

**The effects of high-performance work systems on hospital employees'
work-related well-being: Evidence from Greece**

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Abstract

Following an employee-centric approach and based on the social and economic exchange theories, this study examines the effects of High Performance Work Systems (HPWS) on employees' work-related well-being, such as emotional exhaustion, work engagement and consequently their job satisfaction. Partial Least Squares (PLS) Structural Equation Modeling (SEM) was used on a sample of 297 clinicians (doctors, and nurses) across seven Greek regional hospitals. The findings demonstrated that the HPWS effects on employee outcomes can be influenced by their perceived nature of the exchange relationship with their employers. Specifically, it was indicated that if employees perceive their relationship with the hospitals as a social exchange, emotional exhaustion tends to decrease. On the other hand, an economic exchange relationship decreases the possibility that HPWS leads to work engagement. Last but not least, employees' job satisfaction was negatively associated with emotional exhaustion, and positively with work engagement. Finally, implications are drawn for the management of employees in the healthcare sector.

Keywords: Burnout; Greece; health care; high performance work systems; HPWS; job satisfaction; well-being

1. Introduction

During the past 20 years, there has been a great deal of debate regarding the appropriate human resource (HR) practices that should be used in an organization in order to lead to workers' prosperity and well-being and consequently to greater efficiency and increased financial performance for the organizations. The most common term characterizing such a relationship is known as High Performance Work Systems (HPWS), also referred to as High Performing Work Practices (HPWPs), High Involvement Management (HIM; Lawler, 1986) and High Commitment Management (HCM; Walton, 1985). It should be noted, however, that the latter notions (HIM and HCM) are not equivalent to HPWS (Boxall and Macky, 2009), which encompasses both the high-commitment and involvement elements and is thus broader in scope in emphasizing the competitive advantage gained by such human resource practices (Zacharatos et al., 2005, p. 77).

High Performance Work Systems (HPWS) have been defined as 'a specific combination of HR practices, work structures, and processes that maximizes employee knowledge, skill, commitment, and flexibility' (Bohlander and Snell, 2007, p. 690). One significant aspect of this definition is the reference to the 'system' approach or 'bundles of practices' and not to isolated individual practices, since HPWS is composed of many interrelated parts that complement one another to align with the goals of an organization.

The usefulness of HPWS can be explained by Datta et al. (2005, p. 136) argument that HPWS enhances employees' skills, commitment, and productivity in such a way that employees become a source of sustainable competitive advantage, as opposed to individual HR practices. Indeed, there is a dominant view nowadays that success in markets is largely derived from a firm's Human Resources (HR), as HR are one of the most important resources to generate a firms' competitive advantage (Zhang and Morris, 2014, p. 84). This concept is also known as the Resource Based View (RBV) of the firm (Barney, 1991). According to the RBV,

resources which are *valuable*, *rare*, *inimitable* and *non-substitutable* can provide sources of sustainable competitive advantages (Boxall, 1996, p. 65), not only through developing a unique and valuable human capital pool, but also by providing firms with both increased fit and flexibility (Delery, 1998, p. 290).

Although across the Human Resource Management (HRM) literature HPWS has been generally related with increased productivity, organizational performance, and reduced turnover (e.g., Huselid, 1995; Delery and Doty, 1996; Delaney and Huselid, 1996; Ichniowski and Shaw, 1999; Datta et al., 2005; Messersmith and Guthrie, 2010; Torre and Solari, 2012), there is still a gap in the literature as to what practices and in what patterns they can promote performance, and, additionally, what is the mechanism through which HRM practices (such as HPWS) influence performance (Takeuchi et al., 2007, p. 1069; Zhang and Morris, 2014, p. 69)?

Regarding the latter question, the mechanism driving the HRM—organizational performance relationship is still in need of further exploration, and is often referred to as the ‘black box’ (Kinnie et al., 2005; Becker and Huselid, 2006; Sels et al., 2006; Messersmith et al., 2011). Overall, the basic concept behind these systems is that organizational performance does not stem from the HR practices themselves but rather from the contribution that these HR practices make regarding employees’ attitudes and behaviors (Delery, 1998; Messersmith et al., 2011), which in turn serve as mediators in the HPWS—organizational performance relationship (Purcell and Kinnie, 2007; Takeuchi et al., 2007, p. 1069).

Last but not least, one major drawback regarding the HPWS approach concerns the little agreement as to the exact ‘best’ practices that constitute a HPWS (Delery, 1998, p. 296; Boxall, 2012), although some researchers have tried to overcome this issue. For instance, Appelbaum et al. (2000) proposed the *Ability, Motivation, and Opportunities* (AMO) framework, and argued that performance should be a function of three factors known as Ability (skills,

experience, knowledge), Motivation (to apply abilities – both financial and intrinsic), and Opportunities (to engage in discretionary behavior). Similarly, Lepak et al. (2006) summarized the HRM practices used in previous empirical studies into three groups of activities, namely employee skills, motivation and empowerment.

Following these critiques, although the argument that HPWS has a positive effect on organizational performance and productivity is well established, there are considerably fewer studies that examine the positive effects of HPWS specifically on employees' job attitudes and outcomes (Appelbaum et al., 2000; Macky and Boxall, 2007; Takeuchi et al., 2009; Zhang and Morris, 2014). Indeed, employee outcomes have been either neglected (Edwards and Wright, 2001; Chow, 2003; Purcell and Kinnie, 2007; Jensen et al., 2013) or have been simply used as mediators between HPWS and organizational effectiveness (Boselie et al., 2005; Paauwe and Boselie 2005; Katou and Budhwar, 2006; Sun et al., 2007; Katou and Budhwar, 2010). Thus, many researchers call for more employee-centered research, in order to restore the effects of HRM on employee outcomes to a central position of HPWS studies (Boselie et al., 2005; Ang et al., 2013; Zhang et al., 2013; Van De Voorde and Beijer, 2015), and to focus on the processes that help to explain how HPWS influences health-related outcomes (Van De Voorde and Beijer, 2015, p. 62).

Taking the preceding discussion into consideration, and following Zhang et al. (2013) research, in this study we follow an 'employee-centric standpoint' and examine the employee outcomes of HPWS in the Greek healthcare context. Specifically, based on the social exchange theory, we examine whether the nature of the employer and employee relationship (social or economic exchange) can moderate employees' work-related well-being, burnout and consequently their job satisfaction. To our knowledge, there are only a few studies examining the HPWS effects on employees' outcomes in the healthcare sector, such as well-being (Weinberg et al., 2012), and burnout (Bartram et al., 2012; Ang et al., 2013; Zhang et al., 2013;

Fan et al., 2014), suggesting a negative association between HPWS, burnout, and consequently on intention to leave.

The paper is organized as follows. The next section provides an overview of the Greek context. In the following section, we present the theoretical framework of the study and stipulate the research hypotheses. In the third section, we present the methodological concerns of the study. The fourth section outlines the main findings of the empirical investigation. Finally, in the last part of the study we discuss the most important conclusions, along with the managerial implications for research and practice.

2. The Greek context

Despite the vast amount of empirical studies supporting the overall positive effects of HPWS, one significant issue prohibiting generalizations of these findings concerns the existing differences between different contexts and countries. As noted by Brewster et al. (2008), employment systems and structures and, hence, HRM, vary from country to country. Indeed, the context in which organizations operate may limit or enhance the HPWS usefulness due to differences in cultural and institutional factors, that are considered country contingent, and which shape employment relationships. Therefore, practices which seem to be appropriate in one culture may be less appropriate in another (Den Hartog and Verburg, 2004; Boxall and Macky, 2009). Despite the growing interest in comparative HRM which seeks to better understand contextual effects and their implications for theory and practice, one significant regional omission concerns the area of south-eastern Europe, also referred to as the Balkans (Szamosi et al., 2010, p. 2521).

Greece is a peripheral country in the European Union that both influences, and is influenced by, the Balkan and the Black Sea countries, whose cultural and economic context is rather different from the West European countries (Katou and Budhwar, 2012). In summary, the

Greek economy is characterized by a striking dualism. On the one hand there is a class of professionally managed firms, including the subsidiaries of multinationals, and on the other there are numerous Small and Medium Enterprises (SMEs), mostly family-owned that have been traditionally managed by their founders or by small proprietors (Makridakis et al., 1997). SMEs perform the 99% of industrial business activities, and although they demonstrate low productivity they tend to maintain an increased employment rate (Psychogios and Wood, 2010, p. 2626). Taking into account this depicted situation, it can be argued that the practice of HRM in Greece is also dualistic. Indeed, larger employers are more inclined to follow the law, and be unionized, which makes the practice of HRM more consistent and regulated. In contrast, the HRM policies in SMEs are likely to be unprocedural, flexible, highly personal, but also arbitrary (Mihail, 2004), and with little in the way of formalized mechanisms for involvement and participation, which is often matched by poor terms of employment and working conditions (Psychogios and Wood, 2010, pp. 2627-2628). Overall, what affects both large firms and SMEs are structural weaknesses in the training system that influences the level and quality of employees' skills. Specifically for SMEs, they are characterized by relatively weak job security, while the lack of resources forces them to rely mainly on on-the-job training, rather than external courses (Psychogios and Wood, 2010, p. 2627).

Taking the preceding discussion into consideration, the first goal of the current study is to investigate the practice of HRM in the broader area of south-eastern Europe (Szamosi et al., 2010, p. 2521), and specifically in the Greek context, characterized by unique labor relations and institutional conditions. In addition, and given that the theoretical underpinning of the present study is derived from theories of advanced economies (e.g., USA / UK; Takeuchi et al., 2007, p. 1080), it would be interesting to examine whether similar findings will be reported in a non-US/UK context (i.e., Greece). To our knowledge, there is a poverty of HPWS studies focusing specifically in the Greek context (e.g., Vlachos, 2008; Katou et al., 2014).

Furthermore, the majority of strategic HRM research has been conducted in manufacturing environments neglecting the considerable presence of other sectors (Katou et al., 2014, p. 529), and especially the service sector. One major drawback of this issue is the fact that manufacturing studies may not be generalized to service settings due to special characteristics of the latter, such as the simultaneous production and consumption of products, the intangibility of service processes and outcomes, as well as the customer involvement in service production (Liao et al., 2009, p. 373). In addition, and despite the majority of studies in the manufacturing sector, the service sector accounts for 60% of world Gross Domestic Product (GDP) and dominates economies in most nations (Liao et al., 2009, p. 371). Specifically for the Greek case, the service industry is the most developed sector. Since 1961 it has accounted for more than half of GDP (Psychologios and Wood, 2010, p. 2621), and is currently around 80%. Hence, the further goal of the current study is to extend the SHRM research into the Greek service sector, and especially in regard to healthcare for several reasons.

To begin with, the most rapid expansion in Greece up until 2013 has occurred among public administration, education, health and social work activities reaching 21,6% in 2013 (Eurostat, 2013). On the other hand, the Greek healthcare is already a saturated labor sector. The salaries and benefits are disproportional when compared to the actual amount of work, while doctors and allied health professionals are constantly seeking employment in other countries around the world, such as Germany, the UK, and Sweden. Similar to this line of thinking, there are various significant issues that the healthcare sector is facing globally. For instance, there are significant challenges regarding the training, development and retention of nurses, while there is also evidence of significant labor turnover (Ang et al., 2013, p. 3086). Especially important, the burnout syndrome is commonly associated with workers in ‘caring’ professions (Mashalch, 1982) leading to emotional exhaustion, and increased intention to leave (Laschinger et al., 2003; Bartram et al., 2012; Ang et al., 2013). Finally, it could be argued that the effective

management of healthcare workers is rather complex, mainly due to the nature of the work (Ang et al., 2013, p. 3086).

Hence, and taking into consideration the positive reported effects of HPWS on employees' job attitudes and outcomes (e.g., Macky and Boxall, 2007; Takeuchi et al., 2009; Ang et al., 2013; Bartram et al., 2014; Fan et al., 2014; Zhang and Morris, 2014), it would be interesting to extend the debate on the role of HPWS in affecting employees' work-related outcomes in the Greek healthcare context. To our knowledge, there are no empirical studies examining the HPWS approach in the Greek healthcare industry. Of the few existing empirical studies, however, the majority focus specifically on the motivational factors among health-care professionals (e.g., Peleologou et al., 2006; Kontodimopoulos et al., 2009; Lambrou et al., 2010).

3. Theory and Conceptual Framework

3.1 High-Performance Work Systems (HPWS) in the healthcare sector

Although across the HRM literature HPWS has been generally examined in the manufacturing sector, recent empirical studies have extended to the service sector as well, and especially in regard to healthcare.

Indeed, there is mounting evidence relating aspects of HPWS and improved patient outcomes in numerous healthcare studies. For instance, HPWS has been connected with cost efficiency through enhancing employee satisfaction and service quality (Harmon et al., 2003; Scotti et al., 2007), with improved performance (Preuss, 2003; Michie and West, 2004), and with positive perceptions of quality of patient care and delivery of health care services (Bonias et al., 2010; Leggat et al., 2010, 2011; Bartram et al., 2014). Moreover, previous studies reported a positive association of HPWS with employees' experiences of work (Harley et al., 2007, 2010; Young et al., 2010), and benefits to employees' well-being (Fan et al., 2014), while

High Performance Work Practices focused on career development and extensive training are positively related to career mobility, which in turn is a significant predictor of job satisfaction and employment intentions (Dill et al., 2014). In addition, some researchers have suggested a negative association of HPWS with employee burnout (Bartram et al., 2012; Ang et al., 2013; Zhang et al., 2013; Fan et al., 2014) and, consequently, on intention to leave (Bartram et al., 2012; Ang et al., 2013).

Although at first sight it seems that HPWS research in the healthcare context follows a more ‘employee-centric standpoint’, there are similar barriers to those mentioned earlier for the manufacturing sector. For instance, Leggat et al., (2008) identified weaknesses in important aspects of HRM responsible for developing the will, skills and capacity within the workforce for patient safety. In addition, other researchers argued that the high-performance approach in healthcare has been neglected (Townsend and Wilkinson, 2010), whereas its implementation suffers from critical challenges as well (Bartram and Dowling, 2013). Another major issue recognized thus far is the limited understanding regarding how the various components of HPWS are used to impact on the care delivery and how they ultimately influence patient outcomes (Harris et al., 2007), suggesting that additional research is needed (Etchegaray et al., 2011).

For this study, after considering the HR practices confirmed by Zacharatos et al. (2005) as representative of HPWS and following some of the most significant studies in the healthcare industry examining the HPWS approach (Bonias et al., 2010; Leggat et al., 2010, 2011; Bartram et al., 2012; Ang et al., 2013; Zhang et al., 2013; Bartram et al., 2014), we suggest that the following HPWS practices should be representative within the Greek healthcare context. They comprise of recruitment and selection, training and development, participation in decision-making, employment security, performance management, job clarity, and employee autonomy.

Finally, as Zhang et al. (2013, p. 3199) suggested, the relationships between HPWS and employee well-being such as burnout and job satisfaction are neither direct nor unconditional, and can be moderated and/or mediated by other variables. Thus, and following their argument, we introduce and explore the social and economic exchange perceptions as moderators between HPWS and employee outcomes in the Greek healthcare context, since exchange plays a central role in employment relationships (Shore et al., 2006, p. 837).

3.2 The Social and Economic exchange theories

According to the social exchange theory (Blau, 1964), employers and employees develop an exchange relationship. In general, one contributes to the interest of the other and expects a return at a future time, while it is believed that those receiving a service will develop a sense of obligation to reciprocate. On the other hand, Shore et al. (2006) suggested that employees may develop exchanges not only for socio-emotional, but for economic reasons as well. Therefore, in contrast to social exchange relationships which depend on trust, in economic exchange relationships transactions between parties are not long-term or ongoing, but represent discrete, financially-oriented transactions. Thus, social exchange emphasizes socio-emotional aspects of the employment relationship (i.e., feelings of obligation and trust), while economic exchange emphasizes the financial and more tangible aspects of the exchange relationship (Shore et al., 2006, p. 839). Hence, economic exchange may include paying for specific work without other investment, such as training.

Overall, the social and economic exchange theories view exchange relationships as comprising tangible and intangible resources governed by the norm of reciprocity. In other words, both theories suggest that each party holds a set of expectations/obligations that they will provide in return for what they receive. Hence, and as has been assumed for HPWS, if an organization provides substantial inducements to employees, then employees are more likely

to reciprocate with positive job attitudes and work behaviors (Giannikis and Nikandrou, 2013, p. 3651). In detail, if the employment relationship is an economic exchange, employees might perceive that the gains from the employer are not proportional to their expectations and inputs, they might feel frustrated and consequently not committed or satisfied with the organizational goals. In contrast, if the employment relationship is a social exchange, employees will possibly feel the need to reciprocate with positive attitudes and behaviors towards that employer (Zhang et al., 2013, pp. 3199-3200).

To better understand these relationships, it would be beneficial to examine the similarities to the concept of psychological contract. Indeed, the notion of social exchange served as the theoretical foundation for the development of the well-documented concept of psychological contract (Giannikis and Nikandrou, 2013, p. 3651). Psychological contracts are an individual's beliefs regarding reciprocal obligations and refer to written or unwritten expectations that operate between employees and employers (Rousseau, 1990). When the employer has failed to fulfill its promises or obligations, employees may experience psychological contract breach (Robinson and Rousseau 1994), as opposed to psychological contract fulfillment. Psychological contract breach could result in negative employee attitudes, as well as increased turnover intentions (e.g., Robinson and Rousseau 1994; Zhao et al., 2007; Suazo et al., 2009). Nonetheless, research suggests that the appropriate use of HR practices will create a positive organizational environment that will influence the degree of employer and employee promise fulfillment (Guest, 1999; Purcell et al., 2003; Suazo et al., 2009), cultivating thus a positive psychological contract. The latter will lead to positive employee attitudes, such as motivation, commitment, and satisfaction, and consequently to improved organizational performance (Boselie et al., 2005; Katou and Budhwar, 2012; Giannikis and Nikandrou, 2013), although research on HRM practices as antecedents to psychological contracts is in need of further development (Suazo et al., 2009).

Hence, as can be inferred by the so far analysis, employee perceptions about the nature of their exchange relationships with their employers can influence their emotions, attitudes, health and performance, and consequently their feelings of job burnout and job satisfaction (Zhang et al., 2013, pp. 3199-3200). Nonetheless, although the argument that HPWS impact employees' attitudes and behaviors through the social exchange mechanism has not been empirically examined, some studies have used the social exchange theory as their theoretical framework (Takeuchi et al., 2009; Zhang and Li, 2009; Gong et al., 2010; Wei et al., 2010; Giannikis and Nikandrou, 2013). Indeed, the relationship between HPWS and social exchange seems promising. HPWS as opposed to individual HR practices provides employees with multiple social resources, such as appreciation, prestige, growth, recognition, fairness and empowerment (Gong et al., 2010, p. 125). In addition, HPWS conveys messages from the organization to its employees that they are highly valued for their skills and knowledge by the organization, while the latter is willing to commit itself to employees' welfare. As a consequence, employees develop positive work-related attitudes by (and towards) their organizational environments (Wei et al., 2010, pp. 1635-1636), while at the same time HPWS reinforces the tone of the social exchange relationship with employees (Gong et al., 2010, p. 125). Hence, there is an incentive for the employees to remain with the organization and perform at a high level (Takeuchi et al., 2007, p. 1071). Especially for the healthcare sector, Fan et al. (2014, p. 944) suggested that the social exchange theory could be especially crucial in the implementation of HPWS, since employees may interpret HPWS as a sign that they are valued and respected by the organization. Thus, showing loyalty to the organization, even if their jobs are emotionally demanding, is one way for employees to reciprocate the positive treatment they receive from the organization (Bartram et al., 2012, p. 1575). Finally, Ang et al. (2013, p. 3090) suggested that based on the social exchange theory, the organization and front-line managers provide transformational leadership enabling management practices that are

reciprocated by employee's socio-emotional benefits, which evolve over time into trusting, loyal and mutual commitments and ultimately lead to appropriate employee attitudes, behaviors and, improved organizational performance.

Taking the above arguments into consideration and since HPWS is likely to influence employees' views about the nature of the employment relationships, it seems reasonable to expect social and economic exchange to become mediating variables between HPWS and employee outcomes in the Greek healthcare context. However, in this paper we chose to follow Zhang et al. (2013) study and examine the moderating effect of these two theories (social and economic exchange) on employees' work-related well-being, burnout and job satisfaction. Hence, we did not examine the mediating effect of these two theories, although these findings could be promising.

3.3 Burnout - Emotional exhaustion and disengagement from work

Burnout is a psychological syndrome that involves losing concern for the people with whom one is working and is commonly associated with workers in 'caring' professions (Maslach, 1982). Individuals experiencing burnout sense a decline in their feelings of job competency and successful achievement leading to tendencies to characterize themselves negatively (Zellars et al., 2000).

A series of systematic empirical studies in the late 1970s and early 1980s (e.g., Maslach and Jackson, 1981; Maslach, 1982; Maslach and Jackson, 1986) produced a three-component conceptualization of the burnout construct known as the Maslach Burnout Inventory (MBI), which includes feelings of emotional exhaustion, depersonalization, and diminished feelings of personal accomplishment in working with others. However, the MBI was developed exclusively for use in human services professions, and thus, the three subscales of the MBI were applicable only to employees working with other people (Demerouti et al., 2003). Hence,

several adaptations of the MBI have been proposed, such as the Oldenburg Burnout Inventory (OLBI, Demerouti et al., 2003). This new instrument includes two dimensions: *exhaustion* and *disengagement from work*. Exhaustion refers to ‘a depletion of emotional resources’ and is defined as ‘a consequence of intensive physical, affective, and cognitive strain’, whereas disengagement refers to ‘distancing oneself from one’s work and experiencing negative attitudes toward the work object, work content, or one’s work in general’ (Demerouti et al., 2010, pp. 210-211). Overall, disengagement concerns the relationship between employees and their job, particularly with respect to their engagement, identification, and willingness to continue the same occupation.

Although burnout has been linked to several negative organizational outcomes, such as chronic emotional exhaustion, cynicism, detachment from work and feelings of ineffectiveness on the job (Laschinger et al., 2003), leading to increased intention to leave (Bartram et al., 2012; Ang et al., 2013), and lower quality of patient care (Aiken et al., 2002) and has been a pervasive organizational problem with significant costs in terms of health and organizational consequences (Zellars et al., 2000; Laschinger et al., 2003; Zhang et al., 2013), there has been little research exploring how to reduce burnout through appropriate HRM strategies (Zhang et al., 2013). To our knowledge, only a few studies were focused on the relationship between HPWS and burnout in the healthcare sector. For instance, Bartram et al. (2012) found that perceived HPWS not only reduced the strength of the negative effect of emotional labor on burnout but also had a unique negative effect on intention to leave. Zhang et al. (2013) demonstrated that an economic exchange perception increased the possibility that HPWS leads to employees’ emotional exhaustion. Similarly, Ang et al. (2013) suggested that HPWS could decrease employees’ feelings of burnout through greater engagement, job satisfaction, and affective commitment, resulting thus in less intentions of leaving the hospital. Finally, Fan et

al. (2014) found that HPWS increased employees' subjective well-being (SWB) and decreased burnout.

In this study, based on the social and economic exchange theories, taking into consideration the preceding discussions and following the Zhang et al. (2013) study, we assume that the perceived nature of the exchange relationship between employees and employers moderates the relationship between HPWS and burnout. Thus, we propose the following hypotheses:

Hypothesis 1: The social exchange perception will decrease the likelihood that HPWS leads to employees' emotional exhaustion. On the contrary, the economic exchange perception will increase the likelihood that HPWS leads to employees' emotional exhaustion.

Hypothesis 2: The social exchange perception will increase the likelihood that HPWS leads to employees' work engagement. On the contrary, the economic exchange perception will decrease the likelihood that HPWS leads to employees' work engagement.

3.4 Job satisfaction

Job satisfaction lies at the heart of the HPWS approach. Indeed, it has been argued that discretionary effort is one of the keys to understanding the links between HR practices and organizational performance (CIPD/EEF, 2003, p. 15), which depends on improvements in job satisfaction, organizational commitment, and motivation. This argument is aligned with the *Ability, Motivation, and Opportunities* (AMO) framework (Appelbaum et al., 2000), which feeds directly into the three elements of organizational commitment, motivation, and job satisfaction and supports the fact that HPWS will create highly skilled, engaged and empowered workers who feel valued and enjoy higher job satisfaction. Overall, there is mounting evidence across the HRM literature supporting the positive relationship between

HPWS and employee attitudes and behavior, such as job satisfaction (e.g., Wright et al., 2003; Paauwe and Boselie, 2005; Macky and Boxall, 2007, 2008; Danford et al., 2008; Messersmith et al., 2011).

Specifically for the healthcare sector, HPWS has also been associated with higher employee satisfaction (Harmon et al., 2003; Harley et al., 2007; Chang et al., 2009; Chuang et al., 2011; Weinberg et al., 2012; Young et al., 2010). For instance, Leggat et al. (2010) found that job satisfaction moderated the relationship between HPWS and perceived quality of care, while Ang et al. (2013) and Zhang et al. (2013) reported that HPWS can be positively translated into greater engagement, and job satisfaction. Fan et al. (2014) also indicated that the adoption of HPWS would increase employees' subjective well-being, including satisfaction with their lives and their work.

Hence, based on the preceding discussion regarding the social and economic exchange theories and the positive contribution that HPWS can have on employee outcomes and well-being, we propose the following hypotheses:

Hypothesis 3: The relationship between HPWS and employees' job satisfaction will be moderated by the perceived exchange relationship between employees and their employers. Specifically, the social exchange perception will increase the likelihood that HPWS leads to employees' job satisfaction. On the contrary, the economic exchange perception will decrease the likelihood that HPWS leads to employees' job satisfaction.

Hypothesis 4: Employees' job satisfaction will be negatively associated with their emotional exhaustion.

Hypothesis 5: Employees' work engagement will be positively associated with their job satisfaction.

4. Method

4.1 Sample and procedure

For the purposes of our research, we developed both a handwritten and an on-line questionnaire. We surveyed clinicians' (doctors, and nurses) responses in seven (five private and two public) regional hospitals, located in Athens and Thessaloniki, Greece. All private hospitals are well-known and reputed for their high health-care quality. Specifically for public hospitals, the first one is newly established, the second one is in part privately funded, and both are recognized as leaders in the health care industry. The questionnaire was delivered by hand in the two public hospitals, while for private ones we chose the on-line method by sending it to the clinicians' personal e-mail addresses, obtained by hospitals.

Overall, the survey was sent to 741 employees in the seven hospitals, in spring 2014. Cases that had missing data for more than one item for any of the subscales were deleted. For those cases that had missing data for an item in a subscale, the respondent's average over the other items in the subscale was used as the response to the missing item because each subscale is assumed to consist of reflective indicators. We received 297 usable responses, a response rate of 40%. Our sample is comprised of 178 doctors and 119 nurses. About 71% of the doctors were male while 83% of the nurses were female. The average age of respondents was 44. In addition, 55% of employees held a bachelor's degree, while 41% held postgraduate qualifications (e.g. postgraduate diploma, master's degree, PhD). Finally, 71% of the respondents were working full-time, 18% part-time, and an additional 11% were working under a short-term employment contract.

At this point we have to underscore that although we measured employees' (nurses and doctors) perceptions regarding their experiences on the implemented HPWS practices, we were not able to collect data from HR managers. However, in large and complex organizations, such as hospitals, there are usually different employee groups characterized by their own discrete priorities and needs. As a result, each team of workers in the various departments may be managed through diverse sets of HR policies and practices (Kinnie et al., 2005; Paauwe and Boselie, 2005; Guest, 2011), and consequently, organizations may adopt different HPWS practices towards different employee groups (Zhang et al., 2013, p. 3199). In addition, employees have usually different perceptions of the nature and extent of the HR practices used (Ramsay et al., 2000), while managers' perceptions might not bear any relationship to what actually occurs (Boxall and Macky, 2007). Similar to this line of thinking, researchers suggest that a distinction should be made among the intended HR practices on the strategic level, and the actual or implemented HRM practices as experienced by employees (Kinnie et al., 2005; Paauwe and Boselie, 2005; Boxall and Macky, 2007; Veld et al., 2010; Guest, 2011).

Despite this limitation though, although there is a limited examination in the HRM literature of the perceptions of HPWS from the perspectives of both the front-line supervisors and their subordinates, only until recently studies started moving away from single source survey respondents – often the HR manager – and focusing on employee attitudes and perceptions (Bonias et al., 2010; Guest, 2011). Indeed, and following this line of thinking, Ang et al. (2013, p. 3089) argued that a multi-level theoretical approach should be adopted by future studies that uses multiple raters of HRM practices to elucidate the perspectives of managers and employees, and the roles they play in the use of HRM, as opposed to single respondent surveys in which only HR managers are asked to describe the HRM practices that are used across an entire organization. Nevertheless, although we did not include managers' responses in this study, the attitudes of employees toward the HR practices and policies are important since they have been

seen as drivers of discretionary behavior and organizational performance, while only through employees organizational objectives such as high performance, involvement, cost reduction, safety and customer service will be enacted (Bonias et al., 2010, p. 322). As Bowen and Ostroff (2004) note, the strength of the attitudinal and behavioral links to HRM practices is only appropriately assessed by workers. Thus, research on HRM should be employee centered rather than policy focused and should refer to the employees' reactions to HR practices as experienced by them (Kinnie et al., 2005; Boxall, 2012).

Taking all of the above into consideration, and considering the lack of empirical studies in the Greek healthcare sector, the nurses' and doctors' perceptions on the actual or implemented HPWS practices in the hospitals under study could provide some useful insights in trying to unlock the so called 'black box' in the HPWS – performance relationship (Kinnie et al., 2005; Becker and Huselid, 2006; Sels et al., 2006; Messersmith et al., 2011).

5. Measures

All survey items, were measured using a five point Likert-type scale ranging from 1 = strongly disagree, to 5 = strongly agree.

5.1 High-performance work systems (HPWS)

Items on HR practices were adapted from established scales or existing measures of HR systems (Zacharatos et al., 2005; Delery and Doty, 1996; Ang et al., 2013). Overall, 31 items were used, encompassing seven sub-scales. A separate component analysis was conducted for each of the seven constructs in the HPWS scale, while a cutoff value of 0.50 was used to indicate satisfactory loading. The number of items that met the loading criterion and the Cronbach's alphas for the seven sub-scales, are as follows: Recruitment and selection (four of five items included, $\alpha = 0.789$), training and development (six of seven items included, $\alpha =$

0.863), employee autonomy (all five items included, $\alpha = 0.807$), participation in decision-making (all four items included, $\alpha = 0.787$), employment security (all four items included, $\alpha = 0.831$), job clarity (three of four items included, $\alpha = 0.884$), and performance management (all five items included, $\alpha = 0.898$). The Cronbach's alpha for the single-index HPWS measure was 0.915.

5.2 Social exchange

The perceived nature of social exchange between employers and employees was measured with a five-item scale developed by Shore et al. (2006), loaded into a single factor. Sample items include 'My hospital has made a significant investment in me' and 'Even though I may not always receive the recognition [from my hospital] I deserve, I know my efforts will be rewarded in the future'. The Cronbach's alpha for the single index measure was 0.833.

5.3 Economic exchange

The perceived nature of economic exchange between employers and employees was measured with a five-item scale developed by Shore et al. (2006), loaded into a single factor. Sample items include 'My relationship [with my hospital] is strictly an economic one – I work and they pay me' and 'I do what my hospital requires, simply because they pay me'. The Cronbach's alpha for the single index measure was 0.792.

5.4 Emotional exhaustion

Emotional exhaustion was measured using the eight-item scale of the Oldenburg Burnout Inventory (OLBI) developed by Demerouti et al. (2010). A separate component analysis with a cutoff value of 0.50 was used to indicate satisfactory loading. Finally, four items were used,

loaded into a single factor. These four items are generic and refer to general feelings of overtaxing from work, a strong need for rest, and a state of physical exhaustion. These four items are ‘There are days when I feel tired before I arrive at work’, ‘After work, I tend to need more time than in the past in order to relax and feel better’, ‘During my work, I often feel emotionally drained’, and ‘After working, I have enough energy for my leisure activities’ (R). The Cronbach’s alpha for the single-index measure was 0.759. (R) means reversed item.

5.5 Work engagement

Similarly to emotional exhaustion, work engagement was measured using the Oldenburg Burnout Inventory (OLBI) developed by Demerouti et al. (2010). A separate component analysis with a cutoff value of 0.50 was used to indicate satisfactory loading. Finally, four items were used, loaded into a single factor. These four items are ‘I always find new and interesting aspects in my work’, ‘It happens more and more often that I talk about my work in a negative way’ (R), ‘Sometimes I feel sickened by my work tasks’ (R), and ‘I feel more and more engaged in my work’. The Cronbach’s alpha for the single-index measure was 0.677. (R) means reversed item.

5.6 Job satisfaction

Job satisfaction was measured by using three items developed by Seashore et al., (1983). Sample items include ‘All in all, I am satisfied with my job’ and ‘In general, I like working here’. The scale’s α reliability was 0.643.

5.7 Common Method Variance

Although our data were collected through different sources, they were obtained by the same method, a 5-point Likert scale. Thus, we used Harmon’s single-factor test to exclude the possibility of Common Method Variance (CMV). A principal component analysis was

conducted between all of the variables that were used to measure HPWS, emotional exhaustion, work engagement, social exchange, economic exchange, and job satisfaction. We chose one fixed number of factors to be extracted for all measured variables, which according to the results explained only 22.5% of the variance approximately. Therefore, since this single factor did not explain the majority of the variance in the variables, common method bias is not likely to be an issue in our analysis.

5.8 Statistical Model

SPSS v. 22 was used to conduct descriptive statistical analysis and exploratory factor analysis. We tested our hypotheses by means of Partial Least Squares (PLS) Structural Equation Modeling (SEM) using the SmartPLS 3.0 software (Ringle et al., 2014). Overall, PLS-SEM has several advantages when compared to the covariance based structural equation modeling (SEM) techniques. For instance, it is free from distributional assumptions of normality, while it can be used to analyze data from small samples. Of particular relevance to this study, PLS-SEM incorporates both formative and reflective constructs, as well as Hierarchical Component Models (HCMs). In HCMs a general construct is defined that consists of several sub-dimensions. Thus, while the more general construct becomes part of the structural model, additional information can be found on the sub-dimensions by using a second-order model. By using HCMs, we are able to reduce the number of relationships in the structural model, making the PLS path model more parsimonious and easier to grasp (Hair et al., 2014, p. 229).

Overall, these HCM models have two elements, namely the higher-order components (HOC), which capture the more abstract entity, and the lower-order components (LOCs), which capture the sub-dimensions of the abstract entity. Each of the HCM types is characterized by different relationships between the HOC and the LOCs (reflective or formative) and between the constructs and their indicators (reflective or formative). In our structural model, HPWS was

operationalized as ‘reflective-formative’ higher-order component. Specifically, HPWS consisted of the seven individual HR Practices. Each HR Practice was measured by its reflective indicators, while their relationship with the HPWS construct was indicated as formative. The reflective-formative HCM and the proposed model are depicted in figure 1.

FIGURE 1 near here

Finally, in establishing the final Hierarchical Component measurement model we followed the ‘repeated indicators approach’ combined with the ‘two-step approach’. Additional information in performing these procedures can be found in Hair et al. (2014, pp. 230, 233) and Lowry and Gaskin, (2014, p. 135). The final model (two-step approach) is depicted in Figure 2.

FIGURE 2 near here

5.9 Validity and Reliability

Before running the PLS analysis, we had to configure the model’s reliability and validity. Since all first-order constructs used in the model were reflective, we evaluated *individual indicator reliability*, the *composite reliability* to evaluate internal consistency, the *convergent validity* of the measures associated with each construct and their *discriminant validity* (Hair et al., 2014, p. 95). Regarding the *individual indicator reliability* for the reflective constructs, only four items (two in Work Engagement, one in Economic Exchange, and one in Social Exchange) were slightly below the threshold of 0.7. The lowest value was reported for the one reverse-coded item of Job Satisfaction (0.582). However, since all of the examined t-values of the outer model loadings were significant at the 0.05 α level, we retained them in the model. *Composite*

reliability, was greater than 0.7, and thus was confirmed. In addition, the Average Variance Extracted (AVE) extracted was above the threshold of 0.5, confirming thus *convergent validity*. All measures are reported in table 1.

TABLE 1 near here

To determine the *discriminant validity* of our indicators, we used two established techniques. First, we checked for cross-loadings. Secondly, we used the Fornell-Lacker criterion which compares the AVE values with the latent variable correlations. Since the square root of each construct's AVE was greater than its highest correlation with any other construct (table 2), discriminant validity was confirmed for all sub-constructs.

TABLE 2 near here

Next, the validity and reliability of the formative scale (HPWS) was checked by following the procedures described in Petter et al., (2007). For instance, face and content validity of the formative construct is derived from theory, while the construct under investigation is considered abstract and complex. In addition, following Cenfetelli and Bassellier (2009), we tested the formative factors for multicollinearity by calculating the Variance Inflation Factors (VIFs) of the items in the formative construct. In our case, all of the VIFs of the indicators were below 3.33, indicating sufficient construct validity for our formative indicators.

Finally, we evaluated the quality of the structural model by using the R-square of the dependent variable (Chin, 1998), and the Stone-Geisser Q-square test for predictive relevance (Hair et al., 2014, p. 167). In our case, the R^2 value for the endogenous constructs (emotional exhaustion, work engagement, job satisfaction) were adequate (0.128, 0.264, and 0.347

respectively), while most of the path coefficients were substantial and significant. Last but not least, two separate analyses with 7 and 25 omission distances were undertaken (blindfolding technique in SmartPLS) to test the stability of the findings. As the values were stable for both omission distances and all of the Q-squares were greater than zero, we were confident that the model was stable and the predictive relevance requirement was satisfied. We chose not to include the goodness-of-fit (GoF) as a criterion for PLS-SEM, since it is believed that it is not able to separate valid models from invalid ones, while it is not applicable to formatively measurement models (Hair et al., 2014, p. 185; Henseler and Sarstedt, 2012, p. 577).

6. Results

To analyze the hypotheses in the structural model, we ran the full model (figure 2) with a bootstrapping procedure that used 500 randomly drawn samples with replacement. The algorithm converged in 12 iterations, while the model was controlled for age, and gender. Since there were no significant effects for these control variables, we excluded them from the analysis. A summary of the path coefficients and their significance levels are summarized in table 3.

TABLE 3 near here

Table 3 presents some interesting findings. First of all, HPWS was positively associated with work engagement ($\beta= 10.126$, path coefficient = 0.451) and job satisfaction ($\beta= 2.138$, path coefficient = 0.142). On the other hand, although HPWS was negatively associated with emotional exhaustion, the effect was not statistically significant.

In addition, the results of the analysis showed that the perceived nature of the relationship between hospitals and their employees was in part an important factor influencing employees' well-being. Specifically, employees' emotional exhaustion would decrease if the employment

relationship was perceived by employees as a social exchange. However, if the employment relationship was perceived as an economic exchange, the effect was not statistically significant, although positive. Hence, hypothesis 1 was partially supported. Figure 3 provides the moderating effect of social exchange perception on the relationship between HPWS and emotional exhaustion.

FIGURE 3 near here

Moreover, although the economic exchange perception had a significantly negative effect on work engagement ($\beta = 2.350$, path coefficient = -0.155), its negative effect on job satisfaction (path coefficient = -0.033) was not significant. On the other hand, social exchange perception had a significant positive effect on work engagement ($\beta = 4.299$, path coefficient = 0.266). However, its effect on job satisfaction was not significant. Last but not least, although the findings showed that the economic exchange and the social exchange perceptions did influence the HPWS effect on work engagement and job satisfaction respectively, the interaction effects were not significant. Hence, hypotheses 2 and 3 were not supported.

Finally, employees' job satisfaction was negatively and significantly associated with emotional exhaustion ($\beta = 3.097$, path coefficient= -0.260), and thus hypothesis 4 was supported. Similarly, work engagement was positively and significantly associated with job satisfaction ($\beta = 10.242$, path coefficient = 0.503), providing support for hypothesis 5. Hence, it can be inferred that satisfied employees are more likely to be involved with their jobs, and less likely to be emotionally exhausted.

Although the control variable of gender and age had no significant effect on our final model, we also controlled for the potential impact of job position (doctors vs nurses). Indeed, there were some significant differences between the two occupational groups. First of all, social

exchange moderated the relationship between HPWS and emotional exhaustion only for the doctors' group, as opposed to the nursing one. Hence, hypothesis 1 was partially supported only for the doctors' group. On the other hand, hypothesis 2 and 3 were not supported for neither groups. Furthermore, the direct effect of HPWS on employees' job satisfaction was statistically significant only for the doctors' group, while its effect on employees' emotional exhaustion only for the nursing group. In contrast, HPWS had a positive and significant effect on employees' work engagement for both groups. Finally, although job satisfaction was negatively associated with emotional exhaustion for both occupational groups, its effect was not significant for nurses. Hence, hypothesis 4 was supported for the doctors' group only. Similarly, and since work engagement had a positive and significant effect with job satisfaction, hypothesis 5 was supported for both groups. However, one should interpret these findings with caution. Specifically, the generation of the two occupational groups resulted in rather small samples for nurses (119) and doctors (177). Hence, the resulting small samples might mislead these findings regarding the differences between the two occupational groups, namely doctors and nurses.

7. Discussion and conclusions

The findings of this paper offer some useful insights.

First of all, it was indicated that HPWS has the potential to lead to work engagement, and job satisfaction. These findings support previous studies' conclusions relating HPWS with higher employee satisfaction (Harley et al., 2007; Chang et al., 2009; Leggat et al., 2010; Young et al., 2010; Chuang et al., 2011; Weinberg et al., 2012; Ang et al., 2013; Fan et al., 2014) and

reduced burnout (Bartram et al., 2012; Fan et al., 2013) or greater engagement (Ang et al., 2013).

In addition, our findings confirm Zhang et al. (2013, p. 3209) argument that ‘it is not unconditional or inevitable that HPWS will lead to decreased emotional exhaustion or greater work engagement’ (p. 3209). Indeed, the HPWS effects on employee outcomes seem to be influenced by their perceived nature of the exchange relationship with their employers. Specifically, it was indicated that if employees perceive their relationship with the hospitals as a social exchange, emotional exhaustion would decrease. On the other hand, an economic exchange relationship had not significant effect on emotional exhaustion. These findings provided partial support for hypothesis 1. Similarly, although the findings showed that the perceived exchange relationship did influence the HPWS effect on work engagement and job satisfaction respectively, the interaction effects were not significant. Hence, hypotheses 2 and 3 were not supported.

Furthermore, our findings indicated that employees’ job satisfaction was negatively associated with emotional exhaustion, while, in contrast, work engagement was positively associated with job satisfaction, providing support for hypotheses 4 and 5. Hence, it can be inferred that satisfied employees are more likely to be involved with their jobs, and less likely to be emotionally exhausted, supporting Zhang et al., (2013) argument.

Last but not least, when we controlled for job position (doctors vs nurses) the results were indeed interesting. Hypotheses 1 and 4 were supported for the nursing group only, while hypothesis 5 was supported for both occupational groups. Hypotheses 2 and 3 were not supported for any of the groups. These differences between the two occupational groups should be expected, since there are distinct differences in the nature of the employment relationship among these occupational groups. For instance, medical practitioners might not be employees of the hospital, but rather independent practitioners who have little association with the

organizations in which they practice their profession. Nursing staff on the other hand are typically employees of the hospital. Taking into account the shortage that the nursing profession is generally facing, effective retention strategies are needed as opposed to other professions in a hospital (Ang et al., 2013, p. 3090). In addition, and specifically for the Greek healthcare sector, the salaries and benefits are disproportional when compared to the actual amount of work, while doctors and allied health professionals are constantly seeking employment in other countries around the world, such as Germany, the UK, and Sweden, as opposed to nurses. We should underscore though that since doctors outnumber the number of nurses in the sample, one should interpret these findings with caution, while further research is needed regarding the HPWS effects on different occupational groups, especially within a healthcare setting.

Taking these findings into consideration, we also conclude that it is indeed premature to theorize that HPWS ‘will inevitably improve the well-being of all employees or that its introduction is a one-time event’ (Zhang et al., 2013, p. 3209). Specifically, there are different types of HPWS in practice and across countries, and these variations may have different effects on employee outcomes (Zhang et al., 2013, p. 3198). For instance, a profit-oriented HPWS can be used for enhancing financial performance at the cost of employees, producing burnout and job dissatisfaction (Ramsay et al., 2000). In contrast, HPWS can also be used for increasing organizational performance through eliciting positive employee outcomes such as high commitment and job satisfaction, leading to greater work engagement and employees’ well-being (Sparham and Sung, 2007). In addition, and as Ang et al. (2013) argued, although HPWS has positive effects on employee outcomes, this effect is significant only when management’s implementation of HPWS is similar to employees’ espoused HR practices. Hence, special attention is needed when examining the HPWS-well-being linkage and its effects on employee outcomes.

Moreover, our research adds to the broader HRM literature, since it not only follows an employee-centered study, restoring the effects of HRM on employee outcomes to a central position of HPWS studies, but it also takes place in the Greek social context. Hence, and following Takeuchi et al. (2007, p. 1080), given that the theoretical underpinning of the present study was derived from theories of advanced economies (e.g., USA / UK), the Greek sample may be considered a strength of this study since it illustrates theoretically-derived relationships in a non-US/UK context.

Furthermore, and surprisingly enough, among the seven HR practices constituting the HPWS construct only ‘employment security’ had an insignificant effect. This finding is of significant importance, since employment security encourages people to take a longer-term perspective on their jobs and organizational performance (Pfeffer, 1998) and represents an investment of time and resources in employees, which would be reciprocated in terms of loyalty to the organization. In addition, trust in management will also result from employment security, not to mention its linkage with occupational safety (Zacharatos et al., 2005, p. 78). To our knowledge, the insignificant effect of ‘employment security’ might also be explained by the differences we mentioned regarding the nature of the employment relationship among the two occupational groups (doctors and nurses) in the Greek context. Hence, although ‘employment security’ seems to be a significant HR practice in the HPWS construct based on the HR literature, this might not be the case for the Greek healthcare industry.

Finally, although the majority of previous studies have not examined the individual HPWS practices effects on employee outcomes and performance but have treated HPWS as a single index, Takeuchi et al. (2009, p. 23) suggested that some sub-components of HPWS may have differential effects on mediators and dependent variables. Thus, and since in our case ‘employment security’ was the only HR practice that had a weak bivariate relationship to the

HPWS construct, special attention should be given to the individual HR practices' contribution to the HPWS construct by HR researchers and practitioners.

Overall, and by following an employee-centric approach, this study examines the moderating effect of the social and economic exchange perceptions on employees' emotional exhaustion, work engagement, and job satisfaction. Although we make no attempt to generalize our findings, it seems reasonable to argue that these might be of particular interest to health-care researchers and practitioners of other countries with similar economic traits.

8. Implications for managers and practitioners

The findings of this study provide important practical implications for health care organizations, managers and practitioners. Since the perceived nature of the employee-employer relationship can influence work engagement or emotional exhaustion, managers should pay specific attention when following a high performance strategy in their organizations by creating a social exchange perception among employees. Hence, in these organizations, employees will more likely perceive that their work expectations are fulfilled and thus develop positive job attitudes. These positive attitudes not only have an effect on work engagement and emotional exhaustion, but in turn influence job performance (Takeuchi et al., 2007). In other words, HR managers might view the development of HPWS as a fruitful approach in improving employees' outcomes and organizational goals.

Finally, as we've already discussed, job satisfaction not only results in higher employee satisfaction, greater engagement and reduced burnout, but it also moderates the relationship between HPWS and perceived quality of care (Leggat et al., 2010). Hence, hospitals and healthcare organizations should pay special attention to clinicians' and allied health professionals' well-being, by adopting a social exchange relationship with their employees.

9. Limitations

In this study, there are some limitations. First of all, as in all cross-sectional studies, although we tested for Common Method Variance (CMV) and found none, there is the potential that CMV did influence the results, since self-report measures were used for the needs of our study. Thus, a longitudinal study would be preferable to eliminate CMV and uncover the dynamic influence of HPWS. Indeed, longitudinal studies are in a better position to make causal statements and provide a stronger test of the hypothesized relationships.

Furthermore, although we measured the perceptions of clinicians (nurses, and doctors) across seven exemplary hospitals operating in Greece, we were not able to collect data from HR managers. This could be a potential issue though for two main reasons. First of all, organizations may adopt different HPWS practices towards different employee groups (Zhang et al., 2013, p. 3199). In addition, employees have different perceptions of the nature and extent of the HR practices used (Ramsay et al., 2000), while managers' perceptions might not bear any relationship to what actually occurs (Boxall and Macky, 2007). Moreover, in complex organizations, there are potentially problems of agreement within the management hierarchy and between management and operating employees. Thus, the adoption of a multi-level approach that uses multiple raters of HRM practices to elucidate the perspectives of managers and employees and the roles they play in the use of HRM are required (Ang et al., 2013, p. 3089).

Similarly to the previous limitation, the findings differed between the two occupational groups, namely doctors and nurses. These differences between the two occupational groups confirm the argument that hospital employees cannot be considered a homogenous group of workers, and underscore the importance of analyzing and comparing discrete employee groups separately (Ang et al., 2013, p. 3088). Hence, and taking into consideration that the resulting occupational groups under study were small in size, future studies could clarify the HPWS

effect on different occupational groups. Indeed, the effective management of diverse occupational groups within a hospital setting is one of the principal challenges that the healthcare sector is facing (Ang et al., 2013, p. 3090).

Finally, although we chose to examine the moderating role of social and economic exchange in the relationships between HPWS, emotional exhaustion, work engagement, and job satisfaction, HPWS is likely to influence employees' views about the nature of the employment relationship, and thus social and economic exchange could become mediating variables. Hence, future research could examine the mediating role of social (and economic) exchange in the relationships between HPWS and employees' well-being, in a further effort to unlock the 'black box' in the relationship between HPWS and organizational performance (Kinnie et al., 2005; Becker and Huselid, 2006; Sels et al., 2006; Messersmith et al., 2011).

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Table 1. Composite reliability, Average Variance Extracted (AVE) and convergent validity

Construct (latent variable)	Composite reliability	Loadings	T-Statistics	Average Variance Extracted (AVE)	Convergent & Discriminant Validity
Recruitment & Selection	0.864	Min: 0.725 Max: 0.836	***	0.615	Yes
Training & Development	0.898	Min: 0.727 Max: 0.838	***	0.596	Yes
Decision Making	0.862	Min: 0.707 Max: 0.880	***	0.611	Yes
Employment Security	0.880	Min: 0.747 Max: 0.845	***	0.648	Yes
Performance Mgmt	0.925	Min: 0.771 Max: 0.911	***	0.712	Yes

Job Clarity	0.928	Min: 0.871 Max: 0.920	***	0.812	Yes
Employee Autonomy	0.862	Min: 0.704 Max: 0.803	***	0.556	Yes
Economic Exchange	0.853	Min: 0.635 Max: 0.815	***	0.538	Yes
Social Exchange	0.880	Min: 0.695 Max: 0.854	***	0.596	Yes
Emotional Exhaustion	0.842	Min: 0.716 Max: 0.787	***	0.571	Yes
Work Engagement	0.805	Min: 0.657 Max: 0.771	***	0.509	Yes
Job Satisfaction	0.805	Min: 0.582 Max: 0.873	***	0.586	Yes

*indicates significant paths: *p<0.05, **p<0.01, ***p<0.001, ns (not significant)

Table 2. Discriminant validity through the Fornell-Lacker criterion (Square Root of AVE on diagonal)

	1	2	3	4	5	6	7	8	9	10	11	12
Decision. Making (1)	<u>0.782</u>											
Economic Exchange (2)	-0.146	<u>0.734</u>										
Emotional Exhaustion (3)	-0.181	0.206	<u>0.756</u>									
Employee Autonomy (4)	0.283	-0.193	-0.152	<u>0.746</u>								
Employment Security (5)	0.325	-0.224	0.009	0.216	<u>0.805</u>							
Job Clarity (6)	0.378	-0.103	-0.212	0.237	0.074	<u>0.901</u>						
Job Satisfaction (7)	0.241	-0.240	-0.309	0.301	0.090	0.187	<u>0.765</u>					
Performance Mgmt (8)	0.564	-0.257	-0.108	0.303	0.305	0.552	0.266	<u>0.844</u>				
Recruitment (9)	0.257	-0.253	-0.113	0.314	0.142	0.340	0.299	0.507	<u>0.784</u>			
Social Exchange (10)	0.284	-0.391	-0.349	0.395	0.244	0.382	0.317	0.377	0.284	<u>0.772</u>		
Training (11)	0.558	-0.129	-0.073	0.270	0.173	0.499	0.212	0.660	0.564	0.330	<u>0.772</u>	
Work Engagement (12)	0.181	-0.332	-0.479	0.303	0.083	0.365	0.567	0.292	0.252	0.460	0.154	<u>0.714</u>

Table 3. Summary of Path Coefficients and Significance levels

Hypotheses and corresponding paths	Path Coefficient	T-Statistics	Hypotheses Support
Social Exchange → Emotional Exhaustion	-0.241	3.679***	H1 partially supported
Economic Exchange → Emotional Exhaustion	0.042	ns	
Social Exchange → Work Engagement	0.266	4.299***	H2 not supported
Economic Exchange → Work Engagement	-0.155	2.350*	
Social Exchange → Job Satisfaction	0.006	ns	H3 not supported
Economic Exchange → Job Satisfaction	-0.033	ns	
Job Satisfaction → Emotional Exhaustion	-0.260	3.097**	H4 supported
Work Engagement → Job Satisfaction	0.503	10.242***	H5 supported
HPWS → Job Satisfaction	0.142	2.138*	---
HPWS → Emotional Exhaustion	-0.169	Ns	
HPWS → Work Engagement	0.451	10.126***	

*indicates significant paths: *p<0.05, **p<0.01, ***p<0.001, ns = not significant

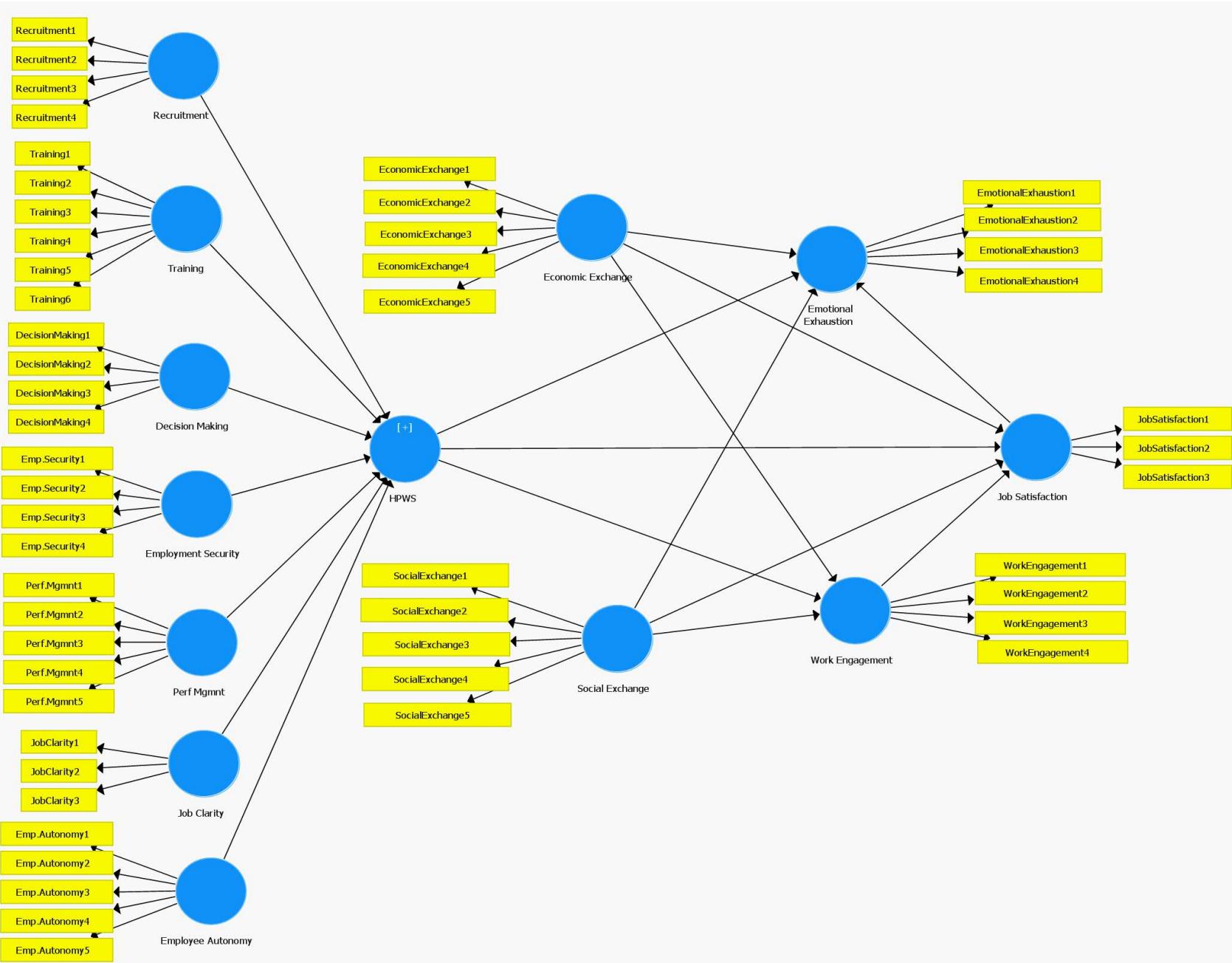


Figure 1. The proposed model

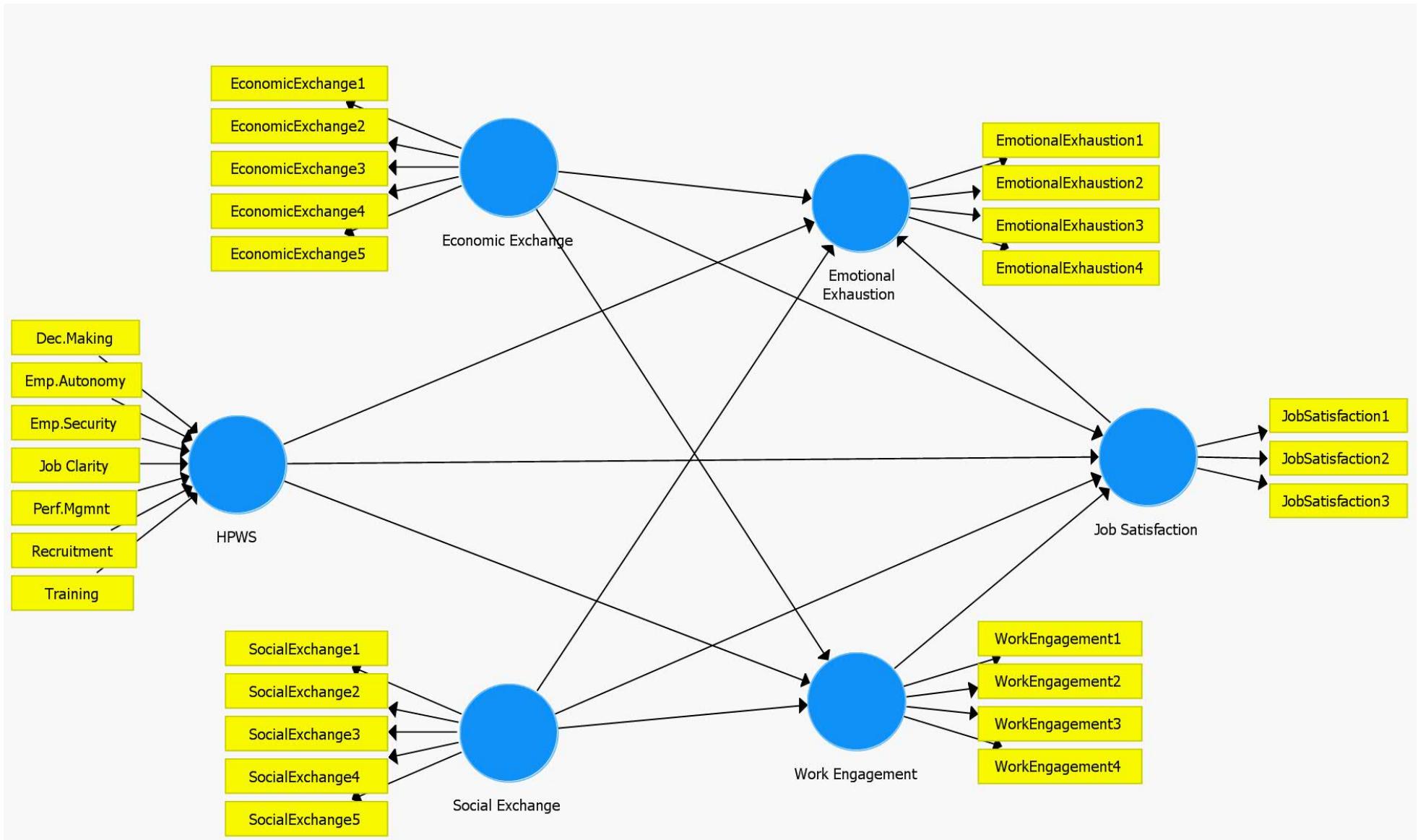


Figure 2. The Two-step approach model

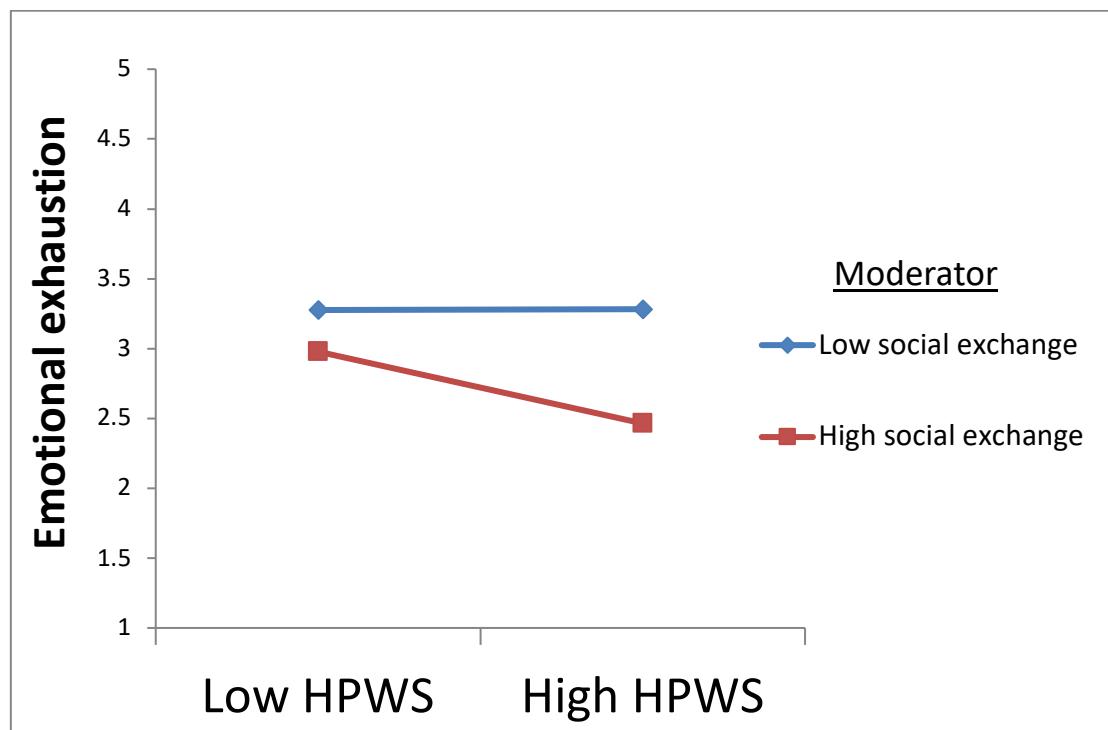


Figure 3. The moderating effect of social exchange perception on the relationship between HPWS and emotional exhaustion

APPENDIX A HPWS Measures

Dimension	Item	Loading
Recruitment & Selection	The recruitment and selection processes in this hospital are impartial	0.845
	Favoritism is not evident in any of the recruitment decisions made in this hospital	0.753
	All appointments in this hospital are based on merit (i.e. the best person for the job is selected regardless of his/her personal characteristics)	0.824
	Only the best people are hired to work in this hospital	0.709
Training & Development	Providing employees with training beyond that mandated by government regulations is a priority in this hospital	0.736
	This hospital subsidizes, assists or reimburses employees for training or courses taken outside of the workplace	0.746
	Employees of this hospital are encouraged to extend their abilities	0.773
	Employees are provided with training opportunities enabling them to extend their range of skills and abilities	0.813
	Employees in this hospital get the opportunity to discuss their training and development requirements with their immediate manager	0.727
	This hospital is committed to the training and development of its employees	0.831
Participation in Decision Making	Employees in this job are allowed to make many decisions	0.730
	Employees in this job are often asked by their supervisor to participate in decisions	0.815
	Employees are provided with the opportunity to suggest improvements in the way things are done	0.863
	Superiors keep open communications with employees in this hospital	0.712
Employment Security	Employees can expect to stay in the hospital for as long as they wish	0.784
	It is very difficult to dismiss an employee in this hospital	0.836
	Job security is almost guaranteed to employees in this hospital	0.900
	If the hospital were facing economic problems, employees would be the last to get cut	0.739
Performance Management	In this hospital, the performance management policy document is readily available to all staff	0.773
	In this hospital, staff performance is reviewed in accordance with agreed annual goals and	0.801

	organization-wide requirements and informal feedback is given	
	In this hospital, there is a performance management system to ensure that staff are competent and accountable for their work	0.912
	In this hospital, there is a performance management system to ensure that future growth and development needs are identified	0.899
	In this hospital, the statements of accountabilities and responsibilities are regularly reviewed to ensure that they are relevant to current organizational needs and goals	0.827
Job Clarity	The duties of this job are clearly defined	0.872
	This job has an up-to-date job description	0.917
	The job description for this job contains all of the duties performed by individual employees	0.913
Employee Autonomy	<i>In general, how influence or input do you have about</i>	
	The type of work you do	0.779
	How you do your work	0.775
	When you start and finish work	0.765
	The pace at which you do your job, and	0.813
	Decisions which affect you at this workplace	0.656

APPENDIX B Emotional Exhaustion and Work Engagement (OLBI)

Dimension	Item	Loading
Emotional Exhaustion	There are days when I feel tired before I arrive at work	0.806
	After work, I tend to need more time than in the past in order to relax and feel better	0.810
	During my work, I often feel emotionally drained	0.721
	After working, I have enough energy for my leisure activities (R)	0.708
Work Engagement	I always find new and interesting aspects in my work	0.633
	It happens more and more often that I talk about my work in a negative way (R)	0.747
	Sometimes I feel sickened by my work tasks (R)	0.723
	I feel more and more engaged in my work	0.748

(R) means reversed item