HUMAN RESOURCE PROFESSIONALS AND THE ADOPTION AND EFFECTIVENESS OF HIGH PERFORMANCE WORK PRACTICES

ABSTRACT

In recent times, the human resource (HR) function has become increasingly professionalised in the UK and more widely with the development of HR certification and degree level qualifications. In this paper, we assess the implications of HR professional qualifications using data from the British 2011 Workplace Employment Relations Study. Specifically we focus on whether the adoption of high performance work practices (HPWPs) is greater, and the relationship between these practices and organisational performance is stronger, in workplaces with a qualified HR professional. Our analysis reveals a mixed picture. Although the presence of qualified HR professionals is associated with HPWP adoption, it is not associated with a stronger relationship between HPWPs and organisational performance. The results therefore suggest that the impact of professionalisation has not been transformational, and remains partial at best.

Keywords: Professions, qualifications, high performance work practices, HR function.

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> After close to 20 years of hopeful rhetoric about becoming "strategic partners" with a "seat at the table" where the business decisions that matter are made, most human-resources professionals aren't nearly there. They have no seat, and the table is locked inside a conference room to which they have no key. HR people are, for most practical purposes, neither strategic nor leaders.
>
> (Keith Hammond, *Why we Hate HR* (2005) https://www.fastcompany.com/53319/why-we-hate-hr)

1. INTRODUCTION

The growth of professions within management is a long-standing global trend (Child & Faulk, 1982; Leicht & Fennel, 2001). In the human resources (HR) field, as elsewhere, this is reflected in the expansion of professional associations such as the Society for Human Resource Management (SHRM) and the Chartered Institute of Personnel Development (CIPD), which now have global membership and reach (Parks-Leduc et al., 2017). Vocational HR certification programmes controlled by these associations are also 'moving forward at a rapid pace' (Lengnick-Hall & Aguinis, 2012: 248). However, as the opening quotation by Keith Hammond suggests, there is deep skepticism about the benefits of professionalisation and whether it has (or ever will) improve the status or influence of the HR function (Heizmann & Fox 2017; Cheung et

al., 2019; Lanahan et al. 2017). Focusing on Britain, Guest & Bryson (2009: 122) conclude that HR professionals have had little or no impact on the spread of 'more contemporary HR practices'. 'Contrary to expectations', they argue, 'personnel specialists, including qualified specialists, are not at the vanguard of human resource innovations' (p.131).

Nevertheless, questions remain about how far we should accept these downbeat assessments. For example, the enhanced qualifications that are central to professionalisation might be expected to increase professionals' credibility and legitimacy, thus enabling them to exercise greater influence on decisions regarding the adoption of new practices, as well as equipping them with the skills necessary to help implement those practices more effectively (Lanahan et al. 2017; Graffin & Ward, 2010). In addition, it is often noted that professional associations play an important role in disseminating best practice (Scott, 2008; McDonald & Westphal, 2003). For these reasons, Birkinshaw et al. (2008) argue that professions are often central actors in management innovation.

These observations apply as much to HR as to any other profession. Indeed, throughout their history, there are examples of how the HR profession has transformed policy and practice. For example, Dobbin (2009) illustrates how, in response to federal legislation, the HR profession in the US first championed equal opportunities policies and then successfully recast them into 'diversity-management programs' (also see Pohler & Willness (2014) on the Canadian experience). Others note how professional certification has increased HR practitioners' awareness of best practice (Rynes et al., 2002) and, over time, could 'change attitudes about the value added contribution of the HR function' (Lengnick-Hall & Aguinis, 2012: 250). As such, it is possible that as HR practitioners become more professionally qualified this will increase their knowledge of best practice and, crucially, their ability to influence and shape decision-making

within organisations. Yet, while this possibility is often mooted (Ferris et al., 2007; Lester, 2011), with some exceptions (e.g. Guest & Bryson, 2009), it has not been explored systematically.

We address this gap by drawing on data from the British 2011 Workplace Employment Relations Study (WERS) to explore the implications of HR professional qualifications (a key feature of the HR professionalisation project). Our particular focus is on whether the uptake of high performance work practices (HPWPs) (defined here as practices aimed at enhancing employees' ability, motivation, and opportunity to participate, see: Appelbaum et al., 2000; Kehoe & Wright, 2013) and their association with organisational performance, is greater in workplaces where the manager responsible for HR holds a formal HR qualification (i.e. is a qualified HR professional).

There are several reasons why this might be the case. Where HPWP uptake is concerned, mirroring the classic distinction between 'best practice' and 'best fit' HRM models (Datta et al., 2005), Subramony (2006) suggests the importance of 'economic' or 'alignment' arguments that focus on decision makers' economic rationality in explaining HPWP adoption. However, he also notes alternative 'diffusion and decision-making' explanations which draw attention to the 'institutional and psychological processes underlying the decision to adopt or reject HR practices' (2006: 202). Both of these latter explanations highlight the potential role of HR professionals in HPWP adoption, with diffusion explanations suggesting their membership of professional associations and wider networks will increase their knowledge of current best practices, and decision-making explanations suggesting the knowledge and legitimacy conferred by qualifications will help them exert influence over decision-making processes. Where organisational performance is concerned, there is considerable evidence that HPWPs are

associated with higher employee affective commitment, lower absence rates, higher productivity, better product or service quality, and improved financial performance (Coombs et al 2006; Subramony 2009). It might be anticipated these associations will be stronger where a qualified HR professional is present, given the role they might play in overseeing HPWPs and helping ensure they function effectively. However, to date, while the importance of the role of HR professionals in this regard has been alluded to (see for example, Huselid et al., 1997), no research has been conducted on this matter.

In what follows we first consider why, in theory, one might expect the presence of qualified HR professionals to be associated with the greater uptake and effectiveness of HPWPs. We then explore this matter empirically, drawing on the 2011 WERS data. Our analysis reveals a mixed picture. While we find qualified HR professionals are associated with HPWP adoption, their presence is not associated with a stronger relationship between HPWPs and organisational performance. Although the cross sectional nature of the WERS data makes it impossible to assert causality, and further work is needed to understand precisely how HR professionals exert greater influence, we argue these findings are important given the assumption in much of the literature about the failure of HR professionalisation to secure greater influence for the profession.

2. HR PROFESSIONALISATION AND THE ADOPTION AND EFFECTIVENESS OF HPWPS

A central element of how professions are defined relates to their control over the processes of education and training, including the development of qualifications such as university degrees and (postgraduate) certification schemes. In some instances, holding such qualifications is legally mandated as a condition for registration or state licensing (Albert, 2017), thereby allowing professional associations (Greenwood et al., 2002) to control the ‘production of

producers' (the supply of qualified labour). This creates labour market shelters that insulate the profession from competition (Weeden, 2002), and enable the negotiation of occupational closure (Muzio et al., 2020).

The growth in the importance of qualifications also has implications for professionals' status and influence within organisational settings (Antaby et al., 2016). Such influence may be variable and is by no means guaranteed (Huising, 2015). It may be easier, for example, for highly qualified professions at the pinnacle of expert status hierarchies (doctors or lawyers, for example) to gain influence, especially in situations where no other professions have competing jurisdictional claims (Bos de Vis et al., 2019; Sandholtz et al., 2019). Either way, it might be anticipated that by bolstering their credibility and status, qualifications provide professionals with opportunities to shape decision-making in key policy areas.

This increased importance of professional qualifications similarly applies in the case of the HR profession. In the UK, for example, the CIPD, which was formed in 1913 as the Welfare Workers Association, today has 150,000 members globally with membership status linked to degree-level qualifications and higher (post degree) certification. While these qualifications are not a legal requirement for entry into the profession, and do not lead to full occupational closure, there is evidence in both the UK and US to suggest they have become increasingly important at initial screening stages in hiring to HR roles (Lyons et al. 2012; Hallier & Summers, 2011). It appears, therefore, that the HR occupation is now becoming more professionalised than ever before (Guest & Bryson, 2009).

This might have specific consequences for the adoption of HPWPs and their association with performance. With regard to adoption, qualified HR professionals would be expected to possess 'substantive expertise' (Sandefur, 2014: 911), including a deep knowledge of HPWPs.

Their expertise is also likely to be bolstered by their membership of professional associations (membership of which is often dependent on achieving the requisite qualifications) and connections to wider networks (Scott, 2008). According to Gordon and Sandefur (2011: 282), 'associations contribute to the diffusion of innovation across workplaces, both directly, by disseminating information to members through seminars, mailings, and web sites, and indirectly, by facilitating networks of "weak ties" that promote the exchange of new knowledge'. By implication, professionals linked into these networks will be highly aware of current HR innovations. Accordingly, it is unsurprising that Rynes et al. (2002) find professionally-certified HR practitioners are more knowledgeable about HPWPs and the supporting evidence base than those without certification. Therefore, given their awareness of HPWPs as current perceived best practice, it might be anticipated that HR professionals will press for their introduction, while also providing the organisation with the expertise it needs in order to implement them.

However, professional qualifications not only enhance knowledge, but also have important signaling effects (Lanahan, and Armaniosb, 2018; Graffin & Ward, 2010). Holding such qualifications would be expected to enhance HR professionals' reputation and legitimacy, thereby increasing other organisational stakeholders' respect for their expertise and willingness to follow the advice they offer (including with regard to HPWPs) (Lengnick-Hall & Aguinis, 2012; Ferris et al., 2007). The potential for this to happen has already been noted in prior empirical research. For example, surveys of both HR practitioners (Claus & Collinson, 2004) and employers (Lester et al., 2011) highlight the perceived value of qualifications in improving performance. According to Lester et al. (2011: 412), 'HR-certified professionals inspire greater trust and confidence from business colleagues than do their noncertified HR coworkers', and 'Organizations believe hiring HR-certified professionals gives them a competitive advantage'.

As such, qualified HR professionals might not only possess significant 'substantive expertise' (Sandefur, 2014) of HPWPs, but also the legitimacy and credibility necessary to enable them to influence decisions regarding their adoption. Therefore, we predict:

Hypothesis 1. HPWPs are more widely adopted in organisational settings in which qualified HR professionals are present than elsewhere.

Our second concern relates to whether, once HPWPs have been adopted, the relationship between HPWPs and performance is stronger where a qualified HR professional is present. As argued above, the general consensus in the strategic HRM literature is that HPWPs are positively associated with a range of performance outcomes including affective commitment, absence rates, productivity, product and service quality, and financial performance. Although questions have been raised about effect sizes, the direction of causality, and the performance outcomes that are most heavily affected (Posthuma et al 2013), there is widespread support for the argument that 'Firm performance is influenced by the set of HRM practices that firms have in place' (Huselid et al, 1997: 171) (see also: Appelbaum et al., 2000; Coombs et al 2006; Subramony 2009).

Nevertheless, whether the association between HPWPs and organisational performance is stronger where a qualified HR professional is present is less clear cut. Equally (or possibly more) important is how HPWPs are managed and supported by wider stakeholders. For example, Birkinshaw et al. (2008: 836) note how the effective operationalisation of management innovations can be a lengthy process, requiring various forms of 'critical manoeuvring' including 'trial and error' (involving monitoring progress and making adjustments) and 'reflexive experimentation'. As such, where HPWPs are concerned, their effective operationalisation may

be dependent on change agents other than HR professionals (line managers, for example). As Purcell & Hutchinson (2007: 3) suggest, 'the HR practices perceived or experienced by employees will … be those delivered or enacted by line managers … with direct supervisory responsibility'.

Despite these arguments, there are reasons to assume that qualified HR professionals will have an important role to play in ensuring HPWPs function effectively. It would be expected, as a result of their qualifications, that they possess the practical knowledge necessary to support the operation of such practices, and to provide advice and guidance to others within the organisation (line managers, for example) who are responsible for delivering them (Huselid et al. 1997). In addition, if possessing qualifications boosts HR professionals' credibility and legitimacy (as discussed above), this could help ensure their advice and guidance is both sought and heeded. Moreover, where HR professionals have championed HPWP adoption, it might be expected they are committed to ensuring these practices are adhered to and function as intended, with no slippage in their operation (Wu et al.2015). Therefore, we hypothesise:

Hypothesis 2a. The adoption of HPWPs is associated with higher performance outcomes (higher employee affective commitment, lower absence rates, higher productivity, better product or service quality, and better financial performance).

Hypothesis 2b. The association between HPWPs and performance outcomes is moderated by the presence of a qualified HR professional, such that the relationship is stronger where a qualified HR professional is present.

3. DATA, METHODS AND ANALYSIS

3.1. Data and Sample

The analysis uses matched employer-employee data from the 2011 Workplace Employment Relations Study (WERS) (Department for Business, Innovation and Skills, Advisory Conciliation and Arbitration Service, National Institute of Economic and Social Research, 2015). WERS is designed to be nationally representative of British workplaces with five or more employees in all industry sectors (with the exception of agriculture, hunting, forestry and fishing, and mining and quarrying) when probability weighted to account for the complex nature of the survey design. It is widely regarded as an authoritative data source, being sponsored by the British government, the Economic and Social Research Council, the Advisory, Conciliation and Arbitration Service, and the Policy Studies Institute.

The WERS data comprise both an employer and employee survey. The employer survey comprises 2,680 observations with a response rate of 46.5 percent. The respondent is typically the workplace manager who has primary responsibility for employment relations matters. In total 1,444 workplaces are included in our analysis once workplaces with missing data, workplaces in which the respondent is not the person with primary responsibility for employment relations matters, and public sector workplaces are excluded.

The WERS employee survey was sent to a random sample of up to 25 employees in 2,170 of the workplaces in the employer survey (those in which the management respondent gave permission to do so). The design of the survey therefore allows the workplace-level data to be matched into the employee data. The employee survey comprises 21,981 responses, with a response rate of 54.3 percent (van Wanrooy et al., 2013). For the elements of our analysis based on the individual level data, 8,783 employees were included, after excluding employees in the

public sector, employees in workplaces in which the respondent was not the person with primary responsibility for employment relations matters, and observations with missing data.

3.2. Dependent variables

i) HPWPs. This is a composite count measure based on 19 separate dichotomous variables for individual HPWP practices commonly identified as important within previous strategic HRM research (see, for example: Appelbaum, Bailey, Berg & Kalleberg 2000; Combs et al. 2006; Jiang et al., 2012). Adhering to the conventions followed in previous studies of HPWPs using the WERS data (see, for example: White & Bryson, 2013), these 19 dichotomous variables were combined into a single count measure (mean = 5.81). Details of the individual HPWP practice variables used to construct the count measure are reported in Appendix Table 1.

ii) Affective commitment. Following previous WERS-based studies (e.g. Ogbonnaya et al., 2017), we used three items in the WERS employee survey in which respondents were asked to state the extent to which they: share the organisation's values; feel loyal to the organisation; and are proud to tell people who they work for (5-point scale coded 1 = strongly disagree; 5 = strongly agree) These were combined into a single scale (range: 3-15; mean = 8.59; $\alpha = .86$).

iii) Absence rate. Measured at workplace level as the proportion of working days lost through employee sickness or absence (mean = 0.04).

iii) Labour productivity, quality of product or service, and financial performance. Workplace-level measures with management respondents being asked to rate these outcomes relative to other workplaces in the same industry on a five-point Likert scale where 1='a lot below average' and 5='a lot better than average' (labour productivity mean = 3.66; quality of product or service mean = 4.10; financial performance mean = 3.54) The reliability of such measures has been

demonstrated in studies suggesting average positive correlations from 0.4 to 0.6 between subjective and objective performance measures (Wall et al., 2004: 113). Where the financial performance measure is concerned, analyses using both subjective and objective performance measures have shown both measures produce similar results in modelling the determinants of workplace performance within the WERS dataset (see: Forth & McNabb, 2008).

3.3. Independent variables

i) Qualified HR professionals. The WERS employer survey asks respondents if they have any formal qualifications in personnel management or a closely related subject. This measure provides a proxy for the presence of qualified HR professionals within each workplace, including those that have higher (undergraduate and postgraduate) degrees and certifications linked to the main professional body in the UK (the CIPD). Dichotomous variable in which 1= 'qualified HR professional'; 0 = 'otherwise' (mean = 0.304).

It is worth noting that the person with responsibility for HR in many workplaces is often not an HR specialist. Regarding this, WERS identifies whether the respondent to the survey (who is the person with responsibility for HR) is in an HR specialist role, or whether they are in a general manager (or other) role. It is notable that only around half (45.7 percent) of the qualified HR professionals in the sample are in HR specialist roles (with 'human resource', 'personnel', 'industrial relations' or 'employee relations' in their job title job titles), while the remainder are in non-specialist roles (proprietors/ owners, general managers, for example).

ii) HPWPs. In the equations exploring the relationship between HPWPs and organisational performance (to test Hypothesis 2a) and whether the presence of a qualified HR professional

moderates this relationship (Hypothesis 2b), the HPWP variable outlined above was treated as an independent variable.

3.4. Control variables

A range of controls commonly used in the strategic HRM literature that might affect the adoption of HPWPs and their relationship with organisational performance were included in the equations. Details of the control variables and their means are given in Appendix Table 2.

3.5. Analysis Procedure

Hypothesis 1 was tested in an equation in which the dependent variable was the HPWP count measure, the independent variable was the 'qualified HR professionals' measure, and the control variables were the workplace-level controls outlined in Appendix Table 2. Survey poisson was used, this being the standard model where the dependent variable is a count measure (Cameron & Trivedi 1998: 9), given the highly non-normal nature of such measures (Greene 1997).

Hypothesis 2a was tested by a series of equations in which the dependent variables were the affective commitment, absence rate, labour productivity, quality of product or service, and financial performance measures outlined above, the HPWP count measure was the independent variable, and the control variables were as outlined in Appendix Table 2. Hypothesis 2b was tested by first including the qualified HR professional variable into the equations for Hypothesis 2a, and then including a HPWP x qualified HR professional interaction term, with positively significant interaction terms (and a negatively significant interaction term in the absence rate equation) denoting support for the Hypothesis.

The affective commitment equations are estimated at individual level using both individual- and workplace-level data. As such, is necessary to account for the multi-level

structure of the data in which employee responses are nested within workplaces. Therefore, multi-level mixed effects modelling incorporating both fixed and random effects was used. This makes the same assumptions as OLS but also enables the variance to be partitioned into within (Level 1) and between (Level 2) workplace variation. This enables between-workplace variance to be controlled for, thus preventing the violation of assumptions of independence between observations in multiple regression, given that employees within a given workplace are not independent from each other. In the affective commitment equation in the first column of Table 2, the amount of variance that is due to between-workplace variation is 12.2 per cent (0.594/ [4.258 + 0.594] = 0.122).

The absence rate, labour productivity, quality of product or service, and financial performance equations were estimated at workplace-level. For the absence rate equations, given the absence rate variable is naturally bounded between 0 and 1, fractional logit was used (Papke & Wooldridge, 1996). For the labour productivity, quality of product or service, and financial performance equations, ordered probit was used given the categorical nature of the dependent variables.

To allow unbiased population estimates to be obtained, the workplace-level equations were all weighted by the inverse of the workplace's selection into the sample to account for the complex nature of the WERS survey design, in which larger workplaces and workplaces in certain industrial sectors were deliberately over-sampled. The individual-level affective commitment equations were weighted by: the probability of selection of the respondent's workplace into the main management sample; the respondent's own probability of selection from the employee population at the workplace; and bias introduced as a result of employee non-response. The weights for the affective commitment equations were also scaled to ensure

consistency across lower-level clusters. The scaling specified that first-level (observation-level) weights were scaled so they summed to the sample size of their corresponding second-level cluster.

To check for multicollinearity between the independent and control variables, variance inflation factors (VIFs) were calculated. None of the VIFs for any of the variables exceeded 10 (the recognised point at which multicollinearity might present a problem, Cohen et al., 2003). The mean VIF was 2.8 in the workplace-level analysis and 3.11 in the individual-level analysis. As such, the analysis does not suffer from problems of multicollinearity.[1]

For brevity, only the relationships between the main study variables are reported in the Tables. However, for illustrative purposes, and to demonstrate the relationship between the workplace level controls and the HPWP count variable, equation 1 in Table 2 is presented in full in Appendix Table 3.

4. RESULTS

The means, standard deviations and correlations of the main study variables in the workplace-level analysis are reported in Table 1.

INSERT TABLE 1 HERE

Hypothesis 1 is that HPWPs are more widely adopted in organisational settings in which qualified HR professionals are present than elsewhere. This is explored in the equation reported in the first column of Table 2. This shows a strong positive association ($\beta = 0.193$, $p < 0.01$)

[1] The VIFs for all the variables used in the analysis are available on request from the authors

between qualified HR professionals and the extent of HPWP adoption. The effect size is substantial, with a post hoc analysis of marginal effects demonstrating that when all other variables are held constant, the predicted number of HPWPs in workplaces with a qualified HR professional is 6.55, compared with 5.40 in workplaces elsewhere. Hypothesis 1 is therefore supported.

INSERT TABLE 2 HERE

It is, possible, however, that the relationship between qualified HR professionals and HPWP adoption is explained by qualified HR professionals being more likely to be in a designated specialist HR manager role (or in another specialist HR role) rather than a non-specialist role (proprietors/ owners or general managers, for example). Indeed, while 45.7 per cent of qualified HR professionals in our sample are in specialist HR roles (defined as having the terms ‘human resource’, ‘personnel’, ‘industrial relations’ or ‘employee relations’ in their job title), this compares with only 7.6 per cent of respondents without HR qualifications. As such, we conducted the post hoc tests reported in columns 2 and 3 of Table 2 to control for whether the respondent is also in a specialist HR role. The equation in column 2 of Table 2 confirms HPWP adoption is higher in workplaces with an HR specialist ($\beta = 0.136$, $p < 0.01$), thus supporting earlier research on the relationship between HR specialists and HPWP adoption (e.g. Hoque and Noon, 2001). However, the equation in column 3 shows the relationship between qualified HR professionals and HPWP adoption remains positively significant ($\beta = 0.175$, $p < 0.01$) even when a control is included for whether the respondent is also in an HR specialist role. The relationship therefore holds irrespective of whether the qualified HR professional is also an HR specialist.

Notably, the coefficient for HR specialists becomes non-significant in the equation in column 3 of Table 2 ($\beta = 0.051$, p = non-significant). This suggests (further highlighting the importance of HR qualifications) that HR specialists are associated with higher HPWP adoption because they are more likely than non-specialists to have HR qualifications, not because they are designated HR specialists *per se*.

INSERT TABLE 3 HERE

Hypothesis 2a is that the adoption of HPWPs is associated with higher organisational performance outcomes (higher employee affective commitment, lower absence rates, higher productivity, better product or service quality, and better financial performance). The results are reported in the first column of Table 3. In support of the hypothesis, HPWPs are associated with higher levels of affective commitment ($\beta = 0.044$, $p < 0.05$). In addition, although the HPWP measure does not correlate positively with absence rates, labour productivity, or higher quality of product of service in the correlation matrix in Table 1, it is associated with each of these outcomes in the direction hypothesised in the equations reported in Table 3, which include controls for workplace characteristics (absence rates: $\beta = -0.058$, $p < 0.01$; labour productivity: $\beta = 0.036$, $p < 0.05$; quality of product or service: $\beta = 0.038$, $p < 0.05$). However, the HPWP measure is not associated with financial performance ($\beta = 0.009$, p = non-significant). With the exception of this latter finding, therefore, Hypothesis 2a is supported.[1]

Hypothesis 2b is that the association between HPWPs and performance is moderated by the presence of a qualified HR professional, such that the relationship is stronger where a qualified HR professional is present. The results are reported in columns 2 and 3 of Table 3.

Column 2 adds the qualified HR professional measure into the equations reported in column 1, and column 3 adds the HPWP x qualified HR professional interaction term. The results in column 2 show there is no association between the presence of a qualified HR professional and: affective commitment (β = -0.158, p = non-significant); absence rates (β = 0.039, p = non-significant); and labour productivity (β = -0.175, p = non-significant). It is weakly negatively associated (at the 10 per cent significance level) with quality of product or service (β = -0.208, p <0.1), and negatively associated with financial performance (β = -0.291, p <0.01). Where the HPWP x qualified HR professional interaction terms in column 3 are concerned, these are insignificant for: affective commitment (β = 0.032, p = non-significant); labour productivity (β = 0.002, p = non-significant); quality of product or service (β = -0.006, p = non-significant); and financial performance ((β = -0.049, p = non-significant). As such, the strength of the relationship between HPWPs and these performance outcomes is no different where a qualified HR professional is present than elsewhere, thus not supporting Hypothesis 2b. Where absence rates are concerned, the weakly negative HPWP x qualified HR professional interaction term (β = -0.055, p <0.1) suggests the negative association between absence rates and HPWPs is marginally stronger where a qualified HR professional is present. Although this provides weak support for the Hypothesis, the results overall suggest that, on balance, Hypothesis 2b is not supported.

5. DISCUSSION

As the opening quotation from Keith Hammond illustrates, there is deep cynicism about the relevance and effectiveness of HR professionals. According to Kochan (2010: 599), the profession ‘has largely failed to realise its promised potential of greater status, influence and achievement’ and ‘faces a crisis of trust and loss of legitimacy in the eyes of its major stakeholders’. Nevertheless, other commentators have argued that an increasing focus on

professional qualifications might expand the influence of the HR function (Lyons et al., 2012; Lester, 2011; Claus & Collison, 2004; Lengnick-Hall & Aguinis, 2012). To address this matter, we explored whether the uptake of HPWPs is greater, and their association with performance is stronger, where a qualified HR professional is present.

Our results suggest a mixed picture regarding this matter. Consistent with Hypothesis 1, we found the presence of qualified HR professionals is associated with significantly higher HPWP adoption. This in stark contrast to Guest & Bryson's (2009: 137) conclusion that workplaces employing qualified HR specialists 'lag behind'. It is also notable that this relationship is not explained by qualified HR professionals' greater likelihood of being in designated HR specialist roles.

These findings suggest that HR professionals are no longer 'would be reformers' (Watson, 1977) and that efforts to raise the profile of the profession are starting to pay off; hence, professional qualifications may play an important role in enhancing HR practitioners' influence within organisational settings (Rynes et al., 2002; Ferris et al., 2007; Lester, 2011). As argued above, this might be due to qualified HR professionals' greater knowledge of HPWPs (Sandefur, 2014: 911), resulting both from the qualifications themselves and also from their membership of professional networks (Gordon and Sandefur, 2011; Scott, 2008). It might also be due to their ability to draw on the legitimacy conferred by professional qualifications to influence decision-making processes (Subramony, 2006). We are, of course, only able to speculate on these possible explanations for our findings. Further research exploring the precise mechanisms underpinning the relationship between qualified HR professional presence and HPWP adoption is therefore warranted.

However, although we found support for Hypothesis 2a, with the adoption of HPWPs being associated with higher affective commitment, lower absence rates, higher labour productivity, and better quality of product or service; Hypothesis 2b (that the relationship would be stronger where a qualified HR professional is present) was not supported. The only exception was the relationship between HPWPs and lower absence rates, which was marginally stronger in workplaces with a qualified HR professional. As such, caution is needed in reaching conclusions regarding how far the HR professionalisation project is paying off. It appears the signaling and human capital development benefits of HR qualifications (Hansen, 2011; Albert, 2017) may have had mixed effects, helping to enhance HR professionals' strategic influence regarding HPWP adoption, but not their operationalisation.

These findings have several implications for the broader HPWP literature. As well as contributing to the evidence base regarding the positive performance implications of HPWPs (Coombs et al 2006), they add to debates regarding the antecedents of HPWP adoption (Bacon and Hoque, 2005; Harley, 2017; Wu et al., 2015). As argued earlier, much of the discussion on this topic is dominated by rational economic 'best practice', 'best fit' and 'configurational' arguments (Subramony, 2006). By contrast, less attention has been paid to the role of managers and the processes by which decisions on HR matters are made within organisations. Indeed, it has recently been suggested that a weakness of HPWP research is that 'management as function or actor is conspicuously missing' (Kaufman, 2020: 57). Our analysis underpins this argument by pointing to the importance of HR professionals in the dissemination and adoption of HPWPs (Subramony, 2006). This is not to assume that HR professionals are the only significant factor associated with HPWP uptake, with prior research having also highlighted the importance of business advisory networks, trade unions, workforce skill-mix, and the influence of dominant

customers, for example (Bacon and Hoque, 2005; Wu et al., 2015). Nor should our findings be viewed as downplaying the importance of economically rational explanations for HPWP adoption (based on assessments of fit or utility). Nevertheless, similar to Dobbin's (2009) depiction of personnel managers' 'entrepreneurial' role (in the US) in helping institutionalise commitments to diversity management and equal opportunities policies, our results suggest qualified HR professionals have an important role to play in the adoption and possible spread of HPWPs.

In addition, our analysis has ramifications for employers and government policy. Where employers are concerned, the results suggest that where they are seeking to upgrade their employment practices and implement HPWPs, ensuring managers with responsibility for HR matters possess formal HR qualifications might be critically important. Where government policy is concerned, governments and regulators keen to modernise business practices and improve national productivity have previously noted the importance of encouraging HPWP adoption. In the UK, this aligns with the government's existing Industrial Strategy and the need to strengthen firms' HR capabilities (Brown, 2018). Our findings suggest broadening and deepening the uptake of HR professional qualifications may be significant in helping achieve this aim.

Similarly, these findings are relevant to the professional associations (such as SHRM in the US and CIPD in the UK) offering certification. In recent years, the 'certification ecosystem' (Albert, 2017) of professions has come under growing criticism, and it is sometimes argued that the 'multimillion dollar industry' of HR qualifications (Lengnick Hall & Aguinis 2012: 247) has at best only had a limited impact on practice (Farndale & Brewster, 2005). Our finding that there is only the most marginal association between qualified HR professional presence and the

relationship between HPWPs and performance might be viewed as adding to these concerns. Indeed, the results could suggest a need for HR education and certification to refocus onto the provision of 'administrative expertise' (Ulrich & Brockbank 2005) to ensure that HR professionals are better equipped to oversee the functioning of HPWPs, and to advise line managers on their operationalisation. Nevertheless, consistent with the wider research on certification (Lanahan et al. 2017; Graffin & Ward 2010), our analysis suggests professional qualifications may increase HR practitioners' awareness of HPWPs and their ability to influence their adoption. Over time it is possible that this influence could have 'emergent effects' (Lengnick Hall & Aguinis, 2012: 254), further enhancing the credibility and position of HR professionals. Specifically it could result in a virtuous circle whereby the successful implementation of HPWPs leads to 'more favorable perceptions by the multiple constituents regarding the value-added contribution of the HR function' (ibid).

When drawing these conclusions it is useful to note certain caveats and directions for future research. An obvious limitation, to which we alluded earlier, is the cross sectional nature of the WERS data. This means it is not possible to assert the direction of causality in terms of whether qualified HR professionals drive HPWP adoption or whether they have gravitated towards (or been deliberately hired by) organisations where HPWPs are already in place. The latter is entirely plausible given the likely signaling effect of HPWPs and the perception that organisations adopting them represent 'employers of choice'. Longitudinal research is therefore ideally needed to help clarify the causality of the relationship. Qualitative research (including the use of case studies) might also have an important role to play in addressing this matter. Such research would also help in ascertaining the precise mechanisms by which qualified HR professionals influence HPWP adoption. This might involve in-depth exploration of other

managers' perceptions of HR professionals and the processes by which the latter exploit their qualifications as a resource to enhance their legitimacy and receptiveness towards their advice (Ferris et al., 2007).

In addition, further research is needed to explore the reasons why there is only very limited evidence that the association between HPWPs and performance is stronger where a qualified HR professional is present. A possible explanation for this is the upward mobility project of the HR profession, and its collective desire to jettison operational, transactional work in favour of more strategic roles (see Sandahoz et al., 2019). This might result in HR professionals focusing on influencing strategic decisions regarding HPWP adoption, but not subsequently focusing on operational matters regarding the day-to-day functioning of these practices. The growing focus on business partnering as the model for professional development (Ulrich & Brockbank, 2005) may have further exaggerated this tendency (see: Pritchard, 2010). It is, of course, only possible on the basis of our analysis to speculate on this explanation for our findings; hence, further research on this matter is needed.

Finally, we are unable within our analysis to differentiate between the implications of different types of HR qualifications. Accordingly, future research might explore the variable impact of different types of professional qualifications, for example whether certification by (and membership of) associations such as the CIPD has different implications than non-certified HR undergraduate and postgraduate degrees.

6. CONCLUSION

The analysis presented here contributes to ongoing debates regarding the nature and consequences of the HR professionalisation project by demonstrating a relationship between

qualified HR professionals and HPWP adoption. There is considerable cynicism about how far professional qualifications and attempts to develop 'thinking performers' (Hallier & Summers, 2011) have raised the profile and status of the HR function (Heizmann & Fox 2017; Kochan, 2010; Gilmore & Williams, 2007). However, our analysis suggests that this wholly bleak assessment is only partially correct. HR professionals, it seems, are not (or are no longer) locked into a classic vicious circle of low status and low influence (Legge, 1978). Nevertheless, while it appears they may have been able to exercise influence regarding HPWP adoption, it remains to be seen whether, over time, they are also able to influence HPWP effectiveness.

Notes

1. It is possible that some of the associations between HPWPs and performance might be affected by prevailing business conditions. This is especially where financial performance and productivity is concerned. As such, we re-estimated all of the financial performance and productivity equations adding a control for whether the market in which the workplace operates is growing, stable, declining or turbulent. The results remained qualitatively the same. We would like to thank the anonymous reviewer who highlighted the importance of including this control in the equations.

References

Albert, K. (2017). The Certification Earnings Premium: An Examination of Young Workers. *Social Science Research*, 63, 138-149.

Anteby, M., Chan, C. K., & DiBenigno, J. (2016). Three lenses on occupations and professions in organizations: becoming, doing, and relating. *Academy of Management Annals*, 10, 1, 183-244.

Appelbaum, E., Bailey, T., Berg, P., & Kalleberg, A. (2000). *Manufacturing Advantage*. Ithaca, New York: ILR Press.

Birkenshaw, J., Hamel, G. & Mol, M.J.. (2008) Management innovation. *Academy of Management Review* 33, 4, 825–845.

Bos-de Vos, M., Lieftink, B.M. & Lauche, K. (2019) How to claim what is mine: Negotiating professional roles in inter-organizational Projects. *Journal of Professions and Organization*, 0, 1–28

Brown, L. (2018). Better HR in local businesses needed to revive UK productivity, says CIPD. *People Management*, 9 July.

Cameron, A. C., & Trivedi, P. K. (1998*). Regression Analysis of Count Data*, Cambridge: Cambridge University Press.

Child, J. & Fulk, J. (1982). Maintenance of occupational control: the case of professions. *Work and Occupations,* 9 2, 155-192.

Claus, L., & Collison, J. (2004). *The maturing profession of HR in the United States of America survey report*. Alexandria VA: SHRM Research Department.

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple egression/correlation analysis for the behavioral sciences.* (3rd ed.). Mahwah, NJ: Erlbaum.

Coombs, J., Liu, Y., Hall, A. & Ketchen, D. (2006). How much do high-performance work practices matter? A meta-analysis of their effects on organizational performance. *Personnel Psychology*, 59, 3, 501–528.

Datta, D., Guthrie, J. & Wright, P. (2005). Human resource management and labor productivity: does industry matter? *Academy of Management Journal*, 48: 1, 135–145.

Department for Business, Innovation and Skills, Advisory Conciliation and Arbitration Service, National Institute of Economic and Social Research (2015). *Workplace Employee Relations Survey, 2011*. [data collection]. 6th Edition. UK Data Service. SN: 7226, http://dx.doi.org/10.5255/UKDA-SN-7226-7

DiMaggio, P. J. & Powell, W. W. (1983). The iron cage revisited: institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48, 2, 147–60.

Dobbin, F. (2009). *Inventing Equal Opportunity*. Princeton University Press.

Farndale, E. & Brewster, C. (2005). In search of legitimacy: personnel management associations worldwide. *Human Resource Management Journal*, 15, 3, 33-48.

Ferris, G.R., Perrewé, P.L. Ranft, A.L., Zinko, R., Stoner, J.S., Brouer, R.L. & Laird, M.D. (2007). Human resources reputation and effectiveness. *Human Resource Management Review*, 17, 117–130.

Forth, J. & McNabb, R. (2008). 'Workplace performance: a comparison of subjective and objective measures in the 2004 Workplace Employment Relations Survey'. *Industrial Relations Journal*, 39, 104-123.

Gilmore, S. & Williams, S. (2007). A critical analysis of the Chartered Institute of Personnel and Development's professional qualification scheme. *Personnel Review*, 36, 3, 398-414.

Gorman, E. & R. Sandefur (2011). 'Golden Age'. Quiescence and Revival. *Work and Occupations*, 38, 275-302.

Graffin S.D. & Ward, A.J. (2010). Certifications and reputation: Determining the standard of desirability amidst uncertainty. *Organization Science*, 21, 2, 331–346.

Greene, W.H. (1997). *Econometric Analysis* (3rd ed.), New Jersey: Prentice Hall.

Greenwood, R., Suddaby, R. & Hinings, C. R. (2002). Theorizing change: the role of professional associations in the transformation of institutionalized fields. *Academy of Management Journal*, 45, 1, 58– 80.

Guest, D. & Bryson, A. (2009). From industrial relations to human resource management: The changing role of the personnel function, in W. Brown, A. Bryson, J. Forth & K. Whitfield (Eds.) *The Evolution of the Modern Workplace*, Cambridge University Press, 120-150

Hallier, J. & Summers, J. (2011). Dilemmas and outcomes of professional identity construction among students of human resource management. *Human Resource Management Journal*, 21, 2, 204–219.

Harley, B. (2017) *Towards Explaining the Adoption of High Performance Work Systems: Evidence from SAL*. Paper presented at the Industrial Relations Research Unit Seminar, Warwick Business School, 7 June.

Heizmann H & Fox S. (2017). O Partner, Where Art Thou? A Critical Discursive Analysis of HR Managers' Struggle for Legitimacy. *International Journal of Human Resource Management*, April: 1–23.

Hoque, K. & Noon, M. (2001) Counting angels: a comparison of personnel and HR specialists. *Human Resource Management Journal*, 11, 3, 5-22.

Bacon, N. & Hoque, K. (2005) HRM in the SME sector: valuable employees and coercive networks. *International Journal of Human Resource Management*, 16, 11, 1976-1999.

Huselid, M.A., Jackson, S.E. & Schuler, R.S. (1997). Technical and strategic human resource effectiveness as determinants of firm performance, *Academy of Management Journal*, 40, 1, 171-188.

Kaufman, B.E. (2020) The real problem: The deadly combination of psychologisation, scientism, and normative promotionalism takes strategic human resource management down a 30-year dead end, *Human Resource Management Journal*, 30, 1, 49–72.

Kehoe, R.R.& Wright, P.M. (2013). The Impact of High-Performance Human Resource Practices on Employees. Attitudes and Behaviors. *Journal of Management*, 39, 2, 366-391.

Kochan, T.A. (2010). Social legitimacy of the HRM profession: A US perspective. In Boxall, P, Purcell, J. & Wrights, P. (Eds.) *Human Resource Management*, Oxford: OUP. 599-619.

Lanahan, L. and Armaniosb, D. (2018) Does More Certification Always Benefit a Venture? *Organization Science*, 29, 5, 931–947

Leicht, K. T. and Fennell, M. (2001) *Professional Work: A Sociological Approach*. Oxford: Blackwell.

Lengnick-Hall, M.L. & Aguinis, H. (2012). What is the value of human resource certification? A multi-level framework for research. *Human Resource Management Review*, 22, 246-257

Lester, S.W. Fertig, J. & Dwyer, D.L. (2011). Do Business Leaders Value Human Resource Certification? *Journal of Leadership and Organizational Studies*, 18, 3, 408–414

Lyons, B.D., Mueller, L.M., Gruys, M.L. & Meyers, A.J. (2012). A re-examination of the web-based job demand for PHR and SPHR certifications in the United States, *Human Resource Management*, 51, 5, 769-788.

McDonald, M. L., & Westphal, J. D. (2003). Getting by with the Advice of Their Friends: CEOs' Advice Networks and Firms' Strategic Responses to Poor Performance. *Administrative Science Quarterly*, 48, 1, 1-32.

Muzio, D., S. Aulakh & I. Kirkpatrick (2020). Professional occupations and organizations. In R. Greenwood & N. Philips (eds.) *Elements of Organization Theory* (series). Cambridge: Cambridge University Press.

Ogbonnaya, C., Daniels, K., Connolly, S., & Van Veldhoven, M. (2017). 'Integrated and isolated impact of high-performance work practices on employee health and well-being: A comparative study'. *Journal of Occupational Health Psychology*, 22, 98–114.

Parks-Leduc, L., Rutherford, Becker, K.L. & Shahzad, A.M. (2017). The Professionalization of Human Resource Management: Examining Undergraduate Curricula and the Influence of Professional Organizations. *Journal of Management Education*, 1–28.

Papke, E., & Wooldridge, J.M. (1996). 'Econometric methods for fractional response variables with an application to 401(k) plan participation rates'. *Journal of Applied Econometrics*, 11, 619-632.

Pohler D. & Willness C (2014). Balancing interests in the search for occupational legitimacy: The HR professionalization project in Canada. *Human Resource. Management*, 53, 3, 467–488.

Posthuma, R.A., Campion, M.C., Masimova, M. & Campion, M.A. (2013). A High Performance Work Practices Taxonomy, Journal of Management, 39, 5, 1184-1220.

Pritchard, K. (2010) Becoming an HR strategic partner: tales of transition, *Human Resource Management Journal*, 20, 2, 175-188.

Purcell, J. & Hutchinson, S. (2007). Front-line managers as agents in the HRM-performance causal chain: theory, analysis and evidence. *Human Resource Management Journal*, 17, 1, 3-20.

Rynes, S.L., Colbert, A.E. and Brown, K.G. (2002) HR Professionals' beliefs about effective human resource practices: correspondence between research and practice, *Human Resource Management*, 41, 2, 149-174.

Sandholtz, K., D. Chung, and I. Waisberg, I. (2019) The double-edged sword of jurisdictional entrenchment: Explaining HR professionals' failed strategic repositioning, *Organization Science*, 30: 1349-1367

Sandefur, R. (2014). Elements of Professional Expertise: Understanding Relational and Substantive Expertise through Lawyers' Impact. *American Sociological Review*, 80, 5, 909–933.

Scott, W. R. (2008). Lords of the Dance: Professionals as Institutional Agents. *Organizational Studies*, 29, 2, 219–38.

Subramony, M. (2006). Why organizations adopt some human resource management practices and reject others: An exploration of rationales, *Human Resource Management*, 45, 2, 195-210.

Subramony, M. (2009). A meta-analytic investigation of the relationship between HRM bundles and firm performance, *Human Resource Management*, 48, 5, 745-768.

Suchman, M. C. (1995) Managing legitimacy: Strategic and institutional approaches. *Academy of Management Review*, 20, 571–610.

Ulrich, D. & Brockbank, W. (2005). *The HR Value Proposition*, Boston, MA: Harvard Business School Press.

Wall, T., Michie, J., Patterson, M., Wood, S., Sheehan, M., Clegg, C. and West, M. (2004). 'On the validity of subjective measures of company performance'. *Personnel Psychology*, 57, 95-118.

Watson, T.J. (1977) *The Personnel Managers: A Study in the Sociology of Work and Employment*. London: Routledge and Kegan Paul.

Weeden, K. A. (2002). Why Do Some Occupations Pay More Than Others? Social Closure and Earnings Inequality in the United States. *American Journal of Sociology*, 108, 1, 55–101.

White, M., & Bryson, A. (2013). Positive employee attitudes: How much human resource management do you need? *Human Relations*, 66, 385-406.

Wright C (2008) Reinventing Human Resource Management: Business Partners, Internal Consultants and the Limits to Professionalization. *Human Relations*, 61, 8, 1063-1086.

Wu, N., Hoque, K., Bacon, N. & Bou Llusar, J.C., (2015). High-performance work systems and workplace performance in small, medium-sized and large Firms. *Human Resource Management Journal*, 25, 4, 408-423.

Table 1: Workplace-level main study variable means, standard deviations and correlations

Variables	*Mean*	*S.D.*	1	2	3	4	5	6
Qualified HR professional	0.30	0.46	N.A.					
HPWP count measure	5.81	3.23	0.42***	N.A.				
Absence rate	0.04	0.07	0.01	0.02	N.A.			
Productivity	3.66	0.68	-0.05*	0.03	0.04	N.A.		
Quality	4.10	0.68	-0.06**	0.02	0.06**	0.34***	N.A.	
Financial performance	3.54	0.78	-0.02	0.10***	0.03	0.46***	0.26***	N.A.

Notes: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$
Means are weighted.

Table 2: The relationship between qualified HR professionals, designated HR roles and HPWP adoption

	Dependent variable: HPWP adoption		
Qualified HR professional	0.193***		0.175***
	(0.037)		(0.040)
HR specialist		0.136***	0.051
		(0.038)	(0.040)
F	14.01	13.21	13.72
Prob>F	0.000	0.000	0.000
N	1,444	1,441	1,441

Notes:
*** significant at 1%. Coefficients given, standard errors in brackets.
All non-public sector workplaces (workplaces where the respondent is not primarily responsible for employment relations at the workplace are excluded).
All equations include the workplace-level controls outlined in Appendix Table 2.
Poisson analysis.

Table 3: HPWPs, qualified HR professionals and organisational performance outcomes

	Affective commitment		
HPWPs	0.044 (0.022)**	0.049 (0.022)**	0.037 (0.025)
Qualified HR professional		-0.158 (0.132)	-0.393 (0.313)
HPWPs x Qualified HR professional			0.032 (0.038)
Level 1 intercept	4.258	4.260	4.260
Level 2 intercept	0.594	0.587	0.585
Wald chi2	646.76	649.64	642.47
Prob>chi2	0.000	0.000	0.000
N	8,783	8,783	8,783
	Absence rate		
HPWPs	-0.058 (0.019)***	-0.059 (0.019)***	-0.041 (0.024)*
Qualified HR professional		0.039 (0.163)	0.405 (0.297)
HPWPs x Qualified HR professional			-0.055 (0.033)*
F	2.25	2.21	2.25
Prob>F	0.000	0.000	0.000
N	1,264	1,264	1,264
	Labour productivity		
HPWPs	0.036 (0.018)**	0.043 (0.018)**	0.042 (0.021)**
Qualified HR professional		-0.175 (0.113)	-0.189 (0.261)
HPWPs x Qualified HR professional			0.002 (0.032)
F	2.31	2.29	2.25
Prob>F	0.000	0.000	0.000
N	1,346	1,346	1,346
	Quality of product or service		
HPWPs	0.038 (0.018)**	0.046 (0.019)**	0.047 (0.022)**
Qualified HR professional		-0.208 (0.116)*	-0.167 (0.283)
HPWPs x Qualified HR professional			-0.006 (0.035)
F	1.73	1.79	1.75
Prob>F	0.001	0.001	0.001
N	1,410	1,410	1,410
	Financial performance		
HPWPs	0.009 (0.020)	0.020 (0.020)	0.036 (0.021)*
Qualified HR professional		-0.291 (0.105)***	0.049 (0.249)
HPWPs x Qualified HR professional			-0.049 (0.032)
F	1.89	1.85	1.85
Prob>F	0.000	0.000	0.000
N	1,374	1,374	1.374

Notes:
*** significant at 1% ** significant at 5% * significant at 10%.
Coefficients given, standard errors in brackets. Controls outlined in Appendix Table 2.
All non-public sector workplaces (workplaces where the respondent is not primarily responsible for employment relations at the workplace are excluded

Appendix table 1: Items used in the HPWP measure

HPWP Items	
Selection tests	When filling vacancies at the workplace, personality/ attitude tests or performance/competency tests are used for non-managerial staff.
Induction	Standard induction programme designed to introduce new employees in the largest occupational group to the organisation.
Off-the-job training	60 per cent of more employees in the largest occupational group have been given time off from their normal daily work duties to undertake training over the past 12 months.
Internal labour market	Internal applicants are the only source or are given preference over external applicants, other things being equal, when filling vacancies at this workplace.
Performance-related pay	60% or more non-managerial employees are paid via merit pay or payment by results; OR 60% or more non-managerial employees have a performance appraisal in which employees' pay is linked to the outcome of the appraisal.
Developmental appraisal	60% or more non-managerial employees have their performance formally appraised, and this appraisal results in an evaluation of employees' training needs.
Teamworking	60% or more of the employees in the largest occupational group work in formally designated teams in which team members depend on each other's work in order to be able to do their job and team members jointly decide how the work is to be done.
Team briefing	Meetings at least once per week between line managers or supervisors and all the workers for whom they are responsible in which 10% or more of the time the time is usually available for questions from employees, or for employees to offer their views.
Consultation committee	Committees of managers and employees at this workplace, primarily concerned with consultation, rather than negotiation. These committees may be called joint consultative committees, works councils or representative forums.
Employee attitude survey	Employer or a third party has conducted a formal survey of employees' views or opinions conducted during the past two years
Quality circles	Groups of non-managerial employees at this workplace that solve specific problems or discuss aspects of performance or quality (sometimes known as problem-solving groups or continuous improvement groups).
Functional flexibility	60% or more employees in the largest occupational group do jobs other than their own at least once a week.
Employee benefits	Employees in the largest occupational group are entitled to three or more of the following benefits: employer contributions to a pension scheme; private health insurance; more than 28 days of paid annual leave (including public holidays); sick pay in excess of statutory requirements.
Grievance procedure	Formal procedure for dealing with individual grievances raised by any employee at the workplace in which: employees required to set out in writing the nature of the grievance; employees are asked to attend a formal meeting with a manager to discuss the nature of their grievance; and employees have a right to appeal against a decision made under the procedure
Systematic communication	Management communicates and consults with employees using at least four of the following methods: notice boards; systematic use of management chain/cascading of information; suggestion schemes; regular newsletters distributed to all employees; regular use of email to all employees; information posted on company intranet, accessible to all employees.
Information provision	Management regularly give employees, or their representatives, information about: internal investment plans; the financial position of the workplace and/ or the whole organisation; and staffing plans.
Flexible working/Family-friendly practices	Any employees are entitled to four or more of the following: workplace nursery or nursery linked with workplace; financial help with child care (e.g. childcare

	vouchers, loans, repayable contributions to fees for childcare outside the workplace, subsidised places not located at the workplace); financial help with the care of older adults; a specific period of leave for carers of older adults (in addition to time off for emergencies); a specific period of paid parental leave (in addition to maternity or paternity leave, and time off for emergencies); working at or from home in normal working hours; flexi time (where an employee has no set start or finish time but an agreement to work a set number of hours per week or per month); job sharing schemes (sharing a full-time job with another employee); the ability to reduce working hours (e.g. switching from full-time to part time employment); compressed hours (i.e. working standard hours across fewer days); the ability to change set working hours (including changing shift pattern); working only during school term times.
Equal opportunities practices	Recruitment and selection monitored or reviewed to identify indirect discrimination by four or more of the following characteristics: sex/gender; ethnic group; religion or belief; disability; age; sexual orientation; AND/OR promotion procedures monitored or reviewed by four or more of the following characteristics: sex/gender; ethnic group; religion or belief; disability; age; sexual orientation; AND/ OR relative pay rates reviewed by four or more of the following characteristics: sex/gender; ethnic group; religion or belief; disability; age; sexual orientation
Job security	A policy of guaranteed job security or no-compulsory redundancies for non-managerial employees

Appendix table 2: Control variable means

Workplace level controls (n=1,444)	
Single independent workplace	2.573
Log of workplace size	0.500
Organisational (company) size	
5-49 employees	0.573
50-249 employees	0.123
250-499 employees	0.039
500-999 employees	0.037
1,000-4,999 employees	0.094
5,000-9,999 employees	0.054
10,000+ employees	0.080
SIC Major group	
Manufacturing	0.106
Electricity, gas, steam, and air conditioning supply	0.001
Water supply; sewerage, waste management and remediation activities	0.004
Construction	0.051
Wholesale and retail trade; repair of motor vehicles and motorcycles	0.269
Accommodation and food service activities	0.029
Transport and storage	0.103
Information and communication	0.042
Financial and insurance activities	0.014
Real estate activities	0.030
Professional, scientific and technical activities	0.082
Administrative and support service activities	0.082
Education/ Public administration and defence; compulsory social security	0.038
Human health and social work activities	0.097
Arts, entertainment and recreation	0.020
Other service activities	0.031
National ownership	
UK	0.936
North American	0.024
Other European Union	0.031
Rest of World	0.009
Workplace Age (years)	
0 to <5	0.100
5 to <10	0.232
10 to <20	0.262
20+	0.406
Standard statistical regions	
North	0.044
Yorkshire and Humberside	0.067
East Midlands	0.077
East Anglia	0.044
South East	0.343
South West	0.106
West Midlands	0.077
North West	0.095
Wales	0.049
Scotland	0.098
Union recognition	0.111
Proportion of workforce:	
Female	0.509

Ethnic minority	0.072
Aged 50+	0.227
Part-time	0.306
Proportion of workforce in SOC major group	
Professionals	0.085
Associate professional/ technical occupations	0.088
Administrative and secretarial occupations	0.117
Skilled trades occupations	0.082
Caring, leisure and other personal service occupations	0.080
Sales and customer service occupations	0.179
Process, plant, and machine operatives and drivers	0.066
Routine occupations	0.113
Additional controls for individual level analysis (n=8,783)	
Respondent's SOC major group	
Manager or senior official	0.095
Professional	0.155
Associate professional or technical	0.179
Administrative and secretarial	0.161
Skilled trades	0.075
Caring, leisure and other personal service	0.064
Sales and customer service	0.088
Process, plant and machine operatives and drivers	0.079
Routine occupations	0.105
Pay band (per week)	
£60 or less	0.027
£61-£100	0.039
£101-£130	0.033
£131-£170	0.040
£171-£220	0.061
£221-£260	0.071
£261-£310	0.090
£311-£370	0.105
£371-£430	0.104
£431-£520	0.112
£521-£650	0.108
£651-£820	0.085
£821-£1,050	0.055
£1,051+	0.069
Marital status	
Single	0.252
Married	0.673
Divorced/ separated/ widowed	0.075
Respondent age (years)	
16-21	0.055
22-29	0.203
30-39	0.238
40-49	0.241
50-59	0.191
60-65	0.052
65+	0.020
Respondent's tenure (years)	
<1 year	0.150
1 to <2 years	0.121
2 to <5 years	0.262

5 to <10 years	0.238
10+ years	0.229
Highest academic qualification	
None	0.073
Other	0.024
GCSE grade D-G	0.057
GCSE grade A-C	0.192
A-level	0.246
Degree	0.317
Higher degree	0.091
Part-time	0.254
Temporary/ fixed-term contract	0.065
Union member	0.168
Ethnicity	
White	0.916
Mixed	0.015
Asian or Asian British	0.042
Black	0.016
Other	0.011
Female	0.478
Disabled	0.078
Respondent has dependent child	0.349

Appendix Table 3: Equation 1 Table 2 full equation

	HPWP adoption	
Qualified HR professional	0.193	(0.037)***
Single independent workplace	-0.121	(0.054)**
Log of workplace size	0.112	(0.018)***
Organisational (company) size (reference category: 5-49 employees)		
50-249 employees	0.093	(0.058)
250-499 employees	0.146	(0.071)**
500-999 employees	0.157	(0.082)*
1,000-4,999 employees	0.263	(0.070)***
5,000-9,999 employees	0.275	(0.082)***
10,000+ employees	0.273	(0.080)***
SIC Major group (reference category: Manufacturing)		
Electricity, gas, steam, and air conditioning supply	0.120	(0.112)
Water supply; sewerage, waste management and remediation activities	0.026	(0.148)
Construction	-0.180	(0.125)
Wholesale and retail trade; repair of motor vehicles and motorcycles	-0.079	(0.083)
Accommodation and food service activities	-0.029	(0.102)
Transport and storage	0.110	(0.099)
Information and communication	0.023	(0.120)
Financial and insurance activities	0.178	(0.112)
Real estate activities	0.122	(0.108)
Professional, scientific and technical activities	0.038	(0.094)
Administrative and support service activities	0.015	(0.090)
Education/ Public administration and defence; compulsory social security	0.241	(0.116)**
Human health and social work activities	0.233	(0.096)**
Arts, entertainment and recreation	0.094	(0.137)
Other service activities	0.154	(0.101)
National ownership (reference category: UK)		
North American	0.086	(0.079)
Other European Union	0.134	(0.082)
Rest of World	0.147	(0.132)
Workplace Age (years) (reference category 0<5)		
5 to <10	0.007	(0.073)
10 to <20	0.094	(0.065)
20+	0.022	(0.063)
Standard statistical regions (reference category: North)		
Yorkshire and Humberside	-0.006	(0.098)
East Midlands	-0.009	(0.083)
East Anglia	-0.072	(0.120)
South East	0.052	(0.064)
South West	0.035	(0.075)
West Midlands	0.069	(0.073)
North West	-0.004	(0.077)
Wales	-0.182	(0.135)
Scotland	-0.145	(0.080)*
Union recognition	0.226	(0.045)***
Proportion of workforce:		
Female	-0.196	(0.089)**

Ethnic minority	-0.241	(0.112)*
Aged 50+	-0.188	(0.104)*
Part-time	-0.136	(0.076)
Proportion of workforce in SOC major group:		
Professionals	0.147	(0.189)
Associate professional/ technical occupations	-0.051	(0.182)
Administrative and secretarial occupations	-0.066	(0.186)
Skilled trades occupations	-0.522	(0.200)***
Caring, leisure and other personal service occupations	-0.105	(0.183)
Sales and customer service occupations	-0.082	(0.187)
Process, plant, and machine operatives and drivers	-0.453	(0.200)**
Routine occupations	-0.401	(0.189)**
F	14.01	
Prob>F	0.000	
N	1,444	

Notes:
*** significant at 1%; ** significant at 5%; * significant at 10%. Coefficients given, standard errors in brackets.
All non-public sector workplaces (workplaces where the respondent is not primarily responsible for employment relations at the workplace are excluded).
Poisson analysis.