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Using the lens of human and social capital to clarify HR practices' influence on individual and organisational performance

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Using the lens of human and social capital to clarify HR practices' influence on individual and organisational performance

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Abstract: This paper aims to explore potential mediation mechanisms between two core sources of intellectual capital, human (HC) and social (SC), and a set of human resources (HR) practices as a part of purported high-performance work systems to explain perceived individual and organisational performance. The data for this study were collected from 225 employees sampled from 75 organisations in different economic sectors. The theoretical research model and hypotheses were tested using structural equation modelling. The results support the mediating role of HC and SC on the HR practices system's effects on perceived individual and organisational performance, and their distinct influence on the different performance criteria. Moreover, the findings provide additional evidence regarding the mechanisms linking human resource management (HRM) and performance, which is useful in consolidating and expanding our understanding of the 'black box' perspective.

Keywords: human capital; social capital; human resource practices; employee performance; organisational performance; human resource management; HRM.

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Biographical notes: Carlos Botelho has received his PhD in Management/Organisation and Development at ISCSTE, Lisbon. He is an Assistant Professor at ISCSP, Lisbon University. His professional activity combines teaching strategic HRM and several HRM disciplines at Lisbon University with participation in HRM research projects. In addition, his research focus is in conducting studies with real people in real organisations, on subjects such as HRM and performance, performance management systems, human and social capital, and HRM maturity models.

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1 Introduction

Effective people management is commonly accepted as a critical factor in contemporary organisations' competitiveness (Boon et al., 2018; Delery and Roumpi, 2017; Jiang et al., 2012; Lin et al., 2017). Research focused on explaining the links between human

resource management (HRM) practices and organisational performance (OP) has evolved over the last 25 years, or since such pioneer studies as Huselid's (1995). Despite the rich empirical evidence regarding several human resources (HR) practices' effects (Becker and Huselid, 2006; Combs et al., 2006; Katou, 2017; Iverson et al., 2008), no consensus exists as to which practices have the most significant impact. Alternatively, an overall agreement can be observed among a few major categories of HR practice: recruitment and selection, performance management (and appraisal), training and development, work design, employment relationships, employee voice (participation) and reward management (Chung and Colakoglu, 2018; Posthuma et al., 2013). From 2000 onwards, the interest in unveiling what has been referred to as the 'black box' emerged as a new prominent concern in HRM (Boxall et al., 2011; Mitchell et al., 2013; Cooke et al., 2021).

The strategic human resource management (SHRM) literature suggests two approaches related to the concept of employees' capital: human capital (HC) and social capital (SC). These can be useful in deepening knowledge of the mechanisms operating within the HR system. We drew on vast literature expressing the view that HC is widely accepted as the key productive resource that employees bring to organisations, or their knowledge, abilities, and experience (Crook et al., 2011; Phillips and Phillips, 2015), considered strategic to business performance (Gratton and Ghoshal, 2003; Nahapiet, 2011; Nyberg and Wright, 2015). Other researchers have also argued that to fully exploit employees' HC, organisations must successfully integrate it at the team and organisational levels (Harms and Luthans, 2012; Methot et al., 2018; Tamer et al., 2014; Tsai and Ghoshal, 1998). These authors consider SC as fundamental to unlocking the process of creating value through people. Moreover, several scholars have claimed that the HRM system and its respective HR practices called high-performance work system (HPWS) are critical in the process of building both human and social employee capital (Bornay-Barrachina et al., 2017; Donate et al., 2016; Jiang et al., 2012; Lepak et al., 2011). However, a further exploration of the mechanisms connecting the HRM system of practices to performance through human and SC is required (Hauff et al., 2018).

This study offers an integrated theoretical framework and empirical research exploring not only of organisations' decisions in terms of managing people or the HRM system of practices in building human and SC, but also the mediating role of this capital in individual and OP levels. In doing so, this work responds to the recent call from organisational behaviour (OB) and HRM researchers for more applied studies on people management to unveil the mechanisms underlying an effective workforce and reduce the detachment from HRM practices (Cooke et al., 2021; Jiang and Messersmith, 2018). This fundamental research problem is divided into three specific research questions:

- 1 Does the HR system of practices contribute to promoting human and SC in the workforce?
- 2 What synergies exist between the two types of employee capital relative to perceived organisational performance (POP)? Do HC and SC mediate in the HPWS – POP link?
- 3 Do HC and SC display different associations relative to the two dimensions of individual performance – task performance (TP) and supportive behaviours?

The remainder of this paper is organised as follows. We first extensively review the literature related to HRM and HRM practices from a strategic perspective, by considering such theoretical models as HC management, and the multidimensional nature of the performance construct. We also examine the vast empirical evidence regarding the links between HRM systems and employees' performance from which our hypotheses and research model emerge. Next, we present our methodological options, followed by the presentation and interpretation of the study's primary results. Finally, the paper concludes with a general discussion of its theoretical and managerial implications, and future research directions.

2 Theoretical background and hypotheses

2.1 *Human resource practices and performance*

The influence of HRM and HR practices on OP has been a central research question capturing the interest of academics and practitioners over the last three decades. For example, various researchers at different times (Combs et al., 2006; Huselid, 1995; Jiang et al., 2012; Wood, 2021) have demonstrated HRM's relevant influence on OP. Similar conclusions have been reported in recent meta-analytic reviews (Pindek et al., 2017; Saridakis et al., 2017).

One important trend in SHRM field involves HPWS conceived as synergistic and mutually reinforcing bundles of HR practices intended to improve employee performance through actions to enhance individual abilities, motivation, and opportunities to perform (Beltrán-Martín and Bou-Llusar, 2018; Boxall and Purcell, 2017; Iverson et al., 2008; Soltis et al., 2018), which have a solid history of influencing organisational effectiveness. According to Saridakis et al. (2017, p.155), "the evidence supporting a positive and direct relationship between bundles of HR practices and firm performance is overwhelming in the literature".

It is often assumed that the different components of an HR system have equivalent impacts on several organisational outcomes, and hence, an additive approach should be adopted to measure these HR systems. Although this may seem adequate, we consider that other academics have challenged this assumption, to argue that different sets of HR practices may impact the same organisational outcomes in multiple ways: for example, literature has observed the principle of equifinality from system theory and instead argue for a common latent factor (Batt and Colvin, 2011; Delery and Roumpi, 2017; Jiang and Messersmith, 2018; Subramony, 2009).

Extant literature presents a convincing argument to consider performance criteria both at the individual and organisational levels. Further, it parallels the assumption that HR practices proximally impact employees' performance by contributing to changes in attitudes and behaviours, as well as knowledge, skills, and abilities, which subsequently have a distal influence on OP. For example, Wright et al. (2018, p.155) noted that the 'processes through which HR practices impact firm performance take place within individuals'.

We assume a multidimensional performance framework in the scope of this study (Campbell and Wiernik, 2015; Carpini and Parker, 2018). Thus, in addition to the task or in-role dimension of performance the most common measurement criteria for determining individual performance (Carpini et al., 2017; Griffin et al., 2007), literature

agrees on the importance of discretionary behaviours that exceed the scope of tasks and job responsibilities. Scholars have highlighted two critical types: supportive behaviours directed at other individuals (OCB-i) and the organisation (OCB-o) (Borman et al., 2001; MacKenzie et al., 2018; Koopmans et al., 2011; Podsakoff et al., 2009). The same multidimensionality is observed when the target of performance is not employees but organisations. In addition to such objective indicators as efficiency and financial measures, literature commonly examines the use of subjective (perceived) measures, some of which relate to HR outcomes, such as, employees' motivation and competencies; as well as operational outcomes, that can focus on customer satisfaction, product and service quality, and competitiveness (De Winne and Sels, 2010; Jiang et al., 2012; Mitchell et al., 2013; Tzabbar et al., 2017; Yang and Lin, 2009). Therefore, we propose the following:

Hypothesis 1 HPWS is positively associated with POP.

Hypothesis 2 HPWS is positively associated with employees' TP.

Hypothesis 3 HPWS is positively associated with employees' supportive behaviours, both interpersonal and organisational directed.

2.2 Linking HR practices to human and SC

Largely due to the increasing importance given to HC-and SC – related HRM researchers have become interested in understanding how to capture and develop both HC and SC, to achieve sustainable competitive advantage (Crane and Hartwell, 2019; Ghitulescu and Leana, 2006; Nahapiet, 2011; Youndt and Snell, 2004). One key area of study concerns the links between HC and SC and the policies and practices adopted to manage HR. We observed many suitable examples of academic studies that consider both HR practices as a part of an integrated system often referred to as HPWS and others focused on specific configurations of single HR practices, such as, recruitment and selection, training and development, work design, or compensation. In most cases, evidence supports the existence of a positive relationship between HR practices and the level of organisational HC and SC (Cabello-Medina et al., 2011; Donate et al., 2016; Jiang et al., 2012; Liao et al., 2009; Yang and Lin, 2009).

A review of these studies reveals a consistent pattern of results: involving both – direction (positive) and magnitude (moderate to high), such as the following examples: First, different configurations of HR practices relate to HC, with scores ranging from 0.15 to 0.37; and SC, with scores ranging from 0.18 to 0.39. Second, another case presents values of 0.53 to 0.71 for HC and 0.51 to 0.68 for SC, without any significant differences regarding the cluster of HR practices. Third, an effect of 0.58 between HC and HRM investment, and 0.34 for SC. Fourth, HPWS explains 17% variance in HC and 22% for SC.

Taken together this literature assumes that HC can be leveraged primarily through HR practices focused on employee acquisition (recruitment and selection) and employee development (training, developmental performance management, and career). Alternatively, the system of HR practices can influence SC by supporting the quality of the work environment, collaborative relationships, decentralised decision-making, communication, and the reward system (Crane and Hartwell, 2019; Evans and Davis, 2005; Saridakis et al., 2017; Wang et al., 2015).

In line with previous studies, we predict that:

Hypothesis 4 HPWS is positively associated with HC.

Hypothesis 5 HPWS is positively associated with SC.

2.3 HC, SC, and performance

The nature of contemporary organisations requires them to optimise their HR, a source of capital in that they use other types of tangible and intangible assets to create value for the organisation. Scholars have interpreted the nature of sustained competitive advantage by suggesting the concept of capital be applied to HR to fit the resource-based view of the firm model (Barney and Clark, 2007; Greve et al., 2010; Phillips and Phillips, 2015; Wright et al., 2001). Further, Boxall et al. (2011) noted that organisations need adequate levels of both HC and SC to be effective. While HC refers to employees' knowledge, work experiences, skills, and abilities (Ahmed et al., 2019; Hitt et al., 2001; McMahan and Harris, 2013; Ployhart and Moliterno, 2011); SC involves the relationships between organisational members (Coleman, 1990; Ghitulescu and Leana, 2006; Methot et al., 2018; Nahapiet, 2011). According to Nahapiet and Ghoshal (1998), SC also includes three key distinct dimensions: structural, involving the connections among actors; relational, or the trust among actors; and cognitive, or the shared goals and values among actors. Both sources of capital are assumed to relate to OP. Regarding HC, aggregating employees' knowledge and skills allows organisations to possess the capabilities necessary for superior performance (Hitt et al., 2001; McMahan and Harris, 2013; Nyberg and Wright, 2015; Subramaniam and Youndt, 2005). In contrast, the rationale for SC relates to employees' capacity to create, transfer, and leverage knowledge between internal (employees and managers) and external contacts, so SC can improve working conditions as well as individual and OP (Andrews, 2010; Leana and Van Buren, 1999; Sun et al., 2007; Tamer et al., 2014; Wang et al., 2015).

Moreover, research on individual performance has, generally, deemed that HC – through the creation of knowledge and skills – is logically associated with TP. However, SC is, considered as a contextual variable capable of creating collaborative work environments, and is anticipated to naturally connect to contextual performance. Our study classifies this as interpersonal and organisational supportive behaviours. The scant academic studies relating HC and SC to these dimensions of employees' performance can be considered instrumental in understanding their connection to OP.

Hence, we hypothesise that:

Hypothesis 6 HC is positively associated with POP.

Hypothesis 7 SC is positively associated with POP.

Hypothesis 8 Employees' TP mediates the relationship between HC and POP.

Hypothesis 9 Employees' supportive behaviours – interpersonal and organisational directed – mediate the relationship between SC and POP.

2.4 The interactions between human and SC

Regarding the connections between HC and SC, which a seldom-researched topic, recent academic works highlight SC's role in creating a favourable context for the development

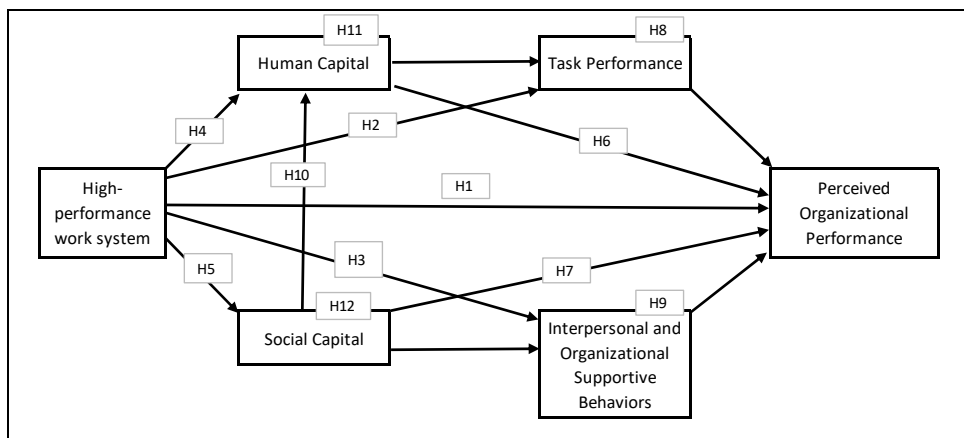
of HC, which implicitly suggests SC as a possible mediator. Beer (2009, p.251) noted that 'organisations with high SC are better at developing and enhancing the talents of their members (HC)'.

These interactions can be analysed in terms of both HC and SC antecedents – or specifically, HR practices and their influence on OP. Literature provides four different types of highly informative studies on this issue:

- 1 Studies including HC as key to building sustained competitive advantage, such as the meta-analysis by Crook et al. (2011) presenting evidence of HC's positive effects on operational and firm performance.
- 2 Studies combining HC with other variables, such as employee motivation (Jiang et al., 2012), social exchange (Takeuchi et al., 2007), and psychological empowerment (Liao et al., 2009).
- 3 Studies in which SC facilitates HC development (Bornay-Barrachina et al., 2017; Leana and Pi, 2006; Leana and Van Buren, 1999; Jiang and Liu, 2015), as well as a meta-analysis identifying 18 of 21 studies demonstrating that positive relationships exist between SC and firm performance (Westlund and Adam, 2010). This in particular summarises a trend noted by Hollenbeck and Jamieson (2015, p.370), in that 'many of the phenomena and outcomes related to HC, such as recruiting and onboarding, teamwork and communication, knowledge management, and employee satisfaction are dependent on SC and the relational networks that exist among employees'.
- 4 Studies integrating both HC and SC (Fei, 2019; Yang and Lin, 2009; Youndt and Snell, 2004) which support the mutual influence of HC and SC on OP.

Based on this vast, diverse evidence, this study also posits that an interconnectedness exists between HC and SC, and suggests they are instrumental in HR practices' influence on OP.

Figure 1 Theoretical research model



Thus, we hypothesise that:

Hypothesis 10 SC is positively associated with HC.

Hypothesis 11 HC mediates the relationship between HPWS and POP.

Hypothesis 12 SC mediates the relationship between HPWS and POP.

Figure 1 illustrates the theoretical research model built to synthesise the previously noted variables and their effects, as well as the resulting hypotheses.

3 Methodology

3.1 Sample and procedure

This study used a cross-sectional design, with data collected through a self-administered survey used to obtain employees' and managers' perceptions regarding HR practices, HC and SC, TP, supportive behaviours – interpersonal and organisational directed, and POP (operational and HR outcomes-based criteria). The respondents were 225 employees from 75 private companies in different economic sectors. Our final sample was comprised of 95 managers and 130 employees, with an average age of 37.27 and 8.62 years of organisational tenure, 56.5% were female and 43.5% were male. We collected the data through e-mail invitations sent to heads of HR from the 250 largest firms in Portugal. In the second phase, the organisations who agreed to participate were invited through their HR manager to identify three non-HR employees – managers and professionals – to respond to a questionnaire through an Internet link.

The survey was based on scales available in academic literature, with necessary adjustments, to consider this study's objective. We used a standard double-back-translation approach, by which the original items in English were translated into Portuguese by a professional bilingual translator, and then back-translated into English. The variables were measured using a seven-point Likert-type scale, ranging from one ('totally disagree') to seven ('totally agree').

3.2 Measures

- *HPWS* – based on a broad literature review – or specifically, the works by Posthuma et al. (2013), Heavey et al. (2013) and Jiang et al. (2012), we adopted a set of 18 practices selected from the fundamental HR categories of practice. These items covered recruitment and selection (e.g., 'we are highly selective in choosing our new employees'), reward management (e.g., 'employees are rewarded, financially or non-financially, based on their individual and/or team performance'), performance management (e.g., 'our performance is evaluated on a formal, regular basis'), employee participation (e.g., 'managers update employees on what occurs within the organisation and how results are progressing'), training (e.g., 'training and development actions focus on improving our performance'), career management (e.g., 'career decisions are based on merit criteria').
- *HC and SC* – we measured these two types of employee capital with eight items from an original scale presented by Youndt et al. (2004). Examples include (for HC) 'our employees are experts in their particular jobs and functions' and (for SC) 'our employees are skilled at collaborating with each other to diagnose and solve problems'.

- *Task performance* – this four-item scale (Botelho, 2012) was developed based on Williams and Anderson's (1991) work and following recommendations from Bott et al. (2003), and Campbell and Wiernik (2015); for example, 'employees demonstrate the capacity to solve problems related to their jobs'.
- *Interpersonal and organisational supportive behaviours (IOSB)* – we measured these two sources of employees' behaviours using an eight-item scale (Botelho, 2012) adapted from Williams and Anderson (1991), Borman et al. (2001), and Carpinì and Parker (2018). Interpersonal supportive behaviours include, for example, 'employees offer help to colleagues when they have some difficulty in conducting a task' or 'employees support and/or encourage a colleague when he or she has a personal problem'. Examples of supportive OBs include 'employees defend the organisation when others criticise it', or 'employees actively and positively promote the organisation's products and services'.
- *Perceived organisational performance* – we used a set of six items selected from different scales used to measure non-financial indicators related to OP, as well as social and operational views (Guerrero and Barraud-Didier, 2004; Hauff et al., 2018; Jiang et al., 2012; Tzabbar et al., 2017; Yang and Lin, 2009; Wall et al., 2004). These items cover two key dimensions associated with POP: the operational perspective, including productivity, quality, service, and competitiveness; and the social/people perspective, including the organisation as a good place to work, motivated employees, and a competent workforce. Examples are 'employees demonstrate the competencies required by the organisation' and 'customers are satisfied with their products and/or services'.
- *Control variables* – consistent with previous studies on HR practices' performance effects, we will verify the potential influence of demographic variables related to our sample: age, organisational tenure, and organisational role (manager or professional).

3.3 *Data analysis*

We performed the data analysis based on structural equation modelling (SEM) using SPSS and AMOS (version 23) software programs. The analysis was performed in four steps. First, we tested each variable's measurement model. Second, we tested the proposed theoretical model's goodness-of-fit and compared it with alternative models, then tested our hypotheses. Third, we analysed the mediating hypotheses using Sobel's test to examine the statistical significance of the indirect effects. Fourth, we aggregate the data at the unit level (the firms in our sample) and replicated the theoretical model.

4 **Results**

4.1 *Measurement model*

The initial step consisted of performing a confirmatory factorial analysis (CFA) for the different measures as a part of the full model, using some of the most common goodness-of-fit indicators – CFI, GFI, NFI, RMSEA, and SRMR – to test the quality of adjustment (Cangur and Ercan, 2015; Hair et al., 2016). Additionally, we considered the

χ^2/df ratio, ideally ranging from less than three to a maximum of five. Overall, the loadings of all individual items largely correspond to their original factors and reflect the theoretical models, in that the final 16 items for HRM practices scored in the range of 0.50 and 0.52. Two items were deleted to enhance the scale adjustment; the four HC items range from 0.75 to 0.83; the four SC items range from 0.35 to 0.83, with one item deleted to enhance the scale adjustment; the four TP items range from 0.67 to 0.90; the eight IOSB items range from 0.76 to 0.86; and the six POP items range from 0.71 to 0.90.

All the measures exhibited overall acceptable properties, as noted in the following Table 1.

Table 1 Evaluation of measurement models for the constructs used in the study

<i>Variables</i>	χ^2	<i>df</i>	<i>p</i>	<i>GFI</i>	<i>CFI</i>	<i>NFI</i>	<i>RMSEA/IC LO</i>	<i>SRMR</i>
High-performance work system	48.847	9	0.000	0.949	0.956	0.948	0.120/0.089	0.038
Human capital	2.735	2	0.255	0.997	0.999	0.997	0.035/0.000	0.009
Social capital	1.765	1	0.184	0.996	0.997	0.993	0.050/0.000	0.016
Task performance	2.457	2	0.280	0.996	0.999	0.996	0.030/0.000	0.014
Interpersonal and organisational supportive behaviours	19.99	5	0.172	0.984	0.997	0.988	0.033/0.000	0.021
Perceived organisational performance	12.01	7	0.100	0.987	0.996	0.989	0.048/0.000	0.022

Table 2 presents the variables' descriptive statistics, including their means, standard deviations, alpha values, and intercorrelations. The evidence supports the presence of good reliability as measured by Cronbach's alpha, in which all cases exceed the cut-off point of 0.70 (Kline, 2005). Further, no evidence exists of any possible constraints due to non-normality of multivariate data; this is based on kurtosis and skewness, which is suggested to be close to zero with no case of skewness greater than 2 and kurtosis of greater than 7 (Hair et al., 2016). Additionally, the data is sourced from single respondents, and thus, multicollinearity risks were checked using the variance inflation factors (VIF) and tolerance (T). The VIF scores ranged between 1.574 and 2.197, with T ranging from 0.455 to 0.635. Both indices scored according to the recommended values.

Finally, we checked for a possible common method variance by applying Harman's single-factor procedure (Podsakoff et al., 2003). The 36.89% variance explained by a single factor demonstrates that common method bias is not a major concern in this study, with a less than 50% cut-off point.

It is important to stand out that confirmatory factor analysis revealed that for the measure of HPWS a common second-order factor solution containing six first-order factors – training, performance management, reward management, recruitment and selection, career management, employee participation, displayed better adjustment indices than the alternative of one common general factor, lower AIC 54.167 vs. 259.784 and ECVI values 0.178 vs. 1.134. Similarly, for employee performance the solution based on two first order factors – TP and IOSB, rather than the one-factor solution, emerged with lower AIC 85.998 vs. 89.297 and ECVI values 0.376 vs. 0.390.

Table 2 Descriptive statistics and correlations for the constructs used in the study

<i>Variables</i>	<i>M</i>	<i>SD</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>
High-performance work system	3.96	1.14	(0.89)					
Human capital	4.57	1.09	0.543	(0.89)				
Social capital	4.48	1.05	0.435	0.617	(0.78)			
Task performance	4.99	1.03	0.387	0.565	0.460	(0.89)		
Interpersonal and organisational supportive behaviours	4.6	1.11	0.527	0.587	0.544	0.637	(0.82)	
Perceived organisational performance	4.95	1.09	0.626	0.736	0.579	0.549	0.645	(0.80)

Note: Internal consistency reliabilities are in parentheses along the diagonal; all correlations are significant at the 0.01 level (two-tailed).

4.2 Structural models

A SEM methodology was used to test the theoretical research model (Figure 1) and the associated hypotheses by analysing the theoretical research model, in which all paths relating to the constructs were estimated. This model did not exhibit acceptable adjustment indices, in that, the CFI, GFI, NFI, and SRMR did not comply with the threshold values. To obtain an adequate adjustment for this research model the modification indices suggest that we consider as an alternative eliminating the HPWS' effect on TP and adding the effects of interpersonal and organisational supportive behaviours on TP (Figure 2). This updated model provides excellent fit indices, namely, the CFI, GFI, and NFI are all greater than 0.90, and the RMSEA and SRMR are less than 0.05. Moreover, alternative models used to compare with this theoretical model had poorer fit indices. For example, a model only noting the direct effects of HPWS, HC, SC, TP and OSBI on POP had a GFI, CFI, and NFI below 0.70 and SRMR of 0.28; another model without the direct effects of HC and SC on POP displayed a GFI and NFI below 0.90, and a model without the direct effects of HPWS on POP had a GFI and NFI below 0.90. Based on this evidence, this study will proceed with all further analyses based on the updated theoretical research model (Figure 2), which illustrates the path model and measurement results with the standardised path coefficients and adjusted R-squared values.

4.3 Hypothesis testing

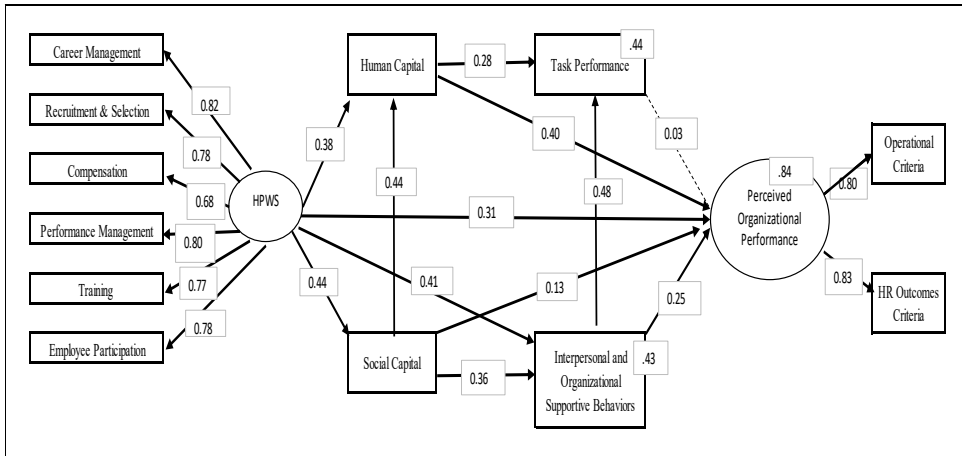
The results indicate that the updated theoretical model, which combines the effects of high-performance work systems and HC and SC – explains 43% of employees' TP and 44% of interpersonal and organisational supportive behaviours. Moreover, the full model explains 84% in the variance of POP.

Based on the path effects' direction and magnitude, we can conclude that most hypotheses were not rejected, which fully supports the relevance of HPWS, HC and SC, and the IOSB variables in explaining POP. The two exceptions regarding the theoretical

model that did not display significant effects were HPWS on TP despite its moderate correlation, 0.39, and TP on POP, despite its moderate-high correlation, 0.55.

The first group comprised of hypotheses 1 to 3, predicted the relationship between HPWS and the three performance criteria: – the task, supportive behaviours, and organisation. The results based on the standardised parameter estimates for the hypothesised model reveal HPWS positively and significantly affects both POP and IOSB ($\beta = 0.31$, and $\beta = 0.41$, $p < 0.01$), with non-significant effects on TP. Thus, Hypotheses 1 and 3 are supported, and 2 is rejected.

Figure 2 Updated theoretical research model



Note: Solid and dotted lines indicate significant and n.s. effects, respectively.

Alternatively, Hypotheses 4 and 5 refer to the relationship between HPWS and HC and SC as two sources of employee capital and were not rejected. The results indicate HPWS positively and significantly affects both HC and SC ($\beta = 0.38$ and $\beta = 0.44$, $p < 0.01$).

A third group of hypotheses anticipates an association between HC and SC and POP. The data supports this relationship ($\beta = 0.40$ and $\beta = 0.13$, $p < 0.01$), with a significantly higher magnitude for HC. Therefore, we did not reject Hypotheses 6 and 7.

Finally, hypothesis 10 was not rejected, confirming the positive association between SC and HC ($\beta = 0.44$, $p < 0.01$).

Moreover, three of the four mediating effects predicted by the theoretical research model were confirmed. This verifies HC and SC partially mediate the associations between HPWS and POP (Sobel tests for Hypotheses 11 and 12: $z = 3.38$, $p < 0.001$ and $z = 2.19$, $p < 0.028$). Further, IOSB has more of a mediating effect than SC on POP (Hypothesis 9: $z = 3.38$, $p < 0.001$). TP’s effect on HC’s influence on POP was not confirmed (Hypothesis 8).

Our results also demonstrate that regardless of the possibility of considering a general factor for OP – a latent construct comprised of operational and HR outcomes criteria – relevant differences exist in terms of the associated effects for our predictor variables. Specifically, the findings reveal that for the operational criteria, HC has dominant effects ($\beta = 0.47$), while the other variables exhibit lesser effects (HPWS: $\beta = 0.18$; SC: $\beta = 0.07$; and IOSB: $\beta = 0.12$). When the criteria involve HR-related

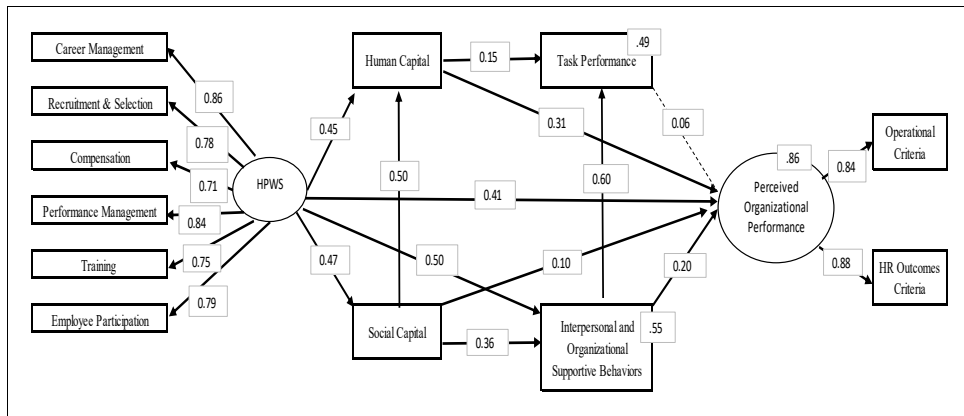
outcomes, the HC's effect significantly decreases to $\beta = 0.20$, with other variables effects increasing (SC: $\beta = 0.15$; IOSB: $\beta = 0.28$; and HPWS: $\beta = 0.31$).

4.4 Supplemental analysis

Our data were collected from a sample of individuals working on different companies, with three employees per company, therefore, it was possible to test our theoretical research model at the unit level of analysis following recommendations by González-Romá et al. (2002) to aggregate lower-level scores to represent scores at higher levels. Namely, the authors referred to a sample size of three members representing a minimum size to operationalise these unit-level constructs [González-Romá et al., (2002), p.472]. This allows us to minimise potential risks due to errors in common method variance. First, we checked for the aggregation criteria, having estimated indices in line with the reference values, or average Rwg: 0.98, ICC (1): 0.56, ICC (2): 0.78. The results of this supplementary analysis (Figure 3) are illuminating, as they display an overall pattern remarkably similar to the one exhibited in our baseline model, which supports our analysis and primary conclusions.

In summary, our updated research model's at the unit-level results not only robustly support the importance of HC and SC in explaining OP, but also highlight the presence of complex, dynamic mediation mechanisms intervening in the relationship between the system of HR practices and organisational outcomes.

Figure 3 Theoretical research model updated at the unit-level



4.5 Control variables

Overall, the data indicate that the three variables should not have a relevant influence. Moreover, our main concern involves any possible influences on the model's core variables – namely, TP, interpersonal and organisational supportive behaviours, and POP and thus, the results are not significant, and we did not consider them in our updated theoretical model.

5 Discussion

This study responds to the call from OB and HRM researchers for more applied studies on people management, by observing the mechanisms underlying an effective workforce and how these relates to organisational effectiveness (Cooke et al., 2021; Jiang and Messersmith, 2018). Our main findings support the influence of purported HPWS – as a latent general factor that encompasses different categories of HR practices, such as recruitment and selection, performance management (appraisal), reward management, training, career management, and employee involvement – on POP. Further, it was feasible to build a theoretical model based on the HPWS approach by simultaneously integrating both forms of employees' capital (HC/SC) and adopting a multidimensional performance perspective. The latter explains a significant percentage of variance in POP using both operational and HR-based outcome criteria. To our knowledge, this framework is pioneering in modern literature.

Generally, the study's results support the hypothesised relationships. First, this study found significant relationships between HPWS and the different types of performance criteria. Specifically, at the individual level, this involves employees' TP and supportive behaviours (IOSB); at the organisational level, this includes operational and HR-based outcomes. Second, the HPWS emerged as a strong predictor of both human and social capital. Third, HC and SC had significant direct effects on POP, with the former having a greater impact because its mediation through TP is non-significant, while the SC's path through supportive behaviours significantly reduced the magnitude of any direct effects. Finally, and as anticipated, SC acted as an enabler in building HC.

Given recent scholars' opinions that the understanding of how HPWS contributes to firm performance remains a work in progress (Hauff et al., 2018; Saridakis et al., 2017), one of the most compelling findings of this study's contribution to literature is the double mediating role of HC and SC regarding HR practices' effects on POP, although with different degrees of intensity.

While both mediation mechanisms were partial, HC exhibited a greater magnitude than SC. Further, our analysis clarified that HC and SC have different effects on employees' performance criteria; specifically, HC had a stronger effect on task or in-role performance, and SC on interpersonal and organisational supportive behaviours. In the case of TP, HC cancelled out the HPWS' direct influence, while for supportive behaviours; SC had only a partial mediating effect. Thus, the study provides additional evidence on the mechanisms linking HRM and OP, which is useful in consolidating and expanding our understanding of the 'black box' perspective. This contribution suits the suggestion by Boon et al. (2018) in the scope of strategic HRM, in knowing how HRM and HR practices jointly build organisational effectiveness.

One unique finding from this analysis emphasises the need for a clarification of conceptual definitions due to an apparent overlap between HC and TP. In contrast to most previous studies, which have adopted an additive approach to measure HR systems, our study reveals support for an alternative view based on systems theory and scholars arguing for a common latent factor (Batt and Colvin, 2011; Delery and Roumpi, 2017; Jiang and Messersmith, 2018). Of particular interest in advancing our knowledge of influence mechanisms (or the 'black box') is evidence that multiple HR practice categories positively affect POP, as indicated by loadings that range from 0.68 to 0.82.

Moreover, the findings highlight the significant, positive interplay that exists between HC and SC, with a correlation of 0.62; further, the structural model validated the

hypothesis regarding SC's effect on HC, supporting the idea that SC creates a favourable context for the development of HC, as argued in the few studies that considered both sources of employees' capital (Bornay-Barrachina et al., 2017; Jiang and Liu, 2015). Our structural model's adjustment requires IOSB to directly affect TP, which reveals new insights regarding the dynamics of performance construct. It also advances one possible explanation, in that these employee behaviours are an enabling factor in explaining TP – similar to the relationship between SC and HC. Therefore, the available evidence suggests that both sources of employees' capital are mutually relevant in understanding the antecedents of their performance; this study confirms that both HC and SC are important assets in explaining an organisation's outcomes (Donate et al., 2016; Fei, 2019).

Another important finding relates to the long-standing debate on the performance construct's structure. This study empirically validates a multidimensional structure as the one that best reflects the nature of employees' contributions to organisational success (Campbell and Wiernik, 2015; Griffin et al., 2007). This study's results reveal that the three factors within the performance construct highly correlate with each other, with values ranging from 0.60 to 0.75. However, they do not form a latent general factor as the model most suitable for the data was based on a solution with two first-order factors. One of these factors includes indicators of TP, and the second factor combines the supportive behaviours directed toward individuals and the organisation, which has profound implications for defining the performance construct and its use in HRM systems (Carpini and Parker, 2018; Carpini et al., 2017).

Our results also demonstrate that regardless of the possibility of considering a general factor for OP, a latent construct comprised of operational criteria (e.g., productivity) and HR-based criteria (e.g., organisation is a good place to work), exhibited relevant differences in terms of the associated effects with our predictor variables. Specifically, the findings revealed that the dominant effect among the operational criteria is HC ($\beta = 0.47$), while the other variables exhibit lower effects (HPWS: $\beta = 0.18$, SC: $\beta = 0.07$, and IOSB: $\beta = 0.12$); when the criteria involve HR-related outcomes, the HC effect significantly decreases to $\beta = 0.20$, and increases occur in both SC ($\beta = 0.15$), IOSB ($\beta = 0.28$) and HPWS ($\beta = 0.31$).

Collectively, these findings demonstrate that from a strategic HRM perspective, we have met the need to know more about the mechanisms that support the link between people management decisions and outcomes with meaningful impacts on OP (Boon et al., 2019; Colakoglu et al., 2019). Moreover, Snape and Redman (2010, p.1220) provide a comprehensive illustration of this expectation, as they posit scholars should 'address the widely recognised need for a richer understanding of the linkages between HRM and outcomes', which reinforces the legitimacy of the HR function in the organisation. The present study expands the topics identified in recent meta-analyses (Pindek et al., 2017; Saridakis et al., 2017), which did not include HC and SC as possible mediating mechanisms in the studies explaining the HRM-performance connection.

5.1 Conceptual and managerial implications

This study provides four theoretical contributions. First, it assists in answering what Wright et al. (2018) argued to be a tension in SHRM research, in assessing not only the relevant characteristics of people that drive firm performance, but also the practices used

to manage those people. These findings strengthen our understanding of the role of HRM and practices in literature as well as their effects on OP.

Second, the support for HC and SC as mutual mediators of the relationship between HR practices and OP adds noteworthy ideas to the debate on the theoretical stream positioning capital as a critical concept for establishing organisational competitive advantage.

Third, our study expands the evidence presented in previous research by combining the use of both organisational and individual performance criteria; specifically, our framework included task and interpersonal and organisational supportive behaviours as constructs. This analysis reveals that employees' TP highly overlaps with HC due to what it exhibits low direct effects on POP. In contrast, although supportive behaviours are related to SC, they have significant incremental effects on POP.

Finally, our study confirms the multidimensional nature of OP and the possibility of a general factor formed to encompass different criteria, whether operational or HR-based outcomes. Nevertheless, our findings also highlight the possibility that this general factor might uncover specific relationships depending on its nature. For example, when considering performance criteria as associated more with HR or people management, we noticed all of the following variables had a more significant influence: HC ($\beta = 0.20$), SC ($\beta = 0.15$), OBs ($\beta = 0.28$), and HR practices ($\beta = 0.31$). When the criteria were more operational or business-related, HC had a substantial, dominant effect.

Three dominant ideas emerge when observing this study's managerial contributions. First, the findings strengthen our understanding of the role of HRM and practices in examining employee and OP. One major insight is that all main categories of HR practices contribute to creating an organisational system that positively influences the building of both HC and SC. Therefore, organisations should focus their resources on improving the HRM system, and in particular, encourage HR practices designed as bundles conceived as both synergistic and mutually reinforcing, such as the HPWS.

Second, we focus on the importance of using integrated models to develop an organisational HRM system. In developing the awareness that HC and SC both significantly influence HRM systems' effectiveness, HR and business managers can learn about the key principles to adopt and the manner by which they can be conveyed throughout the organisation.

Third, our findings could be of interest to practitioners who aim to enhance organisational effectiveness through a balanced view of workforce management. Ultimately, they can consider our methodology in designing organisational contexts that combine a supportive social context with people management practices focused on high performance.

5.2 *Limitations and future studies*

As with similar studies in the HRM field adopting cross-sectional designs, our study contains some limitations and insights for future development. First, the data were cross-sectional and did not allow causal inferences to be made; therefore, we recommend that caution is necessary in interpreting our results, and especially concerning the causal model we tested. Second, self-reported data can indicate a common method variance issue (Podsakoff et al., 2003). We acknowledge work by Gerhart et al. (2000), in that real risks are associated with single-source data-collection methods. However, our study aimed to minimise such risks by collecting data from two sources – managers and

professionals and using as referent to the questionnaire items the 'organisation'. Further, self-reported data seemed to be the most appropriate option in capturing employees' perceptions and appraisals of these variables, and according to Spector (2006), the concerns associated with a heavy reliance on self-reported data measurements may be overstated. Third, the number of respondents per organisation was not sufficient for a stronger claim of generalisability at the unit level, although three individuals per unit fulfilled the minimum statistical recommendations (González-Romá et al., 2002). Finally, the lack of objective measures of financial performance did not allow us to check our perceived measures' validity as a proxy for true performance.

Future studies replicating our model can overcome the limitations identified here by, for example, adopting a longitudinal design and conducting a more robust unit-level analysis. Additionally, the research model should be expanded to include other variables related to OP, both perceived and objective indicators, and specifically expand the criteria to include financial measures. Another improvement would involve measuring employees' performance with direct supervisors' ratings.

6 Conclusions

This study contributes to the SHRM field by offering a theoretical framework to consolidate our knowledge of the operational mechanisms between the HR practices system and HC and SC. Specifically, this work explains how high-performance HR practices as a system can increase both sources of employees' capital (Chung and Colakoglu, 2018). This emphasises the need to consider the interplay between hard and soft HRM perspectives throughout the full performance chain, including employees' performance, both task and supportive behaviours (individual and organisational), and OP (operational and personnel-related outcomes).

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