



Munich Personal RePEc Archive

**Employee coverage of high-performance  
work systems in Spain: a comparative  
analysis before and during economic  
retrenchment**

Pruneda, Gabriel

University of Oviedo

July 2014

Online at <https://mpra.ub.uni-muenchen.de/83909/>

MPRA Paper No. 83909, posted 16 Jan 2018 00:57 UTC

# EMPLOYEE COVERAGE OF HIGH-PERFORMANCE WORK SYSTEMS IN SPAIN: A COMPARATIVE ANALYSIS BEFORE AND DURING ECONOMIC RETRENCHMENT

**Gabriel Pruneda**

[pruneda@uniovi.es](mailto:pruneda@uniovi.es)

University of Oviedo (Spain)

School of Economics and Business

## ABSTRACT

The aim of this paper is to provide the first comprehensive study of high-performance work systems (HPWS) in the Spanish private sector. Based on a representative sample at national level of 9,086 salaried employees, drawn from the Quality of Life at Work Survey, we build three HRM bundles following the ability-motivation-opportunity framework. Results derived from performing logit regressions allow establishing that the size of the organisation has a positive effect on the probability of workers being affected by HPWS. Regarding the activity sector, the positive association is found for the manufacturing and services industries. As for the job and personal characteristics, HPWS primarily affect highly qualified workers and holders of well-paid, high quality jobs. Additionally, we find that, while lower quality jobs are being massively destroyed during the economic crisis, higher quality jobs under HPWS are being created throughout the period 2006-2010.

## 1. INTRODUCTION

Effective management of personnel entails considering the workforce a source of competitive advantage with the potential to substantially enhance business performance. This is opposed to the consideration of the workforce as a plain production factor by *traditional* control-oriented personnel management streams such as Taylorism (Taylor, 1911) or Fordism. Thereby, *modern* HRM involves a set of work management practices considered complementary (Huselid, 1995), aimed at improving the identification and involvement of employees with organisational goals. By increasing business awareness and discretion, i.e. the degree of autonomy and participation in decision-making, they draw upon the skills of workers and intensify individual responsibility. Ultimately, they result in higher quality jobs and more efficient organisations (Boxall & Purcell, 2003), thus enhancing firm performance.

The destruction of 3.8 million jobs and 276 thousand companies in Spain after 6.5 years of severe economic crisis (Spanish National Statistics Institute) entails the urgent need to create new and better jobs. This, together with the increasingly demanding environment where organisations operate, makes high-performance work systems (HPWS) a means to benefit from a competitive advantage provided by highly qualified individuals who are motivated to develop and apply their knowledge, in order to raise competitiveness and, ultimately, generate employment. HPWS are a type of HRM that pursues high levels of employee involvement in order to improve their performance and, subsequently, that of the organisation. These systems are characterized by the simultaneous use of a number of work management practices combined together following the common objectives pursued, thus complementing and reinforcing each other.

The main objective of this study is to examine the degree of development in Spain, as well as the evolution along the past years, of this variety of HRM, which is instrumentalised via the simultaneous implementation of work management practices such as selective hiring, training, possibilities of promotion, contingent pay, job security, information sharing, and job enrichment, among others.

Following a growing body of literature that posits that the influence on organisational performance can be mostly explained by the interactions among different HRM practices which share a common goal, we adopt the AMO framework approach and specifically consider three bundles of these work management practices aimed at enhancing workers' ability, motivation and opportunity. This will allow for the group of individuals under this type of HRM in Spain to be identified for the first time, while at the same time analysing their evolution since the beginning of the economic crisis.

Based on a nationally representative sample of salaried workers in the Spanish private sector, drawn from the Quality of Life at Work Survey (QLWS), we will provide descriptive statistics and perform multivariate regressions in order to accomplish the first comprehensive study of HPWS in Spain. Accordingly, it will be possible to establish which are the main determinants behind their implementation, in terms of activity sector and size of the organisation, as well as to establish which are the socio-economic characteristics shared by those individuals under this type of HRM.

Given the nature of the data, outcomes will not be restricted to neither large corporations nor specific industries, thus being generalizable to the entire salaried working population in the Spanish private sector. Consequently, we will shed some light on how personnel are

being managed, in terms of organisational strategies and HRM policies, across different activity sectors and types of organisations. This will specifically enable to learn whether organisations are embracing HPWS after the beginning of the crisis, possibly as a way to increase competitiveness, or drifting apart from them, conceivably as a consequence of the additional investment that they entail. In this sense, preliminary results show that selective hiring, extensive training, wide information-sharing and job security are more widespread among salaried workers in Spain in 2010 than they used to be four years before, whilst the opposite is true for contingent pay (Pruneda, 2015). This tendency may be construed as high-quality jobs having greater chances of survival in a context of economic downturn, given that job destruction has mainly affected low-skilled workers.

The next section contains a general overview of the existing literature on HPWS, paying special attention to HRM bundles. Section three establishes the objectives and research questions that we aim to answer in order to shed some light on the usage of this modality of personnel management in Spain. In section four, we describe our source of information and introduce the methodology that we use. We then present and discuss our results before, finally, concluding and suggesting some future lines of research.

## **2. LITERATURE REVIEW**

### **2.1. High-performance work systems**

In Spain, where economic and social change is patent, the relevance of employment changes needs analysing in detail. In this context, organisations must embrace workplace restructuring and job rationalisation in order to survive and grow in an environment of increasing competition. In an attempt to move faster towards what has been termed *knowledge-based economy*, some organisations opt to implement HPWS to benefit from a competitive advantage provided by highly qualified individuals who are motivated to develop and apply their knowledge (Huselid, 1995; Pfeffer, 1998; Appelbaum *et al.*, 2000; Boxall & Purcell, 2003). In connection with possessing the specific knowledge required to perform a job properly, Schmidt & Hunter (2004) noted that it has a positive impact on job performance. These two authors proved that higher levels of job knowledge lead to higher levels of job performance, while not knowing enough about the requirements of the job has a negative impact on job performance, concluding that job knowledge is a predictor of job performance (Hunter, 1986; Schmidt *et al.*, 1986).

Following a review of the literature, we can conclude that numerous studies have mainly focused in establishing the effects of HPWS on organisational outcomes. By analysing the relationship between these employment regimes and multiple measures of performance, many of these studies conclude that this type of personnel management is beneficial for organisations (Ichniowski *et al.*, 1997; Guerrero & Barraud-Didier, 2004; Combs *et al.*, 2006). Yet, it must be noted that some environments are better suited than others for the commitment model and that this organisational system promotes the development of skills and individual self-esteem (Walton, 1985).

However, research with a worker oriented approach, addressing the association between these managerial practices and the well-being of employees and their perceptions is not very common in the HPWS literature. In this respect, it is worth mentioning that opponents of high-performance workplaces (White *et al.*, 2003; Danford *et al.*, 2004, 2008, and 2009) suggest that, because individuals obviously have greater responsibilities, they may suffer from greater levels of work intensification, pressure, job insecurity and stress when compared to other employment regimes, damaging their well-being and thus negatively impacting their quality of working life (QWL).

On the contrary, while detractors of Fordism suggest the degradation of workers as a consequence of highly repetitive tasks, lack of employee participation and poor or inexistent career opportunities (Braverman, 1974; Form, 1987), hence constituting factors that negatively affect the QWL, advocates of HPWS go a step further and claim that this type of personnel management looks after the personal and professional development of individuals. They pose that these work management systems have positive effects in terms of job satisfaction or personal development (Guest, 1999 and 2002; Appelbaum *et al.*, 2000; Carr & Mellizo, 2013). In the same vein, Wood *et al.* (2012) find that job satisfaction mediates the relationship between enriched job design and firm performance, while Wood & De Menezes (2011) prove that enriched jobs are not only positively associated to job satisfaction but also with anxiety-contentment, while voice is with job satisfaction. Macky & Boxall (2007) offer empirical evidence on the positive association between HPWS and job satisfaction.

In essence, proponents of HPWS emphasise that individuals are encouraged and motivated to use their skills and acquire new ones within a framework of enhanced business awareness and discretion that facilitates their participation and increases their commitment, following the ability-motivation-opportunity (AMO) model used in

Appelbaum *et al.* (2000), which will be discussed next. As a result, higher levels of QWL are bound to emerge when compared to more traditional control-oriented employment regimes, such as Fordism, as a consequence of the changing nature of employment regimes.

Finally, we must also acknowledge the interesting research by an additional group of scholars who draw attention to the implications for workers being mixed or more complex than the commonly agreed presumptions (Godard, 2004). In this line, Ramsay *et al.* (2000) find that, even though high-performing workplaces do not necessarily entail the degradation of work, neither can we assume that high-performance management results in a win-win situation for both organisations and their staff.

## **2.2. The ability-motivation-opportunity framework and HRM bundles**

The AMO model posits that, in order for workers to achieve high job performance levels, they must possess the required skills to do the job (ability), they must be willing to do it (motivation) and the organisation needs to encourage and offer them the necessary support to perform their job (opportunity). In connection to the role of training on the improvement or acquisition of new skills, it is commonly agreed to be positive not only in terms of performance (Jones *et al.*, 2009), but also on human capital (Becker, 1962 and 1993).

This basic theoretical framework regarding the conceptualisation of what constitutes a performance-enhancing HR system is the above mentioned AMO model (MacDuffie, 1995; Appelbaum *et al.*, 2000; De Menezes & Wood, 2006; Wood & De Menezes, 2008; Subramony, 2009; Kroon *et al.*, 2013), based on an essentially universalist perspective<sup>1</sup> (Guest, 2011). The AMO model follows the assumption that HRM practices aimed at enhancing employees' commitment, involvement and performance yield synergistic effects when they are coherent and harmonious (MacDuffie, 1995; Shah & Ward, 2003; Subramony, 2009; De Menezes *et al.*, 2010), i.e. when they work together to reach a specific goal. In other words, by combining multiple complementary HRM best practices (Pfeffer, 1998; Marchington & Wilkinson, 2005), synergies between them emerge, thus enhancing their effects. Subsequently, the combined effect on performance will be superior to the sum of the individual effects as a consequence of such synergies (MacDuffie, 1995; Marchington & Wilkinson, 2005; Wood & De Menezes, 2008;

---

<sup>1</sup> There may be some exceptions to this, due to factors that may have an impact on the suitability of HRM practices - at least under some circumstances -, such as the type of organisation, the industry and the overall context where the company operates.

Subramony, 2009; De Menezes *et al.*, 2010). Hence, it makes sense to group them together into separate sets of HRM practices, based on the specific objective they pursue. In the literature, these sets of work management practices are usually referred to as HRM *bundles*. A bundle is an aggregate of different HRM practices that share a common goal. The logic behind bundles entails that practices within the same bundle are complementary and reinforce each other's effect, thus resulting in synergies that enhance their global effect on employee behaviour.

A common approach to HRM bundles in the literature entails considering that, in order to achieve higher levels of organisational performance through the discretionary effort of employees, HPWS must contain the three complementary dimensions embedded in the AMO model, each fostering a different HRM policy (MacDuffie, 1995; Appelbaum *et al.*, 2000; Subramony, 2009; Kroon *et al.*, 2013). First, employees need to possess and develop the necessary knowledge, skills and abilities to perform their job properly. Second, they must have their work acknowledged adequately and be effectively incentivised in order to achieve the goals set by the organisation. And third, the organisation has to provide the appropriate settings to facilitate worker participation. Thereby, complementarities among HRM bundles would yield synergistic effects that translate into an enhanced positive impact on organisational performance.

This positive linkage between performance and the configuration of HPWS based on HRM bundles is supported by a growing body of research (MacDuffie, 1995; Wood & De Menezes, 2008; Subramony, 2009; De Menezes *et al.*, 2010; Boxall *et al.*, 2011; Patel *et al.*, 2013). MacDuffie (1995) finds that flexible production plants with team-based work systems outperform mass production plants, also pointing out that interactions among bundles of practices further contribute to performance-enhancement. Wood and De Menezes (2008) show how, when considered individually, practices display a tendency to be unrelated to performance and there is lack of synergistic relationships, while they detect a relationship between high-involvement orientation and the level and change in labour productivity. Subramony (2009) concludes that HRM bundles are positively associated to business outcomes, having significantly larger effects than their constituent individual practices. De Menezes *et al.* (2010) state that multiple goals may be achieved by integrating HRM practices, thus resulting in superior firm performance. Boxall *et al.* (2011) establish that engagement and commitment levels are positively associated to performance, while Patel *et al.* (2013) prove that implementing a complementary set of

high-performance work practices (HPWP) positively contributes to develop the necessary flexibility to achieve firm growth, through efficiency and innovation.

Nevertheless, while positive effects on performance may be expected as a consequence of complementarities between HRM practices, such as selective hiring and extensive training, negative outcomes may be likely to emerge when two or more contradictory practices are implemented, such as fostering teamwork and individual performance based pay.

Regarding the specific bundles when following the AMO model, this translates into three separate yet complementary bundles that account for each of its three dimensions, thus obtaining the *ability bundle*, the *motivation bundle*, and the *opportunity bundle*. As for the selection of the individual practices, and even though the specific practices included in these bundles often differ across studies (Subramony, 2009; Posthuma *et al.*, 2013), there is a relatively widespread agreement on a number of them. In this sense, Pfeffer (1998) identifies the seven basic components that shape the systems that produce benefits through individuals: selective hiring (Combs *et al.*, 2006; Camps & Luna-Arocas, 2009), extensive training (Bansal *et al.*, 2001; Guerrero & Barraud-Didier, 2004; Ordiz & Fernández, 2005; Combs *et al.*, 2006; Camps & Luna-Arocas, 2009; Scheel *et al.*, 2013), wide information sharing on the organisation's performance and financial results (Bansal *et al.*, 2001; Guest, 2002; Combs *et al.*, 2006; Della Torre & Solari, 2011), comparatively high contingent pay based on organisational performance (Bansal *et al.*, 2001; Combs *et al.*, 2006; Camps & Luna-Arocas, 2009; Gkorezis & Petridou, 2012; Linz & Semykina, 2012; Scheel *et al.*, 2013), job security (Godard & Delaney, 2000; Bansal *et al.*, 2001; Rubenstein, 2001; Combs *et al.*, 2006; Jones *et al.*, 2009; Liu *et al.*, 2009; Messersmith & Guthrie, 2010; De Waal & Meingast, 2011; Thompson, 2011; Linz & Semykina, 2012; Wu *et al.*, 2013), self-managed teams and decentralization of decision making as the basic principles of organisational design (Bansal *et al.*, 2001; Gupta *et al.*, 2011; Hempel *et al.*, 2012), and reduction of status differences (Bansal *et al.*, 2001; Phillips *et al.*, 2009; Bendersky & Hays, 2012).

Fifteen years later, following an in-depth taxonomy of HPWP drawn from 193 peer-reviewed articles published along two whole decades, Posthuma *et al.* (2013) categorised



the seven components identified by Pfeffer (1998) as being either *core* or *broad* practices in terms of their adoption by organisations across five world regions<sup>2</sup>.

### **2.3. Additional considerations**

Even though a review of the literature points to HPWS benefitting firm performance (Wood, 2013), there are still multiple issues that need addressing more thoroughly. First, specific HPWP analysed vary from one study to another (Kroon *et al.*, 2013; Wood, 2013) and this variety across studies does not allow generalisation (Patterson *et al.*, 2010; Guest, 2011). Second, variables measuring outcomes not only vary from one study to another but additionally they are objective in some cases and subjective in others<sup>3</sup>, consequently leading to different results. Third, there is an over-sampling issue relative to manufacturing (Ichniowski *et al.*, 1997; Patterson *et al.*, 2010) and private sector organisations (Patterson *et al.*, 2010). Fourth, research design frequently suffers from single respondent bias and workers verdict is not often taken into account.

In connection to the issues introduced in the above paragraph, it must be said that simply studying the presence of practices can be misleading, ever since we will not be able to observe their impact on performance if they are not properly implemented. In this sense, Boxall *et al.* (2011) highlight how the gap between management rhetoric and reality is voiced in some research studies, with Wright & Nishi (2007) drawing attention to the existence of a gap between intention and reality. They propose that intended, actual and perceived HR practices do not necessarily match and that it is actually perceived HR practices that have an effect on employee behaviour, which is what ultimately shapes organisational performance. Meanwhile, Brewster *et al.* (2013) state that how employees perceive the practices impacts how they react, while highlighting the central role that line managers play as mediators of the relationship between HRM work practices and organisational performance. In addition, Alfes *et al.* (2013) establish that employee engagement is positively associated with perceived HRM practices, while Boon *et al.* (2011) find strong direct relationships between employee perceptions of HRM practices and employee outcomes.

---

<sup>2</sup> These authors rank as *core* those practices that show at the top of the list in terms of overall frequency, growing tendency and top-30 most frequently cited practices in at least four out of the five world regions considered, while by *broad* they refer to practices that are at the top of the list in terms of overall frequency and meet one of the two additional criteria.

<sup>3</sup> Quantifiable measures of performance such as financial performance, firm growth or retention rates, among others, are objective, while subjective measures refer mainly to perceptions of different indicators of performance by general managers, HRM managers or alike.

Meanwhile, Kehoe & Wright (2010), based on a survey to ten different categories of employees of a large service organisation, obtain that employees' perceptions of HPWS have a positive effect on both organisational citizenship behaviour and intent to remain with the organisation, and a negative effect on absenteeism. These effects are mediated by affective commitment to the organisation. It is precisely by adopting this type of approach that research can help clarifying the processes through which HPWS impact performance, thus shedding some light in what has been termed the *black box* regarding HPWS.

Summing up, whilst research has recurrently shown a connection between HPWS and firm performance, as well as numerous indications of these work practices playing a decisive role on job enrichment, there are still many concerns that must be overcome before we can assert, with no reservations, that HPWS do have a positive impact on organisational performance and employee QWL. In this sense, it is advisable to always bear in mind that the effectiveness of HPWS is subject to how they are perceived by workers, which in turn is dependent on an appropriate implementation. At the same time, it is essential to acknowledge and accept that some trade-offs might be required.

### **3. OBJECTIVE AND RESEARCH QUESTIONS**

So far, a great number of contributions on HPWS consist on case studies that analyse this modality of HRM within a single organisation and, when research has covered more than one organisation, they often operate in the same industry. However, we aim to expand the existing knowledge by covering the overall Spanish salaried employed population. In this sense, this work will constitute the first comprehensive study on the diffusion of HPWS in Spain, providing empirical evidence both in terms of their degree of implementation depending on the size of the organisation or industry and the typology of individuals under this type of HRM. In addition, special attention will be paid to changes after the beginning of the crisis.

Accordingly, we will see if HPWS in Spain are more widespread in large organisations than in small and medium enterprises (SMEs), as is the case in other countries (Lawler *et al.*, 1992; Osterman, 1994; Camps Torres & Luna Arocas, 2008; Sanchís Palacio & Campos Climent, 2010), or whether, on the contrary, their development in the latter has some relevance (Ordiz-Fuertes & Fernández-Sánchez, 2003; Kroon *et al.*, 2013), thus enabling for a nationwide study of HPWS in SMEs. The novelty in this regard is that, to the best of our knowledge, this has not been done yet, despite the high interest that it may

have given the structure of the Spanish labour market, where 99.9% of private enterprises are SMEs and 93.8 % are micro enterprises with less than ten workers in 2010 (Eurostat).

In terms of the industry, we will analyse whether HPWS in Spain are more frequent in manufacturing (Lawler *et al.*, 1992; Ordiz-Fuertes & Fernández-Sánchez, 2003) and financial (Sanchis Palacio & Campos Climent, 2010) organisations, as concluded by a considerable number of studies on this type of HRM (summary available in Wall & Wood, 2005).

On the other hand, it is necessary to embed this study within the current economic crisis. The Spanish labour market is undergoing profound changes as a result of the severe crisis, leading to the deterioration of the quality of employment. According to the Spanish Labour Force Survey, the massive job destruction has resulted in an unemployment rate of 26% in the first quarter of 2014. This accounts for 3.8 million jobs destroyed since the beginning of the crisis in 2007, when the employed population reached an all-time high of 20.8 million. Given the importance of employment from both an economic and a social perspective, it is of great interest to study the changes that may be taking place in the way that organisations manage their workforce with the backdrop of a change of cycle.

Assuming that the use of HPWS might be adversely affected by the current crisis as a consequence of the additional investment required, we will see to what extent this is actually the case or whether, on the contrary, there is an increase in the use of HRM bundles aimed at enhancing workers' ability, motivation and opportunities. In connection to this second possibility, Pruneda (2015) states that the proportion of employees affected by HPWP related to selective hiring, extensive training, wide information sharing and job security is higher in 2010 when compared to 2006, while in the case of contingent pay the opposite happens. He suggests that the reason behind this may be the fact that it is precisely better jobs that enjoy more chances of survival in a context of job destruction.

Based on both the theoretical and empirical contributions to the literature that point to the beneficial effects of HPWS, the relevance of this research paper is to study this type of personnel management in a context where budgetary allocations for R+D+i are being reduced and organisations might enhance competitiveness by increasing the efficiency of their HRM systems.

Drawn on the above reflections, the main objective of this paper is to provide a comprehensive study of HPWS in Spain based on the AMO framework, thus simultaneously considering three distinct HRM bundles aimed at enhancing workers'

ability, motivation and opportunity. This will allow identifying for the first time the group of individuals under this type of personnel management and establish which the main determinants of this modality of HRM are.

In order to achieve this objective, we propose the following research questions, **in terms of employees:**

*Research question 1: to establish the level of implementation of HPWS in the Spanish private sector in terms of organisational, job, and socio-economic characteristics, in order to define the profile of workers who are under this modality of HRM.*

*Research question 2: to examine if organisational features, such as industry and size, have a relevant incidence on HPWS in the Spanish private sector.*

*Research question 3: to determine which are the job characteristics contributing to a greater extent to the presence of HPWS in the Spanish private sector.*

*Research question 4: to learn which are the socio-economic features that display higher explanatory power in terms of HPWS in the Spanish private sector.*

The above research questions will be addressed considering the changes that may have taken place over the years 2006-2010.

By providing answers to the above research questions, our research will enable to establish what the panorama of HPWS in Spain is.

#### **4. DATA AND METHODOLOGY**

As a source of information, we will use the QLWS. Its geographical scope is the entire country and it covers persons aged 16 and older living in family households. It is a representative sample of the overall Spanish employed population, covering many aspects regarding working conditions, such as information about the position, work environment, labour relations, education and training, as well as attitudes, perceptions and opinions of individuals. Due to the objective of our research, we disregard workers in the public sector, in the agricultural industry, in the Armed Forces, as well as the self-employed and those who are over 64 years of age.

Thereby, the QLWS is an appropriate tool to address the research questions posed, providing solutions to various methodological criticisms concerning the study of HPWS. In this regard, it is worth mentioning the work by Wall & Wood (2005), who argue that

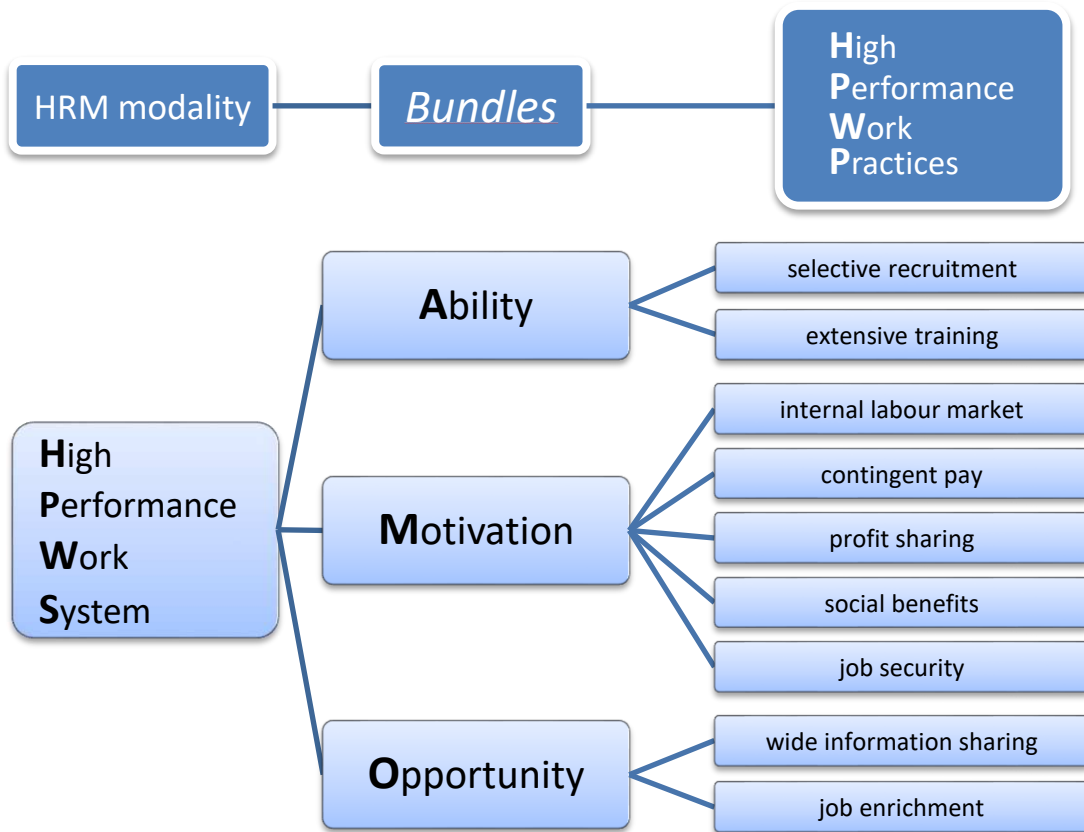
the findings in this field of HRM are inconclusive, due in part to the limitations of small-scale funding inherent to social science research, which means that results are restricted to certain types of companies or industries. These authors suggest that, in order to overcome this issue, it is necessary the collaboration of different stakeholders, such as academics, governments, business, workers and professional associations, so that their union allows for a quantitative approach by using a large sample. In this regard, it must be noted that our final sample contains information from a total of 9,086 employees, thus allowing for a quantitative approach.

Moreover, since data collected both before and after the beginning of the crisis is available, the QLWS offers an appropriate framework to monitor changes in the level of implementation of HPWS in the context of the Spanish economic retrenchment. In this sense, the waves of 2006 – containing 4,423 observations – and 2010 – the latest edition, containing 4,663 observations – will be used.

Additionally, being the unit of analysis workers themselves, their perceptions will be accounted for (Wright & Nishi, 2007; Kehoe & Wright, 2010; Alfes *et al.*, 2013; Brewster *et al.*, 2013), thus allowing for taking into consideration the *worker's verdict*. (Guest, 1999; Glover *et al.*, 2014).

As for the specific work management practices that will be used for our analyses, we will consider nine practices widely agreed to constitute HPWP, partially following Pfeffer (1998) and Posthuma *et al.* (2013). Regarding the grouping of such practices into distinct HRM bundles we will follow the AMO theoretical model. Graph 1 offers a visual representation of the composition of each bundle, while further details are presented in the Appendix. Gamma coefficients will be estimated so as to see the level of association between each pair of our three bundles. This will give us an idea about the consistency of our AMO bundles design, through the interrelationships among all three bundles.

As for the methodological approach, we will use these three bundles to build an additive index of HPWS. Additive indexes are commonly used in HPWS research (Guest, 1999; Kehoe & Wright, 2010; Patel *et al.*, 2013), constituting a straight forward means to measure the intensity of this type of management, ever since the higher the score, the greater the number of HPWP that are simultaneously implemented. In this study, we will use a dichotomous composite index so as to clearly differentiate between workers affected by HPWS from those who are not.

**Graph 1. HPWPs by HRM bundle**

Source: own elaboration from the literature on HPWS and *bundles*.

First, based on outcomes drawn from descriptive statistics, we will establish the scope of HPWS in Spain, through the simultaneous presence of HPWP comprised in each HRM bundle. Therefore, we will be able to analyse in which industries and types of organisations this form of personnel management is more widespread, as well as the typology of workers who are covered by it.

Next, logit models will be used to estimate the determinants of this modality of HRM, where the dependent variable will be the composite index measuring the simultaneous presence of each of the three HRM bundles. Independent variables will cover workers socio-economic features, as well as job and organisation characteristics. Also, in order to include the effects of the economic cycle, the annual regional unemployment rate will be included as an independent variable.

## 5. RESULTS AND DISCUSSION

### 5.1. Gamma coefficients

As we can see in Table 1, Gamma coefficients estimated for each pair of the three bundles range between 0.395 and 0.568, indicating high levels of positive association. These results indicate that the association between each pair of HRM bundles representative of the ability, motivation, and opportunity dimensions of HPWS is strong in both 2006 and 2010. In other words, this analysis supports the AMO framework as an appropriate approach to study HPWS.

**Table 1. HRM bundles based on the AMO model: Gamma coefficients**

2006	A	M	O	2010	A	M	O
A	-	0.5684	0.4358	A	-	0.4670	0.3950
M		-	0.4838	M		-	0.5073
O			-	O			-

ASE: all coefficients  $p < 0.05$

Source: own elaboration from the QLWS, waves 2006 and 2010.

### 5.2. Descriptive analysis

Table 2 contains the means of variables that measure different organisational, job and personal characteristics relative to workers who are simultaneously affected by ability-, motivation- and opportunity-enhancing HRM bundles, based on our methodological design. Additionally, Table 2 also includes the same information for those who are not affected by a HPWS, in order to offer a clear picture of the overall composition of the Spanish employed population.

It can be seen that, before the outbreak of the crisis, individuals under HPWS based on the AMO framework are mainly found in large organisations and in the manufacturing and other services industries, in line with the literature (Lawler *et al.*, 1992; Osterman, 1994; Ordiz-Fuertes & Fernández-Sánchez, 2003; Camps Torres & Luna Arocas, 2008; Sanchís Palacio & Campos Climent, 2010). In terms of job characteristics, this type of HRM is more widespread among employees with no subordinates; support technicians; full-timers; who usually work long hours; whose organisational tenure is of nearly ten years on average; whose monthly net income ranges from 1,200 to 2,100€; and non-union members. These features denote high quality jobs, especially given that the net monthly pay of over half of employees who are not affected by HPWS ranges from 600 to 1,200€.

**Table 2. Descriptive statistics**

Variables	HPWS (AMO)				NO HPWS (AMO)			
	2006		2010		2006		2010	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
<b>Size of the organisation (employees)</b>								
1 - 10	.097	.296	.131	.338	.328	.469	.335	.472
11 - 50	.189	.392	.194	.396	.242	.429	.254	.435
51 - 250	.171	.377	.194	.396	.151	.358	.161	.367
> 250	.543	.498	.480	.500	.279	.448	.250	.433
<b>Activity sector</b>								
Manufacturing	.259	.438	.258	.438	.245	.430	.200	.400
Construction	.105	.306	.082	.275	.137	.344	.106	.307
Trade	.144	.352	.153	.360	.175	.380	.183	.386
Transport	.063	.243	.035	.183	.066	.249	.054	.226
Hospitality	.046	.210	.066	.248	.086	.280	.103	.304
Health and education	.120	.325	.131	.337	.122	.328	.099	.299
Other services	.263	.440	.275	.447	.168	.374	.256	.436
<b>Job rank</b>								
Employee, no subordinates	.595	.491	.622	.485	.851	.356	.836	.370
Middle manager	.347	.476	.343	.475	.139	.346	.148	.355
Director	.058	.233	.035	.184	.010	.099	.016	.125
<b>Occupation</b>								
Directors	.067	.249	.094	.292	.017	.130	.025	.157
Technicians & scientific professionals	.171	.377	.159	.365	.069	.253	.081	.274
Support technicians	.263	.440	.254	.435	.119	.324	.138	.345
Administrative	.122	.327	.091	.288	.116	.321	.089	.285
Bars and restaurants staff	.109	.311	.146	.353	.182	.386	.221	.415
Craftsmen & qualified workers	.150	.357	.141	.349	.201	.401	.172	.378
Assemblers	.071	.256	.071	.257	.127	.334	.125	.330
Non-qualified workers	.048	.214	.044	.206	.167	.373	.148	.355
<b>Supervises</b>								
No	.626	.484	.668	.471	.887	.316	.863	.344
Yes	.374	.484	.332	.471	.113	.316	.137	.344
<b>Working day</b>								
Part-time	.073	.260	.092	.289	.174	.379	.189	.391
Full-time	.927	.260	.908	.289	.826	.379	.811	.391
<b>Long hours</b>								
Never	.224	.417	.240	.427	.383	.486	.333	.471
Occasionally	.260	.438	.524	.499	.238	.426	.453	.498
At least half of the days	.426	.495	.120	.325	.312	.463	.083	.276
Always	.090	.287	.115	.319	.068	.251	.130	.337
<b>Organisational tenure (years)</b>	9.902	9.715	11.189	9.816	6.966	8.764	8.010	8.685
<b>Monthly net income (€)</b>								
< 600	.029	.167	.021	.142	.145	.352	.110	.312
600 - 1,200	.332	.471	.340	.474	.592	.491	.518	.500
1,201 - 2,100	.455	.498	.467	.499	.227	.419	.332	.471
2,101 - 3,000	.146	.353	.127	.333	.026	.161	.030	.171
> 3,000	.039	.193	.045	.208	.009	.093	.011	.102
<b>Unionised</b>								
No	.781	.414	.800	.400	.852	.355	.860	.347
Yes	.219	.414	.200	.400	.148	.355	.140	.347
<b>Sex</b>								
Female	.292	.454	.338	.473	.440	.496	.463	.499
Male	.708	.454	.662	.473	.560	.496	.537	.499
<b>Country of birth</b>								
Abroad	.052	.221	.075	.264	.100	.301	.146	.353
Spain	.948	.221	.925	.264	.900	.301	.854	.353
<b>Age (years)</b>	37.490	1.278	38.961	1.157	36.962	11.480	39.101	1.655
<b>Education</b>								
< Secondary	.251	.434	.218	.413	.477	.499	.417	.493
Vocational training	.224	.417	.279	.449	.218	.413	.263	.440
Secondary	.133	.339	.137	.344	.147	.354	.137	.344
University	.392	.488	.366	.482	.158	.365	.183	.387
<b>NUTS 1 region</b>								
Northwest	.079	.271	.116	.320	.098	.297	.091	.288
Northeast	.109	.311	.118	.323	.107	.309	.107	.309
Madrid	.201	.401	.204	.403	.170	.376	.176	.381
Center	.070	.255	.091	.288	.090	.286	.108	.311
East	.370	.483	.319	.466	.311	.463	.310	.463
South & Canary Islands	.171	.376	.152	.359	.224	.417	.207	.406
Observations	771		978		3,470		3,525	
n (weighted)	1,948,156		2,339,719		9,329,199		8,095,064	

Source: own elaboration from the QLWS, waves 2006 and 2010.



As for the personal characteristic of employees who are subject to HPWS in Spain, men; those who were born in Spain; university graduates; people in their late thirties; and individuals who have their residence in the Mediterranean coast of the country, followed by those who live in Madrid, display the greatest frequencies. This profile indicates highly-qualified workers in the prime of their working life. Four years later, three into the crisis, the picture does not change considerably.

Nevertheless, there are some particular differences that need be acknowledged. First, both average age and organisational tenure increase. Second, differences according to the position in the hierarchy of the organisational structure increase, although the observed tendency remains the same, i.e. the lower the job rank the greater the share of employees under HPWS. This is also supported by an increase of the gap between supervisory and non-supervisory jobs. Third, by comparing 2006 and 2010 frequencies, we detect that differences decrease considerably between men and women, but also with regard to the size of the organisation, between full- and part-timers, and among regions. Finally, it is noticeable how HPWS in 2010 are more frequent for employees who work long hours occasionally.

However, even though men still outmatch women, it must be pointed out that the destruction of lower quality jobs, which primarily affected men and young workers, is behind a number of the above variations. This is supported by the data contained in Table 3, displaying the trend for both HPWS and non-HPWS workers along the years 2006-2010. It can be observed that the share of salaried employees in the private sector affected by HPWS in Spain rises from 17.27% in 2006 to 22.42% 2010. The figures for 2007, 2008 and 2009 are, respectively, 18.29%, 20.14% and 24.77%. What is really remarkable is that, behind this increase, there is more than the massive destruction of low quality jobs brought by the economic crisis. By weighting our data, it can be established that employed individuals under HPWS rose 20% along the years 2006-2010, while those who are not affected by this type of HRM decreased 13% in the same period<sup>4</sup>.

Consequently, not only our results mirror the destruction of lower quality jobs during the economic crisis, but they also indicate that HPWS are more widely spread among employees in the Spanish private sector during economic retrenchment, thus providing empirical support to the assumption that HPWS are stronger in difficult times and even

---

<sup>4</sup> As highlighted in the previous section, it must be noted that this study does not consider the whole employed population in Spain, since self-employed workers, the public sector, the agricultural industry, the Armed Forces, and those individuals over 64 years of age are excluded.

**Table 3. Evolution of private sector employees in Spain: HPWS vs non-HPWS (weighted data)**

	2006	2007	2008	2009	2010	
Total	11,277,356	11,844,222	11,876,220	10,317,209	10,434,783	
HPWS	1,948,156	2,166,176	2,391,676	2,555,338	2,339,719	
No HPWS	9,329,199	9,678,046	9,484,545	7,761,871	8,095,064	Total
Yes (annual variation)	-	0.112	0.104	0.068	-0.084	0.201
No (annual variation)	-	0.037	-0.020	-0.182	0.043	-0.132

Source: own elaboration from the QLWS, waves from 2006 to 2010.

contribute positively to job generation. These interesting outcomes allow answering the question in the title: this type of personnel management is fairly widespread in the Spanish private sector, and even more so three years into the crisis.

Nevertheless, despite the fact that there have been some variations in terms of employees under a high-performance managerial system along the period 2006-2010, the core characterisation of these workers when it comes to personal, job, and organisation features is practically identical. Hence, in order to answer the first research question, posing to establish the frequencies of HPWS workers in terms of organisational, job and personal features, the descriptive statistics analysed above confirm that this type of HRM is more often found in the manufacturing and services industries, as well as in larger organisations. In terms of the characteristics of the position itself, our results indicate relatively high quality jobs: salaries, qualification requirements and organisational tenure all above than average, and full time positions. Finally, the greatest share of HPWS in the Spanish private sector, regarding the socio-economic features of individuals, is found among men, workers in their late thirties, Spain-born employees, and highly educated people.

### 5.3. Logistic regression results

Table 4 contains the results of the two regressions performed, one with 2006 data, and the other with 2010 data. The dependent variable takes the value 1 if individuals are affected by a HPWS based on the AMO model according to our design. Otherwise its value will be zero. As we have seen in the previous section, the independent variables include a number of personal, job and organisation characteristics that may explain differences on the probability to be under a HPWS following the AMO approach. We use odds ratios to present our results in an orderly fashion to facilitate their interpretation, thus allowing us to quantify the increase or decrease in the probability of individuals being subject to HPWS, when compared to the category of reference.

**Table 4. Logistic regression results (2006 & 2010)**

Variables <sup>⌘</sup>	2006		2010	
	odds ratio	s.e.	odds ratio	s.e.
<b>Size of the organisation (CR: 1 - 10)</b>				
11 – 50	1.996*	.006	1.601*	.004
51 - 250	2.218*	.008	2.232*	.006
> 250	4.088*	.012	3.503*	.009
<b>Activity sector (CR: trade)</b>				
Manufacturing	1.077*	.003	1.083*	.003
Construction	1.123*	.005	.889*	.003
Transport	.639*	.003	.623*	.003
Hospitality	.953*	.005	1.057*	.004
Health and education	1.108*	.004	1.226*	.004
Other services	1.389*	.005	.929*	.003
<b>Job rank (CR: director)</b>				
Employee, no subordinates	1.117*	.009	1.265*	.009
Middle manager	.886*	.006	1.902*	.011
<b>Occupation (CR: directors)</b>				
Technicians & scientific professionals	.970*	.006	.503*	.002
Support technicians	1.489*	.009	.660*	.003
Administrative staff	1.354*	.009	.383*	.002
Bars & restaurants staff	1.194*	.008	.339*	.002
Craftsmen & qualified workers	.788*	.005	.296*	.001
Assemblers	.508*	.003	.209*	.001
Non-qualified workers	.508*	.004	.217*	.001
<b>Supervises (CR: no)</b>				
Yes	2.748*	.015	1.004	.005
<b>Working day (CR: part-time)</b>				
Full-time	1.064*	.004	1.102*	.003
<b>Long hours (CR: always)</b>				
Never	.922*	.004	1.280*	.004
Occasionally	1.314*	.005	1.387*	.004
At least half of the days	1.383*	.005	1.507*	.005
<b>Organisational tenure (years)</b>	1.071*	.000	1.083*	.000
<b>Monthly net income (€) (CR: 2,101 - 3,000)</b>				
< 600	.143*	.001	.158*	.001
600 - 1,200	.269*	.001	.483*	.002
1,201 - 2,100	.618*	.002	.586*	.002
> 3,000	.539*	.004	.980*	.006
<b>Unionised (CR: No)</b>				
Yes	1.074*	.003	1.025*	.002
<b>Sex (CR: female)</b>				
Male	1.686*	.004	1.613*	.003
<b>Country of birth (CR: abroad)</b>				
Spain	.961*	.004	1.289*	.004
<b>Age (years)</b>	.992*	.001	.907*	.001
<b>Education (CR: &lt; Secondary)</b>				
Vocational training	1.376*	.004	1.085*	.003
Secondary	.972*	.003	1.165*	.004
University	1.792*	.006	1.352*	.004
<b>NUTS 1 region (CR: centre)</b>				
Northwest	.974*	.005	1.692*	.007
Northeast	.947*	.004	2.085*	.018
Madrid	1.055*	.004	1.037*	.004
East	1.310*	.005	1.166*	.004
South & Canary Islands	1.087*	.006	.692*	.004
Observations	4,167		4,503	
* p<0.01				
⌘ Other variables that have been controlled for include professional association membership, regional unemployment rate, personal status, and children.				

Source: own elaboration from the QLWS, waves 2006 and 2010.

In reference to the characteristics of the organisation, our results show that its size is positively related to HPWS. As a matter of fact, it is the variable with the greatest influence on the probability of employees being affected by HPWS, since this probability is 4 times larger for individuals in large organisations employing more than 250 people when compared to those that have between one and ten workers. This is in line with the

descriptive statistics described in the previous section and with a large body of literature on HPWS (Lawler *et al.*, 1992; Osterman, 1994; Camps Torres & Luna Arocas, 2008; Sanchís Palacio & Campos Climent, 2010). As for the activity sector, our results again support those studies concluding that this type of HRM can be mainly found in the manufacturing and services industries (Lawler *et al.*, 1992; Ordiz-Fuertes & Fernández-Sánchez, 2003; Sanchis Palacio & Campos Climent, 2010), as well as those in the construction sector.

Given the pronounced importance of this sector in the booming Spanish economy, as well as its peculiarities, we removed the construction industry and performed an additional regression with 2006 data. Thereby, we observed that it was manufacturing and service workers whose probability of being under HPWS was highest.

As for the job characteristics, the probability of being affected by HPWS is greater for employees with no subordinates, support technicians, workers who supervise others, who do long hours – although not always –, who have been in the organisation for some time, those whose monthly net income ranges between 2,101 and 3,000€, well above the national average, and union members.

If we look now at the personal characteristics of employees in HPWS, our results point towards men, people born in Spain<sup>5</sup>, university graduates and, to a lesser extent, individuals with vocational training studies, and employees in the East region of the country, by the Mediterranean.

As we did when we commented on the descriptive statistics, we must add now that the characterisation of HPWS workers does not entail major changes if we compare the results based on 2010 data with those on 2006 data. However, we must again highlight some differences. First, health and education workers have the highest probability to be affected by HPWS, followed by those in manufacturing. This is not a major change given that, after all, both health and education are embedded in the services sector. Second, middle management overcomes employees with no subordinates in terms of their likelihood to be under that type of HRM in 2010, while in terms of the occupation it is directors who show the greatest probability. Third, employees in the Northeast region of Spain display the highest probability to work under a HPWS. This region includes the Basque Country and

---

<sup>5</sup> Whereas it is true that the 2006 odds ratio is below one, the results obtained by performing the regression after excluding construction workers show an odds ratio above one: 1.091 (s.e.= .005). This may be explained by considering that workers in the construction sector enjoyed really advantageous conditions before the crisis. Results of this additional regression are available upon request to the author.

Navarra, the two autonomous communities with the highest income per capita in the country (Eurostat). Fourth, the explanatory power of the size of the organisation, monthly net income and unionisation diminishes, while that of the modality of working day, job tenure and age increases.

In summary, the results obtained through the statistical analysis offer the answers to our second, third, and fourth research questions. The second research question posed the organisational features that influence the usage of HPWS in the Spanish private sector. Our results support previous findings that it is large organisations (Lawler *et al.*, 1992; Osterman, 1994; Camps Torres & Luna Arocas, 2008; Sanchís Palacio & Campos Climent, 2010) and the manufacturing (Lawler *et al.*, 1992; Ordiz-Fuertes & Fernández-Sánchez, 2003) and services (Sanchis Palacio & Campos Climent, 2010) sectors. The third research question proposed to investigate the job characteristics shared by those positions affected by HPWS. Our results show that they point in the direction of high quality jobs. The fourth research question set out to learn which socio-economic features are more likely to be present in individuals under HPWS. Our results show that this modality of HRM is more likely to be addressed to highly-qualified individuals at the peak of their career (Huselid, 1995; Pfeffer, 1998; Appelbaum *et al.*, 2000; Boxall & Purcell, 2003).

## **6. CONCLUSIONS AND RESEARCH CHALLENGES**

After more than three decades of research on performance-enhancing organisations, “many of the basic questions remain the same and [...] we are in no position to assert [...] that good HRM has a positive effect on organisation performance” (Guest, 2011: 11). However, we cannot ignore the fact that, even so, the use of personnel management that enhances employee involvement may be an end in itself, for it may be a legitimate means of providing justice and equality of opportunity (Wall & Wood, 2005), hence warranting further investigation.

The objective of this study was to establish the level of implementation and the determinants of HPWS in the Spanish private sector, in terms of salaried employees, as well as identifying the changes after three years of economic retrenchment. Following the AMO model and leaning on a methodological design based on HRM bundles, we used data drawn from the QLWS, a representative sample of the entire employed population in Spain, and delivered two types of relevant contributions.

First, we have found that HPWS primarily affect highly qualified workers, both in terms of education and experience. These individuals hold well-paid high quality jobs and they are to be mainly found in the manufacturing and services industries, in terms of the activity sector, and in large organisations, in terms of size. These results are in accordance to the literature, considering that they match the profile of individuals who these work management systems need addressing if they are to be effective (Huselid, 1995; Pfeffer, 1998; Appelbaum *et al.*, 2000; Boxall & Purcell, 2003).

Second, by using the 2006 and 2010 waves of the QLWS, we were able to approach the evolution of HPWS among salaried employees in the Spanish private sector in the context of the changing economic cycle. In this sense, our results show that, while low quality jobs are destroyed, high quality jobs under HPWS are created, rising from 17.3% to 22.4% throughout the period 2006-2010. Therefore, not only the level of implementation of this modality of HRM is far from negligible, but in fact jobs affected by this modality of personnel management seem to resist the crisis much better than jobs that are not indicative of HPWS. This is an extremely important strength in terms of employment security that needs to be studied by future research, since it may imply that such HRM systems are able to fight turbulent times more effectively, thus entailing a win-win situation for both organisations and workers in terms of employment security and economic growth.

Finally, the picture of HPWS in Spain provided by this study may serve as a starting point to study the relationship between the implementation of this type of HRM and different measures of organisational performance, such as profitability, labour productivity, turnover or absenteeism. Without ignoring the possibility of HPWS entailing negative effects on worker QWL, such as work intensification and higher levels of stress, our research provides a useful framework for analysing how different levels of implementation of HPWS, which relationship with higher performing organisations has been demonstrated on numerous occasions, influence the levels of motivation and satisfaction of individuals and their involvement with the organisation.

## BIBLIOGRAPHY

- Alfes, K., Shantz, A.D., Truss, C. & Soane, E.C. (2013) 'The link between perceived HRM practices, engagement and employee: a moderated mediation model' *The International Journal of Human Resource Management*, 24(2), pp. 330-351.
- Appelbaum, E., Bailey, T., Berg, P. & Kalleberg, A.L. (2000) *Manufacturing advantage: why high-performance work systems pay off*. Ithaca, NY: Cornell University Press.
- Bansal, H.S., Mendelson, M.B. & Sharma, B. (2001) 'The impact of internal marketing activities on external marketing outcomes' *Journal of Quality Management*, 6, pp. 61-76.
- Becker, G.S. (1962) 'Investment in human capital: a theoretical analysis' *Journal of Political Economy*, 70(5) Part 2, pp. 9-49.
- Becker, G.S. (1993) *Human capital: A theoretical and empirical analysis, with special reference to education*. 3<sup>rd</sup> edition. Chicago: University of Chicago Press.
- Bendersky, C. & Hays, N.A. (2012) 'Status conflict in groups' *Organization Science*, 23(2), pp. 323-340.
- Boon, C., Den Hartog, D.N., Boselie, P. & Paauwe, J. (2011) 'The relationship between perceptions of HR practices and employee outcomes: examining the role of person-organisation and person-job fit' *The International Journal of Human Resource Management*, 22(1), pp. 138-162.
- Boxall, P.F. & Purcell, J. (2003) *Strategy and human resource management*. Basingstoke, UK: Palgrave Macmillan.
- Boxall, P., Ang, S.H. & Bartram, T. (2011) 'Analysing the 'black box' of HRM: uncovering HR goals, mediators and outcomes in a standardized service environment' *Journal of Management Studies*, 48(7), pp. 1504-1532.
- Braverman, H. (1974) *Labor and monopoly capital: The degradation of work in the twentieth century*. NY: Monthly Review Press.
- Brewster, C., Gollan, P.J. & Wright, P.M. (2013) 'Guest editor's note: human resource management and the line' *Human Resource Management*, 52(6), pp. 829-838.
- Camps Torres, J. & Luna Arocas, R. (2008) 'Prácticas de alto rendimiento: un contexto estratégico estructural' *Cuadernos de Economía y Dirección de la Empresa*, 35, pp. 113-138.
- Camps, J. & Luna-Arocas, R. (2009) 'High involvement work practices and firm performance' *The International Journal of Human Resource Management*, 20(5), pp. 1056-1077.
- Carr, M.D. & Mellizo, P. (2013) 'The relative effect of voice, autonomy and the wage on satisfaction with work' *The International Journal of Human Resource Management*, 24(6), pp. 1186-1201.
- Combs, 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, pp. 501-528.

- Danford, A., Richardson, M., Stewart, P., Tailby, S. & Upchurch, M. (2004) 'High performance work systems and workplace partnership: a case study of aerospace workers' *New Technology, Work and Employment*, 19(1), pp. 14-29.
- Danford, A., Richardson, M., Stewart, P., Tailby, S. & Upchurch, M. (2008) 'Partnership, high performance work systems and quality of working life' *New Technology, Work and Employment*, 23(2), pp. 151-166.
- Danford, A., Durbin, S., Richardson, M., Tailby, S. & Stewart, P. (2009) 'Everybody's talking at me': the dynamics of information disclosure and consultation in high-skill workplaces in the UK' *Human Resource Management Journal*, 19(4), pp. 337-354.
- De Menezes, L.M. & Wood, S. (2006) 'The reality of flexible work systems in Britain' *International Journal of Human Resource Management*, 17(1), pp. 106-138.
- De Menezes, L.M., Wood, S. & Gelade, G. (2010) 'The integration of human resource and operation management practices and its link with performance: a longitudinal latent class study' *Journal of Operations Management*, 28, pp. 455-471.
- De Waal, A. & Meingast, A. (2011) 'High performance in the temping industry'. The Maastricht School of Management, Working Paper No. 2011/11.
- Della Torre, E. & Solari, L. (2013) 'High-performance work systems and the change management process in medium-sized firms' *The International Journal of Human Resource Management*, 24(13), pp. 2583-2607.
- Form, W. (1987) 'On the degradation of skills' *Annual Review of Sociology*, 13, pp. 29-47.
- Gkorezis, P. & Petridou, E. (2012) 'The effect of extrinsic rewards on public and private sector employees' psychological empowerment: A comparative approach' *The International Journal of Human Resource Management*, 23(17), pp. 3596-3612.
- Glover, I., Tregaskis, O., and Butler, P. (2014) "Mutual gains? The workers' verdict: a longitudinal study" *The International Journal of Human Resource Management*, 25(6), pp. 895-914.
- Godard, J. (2004) 'A critical assessment of the high-performance paradigm' *British Journal of Industrial Relations*, 42(2), pp. 349-378.
- Godard, J. & Delaney, J.T. (2000) 'Reflections on the 'High Performance' paradigm's implications for Industrial Relations as a field' *Industrial and Labor Relations Review*, 53(3), pp. 482-502.
- Guerrero, S. & Barraud-Didier, V. (2004) 'High-involvement practices and performance of French firms' *International Journal of Human Resource Management*, 15(8), pp. 1408-1423.
- Guest, D. (2002) 'Human resource management, corporate performance and employee well-being: building the worker into HRM' *The Journal of Industrial Relations*, 44(3), pp. 335-358.
- Guest, D.E. (1999) 'Human resource management - the workers' verdict' *Human Resource Management Journal*, 9(3), pp.5-25.
- Guest, D.E. (2011) Human resource management and performance: still searching for some answers *Human Resource Management Journal*, 21(1): 3-13.
- Gupta, V.K., Huang, R. & Yayla, A.A. (2011) 'Social capital, collective transformational leadership, and performance: a resource-based view of self-managed teams' *Journal of Managerial Issues*, 23(1), pp. 31-45.



- Hempel, P.S., Zhang, Z & Han, Y. (2012) 'Team empowerment and the organizational context: decentralization and the contrasting effects of formalization' *Journal of Management*, (38)2, pp. 475-501.
- Hunter, J.E. (1986) 'Cognitive ability, cognitive aptitudes, job knowledge and job performance' *Journal of Vocational Behavior*, 29(3), pp. 340-362.
- Huselid, M.A. (1995) 'The impact of human resource management practices on turnover, productivity and corporate financial performance' *Academy of Management Journal*, 38(3), pp. 635-672.
- Ichniowski, C., Shaw, K. & Prennushi, G. (1997) 'The effects of HRM practices on productivity: a study of steel finishing lines' *The American Economic Review*, 87(3), pp. 291-313.
- Jones, M.K., Jones, R.J., Latreille, P.L., & Sloane, P.J. (2009) 'Training, job satisfaction and workplace performance in Britain: Evidence from WERS 2004' *Labour*, 23(1), pp. 139-175.
- Kehoe, R.R. & Wright, P.M. (2010) 'The impact of high-performance human resource practices on employees' attitudes and behaviours' *Journal of Management*, 39(2), pp. 366-391.
- Kroon, B., Van de Voorde, K. & Timmers, J. (2013) 'High performance work practices in small firms: a resource-poverty and strategic decision-making perspective' *Small Business Economics*, 41, pp. 71-91.
- Lawler, E., Mohrman, S. & Ledford, G. (1992) *Employee involvement and total quality management: practices and results in Fortune 1000 companies*. San Francisco: Jossey-Bass.
- Linz, S.J. & Semykina, A. (2012) 'What makes workers happy? Anticipated rewards and job satisfaction' *Industrial Relations*, 51(4), pp. 811-844.
- Liu, W., Guthrie, J.P., Flood, P.C. & MacCurtain, S. (2009) 'Unions and the adoption of high performance work systems: does employment security play a role?' *Industrial and Labor Relations Review*, 63(1), pp. 109-127.
- MacDuffie, J.P. (1995) 'Human resource bundles and manufacturing performance: organizational logic and flexible production systems in the world auto industry' *Industrial and Labor Relations Review*, 48(2), pp. 197-221.
- Macky, K. & Boxall, P. (2007) 'The relationship between 'high performance work practices' and employee attitudes: an investigation of additive and interaction effects' *International Journal of Human Resource Management*, 18(4), pp. 537-567.
- Marchington, M. & Wilkinson, A. (2005) 'High commitment HRM and performance' In: Marchington, M., Wilkinson, A. & Sargeant, M. (eds.) *Human Resource Management at work: people management and development*, pp. 71-98. London: The Chartered Institute of Personnel and Development.
- Messersmith, J.G. & Guthrie, J.P. (2010) 'High performance work systems in emergent organizations: implications for firm performance' *Human Resource Management*, 49(2), pp. 241-264.
- Ordiz, M. & Fernández, E. (2005) 'Influence of the sector and the environment on human resource practices' effectiveness' *International Journal of Human Resource Management*, 16(8), pp. 1349-1373.

- Ordiz-Fuertes, M. & Fernández-Sánchez, E. (2003) 'High-involvement practices in human resource management: concept and factors that motivate their adoption' *The International Journal of Human Resource Management*, 14(3), pp. 511-529.
- Osterman, P. (1994) 'How common is workplace transformation and who adopts it?' *Industrial and Labor Relations Review*, 47(2), pp. 173-188.
- Patterson, M., Rick, J., Wood, S., Carroll, C., Balain, S. & Booth, A. (2010) 'Systematic review of the links between human resource management practices and performance' *Health Technology Assessment*, 14(51).
- Patel, P.C., Messersmith, J.G. & Lepak, D.P. (2013) 'Walking the high-trope: an assessment of the relationship between high-performance work systems and organisational ambidexterity' *Academy of Management Journal*, 56(5), pp. 1420-1442.
- Pfeffer, J. (1998) 'Seven practices of successful organizations' *California Management Review*, 40(2), pp. 96-124.
- Phillips, K.W., Rothbard, N.P. & Dumas, T.L. (2009) 'To disclose or not to disclose? Status distance and self-disclosure in diverse environments' *Academy of Management Review*, 34(4), pp. 710-732.
- Posthuma, R.A., Campion, M.C., Masimova, M. & Campion, M.A. (2013) 'A high performance work practices taxonomy: integrating the literature and directing future research' *Journal of Management*, 39(5), pp. 1184-1220.
- Pruneda, G. (2015) 'Implementation of high-performance work practices in the Spanish private sector: stronger or weaker during economic downturn?' *Evidence-based HRM: a Global Forum for Empirical Scholarship*, 3(2), pp. 159-180.
- Ramsay, H., Scholarios, D. & Harley, B. (2000) 'Employees and high-performance work systems: testing inside the black box' *British Journal of Industrial Relations*, 38(4), pp. 501-531.
- Rubenstein, S. (2001) 'Unions as value-adding networks: possibilities for the future of U.S. unionism' *Journal of Labor Research*, 22(3), pp. 581-98.
- Sanchís Palacio, J.R. & Campos Climent, V. (2010) 'Las prácticas de RR.HH. de alto rendimiento y su relación con el comportamiento estratégico y organizativo de la empresa. El caso de las entidades de crédito españolas' *Dirección y Organización*, 40, pp. 67-77.
- Scheel, T.E., Rigotti, T. & Mohr, G. (2013) 'HR practices and their impact on the psychological contracts of temporary and permanent workers' *The International Journal of Human Resource Management*, 24(2), pp. 285-307.
- Schmidt, F.L. & Hunter, J. (2004) 'General mental ability in the world of work: occupational attainment and job performance' *Journal of Personality and Social Psychology*, 86(1), pp. 162-173.
- Schmidt, F.L., Hunter, J.E. & Outerbridge, A.N. (1986) 'Impact of job experience and ability on job knowledge, work sample performance and supervisory ratings of job performance' *Journal of Applied Psychology*, 71(3), pp. 432-439.
- Shah, R. & Ward, P.T. (2003) 'Lean manufacturing: context, practice bundles and performance' *Journal of Operations Management*, 21, pp. 129-149.

- Subramony, M. (2009) 'A meta-analytic investigation on the relationship between HRM bundles and firm performance' *Human Resource Management*, 48(5), pp. 745-768.
- Taylor, F.W. (1911) *The Principles of Scientific Management*. NY: Harper & Brothers.
- Thompson, P. (2011) 'The trouble with HRM' *Human Resource Management Journal*, 21(4), pp. 355-367.
- Wall, T.D. & Wood, S.J. (2005) 'The romance of human resource management and business performance, and the case for big science' *Human Relations*, 58(4), pp. 429-462.
- Walton, R.E. (1985). 'From control to commitment in the workplace'. *Harvard Business Review*, March-April, pp. 77-84.
- White, M., Hill, S., McGovern, P., Mills, C. & Smeaton, D. (2003) 'High-performance' management practices, working hours and work-life balance' *British Journal of Industrial Relations*, 41(2), pp. 175-195.
- Wood, S. (2013) 'HRM, organisational performance and employee involvement' In: Frege, C. & Kelly, J. (eds.) *Comparative Employment Relations in the Global Economy*. Abingdon, Oxfordshire, UK: Routledge.
- Wood, S. & De Menezes, L.M. (2008) 'Comparing perspectives on high involvement management and organizational performance across the British economy' *International Journal of Human Resource Management*, 19(4), pp. 639-682.
- Wood, S. & De Menezes, L.M. (2011) 'High involvement management, high performance work systems and well-being' *International Journal of Human Resource Management*, 22(7), pp. 1586-1610.
- Wood, S., Van Veldhoven, M., Croon, M. & De Menezes, L.M. (2012) 'Enriched job design, high involvement management and organizational performance: the mediating roles of job satisfaction and well-being' *Human Relations*, 65(4), pp. 419-446.
- Wright, P.M. & Nishii, L.H. (2007) 'Strategic HRM and organizational behavior: Integrating multiple levels of analysis' *CAHRS Working Paper #07-03*. Ithaca, NY: Cornell University, School of Industrial and Labor Relations, Center for Advanced Human Resource Studies, <http://digitalcommons.ilr.cornell.edu/cahrswp/468>.
- Wu, N., Bacon, N. & Hoque, N. (2013) 'The adoption of high performance work practices in small businesses: the influence of markets, business characteristics and HR expertise' *The International Journal of Human Resource Management*, 25(8), pp. 1149-1169.

**Appendix.** Variables used to build the composite index (dependent variable).

HRM bundle	HPWP	Variable	Values	(n)	Measured originally
ABILITY	Selective recruitment	<i>skills utilisation</i>	0: no; 1: yes	9,086	Job is in line with training
		<i>academic education very useful</i>	0: no; 1: yes	9,080	Degree (0-10) of usefulness of academic education to the current job
	Extensive training*	<i>training ≥ 20 hours</i>	0: no; 1: yes	8,570	Total number of hours that worker has participated in training provided by the organisation
		<i>training always during working day</i>	0: no; 1: yes	8,574	Worker has participated in training during working hours
MOTIVATION	Internal labour market	<i>possibilities of promotion</i>	0: null / low; 1: (very) high	8,202	Satisfaction (0-10) with possibilities of promotion
	Contingent pay	<i>performance-based pay (monthly net income ≥ 1,200€)</i>	0: no; 1: yes	3,692	Job income includes variable component based on sales or performance and monthly net income is at least 1,200€
	Profit sharing	<i>share in profits</i>	0: no; 1: yes	9,086	Worker is entitled to profit sharing
	Social benefits	<i>social benefits</i>	0: no; 1: yes	9,086	Social benefits worker is entitled to
	Job security	<i>permanent</i>	0: no; 1: yes	9,086	Employment contract is open-ended
OPPORTUNITY	Wide information sharing	<i>knows the organisational hierarchical structure very well</i>	0: null / low; 1: (very) high	9,086	Degree of knowledge (0-10) with regard to the structure of the organisation
		<i>knows the objectives of the organisation very well</i>	0: null / low; 1: (very) high	9,086	Degree of knowledge (0-10) with regard to the objectives of the organisation
	Job enrichment	<i>teamworking</i>	0: no; 1: yes	9,086	Works as part of a team
		<i>autonomy</i>	0: null / low; 1: (very) high	9,086	Satisfaction (0-10) with level of autonomy/independence
		<i>decision making</i>	0: null / low; 1: (very) high	8,806	Satisfaction (0-10) with participation in decisions over tasks performed
		<i>realisation</i>	0: null / low; 1: (very) high	9,086	Satisfaction (0-10) with personal development (realisation)

	HPWP	Other variables used	Values	(n)	Measured originally
ABILITY	Extensive training*	<i>training provided by the organisation</i>	0: no; 1: yes	8,574	Organisation offers training activities
		<i>participation in training activities</i>	0: no; 1: yes	8,574	Worker has participated in training activities provided by the organisation
MOTIVATION	Contingent pay	<i>performance-based pay</i>	0: no; 1: yes	9,086	Job income includes variable component based on sales or performance

\* Referred to the previous 12 months.