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Alex Bryson

University College London and IZA

Michael White

University of Westminster

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ABSTRACT

HRM and Small-Firm Employee Motivation: Before and after the Recession*

A long-running debate in the small firms' literature questions the value of formal 'human resource management' (HRM) practices which have been linked to high performance in larger firms. We contribute to this literature by exploiting linked employer-employee surveys for 2004 and 2011. Using employees' intrinsic job satisfaction and organizational commitment as measures of motivation we find the returns to small firm investments in HRM are u-shaped. Small firms benefit from intrinsically motivating work situations in the absence of HRM practices, find this advantage disturbed when formal HRM practices are initially introduced, but can restore positive motivation when they invest intensively in HRM practices in a way that characterizes 'high performance work systems' (HPWS) and 'strategic human resource management' (SHRM). Although the HPWS effect on employee motivation is modified somewhat by the recessionary transition, it remains rather robust and continues to have positive promise for small firms.

JEL Classification: L23, M50, M54

Keywords: small firms, human resource management, high performance work system, workplace motivation, intrinsic job satisfaction, organizational commitment

Corresponding author:

Alex Bryson
Department of Social Science
University College London
Gower Street
London WC1E 6BT
United Kingdom
E-mail: a.bryson@ucl.ac.uk

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1 Introduction

Small firms (those with less than 50 employees¹) provide nearly half of all employment in Britain, and more than half of all new jobs (Hijzen et al., 2010). They are one of the main engines of the employment growth that Britain has achieved in recent decades. This article considers whether the adoption of human resource management systems by small firms can enhance the motivation of their employees and so contribute to further gains in performance.

The term ‘human resource management’ (HRM) has numerous meanings (Marlow, 2006). Here we use it in a sense that has been widely adopted in academic research, to designate *systems* of practices that are intended to enhance employee wellbeing and organizational performance. The system (also ‘strategic’) perspective distinguishes between HRM practices adopted by a firm in a piecemeal way (for instance by focusing on staff training and development – see Nolan and Garavan, 2016), and more extensive initiatives that cross several domains of people management. There has been interest within the HRM research community in systems of practice that form a cohesive and integrated set designed to maximize the effectiveness of human resources. These are commonly termed ‘high performance work systems’ (HPWS) after the seminal study of Appelbaum et al. (2000), or ‘strategic human resource management’ (SHRM) whereby the HRM systems are tuned to harmonize with business strategic objectives (Becker and Huselid, 2006).

There exists substantial, though not yet conclusive, evidence that HPWS or SHRM yields worthwhile performance gains for firms (see Bloom and van Reenen 2010 for review); most of

¹ This is the official definition of small firm both in the UK and in the EU.

this evidence however applies to large firms. In this article, we examine the effects both of low-intensity HRM adoption and of more intensive HPWS configurations; accordingly we will often use the label HRM/HPWS to suggest this span, reserving HRM for a partial system and HPWS for a more developed system. As our outcome measures, we choose to focus on employee motivation rather than firm performance partly because of issues around measurement and causality and because the HRM/HPWS-motivation effect (if established) provides a plausible mechanism for the HRM/HPWS-performance link (Author A and Author B).

Gilman and Edwards (2008) observe that as a management structure emerges in the developing small firm there is a push toward formalization or ‘modernization’ that includes HRM.

Analogous findings have been reported concerning the formalization of industrial relations or employment relations policies (Matlay, 2002). This type of development is sometimes placed on the small firm’s agenda by the demands of large customers who want to see their suppliers adopting recognized ‘good’ practice (Tsai et al. 2007).

However, there has been a view among some specialists in small firm research that HRM development is likely to interfere with distinctive small-firm advantages such as flexibility, responsiveness and informality (see, e.g., Cardon and Stevens, 2004; Marlow 2006; Storey et al. 2010). From the viewpoint of the Resource Based View of the firm (RBV) this critique might be expressed in terms of fully exploiting the uniqueness of small firm resources rather than mimicking the large firm. However, it can also be argued that human resources repay intensive development in small firms, as these are often constrained in respect of other resources, notably financial.

This article presents the first British quantitative study to investigate the relationship between HRM/HPWS and employee motivation in small firms. The study makes several contributions to the debate sketched above. It shows that small firms with no or minimal investment in formal HRM tend to have highly motivated employees, but that with the adoption of HRM, employee motivation declines somewhat. So far, the story accords with the critics' warnings. However, in those small firms that proceed to a more intensive and integrated HRM/HPWS, a threshold is reached from which employee motivation climbs up again. In short, the HRM-performance relationship in small firms is *non-linear*, or *contingent*, depending on the intensity of implementation. There are positive messages as well as warnings to be drawn for small-firm practice.

A feature of our research is its coverage of two contrasting economic periods, 2004 and 2011. In 2004, economic conditions were stable and prosperous. In 2011, the British economy was struggling in the wake of a severe recession. We show that although the HRM/HPWS effect on employee motivation is modified somewhat by the recessionary transition, it remains rather robust and continues to have positive promise for small firms.

2 Small firms and their employees

We view small firms' employees in a motivational perspective. Our notion of motivation is taken from work psychology, regarding it as goal-directed behaviour where goals embody values (see Latham and Pinder 2005; Locke 1996). We assume that motivation is represented by and can be measured through expressed attitudes, as argued by the founders of contemporary attitude theory (Ajzen and Fishbein, 2005; Fishbein 1967). In simple terms, attitudes express the realization (or not) of desired goals and values, and the realization of goals and values sustains

motivated behaviour. The validity of this theoretical model is supported by studies showing statistical links between attitudes and work behaviour. Notably, Harrison et al. (2006) show that measures of job satisfaction and organizational commitment in combination explain about 25 per cent of the variation in workers' 'engagement' behaviours (task performance, organizational citizenship, attendance, timeliness and reduced propensity to quit). In what follows, we use the ideas of 'positive/negative attitude' and 'positive/negative motivation' interchangeably.

Evidence suggests employees in small firms have particularly positive work attitudes. For instance, studies for the USA using the Quality of Employment Surveys of 1973 and 1977 reported higher satisfaction in small firms (for a review see Tansel and Gazioglu, 2013 who cite some 20 studies in all). Turning to Britain and more recent times, one can draw on studies using the Workplace Employment Relations (WERS) series, with their linked workplace and employee data in 1998, 2004 and 2011. Tansel and Gazioglu (2013) have re-analysed the 1998 survey and report numerous respects, including job satisfaction and perceptions of employee- management relations, in which smallness is associated with more positive attitudes. Forth et al. (2006: 41, 70), analysing the 2004 dataset, report that small firms' employees have the highest levels of self-rated wellbeing and - according to management respondents - relatively low incidence of employee grievances or disciplinary hearings. The present study is the first to use the WERS 2011 data to analyse influences on employee attitudes in small firms, but Lai et al. (2016) consider employee attitudes as explanatory variables for performance, and in passing (see their Table 5) report that on all the attitudinal items considered, small firms score somewhat higher than medium sized firms.

These are remarkable findings, bearing in mind that small firms offer relatively low pay and fringe benefits, little training, and sometimes coercive forms of supervision and management (for Britain, see e.g. Rainnie 1989; for the USA, see the extensive literature on segmented labour markets, e.g. Edwards, 1979). Some insight into what seems a paradox is provided by the study of Kalleberg and van Buren (1996). Using linked employer and employee data for the USA, they showed that larger size was significantly associated with greater material rewards but also lower feelings of job *autonomy* even with controls for many variables that might be linked to size. Autonomy was measured as a composite of working independently, having a say over job changes, taking part in decisions, and *not* being closely supervised. Interpreting this in a work motivation framework, we suggest that small firms offer greater scope for autonomous or intrinsic motivation (see especially the ‘self-determination’ theory of Gagné and Deci, 2005) to compensate for the relatively weak provision of extrinsic rewards.

Further insight into how small firms provide intrinsic rewards is provided by British case study research. For instance, Ram (1994) in his intensive study of three clothing manufacturers depicted an ethos of extensive freedoms and responsibilities for employees, all the more convincing because Ram’s focus was chiefly on how small businesses survived in intensely competitive markets, rather than on employees’ job quality as such. Established employees had an important role in determining their own working methods, even in one case where the supervisor judged them to be inefficient; they socialized freely with their colleagues; and they had great discretion over their working times to fit work to the needs of their families. Their responsibilities included finding new recruits when these were needed, and for training and embedding them into the work process; and, as also noted by de Kok examining small firms in

the Netherlands (2003), they exerted subtle but considerable influence over the decision making of their managers and principals. Case studies in restaurant businesses (Ram et al, 2001) provide a similar picture.

Moule's (1998) study provides a particularly detailed view of work in a small manufacturer. Despite the autocratic nature of senior management, and pressure from large customers, workers in the dyeing shop, nominally semi-skilled, maintained personal control through their superior practical knowledge that made the firm dependent on them, and used this power to manage work pressures and time flexibility, apparently with the willing collusion of lower supervision.

A factor that tends to maintain a positive quality of work in some small firms is the closeness of the proprietors to employees. This aspect is strongly underlined in the group of Netherlands case studies analysed by de Kok (2003): he observes that the employer-owner often works alongside employees, seeks personal satisfaction in the work (as a distinct objective alongside profit), and places a high value on 'team spirit'; and is in frequent one-to-one communication with employees, which offers scope for them to be influential.

In recent years, British small business has developed strongly in industries requiring high levels of technical and professional expertise, such as health services, ICT, creative media, finance and specialized consultancy. Case research by Tsai et al. (2007) and Gilman and Edwards (2008) address this area. The professional staff typically work in a highly autonomous manner, with proprietors reliant on selecting people with appropriate skills. Tsai et al. (2007) report high levels of employee satisfaction with management, in part because of the opportunities employees have

to learn from seniors working alongside them. A repeated motif in these studies is the extreme flexibility of workloads and hours, with minimal planning and a 'fluid' type of team working that is described as 'a natural extension of the way work is performed' (Gilman and Edwards 2008: 547).

Within the small-firm literature, a concept frequently deployed to describe employer-employee relationships is 'informality'. This is certainly applicable to the examples of autonomous working and freedom from controls cited above, but can also be applied to aspects of small firm relationships that are more negative, such as proprietors' unconcern about workplace regulations, arbitrary treatment of employees, and favouritism. At an extreme, the 'informal' small firm can end by moving into the grey economy and the casualization of its workforce (Ram et al., 2001). Informality has a bipolar (good-bad) dimension and thus in itself cannot explain the positivity of small firm employee attitudes. On the other hand, there is evidence that informality is valued within small firms by both owners and employees, and movement toward a more systematized or 'modern' approach, including by HRM adoption, is often resisted. Such formalization usually involves an increase in external control and a reduction of personal task discretion that have been shown to be involved in falling levels of job satisfaction (see Green, 2006: 151-69). Small firms are sensitive to this. In the Electron Co. case of Gilman and Edwards (2008), supervisors and team leaders were being introduced but the company was stressing that the roles would be chiefly of a mentoring rather than monitoring type. In Ram et al.'s (2001) PatCo study a specialist food manufacturer was being pushed toward formal controls, with reduced employee discretion, as a consequence of selling to supermarkets, but management was representing the development to employees as 'organized autonomy' (Ram et al. 2001: 855). Small-firm case

research can be cross-checked with large-sample analysis. Storey et al. (2010) developed a survey questionnaire instrument to measure formalization and showed higher formality to be associated with lower ratings of job quality.

Our overall conclusion from this review of evidence is that small firm employment is high in terms of intrinsic rewards, in the form of job autonomy and freedom from external controls. The strength of autonomous or intrinsic motivation (see Gagné and Deci, 2005) suffices to explain the highly positive attitudes that have been reported. This conclusion however applies to small firms that have usually retained an informal employment relationship and it remains to consider how the introduction of HRM, involving a substantial element of formalization, is likely to affect the picture.

3 HRM/HPWS effects on small firms' employees

In this section, we first consider, in a general way, how HRM systems can have performance-enhancing motivational effects on employees. We then go on to discuss whether similar results can be achieved in the small-firm sector. We will focus particularly on 'high-performance work systems' (HPWS).

Many of the leading studies in this field have used motivational concepts for interpretation and prescription. For instance, McDuffie (1995) states that an essential condition for performance enhancement is that employees possessing knowledge and skills 'are motivated to apply them in discretionary effort'. Economists interested in the economic effects of complementary work practices stress their value in generating 'incentives to productivity' (Ichniowski et al., 1997).

Becker and Huselid (1998) argued that the aim of HPWS is to construct a ‘skilled and motivated workforce providing the speed and flexibility required by new market imperatives’. Appelbaum et al. (2000:46) stated that ‘Jobs that are challenging and make use of workers’ skills are intrinsically rewarding’. Batt (2002) theorized that HPWS produce a positive effect via increased employee satisfaction that lowers the firm’s quit rate and thus helps to build up human capital and organizational learning.

Previous research (notably Appelbaum et al. 2000) suggests participation and team organization (team-working) are central domains of HPWS. ‘Participation’ refers to methods by which employees can make contributions that directly relate to work tasks, work organization and the management of change. Emphasis on teams as a key route to enhanced productivity has a particularly long history in Britain, where the idea of semi-autonomous (or managerless) teams early became well established. Team roles supported by skill development enable employees to widen skills, experience more challenge in their work, and experience increased relatedness with colleagues. Several more traditional aspects of HRM/personnel management have been adapted to fit into an HPWS specification (see Appelbaum et al. 2000). Financial incentives can be extended with group/workplace bonuses or profit-shares. Training and development can help employees take on variable job roles within teams and achieve enhanced levels of skill and self-efficacy. Recruitment and selection are complementary to training and help build a workforce committed to high performance goals (Locke 1996).

Becker and Huselid (2006), elaborating earlier contributions, argued that for HRM to have a major positive impact it is necessary that relevant work practices are ‘bundled’ in a mutually

supportive way. This points to a threshold effect, with motivation and performance rising more steeply once the threshold has been crossed. Why this may be so is theorized more fully by Bowen and Ostroff (2004). These authors maintain that ‘HRM practices can be viewed as a symbolic or signalling function’ (Bowen and Ostroff, 2004: 206). If HRM is to alter employee behaviour and performance, it must be a ‘strong system’ communicating persuasive messages: implementing *a wide range of practices* is valuable in strengthening the HRM message and making it salient. This thesis connects with the idea that HPWS can project organizational values, such as developing employees’ capabilities and valuing their views, with which individuals can identify. Such a message is more likely to be trusted when the organization demonstrates its seriousness by implementing a wide range of complementary practices. Inconsistency or half-hearted ‘dabbling’ in HRM, on the other hand, can be interpreted as insincerity. While Bowen and Ostroff refer generally to HRM, and do not specify a particular configuration of practices as ideal, a fully developed HPWS appears to meet their criteria for a ‘strong system’.

Our assumption is that the motivations of small firm employees are somewhat positive under normal conditions of informality while still lacking HRM development. As HRM practices enter the scene, their systematic and formalized character tends to infringe upon established employee freedoms and autonomous working. Since this freedom and autonomy is the main reason for their initially positive attitudes, the effect of HRM adoption is to drive motivation downward. However, as a firm moves close to constructing a full HPWS, it signals a new participative, collaborative and self-developing ethos with which employees can identify. To the extent that this is successful, attitudes will move in a positive direction once again.

With the foregoing discussion in mind we propose the following hypotheses:

H1. Intensive adoption of HPWS (a ‘strong system’) results in increased intrinsic work motivation, and this is expressed in two testable forms that we base on the work of Harrison et al. (2006):

H1a. There is a positive relationship between the intensity of HPWS practices and the intrinsic job satisfaction (IJS) of employees.

H1b. There is a positive relationship between the intensity of HPWS practices and the organizational commitment (OC) of employees.

The positive relationships indicated in H1a and H1b only apply above some threshold of HPWS implementation that is to be identified empirically.

H2. At below-threshold levels of adoption of HPWS, there will tend to be reduced levels of intrinsic work motivation. This will have identifiable consequences H2a and H2b, relating to *reduction* in IJS and in OC, respectively.

The overall prediction, therefore, is a non-linear (‘U-shaped’) relationship between overall job attitudes and HPWS intensity. Such a relationship is represented by a model with both linear and quadratic (squared) terms, the linear term having a negative sign and the quadratic term having a positive sign.

5. Data, measures and analysis methods

5.1 Data

We use the Workplace Employment Relations Study 2004 (henceforth, WERS2004) and the subsequent similar 2011 survey known as WERS2011. Some previous studies have used WERS2004 or WERS2011 to examine small firms (Forth et al., 2006; Lai et al. 2016; Storey et al., 2010). The period around 2004 in Britain was one of a stable and prosperous economy, while 2011 was the fourth year of an unusually severe economic recession. This contrast is valuable in testing the cross-situational robustness of the relationships investigated.

WERS2004/2011 are national surveys of workplaces with five or more employees (micro-businesses are excluded), comprising several elements, notably face-to-face interviews with the senior workplace manager responsible for employee relations, and a linked self-completion survey of employees. We make use of the employee within-firm samples to derive attitudinal outcome measures, while the management interviews provide the HRM/HPWS variables and other control variables. This combination reduces the risk of common method artefact (Podsakoff et al. 2003) and respects time sequencing of the independent and dependent variables (Wright et al. 2005).

For WERS2004, the management survey had an overall response rate of 64 per cent (N=2295), declining to 46 per cent in 2011 (N=2680). In each year, an employee survey was conducted in the workplaces where management permitted. Self-completion questionnaires were distributed to a random sample of 25 employees in workplaces with more than 25 workers and to all employees in workplaces with 5-25. In 2004, employee respondents comprised a mean of 57 per

cent of the maximum number of respondents in workplaces with less than 50 employees, while in 2011 the proportion was 49 per cent. In keeping with most of the literature on the effects of HRM or HPWS we confine our analyses to the private sector. The sharp fall in response between 2004 and 2011 (typical of British social surveys during this period) poses a threat to comparability when we assess over-time consistency of findings. We develop a new way of mitigating this problem explained in the analysis section below.

From the management information, we can identify those workplaces that represent small firms (less than 50 employees in the overall organization). There are 280 private sector small firms in the 2004 survey and 375 in 2011. The analysis focuses on these small firms.

5.2 Dependent variables

The chief analyses refer to overall job attitude (Harrison et al. 2006) through two variables that we label intrinsic job satisfaction (IJS) and organizational commitment (OC). We construe these attitudinal measures as evaluations of, respectively, intrinsic rewards that the individuals get from their jobs and rewards that they get from valued organizational membership. We obtain the measures from employee responses that are averaged at the level of the workplace that represents the firm. This aggregation and averaging results in smooth quasi-continuous measures. Unobserved individual attributes that may bias attitudinal responses (notably personality – see Diener and Lucas, 1999) will tend to be averaged out at the mean workplace level (there could however still be unobserved selection effects imposed by consistent selection

processes). From the viewpoint of firm management, the aim is to have positive motivation across all employees, and the workplace-average measures reflect this managerial perspective.

In both years the WERS employee questionnaire contained eight facet satisfaction items and from these four were selected, on the basis of wording, for their similarity to the 'job itself intrinsic satisfaction' subscale of Warr et al. (1979). Table 1 provides item details. The Cronbach alpha of the IJS items in the full employee survey sample was 0.87 in both 2004 and 2011. Responses are summed at the level of the individual respondent and the summed IJS scores are averaged over the employee respondents at each workplace.

The WERS measure of OC consists of three items (see Table 1 again) which have counterparts in the six-item Lincoln-Kalleberg measure of affective organizational commitment. OC has a Cronbach alpha of 0.85 in the full employee surveys of both years. To compute the measure, the three items were summed at the individual level and then averaged across the employees at each workplace.

To check these constructs, a principal components analysis was performed using the full employee sample on the eight satisfaction items, the three OC items and eight further items relating to individual well-being. After varimax rotation, the IJS and OC constructs emerged as distinct components having items with high loadings. These results (not shown here) are available on request.

Table 1. Intrinsic Job Satisfaction (IJS) and Organizational Commitment (OC) scale values for small firms, 2004 and 2011

		2004			2011			
	range	mean	s.d.	N	mean	s.e.	N	Items
IJS scale	4-20	15.84	1.61	280	16.02	1.79	375	(Satisfaction with..) Sense of achievement from your work, Scope for using your own initiative, Amount of influence over your job, The work itself. 5-point item response, high=more satisfied. Alpha = 0.87
OC scale	3-15	11.67	1.54	279	12.10	1.56	375	(Agreement that ...) Share many of the values of my organization, Feel loyal to my organization, Proud to tell people who I work for. 5-point item response, high=stronger agreement. Alpha = 0.85

Note: Unweighted estimates. Alphas are based on the full employee sample

5.3 Measures of HPWS practice

Information about HRM practices come from the WERS interview with the senior manager responsible for HRM or personnel management at the workplace. We consider only items that are descriptive of current practice and ignore any items that seek the manager's opinion about climate, management-employee relationships etc. British studies that similarly emphasize descriptive measures of HRM practice include Brown et al. (2008), Forth and Millward (2004), and Ramsay et al. (2000).

In the HRM-performance literature all the HPWS items from a cross-sectional survey are usually aggregated into a single overall index of practices (see, e.g., Becker and Huselid (1998:63)). It has often been remarked, however, that this approach has not led to consistent, replicable

measures of HRM practice, because of differences across studies in the available items. We find in the present study that although many descriptive items are available, they sometimes do not remain the same across the 2004 and 2011 surveys, and there is also marked variation in the statistical reliability of domain measures. . We therefore introduce a new measurement approach, as follows. (1) Five domains that correspond with the HPWS concept of Appelbaum et al. are defined; these are participation, teams, development, recruitment, and incentives. Across these domains, we find 43 suitable item measures in 2004 and 44 in 2011. (2) We group items by domains, and the grouping is checked by reliability analysis. (3) In each firm, we count how many practices are reported to be present in each domain. If *three or more* items are present, we classify the firm as achieving ‘high’ on that practice domain. (4) In each firm, we count how many domains are classified as ‘high’, and this number is taken as the *HPWS-intensity score* for that firm. This yields a six-point scale with values from 0 to 5. Among small firms, this scale has correlation 0.91 with the additive index of HPWS items in 2004, and 0.83 in 2011. The HPWS-intensity measure has a high degree of face validity with respect to the Bowen-Ostroff concept of ‘strong system’ HRM. Its criterion validity (with respect to employee attitudes) is demonstrated in the Results section below. Further, there are many ways in which a firm can reach the ‘high’ threshold in any given domain, and there are numerous ways in which firms can select from the five domains which ones they wish to develop: thus the HPWS-intensity score provides for uniqueness and equifinality in firm HRM/HPWS strategy (Becker and Huselid, 2006) at both item and domain level. We believe that this method provides robust comparability across surveys: it is not necessary that the item pool be identical across time. A further advantage is that we can use the Storey et al. (2010) measure of formality, alongside the HPWS-intensity measure, without encountering any problem of item overlap. Full details of the

formality measure are given in Storey et al. (2010:311); it has a Cronbach alpha of 0.77 in these surveys.

Table 2 gives further details of the derived domain-high and HPWS-intensity scores. There was a substantial increase in high-scoring domains between 2004 and 2011, notably in regard to participative practices and to incentives. This change poses a fairly severe test of the over-time robustness of the hypothesized HPWS-motivation relationships, especially when combined with post-recessionary conditions (see later).

Table 2. HRM domains and HPWS intensity measure in small firms, 2004 and 2011

% 'High' on:	2004	2011
participation	44	81
teams	42	46
development	46	55
recruitment	79	80
incentives	12	40
Mean (s.e.):		
HPWS intensity	2.23 (0.102)	3.02 (0.089)

Note: 'High' is a dummy variable for each domain, taking value 1 when 3 or more practices are implemented in that domain. All estimates are survey-weighted. For further details of items used in domain construction, see Author A and Author B (2004 data) and Author B (2011 data).

5.4 Control variables

'Structural' control variables are included in all the reported analyses. Industry is represented by 11 dummies; and there are controls indicating the percentage of workplace employees in 'higher' (professional and managerial) occupations; the percentage in 'intermediate' (administrative, technician and craft) occupations; the percentage of female employees; the percentage (banded) of employees in non-permanent jobs; and a dummy for presence of recognised union(s). We could not include a variable sub-dividing size within the 'small' (5-49 employees) segment, as

this information was not available in 2004. However, we count the number of managers at the workplace and create a dummy for those that had three or more managers – an indication of organizational complexity. We additionally included an item relating to job security guarantees made by management – an HRM variable considered important by Forth and Millward (2004), but not combining with any of our HPWS domains.

5.5 Characteristics special to small firms as additional control variables

In all analyses we include controls for two further characteristics regarded as significant in the small firm literature (see Cardon and Stevens, 2004; Marlow, 2006). The number of years that the business has been located at its present workplace, or at previous workplaces from which it has moved, is used as a measure of ‘newness’. This is divided into five bands approximating quintiles of the firm-age distribution. To represent family control over the firm, we constructed a dummy based on whether there is a family that holds more than half the shareholding. The proportion of small firms that satisfied this definition was 50% in 2004 and 55% in 2011. As noted earlier (section 5.3), we also included the Storey et al. (2010) measure of ‘formality’ that can be regarded as particularly relevant to small firms.

5.6 Firms’ recessionary policies (2011)

In analysing the 2011 data, we use one further type of variable, representing the employment policies with which firms responded to the recession. A dummy variable represented having more than one type of employment policy in response to the recession – commonly a wage freeze coupled with some restriction of hours or change of hours contract (e.g., zero hours

contracts). One third of small firms had two or more employment policies responding to the recession.

5.7 *Analysis method*

Analysis focuses on small firms, i.e. those with less than 50 employees in total. For analysis of the WERS2004 data, we used the survey regression method with a robust variance estimator (also known as robust regression: see Berk 1990). The measures of IJS and OC are treated as continuous variables, since they are smoothly distributed workplace means. These means are themselves sample-based estimates. They are therefore measured with error, and heteroskedastic because the workplace samples vary in size. However, as these are always dependent variables, measurement error is incorporated in the usual disturbance term and this does not affect consistency of estimates. The robust variance estimator allows for heteroskedasticity as well as for complex survey design including weighting.

The HPWS-intensity variable was represented in two different ways in variant specifications. In the first variant, it was represented as a linear effect; in the second, it was represented with both linear and quadratic (squared) terms. The latter specification makes it possible to assess the existence of nonlinearities (U-shaped relationship) as specified in the hypotheses (Section 4).

The lower response rate in 2011 compared with 2004 suggests possible bias from sample selectivity. Effects on the covariance structure are unpredictable. Both surveys employed stratified sampling by workplace size and industry, and establishment weighting is intended to restore representativeness with respect to these variables. However, this does not guarantee

representativeness with respect to the other control variables used in our analyses. We therefore use an alternative approach derived from the statistical matching methodology used in programme evaluation research (Fröhlich et al. 2015). We take WERS2004 as the ‘target’ sample, both because of its superior response rate and because of the more typical economic conditions in which it took place, and re-weight WERS2011 so as to achieve mean covariate balance across *all* control variables that are present in both 2004 and 2011. This is made possible by the entropy balancing programme developed by Hainmueller and Xu (2013). We carry out the 2011 analyses along the same lines as for 2004, but with control variables that, when the sample is re-weighted, have the same mean values (within a small tolerance) as in 2004. For example, before re-weighting the small firms in 2011 report having a mean of 49 per cent of employees in ‘lower’ occupations, but after reweighting this falls to 43 per cent. Other variables that were substantially modified by rebalancing were the proportion of family-controlled business, the proportion of non-permanent employees, and the proportion of firms with a trade union. By reducing mean differences in control variables between surveys, we render comparative assessment more plausible. At the same time, however, we respect theoretically relevant differences between surveys by permitting the HPWS measure to vary and by introducing the additional measure of policy response to the recession in the 2011 analysis.

6 Results

6.1 HRM/HPWS and overall attitudes in small firms, 2004

Table 3 shows the key results from regression analyses for 2004. In models (1) and (3), referring respectively to IJS and OC, the coefficient of HRM-intensity is negative and significant (albeit

only at the 10 per cent level in the case of IJS). This appears to give support to those who have argued that HRM is ill-suited to small firms' employment relationships. However, results from models (2) and (4), which introduce a non-linear functional form, paint a different picture. While the linear term is negative in both models, the quadratic is positive, and both are statistically significant at the one per cent level. The 'turning point' reported in the third row of results indicates the value at which the effect of HRM intensity changes from negative to positive. For both IJS and OC, small firms can expect positive outcomes once they have three HRM domains substantially developed (approximately 40 per cent of the small firms had reached this level of HRM development), with further improvement as they proceed toward a more complete HPWS. These results provide strong evidence in support of both H1 (a and b) and H2 (a and b).

Table 3 also reports the estimated effects of formality, family control, internal structural complexity (3 or more managers), and age of firm. Somewhat unexpectedly, the level of formality was *positively* and significantly related to OC and was positive but non-significant in relation to IJS. This is inconsistent with the results reported by Storey et al. (2010), who included no representation of HRM intensity. The other small-firm characteristics had no systematic effect on the IJS and OC outcomes.

Estimates for the control variables are not shown for reasons of space, but the full results are available on request.

Table 3. Robust regression estimates of HRM/HPWS effects on small firm employees' IJS and OC, 2004.

dependent variable>>	mean IJS		mean OC	
	(1)	(2)	(3)	(4)
HR intensity	(1)	(2)	(3)	(4)
HI	-0.192,0.109, -1.77	-0.983,0.334, -2.94	-0.199,0.096, -2.07	-0.855,0.265, -3.23
(HI) squared	---	0.156,0.056,2.77	---	0.130,0.048,2.73
Turning point	---	3.15	---	3.29
smallness features				
formality score	0.058,0.069,0.84	0.090,0.072,1.26	0.111,0.057,1.95	0.138,0.059,2.33
family-owned	-0.245,0.248, -0.99	-0.240,0.244, -0.98	-0.290,0.213, -1.36	-0.288,0.214, -1.35
3+ managers	-0.070,0.246, -0.28	-0.104,0.242, -0.43	-0.345, 0.220, -1.57	-0.377,0.218 , -1.73
firm age:				
7-12 years	-0.186,0.339, -0.55	-0.022,0.358, -0.06	0.093,0.289,0.32	0.225,0.305,0.74
13-20 years	-0.018,0.416, -0.04	0.103,0.413, 0.25	-0.107,0.349, -0.31	-0.007,0.344, -0.02
21-31 years	0.294,0.433,0.68	0.438,0.411,1.06	0.353,0.358,0.99	0.470,0.336,1.40
>31 years	-0.576,0.404, -1.42	-0.417,0.400, -1.04	-0.347,0.296, -1.17	-0.216,0.303, -0.71
R-squared	0.174	0.208	0.286	0.312

Notes: Each 3-number cell reports b, s.e., t. HI is the index of high-scoring domains (range 0-5). All above analyses have N=276. Analyses have additional controls for industry, proportion female employees, proportions higher-level and intermediate-level employees, proportion (banded) of non-permanent employees, trade union recognition, and 'no compulsory redundancy' policy.

6.1 HRM/HPWS and overall attitudes in small firms, 2011

Table 4 shows the results for 2011, with weighting that achieves covariate balance to 2004. This table follows the same general pattern as in the 2004 results, except that there is an additional variable representing the use of multiple cost-cutting policies by the firm in response to the recession. The results for 2011 are somewhat more complex than in 2004, and the key to understanding them is the effect of the additional variable representing firms' cost-cutting

recession policies. Employees in the one-third of small firms having multiple cost-cutting methods have substantially lower levels of IJS and OC. For IJS, the non-linear model continues to perform well, with the linear term significant at the 10 per cent level and the quadratic term significant at the 5 per cent level; IJS begins to climb once a firm has achieved, roughly speaking, substantial implementation of more than two HRM domains (about two-thirds of small firms had by 2011 reached this stage of development). In the case of OC, however, the non-linear model fails and a simple linear model is adequate: substantial development of *any* HRM domain is associated with higher OC. It is notable also that formality is in 2011 negatively related to IJS (in line with the results for 2004 reported by Storey et al., 2010) and that longer-established small firms tend to have lower levels of both IJS and OC than those that are new (established within last six years).

To clarify what is taking place as a result of firms' employment response to the recession, we also ran models separately for those who had multiple policy responses and those who had not. The key estimates are shown in Table 5. When cost-cutting responses are absent, the effect of HPWS intensity is similar to 2004, but when these cost-cutting responses are present the negative effect of linear HPWS on IJS is weakened; in fact, a simple linear model with positive coefficient is now supported for IJS (model (1) under the 'present' condition). In the case of OC, the positive linear effect of HRM/HPWS intensity only emerges when cost-saving responses to the recession are present. Overall then, it seems as if the recessionary pressures transmitted to employees via small firm policies tends to increase the positivity of HRM/HPWS effects (the opposite result to the Canadian study of Zatzick and Iverson, 2006). Some caution is needed

over the magnitude of point estimates in models based on 111 observations, as there is a risk of over-fitting.

Table 4 Robust regression estimates of HRM/HPWS effects on small firm employees' IJS and OC, 2011

	mean IJS		mean OC	
	(1)	(2)	(3)	(4)
HR intensity	0.157,0.113,1.40	-0.631,0.328,-1.92	0.187,0.090,2.09	-0.013,0.276,-0.05
(HI) squared	---	0.136,0.056,2.42	---	0.035,0.048,0.72
Turning point	---	2.32	---	---
recession policies			---	---
multiple cuts	-0.887,0.280,-3.17	-0.912,0.278,-3.28	-0.560,0.256,-2.18	-0.566,0.258,-2.20
smallness features				
formality score	-0.162,0.064,-2.53	-0.153,0.062,-2.49	-0.082,0.050,-1.62	-0.080,0.050,-1.59
family-owned	-0.068,0.253,-0.27	-0.019,0.247,-0.08	-0.044,0.209,-0.21	-0.031,0.207,-0.15
3+ managers	-0.181,0.251,-0.72	-0.258,0.255,-1.01	-0.026,0.213,-0.12	-0.045,0.211,-0.21
firm age:				
7-12 years	-0.852,0.518,-1.64	-0.863,0.506,-1.71	-0.940,0.404,-2.33	-0.943,0.403,-2.34
13-20 years	-0.667,0.368,-1.81	-0.685,0.358,-1.92	-0.738,0.278,-2.65	-0.742,0.278,-2.67
21-31 years	-0.493,0.388,-1.27	-0.464,0.372,-1.25	-0.676,0.305,-2.22	-0.669,0.302,-2.21
>31 years	-0.831,0.403,-2.06	-0.849,0.395,-2.15	0.925,0.334,-2.77	-0.929,0.334,-2.78
R-squared	0.184	0.201	0.174	0.175

Notes: N for these analyses is 336; the reduction in N, compared with Table 1, is mainly due to missing information concerning industry. Otherwise see Table 4 above.

Table 5. Effects of HRM/HPWS in small firms with and without multiple recessionary policies, 2011

	mean IJS			mean OC	
	absent	present (1)	present (2)	absent	present
recessionary multi-policies>>					
HR intensity					
HI	-0.803, 0.345, -2.33	0.885, 0.219, 4.03	-0.509, 0.608, -0.84	-0.064, 0.083, -0.77	0.647, 0.189, 3.42
(HI) squared	0.129, 0.055, 2.33	---	0.244, 0.101, 2.41	---	---
turning point	3.11	---	1.04	---	---
formality score	-0.093, 0.076, -1.23	-0.256, 0.25, -2.04	-0.233, 0.115, -2.02	0.036, 0.055, 0.65	-0.208, 0.114, -1.83
R-squared, N	0.241, 225	0.380, 111	0.424, 111	0.288, 225	0.350, 111

Note: Full controls as before.

7 Conclusions

The aim of this research has been to assess the effects of HRM/HPWS on the intrinsic job satisfaction and organizational commitment of small firms' employees, both before and after the 2008 recession in Britain. These attitudes represent dimensions of employee motivation that previous research has demonstrated to have substantial implications for individual behaviour and performance.

The analyses for 2004, when the British economy was buoyant, provide strong evidence that the effects of HRM are *non-linear* ('U-shaped'), with negative effects at low levels of HRM implementation, but positive effects once more intensive implementation has been reached; these results support both H1 (a and b) and H2 (a and b).

Results are somewhat more complex for 2011. Differences then appeared both between the effects on IJS and the effects on OC, and between small firms that had introduced multiple cost-cutting policies to counter the recession, and those that had not. The U-shaped relation between HRM/HPWS was maintained for IJS but for OC a simpler linear or additive effect of HRM/HPWS now appeared best. Further analysis showed that the linear model applied for both IJS and OC in the case of those small firms that had introduced multiple cost-cutting policies. So when small firms responded to the recession through cost-cutting employment policies, the former negative effect of HRM on motivation tended to be suppressed. This was accompanied by strongly negative reactions toward the cost-cutting employment policies themselves. A parsimonious interpretation is that the cost-cutting policies severely affected the autonomous

working and time freedoms normally enjoyed by small firm employees, and against that frame the development of HRM/HPWS practices appeared relatively benign to employees.

The practical implications of these findings are challenging for small enterprise management. There is much in our investigation that accords with criticisms of HRM: attitudes are highly positive when HRM is absent and informality reigns. It seems unrealistic, however, to recommend staying in this 'never-never land'. As the enterprise grows, there is a normal, possibly inevitable, movement toward more complexity, leading management to seek a more systematized approach. Such a transition is certain to be difficult and the early stages of HRM/HPWS implementation forms part of this difficulty. The key for the small firm is to press on to a more intensive and more integrated form of HPWS that sends stronger signals of positive intent toward employees. Descriptive information for 2011 indicates that this is the direction in which many small firms are moving. The 2011 results also suggest that in turbulent competitive conditions, that may well affect small firms for the foreseeable future, HRM/HPWS will be accepted more happily by their employees. This however requires further confirmation; qualitative research with employees of small firms adopting HRM/HPWS would be of particular value.

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