Human Resources Flexibility as a Mediating Mechanism between High Performance Work Systems and Organizational Performance: A Multilevel Quasi-Longitudinal Study

Abstract

Purpose – The purpose of this study is to investigate the impact of High Performance Work Systems (HPWS) on organisational performance through the mediating role of Human Resources (HR) flexibility (expressed by functional flexibility, skills malleability, and behavioural flexibility).

Design/methodology/approach – The study examines theoretical relationships in the Greek context, which reflects changing economic and financial crisis, based on multilevel structural equation modelling estimation, using three waves of sample data collected in years 2014, 2016 and 2018 from organizations operating in the private sector.

Findings – The study finds that although HPWS positively influences all three HR flexibility dimensions, this positive effect is not transferred equally to organizational performance. The dominant effect on organizational performance is attributed to skills malleability, a smaller effect to behavioural flexibility, whist a negligible effect to functional flexibility.

Research limitations/implications – Although the data collected refer to three different years, most of the companies and individuals responded to sampling were different. As such, the study does not allow for dynamic causal inferences due to its quasi-longitudinal nature.

Practical implications – The findings of this study may influence managerial decisions in developing bundles of HPWS policies and practices in relation to HR flexibility attributes.

Originality/value – Since most studies consider HR flexibility as an aggregated construct, this study is possibly of the very few studies that is examining the differential impact of the HR flexibility dimensions on organizational performance in turbulent times.

Keywords High Performance Work Systems, Human Resources flexibility, Organizational performance, Greece

Paper type Research paper

Introduction

In a recent review, Armstrong and Brown (2019) report that over the past thirty years, a number of empirical studies argue that human resource management (HRM) content positively affects organizational performance. HRM content consists of a number of associated human resource (HR) policies and practices through which organizations attempt to reach their strategic goals (Boselie *et al.*, 2005). According to this review, researchers try to identify the HR policies and practices that are important in building the so-called strategic resource of human capital (Boon *et al.,* 2018). The criteria used for identifying human capital are based on the resource-based view (RBV) (Barney, 1991) who argue that organizations achieve competitive advantage by acquiring, maintaining and developing a capital pool that consists of human resources that are *valuable* (i.e., referring to the economic condition of a resource), *rare* (i.e., reflecting the scarcity of a resource), *inimitable* (i.e., referring to the degree to which resources are very hard to copy or imitate), and *non-substitutable* (i.e., representing resources that are very difficult to be substituted with other resources that achieve the same ends) (Boselie, 2014).

However, the impact of HRM content on organizational performance across different settings remains still unanswered (Okay-Somerville and Scholarios, 2018). These different settings may constitute the boundary conditions of HRM content effectiveness and efficiency on individual and organizational performance (Hong *et al.*, 2017). Although evidence has indicated that HRM content effectiveness and efficiency depends on contingencies such as product or sector, there are still unanswered questions with respect to HRM effectiveness and efficiency in recessionary situations, or in situations where the economy moves dynamically around its equilibrium condition. In

this study we address calls for more empirical research on the performance of HRM in turbulent situations (Okay-Somerville and Scholarios, 2018).

Having established a rather positive relationship between HRM content and organizational performance, researchers started investigating the so-called *black box* in this relationship, by trying to clarify 'what exactly leads to what' in the unknown mechanism between the two endpoints of the performance relationship (Gerhart, 2005). In an effort to enlighten the black box between HRM content and organizational performance two approaches were revealed to be the most dominant (Boon *et al.,* 2018). According to the first approach, the mediating mechanism between the two end points of the relationship should include *employee attitudes* (e.g. employee skills, satisfaction, motivation, commitment) that serially influence *employee behaviours* (e.g. effort, cooperation, work engagement, organizational citizen behaviour) (Purcell *et al.,* 2003). According to the second approach, HRM content could increase organizational performance by establishing a system architecture that facilitates employees' *ability and skill* (A), employees' *motivation and incentive* (M), and gives employees the *opportunity to perform* (O). These three attributes constituted the so-called AMO theory (Appelbaum *et al.,* 2000; Boselie *et al.,* 2005; Gerhart, 2005; Purcell *et al.,* 2003), which usually indicates the HRM content that will improve organizational performance (Bos-Nehles *et al.,* 2013).

Although the serial relationship between employee attitudes and behaviours is generally considered to be a widely acceptable mediating mechanism between HRM content and organizational performance, still some studies argue that a different nature of the mediating mechanisms could improve the understanding of the process through which HRM content has an impact on organizational performance. This different nature of a mediating mechanism refers to the so-called Human Resource (HR) Flexibility

(Beltrán-Martín *et al.,* 2008; Bhattacharya *et al.,* 2005; Xiu *et al.,* 2017; Way *et al.,* 2015). *HR flexibility* reflects the extent to which employees possess skills and behaviours that can be updated or changed in short time according to the needs of the organizations for achieving their goals (Wright and Snell, 1998). Based on RBV, three major components of HR flexibility are distinguished (Beltrán-Martín *et al.,* 2008): *Functional flexibility*, which reflects the degree that employees are capable of working on dissimilar tasks and under varied situations (Wright and Snell, 1998; Martínez-Sánchez *et al.,* 2009); s*kill malleability*, which reflects the degree how quickly and easily employees incorporate new skills and abilities for performing new tasks (Bhattacharya *et al.,* 2005; Wright and Snell, 1998); *behavioural flexibility*, which reflects the degree that employees can perform a range of behavioural repertoires under different situations (Bhattacharya *et al.,* 2005; Wright and Snell, 1998). Accordingly, organizations that can succeed in mobilizing their human resources flexibility through appropriate HRM policies and practices will improve their competitive advantages. Thus, in this study we respond to the call of Beltrán-Martín *et al.* (2008) who suggest that researchers should make greater efforts to empirically examine a framework that treats HR flexibility as a mediating mechanism in the HRM content - organizational performance relationship.

Taking into consideration the above, the scope of this study is to address the two calls for further research. First, it examines whether the three components of HR flexibility individually mediate the relationship between HRM content and organizational performance, and tests their differential mediating impact. Other well known studies (e.g. Bhattacharya *et al.,* 2005; Beltrán-Martín *et al.,* 2008) do not examine individually the mediating nature of the HR flexibility components. Second, it examines whether the influence of the HR flexibility components on organizational

performance depends on changes in the external environment (Okay-Somerville and Scholarios, 2018; *Way et al.,* 2018). To achieve this, three waves of sample data were collected in years 2014, 2016 and 2018 from Greek organizations. These data are unique considering the context of high economic and financial uncertainties in Greece.

Greece, having population of approximately 10.7 million as of 2018 and located in South East Europe, is a peripheral member-state in the European Union. Since 2008, Greece has been heavily affected by the economic and financial crisis that lasted for approximately ten years. In 2009, its budget deficit was 15.1 percent of GDP and the public debt ratio was 127 percent of GDP (Eurostat, 2021). Additionally, due to the increased borrowing rates by the markets, it was impossible for Greece to finance its debt. To avoid sovereign default, Greece being a member-state of the Euro-zone, agreed on a rescue Memorandum of Economic and Financial Practices with the European Commission, the International Monetary Fund and the European Central Bank, the so-called three Institutions. According to this Memorandum Greece had to implement policies to support market assurance and make the economy more competitive. Moreover, to secure the funding and for bringing the deficit under control, Greece was obliged by the three Institutions to adopt strong austerity measures. In this bleak environment, firms in the private sector were trying to keep away from closure and employees were under pressure to stay in employment. Further, in terms of HRM in Greece, many small and medium enterprises were compensating employees at lower levels than the labour laws were indicating and the variability of work conditions was very common by extending or reducing the usual working week time (Wood *et al.*, 2015). During these ten years of crisis, from 2008 to 2018, there was a drop of 25 percent in Greece's GDP and the debt to GDP ratio reached the level of 179 percent,

connected with the bailout programs. Finally, in August 2018 it was declared that Greece's bailout program successfully ended.

For addressing the above mentioned calls we evaluate results using data from the private organizations in Greece, because the burden of the economic and financial crisis was heavier on private than on public organizations, according to two research strands. First, we consider whether the behaviour of this mediating mechanism could be integrated within the AMO model (Blom et al., 2020). As far as our knowledge there is no any such attempt. Second, due to the nested nature of data we use multi-level structural equation modelling (MSEM) analyses via Mplus software (Liu and Lin, 2019; Muthen and Muthen, 2014). Compared to other empirical studies MSEM is preferable because it reaches more accurate estimation results (Kozlowski and Klein, 2000).

The research framework and hypotheses

High performance work systems and organizational performance

HRM content refers to a set of related individual HR practices that make up the HRM system through which organizations achieve the strategic goals of the organization (Boselie *et al.,* 2005). In particular, HRM system refers to HRM content, which enables HR practices to send unambiguous messages about the types of behaviours that the organization expects, values, and rewards (Ostroff and Bowen, 2016). In general, there is no agreement between researchers about the HR practices that constitute the content of an HRM system. However, there are three main approaches that organizations propose in order to improve organizational performance (Armstrong, 2009). The *high-performance work systems* (HPWS), which comprise a set of related HR practices that can facilitate employee ability and skill, motivation and incentive, and opportunity to

perform (Appelbaum *et al.,* 2000; Purcell *et al.,* 2003). The *high-involvement work systems* (HIWS), which refer to a set of synergic HR practices that focus on employee decision making, power, access to information, training and incentives (Benson *et al.*, 2006). The *high-commitment work systems* (HCWS), which refer to a set of combined in use HR practices that focus on job redesign and flexibility, problem-solving groups, team working, and minimal status differences (Wood, 1999). Although there are many studies that report the same general phenomenon which is explained interchangeably under these three approaches, the relationship between HPWS and organizational performance is largely accepted (Zhang *et al.,* 2018).

Taking into consideration the HPWS that are usually applied by companies in the Mediterranean region (Vlachos, 2009), and based on the works of Bhattacharya *et al.* (2005) and Beltrán-Martín *et al.* (2008), in this study we adopt the HPWS approach that facilitates employee *ability and skill* by selective staffing and comprehensive training, *motivation and incentive* by equitable reward systems, and *opportunity to perform* by developmental performance appraisal. Accordingly, our study makes use of the RBV, arguing that HPWS constitutes a source of sustainable competitive advantage of the firm in line to the human and social capital held by the organization (Barney, 1991), and the AMO model, arguing that the architectural philosophy of HPWS used in the study is designed for stimulating employees ability, motivation and opportunity to perform for improving individual and organizational performance (Appelbaum *et al.*, 2000, Blom *et al.,* 2020).

Organizational performance is a multidimensional construct that comprises of the actual output of the organization as measured against indented output. Based on the work of Katou *et al.* (2014), in this study we adopt the definition of organizational performance that facilitates the dimensions of *productivity* (reflecting the effectiveness

and the efficiency of the organization in meeting its objectives), *growth* (reflecting the level of the development of the organization and the satisfaction of the stakeholders), and *creativity* (reflecting innovation and enhanced quality for products, services and processes).

Although it is accepted that HPWS positively influences organizational performance a plausible question that arises is whether the strength of this relationship depends on the strength of economic crises. It could be argued that with the weakening of economic crises, the policies and practices of the HPWS find space to unfold their capabilities and accordingly to strengthen their positive impact on organizational performance. Thus, it could be assumed that there is an inverse relationship between the strength of the impact of HPWS on organizational performance and the strength of economic crises. Accordingly we hypothesize:

Hypothesis 1: HPWS will relate more positively to organizational performance, in periods of weakening compared to periods of strengthening economic crises.

Human resources flexibility

Although the adoption of HRM policies and practices generally considers the competitive environment, strategic perspectives of HRM they have not, in general, taken into account the context of a major economic crisis and the appropriate response to it with respect to HRM. In terms of strategic HRM, policy makers may have two choices in responding to economic crisis (Okay-Somerville and Scholarios, 2019). Either utilize the existing skills of their employees, or invest in changing these existing employee skills. This is because it is supported that during recessionary periods some

employees experience skill underutilization, taking into consideration that these employees were over skilled for the jobs they were doing (ILO, 2014).

Considering the AMO theory, we argue that progressive HR flexibility utilization is based on three principles: Employee skills malleability, indicating that updating skills and abilities are mainly related to training and staffing activities (reflecting thus employee ability to do the job). Employee behavioural flexibility, indicating that acting efficiently in uncertain circumstances is mainly related to developmental performance appraisal (reflecting thus opportunity to perform). Employee functional flexibility indicating that switching to new jobs in short time is mainly related to equitable reward systems (reflecting thus employee motivation to perform).

Although empirical evidence supports a positive impact of HPWS on both, employee and organizational outcomes (e.g. Fu *et al.,* 2017), the hypothesis that HR flexibility mediates the relationship between HPWS and organizational performance has not been fully supported by empirical evidence (Beltrán-Martín *et al.,* 2008; Okay-Somerville and Scholarios, 2019). We extend this argument by adding that most related empirical studies treat HR flexibility as an integrated construct without measuring the individual influence of HPWS on functional flexibility, skill malleability and behavioural flexibility. As a result, these studies do not examine the differential impact of the three dimensions of HR flexibility on organizational performance. However, there are studies that investigate the influence of HR practices on firm performance through the serially mediating relationship between skill flexibility and behavioural flexibility (e.g. Ketkar and Sett, 2009).

Additionally, empirical evidence treats the mediating mechanism of HR flexibility statically, by examining it at a particular stable or turbulent period, without

tracing step by step in consecutive time circumstances its impact on organizational performance (Okay-Somerville and Scholarios, 2019; van den Berg and van der Velde, 2005). In this study, we examine the mediating role of HR flexibility in the relationship between HPWS and organizational performance and we try to trace its behaviour in consecutive dynamic economic and financial crisis periods.

In particular, the major question that arises is whether some dimensions of the HR flexibility are more sensitive than other to changes of the economic environment. For example, it may be argued that in periods of economic crises organizations try to ascertain and utilise in short time employee skills, which they were possibly underutilized before the economic crises. Similarly, employees considering themselves members of the business family may try to change their behaviour for acting more efficiently in uncertain times. Additionally, employees may find difficult to switch to new jobs in short time to be able to cope with economic crises. Therefore, it may be argued that it is difficult for organizations and employees to trace the sensitivity of the HR flexibility dimensions as mediating mechanisms in the relationship between HPWS and organizational performance. However, the examples referred to previously may support arguments that utilization of employee skills and employee behavioural flexibility may be the major qualities of individuals will focus in, in comparison with employee functional flexibility, which will unfold steadily with the weakening of economic crises. Accordingly we hypothesize:

Hypothesis 2: (a) Functional flexibility, (b) Skill malleability, and (c) Behavioural flexibility, positively mediate the relationship between HPWS and organizational performance, depending on the dynamically changing environment.

Based on the above-presentation, Figure 1 presents the conceptual and hypothesized framework of the study.

INSERT FIGURE 1 ABOUT HERE

Methods

Sample and data

Data for this research was collected in October-December 2014, 2016 and 2018 by help of a questionnaire survey. Two year intervals were used for tracking visible changes in the Greek economy that was under economic and financial crises. Following Katou *et al.* (2014), the questionnaires were administered by students pursuing management degrees at a Greek business school. The protocol for collecting data had the following steps. First, the students who were interested in taking part in the study followed a specific lecture on convenience sampling. Second, these students followed a lecture in explaining the aims and objectives of the study and the meaning of the items included in the questionnaire. Third, these students took part in discussions on how to administer in person questionnaires by using pen and paper, and in overcoming self biased response error the students were asked to assure respondents about their anonymity.

The students were asked to distribute the questionnaires per year to 1,600 employees in 200 private organizations with more than 10 employees, operating in the manufacturing, services and trade sectors of Greece. For increasing the reliability of measures and for decreasing the sampling error the students were also asked to concentrate if possible on at least two senior managers (e.g., heads of departments or owners for small firms), two middle managers (e.g., line managers) and four individual employees (e.g., not supervising other employees) from each research firm (Gerhart *et al.*, 2000).

Convenience sampling is a non probabilistic sampling technique. The students

who took part in the study come from different parts of Greece, and the collected data refer to the organisations where they were possibly working in those parts of Greece, and also from their contact organizations. These characteristics ensure heterogeneity and randomness of the sample, as well as external validity and generalisation of conclusions (Wheeler *et al.*, 2014).

A total of 1248, 1139 and 1040 usable questionnaires per year 2014, 2016, and 2018 were returned from the employees in 133, 118 and 140 rather small and medium sized organizations respectively. The response rates per sampling year were equal to 65.5, 59.0 and 70.0 percent at the organization level, and 78.0, 71.1 and 65.0 percent at the employee level respectively. Taking into consideration that the sample sizes per year are very large, the generalization of findings based on convenience sampling techniques is acceptable (Saunders *et al.*, 2012).

The sample characteristics for the three sampling years are presented in Table 1. It must be emphasised here that the study is not a longitudinal one. This is because although there were three waves of data collection in years 2014, 2016 and 2018 respectively, both the organizations and respondents were not labelled for matching due to the convenience sampling which was based on different students in the three years. In other words, the three waves of data were collected independently. Accordingly, in the cross-sectional part of the study the organizations and the respondents were different between the three years, and with respect to time the three years were considered to be three different time environments. In fact, these characteristics were framing the quasi-longitudinal nature of the study. However, from a closer look to the figures in Table 1, it is seen that the average distribution of the sample organizations along the three years, which is allocated between 22.1 percent for manufacturing, 41.7 percent for services and 36.2 percent for trade, is similar to the distribution of the small

and medium organizations in Greece, which is allocated between 22.2 percent for manufacturing (including industry and construction), 42.9 percent for services (including banking, education, health and tourism) and 34.9 percent for trade (including wholesale and retail trade). This similarity of the two distributions supports the view that the sample organizations are representative of the population (Katou *et al.,* 2020). However, the official numbers of employees per organization for the small and medium sized organizations, according to the SBA Fact Sheets of the European Commission, are 29.6, 27.1 and 29.9 for 2014, 2016 and 2018 respectively, whilst for the sample organizations these numbers are 36.1, 82.1 and 86.9. This may mean that in terms of size the sample organizations may not reflect the population of the small and medium sized organizations.

INSERT TABLE 1 ABOUT HERE

Measures

Cronbah's alphas (α), attached in parentheses bellow to the dimensions that constitute specific constructs refer to the years 2014, 2016 and 2018 respectively. For the construction of second order factors used in estimation, confirmatory factor analysis (CFA) indicated good data fit indices.

High performance work systems

This construct is based on Beltrán-Martín *et al.* (2008). It was measured along four dimensions.

- *Selective staffing* (α=0.634/0.737/0.602) comprised of 5-items. Example: "How extensive is the employee selection process for a job in this department?" (1=not extensive: use of few staffing techniques; 7=very extensive: use of many different techniques).

- *Comprehensive training* (α=0.803/0.840/0.841) comprised of 6-items. Example: "How formal or structured is the training processes in this department? (1=very unstructured; 7=very structured).
- *Developmental performance appraisal* (α=0.777/0.824/0.825) comprised of 7-items. Example: "How much do employees participate in goal setting and appraisal?" (1=very little; 4=moderate amount, 7=great deal).
- *Equitable reward systems* (α=0.692/0.621/0.634) comprised of 3-items. Example: "How would you rate pay levels in this unit relative to other firms?" (1=low; 4=same; 7=high).

Functional flexibility

This construct is based on Beltrán-Martín *et al.* (2008) comprised of 3-items. Example: "Our employees can switch to new jobs with similar responsibilities to their current jobs within a short time" (Likert type 7-point scale, 1=applies to very few employees; 7=applies to most of the employees).

Skill malleability

This construct is based on Beltrán-Martín *et al.* (2008) comprised of 4-items. Example: "Employees in this department try to constantly update their skills and abilities" (Likert type 7-point scale, 1=applies to very few employees; 7=applies to most of the employees).

Behavioural flexibility

This construct is based on Beltrán-Martín *et al.* (2008), comprised of 4-items. Example: "When employees detect problems in performing their jobs, they voluntarily try to identify the causes of these problems" (Likert type 7-point scale, 1=applies to very few employees; 7=applies to most of the employees).

Organizational performance

This construct is based on Katou *et al.* (2014). It was measured along three dimensions (1=very bad; 7=very good).

- *Productivity* (α=0.774/0.816/0.782) comprised of 2-items, referring to effectiveness (if the organisation meets its objectives) and efficiency (if the organisation uses the fewest possible resources to meet its objectives).
- *Growth* (α=0.713/0.747/0.775) comprised of 2-items, referring to development (if the organisation is developing in its capacity to meet future opportunities and challenges) and satisfaction (of all participants; stakeholders, employees, customers).
- *Creativity* (α=0.654/0.688/0.647) comprised of 2-items, referring to innovation (for products and processes) and quality (enhancement of quality in products and services).

Controls

They are distinguished into personal (e.g. gender, age, education, seniority, tenure, position), and organizational (e.g. sector of production where the organizations are activated, size of the organization).

Data properties

Table 2 presents means, standard deviations, consistency and reliability indices and correlation coefficients of all the constructs involved in estimation. The average variances extracted (AVE) values are higher than 0.50, indicating acceptable survey instrument construct validity. Since all Cronbah' alphas are greater than 0.70, construct internal consistency is acceptable, and since all scores exceed 0.70, the construct composite reliability (CR) is acceptable. Given that the correlation coefficients are smaller than the square root of each factor's AVE, construct discriminant validity was acceptable (see Hair *et al.*, 2010).

INSERT TABLE 2 ABOUT HERE

Statistical analysis

In testing the model presented in Figure 1, and considering that our data refer to employees nested within organizations, we followed multilevel structural equation modelling (MSEM) applying Mplus (Muthen and Muthen, 2014). This is because MSEM is more suitable for testing multilevel mediations than hierarchical linear regressions (Preacher *et al.*, 2011).

RESULTS

Measurement Model

The estimation protocol for examining the measurement model is based on three steps. First, the hypothesized model was tested for each year using MCFA. The analyses showed acceptable fit for the hypothesized structure (see the first line of results in Table 3 for each year). Second, the single factor model was tested for each year. The analyses showed poor fit for the single factor structure (see the second line of results in Table 3 for each year). Third, comparing the chi-square values between the results in the two previous estimations, it is found that the Δchi-square/Δdf =80.80/87.08/100.11 for each year, are much larger than the critical value of 3.84 per degree of freedom, indicating that the latent factors represent distinct constructs and that common method bias is limited (Brown, 2015).

INSERT TABLE 3 ABOUT HERE

Structural Model

Following Katou *et al.* (2020), before estimating the proposed model, we examined for each year the values of the intra-correlation coefficients ICC1, the intra-correlation coefficients ICC2, and the inter-rater agreement measures $r_{wg}(j)$. It is found that the

values of ICC1 range for 2014 between 0.275 and 0.532, for 2016 between 0.251 and 0.532, and for 2018 between 0.259 and 0.417. Because these values are much larger than 0.10, they indicate that there is an adequate amount of between-unit variation to justify multilevel analysis. The values of ICC2 range for 2014 between 0.773 and 0.991, for 2016 between 0.757 and 0.915, and for 2018 between 0.718 and 0.828. Because these values are much larger than 0.50, they indicate that the constructs certify that there is adequate within-unit agreement to justify aggregation. Finally, the values of $r_{wg}(j)$ range for 2014 between 0.802 and 0.963, for 2016 between 0.742 and 0.986, and for 2018 between 0.764 and 0.959. Because these values are larger than 0.70, the constructs ensure that there is also sufficient within-unit agreement to justify aggregation (Kozlowski and Klein, 2000).

The fit indices of the estimated hypothesized structural model are presented in Table 3 in the third line for each year respectively. In Figures 2 and 3, the within and the between estimation results of the model are presented respectively, where the standardized coefficients are significant for all the used variables. These results verify the homology assumption of the model, meaning that the structure of the model is similar between the within and the between levels of analysis (Kozlowski and Klein, 2000). We note here that none of the controls included in estimation produced significant results.

INSERT FIGURES 2 and 3 ABOUT HERE

Hypothesis Testing

In testing the hypotheses, we considered two aspects: One is the turbulent Greek economic crisis environment where the sample firms were operating. The other is that we examined separately the within-level and between-level effects for arriving at unbiased findings (Peccei and Van De Voorde, 2019).

According to the National Statistical Service of Greece (called ELSTAT) the unemployment rates in 2014, 2016 and 2018 are 27.0, 24.2 and 20.4 percent respectively. Additionally, the GDP per capita (in thousand US dollars) are 22,566, 22,666 and 23,558 respectively. The decrease in the consecutive unemployment rates and the increase in the GDP per capita, produced a strong correlation coefficient (r=-0.941), but not significant (p=0.219), due to the very small sample size (n=3 years). However, we accept in this study that these changes indicate that the economic crisis was weakening in Greece within the period examined in this study.

Taking into consideration that for all examined years the direct link between HPWS and organizational performance is positive and significant, we conclude that Hypothesis 1 is supported for the within-level estimation. This is also true for the between-level estimation, but only for years 2016 and 2018, indicating that Hypothesis 1 is partially supported. In particular, the within-level findings support that the direct impact of HRWS on organizational performance increases with the weakening of crisis.

In terms of Hypothesis 2(a), it is found that functional flexibility is not mediating the relationship between HPWS and organizational performance for the within-level estimation for all years. However, assuming a much enlarged significant level we may accept that for year 2014 functional flexibility partially mediates the previous relationship (Sobel[1]=1.392, p=0.164). Considering the between-level estimation functional flexibility is not mediating the above relationship for all years. This result indicates that in recession periods functional flexibility may not be included within the core part of human resources as it was supported by some authors (e.g. Martínez-Sánchez *et al.*, 2009). This means that in the case under study the weakening of the crisis was not strong enough to change the philosophy of companies toward using

[1] Sobel Calculator by Preacher and Leonardell (http://quantpsy.org/sobel/sobel.htm)

functional flexibility as a core instrument for improving organizational performance.

With regard to Hypothesis 2(b), it is found that skill malleability partially mediates the relationship between HPWS and organizational performance for the within-level estimation and for all years 2014 (Sobel=2.463, p=0.014), 2016 (Sobel=4.286, p=0.000) and 2018 (Sobel=3.990, p=0.000). Considering the between-level estimation skill malleability is fully mediating the above relationship for year 2014 (Sobel=2.443, p=0.014), but is partially mediating for 2016 (Sobel=2.089, p=0.037) and 2018 (Sobel=2.304, p=0.021).

Referring to Hypothesis 2(c), it is found that behavioural flexibility partially mediates the relationship between HPWS and organizational performance for the within-level estimation and for all years 2014 (Sobel=2.793, p=0.005), 2016 (Sobel=3.606, p=0.000) and 2018 (Sobel=4.042, p=0.000). Considering the between-level estimation behavioural flexibility is not mediating the above relationship for all years.

Summarizing the findings above we conclude that the mediating role of skill malleability is the most dominant in the relationship between HPWS and organizational performance compared to the role of behavioural flexibility and functional flexibility. Further, considering the indirect effect of HPWS on organizational performance thought the mediating mechanism of skill malleability, for the three years respectively, (0.092/0.085/0.095 from the within-level estimation) and (0.256/0.105/0.574 from the between-level estimation), we argue that this impact increases with the weakening of economic crisis. On the contrary, considering the indirect effect of HPWS on organizational performance thought the mediating mechanism of behavioural flexibility, for the three years respectively, (0.067/0.038/0.048) from the within-level estimation), we argue that this impact decreases with the weakening of economic crisis.

Overall, relating the information between economic crises with the separate paths within and between organizations, and considering that the estimates were sensible, we can accept that the model plausibly represents the data.

Discussion

Theoretical and research contributions

This paper investigates the mediating mechanism of HR flexibility in the relationship between HRM content, expressed by HPWS, and organizational performance. Through this study we make several important contributions to HR flexibility related issues, highlighting how the findings of the study contribute to the theory. First, by considering the three dimensions of HR flexibility (i.e., functional flexibility, skill malleability, and behavioural flexibility) in the performance relationship, the study adds evidence that organizations can achieve competitive advantage, based on the resource-based view (Barney, 1991), by developing a human capital pool that consists of HR flexibility qualities. This is important because in turbulent times managers should know the new qualities that the human capital pool in their organization must possibly have.

Second, by differentiating these three HR flexibility dimensions in the performance relationship, and based on the AMO model (Purcell *et al.*, 2003), the study adds evidence that employee skills malleability, behavioural flexibility, and functional flexibility are generally influenced by specific HRM policies and practices. In particular, three issues may contribute to the mediating role of HR flexibility in the HRM content – organizational performance literature: (1), skill malleability –that is generally influenced by selective staffing and comprehensive training- constitutes the dominant factor in the mediating mechanism between HRM content and organizational performance. (2), behavioural flexibility –that is generally influenced by developmental

performance appraisal- constitutes the second important mediating mechanism factor in the above mentioned relationship. (3), functional flexibility –that is generally influenced by equitable reward systems- does not seem to play a significant meditating mechanism factor in the relationship under study. These three issues are considered to be important in the HRM content – organizational performance theory, because the current study extends theory by differentiating between the mediating paths of the dimensions of the HR flexibility. To our knowledge, these paths were integrated in the current literature into one aggregative path.

Third, by considering external environment as a contingency boundary condition (expressed by the recent economic and financial crisis) that may influence decision with respect to the HPWS – performance relationship (Okay-Somerville and Scholarios, 2019), the study adds evidence that the changing strength of an economic and financial crisis may have an influence on the mediating mechanism of HR flexibility in the performance relationship under study. In particular, the study suggests that the positive impact of HPWS on organizational performance through the mediating mechanism of skill malleability increases with the weakening of economic and financial crisis, whilst the positive impact through the mediating mechanism of behavioural flexibility decreases with the weakening of economic and financial crisis. This finding addresses the call of Beltrán-Martín and Roca-Puig (2013) who advice for further research which will take into consideration the influence of the level of environmental dynamism faced by companies on the investigated relationships. Moreover, this study adds important evidence, referring to the changing environment, which suggests that the direct impact of HRM content on organizational performance increases with the weakening of the economic crises.

Finally, from a purely technical point of view and taking into consideration the

nested nature of our data, we adopted multilevel structural equation modelling via Mplus in testing the hypotheses. We followed this research strategy for avoiding limitations of the traditional estimation techniques (Preacher *et al.*, 2011).

Summarizing, this study by investigating the differential influence of the mediating mechanisms of the dimensions of HR flexibility extends the understanding of the so-called "black box" between HRM content and organizational performance. New information with respect to mediating roles is important in explaining the HRM-performance relationship (Bryson *et al.*, 2017).

Practical Implications

Our study demonstrates that among the mediating mechanisms, in the path from HPWS to organizational performance, HR flexibility could be considered with emphasis on skill malleability and behavioural flexibility. Taking into consideration that our study is analyzing HR flexibility for organizations operating in an economic and financial crisis environment, making use of three distinct time-dependent samples of Greek firms, our recommendations are in general focused to managers who take decisions in a weakening recessionary environment. This is because managerial decisions were based on knowledge, beliefs and models proposed in previous decades which may need to be revised in light of today's circumstances (Beltrán-Martín and Roca-Puig, 2013).

In particular, bearing in mind that the RBV perspective focuses on the organizational determinants that contribute to advantageous employee skills and behaviours, the practical implications for managers according to the suggestions of our study would be to invest on comprehensive staffing and training. This means that in contrast to freezing or reducing wages, in responding to financial and economic crisis, the investment on staffing and training will give the opportunity employees to update

their skills and abilities, learn procedures and processes, anticipate future skills requirements, and learn how to do specific tasks quickly. This skill malleability will have a positive impact on organizational performance during economic recession (Okay-Somerville and Scholarios, 2019), the positive effects will be even stronger if skills are better coordinated with the weakening of economic and financial disorder (Llorens-Montes *et al.*, 2013), and the effects will better when cultivating resilience in periods of crises (Nizamidou and Vouzas, 2020). However, despite the potential gains of skill malleability the organization should consider the extent of the hidden costs associated with this flexibility (Dyer, 1998).

Additionally, managers should also promote a consistent and generally acceptable developmental performance appraisal system among employees, because it will give employees the opportunity to perform better by making them to voluntarily engage in identifying organizational problems, propose changes and accordingly act efficiently, especially in uncertain times. In developing such a mutually acceptable, between employers and employees performance appraisal system, employee efficiency will be increased and at the same time unproductive redundancies will be avoided.

Finally, managers considering that although equitable reward systems improve employee functional flexibility, the results of these improvements are not seen in organizational performance. Accordingly, managers should try to understand and use HR practices in different employment sectors (e.g., manufacturing, services and trade) (Psychogios and Szamosi, 2007) in order to motivate employees by balancing more closely the job content, the job context and the job requirements that are assigned to employees during turbulent times.

Limitations and future research

Every study has certain limitations that should be noted. First, although the data collected refer to three different years (2014, 2016, and 2018), and collected at the same period (October-December) within each year using the same questionnaire, most of the companies and individuals responded to sampling were different. As a result, the study does not allow for dynamic causal inferences. Future research should consider developing a proper longitudinal framework and not a quasi-longitudinal framework based on three waves of independent sample data.

Second, considering that all variables were self-reported, this may give rise to common method bias concerns. Although this is a multilevel study and as such increased the unbiased nature of our results (Lai *et al.*, 2013), future research should consider a multilevel analysis where managers could respond only to the macro organizational level HPWS and organizational performance questions, and employees could respond only to micro individual level HR flexibility questions (Kozlowski and Klein, 2000). Third, the findings of this study may not generalize in other countries, because the sample used in the analysis was referring to Greece which was facing economic and financial problems. Future research should consider other countries that may face similar problems with Greece.

Conclusion

In spite of the previous limitations, using a robust multilevel quasi longitudinal framework, the study has analyzed the relationship between HPWS and organizational performance through three mediating mechanisms of human resource flexibility dimensions (i.e., functional flexibility, skill malleability, and behavioural flexibility), in a serially weakening economic and financial crisis environment. The results indicate that although HPWS positively influences all three HR flexibility dimensions, this

positive effect is not transferred equally to organizational performance. The dominant effect on organizational performance is attributed to skills malleability, a smaller effect is attributed to behavioural flexibility, whist a negligible effect is attributed to functional flexibility. These effects become stronger with the weakening of economic and financial crisis environment.

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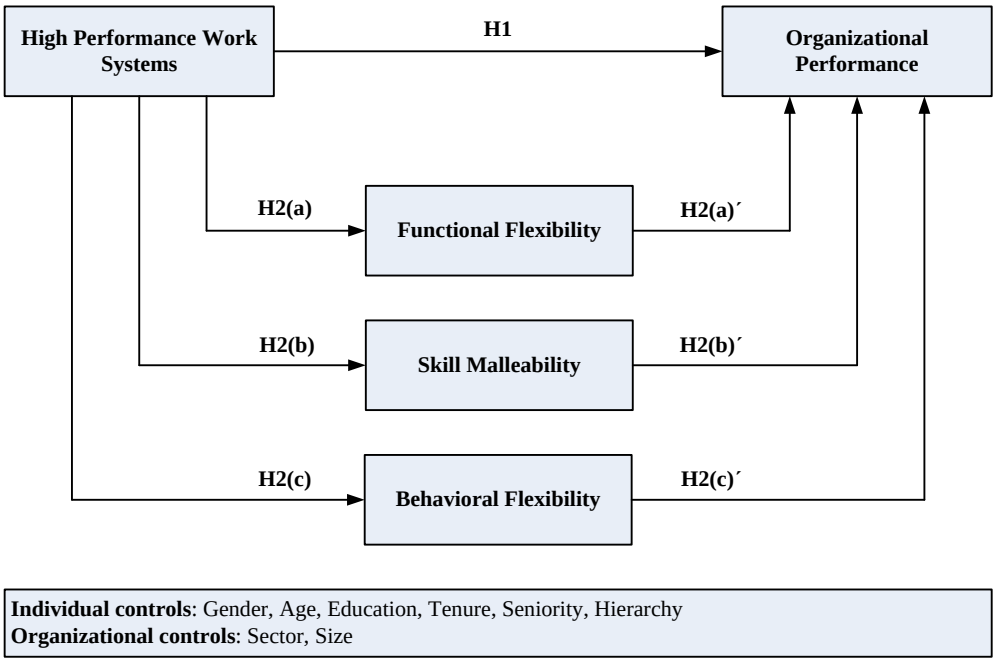

Figure 1. The operational model

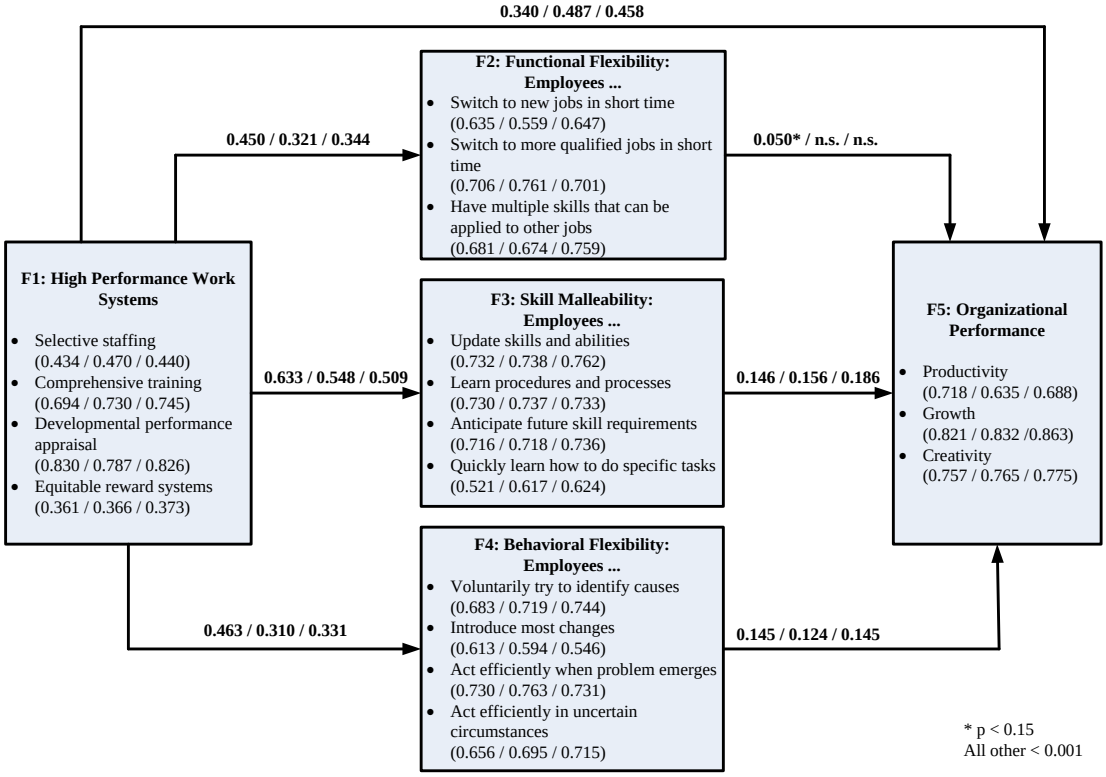

Figure 2. The within-employees estimation results of the operational model

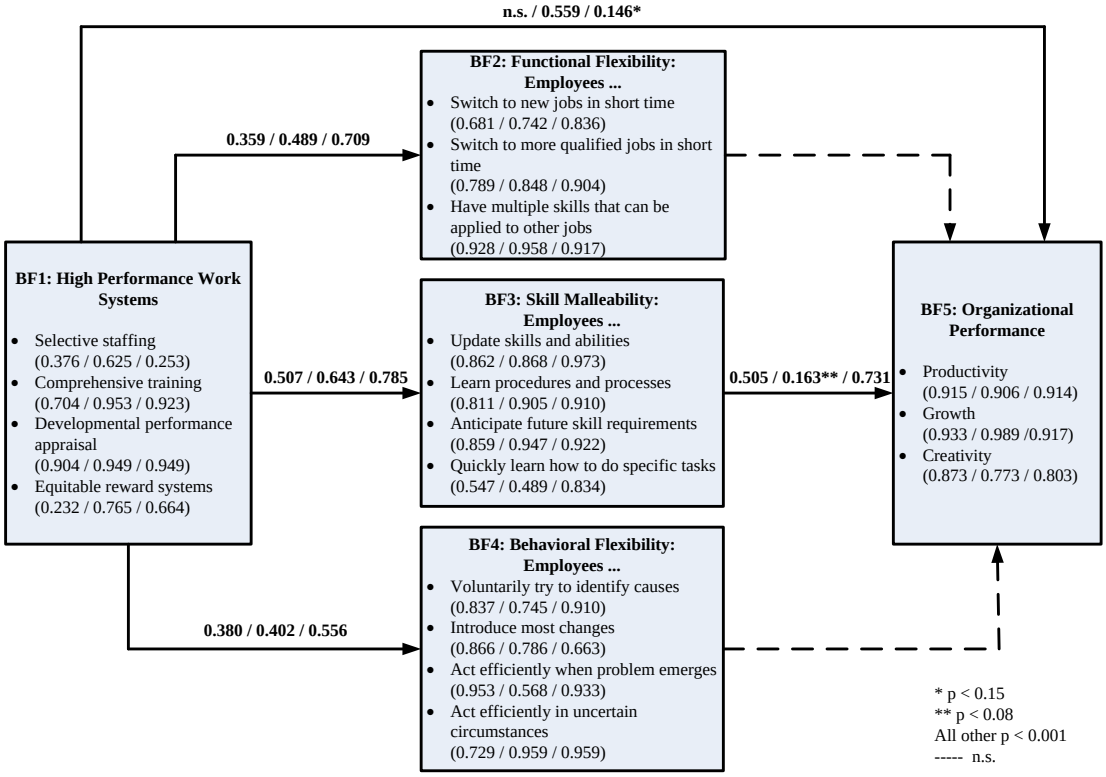

Figure 3. The between-organizations estimation results of the operational model

Table 1. Sample characteristics

Year	2014	2016	2018
Demographic characteristics of sample organizations	N=133	N=118	N=140
	(in percentages)		
Employees			
10 – 20	54.6	53.4	40.5
21 – 50	25.1	29.1	28.2
51 – 100	8.8	5.1	7.8
101 +	11.5	12.5	23.6
Sector			
Manufacturing	17.4	22.1	26.7
Services	47.6	31.7	45.9
Trade	35.0	46.2	27.4
Demographic characteristics of sample respondents	N=1248	N=1139	N=1040
	(in percentages)		
Gender			
Male	53.9	53.0	52.5
Female	46.1	47.0	47.5
Age			
- 30	28.8	31.6	31.3
31 – 40	34.9	32.1	29.9
41 +	36.4	36.3	38.8
Education			
Basic	3.8	5.4	3.2
High school / Lyceum	31.5	33.5	29.3
University	64.7	61.1	67.5
Tenure			
Full time	87.6	82.5	82.8
Part time	12.4	17.5	17.2
Seniority (in years)			
1 - 5	62.5	43.4	40.8
6 – 10	23.9	24.6	20.3
11 – 15	17.4	12.8	15.0
16 +	16.9	19.2	23.9
Hierarchy			
Senior managers	16.3	15.7	20.8
Middle managers	21.2	19.5	24.7
Other employees	62.5	64.8	54.5

Table 2. Means, standard deviations, consistency and reliability indices, and correlation coefficients of constructs

Year	Construct	Mean (standard deviation)	Consistency and reliability indices		Correlation coefficients				
			Cronbah's alphas	Composite reliability (CR)	[1]	[2]	[3]	[4]	[5]
2014	1. HPWS	3.64 (0.74)	0.703	0.816	[0.539]				
	2. Functional Flexibility	3.64 (1.23)	0.770	0.868	0.319	[0.687]			
	3. Skill Malleability	4.10 (1.18)	0.798	0.872	0.411	0.518	[0.633]		
	4. Behavioural Flexibility	3.79 (1.16)	0.808	0.874	0.313	0.389	0.624	[0.637]	
	5. Organizational Performance	5.17 (1.01)	0.866	0.918	0.314	0.282	0.430	0.329	[0.790]
2016	1. HPWS	3.97 (0.90)	0.808	0.874	[0.636]				
	2. Functional Flexibility	3.64 (1.28)	0.768	0.866	0.311	[0.684]			
	3. Skill Malleability	4.20 (1.28)	0.826	0.887	0.487	0.533	[0.665]		
	4. Behavioural Flexibility	3.94 (1.25)	0.816	0.879	0.278	0.417	0.604	[0.647]	
	5. Organizational Performance	4.43 (0.81)	0.788	0.903	0.501	0.259	0.420	0.301	[0.755]
2018	1. HPWS	3.93 (0.82)	0.740	0.835	[0.564]				
	2. Functional Flexibility	3.80 (1.34)	0.812	0.889	0.405	[0.728]			
	3. Skill Malleability	4.34 (1.31)	0.858	0.906	0.501	0.597	[0.707]		
	4. Behavioural Flexibility	4.05 (1.24)	0.829	0.887	0.345	0.465	0.590	[0.664]	
	5. Organizational Performance	5.35 (1.00)	0.856	0.913	0.523	0.349	0.555	0.406	[0.777]

Notes: Constructs (1) and (5) are 2nd order constructs; Constructs (2), (3) and (4) are 1st order constructs.
All correlation coefficients are significant at p = 0.01

Table 3. Fit indices of estimated models

Year		Chi-Square	df	p	Normed Chi-Square	RMSEA	CFI	TLI	SRMR-within	SRMR-between
	Hypothesized measurement model	590.026	250	0.000	2.360	0.033	0.934	0.920	0.039	0.126
2014	Single factor model	2206.074	270	0.000	8.171	0.076	0.627	0.577	0.084	0.155
	Proposed structural model	590.448	251	0.000	2.352	0.033	0.935	0.920	0.039	0.126
	Hypothesized measurement model	576.679	250	0.000	2.307	0.034	0.931	0.915	0.046	0.109
2016	Single factor model	2318.217	270	0.000	8.586	0.082	0.566	0.508	0.104	0.204
	Proposed structural model	576.676	250	0.000	2.307	0.034	0.931	0.915	0.046	0.109
	Hypothesized measurement model	697.209	250	0.000	2.789	0.041	0.922	0.905	0.065	0.077
2018	Single factor model	2699.461	270	0.000	9.998	0.093	0.577	0.520	0.106	0.104
	Proposed structural Model	698.368	251	0.000	2.782	0.041	0.922	0.905	0.065	0.078