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Instituto Universitário de Lisboa

IUL School of Social Sciences

Department of Political Economy

How gender free are HPWP?

A moderated mediation model across participatory safety towards team performance

Constança Isabel Jardim Tavares

Dissertation submitted as partial requirement for the conferral of

Master in Human Resources Development Policies

Supervisor:

Doutor Nelson Campos Ramalho, Assistant Professor

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Acknowledgments

"I wanted to thank you," I said. She wrinkled her nose and squinted like I'd said something funny. "Thank me for what?" she said.

"You give me strength I didn't know I had," I said. "You make me better."

~Ransom Riggs

Words will never be able to convey how deeply my sentiments are for each and every person that has helped me through this journey. I wouldn't be where I am today and I wouldn't have accomplished what I have without your undying and kind-hearted support.

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And finally, to my lovely Luna, who brings us so much joy.

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Resumo

A perspetiva universal de GERH assume um efeito positivo no desempenho decorrente da Práticas de Trabalho de Alto Desempenho. Contudo, ainda estão a ser explorados os mecanismos subjacentes a este processo. Propusemo-nos a examinar a relação entre estas práticas e o desempenho subjetivo de equipa através da participação segura como mediador, testando as condições-limite do género (sexo e identidade) nesta relação.

Com uma amostra de 123 participantes, utilizámos o macro PROCESS de Hayes (2017) de modo a testar o modelo de mediação moderada. Os resultados evidenciam uma mediação parcial que não se altera em função do género o que evidencia o seu carácter neutro. Apesar das limitações existentes em relação ao nosso estudo, encorajamos ao estudo da participação segura e do género na temática dos RH.

Palavras-Chave: HPWP, participação segura, sexo, género, desempenho de equipa subjetivo

Códigos JEL: M12 (Gestão de pessoas)

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Abstract

The universal perspective of SHRM assumes a positive effect on the performance due to the implementation of HPWP. However, the mechanisms that underlie it are still a matter of research. We set ourselves to examine the relationship between these practices and the subjective team performance by means of the participatory safety as a mediator, testing boundary conditions related to gender (both sex and gender identity) in this relationship.

With a sample of 123 employees, we use PROCESS macro (Hayes, 2017) to test the moderated mediation model. Finding show a partial mediation that does not change according with gender which highlights its gender neutral character. Despite limitations, findings encourage further research focused on participatory safety and gender within HR domain.

Key-Words: HPWP, participatory safety, gender, sex, subjective team performance

JEL Codes: M12 (Personnel management)

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List of Abbreviations

AVE	Average Variance Extracted
BSRI	Bem's Social Role Inventory
CFA	Confirmatory Factor Analysis
CMIN/DF	Chi-Square/Degree of Freedom Ratio
CR	Composite Reliability
DV	Dependent Variable
EFA	Exploratory Factor Analysis
HPWP	High Performance Work Practices
HPWS	High Performance Work Systems
HRM	Human Resource Management
IV	Independent Variable
KMO	Kaiser-Meyer-Olkin
MSA	Measure of Sample Adequacy
MV	Mediator Variable
NFI	Normed Fit Index
RMSEA	Root Mean Square Error of Approximation
SHRM	Strategic Human Resource Management
SRMR	Standardized Root Mean Square Residual

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INTRODUCTION

Due to the pressures from the competitive business market, organizations found themselves needing to use their resources to their full potential. Therefore, to gain a competitive advantage, it was necessary for Human Resources Management to acquire a strategic vein, where the practices are developed in order to fit in the organization's overall strategic vision and strategy. Strategic Human Resources Management developed a set of "best practices" that allegedly lead to higher performance and productivity, both individual and organizational.

High Performance Work Practices are a universally developed set that focuses on the employees as the key to achieving high performance, through the investment in their work abilities and on a participative and communicative climate. However, this universal perspective seems to imply the existence of a linear and direct relation between HPWP and (individual/team/organizational) performance, when properly implemented. As literature review suggests, this relation cannot remain a black-box (Sun, Aryee & Law, 2007) and there are many variables influencing the results in their own way. For the present study, we explore participation as the key to achieving a high performance through HPWP since it has not been thoroughly studied in HRM literature.

Considering that HPWP have been promoted as a universal measure with a universal effect, we wonder that by having gender (sex and identity) moderating the relationship, if it will have an impact on the outcome, that is, if the practices will not be affected by the conditions applied by gender. As literature on gender notes, men and women do not have access to the same work conditions (e.g. career growth, pay gap), which in turn has a negative effect on productivity and costs for the organization (Robinson & Dechant, 1997). We asked ourselves if such setting would not reflect itself upon HPWP differential impact according to gender.

The purpose of this research is threefold. First, we wish to ascertain an association between HPWP and subjective team performance as is depicted by current SHRM literature. Second, we aim to understand if the identification of participatory safety will have an impact on the identified relationship. Third, and lastly, we wish to examine the moderating role of gender identity (BSRI) and sex in the relationship, that is, if the HPWP are indeed as universal as they claim to be and will be gender free.

Therefore, this research is structured as follows: Chapter I focuses on presenting the literature review regarding Strategic Human Resources Management, High Performance Work Practices, Participatory Safety and Gender, mainly what it means and how it may be achieved.

It also presents the research questions stated as hypotheses. Chapter II focuses on the method chosen for this research, mainly the procedure, research sample, strategy and measures used. Chapter III shows the results obtained through our research. And, Chapter IV focuses on opening a discussion regarding said results and the limitations that can be found within our research.

I. LITERATURE REVIEW

Literature review will cover the main concepts and theoretical developments starting with explaining strategic human resource management, exploring each high performance work practice and linking it to participatory safety and how it relates with gender. The hypothesized relationships are integrated into a final moderated mediation model.

1. Strategic Human Resource Management

Due to the unstable and ever-changing nature of the market-based economy, organizations have developed a need to structure themselves strategically to keep up with the competitive market and maximize organizational performance. Since Human Resources Management (HRM) focuses on organizing and motivating employees to reach their full potential, and because people are believed to be an organization's best assets, it is only natural for HRM to gain a strategic focus and align itself to the overall vision, goals and business strategy of its organization (Rotich, 2015; Flores, Posthuma and Campion, 2016). Thus, Strategic Human Resources Management (SHRM) is the effective implementation of an organization's strategy and strategic needs across its policies, practices and employee' behavior (Schuler, 1992) in order to aid the organization in achieving its set goals.

Literature collected on SHRM notes that there are different perspectives on how to view its management. The three most common perspectives are the contingency, configurational and universalistic perspectives (Delery and Doty, 1996), though Wright and McMahan (1992) have presented an extended theoretical list to include resource-based view, and cybernetic systems.

The contingency perspective implies an interaction between the strategic practices and the organizational context, i.e. its own strategy (Delery and Doty, 1996). The outcome of the interaction between the HR practices and organizational performance is contingent upon the overall strategy, which suggests the need for an alignment between these two variables in order to reach the desired performance. The configurational perspective expands from a contingency view in the sense that, it procures to identify the configurations that will be beneficial in the goal of high performance. It is a perspective that explores the existent black box in the relationship between HR and performance by creating a mix of patterns and combinations that will aid in the relationship. Last, but not least, the universalistic perspective predicts a linear interaction between SHRM and performance through a set of 'best practices' that guarantee an increase in productivity and apply to most situations therefore it being "universal" (Martín-

Alcázar, Romero-Fernández and Sánchez-Gardeym 2005). For this research purpose, we will work under the idea of a set of best practices and a universalistic perspective.

However, SHRM is also the studious understanding of the affect HRM practices have in the organization's outcome (Combs, Liu, Hall and Ketchen, 2006) as well as how the overall strategy may be successfully implemented and carefully planned via its decision-making (Wright and McMahan, 1992). And according to Schuler (1992) there are certain implications to the successful development of a strategic management.

First of all, it is not possible to develop a strategic management without identifying the organization's strategic needs, generally expressed through its mission or vision statement. It is important to be aware of the organization's status quo in order to try to manage it. Secondly, keeping in mind the important role the employees have is essential when implementing strategy since they are directly affected by it. A strategic management must implement participatory processes to close the bridge between the organization's strategy and HR practices, and be open to the involvement of employees in the planning process (Schuler, 1992). Thirdly, it being a *strategic* type of management, it needs to be developed and implemented in a systematic and analytic manner where the needs are identified in the beginning so that they may be taken into account during the design of the HR practices. Finally, Schuler states that HR has the ability to positively impact its organization, especially if they apply a carefully thought out strategic management plan.

Since SHRM believes employees are the key to achieve organizational high performance (Pfeffer, 1998; 2005), they must be managed under a set of best practices established as *high performance work practices* (Huselid, 1995; Wright, Garner, Moynihan and Allen, 2005) so that it may maximize organizational effectiveness.

1.1. High Performance Work Practices

High performance work practices (HPWP) are strategic practices developed in order to improve the employees' performance through the development of their skills and work mentality. Since the employees are the focus of these practices, they are stimulated by the organization in order to develop their skill set, work abilities and knowledge (KSAs), their motivation and satisfaction with the tasks at hand (Lepak, Liao, Chung and Harden, 2006), and ensured a safe environment of trust and communication between employees and their superiors. Pfeffer (1998; 2005), based on the empirical data collected, determines the existence of seven essential practices that, under the right circumstances, have positive effects on one's business and employees. These key practices are employment security, recruitment and selective hiring,

extensive training, compensation contingent to performance, self-managed teams, reduced status distinctions and barriers, and, open knowledge about the organizations' financial and performance situation:

Employment security

Employment security is a promise between the employer and its employees regarding the security of their job position in case of external pressures (e.g. economic crisis) or any other events, beyond the employees' control, that may negatively impact the workplace. It is one of the most important practices, according to Pfeffer (1998), when establishing a strategic management and, equally, the most efficient as it provides positive effects for both the organization as well as the employee. On an individual level, with the assurance of a contract, the worker no longer fears the loss of their position by reasons beyond their performance, and is motivated to have more initiative and creative in order to give back to the employer, which reflects in an improvement in productivity. On an organizational level, the advantage in establishing employment security resides in preventing a loss of talent to the competition and wasting resources (i.e. money, time, and workforce) in the recruitment and training of new workers. Moreover, this practice builds trust between the employer and its employees as it shows thoughtfulness that is rewarded by a spike in productivity, cooperation and a positive work environment between the individuals.

Recruitment and Selective Hiring

By employing the employment security policy, organizations will need to be rigorous in their recruitment and selection process in order to hire the person that will best fit the job description and their organizational culture. When an organization establishes a strategic management with the purpose of enhancing its performance, it is important to have the right people that align with the organization's culture, vision and values. The idea is to recruit individuals with attributes that can't be learnt and with good teamwork and cooperation.

The recruitment and selection process can be executed through various phases in order to be assured over the right candidate for the organization, with the aid of personality, skill and group tests. By undertaking an extended selection process, the candidates will get the sense that they are applying for an important position, therefore, they are important to the organization and when they are finally hired they will come into work motivated and eager to do the best work possible.

Extensive Training

The idea is to hire the best people for the organization, not only for the job position, and even if some skills may be lacking, it is the organization's duty to provide an adaptation period

where the new employees may learn the ropes so to speak, how the organization is structured and functions on a daily basis and to get to know their team colleagues. After the adaptation period, the organization must provide a continuous training to all its employees in order to develop the skills useful for their line of work and teamwork. Training is an investment partaken by the employer on its employees, and it represents how essential they are to the well-functioning of the organization which is reciprocated through their performance.

Training may be focused on a particular aspect from the person's job position or on a cross-sectional skill (e.g. technological literacy). Moreover, training may focus on a person's flexibility to different task and job rotation. When there are a variety of tasks, employees are faced with the challenge to come up with new ways to problem solving or to improve their own work practices (Pfeffer, 2005).

Compensation contingent to performance

Compensation is not only the monetary payment for the work provided by the individual, but it is a measure used by the organization in order to recognize the quality and the effort provided by the employee for their performance. If the compensation is below the labour market's sector average the employees will feel underappreciated by their employer, since it shows a lack of consideration and value for what each individual achieves. If an employee is unhappy with their job conditions, they will look elsewhere for better opportunities or they will remain disconnected and unmotivated in their workplace. Either case, the organization will see a drop in the individuals' performance or a loss of talent to its competition (Pfeffer, 1998).

A basis compensation must guarantee the satisfaction of the basic needs of its employees, taking into account the average cost of living, in order to guarantee the successful application of performance incentives. Considering Maslow and Herzberg's theories, an individual that does not meet their basic needs, guaranteed by the salary, they will not feel motivated to increase their productivity despite the incentives and, eventually, will leave the organization (Ozguner and Ozguner, 2014). Performance incentives are a practice that aims to improve one's performance and may be attributed depending on the individual, team or organizational performance, separately or simultaneously, when performance standards are met.

Self-managed teams

The advantages in creating self-managed teams vary; according to Pfeffer (1998), when compared to a traditionally managed team by a supervisor, self-manage teams possess a higher level of productivity, job quality and responsibility which, in return, will aid in reaching the established performance objectives. The team's progress is monitored by every member as the

incentives depend on the overall team performance, so if one person fails everyone in the team will bear the failure. The peer pressure and the need to not disappoint fellow colleagues, not only contributes to the control but also leads to cooperation so that the set target can be met. Self-managed teams are teams that possess a high level of flexibility in their work, specifically how they perform it and in its decision-making, which means any problems encountered are solved internally between team members. Problem solving requires an open dialogue where the individuals feel free to express their opinions and their knowledge, and through this dialogue the team develops a climate of cooperation and a space where ideas and creativity can be shared in order to solve any difficulties and present the best work they can.

Reduced status, distinctions and barriers

This practice has a symbolic determination since it aims to reduce differences between employees within the organization in order to create a culture where every individual is valued and brings something to the table. It can be done through a symbolic manner, by the language and designation applied, the structure of the physical space, the dress code, and in a materialistic manner through the reduction of salary gaps (i.e. equal pay for men and women in the same job position).

Examples of this practice are the removal of reserved parking spaces, a shared food cafeteria for everyone to use no matter the job position or altering job position designations [«The title "secretary" seems subservient, Wilson [a consultant at Miss Paige Personnel agency in Sherman Oaks, California] said, "whereas administrative assistant sounds more career-oriented, and they like that.» (Schlosberg, 1991 cit in Pfeffer, 1998)].

By changing the dress code, the way executives socialize with line management employees, open spaces for the office with no walls separating everyone, all these practices aim to create an environment of trust and open communication, where everyone feels comfortable enough to ask questions regardless of one's hierarchy position within the organization.

Open knowledge

In order to pursue a strategic management, it is important to establish an open space where employees feel free to communicate with their employers, and have access to information. When the organization is transparent with its strategy, productivity, vision, why some decisions and investments are made, it shows there are no secrets and the employees are trusted to safeguard what is shared. The transparency in showing how the organization works, its values and goals, it includes the individuals in the organization and is rewarded by their productivity since they feel a certain commitment to reciprocate.

According to Pfeffer (1998; 2005), many empirical cases show the level of efficiency that HPWP bring to the table in terms of individual, team and organizational performance. Turnover, as in an employee's resignation, decreases substantially under these strategic systems, and employees are encouraged to be creative and innovative as well as flexible with the job description.

There is, however, conflicting literature that begs to differ. While Ashkanasy, Bennett, and Martinko (2016) acknowledge the reputation HPWP has acquired regarding its effectiveness and profitability, there are underlying negative consequences to its application regarding the employees outcomes, such as a deterioration of the quality of work life, motivation techniques employed in the form of physical, emotional and psychological abuse, and work induced stress from the pressures for productivity. Despite the positive research regarding the relationship between HPWP and performance (be it individual or organizational), few studies focus on exploring the employee experiences in this context (Flores, Posthuma and Campion, 2016) which, consequently, fails to grasp the complete impact that high performance holds over employees. That being said, despite the mixed opinions, it is undeniable the positive effect that HPWP has when the practices are properly implemented and managed in one's organization. As Ashkanasy, Bennett, and Martinko (2016) state, the negative impacts on the employees' well-being are found when the high performance practices are poorly managed and reviewed. HPWP cannot simply be implemented without the careful planning and sustained management with feedback from the employees.

Through empirical research, it is possible to affirm that high performance work practices possess a positive association with organizational performance (Pfeffer, 1998; 2005; Appelbaum et al., 2000; Evans and Davis, 2005; Combs et al., 2006; Muduli, 2015) characterized by a diminished employee turnover and high productivity (Huselid, 1995). Moreover, Combs et al. (2006) meta-analysis shows a statistically significant impact of HPWP on performance, where an organization "can increase their performance by .20 of a standardized unit for each unit increase in HPWP use" (Combs et al., 2006: 524).

Considering the positive effect on organizational performance and how HPWP establishes a common ground where employees work in an open communication environment with self-managed teams, we hypothesize that these practices also possess a positive association with perceived team performance (Evans & Davis, 2005; Muduli, 2015).

H1: HPWP will positively associate with subjective team performance

2. **Mediating role of Participatory Safety**

Despite the empirical evidence presented formerly, a sheer association between HPWP and team/organizational performance does not comprehend any underlying mediators that could bring a new perspective as to how this relation occurs, what contexts or dispositions may benefit it and how it can be successfully replicated. In HRM these sort of approaches (establishing direct effects without concern for the explanative mechanisms) are often labeled the black-box (Sun, Aryee & Law, 2007).

Several studies have been carried out in order to determine the black-box of HRM, variables such as organizational citizenship behavior (Evans & Davis, 2005), critical role of line managers (Harney & Jordan, 2008), diversity levels (Lu et al. 2015), among others, have been identified as having a role in the relation between HPWP and performance. Muduli (2015) explores a research gap where a positive human resource development climate mediates the relation between HPWS and organizational performance, namely when the organization invests in establishing an open and cooperative environment for its employees, it contributes to their well-being which, in turn, is reciprocated through their productivity.

Another proposal differentiates a new facet of team climate: participatory safety. Participatory safety is a measure that belongs to Team Climate Inventory (TCI), which aims to characterize the objectives, participation and support existence in one's teams (Anderson & West, 1996). In fact, West's four-factor theory of innovation (1990) theorizes that the existence of a safe and participatory team climate is fundamental to achieving innovation within the team.

Empirically, Appelbaum et al. (2000) showed that all HPWP positively associate with practices that aim to promote participation between employees and teams. McMurray, Islam, Sarros and Pirola-Merlo (2012) found a strong correlation between participatory safety and team effectiveness while Comber (2014) found a weak but significant (p<.001) association. Group maturity (that integrates participatory safety) was found to predict job satisfaction, and in stage 4 of the Integrated Model of Group Development (Wheelan, 2009), group maturity cushions emotional exhaustion (Jacobsson, Rydbo and Börresen, 2014). Openness and team cohesion are considered the ultimate stage of the Integrated Model of Group Development (Wheelan, 2009) which is taken as the highest level for team effectiveness and strongly identify with participatory safety.

Therefore, we trust that when employees are surrounded by a positive team environment where safety, cooperation and most importantly, participation, are valued and encouraged, they will have a stronger and positive contribute to their team performance. Additionally, as Schuler (1992) has stated, participatory processes are the critical element to successfully implementing

a strategic management and, therefore, HPWP, since employees have a positive response to its presence.

HPWP are designed to enhance the employee's productivity by providing the best possible environment (with job security, supportive teams and communication) where they can easily be able to focus on their work tasks, which seems to associate with our mediator of Participatory Safety (Anderson & West, 1996).

> *H$_2$: Participatory safety will mediate the positive relationship between HPWP and perceived team performance*

3. Boundary conditions: Gender

SHRM is the strategic perspective that human resource management is able to achieve given the proper management and as the literature review on this subject states, there is many empirical evidence and theoretical reviews on how it may be developed. As stated in the beginning of Chapter I, the three most common perspectives studied upon are the universal, contingency and configurational perspectives on SHRM. For our research purposes, we have chosen to study SHRM according to the universal perspective and its 'best practices', as Pfeffer (1998; 2005) has defended. The idea of having best practices expresses that, independently of the context of the organization, these practices have positive outcomes when accurately implemented (e.g. in the recruitment and selection practice, hiring an individual that will not fit into the organization's culture will be prejudicial).

Despite the enduring nature of the idea of best practices, such as implied in the HPWP literature, there is indication that some sociodemographic variables may play a key role. For instance, Qiao et al. (2009) found that men are more committed to HPWP. Pichler, Varma, Yu, Beenen and Davopour (2014) tested the boundary conditions linked to gender in the relationship between HPWP and its effects. They found a significant interaction for gender, where higher proportion of women in organizations increased the negative association between HPWS and turnover, i.e. HPWS were more effective into preventing employee turnover in situations where organizations employ higher proportion of women. They end by calling for further research to explore gender demography in organizations, HPWS and effectiveness.

Most recently, Andersén and Andersén (2019) argue that organizations with HPWS should be less discriminating towards women because they tend to state objective criteria (e.g. to reward or promote). They found that HPWP increase affective commitment both in men and women when they hold managerial positions, but that HPWP is counterproductive for men holding managerial positions.

Relating gender differences to our mediation model proposed, Goh, Eccles, and Steen (2009) empirical study is informative. They found gender to correlate with team climate (also participatory safety) with a -2 log-likelihood delta of 4.34 (p<.05) suggesting males tend to report higher perceived team climate as measured by TCI (Anderson & West, 1996). Thus, gender makes a difference.

It is worth noting that in the development of the arguments in favor of gender differences in HPWP, researchers pointed out work-life balance due to social sex roles. White, Hill, McGovern, Mills & Smeaton (2003) found HPWP are harmful to work-life balance which is in disarray with expectation as women tend to take the highest family burden (Robinson & Dechant, 1997) and, consequently, abandon their jobs when they cannot conciliate the work-family life. However measuring gender as male vs female is not as informative as regards sex roles as measuring it as gender identity.

First and foremost, despite popular belief, sex and gender are not the same thing. As Deaux (1985 *in* Fischer & Arnold, 1994) acknowledges, sex is the term referred to biologically based categories of male and female that are daily used. Gender is the psychological identity associated with the features, traits and roles that are socially ingrained and based on society's social structure of a "gendered division of labor" (Bem, 1993: 133), which characterizes gender identity (Fischer & Arnold, 1994).

On a sociologically level, not only does society develop gender-stereotyped expectations for men and women where women are expected to become the caretakers and the men the providers, as that expectation translates itself into reality as Bracke, Christiaens and Wauterickx (2008) empirical study exemplifies. Bem (1993) also notes that, since women are expected to be nurturers, they are raised from a young age to develop an interest in children and their caretaking, whilst the same cannot be said about men. Moreover, through a psychological perspective, these gender expectations develop a self-fulfilling prophecy of their own as society reproduces its gender-stereotyped expectations and gendered roles by treating young children differently based on their sex, which they will learn through socialization and, consequently, contribute to its continuance as they grow older.

Additionally, the binary gender as perpetuated by society has also lead to its social organization, to the division of human experience into cultural categories, categories forged according the homogenized concepts of masculinity and femininity (Bem, 1993), also known as gender polarization. Gender polarization is achieved through two mechanisms: gendered language and functional categorization by gender. Gendered language is the creation of a distinction between individuals due to their gender through language where, for example, we

label children as boys and as girls because of their sex (Liben & Bigler, 2017) while functional categorization by gender it refers to the way we organize ourselves, our activities and our environment through our gender. It means we create spaces that are to be specifically used by girls only or boys only, e.g. gender assigned bathrooms, or we assign specific activities where we tell young girls to play with dolls and we give educational toys to young boys. These two mechanisms work in conjunction to create gender polarization: we attribute each individual to their assigned gender and, consequently, to the spaces they must use. Because a child is seen as a boy, he must use the boy assigned bathroom and, if he uses the girls' bathroom, it will be seen as breaking a socially established rule.

Under these circumstances, Bem (1993) calls for a reframing in the discussion over gender and the socially constructed gendered-mechanisms, and its dismantlement so that individuals would no longer be socially divided or controlled to belong in the boxes of either male or female when they could be androgynous (both masculine and feminine) or something of its own. Therefore, Bem (1974) developed a sex-role inventory with the intent to measure psychological androgyny through two independent scales of masculinity and femininity, comprised with personality traits that are attributed to each gender. The individual, based on how they score themselves on each scale, will be sex typed as either masculine or feminine if the score difference is high, or they will be sex typed as androgynous when the difference is low. A masculine sex role represents the rejection of feminine attributes and vice versa, whereas androgyny represents a balance of both attributes and suggests emotional maturity (Fischer & Arnold, 1994).

Pfeffer (1983 *in* Frink et al., 2003) once noted that organizational demography, i.e., an organization's proportion of men and women, is critical to group processes, which Frink et al. (2003) confirms by stating that high organizational performance is associated with a balanced gender composition. As such, we aim to explore what kind of impact gender identity (as measured by BSRI and by sex) may have in the relationship hypothesized in Figure 1. More specifically, considering HPWP are practices believed to have a universal outcome of high performance and improved work conditions for employees, we wonder if these practices are in fact universal or if they are gender-dependent.

> H_3: *Gender moderates the mediated relationship by participatory safety between HPWP and subjective team performance*

The integrated model is depicted as follows:
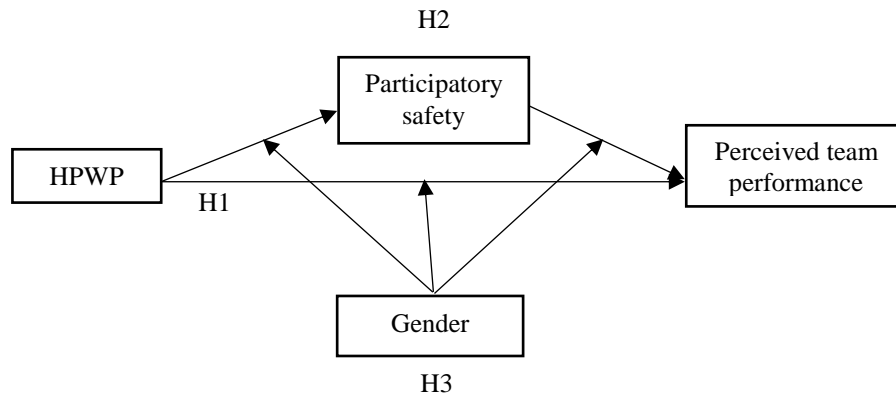
Figure 1. Integrated Model (Source: Personal)

As Chapter I reviews the existing literature review on the topics of interest, the model for our research thesis has been developed and expanded. Not only will we expand on the black box relation of HPWP and perceived team performance through participatory safety, but explore the role of gender.

Therefore, our H1 expects that HPWP will positively associate with subjective team performance. H2 suggests that participatory safety will mediate the positive relationship between HPWP and perceived team performance. Lastly, H3 suggests that gender (identity and sex) moderates the mediated relationship by participatory safety between HPWP and perceived team performance.

II. METHOD

This chapter will identify all methodological options made to empirically test hypotheses. For such purpose we will explain the procedure, characterize the sample, the strategy deployed to conduct data analysis and identify the measures used to operationally define the constructs as well as their psychometric quality.

2.1. Procedure

The study required individuals within work teams to answer an online questionnaire via Qualtrics. To participate, we addressed an invitation via LinkedIn, chosen due to its professional outreach. The invitation stated the nature of the research, making clear it was conducted within the Master of Human Resources Development Policies at ISCTE-IUL under supervision, and that the answers were strictly anonymous and confidential. We offered assurance of the ethical code of research and the protection of all participants from undue disclosure. At the end of the invitation, we provided a direct email address in case of doubt or just to double check the authenticity of the research.

2.2. Sample

The empirical research targeted active working population that is daily operating in work teams, independently of the industry. We collected 147 filled questionnaires from which 123 were valid. The exclusion of questionnaires took into consideration missing values (all above 5% were excluded) as well as within subject variance (those that showed monotonous answers as shown by null variance of the constructs were excluded).

2.3. Data analysis strategy

Data is firstly screened for missing values and abnormal cases (e.g. null variance) and then subjected to psychometric quality analysis for both validity and reliability. Validity concerns being able to measure the exact construct it is intended to, and we opted to test for construct validity via factorial analysis. Therefore, a given construct is valid if the factor analysis (exploratory) offers indicators that it has quality, namely: the KMO should be higher than .500, all measures of sampling adequacy (MSAs) must be at least .500, the Bartlett's sphericity test should give a significant p-value for the chi-square, and all item should have

commonalities above .500. For factor extraction we will use Keiser criterion where only factor that have eigenvalue of at least 1.00 will be retained. For clarity sake we will opt for varimax rotation if theory does not preclude it. In this case, items that crossload will be removed, and we will consider any simultaneous loading distancing .200 as indication of possible crossload and only items that load above .500 will be considered for inclusion in the solution. Solutions are required to explain at least 60% of total variance, after rotation. Otherwise, items will be excluded. Furthermore, factor solutions are tested for convergent validity which is measured by means of Average Extracted Variance (AVE) which should attain at least 50% (Fornell & Larcker, 1981) and in case the solution includes two or more factors, we will test for divergent validity, i.e. that the interfactor correlations do not outweigh intrafactor correlation which is tested by comparing the squared AVE with all the correlations for each pair of latent factor variables. Additionally, a high-quality measure is required to be consistent, i.e. that items measure always the same construct, which can be gauged by means of Cronbach's alpha (Nunnaly, 1994) or Composite reliability (Jöreskog, 1971). In both cases, reliability indicators for reflective constructs are expected to achieve at least .700. If a construct is formative, such as in the case of Bem's (1974) gender identity none of these apply.

To test hypotheses, as the model of research comprehends a path that proposes a moderated mediation, we will use Hayes (2017) macro PROCESS that integrates into SPSS and allows for the simultaneous test of all paths via direct and indirect effects. The indirect effects express mediation processes and the statistical significance of the effects is observed via a Corrected Confidence interval that is originated with bootstrapping. Following Hayes (2017) recommendations, we will set the confidence interval at 95% and we will conduct the analysis with 5000 repetitions. The interval between the lower and upper CI95 bounds is used to judge on the statistical significance. Whenever the interval includes zero value, there is indication that the effect is not significant for CI95.

2.4. Measures

Variables included in this study comprehend high performance work practices, employability orientation climate, gender diversity, age diversity, team climate's participatory safety, and team performance.

High Performance Work Practices

HPWP is measured by means of Pfeffer's (1998) proposal for the key practices. The scale comprehends 7 items expressing job security, rigorous recruitment and selection, autonomous work teams, fair and contingent reward, training and development, status equality, and organizational financial performance awareness. The specific items used were the following: 1) The organization values stable and secure job contracts; 2) There is a high effort into the selection of a new employee; 3) The organization encourages its employees to take the initiative and have autonomy in their work; 4) The organization is generous in their compensation, benefits and bonuses, which reflect the employees' performance; 5) The organization invests in the training and development of all its employees; 6) There are no status distinctions between the employees, and between the employees and their managers; 7) Management provides to the employees with information regarding organizational performance and explains motives for decisions undertaken.

The items are conceived to aggregate into a single index. Because this is not a construct that is expected to be reflective (i.e. where individuals tend to have a shared cognitive representation of its nature) and is instead a formative construct (taken as a theoretical expression of an expert based view of the idea of high performance work practices) we will not proceed with a factorial analysis, but will simply compute the average for these items. Participants were requested to indicate in a 5 point Likert scale (1=Strongly disagree, to 5=Strongly agree) the extent to which each of the items characterized the organization where they work.

Participatory safety

Participatory safety was measured Kivimaki, and Elovainio (1999) 4 item scale (e.g. "We are together' attitude", "People keep each other informed", "People feel understood and accepted" and "Real attempts to share information") which fall into a single factor (KMO=.812, .798<MSA<.828, Bartlett's $X^2(6)$=350.007, p<.001), accounting for 79.4% total variance. The scale has also good reliability (Cronbach alpha=.912; CR=.939) and convergent validity (AVE=.794). Participants were requested to indicate in a 5 point Likert scale (1=Strongly disagree, to 5=Strongly agree) the extent to which each of the items reflects their team climate.

Table 1. Component Matrix[a]

	Component 1
Real attempts to share information	.926
People feel understood and accepted	.914
People keep each other informed	.867
We are together' attitude	.855

Extraction Method: Principal Component Analysis.

a. 1 components extracted.

Perceived Team performance

Perceived team performance was measured with a single subjective indicator where respondents were expected to signal in a scale from 0 (weak) to 10 (strong) their opinion regarding the following question: "If you could assess the average professional performance of your team, you would say it is…?". This follows Ehrardt, Miller, Freeman and Hom (2014) and Thomas et al. (2019) examples due to the same reasons concerning keeping measures simple and unambiguous to prevent long questionnaires, as recommended by Sackett and Larson (1990).

Gender

Gender was measured in both connotations as physical gender (sex) and gender identity (sex role). The first was dummy coded as binary gender where 1 = female, and 2=male. The second was measured by means of Bem's Social Role Inventory (BSRI, Bem, 1974) that comprehends 20 items organized as a formative construct around two dimensions (masculine and feminine). Masculine subscale comprehends 10 items (e.g. defends own beliefs, independent, assertive, strong personality, forceful, leadership ability, ambitious, dominant, willing to take a stand and aggressive), the same number as feminine subscale (e.g. affectionate, sympathetic, sensitive to other's needs, understanding, compassionate, eager to soothe hurt feelings, warm, tender, loves children and gentle). Participants were requested to indicate in a 5 point Likert scale (1=Strongly disagree, to 5=Strongly agree) the extent to which each of the presented items reflects their personal behavior.

Team Tenure

Team tenure was measured through a 5 point scale (1= 1 year or less; 2= 2-5 years; 3= 6-10 years; 4= 11-20 years; 5= 21 years or more) where participants were asked to indicate how long on average they have been working in their current work team.

Age group

Age group of the participants was measured through a 6 point scale (1= Up to 25 years; 2= 26-35 years where it was asked to indicate which age range the individuals belong in.

Supervisory position

Supervisory position was measured by participants indicating in a polar question scale (1=Yes and 2=No) whether they have a supervisory or leadership position within their work team.

Level of Education

Level of education was measured through a 5 point scale (1= Up to 9th grade; 2=9th grade completed; 3=12th grade completed; 4=Licentiate degree or equivalent; 5=Masters degree; 6=PhD Doctorate degree) where participants were requested to indicate their individual level of education.

III. RESULTS

This third chapter presents the findings from the statistical tests conducted in order to corroborate the hypotheses formulated in Chapter I. The aim of this research is to, not only analyze the relationship between HPWP and team performance through participatory safety, but to also to understand the role of gender (sex and gender identity) in this relation.

Table 2 shows sociodemographic variables correlate between themselves in an expectable fashion, namely age-related variables are positively correlated among themselves (e.g. age group and team tenure). As regards sociodemographic variables correlation with variables included in the research model, it is worth mentioning that age related variables are positively correlated both with gender feminine and masculine scales suggesting older individuals tend to identify more with sex roles. Participatory safety is also associated with supervisory position (r=-.208, p<.05). Although HPWP has no significant correlation with any of the sociodemographic variables, the presence of some correlations and their magnitude advises their use as control variables in ensuing analyses.

Table 2. Correlations, Means, Standard Deviations and Reliabilities

	Mean	s.d.	min-max	1	2	3	4	5	6	7	8	9
1. HPWP	3.18	.79	1-4.86	1								
2. Particip. Safety	3.47	.93	1-5	.536**	1							
3. Gender	1.34	.47	1-2	.100	.073	1						
4. BSRI Feminine	3.94	.48	2.7-5	.230*	.112	.016	1					
5. BSRI Masculine	3.65	.49	1.8-5	-.103	-.110	.128	.168	1				
6. Team_Perform	6.97	1.67	0-10	.231*	.535**	.196*	.091	.084	1			
7. Team tenure	2.29	1.17	1-5	.101	.056	.179	.227*	.179	.068	1		
8. Age group	2.76	1.22	1-6	.079	-.007	.125	.302**	.213*	.073	.573**	1	
9. Superv. position	1.65	.48	1-2	-.132	-.208*	-.145	-.066	-.220*	-.080	-.189*	-.205*	1
10. Education	4.20	.81	2-6	-.025	.179	.221*	.035	.054	.185	-.126	-.037	-.029

Pearson's r correlation coefficients: Cronbach's alpha in diagonals; a Association measures expresses Cramer's V; * p<.05; ** p<.01

The remaining correlations observed in the Table 2 encourage the research model as participatory safety is positively associated both with HPWP (r=.536, p<.01) and with perceived team performance (r=.535, p<.01). These are the strongest associations in the table and suggest a mediation. However, the relatively weaker one between HPWP and perceived team performance also deserves highlight (r=.231, p<.05) as it may suggest a possible direct effect and thus, a partial mediation.

As stated, hypotheses testing was conducted with Hayes (2017) Process macro, namely, with model 59. Table 3 shows findings for each of the path and corresponding indirect effect from HPWP to perceived team performance via participatory safety, as depicted in the next Figure 2.
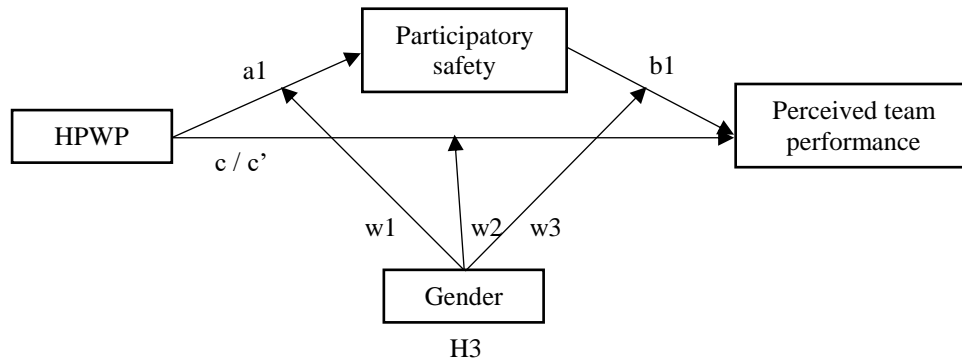

Figure 2. Path Model for Conditional Process Analysis (Hayes, 2017; Adapted by author)

Table 3 – coefficients for conditional process analysis of the research model

Moderator	Path	B	SE	t	CI95 (lower)	CI95 (upper)	Total effect model	Full model with mediator
Gender (sex)	a1	**.616**	**.096**	**6.38*****	**.424**	**.807**	R²=.369	R²=.451
	b1	**1.103**	**.157**	**7.12*****	**.796**	**1.410**	F(7, 100)=8.38***	F(9, 98)= 8.955***
	c	-.015	.172	-.092	-.357	.325		
	c'	-.018	.177	-.103	-.370	.333		
	a1*b1	**.676**	**.154**		**.380**	**.986**		
	w1	-.083	.223	-.373	-.525	.359		
	w2	-.159	.332	-.481	-.818	.499		
	w3	.304	.403	.753	-.496	1.105		
BSRI Gender (feminine)	a1	**.620**	**.098**	**6.32*****	**.425**	**.814**	R²=.366	R²=.471
	b1	**1.053**	**.153**	**6.85*****	**.748**	**1.359**	F(7, 100)=8.257***	F(9, 98)=9.721***
	c	-.015	.172	-.092	-.357	.325		
	c'	.021	.177	.119	-.330	.372		
	a1*b1	.653	.160		.348	.982		
	w1	.001	.179	.009	-.353	.357		
	w2	.387	.262	1.476	-.133	.909		
	w3	-.612	.321	-1.905	-1.251	.025		
BSRI Gender (masculine)	a1	**.597**	**.094**	**6,29*****	**.409**	**.785**	R²=.376	R²=.474
	b1	**1.090**	**.155**	**7.03*****	**.783**	**1.398**	F(7, 100)=8.61***	F(9, 98)=9.82***
	c	-.015	.172	-.092	-.357	.325		
	c'	.030	.171	.177	-.309	.369		
	a1*b1	.651	.148		-.380	.957		
	w1	.130	.171	.759	-.209	.470		
	w2	.363	.288	1.259	-.209	.936		
	w3	-.371	.315	-1.175	-.997	.255		

*** p<.001, ** p<.01, * p<.01

Taking gender (sex) as a moderator, findings show that paths a1 (B=0.616, p<.001, CI95 [0.424; 0.807]) and b1 (B=1.103, p<.001, CI95 [0.796; 1.410]) are both significant and meaningful for the bootstrapping interval generated while the direct relation between HPWP and perceived team performance is not both with and without the mediator in the equation. The indirect effect (a1*b1) is meaningful (B=.676, CI95 [.380; .986]) suggesting a total mediation that explains 45.1% variance in team performance ($F_{(9,98)}$=8.955, p<.001). This gives support to Hypothesis 1. None of the proposed interaction effects occurred for path a1 (B=-.083, p>.05, CI95 [-.525; .359]), b1 (B=-.159, p>.05, CI95 [-.818; .499]) or c (B=.304, p>.05, CI95 [-.496; 1.105]) which does not support Hypothesis 2.

Taking gender (BSRI femininity) as a moderator, findings show a similar situation as previously described, with meaningful a1 (B=.610, p<.001, CI95 [.425; .814]) and b1 (B=1.053, p<.001, CI95 [.748; 1.359]) paths as well as a non-significant direct relationship between HPWP and perceived team performance (both with and without the mediator considered). The indirect effect (a1*b1) is meaningful (B=.653, CI95 [.348; .982]) suggesting the same total

mediation as found before. The explained variance is 47.1%. This supports hypothesis 1. Also similar to previous findings, there is no significant interaction effect between femininity and any of the paths (a1, B=.001 p>.05 CI95 [-.353; .357]; b1 B=.387 p>.05 CI95 [-.133; .909], and c B=-.612 p>.05 CI95 [-1.251; .025]). This does not support Hypothesis 2.

Taking gender (BSRI masculinity) as a moderator, findings show a similar situation as previously described, with meaningful a1 (B=.597, p<.001 CI95 [.409; .785]) and b1 (B=1.090 p<.001 CI95 [.783; 1.398]) paths as well as a non-significant direct relationship between HPWP and perceived team performance (both with and without the mediator considered). The indirect effect (a1*b1) is meaningful (B=.651, CI95 [-.380; .957]) suggesting a total mediation as found before, which explains 47.4% variance of perceived team performance. This supports hypothesis 1. Also similar to previous findings, there is no significant interaction effect between masculinity and any of the paths (a1, B=.130 p>.05 CI95 [-.209; .407]; b1 B=.363 p>.05 CI95 [-.209; .936], and c B=-.371 p>.05 CI95 [-.997; .255]). This does not support Hypothesis 2.

Overall, the first hypothesis stating participatory safety is a mediator between HPWP and perceived team performance is supported while the second hypothesis that tests boundary conditions for this mediation pertaining gender is not.

IV. DISCUSSION AND CONCLUSION

HPWP are mainly theorized as being universal practices expected to increase overall job performance due to many mechanisms. This research proposed to cross the organizational participation literature with HPWP by designing a model that took participatory safety as a mediator between HPWP and team performance, more specifically, perceived team performance. Findings, indeed, supported these hypotheses showing all variance between HPWP and perceived team performance flows through participatory safety, which corroborates the theoretical choices underlying the proposed model. As Schuler (1992) once stated, employees under a strategic management have a positive reaction to participatory safety processes, that is, to the investment of an environment that promotes participation and communication between everyone involved and is psychologically safe (Anderson & West, 1996).

Findings concerning possible genderization of HPWP are very clear in removing this proposal as the mediation effect and all the path coefficients between variables under study remain quite stable, independently from the gender of the participant. The fact that gender was measured both as physical gender (sex, male & female) and as gender identity (via sex roles, with two independent scales, masculine and feminine) confers robustness to the assertion that HPWP are gender-free as regards their perceived effects. Therefore, these HR practices, taken as the best practices, are expected to exert the same effects in workplace with no gender distinction. This adds to its universal value and application in organizations.

Limitations and Suggestions for Future Research

The sample is not very large which, adding to its convenience nature, could hamper its generalizability. However, the data analysis technique chosen (Conditional process analysis, Hayes, 2017) operates with bootstrapping intervals of confidence, which offers some assurance about findings' meaningfulness.

The fact that all measures originated from the same participant and that they are subjective in nature raise doubts about possible endogeneity effects, known as common method variance (Podsakoff et al., 2003). This is a serious problem regarding many inferences that can be draw from data, namely concerning true causal direction (as the research design is correlational in nature) and also the true effects occurring in real settings. An ex-post remedial test that can be conducted in Harman's test which is intended to verify if data aggregates into a

single factor that is mixed and accounts for at least 50% of explained total variance of a factorial analysis (before rotation). The test conducted showed no indication of such phenomenon as the main factor explains 18.8% variance out of 67.6% and is composed only of HPWP.

Future research may opt to build upon these limitations to generate more robust designs such as multi-wave (due to the mediation) or multi-sourced data (to remove possibility of common-source bias) and multi-level (as HPWP can be treated as we did at the perceptive level but it is more suitably seen as a group-level variable) but such design is hardly compatible with the time available to complete a masters dissertation. It is especially important to focus not only upon subjective dependent variables such as perceived team performance but also upon objective criteria itself to gauge true performance. Alongside with methodological options, future research could explore the possibility that the effects of HPWP may still hold differently based on organizational culture as it should set the background for a gendered effect of HWPW.

To conclude, through our research we set out to uncover a part of the black-box relation between HPWP and performance, more specifically, subjective team performance. HPWP are practices aimed to invest in the employee so that they may securely focus on the tasks at hand and develop autonomy within the work place. They are also practices that promote team work and communication between employees, so that an open, participatory environment may take place (Pfeffer, 1998; 2005). Hence, we theorized that the presence of a participatory safety climate had a positive impact in achieving high performance in the context it would be applied in. According to literature, the promotion of a safe and supportive environment within the organization brings positive outcomes overall (Anderson & West, 1996; Schuler, 1992) since employees feel they can develop and express their opinions within a safe space. However, the impact of a participatory safety environment through the interaction of HPWP and performance has not received the empirical attention it deserved, which led to the development of this research.

Since HPWP are practices that are thought of as being universal in their application, that is, by definition, they are expected to have a positive effect on the organization and the individuals when duly implemented, and considering the recent discussion regarding gender diversity in the workplace, it is timely to test if the effect of these practices varies depending on gender identity or the sex of the individual. Moreover, this research explored a not so frequent path in HRM-related gender studies which lies in distinguishing gender from sex and theorizing the moderating conditions they have in the mediated interaction of HPWP and performance.

The results obtained showed support for two of our hypotheses. It is supported that, not only is there a positive association between HPWP and subjective team performance, which

empirical evidence has already proven, as participatory safety has a mediating role in said interaction, meaning that its presence will lead to a higher team performance, at least to the perception about it. In contrast, the results do not support the moderating gender hypothesis that HPWP impact varies due to gender distinctions, which ascertains the universal vein of these practices and that they are indeed gender-free.

Our research does have limitations regarding its sample size and the subjective nature to our measures, but we believe that this is an important discussion worth having and it may be beneficial for the design of HR practices. Developing a participatory safety climate through HPWP, where individuals feel free to express their ideas and learn from each other, may be the key to further improving work conditions and productivity in an organization that is also striving not to be gender-biased.

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APPENDICES

Appendix A Questionnaire displayed to the participants

Appendix B PROCESS Outputs

Appendix A

Questionnaire displayed to the participants

ISCTE ◈ IUL
Instituto Universitário de Lisboa

This questionnaire is being held in the context of the Masters' programme of Human Resources Development Policies at ISCTE-IUL, with the purpose to understand patterns in interpersonal relationship.

Your contribution will aid in the improvement of our understanding in regards to this topic and we ask that you answer each question with the most sincerity. There are no right or wrong answers and your results will be completely anonymous and confidential. Please do not write your name in any section of this questionnaire. The average response time is of 6 minutes.

We recommend the use of a computer in order to answer the questionnaire as it is graphically more appealing with no risk of deforming the structure.

If you have any doubts or questions, please don't hesitate in contacting me at cijts@iscte-iul.pt or in contacting the dissertation advisor at nelson.ramalho@iscte-iul.pt.

Thank you for your time and collaboration!
Constança Jardim Tavares

Sex

❍ Female
❍ Male

Please indicate whether the following characteristics describe your behavior as a person.
On the scale of 1 (Strongly disagree) to 5 (Strongly agree).

	1	2	3	4	5
Defends own beliefs	❍	❍	❍	❍	❍
Independent	❍	❍	❍	❍	❍
Tender	❍	❍	❍	❍	❍
Assertive	❍	❍	❍	❍	❍
Strong Personality	❍	❍	❍	❍	❍
Forceful	❍	❍	❍	❍	❍
Sympathetic	❍	❍	❍	❍	❍
Has leadership abilities	❍	❍	❍	❍	❍
Sensitive to the needs of others	❍	❍	❍	❍	❍
Courageous	❍	❍	❍	❍	❍
Understanding	❍	❍	❍	❍	❍
Compassionate	❍	❍	❍	❍	❍
Eager to soothe hurt feelings	❍	❍	❍	❍	❍
Dominant	❍	❍	❍	❍	❍
Warm	❍	❍	❍	❍	❍
Willing to take a stand	❍	❍	❍	❍	❍
Delicate	❍	❍	❍	❍	❍
Aggressive	❍	❍	❍	❍	❍
Loves children	❍	❍	❍	❍	❍
Gentle	❍	❍	❍	❍	❍

Please indicate whether the following human resource management practices exist in your place of work. On the scale of 1 (Strongly disagree) to 5 (Strongly agree).

	1	2	3	4	5
The organization values stable and secure job contracts.	○	○	○	○	○
There is a high effort into the selection of a new employee.	○	○	○	○	○
The organization encourages its employees to take the initiative and have autonomy in their work.	○	○	○	○	○
The organization is generous in their compensation, benefits and bonuses, which reflect the employees' performance.	○	○	○	○	○
The organization invests in the training and development of all its employees.	○	○	○	○	○
There are no status distinctions between the employees, and between the employees and their managers.	○	○	○	○	○
Management provides to the employees with information regarding organizational performance and explains motives for decisions undertaken.	○	○	○	○	○

Please indicate whether the following statements describe your team's spirit. On the scale of 1 (Strongly disagree) to 5 (Strongly agree).

	1	2	3	4	5
'We are together' attitude.	○	○	○	○	○
People keep each other informed.	○	○	○	○	○
People feel understood and accepted.	○	○	○	○	○
Real attempts to share information.	○	○	○	○	○

If you could assess the average professional performance of your team, you would say it is…? Consider the figure bellow, please move the bar between weak (0) and excellent (10) in order to indicate your average performance.
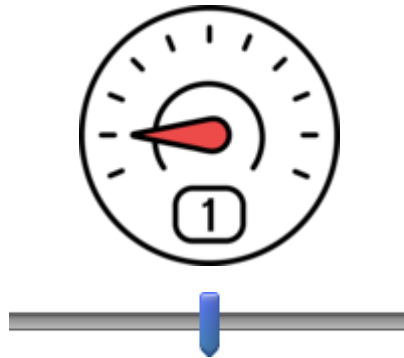
Please consider your current work team. If you are a part of more than one work team, please consider the one in which you develop your main professional activity.

How long, on average, have you been working with your colleagues in your current work team?

   A year or less (1) / 2 to 5 years (2) / 6 to 10 years (3) / 11 to 20 years (4) / 21 years or more (5)

How many members does your current work team have? _____

In order to characterize our sample, to what age range do you belong to?

   Up to 25 years (1) / 26 to 35 years (2) / 26 to 45 years (3) / 46 to 55 years (4) / 56 to 65 years (5) / 66 years or more (6)

Do you hold a supervisory or leadership position in your team
   Yes (1) / No (2)

And what is your level of education?

   Up to 9th grade (1) / 9th grade completed (2) / 12th grade complete (3) / Bsc degree or equivalent (4) / Masters degree (5) / PhD Doctorate degree (6)

The questionnaire is over. Thank you for your cooperation!

Appendix B

PROCESS Outputs

B.01 Test for gender (sex) as moderator

```
Run MATRIX procedure:

************** PROCESS Procedure for SPSS Version 3.2.01 ****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2018). www.guilford.com/p/hayes3

*************************************************************************
Model  : 59
    Y  : Q19
    X  : HPWP
    M  : PartSaf
    W  : Q6

Covariates:
 Q22      Q7        Q21       Q20

Sample
Size:  108

*************************************************************************
OUTCOME VARIABLE:
 PartSaf

Model Summary
          R       R-sq        MSE         F        df1        df2
p
      ,6081      ,3698      ,6017     8,3816     7,0000   100,0000
,0000

Model
            coeff        se          t          p       LLCI       ULCI
constant   1,0382     1,0735      ,9671      ,3358    -1,0916     3,1680
HPWP        ,6162      ,0965     6,3830      ,0000      ,4247      ,8077
Q6         -,1010      ,1686     -,5993      ,5503     -,4355      ,2335
Int_1      -,0832      ,2230     -,3733      ,7097     -,5256      ,3591
Q22         ,0133      ,0805      ,1653      ,8691     -,1464      ,1730
Q7         -,0534      ,0758     -,7047      ,4826     -,2037      ,0969
Q21        -,3400      ,1630    -2,0859      ,0395     -,6633     -,0166
Q20         ,2403      ,0948     2,5354      ,0128      ,0523      ,4284

Product terms key:
 Int_1   :        HPWP      x        Q6

Test(s) of highest order unconditional interaction(s):
      R2-chng         F        df1        df2          p
X*W      ,0009      ,1394     1,0000   100,0000       ,7097
----------
    Focal predict: HPWP      (X)
```

```
        Mod var: Q6         (W)

Data for visualizing the conditional effect of the focal predictor:
Paste text below into a SPSS syntax window and execute to produce plot.

DATA LIST FREE/
   HPWP        Q6         PartSaf    .
BEGIN DATA.
    -,8104      -,3333      -,4847
     ,0000      -,3333       ,0371
     ,8104      -,3333       ,5590
    -,8104       ,6667      -,5183
     ,0000       ,6667      -,0639
     ,8104       ,6667       ,3905
END DATA.
GRAPH/SCATTERPLOT=
 HPWP     WITH    PartSaf  BY        Q6        .


********************************************************************
OUTCOME VARIABLE:
```
Q19 (team performance)

```
Model Summary
         R      R-sq       MSE         F        df1        df2         p
      ,6718     ,4513    1,4390     8,9551     9,0000    98,0000      ,0000

Model
           coeff        se         t         p       LLCI       ULCI
constant   4,6967    1,7165    2,7362     ,0074    1,2903     8,1031
HPWP       -,0183     ,1773    -,1032     ,9180    -,3701      ,3335
```
PartSaf   1,1030   ,1547   7,1290   ,0000   ,7960   1,4100
```
Q6          ,2096     ,2612     ,8024     ,4242    -,3087      ,7279
Int_1       ,3044     ,4037     ,7539     ,4527    -,4968     1,1056
Int_2      -,1599     ,3321    -,4814     ,6313    -,8189      ,4992
Q22         ,0401     ,1248     ,3211     ,7488    -,2076      ,2878
Q7          ,0730     ,1175     ,6215     ,5357    -,1601      ,3061
Q21         ,2947     ,2628    1,1213     ,2649    -,2268      ,8162
Q20         ,0775     ,1541     ,5028     ,6162    -,2283      ,3833

Product terms key:
 Int_1    :       HPWP      x         Q6
 Int_2    :       PartSaf   x         Q6

Test(s) of highest order unconditional interaction(s):
      R2-chng          F         df1         df2          p
X*W       ,0032      ,5683    1,0000    98,0000      ,4527
M*W       ,0013      ,2317    1,0000    98,0000      ,6313
----------
    Focal predict: HPWP     (X)
        Mod var: Q6         (W)


Data for visualizing the conditional effect of the focal predictor:
Paste text below into a SPSS syntax window and execute to produce plot.

DATA LIST FREE/
   HPWP        Q6         Q19        .
BEGIN DATA.
    -,8104      -,3333     7,0100
     ,0000      -,3333     6,9129
     ,8104      -,3333     6,8159
    -,8104       ,6667     6,9729
     ,0000       ,6667     7,1225
     ,8104       ,6667     7,2722
```

```
END DATA.
GRAPH/SCATTERPLOT=
 HPWP      WITH      Q19       BY       Q6        .
----------
     Focal predict: PartSaf  (M)
          Mod var: Q6        (W)


Data for visualizing the conditional effect of the focal predictor:
Paste text below into a SPSS syntax window and execute to produce plot.

DATA LIST FREE/
   PartSaf    Q6          Q19          .
BEGIN DATA.
     -,9446     -,3333     5,8207
      ,0000     -,3333     6,9129
      ,9446     -,3333     8,0052
     -,9446      ,6667     6,1813
      ,0000      ,6667     7,1225
      ,9446      ,6667     8,0638
END DATA.
GRAPH/SCATTERPLOT=
 PartSaf  WITH     Q19       BY       Q6        .

****************** DIRECT AND INDIRECT EFFECTS OF X ON Y ******************

Conditional direct effect(s) of X on Y:
  Q6(sex)     Effect      se         t          p        LLCI       ULCI
    -,3333     -,1198     ,2092     -,5724     ,5684     -,5349     ,2954
     ,6667      ,1846     ,3397      ,5434     ,5881     -,4896     ,8588


Conditional indirect effects of X on Y:

INDIRECT EFFECT:
 HPWP        ->     PartSaf     ->    Q19


       Q6      Effect     BootSE    BootLLCI    BootULCI
   -,3333      ,7446      ,1741      ,4066      1,0807
    ,6667      ,5587      ,3412      ,0355      1,3615

Index of moderated mediation (difference between conditional indirect
effects):
        Index      BootSE    BootLLCI    BootULCI
Q6     -,1859      ,3762     -,8018       ,6602
---


********************* ANALYSIS NOTES AND ERRORS *********************

Level of confidence for all confidence intervals in output:
  95,0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  5000

NOTE: The following variables were mean centered prior to analysis:
        Q6        HPWP      PartSaf

NOTE: Standardized coefficients not available for models with moderators.

------ END MATRIX -----
```

B.02 Test for BSRI Gender (Feminime)

Run MATRIX procedure:

************** PROCESS Procedure for SPSS Version 3.2.01 *****************

          Written by Andrew F. Hayes, Ph.D.   www.afhayes.com
      Documentation available in Hayes (2018). www.guilford.com/p/hayes3

****
Model : 59
    Y : Q19
    X : HPWP
    M : PartSaf
    W : Fem

Covariates:
 Q22   Q7   Q21   Q20

Sample
Size: 108

****
OUTCOME VARIABLE:
 PartSaf

Model Summary
          R   R-sq   MSE   F   df1   df2   p
      ,6052   ,3663   ,6051   8,2571   7,0000 100,0000   ,0000

Model
              coeff   se   t   p   LLCI   ULCI
constant   1,0921   1,0820   1,0093   ,3153   -1,0546   3,2389
HPWP   ,6202   ,0981   6,3216   ,0000   ,4256   ,8149
Fem   -,0097   ,1672   -,0582   ,9537   -,3415   ,3220
Int_1   ,0017   ,1792   ,0092   ,9927   -,3539   ,3572
Q22   ,0046   ,0819   ,0560   ,9554   -,1579   ,1670
Q7   -,0510   ,0785   -,6493   ,5176   -,2067   ,1047
Q21   -,3362   ,1636   -2,0556   ,0424   -,6607   -,0117
Q20   ,2247   ,0926   2,4275   ,0170   ,0410   ,4083

Product terms key:
 Int_1   :   HPWP   x   Fem

Test(s) of highest order unconditional interaction(s):
      R2-chng   F   df1   df2   p
X*W   ,0000   ,0001   1,0000 100,0000   ,9927

    Focal predict: HPWP   (X)
         Mod var: Fem   (W)

Data for visualizing the conditional effect of the focal predictor:
Paste text below into a SPSS syntax window and execute to produce plot.

DATA LIST FREE/
   HPWP   Fem   PartSaf   .
BEGIN DATA.
    -,8104   -,5035   -,4972
     ,0000   -,5035   ,0048
     ,8104   -,5035   ,5067

```
      -,8104        ,0000      -,5028
       ,0000        ,0000      -,0001
       ,8104        ,0000       ,5025
      -,8104        ,5035      -,5084
       ,0000        ,5035      -,0050
       ,8104        ,5035       ,4983
END DATA.
GRAPH/SCATTERPLOT=
 HPWP      WITH      PartSaf  BY        Fem       .
```

```
**************************************************************************
OUTCOME VARIABLE:
```
 Q19 team performance

```
Model Summary
         R        R-sq        MSE          F         df1        df2          p
     ,6868      ,4717     1,3855     9,7211     9,0000    98,0000      ,0000
```

```
Model
              coeff         se           t          p        LLCI        ULCI
constant    4,2253     1,6472     2,5652      ,0118       ,9565     7,4942
HPWP         ,0211      ,1770      ,1190      ,9055      -,3302      ,3723
PartSaf     1,0539      ,1538     6,8515      ,0000       ,7486     1,3591
Fem          ,2392      ,2558      ,9351      ,3520      -,2684      ,7468
Int_1       -,6127      ,3216    -1,9050      ,0597     -1,2510      ,0256
Int_2        ,3879      ,2627     1,4765      ,1430      -,1335      ,9093
Q22          ,0435      ,1275      ,3408      ,7340      -,2096      ,2966
Q7           ,0418      ,1197      ,3491      ,7277      -,1957      ,2793
Q21          ,3717      ,2533     1,4674      ,1455      -,1310      ,8744
Q20          ,1155      ,1441      ,8015      ,4248      -,1705      ,4015
```

```
Product terms key:
 Int_1    :        HPWP     x        Fem
 Int_2    :        PartSaf  x        Fem
```

```
Test(s) of highest order unconditional interaction(s):
      R2-chng          F         df1        df2          p
X*W      ,0196     3,6291     1,0000    98,0000      ,0597
M*W      ,0118     2,1800     1,0000    98,0000      ,1430
----------
    Focal predict: HPWP      (X)
          Mod var: Fem       (W)
```

```
Conditional effects of the focal predictor at values of the moderator(s):

        Fem      Effect          se          t          p        LLCI
ULCI
    -,5035       ,3296       ,2637     1,2499      ,2143      -,1937       ,8529
     ,0000       ,0211       ,1770      ,1190      ,9055      -,3302       ,3723
     ,5035      -,2874       ,2135    -1,3465      ,1812      -,7111       ,1362
```

There are no statistical significance transition points within the observed
range of the moderator found using the Johnson-Neyman method.

```
Conditional effect of focal predictor at values of the moderator:
       Fem      Effect         se          t          p        LLCI        ULCI
   -1,2546       ,7898      ,4733     1,6687      ,0984      -,1495     1,7291
   -1,1396       ,7193      ,4391     1,6383      ,1046      -,1520     1,5907
   -1,0246       ,6489      ,4054     1,6008      ,1126      -,1555     1,4533
    -,9096       ,5784      ,3722     1,5539      ,1234      -,1603     1,3171
    -,7946       ,5080      ,3399     1,4943      ,1383      -,1666     1,1825
    -,6796       ,4375      ,3087     1,4173      ,1596      -,1751     1,0500
    -,5646       ,3670      ,2788     1,3164      ,1911      -,1863      ,9203
```

```
  -,4496      ,2966      ,2509    1,1821      ,2400    -,2013      ,7944
  -,3346      ,2261      ,2255    1,0025      ,3186    -,2215      ,6737
  -,2196      ,1556      ,2038     ,7636      ,4469    -,2488      ,5601
  -,1046      ,0852      ,1869     ,4556      ,6497    -,2858      ,4562
   ,0104      ,0147      ,1763     ,0834      ,9337    -,3352      ,3646
   ,1254     -,0558      ,1731    -,3220      ,7481    -,3993      ,2878
   ,2404     -,1262      ,1777    -,7102      ,4793    -,4789      ,2265
   ,3554     -,1967      ,1896   -1,0375      ,3020    -,5729      ,1795
   ,4704     -,2671      ,2074   -1,2879      ,2008    -,6788      ,1445
   ,5854     -,3376      ,2299   -1,4686      ,1451    -,7938      ,1186
   ,7004     -,4081      ,2557   -1,5956      ,1138    -,9156      ,0995
   ,8154     -,4785      ,2841   -1,6845      ,0953   -1,0423      ,0852
   ,9304     -,5490      ,3142   -1,7472      ,0837   -1,1726      ,0746
  1,0454     -,6195      ,3457   -1,7919      ,0762   -1,3055      ,0666
```

Data for visualizing the conditional effect of the focal predictor:
Paste text below into a SPSS syntax window and execute to produce plot.

```
DATA LIST FREE/
   HPWP        Fem          Q19          .
BEGIN DATA.
     -,8104      -,5035       6,6376
      ,0000      -,5035       6,9047
      ,8104      -,5035       7,1719
     -,8104       ,0000       7,0081
      ,0000       ,0000       7,0252
      ,8104       ,0000       7,0423
     -,8104       ,5035       7,3786
      ,0000       ,5035       7,1456
      ,8104       ,5035       6,9127
END DATA.
GRAPH/SCATTERPLOT=
 HPWP      WITH     Q19       BY        Fem        .
----------
    Focal predict: PartSaf  (M)
         Mod var: Fem       (W)
```

Data for visualizing the conditional effect of the focal predictor:
Paste text below into a SPSS syntax window and execute to produce plot.

```
DATA LIST FREE/
   PartSaf     Fem          Q19          .
BEGIN DATA.
     -,9446      -,5035       6,0937
      ,0000      -,5035       6,9047
      ,9446      -,5035       7,7158
     -,9446       ,0000       6,0297
      ,0000       ,0000       7,0252
      ,9446       ,0000       8,0207
     -,9446       ,5035       5,9656
      ,0000       ,5035       7,1456
      ,9446       ,5035       8,3256
END DATA.
GRAPH/SCATTERPLOT=
 PartSaf  WITH     Q19       BY        Fem        .
```

****************** DIRECT AND INDIRECT EFFECTS OF X ON Y ******************

Conditional direct effect(s) of X on Y:
```
      Fem      Effect        se           t           p        LLCI        ULCI
    -,5035      ,3296      ,2637     1,2499      ,2143     -,1937      ,8529
     ,0000      ,0211      ,1770      ,1190      ,9055     -,3302      ,3723
     ,5035     -,2874      ,2135    -1,3465      ,1812     -,7111      ,1362
```

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```
Conditional indirect effects of X on Y:

INDIRECT EFFECT:
 HPWP        ->    PartSaf    ->    Q19

        Fem     Effect    BootSE   BootLLCI   BootULCI
    -,5035      ,5318     ,1614      ,2262      ,8499
     ,0000      ,6536     ,1606      ,3488      ,9822
     ,5035      ,7758     ,2696      ,2619     1,3376
---


*********************** ANALYSIS NOTES AND ERRORS ***********************

Level of confidence for all confidence intervals in output:
  95,0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  5000

W values in conditional tables are the mean and +/- SD from the mean.

NOTE: The following variables were mean centered prior to analysis:
         Fem      HPWP      PartSaf

NOTE: Standardized coefficients not available for models with moderators.

------ END MATRIX -----
```

B.03 Test for BSRI Gender (Masculine)

```
Run MATRIX procedure:

************** PROCESS Procedure for SPSS Version 3.2.01 ****************

         Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
   Documentation available in Hayes (2018). www.guilford.com/p/hayes3


*************************************************************************
Model : 59
    Y : Q19
    X : HPWP
    M : PartSaf
    W : Mas

Covariates:
 Q22      Q7       Q21      Q20

Sample
Size: 108


*************************************************************************
OUTCOME VARIABLE:
 PartSaf

Model Summary
```

```
             R        R-sq        MSE          F         df1        df2
p
      ,6133       ,3761       ,5957      8,6112      7,0000   100,0000
,0000


Model
              coeff        se          t          p         LLCI       ULCI
constant     1,2294     1,0696      1,1494      ,2531      -,8926     3,3515
HPWP          ,5974      ,0948      6,2996      ,0000      ,4092      ,7855
Mas          -,1867      ,1626     -1,1487      ,2534      -,5093      ,1358
Int_1         ,1303      ,1715       ,7599      ,4491      -,2099      ,4705
Q22           ,0067      ,0788       ,0847      ,9326      -,1497      ,1630
Q7           -,0457      ,0760      -,6012      ,5491      -,1966      ,1051
Q21          -,3655      ,1638     -2,2317      ,0279      -,6905     -,0406
Q20           ,2281      ,0919      2,4833      ,0147      ,0459      ,4103


Product terms key:
 Int_1    :         HPWP       x        Mas


Test(s) of highest order unconditional interaction(s):
      R2-chng         F          df1        df2          p
X*W     ,0036       ,5775      1,0000   100,0000       ,4491
----------
    Focal predict: HPWP     (X)
          Mod var: Mas      (W)


Data for visualizing the conditional effect of the focal predictor:
Paste text below into a SPSS syntax window and execute to produce plot.


DATA LIST FREE/
   HPWP        Mas         PartSaf    .
BEGIN DATA.
    -,8104      -,4984      -,3328
     ,0000      -,4984       ,0987
     ,8104      -,4984       ,5303
    -,8104       ,0000      -,4785
     ,0000       ,0000       ,0057
     ,8104       ,0000       ,4898
    -,8104       ,4984      -,6242
     ,0000       ,4984      -,0874
     ,8104       ,4984       ,4494
END DATA.
GRAPH/SCATTERPLOT=
 HPWP     WITH     PartSaf  BY       Mas        .


*************************************************************************
OUTCOME VARIABLE:
 Q19 (team performance)


Model Summary
          R        R-sq        MSE          F         df1        df2
p
      ,6886       ,4742      1,3789      9,8200      9,0000    98,0000
,0000


Model
              coeff        se          t          p         LLCI       ULCI
constant     3,9356     1,6386      2,4018      ,0182      ,6838     7,1874
HPWP          ,0303      ,1710      , 1774      ,8595      -,3091      ,3698
PartSaf      1,0908      ,1551      7,0313      ,0000      ,7830     1,3987
Mas           ,5277      ,2498      2,1127      ,0372      ,0320     1,0234
```

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```
Int_1         -,3710        ,3156     -1,1756        ,2426     -,9974      ,2553
Int_2          ,3636        ,2887      1,2592        ,2109     -,2094      ,9365
Q22            ,0259        ,1206       ,2148        ,8304     -,2134      ,2652
Q7             ,0501        ,1159       ,4319        ,6668     -,1800      ,2801
Q21            ,4199        ,2554      1,6437        ,1034     -,0870      ,9267
Q20            ,1157        ,1442       ,8022        ,4244     -,1705      ,4019


Product terms key:
 Int_1     :       HPWP      x       Mas
 Int_2     :       PartSaf   x       Mas

Test(s) of highest order unconditional interaction(s):
       R2-chng         F        df1        df2          p
X*W      ,0074      1,3820     1,0000     98,0000      ,2426
M*W      ,0085      1,5857     1,0000     98,0000      ,2109
----------
    Focal predict: HPWP    (X)
        Mod var: Mas       (W)


Data for visualizing the conditional effect of the focal predictor:
Paste text below into a SPSS syntax window and execute to produce plot.

DATA LIST FREE/
   HPWP       Mas        Q19          .
BEGIN DATA.
     -,8104     -,4984      6,5540
      ,0000     -,4984      6,7285
      ,8104     -,4984      6,9030
     -,8104      ,0000      6,9669
      ,0000      ,0000      6,9915
      ,8104      ,0000      7,0161
     -,8104      ,4984      7,3798
      ,0000      ,4984      7,2545
      ,8104      ,4984      7,1292
END DATA.
GRAPH/SCATTERPLOT=
 HPWP     WITH    Q19      BY      Mas        .
----------
    Focal predict: PartSaf  (M)
        Mod var: Mas        (W)


Data for visualizing the conditional effect of the focal predictor:
Paste text below into a SPSS syntax window and execute to produce plot.

DATA LIST FREE/
   PartSaf    Mas        Q19          .
BEGIN DATA.
     -,9446     -,4984      5,8692
      ,0000     -,4984      6,7285
      ,9446     -,4984      7,5878
     -,9446      ,0000      5,9611
      ,0000      ,0000      6,9915
      ,9446      ,0000      8,0219
     -,9446      ,4984      6,0529
      ,0000      ,4984      7,2545
      ,9446      ,4984      8,4561
END DATA.
GRAPH/SCATTERPLOT=
 PartSaf  WITH    Q19      BY      Mas        .

****************** DIRECT AND INDIRECT EFFECTS OF X ON Y ******************
```

```
Conditional direct effect(s) of X on Y:
       Mas     Effect        se         t         p       LLCI      ULCI
     -,4984     ,2153     ,2415     ,8915     ,3748    -,2639     ,6945
      ,0000     ,0303     ,1710     ,1774     ,8595    -,3091     ,3698
      ,4984    -,1546     ,2229    -,6935     ,4896    -,5969     ,2878


Conditional indirect effects of X on Y:

INDIRECT EFFECT:
 HPWP        ->     PartSaf      ->     Q19

        Mas     Effect     BootSE   BootLLCI   BootULCI
     -,4984     ,4843     ,1833     ,1857      ,8953
      ,0000     ,6516     ,1482     ,3807      ,9572
      ,4984     ,8425     ,2241     ,3865     1,2653
---


********************** ANALYSIS NOTES AND ERRORS ***********************

Level of confidence for all confidence intervals in output:
  95,0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  5000

W values in conditional tables are the mean and +/- SD from the mean.

NOTE: The following variables were mean centered prior to analysis:
        Mas       HPWP      PartSaf

NOTE: Standardized coefficients not available for models with moderators.

------ END MATRIX -----
```