0.11) | (0.09) | (0.11) | (0.09) |
| Permanent contract | | | -0.05 | -0.15 | 0.01 | -0.09 |
| | | | (0.13) | (0.11) | (0.12) | (0.10) |
| Tenure | | | -0.00 | 0.00 | -0.00 | 0.00 |
| | | | (0.00) | (0.00) | (0.00) | (0.00) |
| Unionized | | | -0.33*** | -0.17*** | -0.31*** | -0.15** |
| | | | (0.07) | (0.06) | (0.07) | (0.06) |
| Hourly wage | | | 0.01*** | 0.01*** | 0.01** | 0.01* |
| | | | (0.00) | (0.00) | (0.00) | (0.00) |
| Sum of ICT | | | 0.09*** | 0.15*** | 0.03 | 0.09*** |
| | | | (0.02) | (0.02) | (0.02) | (0.02) |
| Sum of harmful working conditions | | | -0.30*** | -0.15*** | -0.26*** | -0.13*** |
| | | | (0.03) | (0.03) | (0.03) | (0.03) |
| **Workplace characteristics** | | | | | | |
| 50-99 employees | 0.05 | 0.04 | 0.13 | 0.11 | 0.07 | 0.06 |
| | (0.11) | (0.09) | (0.10) | (0.09) | (0.09) | (0.08) |
| 100-249 employees | -0.01 | -0.08 | -0.00 | -0.11 | -0.08 | -0.17** |
| | (0.11) | (0.10) | (0.10) | (0.09) | (0.09) | (0.08) |
| 250 employees and more | -0.17 | -0.27** | 0.03 | -0.10 | -0.10 | -0.21** |
| | (0.12) | (0.11) | (0.10) | (0.09) | (0.08) | (0.08) |
| Construction | 0.22 | 0.22 | 0.39*** | 0.43*** | 0.20* | 0.27** |
| | (0.19) | (0.16) | (0.13) | (0.12) | (0.12) | (0.11) |
| Trade, accommodation and food service | -0.18 | 0.02 | -0.05 | 0.14 | -0.21* | 0.00 |
| | (0.17) | (0.15) | (0.12) | (0.12) | (0.11) | (0.11) |
| Transportation and storage | 0.22 | 0.14 | 0.12 | 0.06 | -0.01 | -0.05 |
| | (0.24) | (0.22) | (0.17) | (0.15) | (0.15) | (0.13) |
| IT and communication | 0.04 | -0.02 | -0.07 | -0.30** | -0.09 | -0.32*** |
| | (0.21) | (0.20) | (0.13) | (0.13) | (0.12) | (0.12) |
| Finance | -0.30 | -0.09 | -0.33*** | -0.25** | -0.30*** | -0.23** |
| | (0.19) | (0.17) | (0.12) | (0.12) | (0.11) | (0.11) |
| Other services | -0.01 | 0.24 | -0.16 | -0.01 | -0.15 | -0.00 |
| | (0.19) | (0.17) | (0.12) | (0.12) | (0.11) | (0.10) |
| Foreign owned | 0.15 | 0.05 | 0.01 | 0.04 | -0.06 | -0.02 |
| | (0.10) | (0.10) | (0.07) | (0.07) | (0.06) | (0.06) |
| Multisite firm | -0.13 | -0.18* | -0.05 | -0.11 | -0.02 | -0.09 |
| | (0.11) | (0.11) | (0.08) | (0.07) | (0.07) | (0.06) |
| | -0.00 | 0.02 | 0.00 | -0.03 | 0.02 | -0.01 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Number of concurrent on the market | (0.06) | (0.06) | (0.04) | (0.04) | (0.04) | (0.04) |
| More than 20 years of activity | -0.08 | 0.02 | 0.04 | -0.02 | 0.09 | 0.02 |
| | (0.10) | (0.09) | (0.08) | (0.09) | (0.07) | (0.07) |
| Percentage of graduate employees | 0.06 | 0.06 | 0.00 | -0.02 | -0.03 | -0.04 |
| | (0.06) | (0.05) | (0.04) | (0.04) | (0.04) | (0.03) |
| Percentage of colleagues with the same gender | 6.29*** | 8.11*** | 0.01 | -0.09 | -0.07 | -0.16 |
| | (0.23) | (0.22) | (0.16) | (0.14) | (0.16) | (0.14) |
| Percentage of colleagues with the same nationality | | | 0.28** | -0.01 | 0.27** | -0.03 |
| | | | (0.11) | (0.11) | (0.11) | (0.10) |
| Constant | | | 5.92*** | 7.19*** | 5.53*** | 6.86*** |
| | | | (0.34) | (0.29) | (0.32) | (0.26) |
| F-test | 1.57* | 1.78** | 9.19*** | 10.60*** | 25.54*** | 28.49*** |
| R-squared | 0.019 | 0.019 | 0.076 | 0.092 | 0.156 | 0.163 |
| Observations | 1,238 | 1,238 | 8,373 | 8,373 | 8,373 | 8,373 |

*Notes*: *Statistically significant at the .10 level; ** at the .05 level; *** at the .01 level. Robust standard errors adjusted for 1,268 clusters (working in the same workplace) in parentheses. Weighted estimations.

***Table A5.*** **Regressions of job satisfaction and organizational commitment on exposure-participation to HRM groups– All results of the linear regression models of Table 5**

| | Job satisfaction | Organizational commitment | Job satisfaction | Organizational commitment |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Exposure High (H) | 0.04 | 0.04 | | |
| | (0.07) | (0.06) | | |
| Participation High (H) | 1.33*** | 1.15*** | | |
| | (0.06) | (0.05) | | |
| Exposure low & participation low | | | -1.38*** | -1.20*** |
| | | | (0.09) | (0.08) |
| Exposure high & participation low | | | -1.26*** | -1.10*** |
| | | | (0.08) | (0.07) |
| Exposure low & participation high | | | 0.04 | 0.01 |
| | | | (0.08) | (0.07) |
| **Individual characteristics** | | | | |
| Male | -0.07 | 0.10 | -0.07 | 0.10 |
| | (0.08) | (0.08) | (0.08) | (0.08) |
| Age 30-49 years | -0.16* | -0.06 | -0.16* | -0.06 |
| | (0.08) | (0.08) | (0.08) | (0.08) |
| 50 years and more | -0.10 | -0.11 | -0.10 | -0.11 |
| | (0.11) | (0.11) | (0.11) | (0.11) |
| German | -0.20* | -0.12 | -0.20* | -0.12 |
| | (0.11) | (0.09) | (0.11) | (0.09) |
| Belgian | 0.37*** | 0.03 | 0.37*** | 0.03 |

| | | | | |
|---|---|---|---|---|
| | (0.10) | (0.08) | (0.10) | (0.08) |
| French | 0.10 | -0.03 | 0.10 | -0.03 |
| | (0.10) | (0.08) | (0.10) | (0.08) |
| Portuguese | 0.09 | 0.01 | 0.09 | 0.01 |
| | (0.13) | (0.11) | (0.13) | (0.11) |
| Other nationality | 0.06 | -0.21** | 0.06 | -0.21** |
| | (0.12) | (0.10) | (0.12) | (0.10) |
| Living with partner | 0.14* | 0.11 | 0.14* | 0.11 |
| | (0.07) | (0.07) | (0.07) | (0.07) |
| Child | 0.06 | 0.09 | 0.05 | 0.09 |
| | (0.06) | (0.06) | (0.06) | (0.06) |
| Secondary education | -0.29*** | -0.01 | -0.29*** | -0.01 |
| | (0.09) | (0.08) | (0.09) | (0.08) |
| More than secondary | -0.60*** | -0.31*** | -0.60*** | -0.30*** |
| | (0.11) | (0.09) | (0.11) | (0.09) |
| Commuting time | -0.03* | -0.01 | -0.03* | -0.01 |
| | (0.02) | (0.01) | (0.02) | (0.01) |
| **Occupational characteristics** | | | | |
| Professional and managers | 0.60*** | 0.98*** | 0.59*** | 0.98*** |
| | (0.17) | (0.15) | (0.17) | (0.15) |
| Associate professionals | 0.52*** | 0.79*** | 0.52*** | 0.79*** |
| | (0.16) | (0.15) | (0.16) | (0.14) |
| Clerical | 0.48*** | 0.58*** | 0.47*** | 0.58*** |
| | (0.15) | (0.14) | (0.15) | (0.14) |
| Sales and service personnel | 0.44*** | 0.57*** | 0.44*** | 0.57*** |
| | (0.16) | (0.15) | (0.16) | (0.15) |
| Craft | 0.65*** | 0.88*** | 0.65*** | 0.88*** |
| | (0.15) | (0.14) | (0.15) | (0.14) |
| Plant operatives | 0.64*** | 0.90*** | 0.64*** | 0.89*** |
| | (0.16) | (0.15) | (0.16) | (0.15) |
| Full time | 0.11 | 0.37*** | 0.10 | 0.36*** |
| | (0.11) | (0.09) | (0.11) | (0.09) |
| Permanent contract | 0.02 | -0.09 | 0.02 | -0.09 |
| | (0.12) | (0.10) | (0.13) | (0.10) |
| Tenure | -0.00 | 0.00 | -0.00 | 0.00 |
| | (0.00) | (0.00) | (0.00) | (0.00) |
| Unionized | -0.31*** | -0.15** | -0.30*** | -0.15** |
| | (0.07) | (0.06) | (0.07) | (0.06) |
| Hourly wage | 0.01** | 0.01* | 0.01** | 0.01* |
| | (0.00) | (0.00) | (0.00) | (0.00) |
| Sum of ICT | 0.03 | 0.09*** | 0.03 | 0.09*** |
| | (0.02) | (0.02) | (0.02) | (0.02) |
| Sum of harmful working conditions | -0.26*** | -0.13*** | -0.26*** | -0.13*** |
| | (0.03) | (0.03) | (0.03) | (0.03) |
| **Workplace characteristics** | | | | |
| 50-99 employees | 0.07 | 0.06 | 0.07 | 0.06 |

| | | | | |
|---|---|---|---|---|
| | (0.09) | (0.08) | (0.09) | (0.08) |
| 100-249 employees | -0.08 | -0.18** | -0.09 | -0.18** |
| | (0.09) | (0.08) | (0.09) | (0.08) |
| 250 employees and more | -0.11 | -0.22*** | -0.11 | -0.22*** |
| | (0.09) | (0.08) | (0.09) | (0.08) |
| Construction | 0.19 | 0.25** | 0.18 | 0.25** |
| | (0.12) | (0.12) | (0.13) | (0.12) |
| Trade, accommodation and food service | -0.22** | -0.01 | -0.23** | -0.01 |
| | (0.11) | (0.11) | (0.11) | (0.11) |
| Transportation and storage | -0.03 | -0.07 | -0.03 | -0.07 |
| | (0.15) | (0.13) | (0.15) | (0.13) |
| IT and communication | -0.09 | -0.32*** | -0.10 | -0.32*** |
| | (0.12) | (0.12) | (0.12) | (0.12) |
| Finance | -0.31*** | -0.23** | -0.31*** | -0.23** |
| | (0.11) | (0.11) | (0.11) | (0.11) |
| Other services | -0.16 | -0.01 | -0.15 | -0.00 |
| | (0.11) | (0.10) | (0.11) | (0.10) |
| Foreign owned | -0.06 | -0.02 | -0.06 | -0.02 |
| | (0.06) | (0.06) | (0.06) | (0.06) |
| Multisite firm | -0.02 | -0.08 | -0.02 | -0.08 |
| | (0.07) | (0.06) | (0.07) | (0.06) |
| Number of concurrent on the market | 0.03 | -0.01 | 0.03 | -0.01 |
| | (0.04) | (0.04) | (0.04) | (0.04) |
| More than 20 years of activity | 0.09 | 0.02 | 0.09 | 0.03 |
| | (0.07) | (0.07) | (0.07) | (0.07) |
| Percentage of graduate employees | -0.03 | -0.05 | -0.03 | -0.05 |
| | (0.04) | (0.03) | (0.04) | (0.03) |
| Percentage of colleagues with the same gender | -0.07 | -0.15 | -0.07 | -0.16 |
| | (0.15) | (0.14) | (0.15) | (0.14) |
| Percentage of colleagues with the same nationality | 0.27** | -0.03 | 0.27** | -0.03 |
| | (0.11) | (0.10) | (0.11) | (0.10) |
| Constant | 5.52*** | 6.85*** | 6.87*** | 8.03*** |
| | (0.32) | (0.26) | (0.32) | (0.27) |
| F-test | 25.05*** | 28.00*** | 24.77*** | 27.72*** |
| R-squared | 0.156 | 0.163 | 0.156 | 0.163 |
| Observations | 8,373 | 8,373 | 8,373 | 8,373 |

*Notes*: *Statistically significant at the .10 level; ** at the .05 level; *** at the .01 level. Robust standard errors adjusted for 1,268 clusters (working in the same workplace) in parentheses. Weighted estimations.

***Table A6.*** **Regressions of job satisfaction and organizational commitment by exposure-participation to HRM groups**

| | Job satisfaction | | | | Organizational commitment | | | |
|---|---|---|---|---|---|---|---|---|
| | LL | HL | LH | HH | LL | HL | LH | HH |
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| **Individual characteristics** | | | | | | | | |
| Male | -0.10 | -0.33** | 0.07 | -0.09 | 0.25 | -0.09 | 0.36* | -0.08 |
| | (0.19) | (0.16) | (0.19) | (0.11) | (0.16) | (0.16) | (0.19) | (0.10) |
| Age 30-49 years | 0.05 | -0.29 | -0.25 | -0.18 | 0.24 | -0.38** | -0.11 | -0.02 |
| | (0.21) | (0.18) | (0.20) | (0.12) | (0.18) | (0.18) | (0.18) | (0.12) |
| 50 years and more | 0.09 | -0.32 | 0.00 | -0.05 | 0.21 | -0.68*** | -0.11 | 0.08 |
| | (0.26) | (0.25) | (0.25) | (0.15) | (0.24) | (0.25) | (0.21) | (0.17) |
| German | -0.05 | -0.22 | -0.34 | -0.16 | -0.32 | -0.16 | -0.16 | 0.03 |
| | (0.27) | (0.28) | (0.23) | (0.19) | (0.22) | (0.23) | (0.21) | (0.14) |
| Belgian | 0.67*** | 0.61*** | 0.05 | 0.27* | 0.13 | -0.11 | 0.07 | 0.04 |
| | (0.23) | (0.23) | (0.21) | (0.15) | (0.21) | (0.22) | (0.20) | (0.12) |
| French | 0.00 | 0.19 | 0.09 | 0.06 | -0.27 | -0.07 | 0.15 | 0.01 |
| | (0.20) | (0.22) | (0.21) | (0.13) | (0.19) | (0.19) | (0.20) | (0.10) |
| Portuguese | 0.36 | 0.00 | -0.03 | 0.03 | -0.17 | 0.15 | 0.00 | 0.24 |
| | (0.24) | (0.29) | (0.25) | (0.23) | (0.23) | (0.23) | (0.21) | (0.18) |
| Other nationality | 0.04 | 0.38 | -0.02 | 0.02 | -0.80*** | 0.04 | -0.14 | -0.04 |
| | (0.28) | (0.26) | (0.26) | (0.18) | (0.27) | (0.25) | (0.21) | (0.14) |
| Living with partner | -0.02 | 0.01 | 0.17 | 0.25** | 0.29* | 0.08 | 0.12 | -0.04 |
| | (0.17) | (0.15) | (0.17) | (0.10) | (0.15) | (0.15) | (0.16) | (0.10) |
| Child | 0.07 | 0.20 | 0.07 | -0.02 | 0.00 | 0.15 | 0.12 | 0.12 |
| | (0.15) | (0.13) | (0.15) | (0.08) | (0.13) | (0.13) | (0.13) | (0.08) |
| Secondary education | -0.31* | -0.48*** | -0.31 | -0.16 | 0.20 | -0.13 | -0.38** | 0.11 |
| | (0.17) | (0.17) | (0.20) | (0.15) | (0.16) | (0.18) | (0.17) | (0.14) |
| More than secondary | -0.79*** | -0.71*** | -0.46* | -0.42** | -0.18 | -0.40* | -0.52*** | -0.17 |
| | (0.24) | (0.24) | (0.24) | (0.16) | (0.20) | (0.23) | (0.19) | (0.16) |
| Commuting time | 0.03 | -0.01 | -0.02 | -0.07*** | 0.05 | 0.01 | -0.04 | -0.04* |
| | (0.04) | (0.03) | (0.03) | (0.02) | (0.03) | (0.03) | (0.03) | (0.02) |
| **Occupational characteristics** | | | | | | | | |
| Professional and managers | 0.19 | 0.21 | 1.10*** | 0.15 | 0.82*** | 0.90*** | 1.61*** | 0.61** |
| | (0.37) | (0.33) | (0.38) | (0.28) | (0.31) | (0.29) | (0.38) | (0.24) |
| Associate professionals | 0.46 | 0.38 | 0.56 | 0.06 | 0.64** | 0.78*** | 1.22*** | 0.40* |
| | (0.34) | (0.30) | (0.36) | (0.27) | (0.30) | (0.28) | (0.35) | (0.23) |
| Clerical | 0.44 | 0.29 | 0.60 | 0.02 | 0.37 | 0.44 | 1.06*** | 0.30 |
| | (0.34) | (0.28) | (0.37) | (0.26) | (0.28) | (0.28) | (0.35) | (0.23) |
| Sales and service personnel | 0.70** | 0.37 | 0.52 | -0.39 | 0.59** | 0.57* | 0.77** | 0.15 |
| | (0.30) | (0.27) | (0.34) | (0.29) | (0.24) | (0.29) | (0.36) | (0.26) |
| Craft | 1.06*** | 0.57* | 0.72** | -0.23 | 1.01*** | 0.80*** | 0.93*** | 0.40* |
| | (0.26) | (0.30) | (0.36) | (0.27) | (0.23) | (0.26) | (0.29) | (0.23) |
| Plant operatives | 1.08*** | 0.58* | 0.86** | -0.30 | 0.96*** | 1.11*** | 0.84*** | 0.37 |
| | (0.36) | (0.30) | (0.37) | (0.27) | (0.31) | (0.32) | (0.31) | (0.25) |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Full time | 0.16 | -0.10 | 0.29 | 0.11 | 0.38** | 0.08 | 0.57** | 0.44*** |
| | (0.23) | (0.18) | (0.23) | (0.16) | (0.17) | (0.19) | (0.23) | (0.14) |
| Permanent contract | -0.16 | -0.18 | 0.30 | 0.12 | -0.29 | -0.22 | 0.21 | -0.00 |
| | (0.30) | (0.25) | (0.26) | (0.19) | (0.26) | (0.23) | (0.20) | (0.16) |
| Tenure | 0.00 | -0.00 | -0.00 | -0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) | (0.00) |
| Unionized | -0.55*** | -0.38*** | -0.20 | -0.13 | -0.39*** | -0.16 | 0.14 | -0.11 |
| | (0.14) | (0.14) | (0.15) | (0.09) | (0.12) | (0.14) | (0.12) | (0.09) |
| Hourly wage | 0.02* | 0.01 | -0.01 | 0.01** | 0.01 | 0.01 | 0.00 | 0.00 |
| | (0.01) | (0.01) | (0.01) | (0.00) | (0.01) | (0.01) | (0.01) | (0.00) |
| Sum of ICT | 0.08 | -0.07 | 0.06 | 0.04 | 0.13** | 0.04 | 0.01 | 0.13*** |
| | (0.06) | (0.06) | (0.05) | (0.03) | (0.06) | (0.05) | (0.05) | (0.03) |
| Sum of harm working conditions | -0.35*** | -0.34*** | -0.24*** | -0.14*** | -0.16*** | -0.19*** | -0.13* | -0.06 |
| | (0.06) | (0.05) | (0.08) | (0.05) | (0.06) | (0.05) | (0.07) | (0.05) |
| **Workplace characteristics** | | | | | | | | |
| 50-99 employees | -0.15 | 0.19 | 0.36* | -0.04 | 0.05 | 0.18 | 0.30* | -0.19 |
| | (0.20) | (0.21) | (0.19) | (0.14) | (0.17) | (0.19) | (0.16) | (0.13) |
| 100-249 employees | -0.34* | 0.16 | -0.17 | 0.06 | -0.29* | -0.11 | -0.10 | -0.21 |
| | (0.18) | (0.20) | (0.19) | (0.15) | (0.17) | (0.19) | (0.19) | (0.14) |
| 250 employees and more | -0.11 | -0.05 | 0.22 | -0.33** | -0.18 | -0.20 | -0.09 | -0.39*** |
| | (0.17) | (0.21) | (0.17) | (0.14) | (0.16) | (0.17) | (0.14) | (0.14) |
| Construction | 0.14 | 0.15 | 0.32 | 0.16 | 0.09 | 0.33 | 0.07 | 0.38** |
| | (0.24) | (0.29) | (0.27) | (0.17) | (0.22) | (0.23) | (0.24) | (0.18) |
| Trade, accom-modation and food service | -0.30 | -0.60** | 0.17 | -0.22 | 0.02 | -0.16 | 0.19 | -0.03 |
| | (0.21) | (0.27) | (0.24) | (0.17) | (0.18) | (0.24) | (0.26) | (0.18) |
| Transportation and storage | -0.50 | -0.20 | 0.10 | 0.09 | -0.11 | -0.27 | 0.18 | -0.09 |
| | (0.39) | (0.29) | (0.50) | (0.17) | (0.32) | (0.27) | (0.40) | (0.18) |
| IT and communica-tion | -0.22 | -0.28 | 0.16 | -0.35** | -0.53* | -0.37 | -0.06 | -0.49*** |
| | (0.26) | (0.33) | (0.24) | (0.18) | (0.27) | (0.32) | (0.23) | (0.18) |
| Finance | -0.66** | -0.66** | -0.08 | -0.13 | -0.23 | -0.30 | -0.19 | -0.20 |
| | (0.30) | (0.33) | (0.21) | (0.14) | (0.26) | (0.29) | (0.19) | (0.16) |
| Other services | -0.28 | -0.07 | 0.02 | -0.28* | 0.04 | 0.03 | 0.33* | -0.21 |
| | (0.21) | (0.28) | (0.20) | (0.16) | (0.20) | (0.27) | (0.19) | (0.16) |
| Foreign owned | 0.30** | -0.03 | -0.24* | -0.16 | 0.09 | -0.07 | -0.03 | -0.10 |
| | (0.14) | (0.16) | (0.14) | (0.10) | (0.13) | (0.13) | (0.14) | (0.10) |
| Multisite firm | -0.08 | -0.11 | 0.12 | -0.01 | -0.16 | -0.16 | 0.00 | -0.10 |
| | (0.14) | (0.17) | (0.15) | (0.11) | (0.12) | (0.14) | (0.15) | (0.10) |
| Number of concurrent on the market | -0.10 | 0.04 | 0.03 | 0.07 | -0.08 | 0.04 | 0.01 | -0.01 |
| | (0.09) | (0.09) | (0.08) | (0.06) | (0.08) | (0.07) | (0.08) | (0.06) |
| More than 20 years of activity | -0.34** | 0.40** | 0.21 | 0.15 | -0.13 | 0.01 | 0.11 | 0.11 |
| | (0.14) | (0.18) | (0.16) | (0.13) | (0.13) | (0.15) | (0.13) | (0.13) |
| Percentage of graduate employees | 0.04 | 0.01 | -0.12* | -0.05 | -0.03 | 0.01 | -0.17*** | -0.02 |
| | (0.08) | (0.09) | (0.06) | (0.06) | (0.07) | (0.09) | (0.06) | (0.05) |
| | -0.41 | 0.11 | -0.20 | 0.30 | -0.57*** | 0.15 | -0.23 | 0.11 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Percentage of colleagues with the same gender | (0.28) | (0.34) | (0.36) | (0.26) | (0.21) | (0.32) | (0.34) | (0.23) |
| Percentage of colleagues with the same nationality | 0.61** | 0.01 | -0.02 | 0.40** | 0.07 | -0.08 | -0.10 | 0.06 |
| | (0.25) | (0.23) | (0.21) | (0.20) | (0.23) | (0.24) | (0.20) | (0.17) |
| Constant | 5.76*** | 6.45*** | 6.55*** | 6.87*** | 6.96*** | 7.57*** | 7.49*** | 8.14*** |
| | (0.67) | (0.61) | (0.56) | (0.55) | (0.53) | (0.59) | (0.51) | (0.43) |
| F-test | 4.43*** | 4.20*** | 3.20*** | 4.06*** | 5.68*** | 2.4*** | 3.89*** | 3.71*** |
| R-squared | 0.108 | 0.088 | 0.085 | 0.056 | 0.112 | 0.061 | 0.111 | 0.058 |
| Observations | 1,993 | 1,834 | 1,465 | 3,081 | 1,993 | 1,834 | 1,465 | 3,081 |

*Notes*: *Statistically significant at the .10 level; ** at the .05 level; *** at the .01 level. Robust standard errors adjusted for 1,268 clusters (working in the same workplace) in parentheses. Weighted estimations.

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