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# Are High-Performance Work Systems always a valuable retention tool? The roles of workforce feminization and flexible work arrangements

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## A B S T R A C T

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Human resource management  
High-Performance Work Systems  
Workforce feminization  
Flexible work arrangements  
Retention rate

High-Performance Work Systems (HPWS) are commonly related to higher rates of employee retention. However, variations in such rates arising from differences in workforce gender composition have hardly been studied, so the aim here is to address these issues based on a sample of British workplaces. It is hypothesized that HPWS have reduced retention outcomes in highly feminized workplaces as compared to less feminized ones. An exploration is also made of how HPWS operate in conjunction with the provision of Flexible Work Arrangements (FWAs) to affect retention across both types of workplaces. The results suggest that workforce gender composition does indeed matter when it comes to the relationship between HPWS and retention. Contrary to expectations, the provision of FWAs alongside HPWS appears to be a less-than-optimal approach to retain employees, particularly in highly feminized workplaces.

## 1. Introduction

After more than two decades of research, the benefits of HR practices for firm performance are well-documented (Jackson, Schuler, & Jiang, 2014; Posthuma, Campion, Masimova, & Campion, 2013). Yet these benefits seem highly dependent on firm context, whereby different firms may reap differential benefits from the same practices. A number of contingent variables capable of influencing the effectiveness of HR practices have been identified, including firm size (Way, 2002), reputation (Slavich, Cappetta, & Giangreco, 2014), industry (Datta, Guthrie, & Wright, 2005), business strategy (Takeuchi, 2009), and labour deployment strategy (Stirpe, Bonache, & Revilla, 2014).

Despite the considerable body of research on contextual variables affecting the outcomes of HR practices, there is only scant literature focusing specifically on contingences related to workforce composition. For instance, employee age has been shown to moderate the relationship between HR practices and employee work attitudes (Innocenti, Profili, & Sammarra, 2013; Kooij, Jansen, Dijkers, & De Lange, 2010), but similar studies analyzing other

demographic variables are scarce. This is surprising, especially considering the assumption that managers should take into account workforce composition when identifying suitable HR practices for their firms (Baron & Kreps, 1999). Thus, Peccei, Van de Voorde, and Van Veldhoven (2013) argue that the interaction between workforce characteristics and HR practices is a promising avenue for future research, and one that may well contribute to a better understanding of the HRM–performance relationship. The overall argument is that employees with different demographic backgrounds and profiles “are likely to have different priorities and expectations at work and, consequently, are likely to evaluate and respond to HR practices differently” (Peccei et al., 2013: 39).

Among the demographic variables defining the workforce, gender is particularly relevant, as the increasing presence of women in paid work has led to more feminized workplaces (Rubery, 2015b). Nevertheless, little research has been conducted on how workforce gender composition influences the effectiveness of HR practices. This study has therefore been designed to address this matter. In particular, we aim to explore the impact of workforce gender composition on the outcomes of what it is usually assumed to be the most effective set of HR initiatives, that is, the so-called High-Performance Work Systems (HPWS). Specifically, we explore how the presence of women in the workplace affects the workforce retention outcomes of these systems.

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Our focus on such specific outcomes is informed by two issues: (1) the recognition of the demanding nature of HPWS for employees, and (2) the role of women in society, as women are typically responsible for a disproportionate share of home chores. As to the first issue, although HPWS increase employee satisfaction through higher participation and discretion, they are demanding in terms of working schedules, and may lead to increased job strain, and a negative work–family interface (e.g., [White, Hill, McGovern, Mills, & Smeaton, 2003](#); [Wood & de Menezes, 2011](#)). As to the second, the demanding nature of HPWS may be particularly relevant for women, who experience greater work–family conflict reflecting unequal home responsibilities ([Adams, Heywood, & Miller, 2014](#)). Therefore, we pose the following question: Are HPWS equally effective as a retention tool in workplaces with a higher degree of workforce feminization as compared to workplaces with a lower degree?

We also analyze whether workplaces providing more extensive Flexible Work Arrangements (FWAs) alongside HPWS record improved retention outcomes. We argue that by allowing employees to better manage their work and non-work responsibilities, FWAs may help to buffer the burdens of HPWS, with this effect being more important for workplaces with a higher degree of workforce feminization. By so doing, not only do we show how HPWS operate depending on workforce gender composition, but we also explore whether these systems may operate better when many women are present in the workplace.

The study is structured as follows. First, we present HPWS, their theoretical foundations, and the effects these systems have on firm performance and employee wellbeing. We then discuss how women's unequal burden of household responsibilities might modify the HPWS–retention relationship. Based on this, we propose our hypotheses. We then present the study's methodology, our findings and, finally, our main conclusions.

## 2. Theoretical rationale and hypotheses

### 2.1. The meaning of High-Performance Work Systems for firms and employees

HR practices may favourably affect firm performance ([Jackson et al., 2014](#)). HPWS have proven to be particularly valuable ([Posthuma et al., 2013](#)). While there is no agreement about which specific HR practices compose such systems, skill-enhancing practices (e.g., selective staffing, training), motivation-enhancing practices (e.g., performance appraisal, incentives), and participation-enhancing practices (e.g., flexible job assignments, disclosure of company information) are typically included in HPWS measures ([Combs, Liu, Hall, & Ketchen, 2006](#)). Taken together, these practices encourage greater employee flexibility, proactivity, collaboration, and organizational involvement ([Posthuma et al., 2013](#)). Their meaning for the firm is mirrored in several positive outcomes, such as improved production quality ([Appelbaum, Bailey, Berg, & Kalleberg, 2000](#)), productivity ([Stirpe et al., 2014](#)) and profitability ([Huselid, 1995](#)). Furthermore, a significant body of research consistently reports a positive association between the greater use of HPWS and workforce retention (e.g., [Gardner, Wright, & Moynihan, 2011](#); [Guest, Michie, Conway, & Sheehan, 2003](#); [Guthrie, 2000](#); [Jensen, Patel, & Messersmith, 2013](#); [Sun, Aryee, & Law, 2007](#); [Way, 2002](#); [Yalabik, Chen, Lawler, & Kim, 2008](#)).

These positive outcomes have been explained from different theoretical perspectives (see [Jackson et al., 2014](#)). Building on Social Exchange Theory, it has been argued that these systems are interpreted by employees as signs of high appreciation, investment, and recognition by the employer, as well as of the employer's intention

to establish a long-term exchange relationship with the workforce. Perceptions of employer goodwill motivate employees to enter into a social exchange (as opposed to a purely mercantile relationship) with the employer, which in turn motivates them to reciprocate by remaining with the organization and performing to a high level ([Evans & Davis, 2005](#); [Paré & Tremblay, 2007](#); [Takeuchi, Lepak, Wang, & Takeuchi, 2007](#)). Several practices contribute to nurturing such an interpretation by employees. For example, careful selection may indicate to employees that the firm values them very highly ([Takeuchi et al., 2007](#)). Employees may interpret participation in decision-making through quality circles, information disclosure, and teamwork, as recognition of their importance ([Evans & Davis, 2005](#)). In addition, training and multi-skilling signal both organizational investment in employees and a commitment to them ([Paré & Tremblay, 2007](#)).

In light of their positive effects for firms, HPWS are often regarded as “HR best practices”. Nevertheless, there is still considerable debate about the impact of such systems on general employee wellbeing at work. The empirical evidence generally suggests a positive association between HPWS and areas of employee wellbeing, such as satisfaction and commitment ([Peccei et al., 2013](#)). These results are often explained by the higher levels of autonomy and empowerment HPWS generate for employees, as well as a generally more interesting and rewarding work environment (e.g., [Akdere, 2009](#); [Katou & Budhwar, 2010](#)).

However, HPWS have also a “dark side” ([Jensen et al., 2013](#)). Indeed, a less positive association has been found between these work arrangements and other indicators of employee wellbeing. In particular, research carried out in the UK has reported the negative impacts such systems have on the components of health-related wellbeing. For example, [Ramsay, Scholarios, and Harley \(2000\)](#) have found that HPWS increase job strain. The authors argue that this effect is the result of the work intensification and stress that employees subjected to HPWS experience due to the enhanced discretion and responsibilities that these systems afford them. [Truss \(2001\)](#) has similarly found that some HPWS practices are coupled with employee feelings of increased stress and work pressure. [White et al. \(2003\)](#) have found that because HPWS are designed to evince greater employee contributions in the pursuit of organizational goals, they subtract hours from home time. Thus, selected HPWS practices have been related to a more negative interface between employees' work and their domestic lives. This negative impact on private life remains even after controlling for several organizational and individual variables, leading [White et al. \(2003\)](#) to conclude that HPWS are an additional and independent source of work–home spillover. More recently, [Wood and de Menezes \(2011\)](#) have shown that some HPWS practices encouraging greater employee involvement are associated with higher degrees of employee anxiety, which can be explained by the greater pressure to be proactive and flexible that such practices place on employees. These findings have received additional support from [Wood, Van Veldhoven, Croon, and de Menezes \(2012\)](#) and [Jensen et al. \(2013\)](#).

However, what are the consequences of these side-effects of HPWS for employee attachment to the firm? Judging from HPWS research, one may well argue that the negative impact of HPWS on employees is not severe enough to result in increased employee turnover. Indeed, as mentioned, there is sound evidence that HPWS are positively associated with employee retention (e.g., [Gardner et al., 2011](#); [Jensen et al., 2013](#)). This evidence suggests that the positive effects of HPWS for employees outweigh the negative ones.

Yet drawing such a conclusion for the workforce as a whole may be ill-judged. Indeed, the workforce is not homogeneous ([Lepak & Snell, 2002](#)), whereby the specific profile and condition of each employee group may actually lead to an idiosyncratic response to

HR practices (Guzzo & Noonan, 1994; Peccei et al., 2013). For example, Kinnie, Hutchinson, Purcell, Rayton, and Swart (2005) have found that the effect of HR practices depends on an employee's occupational status. The workforce's demographic background is also relevant, as it may moderate the outcomes of HR practices. In particular, age has been the focus of a number of studies. Thus, Finegold, Mohrman, and Spreitzer (2002) have found that satisfaction with developmental practices has a differential impact on employee intentions to leave depending on employee age. Kooij et al. (2010) have found that employees' perceptions of HR practices are positively related to their work-related attitudes, and that age considerably tempers the strength of this relationship. More recently, Innocenti et al. (2013) have found that HR development practices are associated with lower job satisfaction and less commitment among older employees.

Bearing in mind the heterogeneous nature of the workforce, we explore how the effectiveness of HPWS as employee retention tools varies in workplaces with different workforce gender compositions. Despite increased female labour force participation, the gender variable has been little studied in relation to HR practices. Women's experience of the workplace remains different to that of men (Adams et al., 2014; Ely, Stone, & Ammerman, 2014; Mennino, Rubin, & Brayfield, 2005), and this may affect their response to high-demand HR systems such as HPWS.

## 2.2. Women's experience of work, HPWS and retention rate

Although women's involvement in paid work is growing, thus leading to more feminized organizations (Rubery, 2015b), the unequal allocation of housework means that women tend to experience their working lives in a different way to men. In their comparative research on the Czech Republic, Norway and the UK, Crompton, Brockmann, and Lyonette (2005) have concluded that "[...] women continue, increasingly, to profess more liberal gender role attitudes, although [...] the rate of change in the division of domestic labour appears to be glacial" (p. 228). Similarly, a study carried out in Spain has shown that despite the increased feminization of the Spanish labour market, only a tiny minority of men take on full responsibility for housework (Goñi-Legaz, Ollo-López, & Bayo-Moriones, 2010). Research in the United States has reached analogous conclusions (e.g., Lachance-Grzela & Bouchard, 2010). Hobfoll, Geller, and Dunahoo (2003) have estimated that the unequal division of domestic labour on average adds ten work hours per week to the schedules of employed American women. Furthermore, women spend more than twice as much time on childcare as men do, and are also more likely than men to become the principal carers for elderly or sick family members (Hobfoll et al., 2003).

Women therefore experience far greater levels of negative spillover between job and family life than men do (Heywood & Miller, 2014; Mennino et al., 2005). The work role for women may become incompatible with family role pressures, to the detriment of the development of the former rather than the latter in most cases (Poeschl, 2008). In a survey of high-achieving men and women, Ely et al. (2014) found that both men and women value fulfilling professional and personal lives. However, men are more likely to achieve such fulfilment, with women being consistently less satisfied with their careers and with the compatibility of work and family life. All this is mirrored by the fact that women tend to occupy fewer managerial positions (Ely et al., 2014; Spoor & Hoye, 2014), and work on a part-time basis to a much larger extent than men (OECD Statistics, 2016). What's more, the negative job–family interface informs a woman's decision to take and hold jobs characterized by demanding work schedules (Adams et al., 2014; Gershuny, 2000; Kanter & Roessner, 1999).

In sum, the specificity of a woman's place affects the way women experience the workplace. This specificity should not be ignored when it comes to understanding the effects of HPWS. In particular, considering women's more demanding household responsibilities and greater levels of negative interface between work and private life (e.g., Goñi-Legaz et al., 2010; Mennino et al., 2005), women will arguably experience greater job pressure and more negative work-to-home spillover from participating in HPWS more intensely than men, resulting in a lower appreciation of such systems. Greater work demands by HPWS will exacerbate women's already heavy burden from the private sphere. The "dark side" of HPWS, in other words, may be particularly difficult to reconcile with a woman's role. Therefore, employers will understandably be less successful in winning the hearts and minds of women employees through HPWS, meaning that as workforce retention tools these systems will have a lower payoff as the proportion of women in the workplace increases. Accordingly, we propose:

**Hypothesis 1.** *There will be an interaction between workforce feminization and HPWS on retention outcomes, whereby HPWS will decrease retention outcomes in highly feminized workplaces more so than in less feminized ones.*

Hypothesis 1 suggests that the actual social condition of women may be detrimental not only to women's experience of HPWS, but also to employers, whose investments in such systems may drive away female talent rather than help to take full advantage of it. This leads us to consider whether firms can mitigate women's exposure to HPWS, and therefore improve the retention payoff of these systems when women's participation in the workforce increases.

Arguably, Flexible Work Arrangements (FWAs), such as working from home, flexible scheduling, compressed hours, and other customized initiatives, may play such a buffering role. These arrangements signal that the organization understands, supports and cares for an employee's extra work demands (Spoor & Hoye, 2014). Although employers may temper employees' experience of HPWS across the board by offering FWAs, this may be particularly beneficial for women in light of their greater negative work–family interface. Indeed, these arrangements are often introduced as a way to manage female talent better (Heywood & Jirjahn, 2009; Mennino et al., 2005). Thus, one would expect that as the degree of workforce feminization increases, HPWS will have better retention outcomes when used in conjunction with FWAs. Therefore, we propose:

**Hypothesis 2.** *There will be an interaction between workforce feminization, HPWS and FWAs, whereby an employer's greater provision of FWAs together with high levels of HPWS will increase*

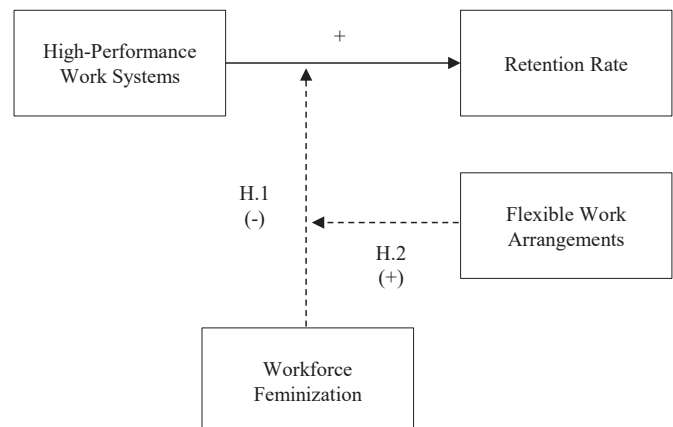


Fig. 1. The proposed research model.

retention outcomes in highly feminized workplaces more so than in less feminized ones.

Fig. 1 depicts our research model.

### 3. Methodology

#### 3.1. Data

This study uses data from the Workplace Employment Relations Study 2011 (WERS 2011), a government-funded national survey whose objective is to provide representative data on a wide range of employment practices in all sectors of the UK economy (Wanrooy et al., 2013). The unit of analysis employed in the WERS is the workplace. The WERS Cross-Section Management Questionnaire, which is completed through face-to-face interviews with the managers responsible for HR at the workplace, provides all the information necessary to test the proposed hypotheses. Following Lepak and Snell (2002), we omitted workplaces with fewer than 200 employees so as to eliminate the possibility of including small firms that might lack formal HR procedures. Therefore, the study sample comprises 537 workplaces.

#### 3.2. Measures

##### 3.2.1. Retention rate

We focused on voluntary employee turnover, which becomes an issue when the firm starts losing potentially competent employees (Way, 2002). As in previous research (e.g., Gardner et al., 2011; Guest et al., 2003; Way, 2002), we measured voluntary turnover as the proportion of employees who voluntarily left the workplace over the previous year relative to the total workforce at the beginning of the year. The retention rate was calculated as one minus this proportion. After adding 1.0 to the variable, the skewness of its distribution has been corrected via a natural log transformation (Tabachnick & Fidell, 1996).

##### 3.2.2. HPWS

HPWS are generally associated with employers using three primary categories of HR practices: (1) skill-enhancing practices; (2) motivation-enhancing practices; and (3) participation-enhancing practices. Therefore, our HPWS measure includes practices belonging to these categories. In choosing the specific practices, we took our cue from previous research, adopting only practices considered in at least five previous works (see Combs

et al., 2006). Table 1 provides more detailed information on the seventeen practices chosen. Consistent with the argument put forward by Becker and Huselid (1998) on the need to measure the overall HR system, we applied an additive index based on these practices to measure the degree to which HPWS are used, with this being a very common approach in previous research (e.g., Datta et al., 2005; Guest et al., 2003; Jensen et al., 2013; Stirpe et al., 2014; Takeuchi et al., 2007). We ensured the comparability of the scales by standardizing the items before adding them up.

##### 3.2.3. Provision of Flexible Work Arrangements

We measured the degree to which FWAs are available at each workplace through an additive index of seven binary items included in the WERS 2011 indicating common FWAs. The items are reported in Table 2. The index ranges from a minimum of zero (none of the arrangements is available) to a maximum of seven (all the arrangements are available).

##### 3.2.4. Workforce Feminization

Similarly to other studies (e.g., Rich, 1995), we measured the degree of workforce feminization through the proportion of non-managerial women in the workplace. We focused on non-managerial women because both the HPWS and FWAs items in the WERS dataset refer to non-managerial employees.

##### 3.2.5. Control variables

We controlled for a number of variables that according to previous research may have an impact on workforce retention (e.g., Guest et al., 2003; Huselid, 1995). Specifically, we included a set of seventeen industry dummies. We also included dummies indicating whether the workplace belonged to the private sector; whether the workplace was part of a larger organization (1 = yes; 0 = no); the kind of working hours at the workplace (1 = the workplace operates seven days a week; 0 = otherwise), trade union recognition (1 = unions are recognized for collective bargaining; 0 = otherwise); and whether downsizing had been carried out in the previous year (1 = yes; 0 = no), as this may decrease “survivor” commitment, and thus increase voluntary turnover (Zatzick & Iverson, 2006). Furthermore, we controlled for workplace size, measured as the logarithm of the number of employees, and for the proportion of turnover/operating costs accounted for by labour costs measured through a four-point scale (1 = less than 25%; 4 = more than 75%). As older workers may be less willing to leave their jobs voluntarily, we controlled for the proportion of the

**Table 1**  
High-performance work systems.

Items
1 When filling vacancies for non-managerial positions, do you ever conduct any type of personality or attitude test?
2 When filling vacancies for non-managerial positions, do you ever conduct any type of performance or competency test?
3 What proportion of experienced workers in the largest occupational group have been given time off from their normal daily work duties to undertake training over the past 12 months?
4 What proportion of the largest occupational group of employees is formally trained to do jobs other than their own?
5 What proportion of non-managerial employees at this workplace have their performance formally appraised?
6 Is the individual pay of non-managerial employees linked to the outcome of the performance appraisal?
7 What proportion of non-managerial employees at this workplace has received profit-related pay in the past 12 months?
8 What proportion of non-managerial employees at this workplace participates in the employee share ownership scheme(s)?
9 What proportion of the largest occupational group of employees actually does jobs other than their own at least once a week?
10 In the last twelve months, roughly what proportion of non-managerial employees has been involved in quality circles?
11 What proportion of the largest occupational group of employees at this workplace works in formally designated teams?
12 Do line managers or supervisors have meetings with all the workers for whom they are responsible to discuss issues related to work organization?
13 Does management use suggestion schemes to communicate or consult with employees?
14 Does management regularly give employees, or their representatives, any information about internal investment plans?
15 Does management regularly give employees, or their representatives, any information about the financial position of the establishment?
16 Does management regularly give employees, or their representatives, any information about staffing plans?
17 Have you or a third party conducted a formal survey of your employees' views or opinions during the past two years?

**Table 2**  
Flexible work arrangements.

Items
1 Working at or from home during normal working hours
2 Flexi-time (i.e., an employee has no set start/finish time but agrees to work a set number of hours per week/month)
3 Job-sharing schemes (sharing a full-time job with another employee)
4 The ability to reduce working hours (e.g., switching from full-time to part-time employment)
5 Compressed hours (i.e., working standard hours across fewer days)
6 The ability to change set working hours (including changing shift pattern)
7 Working only during school term times

workforce older than fifty. As there may be racial effects on turnover (Griffeth, Hom, & Gaertner, 2000), we considered the proportion of employees from a non-white ethnic group as a control (after adding 1.0 to the variable, we performed a natural log transformation to correct the skewness of the variable's distribution). Finally, we controlled for the proportion of part-time employees out of the total workforce (in this case, too, the skewness of the variable has been corrected via natural log transformation after adding 1.0 to the variable).

### 3.3. Analysis

As the data for this study come from a single source (i.e., HR managers), there is a potential threat of common method bias, although the fact that the items for our variables were taken from different sections of a 107-page questionnaire moderates such a threat (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). To address this issue in more depth, we conducted Harman's one-factor test on all the items (Podsakoff et al., 2003). We have extracted five distinct factors accounting for more than sixty percent of the total variance, with the first factor explaining about twenty percent. No single factor therefore emerged, nor did one factor account for most of the variance. These two conditions reduced the likelihood of common method variance being a serious problem in this study.

Table 3 presents descriptive statistics for the variables in the study.

HPWS and FWAs are positively associated with retention rate. On the other hand, higher degrees of workplace feminization are negatively associated with retention. Because the variables "subsidiary" and "downsizing" are not significantly associated with the dependent variable, they were not used in the subsequent analysis.

We used OLS analysis to test our hypotheses. As the variables for FWAs and Workforce Feminization may be not independent—workforce feminization tends toward a greater use of FWAs (Heywood & Jirjahn, 2009)—we have created subsample

**Table 3**  
Descriptive statistics and bivariate correlations.

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Retention rate (ln)	4.53	0.11													
2. HPWS	3.79	5.72	0.08*												
3. FWAs	5.17	1.68	0.17**	0.05											
4. Workforce feminization	50.61	23.88	-0.09*	-0.01	0.40**										
5. Private Sector	0.56	0.49	-0.19**	0.09*	-0.47**	-0.39**									
6. Seven-day working	0.47	0.50	-0.08*	-0.01	-0.01	0.01	-0.04								
7. Subsidiary	0.82	0.38	0.06	0.26**	-0.01	-0.12**	-0.05	0.05							
8. Firm Size (ln)	6.61	0.99	0.07*	0.06	0.43**	0.18**	-0.25**	0.17**	-0.06						
9. Labour costs	2.80	1.03	0.20**	-0.17**	0.32**	0.27**	-0.48**	-0.01	-0.05	0.17**					
10. Workforce>50	28.65	11.37	0.21**	-0.03	0.13**	0.01	-0.22**	-0.01	-0.07	0.09*	0.11*				
11. Unions	0.87	0.33	0.21**	0.10*	0.21**	0.03	-0.32**	0.12**	-0.01	0.21**	0.12**	0.36**			
12. Downsizing	0.57	0.49	0.04	-0.05	0.20**	0.07	-0.04	-0.15**	-0.09*	0.18**	0.05	-0.03	-0.06		
13. Part-timers (ln)	2.64	1.16	-0.11*	-0.01	0.28**	0.66**	-0.29**	-0.13**	-0.15**	0.13**	0.20**	0.20**	0.18**	-0.01	
14. Ethnic minorities (ln)	1.69	1.19	-0.18**	-0.04	-0.03	0.07	0.01	0.17**	0.04	0.13**	0.04	-0.15**	-0.08*	0.03	0.03

\*p < .05; \*\*p < .01.

splits based on the mean of the variable Workforce Feminization (i.e., 50.61). We considered those workplaces with a degree of feminization above the mean to be "highly feminized workplaces", and those below the mean to be "less feminized workplaces". We have then assessed Hypothesis 1 by comparing OLS coefficients for HPWS across the two groups, and Hypothesis 2 by means of a multiplicative interaction term between HPWS and FWAs for highly feminized workplaces, as well as for less feminized ones.

As a first step after the sample split, we performed an ANOVA test to identify possible differences in the use of HPWS and FWAs across the two subsamples. Table 4 shows the results. Consistent with previous research (Heywood & Jirjahn, 2009), highly feminized workplaces appear to use significantly higher levels of FWAs compared to less feminized ones. However, no significant difference can be observed in the use of HPWS.

OLS regressions for each subsample were then performed. Following Dawson (2014), we first standardized the variables indicating HPWS and FWAs in order to avoid multicollinearity problems with the introduction of the interaction terms between these variables. All VIF values in the regressions were lower than three, suggesting that multicollinearity effects did not influence the results (Belsley, Kuh, & Welsch, 1980).

**Table 4**  
Differences in the use of HPWS and FWAs across highly feminized workplaces and less feminized workplaces (ANOVA test results<sup>a</sup>).

Variables	Group	Mean	SD	F-value	Sig
HPWS	Less feminized workplaces	3.52	6.55	0.809	0.369
	Highly feminized workplaces	3.97	5.10		
FWAs	Less feminized workplaces	4.48	1.72	68.593	0.000
	Highly feminized workplaces	5.64	1.48		

<sup>a</sup> Because equal variances could not be assumed (based on Levene's test), Mann-Whitney U tests were also run, and the results were similar.

**Table 5**  
Results of regression analyses.

Variables	Retention rate (ln)			
	Less feminized workplaces (N = 221)		Highly feminized workplaces (N = 316)	
	Model 1	Model 2	Model 3	Model 4
Industry dummies	Yes <sup>a</sup>	Yes	Yes	Yes
Private sector	-0.005	-0.012	-0.108	-0.118
Seven-day working	-0.014	-0.016	0.089	0.070
Firm Size (ln)	-0.053	-0.052	-0.057	-0.047
Labour costs	0.130	0.132	0.095	0.093
Workforce>50	0.259***	0.258***	0.008	-0.014
Unions	0.136	0.138	0.001	-0.002
Part-timers (ln)	-0.028	-0.031	-0.120*	-0.121*
Ethnic minorities (ln)	-0.051	-0.049	-0.135*	-0.123*
FWAs	-0.032	-0.029	0.174**	0.136*
HPWS	0.159*	0.162*	0.106	0.102
HPWS × FWAs		0.027		-0.135*
ΔR <sup>2</sup>	0.316	0.001	0.346	0.013
Adjusted R <sup>2</sup>	0.225	0.221	0.290	0.302
Change in F	3.461***	0.160	6.153***	5.988*

Standardized coefficients are shown.

\*p < 0.05; \*\*p < 0.01; \*\*\*p < 0.001.

<sup>a</sup> Yes indicates that the seventeen industry dummy variables were included within the model.

#### 4. Results

The results of OLS regressions are shown in Table 5.

Model 1 and 3 have been run to test Hypothesis 1. The results in Model 1, which refers to less feminized workplaces, are consistent with previous research (e.g., Gardner et al., 2011; Guest et al., 2003; Jensen et al., 2013; Sun et al., 2007; Way, 2002; Yalabik et al., 2008), as they indicate a positive and significant relationship between HPWS and workforce retention. Moreover, the size effect is substantial. On the other hand, the results in Model 3, which refers to highly feminized workplaces, show a non-significant association between HPWS and retention. These findings thus support Hypothesis 1, according to which HPWS have a reduced employee retention capacity in highly feminized workplaces as compared to less feminized ones. Interestingly, FWAs are positively and significantly associated with workforce retention in highly feminized workplaces (Model 3), while in less feminized ones we found no significant association between these variables (Model 1). These findings support previous research arguing that FWAs are a way to better manage primarily female talent (Heywood & Jirjahn, 2009; Mennino et al., 2005).

To test Hypothesis 2, we introduced the interaction term between HPWS and FWAs in Models 2 and 4. As shown in Model 2, we found that this interaction is very small and non-significant for less feminized workplaces. Model 4 shows instead that the interaction is negative and significant for highly feminized workplaces. However, the shape of this interaction is different to the one in our second hypothesis. An employer's greater provision of FWAs, together with high levels of HPWS, does indeed appear to decrease retention in highly feminized workplaces rather than improve it. Thus, Hypothesis 2 is rejected. This finding may be also interpreted from a different angle; that is, HPWS are not just ineffective retention tools for highly feminized workplaces (Model 3), as they may also hamper the retention capacity of FWAs (Model 4). In other words, when it comes to employee retention in highly feminized workplaces, HPWS appear to be ineffective *per se* and detrimental for FWAs.

#### 5. Discussion and conclusions

Given the increasing popularity of HPWS, it is important to

understand the dynamics behind these systems (Posthuma et al., 2013). This study attempts to fill the gap in our understanding of how HPWS operate according to workforce gender composition and parallel investments in FWAs. In particular, we have investigated how the retention outcomes of HPWS vary in workplaces with different degrees of feminization, and whether an employer's provision of FWAs interacts with HPWS to affect retention in highly feminized workplaces more so than it does in less feminized ones.

Our findings indicate that the retention capacity of HPWS is circumscribed to less feminized workplaces; that is, we found that HPWS are ineffective retention tools in contexts with a higher proportion of women. Hence the conventional view that HPWS generate more stimulating work environments, thereby reinforcing employee attachment to the firm (e.g., Huselid, 1995), does not appear to hold true for these latter contexts. We have argued that the loss of HPWS retention capacity in highly feminized workplaces is the result of both the high-demand nature of such systems and the role of women in society. Indeed, although HPWS may help to build a more attractive work environment for employees, they may also cause job pressure, longer working hours, and negative job-to-home spillover (White et al., 2003; Wood et al., 2012). These lateral effects may become overwhelming for women, given their responsibility for most household duties (Adams et al., 2014; Crompton et al., 2005), making HPWS less appealing to them.

These findings have theoretical implications. Consistent with research adopting a contingency view on the HPWS-performance relationship (e.g., Datta et al., 2005; Stirpe et al., 2014), our study helps to gain further insights into the organizational circumstances under which HPWS may provide valuable initiatives for managing the workforce. While previous research has analyzed several firm-level moderators of the effectiveness of HPWS (e.g., size and strategy), our study is one of the first to specifically investigate workforce characteristics that impinge upon a particular outcome of such systems (i.e., retention). By so doing, we thus respond to the call made by Peccei et al. (2013) to develop research on employee-level factors that intervene in the HRM-performance link.

From a practical viewpoint, our findings disclose relevant information to employers, particularly in light of the ANOVA test results (Table 4), which show that workforce gender composition is not an issue for employers when it comes to HPWS. These systems appear in fact to be used to a similar degree across both highly feminized workplaces and less feminized ones. Yet, our evidence advises employers not to ignore the fact that HPWS produce differential outcomes in both these types of workplaces, at least as retention tools. The lack of a meaningful retention payoff for HPWS in highly feminized workplaces is not a secondary issue, as it may involve difficulty in fully recouping the high implementation and administration costs these systems incur (Lepak, Taylor, Tekleab, Marrone, & Cohen, 2007). Instead, our study suggests that for workplaces with larger shares of female employees, providing FWAs may be a more effective way of retaining talent than investing in HPWS. In other words, feminized workforces appear to respond more favourably to initiatives that help to reconcile the demands of work and home life (i.e., FWAs) than to those increasing employee involvement and, by so doing, leading to a negative work-home interface (i.e., HPWS).

However, our arguments show that this differential response may be the result of the unequal, gender-based division of domestic work. Therefore, we have explored whether HPWS may be better deployed in highly feminized workplaces by using them in conjunction with FWAs, which we considered to have the potential to mitigate the side-effects of HPWS on an employee's private life. Contrary to our expectations, for highly feminized workplaces we found a negative and significant FWAs-HPWS interaction on retention, while we found no meaningful effect for less feminized

workplaces. Thus, providing FWAs in highly feminized workplaces appears to further weaken the retention payoff of HPWS rather than improve it. However, our findings may be better understood to mean that in such workplaces HPWS (by themselves ineffectual) weaken the retention payoff of FWAs (by themselves very effective). Our analysis therefore suggests that highly feminized workplaces providing high levels of FWAs should not be tempted to use HPWS in parallel if they want to maximize their capacity for retaining talent. The interaction plots are depicted in Fig. 2.

This unexpected finding may be conceptually explained by focusing on the internal consistency between HPWS and FWAs. According to the principle of consistency, the HR practices to which employees are exposed must work in unison if they are to be effective. As argued by Baron and Kreps (1999), internally consistent practices serve to reinforce each other, sending employees an unequivocal message about what contributions are expected from them. It may be that HPWS and FWAs send conflicting messages. Indeed, while HPWS look for greater employee involvement, FWAs may cause detachment from the workplace. For example, being involved in quality circles, on the one hand, and having the option to work from home, on the other, may confuse employees, given that the former programme requires more direct employee participation in the workplace, whereas the latter allows employees to be elsewhere. Moreover, these practices do not really support one another as, in principle, they are incompatible. Perceived inconsistencies and ambiguities may make HR initiatives less effective (Baron & Kreps, 1999), as appears to be the case in our study.

Above and beyond the scope of this study, our findings may show that the HPWS paradigm responds mainly to a male characterization of the workforce, i.e., a workforce that can more readily afford the charge of an increased negative-job-to-home spillover associated with participation in more engaging work environments. What's more, our analysis shows that even employers sensitive to employees' extra work responsibilities (i.e., those providing greater FWAs) may in themselves have a limited capacity for improving the adjustment of HPWS to highly feminized workplaces. HPWS might be deployed in such workplaces more effectively only once stereotypical gender roles have been changed. We agree with Esping-Andersen (2009) that such a transformation is a *sine qua non* for men and women to experience paid work and workplace practices on an equal footing. Much has certainly been done in the last fifty years to modify gender schemas, but much still remains to be done. The task is inherently hard, as it implies shifting norms and value-sets. Sustained (and inspired) policy commitments from an active state may be the only meaningful key to its achievement (Esping-Andersen, 2009; Rubery, 2015a).

As with any study, this research also has its limitations. First, the specific characteristics of women may intervene in the relationships we explored. For example, does the interaction between women's presence and HPWS affect the retention rate differently depending on women's marital status and/or their number of dependent children? Can our findings be generalized to both non-managerial and managerial women? Are women and men equally exposed to HPWS? Could another explanation for the negative moderating effect that women's presence in the workplace has on

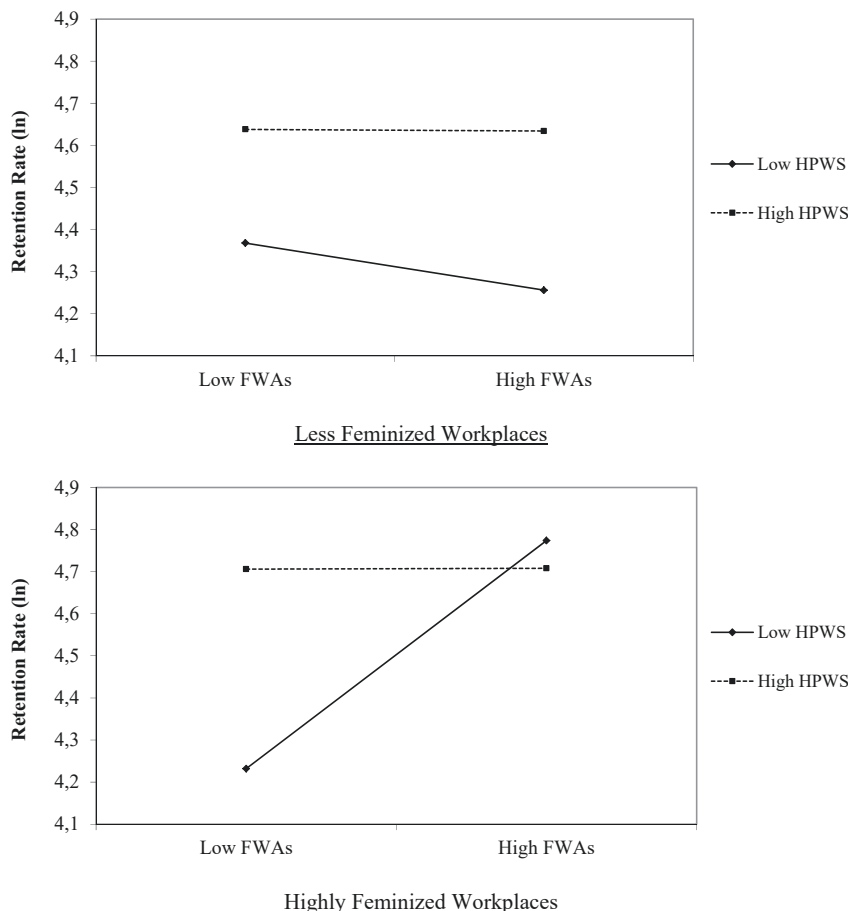


Fig. 2. Effects of the interaction of HPWS and FWAs on retention rate.



retention rate be that women may not have the same access to these systems? The above questions remain unanswered. Second, the cross-sectional nature of the data calls for caution when interpreting causal relationships, as there may be issues of potential reverse causality between our dependent and independent variables. Another limitation is the fact that WERS 2011 is limited to the United Kingdom. As the effect of HR practices may depend upon the socio-institutional context in which they are used (Yalabik et al., 2008), this research cannot be extrapolated to workplaces outside the UK. Finally, our study would have benefited from the inclusion of more control variables, such as LMX quality or workforce satisfaction level. Such variables may indeed influence a firm's retention rate (Griffeth et al., 2000). Unfortunately, the WERS 2011 Management Questionnaire does not include them.

Future research may address these issues and extend our analysis by including other outcome measures besides retention rate, such as quality or sales. It is possible that, compared to less feminized workplaces, HPWS have greater impacts on such outcomes in highly feminized ones. These effects could compensate, or even overcome, the negative ones on retention, thus informing why we found that HPWS are used similarly across both highly feminized workplaces and less feminized ones. Additionally, future research may investigate the role of more informal FWAs. Previous studies have stressed that informal initiatives driven by supervisors may be even more effective than formal ones (e.g., Behson, 2005). Adapting to the needs of specific employee groups may also increase the effectiveness of FWAs (Darcy, McCarthy, Hill, & Grady, 2012). The analysis of the interaction between more nuanced FWAs and HPWS may reveal findings that are different to those here. Finally, the role of other contingencies related to workforce demographics may be explored. For example, based on the evidence on other managerial practices (Piasna et al., 2013), one may argue that employee experience of HPWS may vary depending on race, workforce education, or disability.

There is certainly a great deal of work to be done if we are to arrive at a full understanding of how HPWS, workforce gender composition, and FWAs interact and affect business success. While our study should be seen in the light of its limitations, we trust that it will inspire additional work in this regard, being among the first to offer evidence on these interactions.

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