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## **Improving the life of sports workers: The impact of emotional labor on work engagement and well-being**

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Master in Human Resources Management and Organizational Consultancy

Supervisor:

Doctored Professor Patrícia Lopes Costa, Assistant Professor

IBS, ISCTE-IUL

November 2020





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Department of Human Resources and Organizational Consulting

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## **Acknowledgment**

*" If you don't fail, you're not even trying. Do you have the guts to fail until you succeed?"*

*Denzel Washington*

This was a thought that accompanied me in the last years. This master was a real challenge since before it started. After finishing my sociology degree, I knew I wanted human resources management and consultancy, and I knew this was the specific master I wanted to attend. However, it was not possible, due to economic reasons, to candidate in that year, and I decided to start working to save for this purpose. I learned a lot of new thing, but above all, I worked, I worked really hard and it was worth all the stress! I remember being at work and so anxious about the results of the colocations. When the email arrived, all my coworkers celebrated it me, my parents, and my brother.

This wasn't possible at all without my family, they worked with me, physically and emotionally every step of the way, and I don't think any words will ever express how grateful I am to them, forever. I want to really say their names: I thank my dad, Luis Tavares, for all of his work and all the help and sacrifice, my mum, Florinda Pereira, for being tireless all days and nights I thought I couldn't handle many challenges, and my brother, Luis Tavares, for always making me laugh and teach me how to handle life with humor! Thank you!

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This paper is the result of many years, work, tears, laughs, friendships, insomnia, hypersomnia (of course!), sacrifice... And even with all of these, here we are, after all the challenges I thought I would never overtake.

Now, let more challenges arise. Now I know I have the guts!

Thank you all!

## **Resumo**

Com o presente estudo, pretendeu-se entender o impacto do trabalho emocional no bem-estar e no engajamento com o trabalho por parte dos trabalhadores. Não obstante, diferentes tipos de trabalho emocional têm diferentes impactos nas variáveis em questão. Além disso, foi analisada a necessidade de recuperação como mediadora destas relações. Depois desta análise, procurou-se igualmente compreender o impacto do humor como moderador entre o trabalho emocional e a necessidade de recuperação, assim como o das experiências de recuperação entre a necessidade de recuperação, o bem estar e o work engagement. Em vários ginásios públicos, foram recolhidos 33 questionários, que foram divididos em dois momentos diferentes, no fim do dia de trabalho, e ao início do dia posterior. Contudo, quando mediada pela necessidade de recuperação, o uso da supressão não apresenta apenas uma influencia negativa no bem estar, mas também no engajamento com o trabalho. Posteriormente, apenas a consonancia emocional mostrou ter uma influencia significative no engajamento com o trabalho, sendo esta positiva. Em conclusão, apenas a supressão parece ter um impacto significativo no bem-estar e no engajamento, mesmo que seja através da necessidade de recuperação. Por fim, a consonancia emocional tem uma relação positiva com o engajamento. Os papéis de moderação do humor entre colegas e das experiências de recuperação não foi corroborado.

**Palavras-chave:** Trabalho emocional, recuperação, humor entre colegas, engajamento com o trabalho, bem-estar, ginásios



## **Abstract**

With the present study, we intend to understand the impact of emotional labor in the well-being and work engagement of employees. Nevertheless, different types of emotional labor have different impacts in these variables. Moreover, it was analyzed the need for recovery as a mediator of this relations. After this review, it was also researched the impact of humor as a moderator between emotional labor in need for recovery, as well of recovery experiences between need for recovery, well-being and work engagement. In various public gymnasiums, there were collected 33 questionnaires, that were divided in two different moments, at the end of the workday, and at the beginning of the day after that. Results have supported a correlation of suppression with need and with impaired-well-being. However, when mediated by need for recovery, suppression does not only show to influence negatively well-being, but also work engagement. Furthermore, only emotional consonance appeared to have a significant influence on work engagement, being it positive. In conclusion, only suppression appears to have a significant impact in well-being and work engagement, even though need for recovery. Besides that, emotional consonance relates positively with work engagement. The moderation role of coworker humor and recovery experiences were not supported.

**Keywords:** Emotional labor, recovery, coworker humor, work engagement, well-being, gymnasiums

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## Introduction

The requirement to display organizationally desired emotional expressions and hiding others is a key demand for employees who work with people (Hochschild, 1983). However, to control one's expressions can be taxing for the workers, and it requires attention. Here enters the concept of emotional labor, Arlie Hochschild (1983: p. 328), defined emotional labor as the "management of feeling to create a publicly observable facial and bodily display". In this paper, it's intended to study some of the consequences of this labor in individuals. However, emotional labor divides into different ramifications that should be distinguished: deep acting, surface acting, emotional consonance and suppression. Hochschild (1983), originally defined deep acting as when an individual try to summon the emotions they want to portray when interacting with others and surface acting when people do not actually try to feel the emotions they want to portray. Emotional consonance appears as a more effortless way of emotional labor, as it is discussed by Ashforth and Humphrey (1993), it is the natural and spontaneous comply with social expectations and organizational display rules such that they do not have to deliberately summon the correct emotions. Finally, suppression appears in literature when an employee is required to hide emotions in order to be effective on the job (Näring et al., 2007). This management of one's feelings requires energy expenditure and is cognitively taxing, resulting into fatigue at work. This happens when the individual feels a resource depletion and is negatively influenced by it. When individuals feel this resource repletion, they need to recover from this state, entering the concept of need for recovery, that refers to the extent that the work task induces a need to recuperate from work induced effort. One of the consequences we seek in this study is need for recovery, and how emotional labor, in its various forms, can relate to it.

Besides that, and if emotional labor seems to have an influence on need for recovery, it shows as crucial to understand how it can also influence well-being and work engagement, since these are two of the main characteristics we observe on employees.

The well-being concept, even having a large range of definitions, will be treated in this study in a more general way. Diener (1984) defines well-being, as "good mental states, including all the various evaluations, positive and negative, that people make of their lives, and the affective reaction of people to their experiences". Knowing this and considering the impact that emotional labor has in resource depletion, it can lead to need

for recovery and harm the capacity to recover, neglecting the well-being that these activities can provide. Therefore, one of the purposes of this study is to understand emotional labor can influence well-being, directly or indirectly, mediated by the concept of need for recovery.

On the other side, work engagement, characterized by a high level of energy and strong identification with one's work (Schaufeli & Bakker, 2003), can depend on this variables too. If the individual experiences a certain level of need for recovery resultant from emotional labor, this will in its turn, influence how the employee feel about and at work. The higher the level of need for recovery, the higher the worker will need to take some distance from work. If this distance is not satisfied, it can end up to hinder work engagement. This relation will also be scrutinized since emotional labor is demanded in some way in all organizations that do customer service, being fundamental to understand the extent of its consequences in employees.

Finally, it's important that we do not lose our hope and search for ways that can attenuate this relations and consequences. Cooper (2005, p. 766) defines humor as "any event shared by an agent with another individual that is intended to be amusing to the target and that the target perceives as an intentional act". This is an important concept in this analysis, since humor events seem to generate positive affect in the employees, and better cohesion. In this case, it works as a coping mechanism, helping with stress management. In other words, humor can attenuate the relation between emotional labor and need for recovery at the end of the day and, because of it, this moderation role must be investigated. Moreover, recovery experiences appear as helpful for employees to recover from the stress they had accumulated at the end of the workday. This resource recharge, in a way, can impact the relation between need for recovery at the end of the day and well-being, as well as work engagement.

To conclude, when facing stressful work conditions, recovery would be particularly important. Probably only under very specific circumstances do people engage in effective recovery activities when facing a high degree of stressors, for instance, when they have developed routines of using physical exercise as a stress-management tool (cf. Nägel et al., 2015). And that is the reason it has been chosen to study gymnasiums, making it a sample where all the criteria of daily exercise and customer service is satisfied.

## **Chapter I - Theoretical framework**

### **1. Emotional Labor: At the stage**

Hochschild (1993) argued that organizations commercialize employees' feelings by requiring them to display emotions as part of their job duties (Humphrey, Ashforth and Diefendorff, 2015). In other words, depending on the type of job, there are different "display rules" that are required from employees. Airlines want attendants to smile and act friendly, hospitals want nurses to show concern and compassion, and funeral homes want employees to act somber and sympathetic (Humphrey et al., 2015). First, the term "feeling rules" was used to describe these organizational norms and argued that they were attempts to control employees' inner lives, or thoughts and feelings that are normally private and personal. However, organizations cannot directly regulate unobservable inner emotional states, only outward displays of emotions and, this way, various scholars agreed with the term "display rules" (Humphrey et al., 2015). Both of these terms are correct, but they represent different concerns from the organizations. When display rules are required, employees are asked to control outward appearances, what brings us to "emotional labor". Arlie Hochschild (1983: p. 328), defined emotional labor as the "management of feeling to create a publicly observable facial and bodily display". However, to display a certain emotion, one can still maintain his emotions, which emphasize the regulation of behavior as opposed to feelings. This way, Ashforth and Humphrey (1993) defined emotional labor as "the act of displaying the appropriate emotion (i.e., conforming with a display rule)" (Humphrey et al., 2015, p. 751). Despite the general agreement with this definition, Grandey (2000), argues that there are at least three possible perspectives to look at emotional labor: as surface and deep acting, as expressed emotion and as workplace requirements (Grandey, 2000). The latest perspective is presented by Morris and Feldman (1996), that define emotional labor as the effort, planning, and control needed to express organizationally desired emotion during interpersonal transactions. This framework argued that emotional labor can be understood as having four dimensions: Frequency of emotional display (how many types emotional labor is used), attentiveness to display rules (including both the duration and intensity of expressed emotions), variety of emotions (how many different emotions were expressed), and emotional dissonance (when the expression does not match the felt emotion) (Cropanzano, Weiss & Elias, 2003).

Considering we intend to study emotional labor in employees, we will, then, have to approach not only a behavioral perspective, but take into account more psychological processes. This way, we will base our analysis in four processes of emotional labor: deep acting, surface acting, emotional consonance and suppression.

*a) Deep Acting and Surface Acting*

Hochschild (1983), originally described two methods of performing emotional labor: Surface acting and deep acting. Surface acting happens when people do not actually try to feel the emotions they want to portray. Instead, they put on fake smiles or other emotional displays that do not reflect their true feelings. On the other way, when people try deep acting, they try to summon the emotions they want to portray when interacting with others. Thus, they try to feel and experience the actual emotions, and they purposely engage in thoughts and activities that help foster those emotions. There are two methods for deep acting: exhorting feelings and trained imagination (recalling past events where one experienced the emotion one wants to portray). Moreover, employees may engage in various behaviors to stimulate the desired emotions (Humphrey et al., 2015). An example of this behaviors can be the use of humor, that will be discussed forward in this paper. Grandey (2000) argued that deep acting is an antecedent- focused strategy because it concerns the inner transformation of one's emotion in order to match the required expression. In contrast, surface acting is a response-focused strategy because it does not involve the transformation of the inner emotional state and results in an inauthentic expression.

*b) Genuine expression of emotion*

A third way of emotional labor is discussed by Ashforth and Humphrey (1993), the spontaneous and genuine emotional labor. This form of emotional labor happens when employees natural and spontaneous emotions comply with social expectations and organizational display rules such that they do not have to deliberately summon the correct emotions (Humphrey et al., 2015). For example, when the individual sells products he genuinely believes in.

Emotional dissonance is another key concept in emotional labor theory that refers to the tension that results from displaying emotions that are inconsistent with one's actual feelings (Cropanzano et al., 2003). There are two emotional dissonance

conceptualizations in the literature as follows: (1) when feelings do not match displays, called emotion-display dissonance or fake emotional display (i.e., surface acting); and (2) when feelings do not match display requirements, called emotion-rule dissonance, that is, when the emotion felt is not the same that the organization asks you to display (i.e. express sympathy and hide anger, disgust, or resentment in order to maintain positive care relations and to comply with professional standards) (Humphrey et al., 2015).

### *c) Suppression*

Another concept we will consider is “suppression”: when an employee is required to hide emotions in order to be effective on the job (e.g. “hiding your anger about something someone has done”) (Näring, Briët & Brouwers, 2007).

This management of one’s feelings and displays of emotions is requires an energy expenditure from employees, what can be translated into fatigue at work. Xanthopoulou et al. (2018), refers how the engaging in surface acting on a daily basis can result in an accumulation of problems that can lead to exhaustion of employees' resources in the short run and, consequently, disturb the recovery process. On the other side, engaging in deep acting may allow reserving and even gaining resources at work that may facilitate recovery after work (p. 2).

## **2. Need for Recovery: An Inevitable Stop**

Meijman and Schaufeli (1996) described fatigue at work as the change in the psychophysiological control mechanism that regulates task behavior, resulting from preceding mental and/or physical efforts which have become burdensome to such an extent that the individual is no longer able to adequately meet the demands that the job requires on his or her mental functioning; or that the individual is able to meet these demands only at the cost of increased mental effort and coping with increased task resistance (Van Veldhoven & Broersen, 2003). Fatigue at work can be translated in its turn into the “need for recovery”. This concept emerged from the effort-recuperation model by Meijman and colleagues (2016), that argues that work produces costs in terms of effort during the working day. Effort results in an array of emotional, cognitive, and behavioral symptoms, that are reversed when the effort stops (i.e. when employees engage into surface acting, this effort will be taxing and can lead to an authenticity feeling, thoughts of turn-over or even the actual expression of aggressive behaviors, however, this



consequences are not felt instantly but only when the individual returns to a state where he is not in use of emotional labor). This is what constitutes short term fatigue at work. The symptom reversal takes a certain time span, usually within the same working day and/or the following night. With enough time and possibilities to recover (within the work task and after work is finished) a worker will arrive at the next working day with no residual symptoms of previous effort. Within this normal recuperation cycle the concept of need for recovery refers to the extent that the work task induces a need to recuperate from work induced effort. This need for recovery can be observed especially during the last hours of work and immediately after work. It is characterized by temporary feelings of overload, irritability, social withdrawal, lack of energy for new effort, and reduced performance (Van Veldhoven & Broersen, 2003). Considering this, we believe that the use of emotional labor during one's workday, will impact the extent in which s/he needs to recover.

**H1: The use of emotional labor during the day will be related with the need for recovery at the end of the day.**

a) The use of emotional consonance during the day will be negatively related with the need for recovery at the end of the day.

b) The use of deep acting during the day will be positively related with the need for recovery at the end of the day.

c) The use of suppression during the day will be positively related with the need for recovery at the end of the day.

d) The use of surface acting during the day will be positively related with the need for recovery at the end of the day.

Considering this, how can emotional labor influence other aspects of the employees' life?

### **3. The Consequences of Emotional Labor**

#### ***a) Well-being***

Considering that the emotional labor can affect the fatigue at work, we can also infer that this taxing activity will also impact the well-being of the employees. Although there are different types of well-being, we will guide our research by more general concepts. Ryan and Deci (2001), argue that well-being refers to optimal psychological functioning and experience. It is the focus not only of everyday interpersonal inquires

(e.g. “How are you?”) but also of intense scientific scrutiny (Ryan & Deci, 2016). However, Guest (2017) provide more perspectives of this concept. The World Health Organization defines well-being as ‘a state of complete physical, mental and social well-being, not merely absence of disease or infirmity’ (WHO, 1946). On the other hand, Diener (1984) brings a definition of subjective well-being, as “good mental states, including all the various evaluations, positive and negative, that people make of their lives, and the affective reaction of people to their experiences” (Guest, 2017, p.26). Knowing this, we suggest that not only emotional labor per se impacts well-being, there are different impacts depending on the type of emotional labor. In this case, surface acting appears to be more harmful, in the extent that it’s the one that requires a more acting role. There are two major explanations why this kind of emotional dissonance can reduce well-being (Xanthopoulou et al., 2018). Brotheridge & Grandey (2002) argue that deep acting can be less damaging than surface acting because it minimizes the psychological costs that relate to the discrepancy between the felt and the expressed emotion thus, preventing impairments in employee well-being. First, expressing emotions one does not feel creates a sense of inauthenticity. People do not like faking emotions, which can feel like lying. Moreover, Hochschild’s (1983) argued that frequently faking emotions lead to feelings of depersonalization and alienation from one’s job. Second, faking is cognitively taxing because it requires additional monitoring. Surface acting requires more monitoring than deep acting because employees have to continuously monitor their behaviors throughout their interactions with others (Humphrey et al., 2015). There is also studies that suggest a correlation between suppression and emotional exhaustion (Gross & Levenson, 1997).

However, deep acting shown not only to be less detrimental, but to have some positive results because it prevents the discrepancy between the felt and expressed emotion, it elicits positive emotions and it facilitates the interaction with the other individuals. In other words, it will be less taxing because it implies less discrepancy and will be rewarding because it will lead to favorable responses, making the individual feel good about the job he is performing and himself.

Considering this, we suggest that emotional labor will impact well-being among employees, being the surface acting and suppression the more harmful of all, because it implies emotional dissonance.

**H2: The use of emotional labor related with the perception of well-being on the next morning.**

a) The use of emotional consonance is positively related with the perception of well-being on the next morning.

b) The use of deep acting correlates negatively with perception of well-being on the next morning.

c) The use of suppression correlates negatively with perception of well-being on the next morning.

d) The use of surface acting correlates negatively with perception of well-being on the next morning.

**b) Work Engagement**

Shaufelli, Salanova, Bakker & Romá (2001, p. 74), defined work engagement as “a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption”. Rather than a momentary and specific state, engagement refers to a more persistent and pervasive affective-cognitive state that is not focused on any particular object, event, individual, or behavior. Vigor is characterized by high levels of energy and mental resilience while working, the willingness to invest effort in one’s work, and persistence even in the face of difficulties. Dedication refers to being strongly involved in one’s work and experiencing a sense of significance, enthusiasm, inspiration, pride, and challenge. Absorption, is characterized by being fully concentrated and happily engrossed in one’s work, whereby time passes quickly, and one has difficulties with detaching oneself from work” (Schaufeli et al., 2001). In other words, work engagement is characterized by a high level of energy and strong identification with one’s work (Schaufeli & Bakker, 2003).

When employees feel engaged with their work, they will have more initiative. Considering this, the premise that clients are more likely to do business with an organization when the affective bonds of liking, trust, and respect have been established through employee behavior. Consequently, the more often a work role requires socially appropriate emotional displays, the greater the organization’s demands for regulated displays of emotion will be. However, if an employee feels engaged with his work, this displays can also be seen as any other demand and the pursuit for a good performance or results must be equally present (Andrew Morris & Feldman, 1996). In other words, the

individual is more likely to resort to emotional consonance, as he feels genuinely identified with his work.

**H3: The use of emotional labor is related with work engagement.**

- a) The use of emotional consonance is positively related with work engagement.
- b) The use of deep acting correlates negatively with work engagement.
- c) The use of suppression correlates negatively with work engagement.
- d) The use of surface acting correlates negatively with work engagement.

Nevertheless, emotional labor can influence well-being and work engagement, not only in a direct way, but also mediated by need for recovery.

**c) *Mediating Role***

Taking into account that work engagement translates a high level of energy, what impact can have the fatigue at the end of the day? We believe that emotional labor will influence work engagement, considering that it requires an extra expenditure of energy that will lead to an increased need for recovery at the end of the day.

However, to promote work engagement among employees, it is important to take into account the demands one is experiencing. In an organization that requires high levels of emotional labor, that can be resource-depleting, need for recovery is an inevitable consequence. Xanthopoulou et al. (2018), argued that these processes extent to the time after work and will impact the recovery process. Need for recovery will, then, have influence in being fed up with work and the need to take a distance from it. If this distance is not satisfied, however, it can lead to an accumulation of fatigue that will impact negatively work engagement.

We cannot forget, besides that, that emotional consonance has been theorized to be a positive way of emotional labor so, in this hypothesis, we open this exception and believe that in this case, the relation will be positive.

**H4: The use of emotional labor during the day will impact work engagement through the need for recovery.**

- a) The use of emotional consonance during the day will impact work engagement positively through the need for recovery.
- b) The use of deep acting during the day will impact work engagement negatively through the need for recovery.

c) The use of suppression during the day will impact work engagement negatively through the need for recovery.

d) The use of surface acting during the day will impact work engagement negatively through the need for recovery.

In a deeper analysis, resource depletion at work will result in a greater need for recovery, and this will make re recovery process harder because employees have limited resources to use in other activities that increase recovery. This is line with the Demand-Induced Strain Compensation model which states that well-being is improved when recovery experiences correspond to the type of demands that employees face at work (Jonge et al., 2012). If, in this case, emotional labor can lead to resource depletion, that will lead to need for recovery and harm the capacity to recover, then the well-being obtained through these activities will be neglected.

**H5: The use of emotional labor during the day will impact well-being through the need for recovery.**

a) The use of emotional consonance during the day will impact well-being positively through the need for recovery.

b) The use of deep acting during the day will impact well-being negatively through the need for recovery.

c) The use of suppression during the day will impact well-being negatively through the need for recovery.

d) The use of surface acting during the day will impact well-being negatively through the need for recovery.

However, there are ways of attenuating this impacts and processes that individuals can resort to deal with these emotions.

#### **4. Moderating relationships: the impact of humor among colleagues and recovery experiences**

Regardless of the relationship among these variables, we should consider, as well, the experiences that can affect these relationships. First, what can employees do during their workday to relieve strains and preserve resources, minoring the need for recovery at the end of the day? Second, which experiences, afterwork, can mostly affect the perception of well-being and work engagement on the next morning?

Accordingly, to the Conservation of Resources (COR) Theory, individuals strive to obtain, retain, and protect that termed resources which they value. Despite the ones that can depend on the person, the theory focusses on what we can call primary, shared resources, and these are the resources that tend to hold wide acceptance as being important to people. Hobfoll & Wells (1998), categorize them on four groups: objects, conditions, personal characteristics and energies. Among these, some are valued for themselves (as health) and some are valued as a mean to an end (health insurance).

Psychological stress appears in COR theory when any of these resources are lost or threatened and the expectation of resource gain in turn arise. Stress conditions lead to an immediate loss of these resources. Therefore, to recover from stress, other resources are put into service. Sometimes the same resource is used to preserve itself (e.g., individuals may call on social support to help preserve threat to their social ties) (Hobfoll & Wells, 1998).

#### *a) Coworker Humor*

Hobfoll (1989), not only predicts that individuals are concerned with preventing resource loss, but also that those with greater resources (e.g., social support) are less vulnerable to resource loss. Peers are probably the most beneficial source of psychological support, particularly those that share a stressful environment (Beehr, 1976 in Neves & Cunha, 2009). Accordingly with Neves & Cunha (2009), coworker humor might be a particularly relevant source of social support for three reasons: first, crossover effects also happen for positive experiences or states that in its place, makes individuals better equipped to deal with negative events; second, it induces spirals of positivity, and lastly, it can help employees to focus on more positive affairs and less in the negative ones. Moreover, humor can promote bonding between individuals, and this will reduce work tension.

Humor can help initiate and perpetuate a cycle of individual and social-level positive affect. Cooper (2005, p. 766) defines humor as “any event shared by an agent with another individual that is intended to be amusing to the target and that the target perceives as an intentional act” (Robert & Wilbanks, 2012). Further in time, Romero and Cruthirds (2006, p. 59) suggest that “humor consists of amusing communications that produce positive emotions and cognitions in the individual, group, or organization”.

Among the different functions that humor has, researchers have noted some such as coping, stress-relief, a defense mechanism, bonding and cohesiveness, ingratiation, power, control or aggression and the subversion of power (Robert & Wilbanks, 2012). For this paper, we will adopt the Incongruity theory, that we will discuss below.

It is important to have into consideration that the individual creates a humor event to an audience and creates a positive affect can be transmitted through emotional contagion processes (Robert & Wilbanks, 2012). Hatfield, Cacioppo, and Rapson (1994, p. 5) define this primitive emotional contagion as “*the tendency to automatically mimic and synchronize facial expressions, vocalizations, postures, and movements with those of another person's and, consequently, to converge emotionally*”. This way, we should keep in mind that humor is a particularly intense event that can be easily mimicked and identified by others (Neves & Cunha, 2009).

Moreover, incongruity theory helps us understand how humor can bring pleasure. Incongruity theory has been built throughout the years by several authors. This theory posits that incongruity arises from conflicts between cognitive representations of expectation systems that we hold as a result of our accumulated experiences (Davis, 1993 in Robert & Williams, 2012)). “Stand-alone jokes, for example, simultaneously evoke two seemingly unrelated expectation systems. The incongruity is resolved by the ‘punch line,’ which bridges the two expectation systems to resolve the incongruity. We experience pleasure if the sudden resolution involves an unexpected connection” (Robert & Wilbanks, 2012: 1073).

In other words, humor events can generate positive affects and, consequently, this can be transmitted to others through the emotional contagion. Robert and Wilbanks (2012) provide a brief explanation of how these events are processed in their model of the wheel of humor. First, one creates a positive humor event, what leads to a positive affect that will be displayed. This display will be mimicked by others and through emotional contagion, it will draw to a group positive affect. All these phases will allow a creation of a humor supportive environment, that will encourage more humor events which, in turn, will lead to more positive affect and so on. This is crucial to understand how coworker humor is important.

Although the literature describes 4 types of humor (2 positive – self-enhancing and affiliative - and 2 negative – self-defeating and aggressive), we decided to treat humor in a more general way and focus in humor in its positive manners. This way, studies provide us the information that humor provides self-enhancement through cognitive shift in our perspective to regulate our emotions and cope with adversities (Zeigler-Hill & Besses, 2011 in Bhattacharyya, Jena and Pradhan, 2019). In other words, humor through the workday can help employees cope, what can help with their management of stress and consequently influence their need for recovery in the end of the day.

**H6:** Coworker humor through the day attenuates the impact of emotional labor on the need for recovery at the end of the day

a) Coworker humor through the day attenuates the impact of deep acting on the need for recovery at the end of the day

b) Coworker humor through the day attenuates the impact of suppression on the need for recovery at the end of the day

c) Coworker humor through the day attenuates the impact of surface acting on the need for recovery at the end of the day

Then, depending on the need for recovery on the end of the day, we must indeed look for recovery experiences. As COR theory posits; we must recover to restore threatened resources and reduce stress. This reduction of stress, will impact well-being.

### ***b) Recovery Experiences***

Recovery appears as the process of psychological unwinding that counteracts the strain process triggered by job demands and other stressors (Sabine Sonnentag & Geurts, 2009). In a more simple way, Craig and Cooper (1992) define recovery as the unwinding and restoration processes during which a person's strain level that has increased as a reaction to a stressor or any other demand returns to its prestressor level (in Sonnentag, Venz and Casper, 2017). As coworker humor, recovery appears to help employees preserve their resources through experiences out of work. Resources can be restored through time afterwork, but the effectiveness of this activities depend on their type.

However, when examining recovery as a process, researchers look at both activities (i.e., What are people doing during a nonwork time period?) and experiences (i.e., What psychological state are people in during a nonwork time period?). Of course, activities



and experiences are not fully independent: The type of activities a person engages in makes specific experiences more likely. For instance, spending time on an absorbing hobby (activity) might help to psychologically detach from paid work (experience) (Sonnentag et al., 2017).

Recovery activities refer to the type of activities we do and what they relate too. More specifically, there are two types of activities: (1) high-duty, when they are related to work and activities related with household and childcare and (2) low-duty, that are the ones that allow recovery such as social activities, physical exercise, watching TV, reading a novel (Sonnentag et al., 2017).

On the other hand, recovery experiences refer to what we experience in the time we are in those activities. In this way, there is four types of recovery experiences: psychological detachment from work, relaxation, mastery, and control (Sonnentag and Fritz, 2007).

Psychological detachment implies not to be occupied by work-related duties such as receiving job-related phone calls at home or actively engaging in job-related activities but it also implies to be mentally detached from it (Sabine Sonnentag & Fritz, 2007). One's must be able to forget about this kind of duties and the mental strain that is attached to them. Relaxation, on the other hand, is a process associated with leisure activities. This kind of experience is characterized by the relaxation of the body and the mind through activities like meditation, taking a walk, listening to music, watching TV (Sabine Sonnentag & Fritz, 2007). Tinsley and Eldredge (1995) report that many individuals experience relaxation with activities that require little effort (physical and intellectual) from them. Mastery experiences refer to a state where the individual detach from work because he is being challenged by activities in other domains. These experiences allow the person to feel competent and proficient. Some examples are learning a new language, apply for a workshop and master new skills. This experiences challenge the individual without overtaxing his or her capabilities (Sabine Sonnentag & Fritz, 2007). Lastly, the control experience is characterized by a person's ability to choose an action from two or more options. It is the degree of to which a person can decide which activity to pursue during leisure time, as well as when and how to pursue this activity (Sabine Sonnentag & Fritz, 2007).

Sonnentag (2001), shows that time on social, physical and low-effort activities was related to an increase well-being. However, this specific sample, already spent the day in physical activities, making it important to verify if there are differences in the kind of recovery experiences that lead to well-being.

Studies report that individuals that experience psychological detachment from work, when they leave, experience better mood. This is important because positive emotions can undo the effects of negative emotions that can be present after a workday (Sonnentag & Fritz, 2007). This can lead to better sleep and consequently great well-being in the next day. On the other hand, relaxation experiences shown to be helpful in reducing the negative affect resulting from job stress. Studies suggests that experiencing relaxation help in reducing stress-related complaints (Klink et al., 2001). Mastery experiences can, as well improve positive mood, for example, exercising, is related to an improvement in general mood (Rook & Zijlstra, 2006). Lastly, experiencing personal control seems to be associated with positive affects, this is, such experience can lead to a reevaluation of potentially stressful events, helping the individual reduce distress and increase his well-being (Sonnentag & Fritz, 2007).

In other words, recovery experiences help employees recover from work related stress and resource depletion, this way, all four of them must attenuate the impact of need for recovery on well-being.

**H7: Recovery experiences attenuate the impact of need for recovery in well-being.**

- a) Psychological detachment experiences attenuate the impact of need for recovery in well-being.
- b) Relaxation experiences attenuate the impact of need for recovery in well-being.
- c) Mastery experiences attenuate the impact of need for recovery in well-being.
- d) Control experiences attenuate the impact of need for recovery in well-being.

Sabine Sonnentag (2003), showed that the level of experienced work engagement is positively associated with the extent to which employees recovered from the strain experiences of their previous working day. This open a door for the moderation by recovery experiences for work engagement. Previous studies have shown that feeling recovered in the morning is crucial in the experiences and behaviors that will take place in that day. In this case, it is positively related with work engagement. This is corroborated by a study conducted by Tuisku, Virtanen, de Bloom, and Kinnunen (2016 in Sonnentag

et al., 2017) in which employees that pursuit cultural leisure activities present a higher level of work engagement.

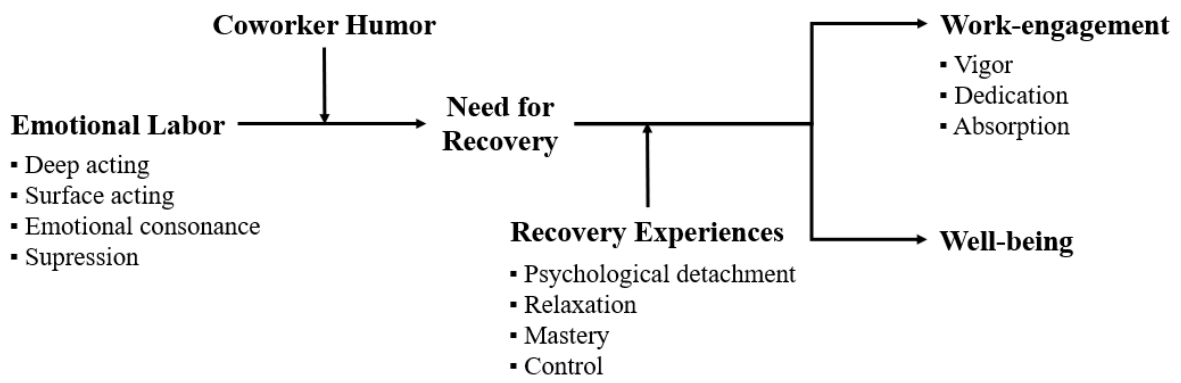
In another study, Schaufeli & Bakker (2003), showed that employees with higher work engagement are active agents at work, take initiative and generate their own positive feedback. Moreover, as highlighted before, this kind of employees values match the organization ones and use to pursuit other activities out of schedule. This will equip the individual with the resources needed to deal with possible strain situations or symptoms that can interfere with work. Such a state of being recovered enables employees to become fully immersed in their work and to fully concentrate on it. In line with a resource-based view of work engagement and work behavior (Sonnentag et al., 2012).

That is, being recovered is related with the availability of energetic and affective resources that, in turn, facilitate work engagement, making recovery experiences important moderators.

**H8: Recovery experiences attenuate the impact of need for recovery in work engagement.**

- a) Psychological detachment experiences attenuate the impact of need for recovery in work engagement.
- b) Relaxation experiences attenuate the impact of need for recovery in work engagement.
- c) Mastery experiences attenuate the impact of need for recovery in work engagement.
- d) Control experiences attenuate the impact of need for recovery in work engagement.

To sum up, we can proceed to a graphic presentation of the research model, facilitating the understanding of the relations there are going to be analyzed in this paper.



*Figure 1 - Research model*



## Chapter II - Method

Being this a correlational study, what we intended was to find the correlations between the explained variables. Furthermore, because it is a quantitative study, we decided for the use of questionnaire surveys.

### 1. Sample and procedure

The criteria for our sample are sports workers that are employed in gym chains. This way, emails were sent to several gyms to ask for their participation, as well as phone calls for the ones that we were not able to contact in the first try. After this, we questioned their availability to inform their employees about the study, because the collaboration of the workers in question would be increased by questioning them inside the facilities. After the contact was made, the surveys were presential, first, to have a greater control over the environment in which it was filled and, consequently, obtain more reliable results; and second, because the variable of the blood pressure must be measured at the time by the inquirer. Besides that, it was important to access the schedules of the workers, because the study imply that the individuals are inquired at the end of their workday and at the beginning of the next one, before they start working. We had 33 participants, making a total of 66 questionnaires filled. The participants have between 21 and 38 years old, but 78,8% are less than 30. Moreover, 78,8% of them are single, being 20 man and 13 women. Most of them are in the job for less than 6 years as fitness instructors or personal trainers. Other important data is that 75,6% of them have an irregular schedule and 60,6% did the bachelor in sport sciences.

### 2. *General questionnaire*

The variables analyzed at the end of day 1 were emotional labor, coworker humor, and need for recovery. At the beginning of day 2, we evaluated work engagement, well-being, and the recovery experiences. We must have in mind that, because we needed more accurate answers about the recovery experiences at the end of day 1, we decided to inquire the individuals in the morning after (in day 2). The blood pressure, being more objective, was measured in this two moments, with the intention of having some idea about the well-being/level of stress of the respondent in each moment. Moreover, sociodemographic questions were made to categorize the respondents a priori.

We also needed to translate some of the items to portuguese, given the area of application. For this, we used the method of translation- back translation (Hill & Hill, 2002), making sure the meaning was not lost in the process.

### **3. Measures**

#### *Emotional Labor*

First, to evaluate this variable, we decided for the Dutch Questionnaire of Emotional Labor (Näring et al., 2007). This questionnaire was decided to be the best because it evaluates the four types of emotional labor and it was convertible to the context we wanted to analyze. Furthermore, we also applied this questionnaire two times for each individual, the first time only concerning to what is done between colleagues, the second one concerning the interaction with clients. All four types of emotional labor were evaluated in day 1.

In this way surface acting was evaluated by 5 items (e.g. “I put on a “mask” in order to express the right emotions for my job”), deep acting by 5 items (e.g. I work hard to feel the emotions that I need to show to others”), emotional consonance by 2 items (e.g. I react to patients’ emotions naturally and easily”) and suppression by 3 items (e.g. I hide my anger about something someone has done”). Responses were given on a 5-point rating scale ranging from 1 (*never*) to 5 (*always*).

For emotional labor with colleagues the Cronbach’s alpha was 0,84. More specifically, 0,73 for emotional consonance, 0,70 for deep acting, 0,68 for suppression and 0,73 for surface acting.

For emotional labor with clients, the Cronbach’s alpha was 0,87. More specifically, 0,680 for emotional consonance, 0,77 for deep acting, 0,80 for suppression and 0,75 for surface acting.

#### *Coworker Humor*

To measure this variable, we used an adaptation of Avolio, Howell and Sosik (1999) questionnaire (made by Neves & Cunha, 2009) in day 1. Like it was explained before, we decided to focus only in the positive forms of humor, and that way, each individual evaluated his coworkers counting on this positive affect. Sample items included “My

coworkers use a funny story to turn an argument in their favor” and “My coworkers use humor in their daily life”. Responses were given on a 5-point rating scale ranging from 1 (*totally disagree*) to 5 (*totally agree*). Cronbach’s alpha was 0,76.

#### *Need for recovery*

For this variable, in day 1, we used the Need for Recovery scale developed by Veldhoven and Broersen (2003), being the only one fully developed until nowadays. Examples of items were “I find it difficult to relax at the end of a working day” and “When I get home from work, I need to be left in peace for a while”. Responses were given on a 4-point rating scale ranging from 1 (*never*) to 4 (*always*). Cronbach’s alpha was 0,77.

#### *Recovery Experiences*

To access the recovery experiences by the individuals at the end of day 1, we applied the Recovery Experience Questionnaire developed by Sonnentag and Fritz (2007) in the morning of day 2, that access the four types of experiences. Responses were given on a 5-point rating scale ranging from 1 (*totally disagree*) to 5 (*totally agree*). Cronbach’s alpha was 0,75.

Each one of this four types of experiences were evaluated by 4 items. Psychological detachment included items like “I forget about work” (Cronbach’s alpha was 0,80); relaxation items were more like “I do relaxing things” (Cronbach’s alpha was 0,74); an example of mastery was “I seek out intellectual challenges” (Cronbach’s alpha was 0,82) and control was evaluated by items like “I decide my own schedule” (Cronbach’s alpha was 0,598). This last Cronbach’s alpha value is not ideal, but because it’s very close to 0,6, we will proceed to the analysis.

#### *Work Engagement*

To measure work engagement we used the Utrecht Work Engagement Scale (UWES) developed by Schaufeli and Bakker (2003) in the morning of day 2. This scale evaluates the three components of work engagement and has the option of a larger or shorter questionnaire. As we believed it would facilitate the collaboration of the workers and taking into account this questionnaire would take place before work started, we decided for the shorter version. Responses were given on a 6-point rating scale ranging from 1 (*never*) to 6 (*always*). Cronbach’s alpha was 0,86.



More specifically, the 9 items were divided by vigor, dedication and absorption, having 3 items to evaluate each component. Vigor concerned items like “At my work, I feel bursting with energy” (Cronbach’s alpha was 0,82); dedication included items like “I am enthusiastic about my job” (Cronbach’s alpha was 0,75) and absorption presented items like “I get carried away when I’m working” (Cronbach’s alpha was 0,65).

### *Well-being*

As we refer, it was important to keep the questionnaire short and for this variable we keep that in mind too. To analyze well-being, we choose the shorter version of the Copenhagen Psychological Questionnaire (Kristensen & Borg, 2003), applied at the morning of day 2, and selected the items that referred to a more personal and subjective experience of well-being. The items selected were referring to how often ones felt in the last week and included items like “physically exhausted” and “anxious”. Responses were given on a 5-point rating scale ranging from 1 (*never*) to 5 (*always*). Cronbach’s alpha was 0,76. Because greater values represent lower well-being, instead of changing the scale, we decided to treat this variable as impaired well-being in the analysis of the results.

### *Blood pressure*

This variable was measured with a wrist blood pressure monitor at the end of each questionnaire (from day 1 and from day 2). This way, the individuals had some time to return to a state of relaxation and we could have more accurate values. All the respondents were between 20 and 40 years old, therefore we adopted the scale of values standard in adults, since the WHO defines an adult as a person older than 19 years old.

Normal adult blood pressure is defined as a blood pressure of 120 mm Hg when the heart beats (systolic) and a blood pressure of 80 mm Hg when the heart relaxes (diastolic). When systolic blood pressure is equal to or above 140 mm Hg and/or a diastolic blood pressure equal to or above 90 mm Hg the blood pressure is considered to be raised or high. When these values are lower than 90 mm Hg (systolic) and 60 mm Hg (diastolic), the person is considered to be hypotensive. Summing up, we considered the normal values for systolic pressure to be between 90 and 140 mm Hg and for diastolic pressure to be between 60 and 90 mm Hg.

In relation to the values of a normal resting heart rate, it ranges from 60 to 100 beats per minute. However, values lower than 60 beats per minute generally imply more efficient heart function associated to better cardiovascular fitness. For this, we take into account that a well-trained athlete might have a normal resting heart rate closer to 40 beats per minute.

After the results were obtained, to ease the analyzing process, we decided to calculate the pulse product as measure. This variable assesses DBP, SBP, and heart rate together to provide comprehensive and accurate information about the individuals' organic balance, i.e., how efficient the worker's level of energy expenditure is. The specific formula for its calculus was: pulse rate x [SBP-DBP] x 100 (Article, 2017).



## Chapter III - Results

After the collection of the results, we used the IBM SPSS Statistics 25 software to analyze the statistical results. Moreover, for relations of mediation and moderation, we resorted to the PROCESS macro ((Preacher et al., 2007)).

### 1. Data Analysis

#### a) Correlations

In the next table, we can observe the correlations between the variables we are working with.

	<b>M</b>	<b>SD</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>
<b>1. Coworker humor</b>	4,12	0,67	-													
<b>2. Need for Recovery</b>	2,19	0,48	-,112	-												
<b>3. Psychological detachment</b>	2,66	0,85	<b>,354*</b>	-,164	-											
<b>4. Relaxation</b>	4,1591	0,61	<b>,518**</b>	-,056	<b>,366*</b>	-										
<b>5. Mastery</b>	3,99	0,70	,276	,153	-,213	,320	-									
<b>6. Control</b>	4,15	0,62	,176	-,043	-,003	,269	<b>,382*</b>	-								
<b>7. Work engagement</b>	5,23	,75	,138	-,299	-,192	,108	<b>,375*</b>	<b>,360*</b>	-							
<b>8. Impaired well-being</b>	1,72	,53	,014	<b>,505**</b>	-,053	,146	,310	,312	-,117	-						
<b>9. Emotional Consonance</b>	4,14	,70	<b>,451**</b>	-,202	,140	,210	,074	,205	<b>,618**</b>	-,082	-					
<b>10. Deep Acting</b>	2,72	1,05	<b>,493**</b>	,271	-,064	,298	<b>,382*</b>	,261	,200	,305	<b>,416*</b>	-				
<b>11. Suppression</b>	1,61	,70	,086	<b>,411*</b>	,026	,083	,090	,178	-,076	,296	,083	<b>,521**</b>	-			
<b>12. Surface Acting</b>	2,28	,80	<b>,355*</b>	,187	,072	,220	,160	,199	,064	,205	,213	<b>,682**</b>	<b>,734**</b>	-		
<b>13. Pulse Product Day 1</b>	48,48484	103,444466	,083	-,028	-,170	,085	,016	-,082	,027	,117	-,040	,123	-,005	,119	-	
<b>14. Pulse Product Day 2</b>	39,393939	108,798535	-,169	,034	-,002	-,181	-,190	-,080	-,309	,338	-,217	-,038	-,005	-,047	<b>,380*</b>	-

*Table 1 - Means, standard deviation and correlations of the variables*

*\*Correlation is significant at the 0.05 level (2-tailed); \*\*Correlation is significant at the 0.01 level (2-tailed).*

Looking at the correlations table, there is a reinforcement that recovery experiences relate with each other, as well as the four types of emotional labor. However, we will not focus on these results, as we are not analyzing the use of this types of variables together. We can only highlight that pulse product in day 2 correlates with the impaired well-being ( $r=0,462$ ;  $p<0,05$ ), as expected.

Taking this into account, we can observe that a lot of variables relate positively with coworker humor. In recovery experiences, we have psychological detachment ( $r=0,354$ ;  $p<0,05$ ) and relaxation ( $r=0,354$ ;  $p<0,01$ ). On other variables, that fit in the types of emotional labor, we have the emotional consonance ( $r=0,451$ ;  $p<0,01$ ), deep acting ( $r=0,493$ ;  $p<0,01$ ) and surface acting ( $r=0,355$ ;  $p<0,05$ ). In other words, when the individuals use more emotional consonance, deep acting and surface acting, the use of coworker humor increases as well. And it looks like the use of coworker humor is more common in workers that have more experiences of psychological detachment and relaxation.

We can also notice three variables that correlate positively with need for recovery. First, impaired well-being ( $r=0,505$ ;  $p<0,01$ ), then we have the use of suppression ( $r=0,411$ ;  $p<0,05$ ) and last, the pulse product in day 2 ( $r=0,457$ ;  $p<0,05$ ). When the need for recovery is greater at the end of the day, individuals will experience a bigger impairment in their well-being the next day, data that is supported by the pulse product as well.

The work engagement also increases together with mastery ( $r=0,375$ ;  $p<0,05$ ) and control experiences ( $r=0,360$ ;  $p<0,05$ ). As well, individuals that show a greater work engagement, show also greater emotional consonance ( $r=0,618$ ;  $p<0,05$ ).

### ***b) Direct Relations***

In the next table, we have the results of the linear regressions made for the three first hypothesis.

<b>Independent Variable</b>	<b>Dependent variable</b>	<b>Unstandardized <math>\beta</math></b>	<b>sig</b>	
<b>Emotional Consonance</b>	Need for Recovery	-,229	,068	
<b>Deep Acting</b>		,191	,084	
<b>Suppression</b>		<b>,363</b>	<b>,033</b>	
<b>Surface acting</b>		-,247	,139	
<b>Emotional Consonance</b>	Impaired Well-Being	COPSOQ	-,173	,240
		Pulse product 1	19,219	,533
<b>Deep Acting</b>		COPSOQ	,209	,113
		Pulse product 1	15,173	,578
<b>Suppression</b>		COPSOQ	,197	,315
		Pulse product 1	<b>-33,738</b>	<b>,414</b>
<b>Surface acting</b>		COPSOQ	-,146	,459
		Pulse product 1	26,971	,516
<b>Emotional Consonance</b>	Work Engagement	<b>,673</b>	<b>,001</b>	
<b>Deep Acting</b>		-,013	,934	
<b>Suppression</b>		-,177	,457	
<b>Surface acting</b>		,059	,803	

*Table 2 - Analysis of the direct relations through linear regression*

In the table above, we can observe that when accounting for all dimensions of emotional labor, only suppression ( $p=0.03$ ) significantly predicts the need for recovery, supporting only the sub-hypothesis H1c.

About hypothesis 2, none of the four types of emotional labor seem to have a significant influence over impaired well-being, what does not support hypothesis 2.

Looking at work engagement, we can see that suppression ( $\text{sig}=0,457$ ) is the only significant predictor, what supports only the sub-hypothesis H3a.

### *c) Mediation*

Following the direct influence of emotional labor on well-being and work engagement, we analyzed this relation through need for recovery. In the next table we can see the role of need for recovery as a mediator between these variables.

Mediator	Independent Variable	Dependent Variable	Indirect effect	Low IC	Upper IC	
Need for Recovery	Emotional Consonance	Impaired	COPSOQ	-,0775	-,2035	,0451
		Well-Being	Pulse product 2	,3339	-14,5612	22,5328
		Work Engagement		,0394	-,0366	,1190
	Deep Acting	Impaired	COPSOQ	,0622	-,0104	,1704
		Well-Being	Pulse product 2	1,3327	-17,5948	15,1099
		Work Engagement		-,0741	-,1959	,0142
	Suppression	Impaired	COPSOQ	<b>,1435</b>	<b>,0305</b>	<b>,3400</b>
		Well-Being	Pulse product 2	2,7364	-54,3725	26,5852
		Work Engagement		<b>-,1429</b>	<b>-,4351</b>	<b>-,0274</b>
	Surface acting	Impaired	COPSOQ	,0595	-,0559	,1655
		Well-Being	Pulse product 2	1,1132	-23,9231	9,5103
		Work Engagement		-,0565	-,1830	,0646

Table 3 - Analysis of the mediation role of need for recovery

In the results presented, we conclude that need for recovery doesn't have a significant mediator role between emotional consonance and impaired well-being [95% IC -.2035;.0451 for COPSOQ and 95%IC -89475.557; 8148.1227 for Pulse product]what rejects hypothesis H5a. The same results are observed for work engagement [95% IC-.0366; .1190).

In hypothesis H5b, we look for the same role, but between deep acting and impaired well-being. This mediation is also rejected, since the confidence interval of the indirect effect contains the value 0 [95%CI-.0104; .1704]. Same for H4b, for work engagement, where deep acting shows an indirect effect of -,0741 [95%IC -,1959; ,0142]., what rejects the hypothesis.

On the other side, need for recovery seems to mediate the use of suppression and impaired well-being measured using COPSOQ (indirect effect=.1435, [95% CI .0305; ,.3400]) as well as work engagement (indirect effect=-.1429, [95%CI -.4351; -.0274]). This supports hypotheses H4c and H5c.

The last hypothesis, of the indirect effect of surface acting in impaired well-being through the need for recovery, has shown an irrelevant indirect effect of ,0595 (95%IC -.0559; .1655) considering COPSO, the same is backed up by the results in pulse product 2, where we can see that it shown an indirect effect of 17214,7681 in it [95%CI -27083,933; 44045,6009]). Moreover, the indirect effect of surface acting in work engagement [indirect effect = -.0565 [95%IC -1830; 0646]). This data does not support H4d or H5d, as well.

#### d) Moderations

Next, the moderation hypotheses were analyzed as well. In the next table, it is presented the data of coworker humor as a moderator between emotional labor and need for recovery.

Independent Variable	Moderator	Dependent Variable	Interaction effect	Low IC	Upper IC
Deep Acting	Coworker Humor	Need for Recovery	,0634	-,1831	,3099
Suppression			,2047	-,1659	,5753
Surface acting			,0849	-,2454	,4151

Table 4 - Analysis of the moderation role of coworker humor

In table 5 we can observe that coworker humor does not moderate any of the types of emotional labor and need for recovery. This way, all sub-hypothesis 6 are rejected.

Independent Variable	Moderator	Dependent Variable	Indirect effect	Low IC	Upper IC
Need for Recovery	Psychological Detachment	Impaired COPSOQ	,1906	-,2826	,6637
		Well-Being Pulse product2	-35,9690	-149,6884	77,7503
		Work Engagement	,2577	-,4654	,9809
	Relaxation	Impaired COPSOQ	-,2132	-,8399	,4135
		Well-Being Pulse product2	<b>-31,3088</b>	<b>-182,6465</b>	<b>120,0288</b>
		Work Engagement	-,1370	-1,1480	,8740
	Mastery	Impaired COPSOQ	,0336	-,5486	,6157
		Well-Being Pulse product2	124,3995	-9,4182	258,2172
		Work Engagement	-,1331	-,9855	,7194
	Control	Impaired COPSOQ	,1102	-,5036	,7241
		Well-Being Pulse product2	126,9685	-24,6006	278,5376
		Work Engagement	-,0890	-1,0677	,8897

Table 5 - Analysis of the moderation role of the recovery experiences

The same way that coworker humor was not supported as a moderator, all four recovery experiences don't show results that support them as moderator between need for recovery, impaired well-being and work engagement. This data can be confirmed in the table above.

## 2. Hypotheses

After an analysis we could conclude that the data supports only some of the hypothesis. In the next table the hypothesis are presented in a summarized way as supported an not supported.



<b>Results</b>		<b>Hypothesis</b>								
<b>Supported</b>		H1c	H2c		H3a		H4c		H5c	
<b>Not supported</b>		H1a	H1b	H1d	H2a	H2b	H2d	H3b	H3c	H3d
		H4a	H4b	H4d	H5b	H5d	H6a	H6b	H6c	
		H7a	H7b	H7c	H7d	H8a	H8b	H8c	H8d	

*Table 6 - Summary of the supported and not supported hypothesis*

To analyze the hypotheses 1, 2 and 3, we resorted to the linear regression method. All the other hypothesis, were analyzed by the PROCESS macro (Preacher et al., 2007) as mentioned before.

## Chapter IV – Discussion

In the previous chapter, the data rejects most of the hypotheses, making it a bigger challenge to explain.

In the first hypothesis, the results shown that only suppression has a relevant influence in need for recovery and impaired well-being. Since surface acting does not present this influence, this conclusion says that suppressing any emotion can be more damaging than showing a different one than the one it is felt. If we cannot or don't want to show an emotion in a more obvious way, other forms of emotional labor give the opportunity to choose what it is expressed (using sarcasm, for example), but suppression limits the individual, considering he only feels the emotion and not expresses anything at all. On the other side, this can also be explained by proprioceptive feedback (Stepper & Strack, 1993) that tell us how our own feelings can be influenced, not only by facial expressions of emotions or exteriorized words, but also by others posture. This influence occurs without a cognitive interpretation of the induced bodily action, what can go both ways. This is, when an individual chooses any other form of emotional labor, he will influence other persons by his own posture, independently of what he is really feeling. Such process occurs by emotional contagion, that will also influence the individual in the first place. If an individual chooses suppression, however, it is possible to subtly show his real emotions trough posture, and the emotional contagion cycle begins in the same way. This can lead to more conflictual situations and produce more and more negative feelings and trigger an overwhelming state that overloads the workers.

On hypothesis 2, we could perceive that only emotional consonance seems to be related positively with work engagement. When the individual experiences a more encouragement to show what he really feels, being it negative or positive, it results in a relieving experience that will increase work engagement. We can also explain this by the perspective of the job Demands-Resources model (Wilmar B. Schaufeli & Bakker, 2004), that show us how the demands and resources given by the individuals organization influence his/her motivation at work. In this case, we can look at the emotional labor as a demand, that is not required, or at least not in high levels, and at the freedom of express oneself as a resource. In short, less demands and more resources, will result in a greater engagement.

Furthermore, the need for recovery, seems to only mediate the relation between suppression and work engagement and well-being. Relative to well-being, suppression already shown to be a direct effect in well-being, but it also happens through need for recovery. This is, when an individual uses more suppression, it will be more taxing and he will feel a bigger need for recovery at the end of the day, what will influence the perception of well-being in the next day. The mediation relation in question, happens in the same way with work engagement, that will, however, decrease with greater values of need for recovery at the end of the previous day.

Nevertheless, the use of deep acting and surface acting, does not show an influence in need for recovery, what goes against the literature. The indicated results can be explained by the fact that literature takes, yet, little focus on suppression, and could have treated it as deep or surface acting, influencing the conclusions.

Lastly, the moderation hypothesis were not supported either, for coworker humor and for recovery experiences. The rejection of humor as a moderator between emotional labor and need for recovery can be explained by the fact that that it is used in different interactions. In other words, humor is used between coworkers, but emotional labor is more used with clients. This means that when an individual uses emotional labor, he can suffer the consequences, and only in other moment he will use humor, and not use it to relieve the tension in the specific situation.

It seems important to look at the correlation between psychological detachment and coworker humor, that is significant and positive. This can mean that people more exposed do coworker humor has greater ease in experience relaxation and psychological detachment, and vice-versa, what can also explain a lower impact in need for recovery in the long run.

In the end, recovery experiences did not reveal to be moderators between need for recovery and well-being and work engagement. However, we should consider that the analyzed sample was mostly under their thirties, and younger workers can have a better capacity to recover as the better circumstances, as they are living alone and with no children, having less responsibilities. Also, most individuals have other jobs, what can make the need for recovery at one work less meaningful and this will have a lower impact in the overall results.

## **1. Limitations and Future Research**

Talking about the limitations of this study, the first one was the size of the sample. The data needed for this study had to be collected in person, and twice, because of the blood pressure measure, what made the participation of the individuals more difficult, as the authorization was needed from the organizations. It had to happen in a slow way too, considering there was just one inquirer and each questionnaire implied two different moments. Above this, due to COVID-19, the gymnasiums had to close for a long time, what made impossible to produce data for this research. A bigger sample could have changed the results and open new paths.

For future research, it can be benefic, not only to have a bigger sample, but also look for individuals in all ages. Analyzing the same variables in different work areas can also provide different kinds of results that can allow a better comprehension of the relations in question.

As a result of the previous chapter, in future literature, there should be a greater focus on suppression and in what differentiates it from the other types of emotional labor. This is important to also generate more studies that include and scrutinize the use of suppression and its real consequences. Analyzing the use of humor in the same moment of the emotional labor, may also bring new results and understand its role on need for recovery, since the time interval can have a role in this relation.

Finally, taking into account the times we are living, it can be interesting to understand the role of emotional labor in the virtual context and its consequences.

## **2. Practical Implications**

As a result of this analysis, we would recommend better knowledge by the gymnasiums about the positive and negative consequences of emotional labor. This kind of training can lead the managers to have a different approach about these emotional demands or how to deal with its consequences. We could confirm that even though the regular exercise its important, there is more variables that have an important weigh in their well-being and work engagement. In order to improve the life of sports workers, organizations could also focus in more awareness of this concepts and have some relaxing activities behind schedule to foment positive emotions.



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## Chapter VI – Appendix

### Appendix A – Questionnaire day 1

#### Questionário 1

Este questionário enquadra-se numa investigação no âmbito de uma tese de Mestrado em Gestão de Recursos Humanos e Consultadoria Organizacional no ISCTE – Instituto Universitário de Lisboa. Ao concluir este questionário autoriza que os dados sejam utilizados para fins académicos, sendo realçado o anonimato das respostas. Solicitamos que responda de forma espontânea e sincera a todas as questões, sendo que na maioria terá apenas de assinalar com uma cruz a sua opção de resposta.

**Por favor, escreva as três primeiras letras do seu apelido, seguido do dia e mês de aniversário. Deverá escrever 3 letras e 4 números.**

Exemplo: SAN0903, no caso do seu apelido ser SANTOS e ter nascido a 9 de Março.

\_\_\_\_\_  
**Sexo:**  Feminino  
 Masculino

**Idade:** \_\_\_\_\_

**Estado civil:**  Solteiro  
 Casado  
 Divorciado  
 Viúvo  
 União de facto

**Há quantos anos trabalha no atual ramo profissional?** \_\_\_\_\_

**Há quantos anos trabalha na instituição/empresa atual?** \_\_\_\_\_

**Há quantos anos trabalha na função atual nesta empresa/instituição?** \_\_\_\_\_

**Qual a função/cargo que desempenha dentro da empresa/organização?** \_\_\_\_\_

**Quantas promoções teve?** \_\_\_\_\_

**Quantos empregos teve anteriormente?** \_\_\_\_\_

**Qual o grau de escolaridade mais elevado que completou?**

- 4º ano
- 9º ano
- 12º ano
- Licenciatura
- Mestrado
- Doutoramento
- Outro. Qual? \_\_\_\_\_

Se completou um grau de escolaridade superior ao 12º, qual foi a área de formação?

\_\_\_\_\_

**Para além deste ginásio, exerce alguma outra actividade profissional?**

- Sim
- Não

**Qual a melhor opção para descrever o seu horário de trabalho?**

- Horário fixo (as mesmas horas por dia)
- Horário rotativo (por exemplo: trabalhar no turno da manhã uns dias e no turno da noite outros dias)
- Horário irregular (por exemplo: carga horário imprevisível dependendo das situações ou quantidade de trabalho)

**Quantas horas trabalha semanalmente** (incluindo horas extra)? \_\_\_\_\_

**Tem um salário fixo ou é pago por hora?** ("Salário fixo" significa que recebe o mesmo montante a cada semana ou mês independentemente das horas que trabalhou. "Pago por hora" significa que recebe quantias diferentes dependendo das horas que trabalhou.)

- Salário fixo
- Pago por hora

**Pensando no presente dia de trabalho, responda às seguintes questões.**

**Com os meus colegas...**

	Nunca	Algumas vezes	Regularmente	Bastantes vezes	Sempre
Reagi naturalmente e facilmente às emoções dos meus colegas.					
Expressei facilmente emoções positivas aos meus colegas, conforme o esperado no meu trabalho.					
Esforcei-me para sentir as emoções que precisei de mostrar.					
Escondi a minha raiva em relação a algo que algum colega tenha feito.					
Mantive um personagem constante no trabalho.					
Escondi a minha aversão por algo que algum colega tenha feito.					
Pus uma “máscara” com a intenção de expressar as emoções certas para o meu trabalho.					
Fingi ter as emoções que precisei de demonstrar para o meu trabalho.					
Desempenhei um determinado papel de forma a lidar com os clientes de maneira apropriada.					
Esforcei-me para realmente sentir as emoções que precisei de mostrar.					
Fingi estar de bom humor.					
Escondi o meu medo de um colega que pareça ameaçador.					
Esforcei-me para evocar os sentimentos que precisei de mostrar aos meus colegas.					

**Com os clientes...**

	Nunca	Algumas vezes	Regularmente	Bastantes vezes	Sempre
Reagi naturalmente e facilmente às emoções dos clientes.					
Expressei facilmente emoções positivas aos clientes, conforme o esperado no meu trabalho.					
Esforcei-me para realmente sentir as emoções que precisei de mostrar.					
Escondi a minha raiva em relação a algo que algum cliente tenha feito.					
Mantive um personagem constante no trabalho.					

Continuação...	Nunca	Algumas vezes	Regularmente	Bastantes vezes	Sempre
Escondi a minha aversão por algo que algum cliente tenha feito.					
Pus uma “máscara” com a intenção de expressar as emoções certas para o meu trabalho.					
Fingi ter as emoções que preciso de demonstrar para o meu trabalho.					
Desempenhei um determinado papel de forma a lidar com os clientes de maneira apropriada.					
Esforcei-me para sentir as emoções que precisei de mostrar aos outros.					
Fingi estar de bom humor.					
Escondi o meu medo de um cliente que pareça ameaçador.					
Esforcei-me para evocar os sentimentos que precisei de mostrar aos clientes.					

	Discordo totalmente	Discordo parcialmente	Nem concordo nem discordo	Concordo parcialmente	Concordo totalmente
Os meus colegas usaram humor para reduzir a tensão em períodos difíceis.					
Os meus colegas contaram histórias engraçadas ou anedotas para mostrar o seu ponto de vista.					
Os meus colegas fizeram-me rir quando estamos demasiado sérios.					
Os meus colegas contaram histórias divertidas para reduzir conflitos.					
Os meus colegas usam humor no dia-a-dia.					

**Pense agora no final dos seus dias de trabalho.**

	<b>Discordo totalmente</b>	<b>Discordo parcialmente</b>	<b>Concordo parcialmente</b>	<b>Concordo totalmente</b>
Acho difícil relaxar no fim de um dia de trabalho.				
No fim de um dia de trabalho, sinto-me mesmo esgotado/a.				
Por causa do meu trabalho, ao fim do dia sinto-me exausto/a.				
Depois do jantar, sinto-me normalmente em forma.				
Normalmente, só começo a relaxar no segundo dia sem trabalho.				
Sinto dificuldade em concentrar-me no tempo livre depois do trabalho.				
Não consigo demonstrar qualquer interesse por outras pessoas quando chego a casa depois do trabalho.				
Normalmente, preciso de mais de uma hora para me sentir completamente recuperado/a depois do trabalho.				
Quando chego a casa vindo/a do trabalho, preciso que me deixem em paz durante algum tempo.				
Frequentemente, depois de um dia de trabalho sinto-me tão cansado/a que não consigo envolver-me noutras atividades.				
Durante a última parte do meu dia de trabalho, fico com uma sensação de cansaço que me impede de trabalhar bem.				

**Tem hipertensão ou hipotensão?**

- Sim, hipertensão.
- Sim, hipotensão.
- Nenhuma das duas

**Valores pressão arterial (SYS/DIA/Pulse):** \_\_\_\_\_

**Obrigada e até amanhã!**



## Appendix B - Questionnaire day 2

### Questionário 2

Este questionário enquadra-se numa investigação no âmbito de uma tese de Mestrado em Gestão de Recursos Humanos e Consultadoria Organizacional no ISCTE – Instituto Universitário de Lisboa. Ao concluir este questionário autoriza que os dados sejam utilizados para fins académicos, sendo realçado o anonimato das respostas. Solicitamos que responda de forma espontânea e sincera a todas as questões, sendo que na maioria terá apenas de assinalar com uma cruz a sua opção de resposta.

**Por favor, escreva as três primeiras letras do seu apelido, seguido do dia e mês de aniversário. Deverá escrever 3 letras e 4 números.**

Exemplo: SAN0903, no caso do seu apelido ser SANTOS e ter nascido a 9 de Março.

**Pensando na última semana de trabalho, responda às seguintes questões.**  
Quando não me encontrei no meu horário laboral...

	Discordo totalmente	Discordo parcialmente	Nem concordo nem discordo	Concordo parcialmente	Concordo totalmente
Esqueço o trabalho.					
Não penso de todo no trabalho.					
Distancio-me do meu trabalho.					
Faço uma pausa relativamente às exigências do trabalho.					
Relaxo.					
Faço coisas relaxantes.					
Uso o tempo para relaxar.					
Arranjo tempo para o lazer.					
Aprendo novas coisas.					
Procuró desafios intelectuais.					
Faço coisas que me desafiam.					
Faço alguma coisa para alargar os meus horizontes.					
Sinto que posso decidir o que fazer.					
Determino o meu próprio horário.					
Decido como passar o meu tempo.					
Controlo as coisas de modo a que sejam feitas como eu quero.					

	Nunca	Quase Nunca	Algumas vezes	Regularmente	Bastantes vezes
Senti-me cheio/a de energia quando estava a trabalhar.					
Senti-me com força e energia quando estava a trabalhar.					
Estive entusiasmado/a com o meu trabalho.					
O meu trabalho inspirou-me.					
Quando me levantei pela manhã, tive vontade de ir trabalhar.					
Fui feliz quando estive a trabalhar.					
Estive orgulhoso/a do o meu trabalho.					
Estive imerso/a no meu trabalho.					
“Deixei-me levar” pelo meu trabalho.					

	Nunca/Quase nunca	Algumas vezes	Cerca de metade das vezes	A maioria das vezes	Sempre
Dificuldade a adormecer?					
Acordou várias vezes durante a noite e depois não conseguia adormecer novamente?					
Fisicamente exausto?					
Emocionalmente exausto?					
Irritado?					
Ansioso?					
Triste?					
Falta de interesse por coisas quotidianas?					

**Valores de pressão arterial (SYS/DIA/Pulse):** \_\_\_\_\_

**Quanto recebe por hora(€), antes de impostos?**

- |  |  |   |
|--|--|---|
| <input type="checkbox"/> 2,00 - 5,00   | <input type="checkbox"/> 22,01 - 24,00 | <input type="checkbox"/> 50,01 - 55,00  |
| <input type="checkbox"/> 5,01 - 8,00   | <input type="checkbox"/> 24,01 - 26,00 | <input type="checkbox"/> 55,01 - 60,00  |
| <input type="checkbox"/> 8,01 - 10,00  | <input type="checkbox"/> 26,01 - 29,00 | <input type="checkbox"/> 60,01 - 70,00  |
| <input type="checkbox"/> 10,01 - 12,00 | <input type="checkbox"/> 29,01 - 32,00 | <input type="checkbox"/> 70,01 - 80,00  |
| <input type="checkbox"/> 12,01 - 14,00 | <input type="checkbox"/> 32,01 - 35,00 | <input type="checkbox"/> 80,01 - 90,00  |
| <input type="checkbox"/> 14,01 - 16,00 | <input type="checkbox"/> 35,01 - 38,00 | <input type="checkbox"/> 90,01 - 100,00 |
| <input type="checkbox"/> 16,01 - 18,00 | <input type="checkbox"/> 38,01 - 41,00 | <input type="checkbox"/> Mais de 100    |
| <input type="checkbox"/> 18,01 - 20,00 | <input type="checkbox"/> 41,01 - 45,00 |   |
| <input type="checkbox"/> 20,01 - 22,00 | <input type="checkbox"/> 45,01 - 50,00 |   |

**Qual o seu rendimento anual(€) pelo seu emprego, antes de impostos?**

- |  |  |  |
|--|--|--|
| <input type="checkbox"/> 1 - 999         | <input type="checkbox"/> 12 000 - 12 999 | <input type="checkbox"/> 40 000 - 44 999   |
| <input type="checkbox"/> 1 000 - 1 999   | <input type="checkbox"/> 13 000 - 13 999 | <input type="checkbox"/> 45 000 - 49 999   |
| <input type="checkbox"/> 2 000 - 2 999   | <input type="checkbox"/> 14 000 - 14 999 | <input type="checkbox"/> 50 000 - 74 999   |
| <input type="checkbox"/> 3 000 - 3 999   | <input type="checkbox"/> 15 000 - 15 999 | <input type="checkbox"/> 75 000 - 99 999   |
| <input type="checkbox"/> 4 000 - 4 999   | <input type="checkbox"/> 16 000 - 16 999 | <input type="checkbox"/> 100 000 - 149 999 |
| <input type="checkbox"/> 5 000 - 5 999   | <input type="checkbox"/> 17 000 - 17 999 | <input type="checkbox"/> 150 000 - 199 999 |
| <input type="checkbox"/> 6 000 - 6 999   | <input type="checkbox"/> 18 000 - 18 999 | <input type="checkbox"/> 200 000 - 299 999 |
| <input type="checkbox"/> 7 000 - 7 999   | <input type="checkbox"/> 19 000 - 19 999 | <input type="checkbox"/> 300 000 - 499 999 |
| <input type="checkbox"/> 8 000 - 8 999   | <input type="checkbox"/> 20 000 - 24 999 | <input type="checkbox"/> 500 000 - 999 999 |
| <input type="checkbox"/> 9 000 - 9 999   | <input type="checkbox"/> 25 000 - 29 999 | <input type="checkbox"/> 1 000 000 ou mais |
| <input type="checkbox"/> 10 000 - 10 999 | <input type="checkbox"/> 30 000 - 34 999 |  |
| <input type="checkbox"/> 11 000 - 11 999 | <input type="checkbox"/> 29 000 - 39 999 |  |

**Obrigada pela sua colaboração!**

## Appendix C – Linear regression hypothesis

### *Emotional labor on need for recovery*

<b>Model Summary<sup>b</sup></b>					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,564 <sup>a</sup>	<b>,318</b>	,220	,42715	1,553

a. Predictors: (Constant), Surface Acting, Emotional Consonance, Deep Acting, Supression

b. Dependent Variable: Need for Recovery

<b>ANOVA<sup>a</sup></b>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2,378	4	,594	3,258	,026 <sup>b</sup>
	Residual	5,109	28	,182		
	Total	7,487	32			

a. Dependent Variable: Need for Recovery

b. Predictors: (Constant), Surface Acting, Emotional Consonance, Deep Acting, Supression

<b>Coefficients<sup>a</sup></b>						
Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Coefficients Beta		
1	(Constant)	2,593	,485		5,341	,000
	Emotional Consonance	-,229	,121	-,330	-1,896	,068
	Deep Acting	,191	,107	,415	1,793	,084
	Supression	<b>,363</b>	,161	,522	2,249	,033
	Surface Acting	-,247	,162	-,409	-1,524	,139

a. Dependent Variable: Need for Recovery

### *Emotional labor on impaired well-being*

<b>Model Summary<sup>b</sup></b>					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,422 <sup>a</sup>	<b>,178</b>	,060	,51073	2,013

a. Predictors: (Constant), Surface Acting, Emotional Consonance, Deep Acting, Supression

b. Dependent Variable: Impaired well-being

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1,580	4	,395	1,514	,225 <sup>b</sup>
	Residual	7,304	28	,261		
	Total	8,884	32			

a. Dependent Variable: Impaired well-being

b. Predictors: (Constant), Surface Acting, Emotional Consonance, Deep Acting, Supression

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1,878	,580		3,236	,003
	Emotional Consonance	-,173	,144	-,230	-1,201	,240
	Deep Acting	<b>,209</b>	,128	,416	1,636	,113
	Supression	,197	,193	,261	1,023	,315
	Surface Acting	-,146	,194	-,221	-,751	,459

a. Dependent Variable: Impaired well-being

### *Emotional labor on pulse product day 1*

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,224 <sup>a</sup>	,050	-,086	107,78490

a. Predictors: (Constant), Surface Acting, Emotional Consonance, Deep Acting, Supression

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17131,884	4	4282,971	,369	,829 <sup>b</sup>
	Residual	325292,359	28	11617,584		
	Total	342424,242	32			

a. Dependent Variable: PulseProduct

b. Predictors: (Constant), Surface Acting, Emotional Consonance, Deep Acting, Supression

<b>Coefficients<sup>a</sup></b>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	79,410	122,496		,648	,522
	Emotional Consonance	-19,219	30,430	-,130	-,632	,533
	Deep Acting	15,173	26,953	,154	,563	,578
	Supression	-33,738	40,692	-,227	-,829	,414
	Surface Acting	26,971	40,952	,208	,659	,516

a. Dependent Variable: PulseProduct

### *Emotional labor on work engagement*

<b>Model Summary<sup>b</sup></b>					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,632 <sup>a</sup>	<b>,400</b>	,314	,62197	1,606

a. Predictors: (Constant), Surface Acting, Emotional Consonance, Deep Acting, Supression

b. Dependent Variable: Work engagement

<b>ANOVA<sup>a</sup></b>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7,216	4	1,804	4,664	,005 <sup>b</sup>
	Residual	10,832	28	,387		
	Total	18,048	32			

a. Dependent Variable: Work engagement

b. Predictors: (Constant), Surface Acting, Emotional Consonance, Deep Acting, Supression

<b>Coefficients<sup>a</sup></b>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2,632	,707		3,724	,001
	Emotional Consonance	<b>,673</b>	,176	,626	3,830	,001
	Deep Acting	-,013	,156	-,018	-,084	,934
	Supression	-,177	,235	-,164	-,754	,457
	Surface Acting	,059	,236	,063	,251	,803

a. Dependent Variable: Work engagement

## Appendix D – Mediation hypothesis (PROCESS)

### *Emotional consonance and work engagement trough need for recovery*

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 3.4.1 \*\*\*\*\*

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

\*\*\*\*\*

Model : 4  
Y : WorkEnga  
X : EL\_EC  
M : NeedForR

Sample  
Size: 33

\*\*\*\*\*

OUTCOME VARIABLE:  
NeedForR

Model Summary	R	R-sq	MSE	F	df1	df2	p
	,2018	,0407	,2317	1,3166	1,0000	31,0000	,2600

Model	coeff	se	t	p	LLCI	ULCI
constant	2,7650	,5104	5,4174	,0000	<b>1,7240</b>	<b>3,8060</b>
EL_EC	-,1397	,1217	-1,1474	,2600	<b>-,3879</b>	<b>,1086</b>

\*\*\*\*\*

OUTCOME VARIABLE:  
WorkEnga

Model Summary	R	R-sq	MSE	F	df1	df2	p
	,6434	,4139	,3526	10,5935	2,0000	30,0000	,0003

Model	coeff	se	t	p	LLCI	ULCI
constant	3,2612	,8786	3,7120	,0008	<b>1,4669</b>	<b>5,0555</b>
EL_EC	,6249	,1533	4,0755	,0003	<b>,3117</b>	<b>,9380</b>
NeedForR	-,2820	,2216	-1,2728	,2129	<b>-,7345</b>	<b>,1705</b>

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

Direct effect of X on Y	Effect	se	t	p	LLCI	ULCI
	,6249	,1533	4,0755	,0003	<b>,3117</b>	<b>,9380</b>

**Indirect effect(s) of X on Y:**

	Effect	BootSE	BootLLCI	BootULCI
NeedForR	<b>,0394</b>	,0388	<b>-,0366</b>	<b>,1190</b>

\*\*\*\*\* 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: Variables names longer than eight characters can produce incorrect output.

Shorter variable names are recommended.

----- END MATRIX -----

***Deep acting and work engagement trough need for recovery***

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 3.4.1 \*\*\*\*\*

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

\*\*\*\*\*

Model : 4  
Y : WorkEnga  
X : EL\_DA  
M : NeedForR

Sample  
Size: 33

\*\*\*\*\*

OUTCOME VARIABLE:  
NeedForR

Model Summary	R	R-sq	MSE	F	df1	df2	p
	,2712	,0735	,2237	2,4607	1,0000	31,0000	,1269

Model	coeff	se	t	p	LLCI	ULCI
constant	1,8466	,2323	7,9501	,0000	<b>1,3729</b>	<b>2,3204</b>
EL_DA	,1252	,0798	1,5687	,1269	<b>-,0376</b>	<b>,2879</b>

\*\*\*\*\*

OUTCOME VARIABLE:  
WorkEnga

Model Summary	R	R-sq	MSE	F	df1	df2	p
	,4176	,1744	,4967	3,1687	2,0000	30,0000	,0564

Model	coeff	se	t	p	LLCI	ULCI
constant	5,9327	,6033	9,8339	,0000	<b>4,7005</b>	<b>7,1648</b>
EL_DA	,2170	,1235	1,7573	,0891	<b>-,0352</b>	<b>,4693</b>
NeedForR	-,5918	,2676	-2,2116	,0348	<b>-1,1383</b>	<b>-,0453</b>

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

Direct effect of X on Y	Effect	se	t	p	LLCI	ULCI
	,2170	,1235	1,7573	,0891	<b>-,0352</b>	<b>,4693</b>

**Indirect effect(s) of X on Y:**

	Effect	BootSE	BootLLCI	BootULCI
NeedForR	<b>-,0741</b>	,0527	<b>-,1959</b>	<b>,0142</b>

\*\*\*\*\* 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: Variables names longer than eight characters can produce incorrect output.  
Shorter variable names are recommended.

----- END MATRIX -----

***Suppression and work engagement trough need for recovery***

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 3.4.1 \*\*\*\*\*

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

\*\*\*\*\*

Model : 4  
Y : WorkEnga  
X : EL\_SUP  
M : NeedForR

Sample  
Size: 33

\*\*\*\*\*

OUTCOME VARIABLE:  
NeedForR

Model Summary	R	R-sq	MSE	F	df1	df2	p
	,4112	,1690	,2007	6,3065	1,0000	31,0000	,0175

Model	coeff	se	t	p	LLCI	ULCI
constant	1,7275	,1990	8,6803	,0000	<b>1,3216</b>	<b>2,1334</b>
EL_SUP	,2854	,1136	2,5113	,0175	<b>,0536</b>	<b>,5172</b>

\*\*\*\*\*

OUTCOME VARIABLE:  
WorkEnga

Model Summary	R	R-sq	MSE	F	df1	df2	p
	,3035	,0921	,5462	1,5221	2,0000	30,0000	,2346

Model	coeff	se	t	p	LLCI	ULCI
constant	6,2251	,6081	10,2368	,0000	<b>4,9832</b>	<b>7,4671</b>
EL_SUP	,0615	,2057	,2988	,7672	<b>-,3586</b>	<b>,4815</b>
NeedForR	-,5007	,2963	-1,6898	,1014	<b>-1,1058</b>	<b>,1045</b>

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

Direct effect of X on Y	Effect	se	t	p	LLCI	ULCI
	,0615	,2057	,2988	,7672	<b>-,3586</b>	<b>,4815</b>

Indirect effect(s) of X on Y:	Effect	BootSE	BootLLCI	BootULCI
NeedForR	-,1429	,1051	<b>-,4351</b>	<b>-,0274</b>

\*\*\*\*\* 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: Variables names longer than eight characters can produce incorrect output.

Shorter variable names are recommended.

----- END MATRIX -----

***Surface acting and work engagement trough need for recovery***

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 3.4.1 \*\*\*\*\*

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

\*\*\*\*\*

Model : 4  
Y : WorkEnga  
X : EL\_SA  
M : NeedForR

Sample  
Size: 33

\*\*\*\*\*

OUTCOME VARIABLE:  
NeedForR

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	,1868	,0349	,2331	1,1206	1,0000	31,0000	,2980

Model

	coeff	se	t	p	LLCI	ULCI
constant	1,9292	,2579	7,4795	,0000	<b>1,4031</b>	<b>2,4552</b>
EL_SA	,1130	,1067	1,0586	,2980	<b>-,1047</b>	<b>,3307</b>

\*\*\*\*\*

OUTCOME VARIABLE:  
WorkEnga

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	,3229	,1043	,5389	1,7457	2,0000	30,0000	,1918

Model

	coeff	se	t	p	LLCI	ULCI
constant	6,0572	,6568	9,2222	,0000	<b>4,7158</b>	<b>7,3986</b>
EL_SA	,1164	,1652	,7047	,4864	<b>-,2210</b>	<b>,4538</b>
NeedForR	-,5002	,2731	-1,8317	,0769	<b>-1,0580</b>	<b>,0575</b>

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

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
,1164	,1652	,7047	,4864	<b>-,2210</b>	<b>,4538</b>

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
NeedForR	<b>-,0565</b>	,0595	<b>-,1830</b>	<b>,0646</b>

\*\*\*\*\* 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: Variables names longer than eight characters can produce incorrect output.  
Shorter variable names are recommended.

----- END MATRIX -----

***Emotional consonance and impaired well-being trough need for recovery***

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 3.4.1 \*\*\*\*\*

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

\*\*\*\*\*

Model : 4  
Y : Impaired  
X : EL\_EC  
M : NeedForR

Sample  
Size: 33

\*\*\*\*\*

OUTCOME VARIABLE:  
NeedForR

Model Summary	R	R-sq	MSE	F	df1	df2	p
	,2018	,0407	,2317	1,3166	1,0000	31,0000	,2600

Model	coeff	se	t	p	LLCI	ULCI
constant	2,7650	,5104	5,4174	,0000	<b>1,7240</b>	<b>3,8060</b>
EL_EC	-,1397	,1217	-1,1474	,2600	<b>-,3879</b>	<b>,1086</b>

\*\*\*\*\*

OUTCOME VARIABLE:  
Impaired

Model Summary	R	R-sq	MSE	F	df1	df2	p
	,5056	,2556	,2204	5,1505	2,0000	30,0000	,0119

Model	coeff	se	t	p	LLCI	ULCI
constant	,4390	,6947	,6319	,5322	<b>-,9797</b>	<b>1,8577</b>
EL_EC	,0153	,1212	,1266	,9001	<b>-,2322</b>	<b>,2629</b>
NeedForR	,5548	,1752	3,1666	,0035	<b>,1970</b>	<b>,9126</b>

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

Direct effect of X on Y	Effect	se	t	p	LLCI	ULCI
	,0153	,1212	,1266	,9001	<b>-,2322</b>	<b>,2629</b>

Indirect effect(s) of X on Y:	Effect	BootSE	BootLLCI	BootULCI
NeedForR	<b>-,0775</b>	,0611	<b>-,2035</b>	<b>,0451</b>

\*\*\*\*\* 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: Variables names longer than eight characters can produce incorrect output.

Shorter variable names are recommended.

----- END MATRIX -----

***Deep acting and impaired well-being trough need for recovery***

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 3.4.1 \*\*\*\*\*

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

\*\*\*\*\*

Model : 4  
Y : Impaired  
X : EL\_DA  
M : NeedForR

Sample  
Size: 33

\*\*\*\*\*

OUTCOME VARIABLE:  
NeedForR

Model Summary							
	R	R-sq	MSE	F	df1	df2	p
	,2712	,0735	,2237	2,4607	1,0000	31,0000	,1269

Model							
	coeff	se	t	p	LLCI	ULCI	
constant	1,8466	,2323	7,9501	,0000	<b>1,3729</b>	<b>2,3204</b>	
EL_DA	,1252	,0798	1,5687	,1269	<b>-,0376</b>	<b>,2879</b>	

\*\*\*\*\*

OUTCOME VARIABLE:  
Impaired

Model Summary							
	R	R-sq	MSE	F	df1	df2	p
	,5346	,2858	,2115	6,0026	2,0000	30,0000	,0064

Model							
	coeff	se	t	p	LLCI	ULCI	
constant	,3809	,3937	,9677	,3409	<b>-,4230</b>	<b>1,1849</b>	
EL_DA	,0914	,0806	1,1337	,2659	<b>-,0732</b>	<b>,2560</b>	
NeedForR	,4966	,1746	2,8440	,0079	<b>,1400</b>	<b>,8532</b>	

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

Direct effect of X on Y						
	Effect	se	t	p	LLCI	ULCI
	,0914	,0806	1,1337	,2659	<b>-,0732</b>	<b>,2560</b>

Indirect effect(s) of X on Y:					
	Effect	BootSE	BootLLCI	BootULCI	
NeedForR	<b>,0622</b>	,0471	<b>-,0104</b>	<b>,1704</b>	

\*\*\*\*\* 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: Variables names longer than eight characters can produce incorrect output.  
Shorter variable names are recommended.

----- END MATRIX -----

### *Suppression and impaired well-being trough need for recovery*

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 3.4.1 \*\*\*\*\*

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

\*\*\*\*\*

Model : 4  
Y : Impaired  
X : EL\_SUP  
M : NeedForR

Sample  
Size: 33

\*\*\*\*\*

OUTCOME VARIABLE:  
NeedForR

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	,4112	,1690	,2007	6,3065	1,0000	31,0000	,0175

Model

	coeff	se	t	p	LLCI	ULCI
constant	1,7275	,1990	8,6803	,0000	<b>1,3216</b>	<b>2,1334</b>
EL_SUP	,2854	,1136	2,5113	,0175	<b>,0536</b>	<b>,5172</b>

\*\*\*\*\*

OUTCOME VARIABLE:  
Impaired

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	,5144	,2646	,2178	5,3975	2,0000	30,0000	,0099

Model

	coeff	se	t	p	LLCI	ULCI
constant	,4868	,3840	1,2679	,2146	<b>-,2974</b>	<b>1,2711</b>
EL_SUP	,0805	,1299	,6196	,5402	<b>-,1848</b>	<b>,3457</b>
NeedForR	,5026	,1871	2,6865	,0117	<b>,1205</b>	<b>,8847</b>

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

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
,0805	,1299	,6196	,5402	<b>-,1848</b>	<b>,3457</b>

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
NeedForR	,1435	,0760	<b>,0305</b>	<b>,3400</b>

\*\*\*\*\* 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: Variables names longer than eight characters can produce incorrect  
output.

Shorter variable names are recommended.

----- END MATRIX -----

### *Surface acting and impaired well-being trough need for recovery*

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 3.4.1 \*\*\*\*\*

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

\*\*\*\*\*

Model : 4  
Y : Impaired  
X : EL\_SA  
M : NeedForR

Sample  
Size: 33

\*\*\*\*\*

OUTCOME VARIABLE:  
NeedForR

Model Summary							
	R	R-sq	MSE	F	df1	df2	p
	,1868	,0349	,2331	1,1206	1,0000	31,0000	,2980

Model						
	coeff	se	t	p	LLCI	ULCI
constant	1,9292	,2579	7,4795	,0000	<b>1,4031</b>	<b>2,4552</b>
EL_SA	,1130	,1067	1,0586	,2980	<b>-,1047</b>	<b>,3307</b>

\*\*\*\*\*  
OUTCOME VARIABLE:  
Impaired

Model Summary							
	R	R-sq	MSE	F	df1	df2	p
	,5175	,2678	,2168	5,4859	2,0000	30,0000	,0093

Model						
	coeff	se	t	p	LLCI	ULCI
constant	,3912	,4166	,9389	,3553	<b>-,4597</b>	<b>1,2420</b>
EL_SA	,0752	,1048	,7180	,4783	<b>-,1388</b>	<b>,2892</b>
NeedForR	,5271	,1732	3,0426	,0048	<b>,1733</b>	<b>,8809</b>

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

Direct effect of X on Y						
Effect	se	t	p	LLCI	ULCI	
	,0752	,1048	,7180	,4783	<b>-,1388</b>	<b>,2892</b>

Indirect effect(s) of X on Y:					
	Effect	BootSE	BootLLCI	BootULCI	
NeedForR	<b>,0595</b>	,0549	<b>-,0559</b>	<b>,1655</b>	

\*\*\*\*\* 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: Variables names longer than eight characters can produce incorrect  
output.

Shorter variable names are recommended.

----- END MATRIX -----

### ***Emotional consonance and pulse product day 2 trough need for recovery***

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 3.4.1 \*\*\*\*\*

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

\*\*\*\*\*

Model : 4  
Y : PulsePro2  
X : EL\_EC  
M : NeedForR

Sample  
Size: 33

\*\*\*\*\*

OUTCOME VARIABLE:  
NeedForR

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	,2018	,0407	,2317	1,3166	1,0000	31,0000	,2600

Model

	coeff	se	t	p	LLCI	ULCI
constant	2,7650	,5104	5,4174	,0000	1,7240	3,8060
EL_EC	-,1397	,1217	-1,1474	,2600	-,3879	,1086

\*\*\*\*\*

OUTCOME VARIABLE:  
PulsePro

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	,4873	,2374	2,154E+010	4,6705	2,0000	30,0000	,0171

Model

	coeff	se	t	p	LLCI	ULCI
constant	280854,683	217137,985	1,2934	,2057	-162610,87	724320,235
EL_EC	-40215,235	37893,6675	-1,0613	,2970	-117606,28	37175,8132
NeedForR	141998,016	54763,6217	2,5929	,0146	30153,1001	253842,932

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

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
-40215,235	37893,6675	-1,0613	,2970	-117606,28	37175,8132

Indirect effect(s) of X on Y:

Effect	BootSE	BootLLCI	BootULCI	
NeedForR	-19832,440	26397,0620	-89475,557	8148,1227

\*\*\*\*\* 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: Variables names longer than eight characters can produce incorrect  
output.

Shorter variable names are recommended.

----- END MATRIX -----

### ***Deep acting and pulse product day 2 trough need for recovery***

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 3.4.1 \*\*\*\*\*

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

\*\*\*\*\*

Model : 4  
Y : PulsePro2  
X : EL\_DA  
M : NeedForR

Sample  
Size: 33

\*\*\*\*\*

OUTCOME VARIABLE:  
NeedForR

Model Summary	R	R-sq	MSE	F	df1	df2	p
	,2712	,0735	,2237	2,4607	1,0000	31,0000	,1269

Model	coeff	se	t	p	LLCI	ULCI
constant	1,8466	,2323	7,9501	,0000	1,3729	2,3204
EL_DA	,1252	,0798	1,5687	,1269	-,0376	,2879

\*\*\*\*\*

OUTCOME VARIABLE:  
PulsePro

Model Summary	R	R-sq	MSE	F	df1	df2	p
	,4577	,2095	2,233E+010	3,9748	2,0000	30,0000	,0294

Model	coeff	se	t	p	LLCI	ULCI
constant	94857,5640	127910,765	,7416	,4641	-166377,33	356092,456
EL_DA	-4180,4694	26185,2159	-,1596	,8742	-57659,096	49298,1571
NeedForR	156185,396	56736,8242	2,7528	,0099	40310,5666	272060,226

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

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
-4180,4694	26185,2159	-,1596	,8742	-57659,096	49298,1571

Indirect effect(s) of X on Y:

Effect	BootSE	BootLLCI	BootULCI
NeedForR	19547,4874	17291,3340	-9772,2681 55734,3407

\*\*\*\*\* 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: Variables names longer than eight characters can produce incorrect  
output.

Shorter variable names are recommended.

----- END MATRIX -----

### ***Suppression and pulse product day 2 trough need for recovery***

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 3.4.1 \*\*\*\*\*

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

\*\*\*\*\*

Model : 4  
Y : PulsePro  
X : EL\_SUP  
M : NeedForR

Sample  
Size: 33

\*\*\*\*\*

OUTCOME VARIABLE:  
NeedForR

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	,4112	,1690	,2007	6,3065	1,0000	31,0000	,0175

Model

	coeff	se	t	p	LLCI	ULCI
constant	1,7275	,1990	8,6803	,0000	1,3216	2,1334
EL_SUP	,2854	,1136	2,5113	,0175	,0536	,5172

\*\*\*\*\*

OUTCOME VARIABLE:  
PulsePro

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	,4580	,2097	2,232E+010	3,9806	2,0000	30,0000	,0293

Model

	coeff	se	t	p	LLCI	ULCI
constant	91290,9547	122934,610	,7426	,4635	-159781,03	342362,939
EL_SUP	-7734,7186	41579,8089	-,1860	,8537	-92654,052	77184,6148
NeedForR	158310,333	59899,6424	2,6429	,0129	35976,0121	280644,655

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

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
-7734,7186	41579,8089	-,1860	,8537	-92654,052	77184,6148

Indirect effect(s) of X on Y:

Effect	BootSE	BootLLCI	BootULCI
NeedForR	45182,5136	39867,3453	-44393,204 113221,352

\*\*\*\*\* 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: Variables names longer than eight characters can produce incorrect  
output.  
Shorter variable names are recommended.

----- END MATRIX -----

### ***Surface acting and pulse product day 2 trough need for recovery***

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 3.4.1 \*\*\*\*\*

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

\*\*\*\*\*

Model : 4  
Y : PulsePro  
X : EL\_SA  
M : NeedForR

Sample  
Size: 33

\*\*\*\*\*

OUTCOME VARIABLE:  
NeedForR

Model Summary	R	R-sq	MSE	F	df1	df2	p
	,1868	,0349	,2331	1,1206	1,0000	31,0000	,2980

Model	coeff	se	t	p	LLCI	ULCI
constant	1,9292	,2579	7,4795	,0000	1,4031	2,4552
EL_SA	,1130	,1067	1,0586	,2980	-,1047	,3307

\*\*\*\*\*

OUTCOME VARIABLE:  
PulsePro

Model Summary	R	R-sq	MSE	F	df1	df2	p
	,4574	,2093	2,233E+010	3,9696	2,0000	30,0000	,0295

Model	coeff	se	t	p	LLCI	ULCI
constant	81767,1210	133711,412	,6115	,5455	-191314,56	354848,799
EL_SA	4401,0984	33629,0022	,1309	,8968	-64280,132	73082,3292
NeedForR	152369,980	55596,8472	2,7406	,0102	38823,3494	265916,611

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

Direct effect of X on Y	Effect	se	t	p	LLCI	ULCI
	4401,0984	33629,0022	,1309	,8968	-64280,132	73082,3292

Indirect effect(s) of X on Y:	Effect	BootSE	BootLLCI	BootULCI
NeedForR	17214,7681	17680,9498	-27083,933	44045,6009

\*\*\*\*\* 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: Variables names longer than eight characters can produce incorrect  
output.

Shorter variable names are recommended.

----- END MATRIX -----

## Appendix E - Moderation hypothesis (PROCESS)

### *Emotional consonance and need for recovery by coworker humor*

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 3.4.1 \*\*\*\*\*

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

\*\*\*\*\*

Model : 1  
Y : NeedForR  
X : EL\_EC  
W : Coworker

Sample  
Size: 33

\*\*\*\*\*

OUTCOME VARIABLE:  
NeedForR

Model Summary	R	R-sq	MSE	F	df1	df2	p
	,2915	,0850	,2362	,8976	3,0000	29,0000	,4543

Model	coeff	se	t	p	LLCI	ULCI
constant	5,5658	2,4222	2,2978	,0290	,6117	10,5198
EL_EC	-,8276	,6074	-1,3625	,1835	-2,0699	,4147
Coworker	-,7508	,6384	-1,1762	,2491	-2,0565	,5548
Int_1	<b>,1820</b>	,1546	1,1766	,2489	<b>-,1343</b>	<b>,4982</b>

Product terms key:  
Int\_1 : EL\_EC x Coworker

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	,0437	1,3844	1,0000	29,0000	,2489

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

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

NOTE: Variables names longer than eight characters can produce incorrect  
output.

Shorter variable names are recommended.

----- END MATRIX -----

### *Deep acting and need for recovery by coworker humor*

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 3.4.1 \*\*\*\*\*

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

\*\*\*\*\*

Model : 1  
Y : NeedForR  
X : EL\_DA  
W : Coworker

Sample  
Size: 33

\*\*\*\*\*

OUTCOME VARIABLE:  
NeedForR

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	,4014	,1611	,2166	1,8565	3,0000	29,0000	,1591

Model

	coeff	se	t	p	LLCI	ULCI
constant	3,1988	1,2406	2,5785	,0153	,6615	5,7361
EL_DA	-,0711	,5212	-,1365	,8924	-1,1370	,9948
Coworker	-,3762	,3071	-1,2250	,2304	-1,0044	,2519
Int_1	<b>,0634</b>	,1205	,5260	,6029	-,1831	,3099

Product terms key:

Int\_1 : EL\_DA x Coworker

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	,0080	,2767	1,0000	29,0000	,6029

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

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

NOTE: Variables names longer than eight characters can produce incorrect output.

Shorter variable names are recommended.

----- END MATRIX -----

### *Suppression and need for recovery by coworker humor*

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 3.4.1 \*\*\*\*\*

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

\*\*\*\*\*

Model : 1  
Y : NeedForR  
X : EL\_SUP  
W : Coworker

Sample  
Size: 33

\*\*\*\*\*

OUTCOME VARIABLE:  
NeedForR

Model Summary

R	R-sq	MSE	F	df1	df2	p
,4743	,2250	,2001	2,8057	3,0000	29,0000	,0572

Model

	coeff	se	t	p	LLCI	ULCI
constant	3,4207	1,2337	2,7727	,0096	,8974	5,9440
EL_SUP	-,5382	,7455	-,7219	,4761	-2,0630	,9866
Coworker	-,4206	,3021	-1,3924	,1744	-1,0385	,1973
Int_1	,2047	,1812	1,1299	,2678	-,1659	,5753

Product terms key:

Int\_1 : EL\_SUP x Coworker

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	,0341	1,2766	1,0000	29,0000	,2678

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

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

NOTE: Variables names longer than eight characters can produce incorrect output.

Shorter variable names are recommended.

----- END MATRIX -----

***Surface acting and need for recovery by coworker humor***

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 3.4.1 \*\*\*\*\*  
Written by Andrew F. Hayes, Ph.D. www.afhayes.com  
Documentation available in Hayes (2018). www.guilford.com/p/hayes3  
\*\*\*\*\*

Model : 1

Y : NeedForR  
X : EL\_SA  
W : Coworker

Sample

Size: 33

\*\*\*\*\*

OUTCOME VARIABLE:

NeedForR

Model Summary

R	R-sq	MSE	F	df1	df2	p
,2827	,0799	,2375	,8398	3,0000	29,0000	,4832

Model

	coeff	se	t	p	LLCI	ULCI
constant	3,1753	1,5137	2,0977	,0448	,0794	6,2711
EL_SA	-,2034	,6948	-,2928	,7718	-1,6244	1,2176
Coworker	-,3247	,3662	-,8866	,3826	-1,0736	,4243
Int_1	,0849	,1615	,5256	,6032	-,2454	,4151

Product terms key:

Int\_1 : EL\_SA x Coworker

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	,0088	,2762	1,0000	29,0000	,6032

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

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

NOTE: Variables names longer than eight characters can produce incorrect output.  
Shorter variable names are recommended.

----- END MATRIX -----

### ***Need for recovery and impaired well-being by psychological detachment experiences***

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 3.4.1 \*\*\*\*\*

Written by Andrew F. Hayes, Ph.D.                      www.afhayes.com

Documentation available in Hayes (2018). www.guilford.com/p/hayes3

\*\*\*\*\*

Model : 1

Y : Impaired

X : NeedForR

W : Recovery

Sample

Size: 33

\*\*\*\*\*

OUTCOME VARIABLE:

Impaired

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	,5226	,2731	,2227	3,6327	3,0000	29,0000	,0244

Model

	coeff	se	t	p	LLCI	ULCI
constant	1,4874	1,3580	1,0952	,2824	<b>-1,2902</b>	<b>4,2649</b>
NeedForR	,0878	,5944	,1478	,8835	<b>-1,1279</b>	<b>1,3036</b>
Recovery	-,3984	,5166	-,7713	,4468	<b>-1,4550</b>	<b>,6581</b>
Int_1	,1906	,2313	,8237	,4168	<b>-,2826</b>	<b>,6637</b>

Product terms key:

Int\_1 :            NeedForR x            Recovery

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	,0170	,6786	1,0000	29,0000	,4168

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

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

NOTE: Variables names longer than eight characters can produce incorrect output.  
Shorter variable names are recommended.

----- END MATRIX -----

### ***Need for recovery and impaired well-being by relaxation experiences***

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 3.4.1 \*\*\*\*\*

Written by Andrew F. Hayes, Ph.D.                      www.afhayes.com

Documentation available in Hayes (2018). www.guilford.com/p/hayes3

\*\*\*\*\*

Model : 1  
Y : Impaired  
X : NeedForR  
W : Recovery

Sample  
Size: 33

\*\*\*\*\*  
OUTCOME VARIABLE:  
Impaired

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	,5455	,2975	,2152	4,0944	3,0000	29,0000	,0154

Model

	coeff	se	t	p	LLCI	ULCI
constant	-1,8028	2,4815	-,7265	,4734	<b>-6,8783</b>	<b>3,2726</b>
NeedForR	1,4141	1,2375	1,1427	,2625	<b>-1,1169</b>	<b>3,9451</b>
Recovery	,5679	,6122	,9277	,3612	<b>-,6842</b>	<b>1,8201</b>
Int_1	-,2132	,3064	-,6959	,4920	<b>-,8399</b>	<b>,4135</b>

Product terms key:  
Int\_1 : NeedForR x Recovery

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	,0117	,4843	1,0000	29,0000	,4920

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

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

NOTE: Variables names longer than eight characters can produce incorrect output.  
Shorter variable names are recommended.

----- END MATRIX -----

### ***Need for recovery and impaired well-being by mastery experiences***

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 3.4.1 \*\*\*\*\*

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

\*\*\*\*\*  
Model : 1  
Y : Impaired  
X : NeedForR  
W : Recovery

Sample  
Size: 33

\*\*\*\*\*  
OUTCOME VARIABLE:  
Impaired

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	,5579	,3113	,2110	4,3689	3,0000	29,0000	,0118

Model

	coeff	se	t	p	LLCI	ULCI
constant	,1744	2,5215	,0692	,9453	<b>-4,9828</b>	<b>5,3316</b>
NeedForR	,3716	1,1899	,3123	,7570	<b>-2,0620</b>	<b>2,8052</b>
Recovery	,1086	,6083	,1786	,8595	<b>-1,1355</b>	<b>1,3528</b>
Int_1	,0336	,2846	,1180	,9069	<b>-,5486</b>	<b>,6157</b>

Product terms key:  
Int\_1 : NeedForR x Recovery

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	,0003	,0139	1,0000	29,0000	,9069

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

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

NOTE: Variables names longer than eight characters can produce incorrect output.

Shorter variable names are recommended.

----- END MATRIX -----

### ***Need for recovery and impaired well-being by control experiences***

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 3.4.1 \*\*\*\*\*

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

\*\*\*\*\*

Model : 1  
Y : Impaired  
X : NeedForR  
W : Recovery

Sample  
Size: 33

\*\*\*\*\*

OUTCOME VARIABLE:  
Impaired

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	,6080	,3696	,1931	5,6677	3,0000	29,0000	,0035

Model

	coeff	se	t	p	LLCI	ULCI
constant	,2588	2,7172	,0952	,9248	<b>-5,2986</b>	<b>5,8162</b>
NeedForR	,1118	1,2475	,0896	,9292	<b>-2,4397</b>	<b>2,6632</b>
Recovery	,0513	,6517	,0788	,9378	<b>-1,2816</b>	<b>1,3843</b>
Int_1	,1102	,3001	,3673	,7161	<b>-,5036</b>	<b>,7241</b>

Product terms key:  
Int\_1 : NeedForR x Recovery

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	,0029	,1349	1,0000	29,0000	,7161

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



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

NOTE: Variables names longer than eight characters can produce incorrect output.  
Shorter variable names are recommended.

----- END MATRIX -----

***Need for recovery and pulse product day 2 by psychological detachment experiences***

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 3.4.1 \*\*\*\*\*

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

\*\*\*\*\*

Model : 1  
Y : PulsePro  
X : NeedForR  
W : RecoveryPD

Sample  
Size: 33

\*\*\*\*\*

OUTCOME VARIABLE:  
PulsePro

Model Summary	R	R-sq	MSE	F	df1	df2	p
	,4646	,2159	2,291E+010	2,6615	3,0000	29,0000	,0667

Model	coeff	se	t	p	LLCI	ULCI
constant	-28499,316	435614,417	-,0654	,9483	-919453,79	862455,156
NeedForR	219690,145	190672,270	1,1522	,2587	-170288,48	609668,771
Recovery	50746,3759	165704,721	,3062	,7616	-288166,56	389659,314
Int_1	-28147,623	74208,7795	-,3793	,7072	-179925,53	123630,283

Product terms key:  
Int\_1 : NeedForR x Recovery

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	,0039	,1439	1,0000	29,0000	,7072

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

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

NOTE: Variables names longer than eight characters can produce incorrect output.  
Shorter variable names are recommended.

----- END MATRIX -----

***Need for recovery and pulse product day 2 by relaxation experiences***

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 3.4.1 \*\*\*\*\*

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

\*\*\*\*\*

Model : 1  
Y : NeedForR  
X : PulsePro  
W : RecoveryR

Sample  
Size: 33

\*\*\*\*\*

OUTCOME VARIABLE:  
NeedForR

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	,5088	,2588	,1913	3,3758	3,0000	29,0000	,0316

Model

	coeff	se	t	p	LLCI	ULCI
constant	-,3838	1,6606	-,2311	,8188	-3,7802	3,0126
PulsePro	,0000	,0000	1,6727	,1051	,0000	,0000
Recovery	,5077	,4147	1,2242	,2307	-,3405	1,3559
Int_1	,0000	,0000	-1,3733	,1802	,0000	,0000

Product terms key:

Int\_1 : PulsePro x Recovery

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	,0482	1,8860	1,0000	29,0000	,1802

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

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

NOTE: Variables names longer than eight characters can produce incorrect output.

Shorter variable names are recommended.

----- END MATRIX -----

### ***Need for recovery and pulse product day 2 by mastery experiences***

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 3.4.1 \*\*\*\*\*

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

\*\*\*\*\*

Model : 1  
Y : PulsePro  
X : NeedForR  
W : RecoveryM

Sample  
Size: 33

\*\*\*\*\*

OUTCOME VARIABLE:

PulsePro

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	,4931	,2431	2,211E+010	3,1054	3,0000	29,0000	,0418

Model

	coeff	se	t	p	LLCI	ULCI
constant	-781516,67	795516,054	-,9824	,3340	-2408571,6	845538,266
NeedForR	604225,842	396704,669	1,5231	,1386	-207147,21	1415598,89
Recovery	218276,230	196257,767	1,1122	,2752	-183126,31	619678,774
Int_1	-112632,73	98227,4822	-1,1467	,2609	-313535,67	88270,2002

Product terms key:

Int\_1 : NeedForR x Recovery

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	,0343	1,3148	1,0000	29,0000	,2609

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

Level of confidence for all confidence intervals in output:

95,0000

NOTE: Variables names longer than eight characters can produce incorrect output.

Shorter variable names are recommended.

----- END MATRIX -----

### ***Need for recovery and pulse product day 2 by control experiences***

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 3.4.1 \*\*\*\*\*

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

\*\*\*\*\*

Model : 1  
Y : PulsePro  
X : NeedForR  
W : RecoveryC

Sample

Size: 33

\*\*\*\*\*

OUTCOME VARIABLE:

PulsePro

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	,4775	,2280	2,256E+010	2,8556	3,0000	29,0000	,0543

Model

	coeff	se	t	p	LLCI	ULCI
constant	678780,961	824456,066	,8233	,4171	-1007464,5	2365026,39
NeedForR	-152081,95	389048,364	-,3909	,6987	-947795,69	643631,800
Recovery	-141370,20	198899,039	-,7108	,4829	-548174,89	265434,491
Int_1	73253,3013	93065,4523	,7871	,4376	-117091,82	263598,427

Product terms key:

Int\_1 : NeedForR x Recovery

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	,0165	,6196	1,0000	29,0000	,4376

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

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

NOTE: Variables names longer than eight characters can produce incorrect output.

Shorter variable names are recommended.

----- END MATRIX -----

### *Need for recovery and work engagement by psychological detachment experiences*

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 3.4.1 \*\*\*\*\*

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

\*\*\*\*\*

Model : 1  
Y : WorkEnga  
X : NeedForR  
W : Recovery

Sample  
Size: 33

\*\*\*\*\*

OUTCOME VARIABLE:  
WorkEnga

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	,4053	,1643	,5201	1,9006	3,0000	29,0000	,1516

Model

	coeff	se	t	p	LLCI	ULCI
constant	8,3666	2,0755	4,0311	,0004	<b>4,1216</b>	<b>12,6116</b>
NeedForR	-1,1603	,9085	-1,2772	,2117	<b>-3,0184</b>	<b>,6978</b>
Recovery	-,7829	,7895	-,9916	,3296	<b>-2,3977</b>	<b>,8319</b>
Int_1	,2577	,3536	,7289	,4719	<b>-,4654</b>	<b>,9809</b>

Product terms key:

Int\_1 : NeedForR x Recovery

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	,0153	,5314	1,0000	29,0000	,4719

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

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

NOTE: Variables names longer than eight characters can produce incorrect output.

Shorter variable names are recommended.

----- END MATRIX -----

### *Need for recovery and work engagement by relaxation experiences*

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 3.4.1 \*\*\*\*\*

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

\*\*\*\*\*

Model : 1  
Y : WorkEnga  
X : NeedForR  
W : Recovery

Sample  
Size: 33

\*\*\*\*\*

OUTCOME VARIABLE:  
WorkEnga

Model Summary

R	R-sq	MSE	F	df1	df2	p
,3165	,1002	,5600	1,0764	3,0000	29,0000	,3745

Model

	coeff	se	t	p	LLCI	ULCI
constant	4,6887	4,0032	1,1712	,2510	<b>-3,4990</b>	<b>12,8763</b>
NeedForR	,0919	1,9963	,0460	,9636	<b>-3,9911</b>	<b>4,1749</b>
Recovery	,3808	,9876	,3855	,7027	<b>-1,6392</b>	<b>2,4007</b>
Int_1	-,1370	,4943	-,2772	,7836	<b>-1,1480</b>	<b>,8740</b>

Product terms key:

Int\_1 : NeedForR x Recovery

Test(s) of highest order unconditional interaction(s):

R2-chng	F	df1	df2	p	
X*W	,0024	,0768	1,0000	29,0000	,7836

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

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

NOTE: Variables names longer than eight characters can produce incorrect output.

Shorter variable names are recommended.

----- END MATRIX -----

### *Need for recovery and work engagement by mastery experiences*

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 3.4.1 \*\*\*\*\*

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

\*\*\*\*\*

Model : 1  
Y : WorkEnga  
X : NeedForR  
W : Recovery

Sample  
Size: 33

\*\*\*\*\*  
OUTCOME VARIABLE:  
WorkEnga

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	,5226	,2732	,4523	3,6328	3,0000	29,0000	,0244

Model

	coeff	se	t	p	LLCI	ULCI
constant	3,4808	3,6922	,9427	,3536	<b>-4,0707</b>	<b>11,0323</b>
NeedForR	-,0158	1,7423	-,0090	,9928	<b>-3,5792</b>	<b>3,5477</b>
Recovery	,7393	,8907	,8299	,4133	<b>-1,0825</b>	<b>2,5610</b>
Int_1	-,1331	,4168	-,3193	,7518	<b>-,9855</b>	<b>,7194</b>

Product terms key:  
Int\_1 : NeedForR x Recovery

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	,0026	,1019	1,0000	29,0000	,7518

\*\*\*\*\* ANALYSIS NOTES AND ERRORS \*\*\*\*\*  
Level of confidence for all confidence intervals in output:  
95,0000

NOTE: Variables names longer than eight characters can produce incorrect output.  
Shorter variable names are recommended.

----- END MATRIX -----

### *Need for recovery and work engagement by control experiences*

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 3.4.1 \*\*\*\*\*

Written by Andrew F. Hayes, Ph.D. [www.afhayes.com](http://www.afhayes.com)  
Documentation available in Hayes (2018). [www.guilford.com/p/hayes3](http://www.guilford.com/p/hayes3)  
\*\*\*\*\*

Model : 1  
Y : WorkEnga  
X : NeedForR  
W : Recovery

Sample  
Size: 33

\*\*\*\*\*  
OUTCOME VARIABLE:  
WorkEnga

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	,4595	,2112	,4909	2,5878	3,0000	29,0000	,0721

Model

	coeff	se	t	p	LLCI	ULCI
constant	3,6482	4,3323	,8421	,4066	<b>-5,2127</b>	<b>12,5090</b>
NeedForR	-,0741	1,9890	-,0372	,9706	<b>-4,1421</b>	<b>3,9940</b>
Recovery	,6141	1,0391	,5910	,5591	<b>-1,5112</b>	<b>2,7395</b>
Int_1	-,0890	,4785	-,1859	,8538	<b>-1,0677</b>	<b>,8897</b>

Product terms key:

Int\_1 : NeedForR x Recovery

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	,0009	,0346	1,0000	29,0000	,8538

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

Level of confidence for all confidence intervals in output:

95,0000

NOTE: Variables names longer than eight characters can produce incorrect output.

Shorter variable names are recommended.

----- END MATRIX -----