

Pedro Francisco Sousa Diogo

# HIGH PERFORMANCE WORK SYSTEMS AND EMPLOYEE OUTCOMES

SHEDDING SOME LIGHT INTO THE BLACKBOX

#### **VOLUME 1**

Dissertação no âmbito do Mestrado em Gestão orientada pelo Professor Doutor João Pedro Dias Fontes da Costa e apresentada à Faculdade de Economia da Universidade de Coimbra.

Junho de 2019



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In a competitive environment where organizations strive for competitive advantage, High Performance Work Systems appear as a possible source of sustained competitive advantage. But still, there is a lot to learn about these systems. Do they really enhance firm performance? At what cost do they do that? What are the mechanisms through which they deliver higher organizational performance? These are some questions that still are not fully clarified and need more studies so that they can be better understood to shed some light into the "blackbox" of the HPWS-performance linkage. Following this, our goal was to understand the impact of HPWS on employee outcomes, as these outcomes mediate the relationship between HPWS and Organizational Performance. More specifically, based on employee perceptions, we tried to understand the mechanisms through which HPWS impact employee outcomes. Following theories such as AMO and Social Exchange we developed our hypothesis relating HPWS with employee outcomes referred in the literature as important precursors of organizational performance. To enable the testing of our hypothesis, we collected 306 responses from individuals working in organizations through an online questionnaire survey. Using Structural Equation Modeling we analysed the data and 17 of our 26 Hypothesis were supported. Also, some of the results were statistically supported but for opposite relations relative to the Hypothesis, for example, results showed a negative relation between HPWS and Stress, contrary to what we hypothesized. The results support some relations extensively studied and others scarcely addressed in HPWS literature, contributing to a better understanding of the mechanisms through which HPWS relate to some employees' outcomes while also raising some questions. Results support views like mutual gains and unitarist perspective, linking HPWS to positive employee outcomes like Job Satisfaction. Regardless, the results suggest that views like Conflicting Outcomes and the pluralist perspective are not groundless and that HPWS might have a "Dark-Side" that needs to be accounted for, as a positive link between HPWS and Intention to Leave was found. Further studies are needed to clarify some of our unexpected results and to deepen knowledge regarding some scarcely studied relations that we addressed. Other variables, although not included in our study, should also be included in further studies (e.g. motivation and trust in management), as they are referred to in HPWS literature as possible mediators to some HPWS-Employee Outcomes links.

**PALAVRAS-CHAVE**: High Performance Work Systems; Employee Outcomes; AMO Theory; Social Exchange.

#### Resumo

Num ambiente competitivo em que as organizações se esforçam para obter vantagens competitivas, os Sistemas de Trabalho de Alto Desempenho (STAD) aparecem como uma possível fonte de vantagem competitiva sustentada. Mas ainda assim, há muito que aprender sobre esses sistemas. Será que realmente aumentam o desempenho das organizações? A que custo o fazem? Quais são os mecanismos pelos quais eles aumentam o desempenho da organização? Estas são algumas questões que ainda não estão totalmente esclarecidas e precisam de mais estudos para que possam ser mais bem compreendidas, de forma a iluminar "caixa negra" dos Sistemas de Trabalho de Alto Desempenho. O nosso objetivo é entender o impacto da STAD nos comportamentos e atitudes dos funcionários, pois são esses comportamentos e atitudes que medeiam a relação entre a STAD e o Desempenho Organizacional. Mais especificamente, com base nas percepções dos funcionários, tentámos entender os mecanismos pelos quais os STAD afetam os comportamentos e atitudes dos funcionários. Seguindo teorias como AMO e Trocas Sociais, desenvolvemos as nossas hipóteses relacionando os STAD com os comportamentos e atitudes dos empregados, referidos na literatura como importantes precursores do desempenho organizacional. Para permitir o teste das nossas hipóteses, recolhemos 306 respostas de indivíduos que trabalham em organizações através de um questionário online. Usando os Modelos de Equações Estruturais analisámos os dados e 17 das nossas 26 Hipóteses foram suportados. Além disso, alguns dos resultados foram estatisticamente apoiados, mas para relações opostas relativamente às Hipóteses, por exemplo, os resultados mostraram uma relação negativa entre os STAD e o Stress, ao contrário do que supusemos. Os resultados apoiam algumas relações extensamente estudadas e outras pouco abordadas na literatura sobre STAD, contribuindo para uma melhor compreensão dos mecanismos pelos quais os STAD se relacionam com os comportamentos e atitudes dos funcionários e, ao mesmo tempo que levantam algumas questões. Os resultados apoiam perspectivas como os ganhos mútuos e as perspectivas unitaristas, associando os STAD a atitudes e comportamentos positivos como a Satisfação no Trabalho. Apesar disso, os resultados também mostram que perspectivas como os ganhos conflituantes e perspectivas pluralistas têm algum fundamento e que os STAD podem ter um "Lado Negro" que precisa de ser considerado, visto que foi encontrada uma relação positiva entre os STAD e a Intenção de Saída. Mais estudos são necessários para

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esclarecer alguns dos nossos resultados inesperados e para aprofundar o conhecimento sobre algumas relações pouco estudadas que abordámos. Outras variáveis, embora não incluídas no nosso estudo, também devem ser incluídas em outros estudos (por exemplo, motivação e confiança na gestão), como são referidos na literatura dos STAD como possível mediador para algumas relações entre os STAD e comportamentos e atitudes dos funcionários.

**KEYWORDS**: Sistemas de Trabalho de Alto Desempenho; Efeitos nos Trabalhadores; Teoria AMO; Trocas Sociais.

#### **Initials and Acronyms List**

AMO Ability-Motivation-Opportunity

AMOS Analysis of Moment Structures

AVE Average Variance Extracted

CFA Confirmatory Factor Analysis

CFI Comparative Fit Index

C.R. Critical Ratio

CR Composite Reliability

EFA Exploratory Factor Analysis

HCWS High Commitment Work Systems

HIWS High Involvment Work Systems

HPWS High Performance Work Systems

HR Human Resources

HRM Human Resouces Management

IBM SPSS International Business Machines Statistical Package for the Social Sciences

IFI Incremental Fit Index

IWB Innovative Work Behavior

KMO Kaiser-Meyer-Olkin (Evaluation Criteria)

KSA Knowledge-Skill-Ability

PIRK Power-Information-Rewards-Knowledge

RMSEA Root Mean Square Error Aproximation

SEM Structural Equation Modeling

SHRM Strategic Human Resource Management

SRW Standerdized Regression Weights

TLI Tucker-Lewis Fit Index

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#### 1. Introduction

Firms strive to achieve sustained competitive advantages. But how can they do that? According to Barney (1991, p. 102), "A firm is said to have a sustained competitive advantage when it is implementing a value creating strategy not simultaneously being implemented by any current or potential competitors and when these other firms are unable to duplicate the benefits of this strategy". Following the Resource Based View (RBV), the Human Resources (HR) of a firm can be a source of sustained competitive advantage, thus, they must be properly managed (Barney, 1991; Fu et al., 2017; Messersmith & Guthrie, 2010; P. M Wright & McMahan, 1992).

High Performance Work Systems (HPWS) consist of a group of interconnected Human Resources Management practices, such as comprehensive recruitment and selection, design to enhance employee and firm performance outcomes, through the improvement of workforce competence, attitudes and motivation (Huselid, 1995).

In order to explain the HPWS-performance linkage and following Ability, Motivation and Opportunity (AMO) (Appelbaum, Bailey, Berg, Kalleberg, & Cornell, 2000) and Social Exchange Theories (Blau, 1964), we need to understand what impact HPWS have on employee outcomes, since HPWS first influence employees' attitudes and behaviors, which in turn affect organizational performance (Boselie et al., 2005; Guest, 2011; Katou & Budhwar, 2010; Mihail & Kloutsiniotis, 2016; Purcell & Kinnie, 2007; Úbeda-García, Claver-Cortés, Marco-Lajara, Zaragoza-Sáez, & García-Lillo, 2018).

One of the main critics on the HPWS literature is its highly management-centric point, ignoring both employees' experience and perception of HPWS (Boselie, Dietz, & Boon, 2005; M. Zhang, Di Fan, & Zhu, 2014), also more research is needed before HPWS and the HPWS-performance linkage can be well understood (M. Zhang et al., 2014).

Therefore, the main objective of this study is to address some of the gaps in the HPWS literature; more specifically, how do HPWS perceptions affect employee attitudes and behaviors and through which mechanisms do they do that. In order to achieve our objective, we test several hypothesis linking HPWS to employee outcomes, like innovative work behavior, job satisfaction and intention to leave and test links between employee outcomes variables in order to suggest possible mediation variables between HPWS and employee outcomes, all based on employee perceptions, thus, contributing to clarifying the effects of HPWS on employee outcomes that impact organization performance.

Our study consists of six sections. In the first section we do an introduction to the topic and state our objectives. The second section consists on a literature review, arguing the strategic importance of Human Resources and then elaborating on the concept of High Performance Work Systems, highlighting specific frameworks (AMO, PIRK, Social Exchange), related concepts (High Commitment Work Systems and High Involvement Work Systems), different views of the impact of HPWS on employee outcomes and theoretical perspectives under which HPWS have been studied. On section 3 we will present the hypothesis we developed as well as the conceptual models we will test. Section 4 consists on the methodology we will use, more specifically, we will explain how we selected our sample and collected data, the measures used in our questionnaire and proceed to the presentation of the respondents profile and data analysis through Exploratory and Confirmatory Factor Analysis as well as the quality of the measurement model. On section 5 we will present our results with a descriptive analysis of the variables, followed by the structural model, the hypothesis tests and then a discussion of the results. Finally, section 6 will consist on the theoretical and practical implications, limitations of the study and directions for future research.

#### 2. Literature Review

#### 2.1. Introduction

In this chapter we will present the literature review of the main theoretical concepts used in our rationale.

First, in a preliminary phase using scientific databases, such as B-On, we searched for scientific articles from the last five years published in renowned scientific magazines that would address the topic of High Performance Work Systems. Then, we complemented the previous step by reviewing seminal papers (e.g. Huselid, 1995). After analyzing the first papers and defined our research direction we included other studies we considered relevant for the development of our research with no other restriction.

The chapter will begin with a reference to the Resource Base View and the role of Human Resources in this view, followed by the importance of Human Resource Management and the link to Strategic Human Resource Management. Then we present the different views of whether the People or the Management System are the source of the competitive advantage, the importance of employee perceptions and the frameworks in which Human Resource Management research is based. Finally, we will introduce the concept of High Performance Work Systems and similar concepts, the relevance of employee outcomes and theoretical perspectives under which High Performance Work Systems are studied.

#### 2.2. Resource Based View

The Resource Based View (RBV) emphasizes the internal resources controlled by a firm as a source of sustained competitive advantage (Barney, 1991; Fu et al., 2017; Patrick M. Wright & Mcmahan, 1992). Barney considered firm resources as including all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc. controlled by a firm that enable it to conceive of and implement strategies that improve its efficiency and effectiveness. Firm resources can be classified into three categories: physical capital resources (physical technology, equipment, geographic location...), human capital resources (training, experience, intelligence...) and organizational capital resources (formal reporting structure, formal and informal reporting structure) (Barney, 1991).

Sustained competitive advantage can only occur when there is heterogeneity and immobility of firm resources.

Heterogeneity refers to the fact that there is a difference in the resources possessed across firms. For this heterogeneity to be long lasting, resources must be immobile. Resource immobility refers to the difficulty of resource transference from one firm to another (Barney, 1991; Lado & Wilson, 1994; Patrick M. Wright & Mcmahan, 1992). In order for heterogeneous resources to be a source of competitive advantage, they must be (a) valuable, enabling the exploitation of opportunities or the neutralization of threats in the competitive environment of the firm and (b) rare, meaning that only a small number of firms possess these resources in a particular competitive environment (Barney, 1991; Lado & Wilson, 1994). Regarding the resource immobility, the resources (c) must be imperfectly imitable and (d) there cannot be a strategic equivalent substitute (Barney, 1991; Lado & Wilson, 1994).

Resources are valuable when they enable the firm to create or implement strategies that improve a firms efficiency and effectiveness (Barney, 1991). Resources must be rare. Valuable common resources provide only competitive parity, ensuring that a firm is not at competitive disadvantage due to the lack of this resources. If the valuable resources are not rare then these resources are possessed by a large number of other firms, enabling them the possibility of exploiting it in the same way, creating and implementing the same strategies, giving no firm the possibility of generating a sustained competitive advantage through the use of this resources (Barney, 1991; Barney & Wright, 1998). Valuable and rare resources, can only be sources of sustained competitive advantage if they cannot be obtained by other firms, meaning that they are imperfectly imitable. This can happen because of unique historical conditions, causal ambiguity and social complexity. Regarding unique historical conditions, Barney states that the ability of firms to acquire and exploit some resources depend upon their place in time and space and when this particular time in history passes. He gives the example of a "unique and valuable organizational culture that emerged in the early stages of a firm's history may have an imperfectly imitable advantage over firms founded in another historical period". Causal Ambiguity exists when the connection between the resources of a firm and a firm's competitive advantage is poorly understood. This causes difficulties when a firm wants to imitate other firm's strategies through the imitation of its resources, because they don't know which ones they should imitate. The level of causal ambiguity must be the same for the firms that want to imitate and the ones that are the subject of imitation, otherwise, the gap of knowledge, linking the resources and

the competitive advantage, among firms might be eliminated, for example, by hiring personnel from the company with the competitive advantage. Social Complexity can constrain significantly the imitation of a firm's resources. Interpersonnal relationships between managers in a firm, a firm's culture, a firm's reputation among suppliers and costumers, are examples given by Barney to illustrate social complex resources that although have a very clear connection to the competitive advantage, they are so complex that a sistematic management or influence of these resources is impossible, making them imperfectly imitable (Barney, 1991; Patrick M. Wright, McMahan, & McWilliams, 1994).

Even if the resource is valuable, rare and imperfectly imitable, but other firms can use a strategically equivalent valuble resource, which enables them to use the same strategies, that is not rare nor imperfectly imitable, then this resource cannot be source of sustained competitive advantage. If a firm has a valuable, rare and imperfectly imitable resource, but other firms have acess to a strategically equivalent resource, then these other firms can implement the same strategies in a different way. If these substitute resources are not rare nor imperfectly imitable, then numerous firms will have acess to these resources and will be able to implement the same strategies and those same strategies will not generate sustained competitive advantage (Barney, 1991; Barney & Wright, 1998).

#### 2.3. Importance of Human Resources

As recognized by Barney, Human Resources are one of the three categories of resources that a firm has and that can be a source of competitive advantage. Wright, MacMahan and McWilliams, argued that human resources have the four requirements of the RBV to be a source of sustained competitive advantage (Barney, 1991; Patrick M. Wright & Mcmahan, 1992; Patrick M. Wright et al., 1994). They defined Human Resources as the pool of human capital under the firm's control in a direct employment relationship (Barney, 1991; Patrick M. Wright et al., 1994).

Regarding the valuable requirement, Human Resources add value to a firm, because there is a heterogeneous demand and supply for labour. Firms have jobs that require different skills and individuals also differ in the skills they possess and in the level of those skills; the variance in contribution by the individuals shows that Human Capital can indeed create value for the firm (Steffy & Maurer, 1988; Patrick M. Wright & Mcmahan, 1992; Patrick M. Wright et al., 1994). Firms that have Human Resources with high ability levels, possess more valuable human resources than their competitors. Since ability is normally

distributed, Human Resources with high ability are rare (Patrick M. Wright & Mcmahan, 1992; Patrick M. Wright et al., 1994).

Firms unique histories have an impact on their culture and norms, which influence their Human Resources (Patrick M. Wright et al., 1994). This influence can be positive, for example, making individuals work towards the organization goals, or negative, doing the opposite, either way this historical conditions that affect Human Resources are hard to imitate, making them imperfectly imitable (Patrick M. Wright et al., 1994). Causal Ambiguity also affect HR. The output of team production is not the sum of the co-operating parts, this makes impossible to identify the source of competitive advantage that arises from team production. Even if competing firms tried to assemble a similar team, it is unlikely that they could assemble one with the same atribbutes and imitate the competitive advantage (Patrick M. Wright et al., 1994). Human resources interaction create very specific relations highly complex that develop over time and are very difficult to imitate (Barney, 1991; Patrick M. Wright et al., 1994). Even if a competing firm wanted to hire the human resources of another firm, in order to imitate its sustained competitive advantage, that wouldn't be that simple. There are transaction costs to the human resources to move from one job to other (Patrick M. Wright et al., 1994). Causal ambiguity and social complexity make it very hard to understand which personnel are responsible the sustained competitive advantage. The Human Resource effectiveness might be dependable of the unique historical conditions of the firm. In conclusion, Human Resources are imperfectly imitable (Patrick M. Wright & Mcmahan, 1992; Patrick M. Wright et al., 1994).

Only valuable, rare, inimitable and non-substitutable resources can substitute Human Resources. Even if a competing firm develops a new technology that provides a productivity increase greater than the productivity difference resulting of the different Human Resources, technology is likely to be imitated, for example, by purchase, and once this is done, Human Resources would once again become a source of sustained competitive advantage (Patrick M. Wright & Mcmahan, 1992; Patrick M. Wright et al., 1994).

Other sources of competitive advantage such as natural resources, technology and economies of scale, on which competitive advantage was built in the past, although valuable to a firm, have become easier to imitate, therefore less relevant for the creation of sustained competitive advantage. Even if a new technology is developed that only one firm has access to, other firms can try to imitate it, and although in the mean time the firm that developed it has a competitive advantage, once competitors can imitate it, it is no longer a source for competitive advantage, which doesn't classify it as a source of sustained

competitive advantage (B. E. Becker & Huselid, 1998; B. Becker & Gerhart, 1996; Guthrie, Flood, Liu, & MacCurtain, 2009; Lado & Wilson, 1994; Pfeffer, 1995; Steigenberger, 2013; Patrick M. Wright & Mcmahan, 1992). This makes Human Resources specially important as a source of sustained competitive advantage, because compared with other resources, they are very hard to imitate (Barney, 1991; B. E. Becker & Huselid, 1998; B. Becker & Gerhart, 1996; Patrick M. Wright & Mcmahan, 1992; Patrick M. Wright et al., 1994). Supporting this view, there are papers that state that nowadays there is the dominant view that the success of firms is mainly derived from the firm's Human Resources (Mihail & Kloutsiniotis, 2016; B. Zhang & Morris, 2014).

#### 2.4. Human Resource Management

In order to have a sustained competitive advantage, the mere possession of resources is not enough. Resources need to be properly managed so that they can create value to the firm (Fu et al., 2017; Messersmith & Guthrie, 2010). The way Human Resources are managed provides a potential source of sustainable competitive advantage (B. E. Becker & Huselid, 1998; Combs, Liu, Hall, & Ketchen, 2006; Guest, 1987; Patrick M. Wright & Mcmahan, 1992; N. Wu, Hoque, Bacon, & Bou Llusar, 2015).

The field of Human Resource Management (HRM) includes everything associated with the management of employment relations within a firm (Boxall & Purcell, 2000), which consists in various practices used to manage people in organizations (Patrick M. Wright & Mcmahan, 1992). Practices like recruitment, selection, performance appraisal, training, incentive compensation, internal promotions, quality circles and job rotation are examples of Human Resource Management Practices (Combs et al., 2006; Huselid, 1995; Pfeffer, 1998; Schuler & MacMillan, 1984; Patrick M. Wright & Mcmahan, 1992).

Following the behavioral perspective, the use of HRM practices allows the firm to elicit and control behaviors and attitudes of their employees, managing them (García-Chas, Neira-Fontela, & Castro-Casal, 2014; Jackson, Schuler, & Rivero, 1989). Wright, Dunford, & Snell (2001), recognize individuals as cognitive and emotional beings who possess free will, which enables them to make decisions about their behaviors. Even within prescribed organizational roles employees exhibit discretionary behaviors that may affect the firm in a positive or negative way. For example, "a machine operator who hears a "pinging" has discretion to simply run the machine until something breaks or to fix the problem immediately, and thus save significant downtime" (Patrick M. Wright et al., 2001, p.10)If

not properly managed, valuable Human Resources may not have strategic impact. Competitive advantage can only be achieved if the firm's Human Resources choose to engage in behaviors that benefit the firm.

According to Bailey (1993) Human Resources often perform below their potential because they possess discretionary use of their time and talent. He argued that HRM practices can have an impact on employees discretionary efforts, influencing their knowledge, skills and abilities (KSA) and their motivation, while the organizational structures enable them to control how their roles are performed (Combs et al., 2006; Huselid, 1995). For example, recruitment and selection procedures will have influence on the quality and type of skills new employees possess, while training will have an impact on their development, influencing employees KSA's (Bailey, 1993; Huselid, 1995; Jiang, Lepak, Hu, & Baer, 2012; Subramony, 2009). The use of performance appraisals linked with incentives and compensation and internal promotions are examples of HRM pratices that can motivate employees (Bailey, 1993; Combs et al., 2006; Huselid, 1995; Jiang et al., 2012; Subramony, 2009). The contribution of highly skilled and motivated employees can be enhanced through organizational structures or tools, such as quality circles or job rotation, that give employees the opportunity to participate in the improvement of how their own jobs are performed (Bailey, 1993; Combs et al., 2006; Huselid, 1995).

#### 2.5. Strategic Human Resource Management

Strategic Human Resource Management (SHRM), as defined by Wright and MacMahan (1992), is "the pattern of planned human resource deployments and activities intended to enable an organization to achive its goals" (Patrick M. Wright & Mcmahan, 1992, p. 298).

This concept integrates the HRM with the Strategic Management field, considering the HRM practices as potential source of sustained competitive advantage (M. R. Allen & Wright, 2007; Boxall & Purcell, 2000). This field focus on the organizational performance rather than on individual performance and how it can create sustainable competitive advantage that in turn creates better performance outcomes (B. E. Becker & Huselid, 2006; Boselie et al., 2005; Bowen & Ostroff, 2004).

SHRM differs from traditional HRM, focusing on the system or bundle of HRM practices emphasizing the vertical and horizontal fit of the HRM practices system. Vertical fit considers the alignment of the HRM practices with the overall strategy of the

organization (Patrick M. Wright & Mcmahan, 1992). The basic premise is that organizations that adopt different strategies also use different sets of HRM practices to influence and align employees attitudes and behaviors with the strategic goals of the organization (Bartram, Karimi, Leggat, & Stanton, 2014; Delery & Doty, 1996; Schuler & Jackson, 1987; Patrick M. Wright & Mcmahan, 1992). Conversly, the same set of HRM practices will not be equally efective in organizations with different business strategies (Guest, Michie, Conway, & Sheehan, 2003). This explains the variation of HRM systems between organizations following different business strategies (Delery & Doty, 1996).

Horizontal fit emphasize the coordination and the complementarity between the different HRM practices that constitute the HRM system (Guest et al., 2003; Patrick M. Wright & Mcmahan, 1992). This system or bundle perspective supports the idea that the implementation of an HRM system incorporating mutually supportive HRM practices is superior to any single practice in achieving sustained competitive advantage (M. R. Allen & Wright, 2007; Fu et al., 2017).

#### 2.6. The Importance of People or People Management

There are some authors that defend that the source of sustained competitive advantage is in the Human Resources of the firm affected by the HRM system, and not in the HRM system itself (e.g. Huselid, 1995; Takeuchi, Lepak, Wang, & Takeuchi, 2007; Wright & Mcmahan, 1992). Arguing that the Human Resources of a firm satisfy the valuable, rare, inimitable and non-substitutable RBV criteria, they support this idea on the rationale of Wright and MacMahan (1992) and Wright, MacMahan and MacWilliams (1994), where it's argued that high-quality Human Resources are valuable, since there is an heterogenous demand and supply of labour, are rare because of their normally distributed ability, are inimitable in a way that competitive advantage based on Human Resources are characterized by unique historical conditions, causal ambiguity, social complexity and non-substitutability. On the contrary, any individual HR practice could be easily copied by competitors (Patrick M. Wright et al., 2001, 1994; Patrick M. Wright & Mcmahan, 1992). More recently Takeuchi et al. (2007) added that Human Resources are generally embedded in the organization's complex social systems, that may cause it to take firm specific features, making it more useful to that speficific firm; for example, a firm's human resources may have complex interrelationships with other physical, financial, legal or information resources. This also makes the link between the Human Resources and the

firm more difficult to explain. The specific features of the HR of a particular firm make it more difficult to be traded, readily imitated or substituted without incurring in significant costs. All this adds to the idea that the HR of a firm are the potential source of sustained competitive advantage and not their HRM practices (Takeuchi et al., 2007).

Other authors defend the HRM system as the source of competitive advantage instead of the Human Resources themselves (e.g. B. E. Becker & Huselid, 2006; Fu et al., 2017; Lado & Wilson, 1994). They argue that HR systems (as opposed to individual practices) can meet the four criteria of RBV, valuability, rarity, inimitability and non-substability to be classified as a source of sustained competitive advantage.

Lado & Wilson (1994) stated that contrary to individual practices, the system with all the complementarities and interdependencies among the practices would be unique, causaly ambiguous and sinergistic, making it impossible to imitate (Wright et al., 2001).

Becker & Gerhart (1996) supported this view by stating that a single HRM practice is developed over time in specific circumstances, reflecting the culture and philosofies of a firm and its management. An HRM system is composed by many individual practices, each of them developed under unique historical conditions, which makes it very hard to replicate. The interactions between the practices that compose the HRM system and between the Human Resources of the firm make the system causualy ambigual. Finally, the way the HRM practices are communicated and implemented is influenced by multiple social complex relationships, making it hard to imitate (M. R. Allen & Wright, 2007; B. Becker & Gerhart, 1996). Becker & Huselid (2006) added that the HRM system has a greater potential for inimitability due to its alignment with a firm's strategy and that unlike human capital, the HRM system is immobile. According to the Dinamic Capability Theory, competitive advantage relies on a firm's ability to integrate, build and reconfigure internal and external resources and competencies (Fu et al., 2017; Teece, Pisano, & Shuen, 1997). Following this theory, the resources a firm possesses need to be properly managed in order to achieve competitive advantage, which means that HRM practices, by promoting the strategic and effective use of the Human Resources of a firm, are creating value for the firm (Fu et al., 2017; Messersmith & Guthrie, 2010).

Nevertheless, both perspectives agree that an HRM system is an important piece of an organization's strategy, whether it is the direct source of sustained competitive advantage or by influencing that source, the Human Resources of a firm.

#### 2.7. Employee Perceptions

The effectiveness of an HRM system depends on more than just its mere existence (Choi, 2014). Even though present, the HRM system may still not elicit the appropriate behaviors and attitudes for the firm, because individuals may interpret it idiosyncratically (Bowen & Ostroff, 2004). According to Wright & Nishii (2006) in their Process Model of SHRM, between the actual HRM practices and the employee's reaction to those same practices there is the employee perception about the practices implemented, making the relationship between actual HRM practices and the employee's reactions mediated by perceptions (Choi, 2014; Patrick M Wright & Nishii, 2006). Thus, employee's behaviors and attitudes will depend on their perceptions of the HRM practices, and those same behaviors and attitudes will influence the effectiveness of the HRM system (Ang, Bartram, McNeil, Leggat, & Stanton, 2013; García-Chas et al., 2014; Stirpe & Zárraga-Oberty, 2017; B. Zhang & Morris, 2014). This is supported by Kooij, Jansen, Dikkers & De Lange (2010) that have found that employee's perceptions of HRM practices are positively related to their work-related attitudes (Stirpe & Zárraga-Oberty, 2017).

#### 2.8. Frameworks

#### 2.8.1- Social and Economic Exchange Theory

Employees and the organization develop an exchange relationship between them (Shore, Lynch, Tetrick, & Barksdale, 2006). According to the Social Exchange Theory (Blau, 1964), the relationship and interactions between interdependent partners generate a bond in the form of reciprocal obligations, in which one part contributes to the interest of the other expecting that the other part will develop a sense of obligation to reciprocate and will contribute in a future time, although this future contribution is uncertain in terms of what and when it will happen (Arthur, Herdman, & Yang, 2016; P. C. Chang & Chen, 2011; Gouldner, 1960; Mihail & Kloutsiniotis, 2016; Shore et al., 2006). Social exchanges are long-term oriented since the relationship is continuous and evolves over time; also, each part invests in the other, taking the risk of that investment not being repaid, although reciprocity is expected, thus, making trust essential to the relationship (Blau, 1964; Cropanzano & Mitchell, 2005; Shore et al., 2006).

HRM systems signal the employees about the degree to which the organization values them and how it is concerned with them (García-Chas et al., 2014; Wayne, Shore, & Liden, 1997). They are interpreted by employees as signs of appreciation, investment, recognition by the organization and as the intention to establish a long-term exchange relationship, motivating employees to enter into a social exchange logic, reciprocating with positive attitudes and work behaviors towards the job, the organization and their coworkers (P. C. Chang & Chen, 2011; Cropanzano & Mitchell, 2005; García-Chas et al., 2014; Giannikis & Nikandrou, 2013; Stirpe & Zárraga-Oberty, 2017; Takeuchi et al., 2007; M. Zhang et al., 2014).

On the contrary, Economic Exchange refers to financially oriented, impersonal and short-term interactions with a lack of trust and feelings of obligation, emphasizing the more tangible and financial aspects of the exchange relationship (Mihail & Kloutsiniotis, 2016; Shore et al., 2006; M. Zhang, Zhu, Dowling, & Bartram, 2013). An example of this type of interactions is temporary work with a specific paying and no other investments included (M. Zhang et al., 2013). If the employment relationship is based only on an economic exchange, employees might perceive that the gains they receive are not proportional to what they give and expect to receive, negatively affecting their attitudes and workbehaviors such as commitment and satisfaction with the organization (Mihail & Kloutsiniotis, 2016).

#### 2.8.2- PIRK

The PIRK model (Lawler, 1986) posits that for high employee involvement to happen in an organization four attributes need to be diffused among the employees (Vandenberg, Richardson, & Eastman, 1999). Those are: Power (P), Information (I), Rewards (R) and Knowledge (K). These attributes are found in all organizations, although traditionally concentrated in the upper levels of management, they must be spread throughout all organization levels in order to foster high employee involvement (Vandenberg et al., 1999).

The focus of these attributes is to empower employees to make more and better decisions, enhance the information and knowledge they need to do so and reward them after that (Boxall & Macky, 2009; Kilroy, Flood, Bosak, & Chênevert, 2016, 2017). The attributes should not be considered in isolation, but as mutually reinforcing (Boxall & Macky, 2009; Kilroy et al., 2016, 2017; Vandenberg et al., 1999). The lack of knowledge,

information and rewards in the presence of power might lead to poor decisions. The presence of information and knowledge without power to exert it might lead to frustration because the employee cannot make use of his expertise. Rewards for organizational performance without the presence of power, knowledge and information might lead to frustration, because the employee cannot influence the reward. Information, knowledge and power together without rewards for organizational performance might lead to lack of motivation to exercise power in the benefit of the organization (Lawler, 1986; Vandenberg et al., 1999).

#### 2.8.3-AMO

The "AMO" framework, developed by Appelbaum, Bailey, Berg, Kalleberg, & Cornell, (2000) argued that employee performance and consequently superior organizational performance is a function of three factors: Ability (A), which includes skills, experience and knowledge, Motivation (M) to apply the abilities and Opportunity (O) to engage in discretionary behavior (Appelbaum et al., 2000; Y. Huang, Fan, Su, & Wu, 2018; Jiang et al., 2012; Mihail & Kloutsiniotis, 2016; B. Zhang & Morris, 2014).

Employee ability sets the upper limit for performance, while motivation influences the degree to which the employee ability is used and opportunity removes the barriers that might prevent the capable and motivated employee to use his/hers abilities (Macky & Boxall, 2007). Knowledgeable and skilled employees are more capable of generating valuable ideas; that ability combined with empowerment and incentives motivates them to engage in discretionary effort, suggest and act on new ideas and improvements upon the workplace, thus enhancing performance (Shin & Konrad, 2017).

HRM systems can develop employees' abilities, by including practices like recruitment and selection procedures and extensive training (Huselid, 1995; Katou & Budhwar, 2010; Macky & Boxall, 2007; Messersmith, Kim, & Patel, 2018), employees' motivation, by making use of practices such as performance appraisals linked with incentive compensation (Fu, Flood, Bosak, Morris, & O'Regan, 2015; Huselid, 1995; Katou & Budhwar, 2010; Macky & Boxall, 2007) and also employee's opportunities by encompassing practices like employee participation in decision making, quality circles and job design (Fu et al., 2015; Gilman & Raby, 2013; Huselid, 1995; Katou & Budhwar, 2010).

By including practices vertically and horizontally integrated that develop employees' abilities, increase their motivation for discretionary behavior and create the opportunities for motivated employees to apply their abilities, HRM systems can improve employee performance and consequently organizational performance (Macky & Boxall, 2007; Meuer, 2017; Úbeda-García et al., 2018).

The AMO framework is based on the notion of social exchange, entailing that human resources that are rigorously selected, trained adequately, provided with development opportunities, given a voice in the organization and compensated upon merit will reciprocate with positive attitudes and behaviors towards the organization, such as commitment and engagement, which in turn will influence, directly or indirectly, organizational performance (Katou & Budhwar, 2010; Messersmith et al., 2018).

The PIRK model can also be related to the AMO framework. Improvements in knowledge (K) enhance the employees ability (A), while empowerment (P) and information (I) enhance the opportunity (O) for the employee to contribute and finally rewards (R) are a direct attempt to improve employees motivation (M), which may also be improved through empowerment, making the employee have a more autonomous work, information, making the employee feel better informed or even knowledge, making the employee enjoy the growth in his knowledge and skills (Boxall & Macky, 2009).

#### 2.9. High Performance Work Systems

High Performance Work Systems (HPWS) are described as a system of HRM practices, horizontally and vertically aligned, designed to enhance employee knowledge, skills and abilities, motivation and opportunities to contribute, which consequently will lead to improved employee and organizational performance (Beltrán-Martín, Roca-Puig, Escrig-Tena, & Bou-Llusar, 2008; Chang & Chen, 2011; Chiang, Shih, & Hsu, 2014; Guidice, Mero, Matthews, & Greene, 2016; Huselid, 1995; Lepak, Liao, Chung, & Harden, 2006; Patel, Messersmith, & Lepak, 2013; Shen, Benson, & Huang, 2014; Subramony, 2009; Takeuchi, Chen, & Lepak, 2009; Úbeda-García et al., 2018; Patrick M. Wright & Snell, 1991).

These systems have the overarching objective of attracting, selecting, managing, training, retaining and motivating Human Resources, eliciting desired attitudes and behaviors, in order to achieve organizational goals (Baluch, Salge, & Piening, 2013; Bowen & Ostroff, 2004; Gilman & Raby, 2013; Kellner, Townsend, & Wilkinson, 2017; Way,

2002). They accomplish this by creating a fit between the KSA's of an employee and the tasks, duties and responsibilities required by a job (Appelbaum et al., 2000; Combs et al., 2006; Gilman & Raby, 2013; Huselid, 1995; Patel et al., 2013; Shen et al., 2014; Úbeda-García et al., 2018; Patrick M. Wright et al., 2001, 1994; N. Wu et al., 2015).

HPWS should be composed by multiple and mutually reinforcing HRM practices (Bartram et al., 2014; B. E. Becker & Huselid, 1998, 2006; Gilman & Raby, 2013; Zacharatos, Barling, & Iverson, 2005). While there is no consensus about what specific bundle of practices should be part of the HPWS (Boxall & Macky, 2007; Stirpe & Zárraga-Oberty, 2017), it is generally agreed that it includes: rigorous recruitment and selection procedures, extensive training, performance appraisal, incentive compensation, flexible job assignments, information sharing, internal merit-based promotion, employee participation, job description, job security, grievance procedures and profit-sharing (Combs et al., 2006; Datta, Guthrie, & Wright, 2005; Della Torre & Solari, 2013; Demirbag, Tatoglu, & Wilkinson, 2016; Huselid, 1995; Michaelis, Wagner, & Schweizer, 2015; Posthuma, Campion, Masimova, & Campion, 2013; Shen et al., 2014; Stirpe & Zárraga-Oberty, 2017; Sun, Aryee, & Law, 2007; Takeuchi et al., 2007).

Several studies report positive impacts upon the implementation of HPWS on organizational performance (Bae & Lawler, 2000; Bartel, 2004; Huselid, 1995; Katou & Budhwar, 2010; Ngo, Lau, & Foley, 2008; B. Zhang & Morris, 2014). Although positive impacts on organizational performance have been reported, the diffusion of HPWS is still limited (Arthur et al., 2016; Shin & Konrad, 2017). Establishing an HPWS can be costly and the results are long-termed, which makes the availability of slack resources essential, creating a barrier to its implementation even though organizations would benefit from doing so (Godard, 2004; Godard & Delaney, 2000; Shin & Konrad, 2017).

# 2.10. High Involvement Work Systems and High Commitment Work Systems

The term HPWS is often used interchangeably with High Involvement Work Systems (HIWS) and High Commitment Work Systems (HCWS) (Demirbag et al., 2016). HIWS is a system of HRM practices that are designed to promote employee participation and involvement in the decision-making processes in organizations, meeting employees' needs for competence, autonomy and belongingness, while providing the opportunity for

employees to identify with the organization and feel an increased sense of ownership (Camuffo, De Stefano, & Paolino, 2017; Lepak et al., 2006), triggering positive job attitudes (Bonet, 2014), ultimately improving organizational performance (Chênevert, Jourdain, & Vandenberghe, 2016; Flinchbaugh, Li, Luth, & Chadwick, 2016; Guthrie, 2001; Kilroy et al., 2016; E. K. Lee, Hong, & Avgar, 2015; Riordan, Vandenberg, & Richardson, 2005; Vandenberg et al., 1999; Wood, van Veldhoven, Croon, & de Menezes, 2012). They typically include HRM practices such as information sharing, team-based design, aggregate compensation, flexible job design, job security, job rotation and employee training (Butts, Vandenberg, DeJoy, Schaffer, & Wilson, 2009; Li, Wang, Van Jaarsveld, Lee, & Dennis, 2018; Von Bonsdorff et al., 2016; Zatzick & Iverson, 2006).

HCWS is similar to HIWS but the focus is on eliciting employees' commitment providing them equitable pay and job security, so that employees' behavior is self-regulated rather than controlled by supervisors (Boxall, 2012; Demirbag et al., 2016; Kilroy et al., 2016; Walton, 1985; Wood & De Menezes, 1998). This systems include HRM practices like recruitment and selection procedures, internal labour markets, training, job security, information sharing, teamworking, problem-solving groups and job flexibility (Wood & De Menezes, 1998). Contrary to the HPWS notion, these two systems do not assume that configuration is necessarily performance enhancing (Boxall & Macky, 2009). It is argued that HPWS encompass elements of both HIWS and HCWS (Demirbag et al., 2016; Zacharatos et al., 2005).

#### 2.11. Employee Outcomes

Employee outcomes are regarded as the primary variable that can explain the unclear HPWS-performance linkage, shedding some light into the so called "Blackbox" of HRM (Boselie et al., 2005; Guest, 2011; Katou & Budhwar, 2010; Mihail & Kloutsiniotis, 2016; Purcell & Kinnie, 2007; Úbeda-García et al., 2018). The basic logic is that HPWS influence employees attitudes and behaviors, which in turn affect organizational performance, mediating the HPWS effect on performance (Mihail & Kloutsiniotis, 2016; Purcell & Kinnie, 2009; Úbeda-García et al., 2018).

There are basically two views concerning the impact of HPWS on employees, that can be separated in positive impacts and negative impacts. Views like mutual gains (Kalmi & Kauhanen, 2008; Van De Voorde, Paauwe, & Van Veldhoven, 2012), optimistic perspective (Peccei, 2004), unitarist perspective (Kroon, van de Voorde, & van Veldhoven,

2009) and even win-win HPWS (Sparham & Sung, 2007; M. Zhang et al., 2013) defend positive impacts on employees. This view is based on theories such as Social Exchange Theory (Blau, 1964) and AMO Theory (Appelbaum et al., 2000), arguing that HPWS that enhance employees KSA's, motivation and opportunities and also take in consideration employees interests, will elicit positive attitudes and behaviors towards the organization and consequently having a positive impact on organizational performance, making both the firm and the employees beneficiaries of the HPWS (Kalmi & Kauhanen, 2008; Sparham & Sung, 2007; Stirpe & Zárraga-Oberty, 2017; Takeuchi et al., 2007; Van De Voorde et al., 2012; B. Zhang & Morris, 2014).

Positive impacts on employee productivity (Datta et al., 2005; Guthrie, 2001; Huselid, 1995; Ichniowski, Shaw, & Prennushi, 1997; Sun et al., 2007), lower intention to leave and turnover (Ang et al., 2013; García-Chas et al., 2014; Guthrie, 2001; Huselid, 1995; Sun et al., 2007), well-being (Fan et al., 2014), job satisfaction (Ang et al., 2013; García-Chas et al., 2014; Giannikis & Nikandrou, 2013; Takeuchi et al., 2009), commitment (Ang et al., 2013; Giannikis & Nikandrou, 2013; Takeuchi et al., 2009), work engagement (Ang et al., 2013), social identification (Bartram et al., 2014), intrinsic motivation (García-Chas et al., 2014) and also innovative work behavior (Fu et al., 2015) have been reported in the HRM literature.

In contrast, views like Confliting Outcomes perspective (Van De Voorde et al., 2012), Critical perspective (Kalmi & Kauhanen, 2008), pessimistic perspective (Peccei, 2004), pluralist perspective (Kroon et al., 2009; M. Zhang et al., 2013) and profit-oriented HPWS (Sparham & Sung, 2007; M. Zhang et al., 2013) emphasize negative employee outcomes. The "Dark-Side" of HPWS states that these HRM systems are based on an economic exchange relationship and although rhetorically concerned with employee outcomes, in reality they are used as a tool to boost organizational performance overlapping employee outcomes by intensifying job demands, leading to negative attitudes and behaviors such as stress, emotional exaustion and work disengagement (Danford, Richardson, Stewart, Tailby, & Upchurch, 2004; Godard, 2001; Jensen, Patel, & Messersmith, 2013; Ramsay, Scholarios, & Harley, 2000; Sparham & Sung, 2007; M. Zhang et al., 2013).

Ramsay et al. (2000) found that HPWS increases job strain as a result of work intensification and stress that employees experience due to enhanced discretion and responsabilities (Kroon et al., 2009; Stirpe & Zárraga-Oberty, 2017; Van De Voorde et al., 2012; White, Hill, McGovern, Mills, & Smeaton, 2003).

Godard (2001) concluded that although initially HPWS yielded positive outcomes for employees, more intensive HPWS were related to work intensification, stress, low-job satisfaction and self-esteem (Kroon et al., 2009; Van De Voorde et al., 2012; White et al., 2003). Truss (2001) found some HPWS to be related with feelings of increased stress and work pressure (Stirpe & Zárraga-Oberty, 2017). White et al. (2003) concluded that HPWS were a negative interface between employees work and their domestic lives, making HPWS a source of workhome spillover (Stirpe & Zárraga-Oberty, 2017).

Macky & Boxall (2008) concluded that HPWS can lead to job satisfaction or dissatisfaction depending on the amount of workload and working hours (M. Zhang et al., 2013).

Kroon et al. (2009) found out that in organizations that reported more employees covered by HPWS, higher levels of job demands were also reported, which was also associated with more emotional exhaustion (Jensen et al., 2013).

Wood & de Menezes (2011) found that HPWS is not related to job satisfaction and increases employee anxiety (M. Zhang et al., 2013).

Van De Voorde et al. (2012) found support for the conflicting outcomes perspective, relating HPWS with a negative impact on health-related well being, although for happiness and relationship well being evidence for the mutual gains perspective was stronger. The general consensus is that HPWS result in improved organizational performance, although it might not benefit employees (Van De Voorde et al., 2012).

#### 2.12. HPWS Perspectives

Generally, HPWS have been studied under three different theoretical perspectives: the universalistic, the contingent and the configurational perspectives

#### 2.12.1 – Universalistic Perspective

The Universalistic Perspective argues that some HRM practices are always better than other and that the implementation of these "universally" better practices will lead to higher performance independently of the implementation of other HRM practices or contextual factors, proposing a linear and independent association between an HRM practice and organizational performance (Delery & Doty, 1996; Meuer, 2017).

Supporting this perspective, Pfeffer (1995, 1997, 1998) concluded that sucessful firms implemented certain common HRM practices, like selectivity in recruitment, incentive pay and training and skill development, making such practices universally more effective than others (Lepak & Shaw, 2008; B. Zhang & Morris, 2014).

## 2.12.2 – Contingency Perspective

Contingency Perspective emphasizes contextual factors, either internal or external, as a determinant variable in the effectiveness of HRM practices (Delery & Doty, 1996; Meuer, 2017; B. Zhang & Morris, 2014). Although organizational strategy is considered to be the primary contingency variable (Delery & Doty, 1996), suggesting that different strategies require different HRM practices (Chadwick, Way, Kerr, & Thacker, 2013; Meuer, 2017), other variables like manufacturing/service sector (Combs et al., 2006), industry sector (Datta et al., 2005) and technology (Snell & Dean, 1992) have been found to be important contingencial variables. Datta et al. (2005) found that industry characteristics such as capital intensity, industry growth and industry product differentiation moderated the HPWS-labour productivity relationship (Lepak & Shaw, 2008).

## 2.12.3 - Configurational Perspective

Rather than asserting that individual HRM practices independently contribute to performance, the Configurational organizational Perspective focus complementarities between the different HRM practices that compose the HRM system (Lepak & Shaw, 2008; Meuer, 2017; B. Zhang & Morris, 2014). Employees are exposed to more than a single practice in their organization, making the effectiveness of an individual practice dependent of its fit with other practices of the HRM system (Lepak & Shaw, 2008). The implementation of multiple practices that complement each other will create an higher effect in performance enhancement than the sum of the contributions of each individual practice (Meuer, 2017). For example Ichniowski et al. (1997) and Macduffie (1995) reported that HRM systems had a greater impact on productivity and organizational performance, compared to HRM individual practices (Lepak & Shaw, 2008).

This perspective also accounts for the fit with organization characteristics, such as firm strategy, arguing that besides horizontal fit, there must be also vertical fit, meaning that the HRM system will enhance firm performance only when it is implemented in association with the appropriate firm strategy (Delery & Doty, 1996). This perspective differs from universalistic perspective because it focus on a system of HRM practices instead of individual HRM practices and includes the assumption of equifinality, implying that different HRM systems can be equally effective for the same set of conditions, rather than assuming that certain individual HRM practices are better than other in all conditions (Delery & Doty, 1996).

The primary difference between contingency and configurational perspectives is that the contingency perspective focus is on individual practices, while configurational is on the "bundle" of practices horizontally aligned (Delery & Doty, 1996).

# 2.12.3 – Contingent Configurational Perspective and Weak and Strong Contingency

More recently the three dominant perspectives have been complemented. Lepak & Shaw (2008) combine the configurational and contingency perspectives into a "contingent configurational perspective", stating that the effectiveness of HRM systems may also depend on external contingency factors, thus, internally consistent HRM systems must also achieve external alignment with contingencies, such as firm strategy, but also some contextual factors such as industry sector (Meuer, 2017). They exemplify this with Osterman (1994), which found that companies with a 'high road' strategy utilized more innovative work practices such as quality circles and team-based production, compared to companies with a 'low road' strategy (Lepak & Shaw, 2008).

Kaufman (2010), distinguishes between weak and strong contingency. While the weak contingency is a universalistic relation between HRM practices and organizational performance, moderated by contingent factors, such as alternative business strategies, the strong contingency assumes that "it depends" and in some situations more investment in HRM may have a positive effect on organizational performance and in other situations that effect might be null or even negative. Kaufman exemplifies that while a "commitment" HRM model means high performance in certain firms, in others (following cost minimization or labour exploitation strategy), it means losing money (Meuer, 2017).

## 3. Hypothesis and Conceptual Models

#### 3.1. Introduction

In this chapter we will present the hypothesis we want to test along with the corresponding literature review to support them, followed by conceptual models of our study.

After a literature review supporting every hypothesis we want to test, that link HPWS with employees' attitudes and behaviors, all based in employees' perceptions, we will present a review on conceptual models followed by the three conceptual models we will test in our empirical research.

# 3.2. Hypothesis

Hypothesis is a proposition made in an attempt to verify the validity of an existing response to a problem that needs to be tested in order to verify its validity, always leading to an empirical verification (Marconi & Lakatos, 2007)<sup>1</sup>.

## 3.2.1 HPWS and Employee Outcomes

#### 3.2.1.1. Job Satisfaction

Job Satisfaction is defined by Locke (1976) as a pleasurable or positive emotional state, resulting from the appraisal of one's job experience (García-Chas et al., 2014). HPWS should have a positive impact on job satisfaction as this employee outcome is seen as an end in itself (García-Chas et al., 2014). This idea is supported by AMO Theory (Appelbaum et al., 2000), social exchange theory (Blau, 1964), and reciprocity (Gouldner, 1960). in which organizations invest in a long-term relationship with their employees by developing highly-skilled, motivated and empowered employees, and these, in turn, by perceiving that investment will reciprocate with positive employee outcomes such as job satisfaction (García-Chas et al., 2014; Mihail & Kloutsiniotis, 2016; M. Zhang et al., 2013).

<sup>&</sup>lt;sup>1</sup> Free Translation

Several empirical studies support this HPWS-Job satisfaction linkage (e.g García-Chas et al., 2014; MacKy & Boxall, 2008; Mihail & Kloutsiniotis, 2016; P. C. Wu & Chaturvedi, 2009). More recently, Messersmith, Patel, Lepak, & Gould-Williams (2011) in a study involving local government authorities from Wales, have reported that HPWS increase job satisfaction. Takeuchi et al. (2009) using a sample of 56 Japanese companies showed that HPWS is positively related with job satisfaction. In a meta-analytic review, considering 83 studies, Kooij et al. (2010) found out that employees' perception of HPWS is significantly and positively related with job satisfaction, with a mean correlation of 0.34.

On the contrary other studies question the assumption of the positive effect of HPWS on job satisfaction, for example Ramsay et al. (2000) reported that HPWS may be associated with higher job strain and lower pay satisfaction.

Furthermore job satisfaction is also regarded in HRM literature as a mediator of the HPWS-Organizational performance link (e.g. B. Zhang & Morris, 2014). Therefore, we expect the following:

H1: HPWS will be positively related with Job Satisfaction.

#### 3.2.1.2. Intention to Leave

Intention to leave refers to the conscious and deliberate wilfulness of the employees to leave the organization (Tett & Meyer, 1993). HPWS encompass a wide range of practices that lead to positive employee outcomes, such as enhanced satisfaction, organizational commitment, motivation, trust, work engagement which may reduce intention to leave and employee turnover (Ang et al., 2013; Sun et al., 2007; Way, 2002). For example, organizations that are less selective in hiring are prone to experience higher quit rates (Batt, 2002).

This negative effect of HPWS on intention to leave has been reported in HRM literature (e.g. García-Chas et al., 2014). Therefore, we expect the following:

H2: HPWS will be negatively related with Intention to Leave.

#### 3.2.1.3. Affective Commitment

Organizational Commitment has been emphasized as a core mediator between HPWS and financial performance, as it is an attitude that reflects the nature of the relationship between an employee and an employer (Giannikis & Nikandrou, 2013; M. Zhang et al., 2014). This concept is defined as the strength of an individual's identification with and involvement in a particular organization (Porter, Steers, Mowday, & Boulian, 1974). This concept includes three components: affective commitment, normative commitment and continuance commitment (N. J. Allen & Meyer, 1990; Miao, Newman, Schwarz, & Xu, 2013). Affective commitment is defined as an emotional attachment to, identification with, and involvement in the organization (J. P. Meyer, Stanley, Herscovitch, & Topolnytsky, 2002; Van Dierendonck & Jacobs, 2012), making individuals remain with the organization because they want to (Miao et al., 2013). Normative commitment a perceived obligation to remain in the organization, making employees remain in the organization because they ought to do so (J. P. Meyer et al., 2002; Miao et al., 2013). Continuance commitment refers to "individuals' economic attachment to the organization", and it derives from the perceived costs that the employee will have if he decides to end the relationship with the organization (N. J. Allen & Meyer, 1990; Miao et al., 2013).

HPWS conveys the message that the organization values and is willing to commit itself to its employees, and based on social exchange, this leads to positive attitudes from the employees towards the organization, such as improved commitment (Mihail & Kloutsiniotis, 2016). Extensive training and internal labour market are practices included in HPWS that let employees know that they are important to the organization and have opportunities to develop and advance in their career within the organization, fostering organizational commitment (P. C. Chang & Chen, 2011)

This HPWS-commitment relationship is supported in the literature (e.g. Giannikis & Nikandrou, 2013; Macky & Boxall, 2007; Takeuchi et al., 2007). Godard (2001) reported higher commitment related to a moderate adoption of HPWS.

Mathieu & Zajac (1990) concluded that, in general, affective involvement tends to be most relevant as a behavioral predictor and several meta-analyses confirmed the essential role of affective commitment, showing relationships with work attitudes and behaviors such as turnover and organizational citizenship behaviors (Van Dierendonck & Jacobs, 2012). Therefore, we expect the following:

H3: HPWS will be positively related with Affective Commitment.

## 3.2.1.4. Social Identity

Wright & Haggerty (2005) argue that the impact of HRM practices on employees' attitudes and in-role performance is also a social process (Bartram et al., 2014). Social identity theory suggests that people wish to belong to specific groups, that they perceive distinct from other groups, in order to raise their self-esteem, thus forming their individual social identity (Bartram et al., 2014; Tajfel & Turner, 1986). Social identity refers to the part of individuals' self-concept associated with their membership in social groups (Tajfel, 1972). Social identification plays a major role in the formation and development of collective attitudes and behavior (Bartram et al., 2014; Tajfel & Turner, 1986). HPWS can develop employees' social identification, increasing their attachment to the organization and willingness to contribute (Bartram et al., 2014). For example, extensive training, particularly at team level, may improve communication, cohesion and coordination, enabling its members to develop a shared understanding of the tasks, ensuring that the identity of the team is consistent with broader organizational goals (Bartram et al., 2014). Furthermore, information sharing signals employees that the organization trusts them conducting to feelings such as pride and loyalty (Bartram et al., 2014; Pfeffer, 1998). Therefore, we expect the following:

H4. HPWS will be positively related with Social Identity.

#### 3.2.1.5. Innovative Work Behavior

Innovative Work Behavior (IWB) is defined as "the intentional creation, introduction and application of new ideas within a work role, group or organization, in order to benefit role performance, the group or the organization", consisting in idea generation, idea promotion and idea realization (Janssen, 2000). Idea generation corresponds to the production of novel and useful ideas in any domain (Amabile, Conti,

Coon, Lazenby, & Herron, 1996; Janssen, 2000). Idea promotion consists in finding backers and sponsors who can provide the necessary power behind it (Janssen, 2000; Kanter, 1988). Idea realization refers to the production of a prototype or model of the innovation that can be experienced and ultimately applied within a work role, group or the whole organization (Janssen, 2000; Kanter, 1988).

This behaviors are critical for organizational innovation, as they foster knowledge exchange and combination, generating new knowledge (Fu et al., 2015). In turn, organizational innovation contributes to organizational performance has it has been reported by some authors (Fu et al., 2015; Jiménez-Jiménez & Sanz-Valle, 2008).

Following AMO Theory (Appelbaum et al., 2000), HPWS improve employees' KSA's to innovate by building their expertise and talent, also increasing their motivation (for example through incentive compensation) and opportunities (for example, through employee participation) to develop new ideas (Fu et al., 2015; Messersmith & Guthrie, 2010). Moreover, HPWS helps to create a strong and efficient organizational structure and climate, allowing employees to create, transfer and implement their knowledge, leading to IWB (Fu et al., 2015). Therefore, we expect the following:

H5: HPWS will be positively related with IWB.

#### 3.2.1.6. Stress

The HRM literature has reported mixed findings on whether HPWS result in positive or negative employee outcomes. Following AMO Theory (Appelbaum et al., 2000) and Social Exchange Theory (Blau, 1964), views like mutual gains (Kalmi & Kauhanen, 2008; Van De Voorde et al., 2012), optimistic perspective (Peccei, 2004), unitarist perspective (Kroon et al., 2009) and win-win HPWS (Sparham & Sung, 2007; M. Zhang et al., 2013) support that HPWS will lead to positive employee outcomes, such as higher job satisfaction (Ang et al., 2013; García-Chas et al., 2014; Giannikis & Nikandrou, 2013; Takeuchi et al., 2009) and commitment (Ang et al., 2013; Giannikis & Nikandrou, 2013; Takeuchi et al., 2009).

On the contrary, views like confliting outcomes perspective (Van De Voorde et al., 2012), critical perspective (Kalmi & Kauhanen, 2008), pessimistic perspective (Peccei, 2004), pluralist perspective (Kroon et al., 2009; M. Zhang et al., 2013) and profit-oriented HPWS (Sparham & Sung, 2007; M. Zhang et al., 2013) support negative employee

outcomes, like increased stress and workload (Danford et al., 2004; Godard, 2001; Ramsay et al., 2000). Stress is defined as a substancial imbalance between environmental demands and the response capability of the focal organism (McGrath, 1970; Rauch, Fink, & Hatak, 2018).

The ultimate goal of HPWS is to help the organization improve competitive advantage and organizational performance (Godard, 2001). This can be achieved by motivating employees to make extra efforts in favor of the firm and although employees may value the investment that the organization makes in them by implementing HPWS, the message the whole system conveys is of expectations of increased performance, making the implementation of HPWS to be accompanied by higher workloads, stressing employees with higher completion rates and time pressures (Y. Huang et al., 2018; Kroon et al., 2009). The investment on the implementation of HPWS involve high start-up costs and needs higher returns to justify its maintenance, thus demanding more effort from the employees, resulting in increased workloads, time pressure and demands (Chaudhuri, 2009; Whitfield & Poole, 1997). Some practices included in HPWS, reported as having positive effects on employee outcomes can actually increase stress (Chaudhuri, 2009). For example, performance appraisal could generate feelings of frustration and hostility if they were meant to evaluate pay hike rather than personal development, particularly when employees were subjected to inadequate staffing levels and unrealistic targets (Chaudhuri, 2009).

It is possible that HPWS may have contradictory effects, intensifying the work and stress while at the same time enhancing employee outcomes like job satisfaction, commitment and trust (Godard, 2001; Van De Voorde et al., 2012). For example, teambased work can be expected to have positive implications for employees, increasing group interaction and belongingness, although it may also result in increased workload and stressfulness as employees feel increased pressure to perform (Godard, 2001).

Following this reasoning, we would like to understand if HPWS will also be associated with increased stress, because, like Godard (2001) we want to understand how HPWS are actually implemented and perceived by employees and not how they should be. Therefore, the testing of the following hypothesis is needed:

H6: HPWS will be positively related with Stress.

## 3.2.1.7. Participative Leadership

Participative Leadership is a leadership style in which the leader involves the subordinates in the problem-solving and decision-making process (Miao et al., 2013; Somech, 2006). This style is regarded by several scholars as the most humanistic (Lythreatis, Mostafa, & Wang, 2017; Sauer, 2011). Participative leaders prefer consensus building, consultation over direction and exhibit behaviors that allow followers to manage themselves, which implies that the subordinates must take a certain amount of responsibility themselves (Miao et al., 2013; Sauer, 2011).

When employees are given the opportunity to participate in the decision-making process and take greater responsibility over their participative work, they will interpret this as a sign that their managers wish to develop relationships based on social exchange, and thus they will reciprocate accordingly, promoting organizational affective commitment, trust (X. Huang, Iun, Liu, & Gong, 2010; X. Huang, Shi, Zhang, & Cheung, 2006; Miao et al., 2013), morale, perceived support (Lythreatis et al., 2017), self-efficacy and performance (Lam, Huang, & Chan, 2015). When involved in participation, employees tend to seek more information from their managers, making participative leadership combined with information sharing highly effective in inducing higher performance (Lam et al., 2015).

HPWS tend to include opportunity enhancing practices like employee participation practices, job rotation, job autonomy, communication programs and information sharing (Fu et al., 2017; Jiang et al., 2012; Messersmith et al., 2018; Patel et al., 2013; Takeuchi et al., 2007). Although this is not an employee outcome, we will consider this contextual factor as a variable associated with HPWS and that further on our analysis might be related with employee outcomes. Therefore, we expect the following:

H7: HPWS will be positively related with Participative Leadership.

## 3.2.1.8. Self-Efficacy

Self-efficacy refers to a person's judgement about his or her ability to perform specific tasks (Bandura, 1986). In the organizational context, it has been argued that HPWS can enhance employee self-efficacy through a wide range of practices, such as adequate

training (Axtell & Parker, 2003; Butts et al., 2009; Shen et al., 2014), information sharing (Butts et al., 2009), increased task control (Axtell & Parker, 2003), feedback mechanisms (Baluch et al., 2013; Shen et al., 2014), reward systems linking individual performance to organizational goals (Butts et al., 2009) and performance appraisal (Baluch et al., 2013). The increased feeling of competence is expected to lead to superior job performance (Spreitzer, 1995). Therefore, we expect the following:

H8: HPWS will be positively related with Self-Efficacy.

#### 3.2.2. Links Between Outcomes

#### 3.2.2.1. Job Satisfaction and Affective Commitment

While job satisfaction is regarded as an affective reaction to relatively specific aspects of one's job, organizational commitment is generally viewed as a global affective reaction towards the organization as a whole (Lance, 1991). Porter et al. (1974) suggested that job satisfaction represents an unstable and immediate affective reaction to the work environment whilst organizational commitment is viewed as a more long-termed and slower developing attitude (Mathieu, 1991). The relationship between job satisfaction and organizational commitment has been widely studied, but still generating different findings (Saridakis, Lai, Muñoz Torres, & Gourlay, 2018). Following the rationale that satisfaction is determined only by a subset of organizationally relevant perceptions and experiences that determine organizational commitment (Lance, 1991; Williams & Hazer, 1986), some authors (e.g. Froese & Xiao, 2012; Mathieu & Hamel, 1989; Williams & Hazer, 1986), found evidence that job satisfaction is a precursor of organizational commitment, this being the most supported relation (Lance, 1991; Saridakis et al., 2018; Williams & Hazer, 1986). Other researchers (e.g. Bateman & Strasser, 1984; Paik, Parboteeah, & Shim, 2007), found evidence of the opposite, arguing that employees may develop commitment during their initial entry to the organization and will interpret job experiences such as satisfaction, influenced by their level of commitment (Lance, 1991; Mathieu, 1991). Also, there are authors that argue (Brunetto, Teo, Shacklock, & Farr-Wharton, 2012) and present evidence (James P. Curry, Douglas S. Wakefield, James L. Price, & Charles W. Mueller, 1986) that job satisfaction and organizational commitment are not causally related and others that suggest a reciprocal relation between them (T.-C. Huang & Hsiao, 2009; Lance, 1991; Mathieu, 1991).

Meyer & Alien (1991) identified employees' work experiences as the most influential precursor of affective commitment, suggesting that it develops as the result of experiences that satisfy employees' needs and/or are in line with their values (Giannikis & Nikandrou, 2013; Meyer & Alien 1991, p.70). Macky & Boxall (2007) found a relationship between HPWS and affective commitment mediated by variables like employee job satisfaction and employee trust in management, although a direct link between HPWS and affective commitment was not found. Therefore, we expect the following:

H9: Job Satisfaction will be positively related with Affective Commitment.

### 3.2.2.2. Stress, Job Satisfaction and Affective Commitment

According to perspectives such as the pluralist perspective (Kroon et al., 2009; M. Zhang et al., 2013), HPWS have a negative influence on employee well-being, arguing that organizational goals and employee well-being are not always aligned (M. Zhang et al., 2013). Godard (2001) concluded that benefits of the Alternative Work Practices (AWP), (positive implications in job satisfaction, self-esteem, motivation, commitment and organizational citizenship behavior), tend to diminish and even decline at higher levels of adoption, this being explained by increased levels of stress. Jamal & Preena (1998) also found evidence of a negative relation between job stress and job satisfaction and also between job stress and organizational commitment. Appelbaum (2002) argued that HPWS might have contradictory effects on well-being, positively influencing commitment, job satisfaction and trust, while also increasing stress levels (Van De Voorde et al., 2012). Therefore we expect the following:

H10: Stress will be negatively related with Job Satisfaction.

H11: Stress will be negatively related with Affective Commitment.

# 3.2.2.3. Participative Leadership, Affective Commitment and Job Satisfaction

Participative leadership gives employees the opportunity to participate in decision-making, problem-solving and information-sharing, taking greater responsibility in their work (Kim, 2002; Miao et al., 2013; Somech, 2006). According to social exchange theory (Blau, 1964), this opportunity will be interpreted as a sign that their superior wishes to engage in a relationship based on social exchange, making employees reciprocate accordingly, and since their supervisors are seen as the main representatives of the organization, this will elicit higher levels of organizational commitment (Miao et al., 2013). Miao et al. (2013) found evidence relating participative leadership with both affective commitment and normative commitment.

Furthermore, Miller & Monge (1986) made a meta-analysis of the (cognitive, affective and contingency) models of participation and linked them to productivity and satisfaction: "In sum, cognitive models of participation propose that participation leads to increases in productivity through bringing high-quality information to decisions and through increasing knowledge at times of implementation. (...) There will not be a direct influence on job satisfaction. Rather, the effect of participation on productivity will mediate this effect. (...) Affective models suggest that participation will satisfy higher-order needs (self-expression, respect, independence and equality) of workers and that, as these needs are satisfied, workers will be more satisfied with their jobs. (...) Contincency models of participation suggest that no single model of participation is appropriate for all employees in all organizations. Instead, various contingency models predict that: (1) Employees with high needs for independence and personalities with low authoritarianism will be the most positively influenced by participation. (2) Some decisions are more appropriate for participation than others. (...) (3) Employees who value participation will be the most positively influenced by it, and these are likely to be higher-level employees, or individuals working in research or service industries" (Miller & Monge, 1986: p.732-733).

Also, Kim (2002) found support to the hypothesis that perceived participative management style would be related with higher levels of job satisfaction. Therefore, we expect the following:

H12: Participative Leadership will be positively related with Affective Commitment.

H13: Participative Leadership will be positively related with Job Satisfaction.

## 3.2.2.4. Participative Leadership and Self-Efficacy

HR practices that involve increased responsibility and decision-making authority over one's job, characteristics of a participative leadership style, shows leader's confidence in an employee's abilities to perform the job (Baluch et al., 2013; Lam et al., 2015; Miao et al., 2013; Somech, 2006; X. Zhang & Bartol, 2010). This makes employees feel empowered and perceive that they have more control and power to influence their work, promoting feelings of self-efficacy (Axtell & Parker, 2003; Lam et al., 2015; X. Zhang & Bartol, 2010). Axtell & Parker (2003) found that increased task control by the employee was associated with role breath self-efficacy<sup>2</sup>. Also, Ahearne, Mathieu, & Rapp (2005) found a positive relationship between empowering leadership and employee self-efficacy. Therefore, we expect the following:

H14: Participative Leadership will be positively related with Self-Efficacy.

# 3.2.2.5. Job Satisfaction, Affective Commitment and Intention to Leave

Employees´ turnover theories emphasize the essential role of job satisfaction in reducing employees´ intention to leave, considering it a key mechanism in the turnover process (Boswell, Boudreau, & Tichy, 2005; García-Chas et al., 2014; T. W. Lee, Mitchell, Holtom, McDaniel, & Hill, 1999; Porter et al., 1974; Steel, 2002). For example, the seminal work of March & Simon (1958), which influenced more recent turnover models such as Mobley (1977) and T. W. Lee & Mitchell (1994) considered that employees´ intention to leave was influenced by two motivational forces, "the perceived desirability of movement" and "the perceived ease of movement" (García-Chas et al., 2014; Steel & Lounsbury,

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<sup>&</sup>lt;sup>2</sup> "... a person's confidence in performing proactive, interpersonal tasks that go beyond traditional boundaries." (Axtell & Parker 2003:113)

2009). Low job satisfaction is considered a strong antecedent of desirability of movement (e.g. William H. Mobley, Griffeth, Hand, & Meglino, 1979; Podsakoff, Lepine, & Lepine, 2007). Steel & Lounsbury (2009) highlighted the role of job satisfaction in the majority of turnover theories as a result of its ability to capture desirability of movement. The expected negative relationship between job satisfaction and intention to leave or turnover has been supported in the literature (e.g. Griffeth, Hom, & Gaertner, 2000). More recently, with a sample of 155 spanish engineers, García-Chas et al. (2014) found support for the hypothesis that job satisfaction mediated the relationship between HPWS and engineers' intention to leave.

Besides job satisfaction, organizational commitment has also been considered a center piece of the turnover theory (Steel, 2002). Porter et al. (1974), found evidence of the relation between organizational commitment and turnover, arguing that it is expected that an individual highly committed with the organizations' goals and willing to work towards them would be inclined to remain with the organization and help it achieve this valued objectives, also stating that in certain circumstances, organizational commitment may be a more effective predictor of turnover than job satisfaction, for example, in a situation where an individual is dissatisfied with his or her pay or supervisor, but has such an high commitment that it overrides this lack of satisfaction, deciding to remain in the organization. Batt (2002) stated that some HR practices such as employment security, training and other practices that build trust are likely to induce commitment towards the organization, and practices like employment security have been negatively related with turnover (Shaw, Delery, Jenkins, & Gupta, 1998). Since, in this study, we are measuring affective commitment and not organizational commitment as a whole, we can only hypothesize about the relationship between affective commitment and intention to leave. Therefore, we expect the following:

H15: Job Satisfaction will be negatively related with Intention to Leave.

H16: Affective Commitment will be negatively related with Intention to Leave.

#### 3.2.2.6. Stress and Intention to Leave

Organizational stress theories perceive turnover has a result of a two-step process in which stressful work leads to psychological strain and in turn this causes employees to display several behavioral reactions such as voluntary turnover (De Croon, Sluiter, Blonk, Broersen, & Frings-Dresen, 2004). Several studies reported that, contrary to job satisfaction and organizational commitment, stress increases employees' intention to leave (e.g. Balfour & Neff, 1993; Todd & Deery-Schmitt, 1996). For example, in a sample of Dutch truck drivers, De Croon et al. (2004) reported a positive relationship between stressful work and turnover intentions. Therefore, we expect the following:

H17: Stress will be positively related with Intention to Leave.

# 3.2.2.7. Affective Commitment and Innovative Work Behavior

Committed people have an active curiosity, a passion for learning, a willingness to challenge the status quo and an eager to experiment with new methods and strategies, therefore more disposed to engage in innovative behavior (Choi, Cundiff, Kim, & Akhatib, 2017). Sun et al. (2007) argues that high levels of organizational commitment leads to discretionary behaviors that benefit the organization, while S. Chang, Jia, Takeuchi, & Cai (2014) states that organizational commitment developed by HPWS, may elicit proactive behaviors, such as knowledge sharing and integration leading to innovation. Also, Meyer, Becker, & Vandenberghe (2004) posit that individuals affectively committed to their organizations may be expected to have stronger motivation to help their firms improving their innovation performance (Y. Chen, Jiang, Tang, & Cooke, 2018). Choi, Cundiff, Kim, & Akhatib (2017) found support for the hypothesis that organizational commitment was positively related with innovative behavior. Therefore, we expect the following:

H18: Affective Commitment will be positively related with IWB.

#### 3.2.2.8. Job Satisfaction and Innovative Work Behavior

Isen & Baron (1991) indicated that individuals who experience positive feelings in organizations are more likely to be creative and innovative (Choi, Cundiff, Kim, & Akhatib, 2017).

Also, Thomas S. Bateman & Organ (1983), related employee satisfaction with extra-role behavior towards the organization, and as innovative behavior is mostly

considered and extra-role behavior, we can relate job satisfaction with innovative behavior (Choi, Cundiff, Kim, & Akhatib, 2017). Moreover, job satisfaction has been related to motivation (Choi, Cundiff, Kim, & Akhatib, 2017; Oishi, Diener, Lucas, & Suh, 1999), while intrinsic motivation is essential to creativity, which is a part of innovative work behavior (Choi, Cundiff, Kim, & Akhatib, 2017; Janssen, 2000).

Choi, Cundiff, Kim, & Akhatib (2017) found support for the positive relationship between job satisfaction and innovative behavior. Therefore, we expect the following:

H19: Job Satisfaction will be positively related with IWB.

## 3.2.2.9. Self-Efficacy and Innovative Work Behavior

As self-efficacy refers to a person's judgement about his or her ability to perform specific tasks (Bandura, 1986), it is likely that employees with higher levels of self-efficacy are more prone to start new activities, pursue them and sustain them more persistently, as they are more confident about their capabilities to handle what they want to do or what is required to be done (Stajkovic, 2006; Zahra, Ahmad, & Waheed, 2017). Thus, employees with more self-efficacy are likely to generate, promote and implement new ideas, (i.e. exhibit innovative work behavior) (Zahra et al., 2017). Previous researches reported links between self-efficacy and innovation in work, work processes improvement and challenging tasks (Hsiao, Chang, Tu, & Chen, 2013; Zahra et al., 2017). Therefore, we expect the following:

*H20: Self-Efficacy will be positively related with IWB.* 

# 3.2.2.10. Self-Efficacy and Job Satisfaction

Individuals with high self-efficacy deal more effectively with difficulties and are more persistent when they face failure, thus, they are more likely to achieve greater results and success on the job, which leads them to derive more satisfaction from their job (Gist, Mitchell, & Mitchell, 1992; Judge & Bono, 2001). Employees with high self-efficacy are more sensitive to positive stimuli and less sensitive to negative stimuli, which enhances job satisfaction (Ferris et al., 2013; Ren & Chadee, 2017). This positive link between self-

efficacy and job satisfaction has found support in previous studies (e.g. Ren & Chadee, 2017). Therefore, we expect the following:

H21: Self-Efficacy will be positively related with Job Satisfaction.

## 3.2.2.11. Self-Efficacy and Affective Commitment

Although most studies relate self-efficacy to performance, Self-Efficacy has been found to have a positive relation with Affective Commitment (J. P. Meyer et al., 2002; Yousaf & Sanders, 2012). As organizations enhance feelings of self-efficacy, it might be expected that employees will reciprocate this feelings with increased affective commitment (Yousaf & Sanders, 2012). Yousaf & Sanders (2012) found support for the positive relation between self-efficacy and affective commitment. Therefore, we expect the following:

H22: Self-Efficacy will be positively related with Affective Commitment.

## 3.2.2.12. Social Identity and Intention to Leave

Social Identity literature supports a negative link between social identification and turnover intentions (or intention to leave), so as that when an individual's social identification is higher, his/her intention to leave tends to be lower (Van Dick et al., 2004). According to Van Knippenberg, Van Dick, & Tavares (2007), this happens because, strong identification with a group or with the organization, appears to be psychologically intertwined with their self-concept, thus, withdrawal from this group or organization would have a negative effect on their self-concept, like losing a part of their self. Also, individuals with high identification with a group or organization, are more likely to act in accordance to the group's values and norms (Tajfel & Turner, 1986) and less likely to withdraw from the group, as this action contradicts the group's or organization's interests.

Cheng, Bartram, Karimi, & Leggat (2016) found support for the negative linkage between social identity and intention to leave. Therefore, we expect the following:

H23: Social Identity will be negatively related with Intention to Leave.

## 3.2.2.13. Social Identity and Job Satisfaction

In their study, Van Dick et al. (2004) suggested that individuals who are strongly identified with their organization also perceive their actual work situation more positively, leading to higher job satisfaction. Individuals with strong organization identity tend to take pride in organizational membership, which should give them predisposition to evaluate their jobs in a positive manner (Loi, Chan, & Lam, 2014). Knippenberg & Schie (2000) suggested that organizational identification should be positively related to job satisfaction, as people tend to think positively about things associated with the self. Also, individuals with strong organizational identification are more likely to adopt organizational goals as their own personal goals, and when working towards they are cognitively engaged in their jobs and gain intrinsic satisfaction (Loi et al., 2014). Van Dick et al. (2004) found support for the positive relationship between job satisfaction and organizational identity. Since we couldn't find studies clearly associating Social Identity and Job Satisfaction, we will expect similar results as the ones found associating similar concepts to Social Identity (in this case Organizational Identity) with Job Satisfaction. Therefore, we expect the following:

*H24: Social Identity will be positively related with Job Satisfaction.* 

### 3.2.2.14. Social Identity and Affective Commitment

Social identity and commitment are seen as distinguishable, but related concepts, generally, the first being a precursor of the later (J. P. Meyer, Becker, & Van Dick, 2006). Social identification is primarily used to refer to a feeling of affective commitment to a group (Ellemers, Kortekaas, & Ouwerkerk, 1999). Several arguments have been made in favour of this position. For example, Ashforth & Mael (1989), argued that identifying with an organization enhances commitment to it, because feelings of belongingness and vicarious experiences with respect to the organization create an emotional bond. Moreover, T. E. Becker (1992), argued that seeking self-defining relationships with other individuals or groups often involves adopting certain attitudes, including commitment towards those same individuals or groups. For example, Bergami & Bagozzi (2000) found evidence for this link. Therefore, we expect the following:

# 3.2.2.15. Participative Leadership and Innovative Work Behavior

It is assumed that leaders generally have a significant influence in fostering innovation, for instance using a participative style (Denti & Hemlin, 2012).

Participative Leaders allow employees to express their own ideas, actively listening and using them to make important decisions, conveying the message that innovative behaviors are valued, prioritized and expected, eliciting innovative work behavior from the employees (Odoardi, Montani, Boudrias, & Battistelli, 2015). These same authors found support linking participative leadership to innovation. Therefore, we expect the following:

*H26: Participative Leadership will be positively related with IWB.* 

The hypothesis referred in our models are as follows:

H1: HPWS will be positively related to Job Satisfaction.

H2: HPWS will be negatively related to Intention to Leave.

*H3: HPWS will be positively related with Affective Commitment.* 

H4. HPWS will be positively related with Social Identity.

H5: HPWS will be positively related with IWB.

H6: HPWS will be positively related with Stress.

*H7: HPWS will be positively related with Participative Leadership.* 

H8: HPWS will be positively related with Self-Efficacy.

H9: Job Satisfaction will be positively related with Affective Commitment.

H10: Stress will be negatively related with Job Satisfaction.

H11: Stress will be negatively related with Affective Commitment.

H12: Participative Leadership will be positively related with Affective Commitment.

H13: Participative Leadership will be positively related with Job Satisfaction.

H14: Participative Leadership will be positively related with Self-Efficacy.

H15: Job Satisfaction will be negatively related with Intention to Leave.

H16: Affective Commitment will be negatively related with Intention to Leave.

H17: Stress will be positively related with Intention to Leave.

H18: Affective Commitment will be positively related with IWB.

H19: Job Satisfaction will be positively related with IWB.

H20: Self-Efficacy will be positively related with IWB.

*H21: Self-Efficacy will be positively related with Job Satisfaction.* 

H22: Self-Efficacy will be positively related with Affective Commitment.

H23: Social Identity will be negatively related with Intention to Leave.

H24: Social Identity will be positively related with Job Satisfaction.

*H25: Social Identity will be positively related with Affective Commitment.* 

H26: Participative Leadership will be positively related with IWB.

## 3.3. Conceptual Models

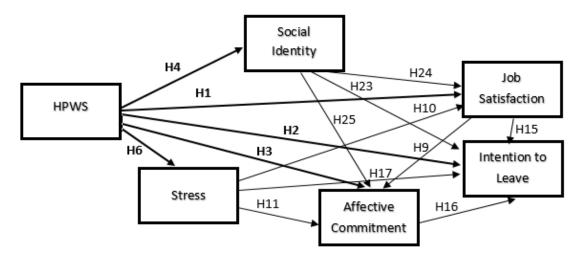
In the research conceptual model are exposed the variables that will be analyzed in the research and their inter-relations, designed to represent, in whole or in part, some real system or process (Malhotra, 1999)<sup>3</sup>. We used a graphic model to isolate variables and suggest directions and relations between them.

Model 1 (Figure 1) tries to integrate both positive and negative perspectives (e.g. Kalmi & Kauhanen, 2008; Van De Voorde et al., 2012) towards the impact of HPWS on employees. By relating HPWS with Stress, Social Identity, Job Satisfaction, Affective Commitment and Intention to Leave, we are trying to understand whether HPWS will elicit negative or positive employee attitudes and behaviors and by relating these outcome variables among themselves, we will try to understand through which mechanism are those outcomes elicited.

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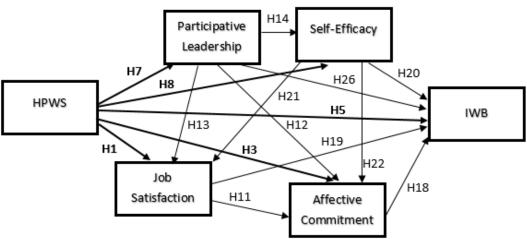
<sup>&</sup>lt;sup>3</sup> Free Translation

Figure 1: Conceptual Model 1



Model 2 (Figure 2) is a more "utilitarist" model that tries to understand the relationship between HPWS and IWB and through which mechanism (Job Satisfaction, Affective Commitment...) they are related. For this purpose we relate HPWS with IWB, Participative Leadership, Self-Efficacy, Job Satisfaction and Affective Commitment, also relating the variables between them as proposed in the hypothesis.

Figure 2: Conceptual Model 2



#### 3.4. Conclusion

In this chapter we presented the conceptual models, based on literature review, we designed and will test in the next chapters. Overall two models were developed and 26 hypothesis we included and will be tested.

In the next chapter, based on the conceptual model and hypothesis, we will try to understand the impact of HPWS on different employee outcomes based on the employee's perceptions.

#### 4.1. Introduction

According to (Marconi & Lakatos, 2016)<sup>4</sup>, the method is the set of systematic and rational activities that enables the achievement of the objective, while showing the way to be followed, detecting errors and helping the researcher to make decisions.

In this study we used the hypothetical-deductive method, beginning with the perception of a gap in the literature, in this case represented by the research of links between HPWS and employees' attitudes and behaviors, based on employees' perceptions in Portugal. Then hypothesis are formulated, which will be tested through deductive inference with the goal of verifying the occurrence of the hypothesized phenomenon's (Marconi & Lakatos, 2016). The procedural method used was the statistical method, using two statistical softwares, SPSS and AMOS, by IBM, both version 25. This type of method enables the reduction of sociological, political and economic phenomenon to quantitative terms and statistical manipulation, allowing for the verification of relations between this phenomenon's and then the generalization of this relations (Marconi & Lakatos, 2016). We chose to use quantitative analysis as the type of research, since it enables the researcher to quantify the data and generalize the results from a representative sample to the corresponding population (Malhotra, 1999), more specifically the hypothesis verification type of research, which consists in verifying hypothesis previously developed and backed by literature (Marconi & Lakatos, 2016).

In this chapter we will explain how we selected the sample and collected the data, how we developed the questionnaire and the pre-test, the measures we used, the respondents' profile and finally the data analysis, namely the exploratory factor analysis and confirmatory factor analysis.

<sup>&</sup>lt;sup>4</sup> Free Translation

### 4.2. Sample and Data Collection

Collecting data from a large group of individuals is, often, impossible, because researchers tend to have very limited resources due to, for example, time and financial constraints (Hill & Hill, 2002; Marconi & Lakatos, 2007)<sup>5</sup>. For this reason, researchers usually use samples of the population they want to study, reaching to conclusions and then extrapolate them to the whole population. The population is defined as "the set of animate or inanimate beings which have, at least, a common characteristic", while the sample is defined as "a suitable selected portion of the universe (population); a subset of the universe" (Marconi & Lakatos, 2007, p. 41).

The sample must be as representative as possible of the universe, exhibiting similar characteristics to those of the population in order to enable an accurate extrapolation of results to the population (Hill & Hill, 2002; Marconi & Lakatos, 2016). The sample is representative of the whole population when the units that constitute it were chosen in a way that all the members of the population had the same probability to be a part of the sample (Ghiglione & Matalon, 2001)<sup>6</sup>.

The purpose of the study is to understand the effects HPWS on employee attitudes and behaviors based on employee perceptions, therefore, the population could be defined as every individual working on an organization. We've decided to narrow our population to every individual working on an organization in Portugal, since it's a closer reality to the researchers, also, this type of studies are usually developed in countries such as China, USA and England, and we wanted to diversify the set of respondents and because of spacetime constraints. As it was impossible to obtain the full list of the individuals that constitute the population, we decided to a non-probabilistic convenience sample. This type of sample trusts in the researcher judgement and is a very common technique that consists on the selection of a sample accessible to the researcher and admitting that the individuals selected in a non-random way can somehow represent the population (Coutinho, 2014; Prodanov & Freitas, 2013)<sup>7</sup>. This type of sample can produce good estimates of population characteristics, although it is not possible to guarantee that the sample is representative of the population (Churchill Jr., 1998; Malhotra, 1999).

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### 4.3. Questionnaire Survey

The data was collected through an online self-report questionnaire survey (Attachment I), between March and April 2019. The questionnaire is a data collection instrument constituted by a set of organized questions, which must be answered with no interference of the interviewer (Marconi & Lakatos, 2016). This type of quantitative research instrument is the most adequate to investigate opinions and attitudes (Marconi & Lakatos, 2007). Questionnaires present several advantages such as time flexibility for the respondent and savings in time and travels for the researcher while still gathering a great number of data, although some disadvantages can be pointed such as the impossibility to help the respondent understand any misunderstood question or the fact that when respondents don't understand a question they tend to uniformize the answers (Marconi & Lakatos, 2016). Online questionnaire surveys enable the researcher to have a greater control of the sample, a faster data collection, lower costs with the distribution and even lower costs with data insertion in the statistics softwares, since the answers can be downloaded into softwares such as Microsoft Excel (Ilieva, Baron, & Healey, 2006).

Taking in account all of this information, we used social media platforms (e.g. Facebook, LinkedIn...) to disseminate our questionnaire available through Google Forms, a free platform that enables the creation and application of online questionnaires, also allowing for the download of the data to Microsoft Excel, which makes the insertion of the data in the statistic software more simple.

The questionnaire was designed in English, following previously published scales used in the literature (e.g. Shore et al., 2006; Sun et al., 2007) then translated into Portuguese by the authors and back translated into English by two independent bilingual researchers to ensure equivalency of meaning (Brislin, 1980). Also, a set of sociodemographic questions were asked in the beginning of the questionnaire, such as age, gender and economic sector in which the organization they worked for was inserted. This part was, mainly, of multiple choice, always having an option that enabled them to insert other typologies not specified.

#### 4.3.1. Common Method Bias

Common Method Variance is the variance attributable to the measurement method rather that to the constructs the measures represent and it occurs when responses systematically vary because of the use of a common scalling approach on measures derived from a single data source (Fuller, Simmering, Atinc, Atinc, & Babin, 2016; P. M. Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). This can lead to biases, when the method distorts causal effects, having detrimental effects such as bias in estimates of construct reliability, validity and parameter estimates of the relationship between two different constructs (Fuller et al., 2016; P. M. Podsakoff, MacKenzie, & Podsakoff, 2012).

To reduce potential common method bias (CMB) (P. M. Podsakoff et al., 2003, 2012), several measures were taken. For example, the introduction section of the questionnaire clearly stated that the survey was anonymous and confidential so as to encourage respondents to answer questions honestly (P. M. Podsakoff et al., 2012). The use of positive and negative wording was balanced (P. M. Podsakoff et al., 2012). Established scales were used to keep questions simple, specific and concise, avoiding ambiguous items, vague and unfamiliar concepts, which are considered the mains sources of CMB (M. Zhang et al., 2013).

#### 4.4. The Pre-Test

The questionnaire pre-test consists on a preliminary survey applied to a small sample of respondents, in which they give opinions and leave comments, about topics such as response time, overall difficulty and question comprehension, in order to help the researcher detecting and eliminating potential problems (Ghiglione & Matalon, 2005; Malhotra, 1999)<sup>8</sup>. After collecting the data from the pre-test, the researcher can identify potential flaws, like difficult or ambiguous language and question complexity and then make the necessary adjustments (Marconi & Lakatos, 2016). Also, the pre-test enables the researcher to assess three elements of the questionnaire: Reliability, meaning that regardless of the person applying the questionnaire, the results will always be the same; Validity, certifying that the collected data are necessary to the research; and Operability, analyzing if the language is accessible and clear (Marconi & Lakatos, 2016).

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<sup>&</sup>lt;sup>8</sup> Free Translation

After building the questionnaire, a pilot test with 10 respondents was made to check if the questions could be easily understood, how long would it take to complete the full questionnaire, if there was any type inconsistency and to have a general opinion on the questionnaire. The average response time was of 10 minutes, information added in the final version questionnaire introduction. Minor phrasing changes had to be made to ensure that the questions could be easily understood by the respondents. Another pre-test was made, now with 20 respondents to assess validity of the scales and to conduct a preliminary exploratory factor analysis. The dimensions of the scales that we found were identical to the ones of the original scales. Finally, the online questionnaire survey was launched, and 306 responses were obtained.

#### 4.5. Measures

The following measures refer to the set of latent variables contained in the conceptual models. Following (Hill & Hill, 2002), latent variables are variables that cannot be observed nor measured directly, but can be defined through a set of other variables that can be observed and measured and can, together, measure the latent variable.

We used 7-point Lickert scales in every variable. Some of the original scales were already 7-point Lickert scales and others had to be adjusted. We did this procedure to harmonize all the scales.

## 4.5.1. High Performance Work Systems

To measure HPWS we used the scale developed by Sun et al. (2007). This scale has been used in other studies (e.g. García-Chas et al., 2014; Shen et al., 2014) and consists of a set of 8 subscales, referring to selective staffing, extensive training, internal mobility, employment security, job description, result-oriented appraisal, incentive reward and participation practices, with a total of 27 items. Response option range from 1 (strongly disagree) to 7 (strongly agree). Sample items include "Great effort is taken to select the right person" (selective staffing) and "The duties in this job are clearly defined" (job description).

#### 4.5.2. Job Satisfaction

To measure job satisfaction a three-item scale developed by Camman, Fichman, Jenkins, & Klesh (1979) was used. This scale has been used in previous studies (e.g. R. M. Rodrigues, Guest, Oliveira, & Budjanovcanin, 2015; M. Zhang et al., 2013) and its option response range from 1 (strongly disagree) to 7 (strongly agree). Sample items are "In general, I like to work here" and "Overall, I am satisfied to work here".

#### 4.5.3. Affective Commitment

A three-item scale developed by Meyer & Allen (1997) was used to measure affective commitment. Previously used in other studies (e.g. Frone, 2018) this scale ranged from 1 (strongly disagree) and 7 (strongly agree). Sample items are "This organization has a great personal meaning for me" and "I do not feel emotionally attached to my organization".

### 4.5.4. Social Identity

Social Identity was measured using nine-item scale developed by Hinkle, Taylor, Fox-Cardamone, & Crook (1989). This scale has been used by other studies (e.g. Bartram et al., 2014) and its options range from 1 (strongly disagree) to 7 (strongly agree). Sample items are "I identify with this group" and "I am glad to belong to this group".

#### 4.5.5. Innovative Behavior

To measure innovative behavior we used a nine-item scale developed by Janssen (2000), used in other researches (e.g. Chen, Farh, Campbell-Bush, Wu, & Wu, 2013; Schuh, Zhang, Morgeson, Tian, & van Dick, 2018). This scale consists of a set of three sub-scales of idea generation (e.g. "I create new ideas for difficult issues"), idea promotion (e.g. "I mobilize support for innovative ideas") and idea realization (e.g. "I evaluate the utility of innovative ideas") and its options range from 1 (never) to 7 (always).

### 4.5.6. Participative Leadership

Participative leadership was measured using a six-item scale developed by Arnold, Arad, Rhoades, & Drasgow (2000) and used in other studies (e.g. Lythreatis et al., 2017). Its options range from 1 (strongly disagree) and 7 (strongly agree). Sample items are "My immediate supervisor listens to my work group's ideas and suggestions" and "My immediate supervisor encourages work group members to express ideas/suggestions".

## 4.5.7. Self-Efficacy

To measure self-efficacy, we used an eight-item scale developed by G. Chen, Gully, & Eden (2001). This scale has been used in other studies (e.g. Liao, Liu, & Loi, 2010) and the respondents were asked to indicate, in a range of 1 (strongly disagree) and 7 (strongly agree), their agreement with statements such as "I will be able to achieve most of the goals that I have set for myself" and "I will be able to successfully overcome many challenges".

#### 4.5.8. Intention to Leave

Intention to leave was measured using a two-item scale developed by (Jones, 1986). The items are "I will probably look for a new job in the coming year" and "I scan the newspapers and other sources for prospective jobs", with the options ranging from 1 (strongly disagree) and 7 (strongly agree).

#### 4.5.9. Stress

To measure stress we used the scale used by Godard (2001). The stress scale has five items, including "Your job is stressful". The options range from 1 (strongly disagree) to 7 (strongly agree).

# 4.6. Profile of Respondents

A total of 306 responses were obtained. In order to analyze our data SPSS version 25 was used. To characterize our sample, we used several the following criteria: Gender, Age, Education, Tenure, Management Position, Public or Private Organization, Average hours worked per week, Employment Contract, Gross Monthly Salary, N° of employees in the organization and activity sector. Table 1 shows the results:

**Table 1:** Profile of Respondents

Criteria	Response Categories	%	Average	Min	Max	
Gender	Male	117	38,2			
	Female	189	61,8			
Age				35,55	19	65
	19-30	134	43,8			
	31-40	59	19,3			
	41-50	71	23,2			
	51-60	37	12,1			
	> 60	5	1,6			
Education	High School or lower	86	28,1			
	Bachelor Degree	134	43,8			
	Master/PhD	61	19,9			
	Other	25	8,2			
Tenure				9,75	1	46
	1 year - 5 years	159	52			
	6 years - 10 years	40	13			
	11 years - 15 years	25	8,2			
	16 years - 20 years	29	9,5			
	> 20 years	53	17,3			
Management Position	Yes	52	17			
	No	254	83			
Organization	Public	116	37,9			
	Private	190	62,1			
Average hours worked per week				37,5	4	72
Employment Contract	Fixed-term contract	81	26,5			
	Unfixed-term contract	49	16			
	Contract for an unspecified duration	140	45,8			
	Part-time contract	10	3,3			
	Service Provision Contract	9	2,9			
	Other	17	5,5			
Gross Monthly Salary	< 500€	34	11,1			
	501€-750€	73	23,9			
	751€-1000€	53	17,3			

Total		306	100	
	Tertiary	256	83,6	
	Secondary	43	14,1	
Activity Sector	Primary	7	2,3	
	> 500	78	25,4	
	251 - 500	70	22,9	
	101 to 250	34	11,1	
	51 to 100	40	13,1	
Ç	10 to 50	52	17	
N° of employees in the organization	< 10	32	10,5	
	> 3000€	22	7,2	
	2501€-3000€	11	3,6	
	2001€-2500€	9	2,9	
	1751€-2000€	10	3,3	
	1501€-1750€	11	3,6	
	1251€-1500€	31	10,1	
	1001€-1250€	52	17	

Regarding gender, 38,2% (117 individuals) were male and 61,8% (189 individuals) were female. The average age of the respondents was 35,55 years, with 43,8% (134 individuals) of the respondents age ranging from 19 years (the minimum in the sample) to 30 years, 19,3% (59 individuals) ranging from 31 years to 40 years, 23,2% (71 individuals) ranging from 41 years to 50 years, 12,1% (37 individuals) ranging from 51 years to 60 years and 1,6% (5 individuals) above 60 years with the maximum of 65 years. Regarding education, 28,1% (86 individuals) had High School or lower education, 43,8% (134 individuals) had Bachelor's Degrees, 19,9% (61 individuals) had Master's Degrees or PhD and 8,2% (25 individuals) had other type of education. The average tenure was of 9,75 years, with 52% (159 individuals) of the respondents presenting a tenure ranging from 1 year (minimum) to 5 years, 13% (40 individuals) presenting a tenure ranging from 6 years to 10 years, 8,2% (25 individuals) presenting a tenure ranging from 11 years to 15 years, 9,5% (29 individuals) presenting a tenure ranging from 16 years to 20 years and 17,3% (53 individuals) presenting a tenure above 20 years, with the maximum of 46 years. Regarding management position, 17% (52 individuals) claimed to have a management position while 83% (254 individuals) have not. 37,9% (116 individuals) of the respondents worked on a public organization, while 62,1% (190 individuals) worked on a private organization. The average of working hours per week was 37 hours and 30 minutes, with a maximum of 72 hours worked and a minimum of 4 hours worked. Regarding the employment contract, 26,5% (81 individuals) had a fixed-term contract, 16% (49 individuals) had an unfixedterm contract, 45,8% (140 individuals) had a contract for an unspecified duration, 3,3% (10 individuals) had a part-time contract, 2,9% (9 individuals) had a service provision contract and 5,5% (17 individuals) had other type of contract. Regarding Gross Monthly Salary, 11,1% (34 individuals) had a gross monthly salary below 500€, 23,9% (73 individuals) earned between 501€ and 750€, 17,3% (53) earned between 751€ and 1000€, 17% (52) individuals) earned between 1001€ and 1250€, 10,1% (31 individuals) earned between 1251€ and 1500€, 3,6% (11 individuals) earned between 1501€ and 1750€, 3,3% (10 individuals) earned between 1751€ and 2000€, 2,9% (9 individuals) earned between 2001€ and 2500€, 3,6% (11 individuals) earned between 2501€ and 3000€ and 7,2% (22 individuals) earned higher than 3000€. 10,5% (32 individuals) of the respondents worked in an organization with less than 10 employees, 17% (52 individuals) worked in an organization with a number of employees between 10 and 50, 13,1% (40 individuals) worked in an organization with the number of employees between 51 and 100, 11,1% (34) individuals) worked in an organization with a number of employees between 101 and 250, 22,9% (70 individuals) worked in an organization with a number of employees between 251 and 500 and 25,4% (78 individuals) worked in an organization with more than 500 employees. Finally, 2,3% (7 individuals) of the respondents worked on the primary sector, 14,1% (43 individuals) worked on the secondary sector and 83,6% (256 individuals) worked on the tertiary sector.

## 4.7. Data Analysis

The data were analyzed through Structural Equation Modeling (SEM) using IBM AMOS version 25. SEM is a statistical method that enables the establishment of a set of relationships between observed and latent variables, combining multiple regression techniques and factor analysis, being particularly useful when the researcher wants to study multiple relations between variables, where a certain variable is assumed as a dependent variable in a relation established in the model and then becomes an independent variable in later relation of the model (Hoyle, 1995; Lisboa, Augusto, & Ferreira, 2012)<sup>9</sup>. It comprises two parts: the measurement model, consisting of confirmatory factor analysis to

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assess the fit of the model and the structural model, which analyzes the hypothetical relations between the latent variables.

### 4.7.1. Factor Analysis

Factor analysis consists of a set of statistical techniques that explain the correlation between observable variables, simplifying data through the reduction of the number of variables necessary to describe them, assuming the existence of a smaller number of non-observable variables underlying the data (factors), that express what is common in the original variables, also this technique enables the evaluation of the validity of the variables that compose the factors, informing if they measure the same concepts (Pestana & Gageiro, 2003)<sup>10</sup>.

Factor analysis can be exploratory or confirmatory. Exploratory factor analysis relates variables without determining in which measure the results adjust to a specific model, while confirmatory factor analysis compares the results obtained with the ones that constitute a specific theory (Pestana & Gageiro, 2003).

## 4.7.1.1 Exploratory Factor Analysis

To undergo Exploratory Factor Analysis (EFA), we used IBM SPSS version 25. Following Pestana & Gageiro (2003) the sample must be big enough in order to guarantee that in a second analysis the factors will hold. Therefore, the authors recommend, that the minimum number of valid answers (N) per variable (K) must be:

- If  $K \le 5$ , then N must be, at least, 50;
- If  $5 < K \le 15$ , then N must be, at least,  $10 \times K$ ;
- If K > 15, then N must be, at least 5 x K.

In our case, we use 9 variables (K), although not all at the same time in a single model, therefore, we should have at least 90 valid answers. We collected a total of 306

<sup>&</sup>lt;sup>10</sup> Free Translation

valid answers, so we can conclude that our sample is big enough to proceed with the analysis.

We used Varimax rotation method, which minimizes the number of variables with high loadings in one factor, allowing for a solution in which every main component is close to 1 or -1, if there is an association between both, or 0, in a case of the absence of association (Pestana & Gageiro, 2003).

In order to apply the factor analysis, the variables must be correlated. If these correlations are low, it is unlikely that they will share common factors. In order to assess the quality of the correlations between the variables and then proceed with the factor analysis, the KMO (Kaiser-Meyer-Olkin) index and the Bartlett test are used (Pestana & Gageiro, 2003).

KMO is a statistic that ranges from 0 to 1 and compares the correlations of order zero with partial observed correlations between the variables. The closer to 1 this statistic gets, the greater the correlation between the variables, while when it is close to zero, it indicates that there is a weak correlation between the variables and the factor analysis might not be a good idea (Pestana & Gageiro, 2003). KMO values are classified as follows:

**Table 2:** Classification of Factor Analysis according to KMO

KMO	Factor Analysis
0,9 – 1,0	Very Good
0,8 - 0,9	Good
0,7 - 0,8	Average
0,6 - 0,7	Reasonable
0,5 – 0,6	Bad
< 0,5	Unacceptable

Source: (Pestana & Gageiro, 2003, p. 505)

Bartlett's Sphericity Test tests the hypothesis that the matrix of correlations is the identity matrix, whose determinant is 1. If the hypothesis is rejected (p<0,01), then there is correlation between the variables, on the contrary if this hypothesis is not rejected, then the factor analysis must be reconsidered (Pestana & Gageiro, 2003).

Internal consistency is another topic that must be considered. This is the proportion of variability that results from differences in the respondents, more specifically their opinions (Pestana & Gageiro, 2003). The most common measure that evaluates internal

consistency between a group of variables (items) is the Cronbach Alpha ( $\alpha$ ). This measure examines the expected correlation between the scale that is going to be used and other hypothetical scales of the same universe, with the same number of items that measure the same characteristic. Cronbach Alpha ranges from 0 to 1 and the closer it is to 1 the greater the internal consistency of the scale (Pestana & Gageiro, 2003). Cronbach Alpha values are classified as follows:

**Table 3:** Classification of Internal Consistency according to Cronbach α

Cronbach α	Internal Consistency			
$\alpha > 0.9$	Very Good			
$0.8 < \alpha < 0.9$	Good			
$0.7 < \alpha < 0.8$	Reasonable			
$0.6 < \alpha < 0.7$	Weak			
$\alpha < 0.6$	Unacceptable			

Source: (Pestana & Gageiro, 2003, p. 543)

The Exploratory Factor Analysis will check the explained variance of each factor, also called one-dimensionality. This is the percentage contribution of each factor to explain the analyzed variable, which together should add up to 100% (Pestana & Gageiro, 2003). In our study, the results of the exploratory factor analysis are as follows:

**Table 4:** Results of the Exploratory Factor Analysis

Variable	Cronbach α	Items	Dimensions	KMO	Bartlett's Test	One-dimensionality
HPWS	0,948	27	8	0,920	0,000	79,560%
Selective Staffing	0,921	4	-	-	-	-
Extensive Training	0,921	4	-	-	-	-
Clear Job Description	0,928	3	-	-	-	-
Internal Mobility	0,830	5	-	-	-	-
<b>Employment Security</b>	0,745	2	-	-	-	-
Results-Oriented Appraisal	0,927	3	-	-	-	-
Participation	0,911	4	-	-	-	-
Incentive Reward	0,688	2	-	-	-	-
Job Satisfaction	0,948	3	1	0,774	0,000	90,619%
<b>Affective Commitment</b>	0,925	3	1	0,732	0,000	87,026%
<b>Social Identity</b>	0,959	9	1	0,937	0,000	75,429%
Participative Leadership	0,961	6	1	0,923	0,000	84,104%

Self-Efficacy	0,950	8	1	0,939	0,000	75,369%
Intention to Leave	0,880	2	1	0,500	0,000	89,348%
Stress	0,867	5	1	0,840	0,000	65,357%
IWB	0,950	9	1	0,939	0,000	71,987%

The collected data internal consistency ranges from Good, with Stress having the lowest score (0,867) and other variable within this range, and Very Good, with Participative Leadership having the highest score (0,961) and the other six variables with similar scores. We also presented the Cronbach  $\alpha$  for each sub-scale of the HPWS measure, with the Incentive Reward sub-scale, with a score of 0,688, presenting a weak internal consistency and the Employment Security sub-scale, with a score of 0,745, presenting a reasonable internal consistency. All other sub-scales have at least a good internal consistency.

Regarding the KMO, Job Satisfaction and Affective Commitment scored between 0,7 and 0,8, which is an average score. Stress scored between 0,8 and 0,9, which is a Good score. HPWS, Social Identity, Participative Leadership, Self-Efficacy and IWB scored between 0,9 and 1,0 which is a Very Good score. Intention to Leave was the exception, scoring 0,5, which is classified as Bad, but we knew this from the start since it only has two items. Still, we used this scale since it was very small, which is convenient in the way that it makes the all questionnaire shorter and therefore doesn't bother respondents unnecessarily and reduces the risk of attrition (Schaufeli, Bakker, & Salanova, 2006) and this was a scale used by a renowned author, Jones (1986) in an article in a renowned scientific magazine, Academy of Management Journal. The results show that there is a good correlation between the variables and that factor analysis can be made.

For every variable Bartlett's Test had 0,000 significance, thus confirming that there is correlation between the variables.

Regarding one-dimensionality, every variable scored above 65%, with Stress (65,357%) being the lowest scoring variable and Job Satisfaction (90,619%) being the highest scoring variable, thus all the variables are relevant in the explanation of the data.

# 4.7.1.2. Confirmatory Factor Analysis

Confirmatory Factor Analysis (CFA) is used when previous information about the factor structure is available, with the main objective of confirming structural patterns, that is if determined latent variables are responsible for the behavior of certain specific manifest

variables according to a given theory (Marôco, 2014)<sup>11</sup>. This is a technique is generally adopted to evaluate the quality of the fit of a theoretical measurement model to the correlational structure observed among manifest variables (items) (Marôco, 2014). The measurement model defines how the hypothetical constructs are operationalized by observed variables (Marôco, 2014). SEM involves two fundamental aspects, the measurement of latent variables through the measurement model and the analysis of causal relations between those same variables through the structural model (Lisboa et al., 2012). Therefore, based on SEM, we used IBM SPSS AMOS version 25 to develop our confirmatory factor analysis. The initial measurement for each of the three proposed models can be visualized in Figure 4, Figure 5 and Figure 6, as follows:

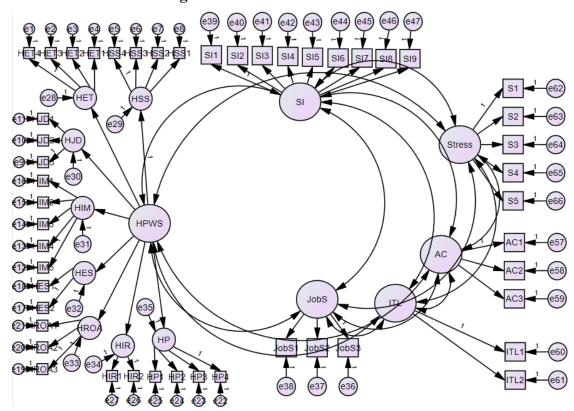


Figure 3: Initial Measurement Model 1

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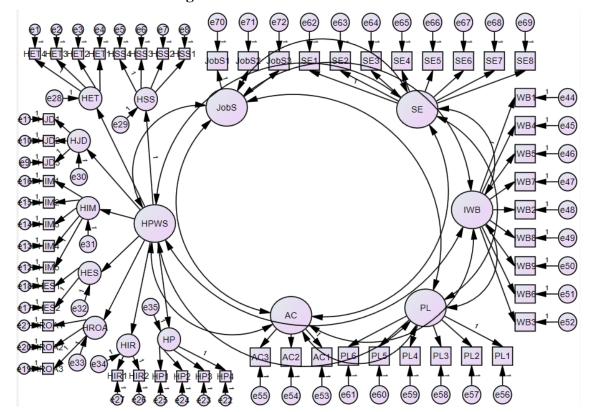


Figure 4: Initial Measurement Model 2

## 4.7.2. Fit of the Model

According to Marôco (2014) the quality evaluation phase of the model aims to evaluate how well the theoretical model is able to reproduce the correlational structure of the manifested variables. Table 5 shows reference values to more common measures used to evaluate the quality of adjustment of the model:  $\chi 2$  (Chi-Square), CFI (Comparative Fit Index), TLI (Tucker-Lewis Fit Index), IFI (Incremental Fit Index) and RMSEA (Root Mean Square Error of Approximation).

**Table 5:** Statistics and Indexes of Quality of Adjustment

Statistic	Reference Value
χ2	The smaller, the better
	> 5: Bad Fit
	]2;5]: Reasonable Fit
χ2/gl	]1;2]: Good Fit
	~1: Very Good Fit
CFI	< 0,8: Bad Fit
TLI	[0,8;0,9[: Reasonable Fit
IFI	[0,9; 0,95[: Good Fit
	≥ 0,95 Very Good Fit
	> 0,10: Unacceptable Fit
RMSEA	]0,05;0,10]: Good Fit
	≤ 0,05: Very Good Fit

Source: Marôco (2014)

For Model 1 the initial fit was Reasonable:  $\chi$ 2/gl = 2,253, IFI = 0,897, TLI = 0,890, CFI = 0,897, RMSEA = 0,064.

For Model 2 the initial fit was Reasonable:  $\chi 2/gl = 2,038$ , IFI = 0,909, TLI = 0,904, CFI = 0,909, RMSEA = 0,058.

If the initial measurement model does not have a good fit, then it is possible to make small changes to improve the initial fit, through the elimination of non-significative pathways, releasing previously fixed parameters, setting previously free parameters or correlating measurement errors (Marôco, 2014). In order to do this, statistic softwares calculate Modification Indices, which estimate the reduction of the  $\chi 2$  statistic of the model - if a fixed parameter or a equality restriction between parameters was released, if measurement errors were correlated, if new structural pathways were added, among others – after considering the model restraint and the associated degrees of freedom variation (Marôco, 2014).

Model 1 had to be re-specified to achieve a good fit. Table 6 shows the fit results after the elimination of 2 items.

 Table 6: Model 1 Fit after Modification Indexes Analysis

Global Fit	Sample
χ2/gl	2,035
CFI	0,915
TLI	0,909
IFI	0,915
RAMSEA	0,058

Model 2 had an initial good fit so no re-specification had to be done.

**Table 7:** Model 2 Fit

Global Fit	Sample
χ2/gl	2,038
CFI	0,909
TLI	0,904
IFI	0,909
RAMSEA	0,058

Table 8 and 9 show the final set of items for each variable and the new Cronbach  $\boldsymbol{\alpha}$  for each of them:

**Table 8:** Final Constitution of the Variables for Model 1

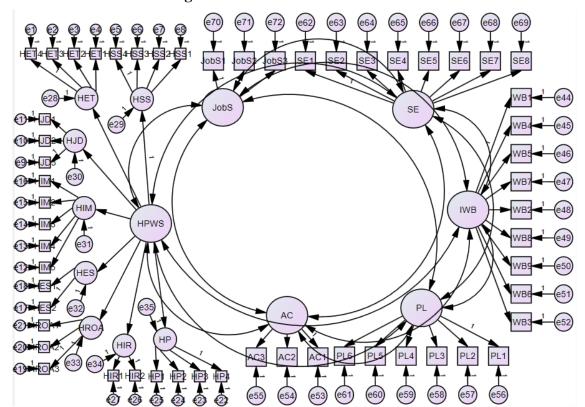
Variable	Cronbach α	Nº of Items	Items	Dimensions
			HET1, HET2, HET3, HET 4,	
			HSS1, HSS2, HSS3, HSS4, HJD1,	
HPWS	0.049	27	HJD2, HJD3, HIM1, HIM2, HIM3,	8
nrws	0,948	27	HIM4, HIM5, HES1, HES2,	8
			HROA1, HROA2, HROA3, HP1,	
			HP2, HP3, HP4, HIR1, HIR2	
Job Satisfaction	0,948	3	JobS1, JobS2, JobS3	1
Stress	0,867	5	S1, S2, S3, S4, S5	1
<b>Affective Commitment</b>	0,937	2	AC1, AC2	1
Social Identity	0,952	8	SI2, SI3, SI4, SI5, SI6, SI7, SI8,	1
o,,,,,,,	0,732	O	SI9	1
Intention to Leave	0,88	2	ITL1, ITL2	1

**Table 9:** Final Constitution of the Variables for Model 2

Variable	Cronbach α	N° of Items	Items	Dimensions
			НЕТ1, НЕТ2, НЕТ3, НЕТ 4,	
			HSS1, HSS2, HSS3, HSS4,	
			HJD1, HJD2, HJD3, HIM1,	
HPWS	0,948	27	HIM2, HIM3, HIM4, HIM5,	8
			HES1, HES2, HROA1, HROA2,	
			HROA3, HP1, HP2, HP3, HP4,	
			HIR1, HIR2	
			IWB1, IWB2, IWB3, IWB4,	
IWB	0,95	9	IWB5, IWB6, IWB7, IWB8,	1
			IWB9	
Job Satisfaction	0,948	3	JobS1, JobS2, JobS3	1
C 16 Tiper		8	SE1, SE2, SE3, SE4, SE5, SE6,	1
Self-Efficacy 0,95	0	SE7, SE8, SE9	1	
<b>Affective Commitment</b>	0,925	3 AC1, AC2, AC3		1
Participative Leadership	0,961	6	PL1, PL2, PL3, PL4, PL5, PL6	1

The final versions of the measurement models are showed in Figures 5 and 6:

Figure 5: Final Measurement Model 1



**Figure 6:** Final Measurement Model 2

## 4.7.3. Quality analysis of the measurement model

Besides a good global fit, the model needs to have a good local fit (Marôco, 2014). Therefore, we did the measurement of the reliability of latent variables and indicators and discriminant validity analysis (Lisboa et al., 2012). In order to do that, we used individual-item reliability, latent variable reliability (composite reliability) and the average variance extracted (AVE).

# 4.7.3.1. Individual Item-Reliability

In order to test the individual-item reliability that compose the models, we used a very common measure which is the explained variance of every manifest variable of the measurement model. In AMOS it is the Standardized Regression Weight (SRW) and it is considered that values above 0,25 indicate appropriate individual reliability (Marôco, 2010).

The Critical Ratio (C.R.) indicates the significance of the trajectory of the coefficient of the SRW. Values above 1,96 for a regression coefficient, show that the trajectory is significant at usual levels of significance ( $\alpha=0.1$ ;  $\alpha=0.05$ ; e  $\alpha=0.01$ ) (Marôco, 2014). In Table 10 and 11 we can see that, for Model 1 and 2 respectively, the SRW for all the variables is above 0,25 and that C.R. values are all above 1,96, except for some values that don't have C.R. Thus, we can conclude that there is appropriate individual reliability and that the trajectories are statistically significant.

**Table 10:** Results from the Confirmatory Factor Analysis for Model 1

Items	SRW	C.R.
HPWS		
<b>HET1-</b> Extensive training programs are provided for individuals in customer contact or front-line jobs.	0,873	19,578
<b>HET2-</b> Employees in customer contact jobs will normally go through training programs every few years.	0,876	19,700
<b>HET3-</b> There are formal training programs to teach new hires the skills they need to perform their job.	0,857	18,981
<b>HET4-</b> Formal training programs are offered to employees in order to increase their promotability in this organization.	0,85	-
<b>HSS1-</b> Great effort is taken to select the right person.	0,837	21,974
HSS2- Long-term employee potential is emphasized.	0,752	17,564
<b>HSS3-</b> Considerable importance is placed on the staffing process.	0,923	28,277
HSS4- Very extensive efforts are made in selection.	0,938	-
<b>HJD1-</b> The duties in this job are clearly defined.	0,893	21,555
<b>HJD2-</b> This job has an up-to-date description.	0,950	23,695
<b>HJD3-</b> The job description for a position accurately describes all of the duties performed by individual employees.	0,863	-
HIM1- Employees have few opportunities for upward mobility.	0,827	13,889
HIM2- Employees do not have any future in this organization.	0,796	13,393
HIM3- Promotion in this organization is based on seniority.	0,471	7,840
HIM4- Employees have clear career paths in this organization.	0,686	11,515
<b>HIM5-</b> Employees in customer contact jobs who desire promotion have more than one potential position they could be promoted to.	0,734	-
<b>HES1-</b> Employees in this job can be expected to stay with this organization for as long as they wish.	0,710	9,036
<b>HES2-</b> Job security is almost guaranteed to employees in this job.	0,836	-
<b>HROA1-</b> Performance is more often measured with objective quantifiable results.	0,923	20,773
HROA2- Performance appraisals are based on objective quantifiable results.	0,973	22,104
HROA3- Employee appraisals emphasize long term and group-based achievement.	0,817	-

<b>HP1-</b> Employees in this job are often asked by their supervisor to participate in decisions.	0,840	17,216
HP2- Individuals in this job are allowed to make decisions.	0,846	17,416
<b>HP3-</b> Employees are provided the opportunity to suggest improvements in the way things are done.	0,895	18,867
<b>HP4-</b> Supervisors keep open communications with employees in this job.	0,818	-
HIR1- Individuals in this job receive bonuses based on the profit of the organization.	0,654	7,765
HIR2- Close tie or matching of pay to individual/group performance.	0,807	-
Job Satisfaction		
JobS1- In general, I do not like my work.	0,925	28,201
JobS2- Overall, I am satisfied with my work.	0,935	29,080
JobS3- In general, I like to work here.	0,921	-
Stress		
S1- Your job is stressful.	0,750	-
S2- Some days you feel like you can't continue any longer at your job.	0,777	13,085
S3- In your job, you are often confronted with problems you can't do much about.	0,758	12,773
S4- You have little time to think and contemplate on your job.	0,767	12,915
S5- You have conflicting demands placed on you on your job.	0,711	11,958
Affective Commitment		
AC1- This organization has a great personal meaning for me.	0,973	-
AC2- I do not feel emotionally attached to my organization.	0,906	26,270
Social Identity		
SI2- I am glad to belong to this group.	0,892	20,262
SI3- I feel held back by this group.	0,811	17,311
SI4- I think this group worked well together.	0,827	17,850
SI5- I see myself as an important part of this group.	0,835	18,123
SI6- I do not fit in well with the other members of this group.	0,889	20,156
SI7- I do not consider the group to be important.	0,856	18,875
SI8- I feel uneasy with the members of this group.	0,820	17,608
SI9- I feel strong ties to this group.	0,832	-
Intention to Leave		
ITL1- I will probably look for a new job in the coming year.	0,926	-

**Table 11:** Results from the Confirmatory Factor Analysis for Model 2

Items	SRW	C.R.
HPWS		
<b>HET1-</b> Extensive training programs are provided for individuals in customer contact or front-line	0,873	19,558
jobs.	0,075	15,550

<b>HET2-</b> Employees in customer contact jobs will normally go through training programs every few years.	0,876	19,691
<b>HET3-</b> There are formal training programs to teach new hires the skills they need to perform their		
job.	0,857	18,970
<b>HET4-</b> Formal training programs are offered to employees in order to increase their promotability in		
this organization.	0,850	-
<b>HSS1-</b> Great effort is taken to select the right person.	0,836	21,954
HSS2- Long-term employee potential is emphasized.	0,751	17,545
HSS3- Considerable importance is placed on the staffing process.	0,923	28,318
<b>HSS4-</b> Very extensive efforts are made in selection.	0,938	-
<b>HJD1-</b> The duties in this job are clearly defined.	0,893	21, 546
HJD2- This job has an up-to-date description.	0,951	23,714
HJD3- The job description for a position accurately describes all of the duties performed by	0.962	
individual employees.	0,863	-
HIM1- Employees have few opportunities for upward mobility.	0,827	13,870
HIM2- Employees do not have any future in this organization.	0,795	13,348
<b>HIM3-</b> Promotion in this organization is based on seniority.	0,472	7,854
HIM4- Employees have clear career paths in this organization.	0,689	11,541
HIM5- Employees in customer contact jobs who desire promotion have more than one potential	0,734	
position they could be promoted to.	0,734	-
<b>HES1-</b> Employees in this job can be expected to stay with this organization for as long as they wish.	0,712	9,147
<b>HES2-</b> Job security is almost guaranteed to employees in this job.	0,834	-
<b>HROA1-</b> Performance is more often measured with objective quantifiable results.	0,923	20,754
HROA2- Performance appraisals are based on objective quantifiable results.	0,973	22,084
HROA3- Employee appraisals emphasize long term and group-based achievement.	0,817	-
<b>HP1-</b> Employees in this job are often asked by their supervisor to participate in decisions.	0,839	17,210
<b>HP2-</b> Individuals in this job are allowed to make decisions.	0,847	17,424
<b>HP3-</b> Employees are provided the opportunity to suggest improvements in the way things are done.	0,896	18,882
<b>HP4-</b> Supervisors keep open communications with employees in this job.	0,817	-
HIR1- Individuals in this job receive bonuses based on the profit of the organization.	0,651	7,661
HIR2- Close tie or matching of pay to individual/group performance.	0,811	-
Job Satisfaction	_	
JobS1- In general, I do not like my work.	0,929	-
JobS2- Overall, I am satisfied with my work.	0,938	30,077
JobS3- In general, I like to work here.	0,914	27,766
Affective Commitment		
AC1- This organization has a great personal meaning for me.	0,927	-
AC2- I do not feel emotionally attached to my organization.	0,932	27,872
AC3- I do not feel as a part of my organization.		22,094

Innovative Work Behavior		
IWB1- I create new ideas for difficult issues.	0,777	-
IWB2- I search out new working methods, techniques, or instruments.	0,769	14,710
IWB3- I generate original solutions for problems.	0,789	15,199
IWB4- I make important organizational members enthusiastic for innovative ideas.	0,838	16,406
IWB5- I mobilize support for innovative ideas.	0,910	18,319
IWB6- I acquire approval for innovative ideas.	0,698	13,063
IWB7- I transform innovative ideas into useful applications.	0,915	18,453
IWB8- I introduce innovative ideas into the work environment in a systematic way.	0,878	17,452
IWB9- I evaluate the utility of innovative ideas.	0,856	16,881
Participative Leadership		
PL1- [My immediate supervisor] Encourages work group members to express ideas/suggestions.	0,898	-
PL2- [My immediate supervisor] Listens to my work group's ideas and suggestions.	0,959	29,829
<b>PL3-</b> [My immediate supervisor] Uses my work group's suggestions to make decisions that affect us.	0,914	25,945
<b>PL4-</b> [My immediate supervisor] Gives all work group members a chance to voice their opinions.	0,932	27,356
<b>PL5-</b> [My immediate supervisor] Considers my work group's ideas when he/she disagrees with them.	0,857	22,105
<b>PL6-</b> [My immediate supervisor] Makes decisions that are based only on his/her own ideas.	0,829	20,604
Self-Efficacy		
<b>SE1-</b> I will be able to achieve most of the goals that I have set for myself.	0,764	-
SE2- When facing difficult tasks, I am certain that I will accomplish them.	0,889	17,264
SE3- In general, I think that I can obtain outcomes that are important to me.	0,880	17,036
SE4- I believe I can succeed at most any endeavor to which I set my mind.	0,900	17,538
SE5- I will be able to successfully overcome many challenges.	0,913	17,865
SE6- I am confident that I can perform effectively on many different tasks.	0,910	17,794
SE7- Compared to other people, I can do most tasks very well.	0,660	12,075
SE8- Even when things are tough, I can perform quite well.	0,845	16,186

# 4.7.3.2. Composite Reliability and Average Variance Extracted

Composite Reliability (CR) measures how each of the latent variables are being measured by their respective indicators (Lisboa et al., 2012). CR must be above 0,7 so that the hypothesis of the reliability of each latent variable can be accepted (Hair, Black, Babin, & Anderson, 2010)

Other important reliability measure is the Cronbach Alpha. This measure had to be recalculated with the reaming items of each variable and will be presented in the diagonal of Table 12 and 13.

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The Average Variance Explained (AVE) index gives an assessment of the proportion of variance of indicators related to the measurement of a given latent variable explained by that latent variable (Lisboa et al., 2012). AVE value must be above 0,5 so that the hypothesis of reliability can be accepted (Hair et al., 2010).

These values are not direct outputs of AMOS, but can be calculated through other outputs, more specifically the SRW.

Tables 12 and 13 show the results of the reliability measures for each model:

**Table 12:** Latent Variables Evaluation for Model 1

Variables	SD	X1	X2	Х3	X4	X5	X6	AVE	CR
HPWS (X1)	1,009	0,948						0,530	0,899
Job Satisfaction (X2)	1,484	0,680	0,948					0,859	0,948
Stress (X3)	1,348	-0,250	-0,428	0,867				0,567	0,867
Affective Commitment (X4)	1,778	0,540	0,727	-0,284	0,937			0,884	0,938
Social Identity (X5)	1,366	0,637	0,788	-0,326	0,743	0,952		0,715	0,953
Intention to Leave (X6)	2,036	-0,206	-0,507	0,399	-0,505	-0,376	0,88	0,790	0,882

Note: SD – Standard Deviation; Diagonal – Cronbach Alpha; AVE – Average Variance Explained;

CR – Composite Reliability; Other Values – Correlations Between Latent Variables

**Table 13:** Latent Variables Evaluation for Model 2

Variables	SD	X1	X2	X3	X4	X5	X6	X7	AVE	CR
HPWS (X1)	1,000	0,948						0,529	0,899	1,000
IWB (X2)	1,008	0,225	0,95					0,686	0,951	1,008
Affective Commitment (X3)	1,693	0,584	0,31	0,925				0,815	0,930	1,693
Participative Leadership (X4)	1,479	0,602	0,279	0,576	0,961			0,809	0,962	1,479
Self-Efficacy (X5)	0,912	0,389	0,323	0,422	0,478	0,95		0,721	0,953	0,912
Job Satisfaction (X6)	1,413	0,683	0,206	0,763	0,62	0,446	0,948	0,859	0,948	1,413

Note: SD – Standard Deviation; Diagonal – Cronbach Alpha; AVE – Average Variance Explained;

CR – Composite Reliability; Other Values – Correlations Between Latent Variables

As we can see all the values in the table are above the reference values in the literature, therefore, we can conclude that all the variables are reliable in every model.

## 4.7.3.3. Discriminant Validity

Discriminant validity assesses whether items reflecting factors are not correlated with other factors (Marôco, 2014). For the requirement of discriminant to be met, the AVE's of the factors must be superior or equal to the square of the correlation between those factors (Marôco, 2014). Tables 14 and 15 show the results of the discriminant validity tests:

**Table 14:** Discriminant Validity Model 1

1		2	Correlation	Correlation <sup>2</sup>	AVE 1	AVE 2
HPWS	<>	Job Satisfaction	0,680	0,462	0,530	0,859
HPWS	<>	Stress	-0,25	0,063	0,530	0,567
HPWS	<>	Affective Commitment	0,54	0,292	0,530	0,884
HPWS	<>	Social Identity	0,637	0,406	0,530	0,715
HPWS	<>	Intention to Leave	-0,206	0,042	0,530	0,790
Job Satisfaction	<>	Stress	-0,428	0,183	0,859	0,567
Job Satisfaction	<>	Affective Commitment	0,727	0,529	0,859	0,884
Job Satisfaction	<>	Social Identity	0,788	0,621	0,859	0,715
Job Satisfaction	<>	Intention to Leave	-0,507	0,257	0,859	0,790
Stress	<>	Affective Commitment	-0,284	0,081	0,567	0,884
Stress	<>	Social Identity	-0,326	0,106	0,567	0,715
Stress	<>	Intention to Leave	0,399	0,159	0,567	0,790
Affective Commitment	<>	Social Identity	0,743	0,552	0,884	0,715
Affective Commitment	<>	Intention to Leave	-0,505	0,255	0,884	0,790
Social Identity	<>	Intention to Leave	-0,376	0,141	0,715	0,790

 Table 15: Discriminant Validity Model 2

1		2	Correlation	Correlation <sup>2</sup>	AVE 1	AVE 2
HPWS	<>	IWB	0,225	0,051	0,529	0,686
HPWS	<>	Affective Commitment	0,584	0,341	0,529	0,815
HPWS	<>	Participative Leadership	0,602	0,362	0,529	0,809
HPWS	<>	Self-Efficacy	0,389	0,151	0,529	0,721
HPWS	<>	Job Satisfaction	0,683	0,466	0,529	0,859
IWB	<>	Affective Commitment	0,31	0,096	0,686	0,815
IWB	<>	Participative Leadership	0,279	0,078	0,686	0,809
IWB	<>	Self-Efficacy	0,323	0,104	0,686	0,721
IWB	<>	Job Satisfaction	0,206	0,042	0,686	0,859
Affective Commitment	<>	Participative Leadership	0,576	0,332	0,815	0,809
Affective Commitment	<>	Self-Efficacy	0,422	0,178	0,815	0,721
Affective Commitment	<>	Job Satisfaction	0,763	0,582	0,815	0,859
Participative Leadership	<>	Self-Efficacy	0,478	0,228	0,809	0,721
Participative Leadership	<>	Job Satisfaction	0,62	0,384	0,809	0,859
Self-Efficacy	<>	Job Satisfaction	0,446	0,199	0,721	0,859

As we can see, the requirement for discriminant validity was met for every variable, therefore, we can conclude that there is discriminant validity.

#### 4.8. Conclusion

In this chapter we presented the research methodology. After a brief theoretical introduction, we described how the population and the sample were selected and the data collected, presented the questionnaire structure, including all the measures we used and the pre-test process. Then, we delineate the respondents' profile, using the sociodemographic data collected. Following this, we did an introduction to factor analysis and described the process of the Exploratory Factor Analysis and Confirmatory Factor Analysis. EFA used the Cronbach Alpha, KMO index, Bartlett's test and explained variance to ensure that the results were significant. CFA allowed to verify the fit of the model as a whole, as well as of the measurement model. We concluded that the fit of the measurement model (globally and locally) was in accordance with literature reference values, allowing us to proceed to the structural model presented in the next chapter.

### 5.1. Introduction

In this chapter we will present the main results obtained from the statistical analyzes.

First, we will show the descriptive analysis of the variables, which allows to predict the average behavior of the sample in relation to the variables. Then, we will present the structural model as well as the hypothesis tests. Finally, we will discuss the results obtained.

## 5.2. Descriptive Analysis of the Variables

The descriptive statistic studies the non-uniform characteristics of the observed units, describing the data through statistic indicators such as the average and standard deviation (Pestana & Gageiro, 2003). Table 16 presents the average and standard deviation for every latent variable:

**Table 16:** Descriptive Analysis of the latent variables

Variable	Average	<b>Standard Deviation</b>
HPWS	4,307	1,694
Job Satisfaction	5,227	1,575
<b>Affective Commitment</b>	4,630	1,832
<b>Social Identity</b>	4,986	1,589
Participative Leadership	5,045	1,611
Self-Efficacy	5,623	1,117
<b>Intention to Leave</b>	3,455	2,165
Stress	4,040	1,841
Innovative Work Behavior	4,398	1,441

The descriptive analysis of the variables allows the researchers to understand the average values as well as the standard deviations for each variable, according to the values attributed by the respondents.

Considering the 1 to 7 Lickert scale used in the questionnaire, almost all variables present an average above 4 points, with the exception of the Intention to Leave variable, which value is 3,455, also presenting the highest standard deviation, showing a greater diversity in the answers of the respondents. The Self-Efficacy variable presented the highest average and the lowest standard deviation, showing a greater uniformity in the answers of the respondents. Regarding the other variables, HPWS presented an average of 4,307 with a standard deviation of 1,694, Job Satisfaction presented an average of 5,227 with a standard deviation of 1,575, Affective Commitment presented an average of 4,630 and a standard deviation of 1,832, Social Identity presented an average of 4,986 and a standard deviation of 1,589, Participative Leadership presented an average of 5,045 and a standard deviation of 1,611, Stress presented an average of 4,040 and a standard deviation of 1,841 and Innovative Work Behavior presented an average of 4,398 and a standard deviation of 1,441.

#### 5.3. Structural Model

Tables 17 and 18 show the results obtained through the estimation of SEM after establishing the study hypothesis proposed by the investigation.

Table 17: Structural Model 1 Fit

Global Fit	Sample
χ2/gl	2,044
CFI	0,914
TLI	0,908
IFI	0,914
RAMSEA	0,059

Table 18: Structural Model 2 Fit

Global Fit	Sample
χ2/gl	2,038
CFI	0,909
TLI	0,904
IFI	0,909
RAMSEA	0,058

As we can see the results are a little lower or equal relative to the measurement models fit (Tables 6 and 7) and the levels are still in accordance with reference values provided by the literature (Table 5). In Figures 7 and 8 we present the final versions of Model 1 and 2 respectively.

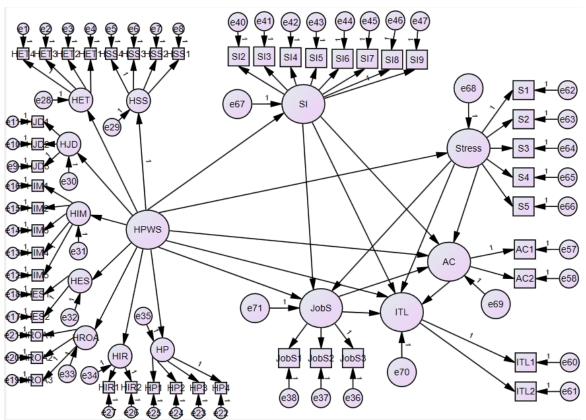


Figure 7: Structural Model 1

Figure 8: Structural Model 2

# 5.4. Hypothesis Test

In this section we will present the results regarding the hypothesis tests for each model. Tables 19 and 20 show the results for hypothesis tests for Model 1 and 2 respectively, figuring SRW and P values for each hypothesis, so that we can assess if the hypothesis have statistical significance, where P values above 0,1 were rejected, resulting in non-supported hypothesis.

**Table 19:** Hypothesis Test Results for Model 1

			Hypothesis	SRW	Р	Sup/NSup
HPWS	>	Job Satisfaction	H1	0,288	***	Sup
HPWS	>	Social Identity	H4	0,644	***	Sup
HPWS	>	Stress	Н6	-0,269	***	NSup
HPWS	>	Affective Commitment	Н3	-0,002	0,979	NSup
HPWS	>	Intention to Leave	H2	0,255	***	NSup
Social Identity	>	Job Satisfaction	H24	0,558	***	Sup
Social Identity	>	Affective Commitment	H25	0,449	***	Sup
Social Identity	>	Intention to Leave	H23	0,154	0,128	NSup
Stress	>	Job Satisfaction	H10	-0,179	***	Sup
Stress	>	Affective Commitment	H11	0,021	0,65	NSup
Stress	>	Intention to Leave	H17	0,225	***	Sup
Job Satisfaction	>	Affective Commitment	Н9	0,382	***	Sup
Job Satisfaction	>	Intention to Leave	H15	-0,429	***	Sup
Affective Commitment	>	Intention to Leave	H16	-0,387	***	Sup

Note: \*\*\* < 0,01; \*\* < 0,05; \* < 0,10 (one tailed test); Sup: Hypothesis Supported; N Sup:

Hypothesis Not Supported

**Table 20:** Hypothesis Test Results for Model 2

			Hypothesis	SRW	Р	Sup/NSup
HPWS	>	Participative Leadership	H7	0,602	***	Sup
HPWS	>	Self-Efficacy	Н8	0,158	**	Sup
HPWS	>	Job Satisfaction	H1	0,464	***	Sup
HPWS	>	Affective Commitment	Н3	0,066	0,316	NSup
HPWS	>	IWB	Н5	0,053	0,551	NSup
Participative Leadership	>	Self-Efficacy	H14	0,383	***	Sup
Participative Leadership	>	Job Satisfaction	H13	0,276	***	Sup
Participative Leadership	>	Affective Commitment	H12	0,128	**	Sup
Participative Leadership	>	IWB	H26	0,107	0,178	NSup
Self-Efficacy	>	Job Satisfaction	H21	0,133	***	Sup
Self-Efficacy	>	Affective Commitment	H22	0,063	0,19	NSup
Self-Efficacy	>	IWB	H20	0,227	***	Sup
Job Satisfaction	>	Affective Commitment	Н9	0,611	***	Sup
Job Satisfaction	>	IWB	H19	-0,216	**	NSup
Affective Commitment	>	IWB	H18	0,286	***	Sup

Note: \*\*\* < 0,01; \*\* < 0,05; \* < 0,10 (one tailed test); Sup: Hypothesis Supported; N Sup:

Hypothesis Not Supported

The results of our two models show that HPWS is positively related with Job Satisfaction, although for Affective Commitment that same relation has not been found, thus, supporting Hypothesis 1, but not Hypothesis 3. Also, the two models tested showed

that Job Satisfaction is positively related with Affective Commitment, thus, supporting Hypothesis 9.

Results from Model 1 show that contrary to the hypothesized, HPWS have a positive relation with Intention to Leave, while, in accordance with the hypothesis developed, Job Satisfaction and Affective Commitment have a negative relation with Intention to Leave, thus we found no support for Hypothesis 2, but found support for Hypothesis 15 and 16.

In Model 1, we found support for almost every Hypothesis involving Social Identity. More specifically, we found that HPWS are positively related with Social Identity and in turn Social Identity is positively related with Job Satisfaction and Affective Commitment, thus, supporting Hypothesis 4, 24 and 25. Contrary to what we hypothesized, results from Model 1 show that Social Identity and Intention to Leave are positively related, although the relation is not statistically significant, therefore, no support was found for Hypothesis 23.

Contrary to our hypothesis, results from Model 1 show that HPWS and Stress are negatively related, thus, no support was found for Hypothesis 6. Moreover, a negative relation was found between Stress and Job Satisfaction, thus supporting Hypothesis 10. A positive relation between Stress and Intention to Leave and also, contrary to our hypothesis, between Stress and Affective Commitment was found, although the later was not statistically significant, thus supporting Hypothesis 17, but not Hypothesis 11.

In Model 2, HPWS was positively related with Participative Leadership, Self-Efficacy and Innovative Work Behavior, although this last relation was not statistically significant, therefore, we found support for Hypothesis 7 and 8, but not for Hypothesis 5. Participative Leadership was positively related with Self-Efficacy, Job Satisfaction, Affective Commitment and Innovative Work Behavior, again, the later was not statistically significant, thus, Hypothesis 12, 13 and 14 were supported, while for Hypothesis 26 we found no support. Self-Efficacy was positively related with Job Satisfaction, Innovative Work Behavior and Affective Commitment, although the later relation was not statistically significant, therefore, Hypothesis 20 and 21 were supported while Hypothesis 22 we found no support. Affective Commitment was positively related with Innovative Work Behavior, therefore, Hypothesis 18 was supported. Contrary to our hypothesis, Job Satisfaction was negatively related with Innovative Work Behavior, therefore, Hypothesis 19 was not supported.

#### 5.5. Discussion

In this study we explored the impact of HPWS on different employees' outcomes, all based on employees' perceptions. In both models, a positive relation between HPWS and Job Satisfaction was found and supported, in accordance with previous studies (e.g. García-Chas et al., 2014). On the contrary, the link between HPWS-Affective Commitment was not statistically significant. Job Satisfaction was positively related with Affective Commitment and, although not consensual, this is the most supported relation in the literature (e.g. Froese & Xiao, 2012; Mathieu & Hamel, 1989). Since job satisfaction is regarded as an immediate affective reaction to relatively specific aspects of one's job and the work environment, while affective commitment, as an emotional attachment to the organization (J. P. Meyer et al., 2002), is viewed as a more long-termed, slower developing attitude towards the organization as a whole (Lance, 1991; Mathieu, 1991) and 52% of our sample worked in their organization for 5 years or less, this might explain these results. Tenure is regarded as a positive moderator of employee outcomes such as job satisfaction and affective commitment (e.g. Hu et al., 2019; Ng & Feldman, 2010; Ohana, 2014) and although a more short-termed attitude had already been developed, they haven't stayed or perceived HPWS long-enough to develop a more long-term affective attitude or that HPWS might elicit a specific affective attitude towards specific aspects of the job, but not for the organization as a whole, thus a direct relation between HPWS and Affective Commitment was not found, although following Meyer & Allen (1991) the satisfaction of employees needs acts as a precursor of affective commitment. Therefore, the results suggest that Job Satisfaction fully mediates the relationship between HPWS and Affective Commitment in accordance with Macky & Boxall (2007).

Contrary to our hypothesis, HPWS were positively related with Intention to Leave. The respondent's profile might help to explain these unexpected results. Almost half of the sample (43,8%) was in the 18-30 years old category and 52% was in the organization for 5 years or less, presenting lower tenure, which has been previously related to turnover (e.g. Mitchel, 1981). This might suggest that a great part of the sample is in their first job and might try to look for other job opportunities, whether to a job that is more in line with their goals or objectives, a job that offers better working conditions or even a job in a different area of expertise, maybe distorting this relation. Also, there was a negative relation between Job Satisfaction and Intention to Leave, something emphasized in turnover theories and supported (e.g. Boswell et al., 2005; García-Chas et al., 2014). Since Job Satisfaction is also related to HPWS, we suggest that the relationship between HPWS and Intention to Leave is mediated by Job Satisfaction, in which by eliciting job satisfaction, HPWS reduces

intention to leave. This might be an important mechanism, since the direct relation between HPWS and Intention to Leave was positive.

Affective Commitment was also found to be negatively related with Intention to Leave, in line with previous researches relating organizational commitment and turnover (Porter et al., 1974). As no direct link between HPWS and Affective Commitment was found, we can't conclude anything regarding a possible mediating effect of affective commitment in the HPWS-Intention to Leave linkage.

Regarding Social Identity, we found a positive relation between HPWS and Social Identity and in turn a positive relation with Social Identity and three other variables, more specifically, Job Satisfaction, Affective Commitment and Intention to Leave. In general, the findings are in line with literature, supporting that HPWS can develop employees social identification (Bartram et al., 2014) and that social identification is associated with positive attitudes and behaviors from the employees towards the organization (e.g. Van Dick et al., 2004), although there is an exception. Literature (e.g. Van Dick et al., 2004) provides bases for an expected negative relation between Social Identity and Intention to Leave, but the opposite was found. As we argued previously, intention to leave might be slightly distorted because of the respondents' profile, leading to misleading results, so further conclusions should be drawn carefully and although not statistically significant, it should not be ignored and should be studied more profoundly. Moreover, the results suggest that Social Identity mediates the relationship between HPWS and Job Satisfaction, also fully mediating the relationship involving HPWS and Affective Commitment.

Results from Model 1 showed that, contrary to what was expected, HPWS were negatively related to Stress. Following Godard (2001), this might be because HPWS in the sample were not adopted at such high levels was that they are associated with higher stress, in fact, in a 1 to 7 Lickert Scale, HPWS variable scored 4,307, little above the middle value of 4, therefore we can assume that, in this sample, HPWS were adopted at a moderate level, which Godard (2001) has related to positive employee outcomes. Results show a negative relation between Stress and Job Satisfaction, which is in line with literature (e.g. Jamal & Preena, 1998), suggesting that Stress works as a mediator in the HPWS-Job Satisfaction linkage. On the contrary, Stress was positively associated with Affective Commitment and Intention to Leave, although the first relation was not statistically supported. The positive relation with intention to leave is supported by the literature (e.g. De Croon et al., 2004) and the results of our study, suggesting that Stress can mediate the relationship between HPWS and Intention to Leave.

As expected, the results from Model 2 show that HPWS is positively related with Participative Leadership and Self-Efficacy and that Participative Leadership is positively related with Self-Efficacy, suggesting Participative Leadership as a mediator in the HPWS-Self-Efficacy relation. Besides promoting feelings of self-efficacy, Participative Leadership was positively related with Job Satisfaction and Affective Commitment, which is supported by previous studies (e.g Kim, 2002; Miao et al., 2013). A participative leadership style, characterized by information sharing, participation in decision making and so on can elicit positive employee outcomes, suggesting that Participative Leadership can mediate the relationship between HPWS and Job Satisfaction and fully mediate the HPWS-Affective Commitment linkage.

Self-Efficacy was positively related with Job Satisfaction and Affective Commitment, although the later relation was not statistically supported. This is in line with previous literature (e.g. Gist et al., 1992; Judge & Bono, 2001), which associated self-efficacy to greater results and success on the job, allowing employees to derive higher job satisfaction from it. Therefore, Self-Efficacy might act as a mediator between HPWS and Job Satisfaction.

Regarding Innovative Work Behavior, there was no support for the HPWS-IWB and Participative Leadership-IWB, contrary to what we expected. Self-Efficacy and Affective Commitment, in line with what we expected, were positively related with IWB. The simple presence of HPWS and the participative leadership style might not be enough to trigger the proactive behavior of innovation. Feelings of self-efficacy, in organizational context, seem to be the key here, as they fully mediate the relationship between HPWS and IWB and Participative Leadership and IWB. Although the respondents' profile might affect the inexistent direct HPWS-IWB and Participative Leadership-IWB linkages, as younger people might not have enough knowledge or work experience to exhibit IWB, the results seem to suggest that employees need to feel confident about their ability to perform in order to reap the benefits of a HPWS and participative leadership style leading to innovative behaviors. Affective Commitment, as expected, was also positively related with IWB. Although we cannot establish a relationship with HPWS, IWB and Affective Commitment, since no statistical evidence supported the relationship between HPWS and the later two variables, we can suggest that the relationship between Participative Leadership and IWB is fully mediated by Affective Commitment.

Contrary to what we expected, the results show a negative relation between Job Satisfaction and IWB. This seem to suggest that a more short-term affective reaction to certain aspects of the job (job satisfaction) are not sufficient to trigger an innovative behaviour, in fact, they are associated with the opposite, as more job satisfaction leads to less innovative work behaviors, which might be explained for a certain feeling of inertia, as if the employee is satisfied, then he/she should not try to introduce any change, as many innovations arise from situations when a need must be satisfied and not when it is already satisfied. Considering other perspective, the results suggest that a stronger and longer-termed emotional attachment to the organization (affective commitment) leads to innovative work behaviors which might be explained for the stronger motivation to help the organization improve their performance through innovation (Y. Chen et al., 2018; J. P. Meyer et al., 2004). Nevertheless, the results suggest that Job Satisfaction is a mediator in the HPWS-IWB linkage.

#### 5.6. Conclusion

We found support for most of the hypothesis presented. Some of them were extensively supported by the literature such as Hypothesis 1, which states that HPWS have a positive relationship with Job Satisfaction, others have been scarcely studied in literature and need deeper studies so that they can be better understood, for example, Hypothesis 21, which states a positive relationship between Self-Efficacy and Job Satisfaction.

Many mechanisms were found that can better explain the effects of HPWS on employees' outcomes. The results suggest that Social Identity is a mediator between HPWS and other variables such as Job Satisfaction and Affective Commitment, while Job Satisfaction is also a mediator between HPWS, Intention to Leave and Affective Commitment. Stress was also related with HPWS and served as a mediator between HPWS and Job Satisfaction and Intention to Leave.

HPWS were also related with Participative Leadership and Self-Efficacy, and while Participative Leadership served as a mediator between HPWS and Self-Efficacy, Job Satisfaction and Affective Commitment, Self-Efficacy served as a mediator between HPWS and Job Satisfaction and Innovative Work Behavior, with Job Satisfaction completing the role of variables that mediated the relationship between HPWS and IWB, as no direct relationship was found between this two variables, contrary to what was expected, which calls for more studies in order to better understand how this two variables might be related.

Moreover, some unexpected results emerged, as some hypothesis were not supported and in some cases were even contradicted. For example, the positive relationship

between HPWS and Intention to Leave as well as the negative relationship between Job Satisfaction and IWB. These unexpected results call for more and deeper studies so that the relations can be well understood and to see if this was an atypical result or if there is some justification not yet explored in the literature.

Other mechanisms not directly related with HPWS were also found, for example, the positive relationship between Affective Commitment and Innovative Work Behavior, also contributing to HRM literature.

#### 6. Conclusions

This study objective was to better understand the impacts of HPWS on employee outcomes and through which mechanisms those same impacts happened.

In order to achieve our goal, we started by reviewing HPWS literature to understand the relations already established and what we could expect from those same relations.

We opted for an empirical study which involved an online questionnaire survey, consisting of an introduction that explained the purpose of the questionnaire and that guaranteed the anonymity of the questionnaire, a set of sociodemographic questions so that the respondents' profile could be outlined and 72 questions regarding 9 variables. We collected 306 valid answers.

After collecting the data, we outlined the respondents' profile and proceeded to Exploratory Factor Analysis and Confirmatory Factor Analysis, allowing us to conclude that our models were in accordance with the acceptable values provided by the literature. Then we made a descriptive analysis of the variables understanding the general behavior of the individual's responses to each variable. Finally, we proceeded to our final analysis using Structural Equation Modeling. The results showed that HPWS is positively related with Job Satisfaction, Social Identity, Participative Leadership and Self-Efficacy, which is in line with our hypothesis. We also found a positive relation between HPWS and Intention to Leave and a negative relation between HPWS and Stress, contrary to what we hypothesized. Respondents profile and levels of HPWS adoption might be the reason for these unexpected results. Also, we found no direct link between HPWS and Affective Commitment and Innovative Work Behavior, contrary to what we expected. Regardless, Social Identity, Job Satisfaction and Participative Leadership fully mediated the relationship between HPWS and Affective Commitment. For IWB, only Job Satisfaction and Self-Efficacy mediated the relationship with HPWS. Other paths were also found, like the relationship between HPWS and Job Satisfaction was mediated by Social Identity, Participative Leadership, Self-Efficacy and Stress, also, Stress and Job Satisfaction mediated the relationship between HPWS and Intention to Leave. Finally, our models also showed other results not directly related with HPWS, but that might be of some relevance for HRM literature, for example the positive relationship between Affective Commitment and Intention to Leave and Affective Commitment with Innovative Work Behavior.

Based on this, we can conclude that our goals when we started this study were achieved, better understanding some HPWS-Employee Outcomes links and raising questions about others.

## 6.1. Theoretical and Practical Implications

HPWS stand as a strategic and operational option for organizations to create a sustained competitive advantage. With our study we addressed the call for more research regarding HPWS involving the impact of HPWS on employee outcomes, since this is the mechanism through which organization performance can be enhanced (Boselie et al., 2005; Guest, 2011; Katou & Budhwar, 2010; Mihail & Kloutsiniotis, 2016; Purcell & Kinnie, 2009; Úbeda-García, Claver-Cortés, Marco-Lajara, Zaragoza-Sáez, & García-Lillo, 2018; M. Zhang et al., 2014). Our results are based on employee perceptions, since employee's attitudes and behaviors are influenced by the perception of HPWS rather than the mere implementation of these systems and how they should operate (Choi, 2014; Patrick M Wright & Nishii, 2006). In this study we tried to address some of the more commonly studied variables linked to HPWS such as Job Satisfaction and others more scarcely linked to HPWS as IWB, but that are of great importance for organizational performance (Fu et al., 2015).

The results have several theoretical implications. First, results support views like mutual gains (Kalmi & Kauhanen, 2008; Van De Voorde et al., 2012) and unitarist perspective (Kroon et al., 2009), linking HPWS to positive employee outcomes like Job Satisfaction and Social Identification. Regardless, the results suggest that views like Conflicting Outcomes (Van De Voorde et al., 2012) and the pluralist perspective (Kroon et al., 2009) are not groundless and that HPWS might have a "Dark-Side" that needs to be accounted for, as a positive link between HPWS and Intention to Leave was found.

Second, some of our results are in line with previous findings or with some specific view of HRM literature, for example the positive link between HPWS and Job Satisfaction or Social Identity (e.g. Bartram et al., 2014; Takeuchi et al., 2009), adding that the results were obtained from a Portuguese sample, deviating from most studies that are developed in the US, UK and China, further reinforcing previous findings.

Third, some of the relations we hypothesized, and mediation mechanisms suggested are scarcely addressed in the literature, for example the HPWS-IWB that although no direct link was found, was mediated by Self-Efficacy. This provides new insights to the HPWS "Blackbox", although further studies are needed to confirm and better understand the results we found.

Furthermore, some managerial implications can be drawn from our results. First, organizations should ensure that the implementation of HPWS is perceived by their employees in order to take full advantage of all the benefits of HPWS, thus managers

should evaluate carefully the perceptions of employees regarding HPWS. Second, in order to achieve more innovative behaviors, which are linked to higher organizational performance (e.g. Fu et al., 2015; Jiménez-Jiménez & Sanz-Valle, 2008), HPWS should be focused to enhance other outcomes first, such as self-efficacy, before innovative behaviors may appear. Also, the implementation of HPWS should be consistent as many of its positive benefits may only occur further down the road, which may explain the inexistent direct link between HPWS and Affective Commitment, since this outcome is long-termed and HPWS may not be implemented long-enough to have a direct impact in this outcome. Finally, some caution is needed when implementing such systems, as negative effects have been reported in the literature and also were revealed in this study, which may be related to the intensity that these systems are implemented as suggested by Godard (2001).

#### 6.2. Limitations and Future Research

The major limitation of our research is the cross-sectional nature of the data, which enable the conclusion that the presence of HPWS is associated with some employee outcome and not that it causes that same outcome. Longitudinal data in which the outcomes are measured in a later date than HPWS would provide a better understanding of the effects of HPWS and its causal effects. Another limitation of our research is that it cannot be generalized to the all population as a consequence of the type of sample we used. Also, the respondents' profile might have distorted some results, as the sample was half composed by young workers. As the data collection was not very restrictive in terms of criteria, for example worker profession, the results tend to be interpreted in a more generic way and more specific mechanisms and justifications can't be drawn. The fact that we opted for a measure of HPWS that encompassed some HR practices and not others included in other scales might impact the results achieved as other HPWS scales may yield different results.

For future researches, we suggest that some of the relations we studied in this research should be addressed more deeply, for example the HPWS-IWB link. Also, some other mechanisms should be studied, for example a HPWS-Stress linkage mediated by Self-Efficacy, as self-efficacy and stress have been related in previous studies (e.g. Butts et al., 2009) and moderation effects considering the sociodemographic variables, as other studies have done (e.g. Hu et al., 2019; Ng & Feldman, 2010). Although we used a wide range of employee outcomes in our hypothesis, there are other variables that we didn't cover (e.g. trust in management, intrinsic motivation, work engagement and subjective well-being), that have been previously linked to HPWS (e.g. Alfes, Shantz, Truss, & Soane,

2013; Kilroy et al., 2016) and can be used in future researches. In order to better understand the HPWS phenomenon and have a diverse set of results, studies should try to cover other regions and countries (e.g. Portugal), which are not as represented in the HPWS literature as countries like USA, China and UK.

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## Attachment I – Questionário sobre HPWS

Num ambiente empresarial cada vez mais competitivo, a gestão e potenciação dos recursos humanos de uma organização torna-se uma fonte de vantagem competitiva importante que pode permitir um desempenho organizacional elevado. Os Sistemas de Trabalho de Alto Desempenho são um conjunto integrado de práticas de Gestão Estratégica de Recursos Humanos com o objectivo de aumentar desempenho organizacional, através do incentivo a atitudes e comportamentos positivos em relação à organização. No meio desta equação entre a gestão dos recursos humanos e o desempenho organizacional surgem os funcionários. Como será que estes percepcionam estes sistemas?

O seguinte questionário surge no âmbito da conclusão do Mestrado em Gestão pela Faculdade de Economia da Universidade de Coimbra, pretendendo estudar o impacto de Sistemas de Trabalho de Alto Desempenho nos funcionários. Este questionário destina-se a trabalhadores de qualquer organização e pretende analisar as suas percepções relativamente a várias dimensões da vida no trabalho. Não há respostas certas nem erradas. O seu preenchimento demora cerca de 10 minutos.

O preenchimento do formulário é realizado de forma voluntária e os dados recolhidos serão utilizados apenas para fins de pesquisa e investigação, sendo o anonimato e a confidencialidade garantidos.

Em caso de qualquer dúvida ou questão por favor contacte-me pelo email pedrofransousadiogo@gmail.com.

Obrigado pela participação.

Pedro Diogo

## Dados Sociodemográficos

Qual a sua idade?
Texto de resposta curta
Qual o seu sexo?
Masculino
Feminino
Qual o seu nível de escolaridade?
1º Ciclo do Ensino Básico (4º ano)
2º Ciclo do Ensino Básico (6º ano)
3º Ciclo do Ensino Básico (9º ano)
Ensino Secundário (12º ano)
Licenciatura
Mestrado
Outoramento
O Pós-Graduação
Outra opção
Há quanto tempo trabalha na organização? (Nº de anos, caso o tempo seja inferior a 1 ano coloque 1)
exto de resposta curta

Ocupa cargo de chefia?
Sim
○ Não
A organização onde trabalha é pública ou privada?
Pública Pública
O Privada
Qual o nº de horas de trabalho, em média, por semana?
Texto de resposta curta
Qual o seu tipo de contrato?*
Ontrato a termo certo
Contrato a termo incerto
Contrato de Trabalho sem termo
Contrato de Trabalho a tempo parcial
Contrato de Prestação de Serviços (Recibos Verdes)
Outra opção

Qu	al o intervalo em que o seu salário bruto mensal se insere?
0	Menos de 500€
0	Entre 501€-750€
0	Entre 751€-1000€
0	Entre 1001€-1250€
0	Entre 1251€-1500€
0	Entre 1501€-1750€
0	Entre 1751€-2000€
0	Entre 2001€-2500€
0	Entre 2501€-3000€
0	Mais de 3000€
Qu	al o nº de colaboradores da sua organização?
0	Menos de 10 trabalhadores
0	Entre 10 e 50 trabalhadores
0	Entre 51 e 100 trabalhadores
0	Entre 101 e 250 trabalhadores
0	Entre 251 e 500 trabalhadores
0	Mais de 500 trabalhadores

Ç	Qual o setor de atividade em que trabalha?										
	Primário (exploração de recursos naturais, ex:agricultura, pesca)										
	Secundário (transformação de recursos, ex:indústria do calçado, construção civil)										
	Terciário (serviços, ex:comércio, transporte)										
	tens que se seguem d cordo Pouco", 4 "Nem										
		1	2	3	4	5	6	7			
	É feito um grande esforço para selecionar a pessoa certa.	0	0	0	0	0	0	0			
	É enfatizado o potencial de longo-prazo do empregado.	0	0	0	0	0	0	0			
	É dada uma importância considerável ao processo de recrutamento e seleção.	0	0	0	0	0	0	0			
	Grandes esforços são feitos na seleção.	0	0	0	0	0	0	0			

	1	2	3	4	5	6	7
Para indivíduos que contactam com o cliente são disponibilizados programas extensivos de treino.	0	0	0	0	0	0	0
O funcionário em contacto com clientes normalmente passa por programas de treino regulares.	0	0	0	0	0	0	0
Para novos contratados há programas formais de treino para ensinar as competências que precisam para desempenhar o seu trabalho.	0	0	0	0	0	0	0
Programas formais de treino são oferecidos aos funcionários de forma a aumentar a sua possibilidade de promoção na organização.	0	0	0	0	0	0	0
	1	2	3	4	5	6	7
Os deveres neste trabalho estão claramente definidos.	0	0	0	0	0	0	0
Este trabalho tem uma descrição atualizada.	0	0	0	0	0	0	0
A descrição do trabalho para uma posição refere todos os deveres desempenhados por cada funcionário com exatidão.	0	0	0	0	0	0	0

	1	2	3	4	5	6	/
Os funcionários têm poucas oportunidades de mobilidade ascendente.	0	0	0	0	0	0	0
Os funcionários não têm qualquer futuro nesta organização.	0	0	0	0	0	0	0
Promoções nesta organização são baseadas na senioridade (tempo de casa).	0	0	0	0	0	0	0
Os funcionários têm percursos de carreira claramente delineados nesta organização.	0	0	0	0	0	0	0
Funcionários que contactam com o cliente e que desejem uma promoção têm mais do que uma posição potencial para a qual podem ser promovidos.	0	0	0	0	0	0	0

Os funcionários neste trabalho podem esperar permanecer com esta organização o tempo que desejarem.  Segurança no emprego é praticamente garantida para os funcionários neste trabalho.  1 2 3 4 5 6 7  O desempenho é mais frequentemente medido com resultados objetivos e quantificáveis.  As avaliações de desempenho são baseadas em resultados objetivos e quantificáveis.  As avaliações dos funcionários enfatizam conquistas de longo-prazo e baseadas no grupo.		1	2	3	4	5	6	7
emprego é praticamente garantida para os funcionários neste trabalho.  1 2 3 4 5 6 7  O desempenho é mais frequentemente medido com resultados objetivos e quantificáveis.  As avaliações de desempenho são baseadas em resultados objetivos e quantificáveis.  As avaliações dos funcionários enfatizam conquistas de longo-prazo e baseadas no	funcionários neste trabalho podem esperar permanecer com esta organização o tempo que	0	0	0	0	0	0	0
O desempenho é mais frequentemente medido com resultados objetivos e quantificáveis.  As avaliações de desempenho são baseadas em resultados objetivos e quantificáveis.  As avaliações dos funcionários enfatizam conquistas de longo-prazo e baseadas no	emprego é praticamente garantida para os funcionários neste	0	0	0	0	0	0	0
é mais frequentemente medido com resultados objetivos e quantificáveis.  As avaliações de desempenho são baseadas em resultados objetivos e quantificáveis.  As avaliações dos funcionários enfatizam conquistas de longo-prazo e baseadas no		1	2	3	4	5	6	7
de desempenho são baseadas em resultados objetivos e quantificáveis.  As avaliações dos funcionários enfatizam conquistas de longo-prazo e baseadas no	é mais frequentemente medido com resultados objetivos e	0	0	0	0	0	0	0
dos funcionários enfatizam conquistas de longo-prazo e baseadas no	de desempenho são baseadas em resultados objetivos e	0	0	0	0	0	0	0
	dos funcionários enfatizam conquistas de longo-prazo e baseadas no	0	0	0	0	0	0	0

	1	2	3	4	5	6	7
Frequentemente neste trabalho, os supervisores, pedem aos funcionários que participem em decisões.	0	0	0	0	0	0	0
Aos indivíduos neste trabalho é permitido tomar decisões.	0	0	0	0	0	0	0
Aos funcionários é fornecida a oportunidade de sugerir melhorias na maneira como as coisas são feitas.	0	0	0	0	0	0	0
Os supervisores mantêm comunicação aberta com os funcionários neste trabalho.	0	0	0	0	0	0	0
	1	2	3	4	5	6	7
Os indivíduos neste trabalho recebem bónus baseados nos lucros da organização.	0	0	0	0	0	0	0
Remuneração muito próxima ou igual para o desempenho individual ou em grupo.	0	0	0	0	0	0	0

	1	2	3	4	5	6	7
No geral, não gosto do meu trabalho.	0	0	0	0	$\circ$	0	0
Globalmente, estou satisfeito(a) com o meu trabalho.	0	0	0	0	0	0	0
Em geral, gosto de trabalhar aqui.	0	0	0	0	0	0	0
	1	2	3	4	5	6	7
Esta organização tem um grande significado pessoal para mim.	0	0	0	0	0	0	0
Não me sinto emocionalmente ligado(a) à minha organização.	0	0	0	0	0	0	0
Não sinto que sou parte integrante da minha organização.	0	0	0	0	0	0	0

	1	2	3	4	5	6	7
Eu identifico- me com este grupo.	0	0	0	0	0	0	0
Estou feliz por pertencer a este grupo.	0	0	0	0	0	0	0
Eu sinto-me limitado(a) por este grupo.	0	0	0	0	0	0	0
Eu penso que este grupo trabalha bem em conjunto.	0	0	0	0	0	0	0
Eu olho para mim como uma parte importante deste grupo.	0	0	0	0	0	0	0
Eu não me encaixo bem com os outros membros do grupo.	0	0	0	0	0	0	0
Eu não considero o grupo importante.	0	0	0	0	0	0	0
Eu sinto-me inquieto(a) com os membros deste grupo.	0	0	0	0	0	0	0
Eu sinto fortes laços com este grupo.	0	0	0	0	0	0	0

## O meu supervisor imediato:

	1	2	3	4	5	6	7
Encoraja os membros do grupo de trabalho a expressar ideias/sugestões.	0	0	0	0	0	0	0
Ouve as ideias e sugestões do meu grupo de trabalho.	0	0	0	0	0	0	0
Usa as sugestões do meu grupo de trabalho para tomar decisões que nos afetam.	0	0	0	0	0	0	0
Dá a todos os membros do grupo de trabalho a chance de dar voz às suas opiniões.	0	0	0	0	0	0	0
Considera as ideias do meu grupo de trabalho quando discorda delas.	0	0	0	0	0	0	0
Toma decisões baseadas apenas nas suas próprias ideias.	0	0	0	0	0	0	0

## Como é que se sente na sua vida?

	1	2	3	4	5	6	7
Serei capaz de atingir a maioria dos objetivos a que me propuser.	0	0	0	0	0	0	0
Quando enfrento tarefas difíceis tenho a certeza de que serei capaz de as desempenhar.	0	0	0	0	0	0	0
Em geral penso que serei capaz de atingir objetivos que sejam importantes para mim.	0	0	0	0	0	0	0
Creio que serei capaz de ser bem-sucedido em qualquer objetivo a que me proponha.	0	0	0	0	0	0	0
Serei capaz de ultrapassar muitos obstáculos.	0	0	0	0	0	0	0
Estou confiante de que serei capaz de desempenhar bem muitas tarefas diferentes.	0	0	0	0	0	0	0
Em comparação com os outros, desempenho bem a maior parte das tarefas.	0	0	0	0	0	0	0
Mesmo quando as coisas são difíceis, consigo ter bom desempenho.	0	0	0	0	0	0	0

	1	2	3	4	5	6	7
Provavelmente irei procurar um novo emprego no próximo ano.	0	0	0	0	0	0	0
Eu procuro novas perspectivas de trabalho em jornais ou outras fontes.	0	0	0	0	0	0	0
	1	2	3	4	5	6	7
O meu trabalho é stressante.	0	0	0	0	0	0	$\circ$
Em alguns dias sinto que não consigo continuar mais no meu trabalho.	0	0	0	0	0	0	0
No meu trabalho, sou frequentemente confrontado(a) com problemas pelos quais não posso fazer muito.	0	0	0	0	0	0	0
Tenho pouco tempo para pensar e contemplar o meu trabalho.	0	0	0	0	0	0	0
No meu trabalho são-me colocadas obrigações que entram em conflito.	0	0	0	0	0	0	0

Os itens que se seguem devem ser classificados segundo a seguinte escala: 1 "Nunca", 2 "Raramente", 3 "Poucas Vezes", 4"Algumas Vezes", 5 "Muitas Vezes", 6 "Quase Sempre" e 7 "Sempre".

	1	2	3	4	5	6	7
Eu crio novas ideias para problemas difíceis.	0	0	0	0	0	0	0
Eu torno importantes membros da organização entusiastas por ideias inovadoras.	0	0	0	0	0	0	0
Eu mobilizo apoio para ideias inovadoras.	0	0	0	0	0	0	0
Eu transformo ideias inovadoras em aplicações úteis.	0	0	0	0	0	0	0
Eu procuro novos métodos, técnicas ou instrumentos de trabalho.	0	0	0	0	0	0	0
Eu introduzo ideias inovadoras no ambiente de trabalho de forma sistemática.	0	0	0	0	0	0	0
Eu avalio a utilidade de ideias inovadoras.	0	0	0	0	0	0	0
Eu obtenho aprovação para ideias inovadoras.	0	0	0	0	0	0	0
Eu crio soluções originais para problemas.	0	0	0	0	0	0	0