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THE IMPACT OF WORK MANAGEMENT SOFTWARE ON WELL-BEING: THE ITCUP SOFTWARE CASE

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Abstract

In this thesis we partnered with a start-up to improve upon a business process management software by developing a project that would increase its impact on worker well-being. We had two goals, one of evaluating the impact of the software “as is” and another of proposing additional features to expand said effects, but we were only able to follow through with the second one due to external constraints. Through a series of meetings with the start-up and the analysis of several articles and books of reference, we reached upon a set of variables that can could worked upon. Our proposal is a series of features based on said variables to implement on the software that are expected to yield positive effects on both well-being and performance at work based on theoretical evidence. To improve the impact of this study, we propose that further research is made to empirically prove the results that should occur upon the software’s implementation in organizations, as well as expanding the width and depth of the software’s features.

Nesta tese associámo-nos com uma start-up para trabalhar sobre um software de gestão de processos de trabalho através do desenvolvimento de um projeto que melhorasse o seu impacto no bem-estar dos trabalhadores. Existiam dois objetivos, um de avaliar o impacto do software no seu estado inicial e outro de propor funcionalidades adicionais para expandir estes efeitos, mas apenas foi possível concluir o segundo devido a constrangimentos externos. Através de uma série de reuniões com a start-up e à análise de vários artigos e livros de referência foi possível chegar a um conjunto de variáveis sobre as quais se trabalhou. A nossa proposta é uma série de funcionalidades baseadas nestas variáveis para serem implementadas no software que esperamos sortir efeitos positivos no bem-estar e performance no trabalho com base nas evidências teóricas. Para melhorar o impacto deste estudo, propõe-se que seja feita investigação adicional para se provar empiricamente os resultados que deverão ocorrer após a implementação deste software nas organizações, bem como que se expandam a abrangência e profundidade das funcionalidades do software.

Executive Summary

The pervasiveness of technology in the workplace has created new challenges that are still in need of effective solutions. All of this creates a burden on HR professionals to improve well-being at work, a field that has garnered increased attention over the past few years. However, the field of HR has suffered from a gap between theoretical research and business practices that has yet to be fully bridged.

In this context, this thesis is then a valuable contribution towards closing this gap. By partnering with a start-up that is developing a business process management software that hopes to not only increase productivity, but also contribute towards a better work life for employees, this work manages to bring both academics and business practicioners closer together.

Our main goal is to help this start-up's goal of improving well-being at work by improving the software's features that are specifically created to work on that area. To do so, we integrated both theoretical and practical knowledge to come up with a set of new features that the software can now possess to further its impact on well-being. These include functionalities meant to work on fields such as the onboarding and performance management process, as well as on other areas such as feedback, group cohesion, and gratitude, among others.

We first give an overview of how the field of well-being research evolved over the years and what sort of variables are at play when it comes to workplace well-being. From then, we go into further detail about the type of functionalities we propose and how they would work, as well as how theory supports the kind of positive effects we expect to receive as a result of a correct implementation of the software.

We hope that by developing these sort of projects, the academic side of HR can become ever closer to the practitioners that work every day on organizations with these same goals, since only by integrating all stakeholders can the field evolve and develop itself to better improve the lives of workers around the world.

Contextual Introduction

The importance of human resources (HR) management has gained increased notoriety in the workplace, as more and more organizations start to realize the potential benefits that it has to offer to both co-workers and, ultimately, the company's bottom-line (Becker & Gerhart, 1996; Llopis, 2017). Namely, organizations are increasingly grasping the impact of how improving working conditions pays off in the long run as employees become more productive and engaged at work. Unfortunately, such endeavors are normally rooted only in business experience, leaving aside the input that researchers and scholars have to give in this field.

As a response, the concept of evidence-based practice (EBP) has been rising in popularity in both scientific and professional context. It calls for a better connection between scientific knowledge and business practices by defending that decision making must involve "conscientious, explicit, and judicious use of the best available evidence" (Rousseau and Gunia, 2016, p.669), instead of the more common approach of merely relying on past experiences or educated guesses (Rousseau & Gunia, 2016; Rousseau & Barends, 2011). EBP has been successfully exploited in many fields, with some of the most prominent being medicine or education (Rousseau & Barends, 2011), so it comes as no surprise that we see it now becoming a staple in HR practice discussion.

However, HR in organizations still suffers from a lack of support of scientific evidence when it comes to implementing various techniques and strategies. Bailey and Eastman (1996) state that one of the reasons for this gap originates in the belief that academic research is abstract in nature, and therefore difficult to translate and apply to real-life situations. Another perspective is the one put forth by Rousseau and Barends (2011, p.221), who put it best when they wrote that "the complexity and fast pace of today's organizations often lead to knee-jerk business decisions, fad chasing and guesswork regarding 'what works'". In other words, the rhythm in which organizations are forced to work in pushes them to make decisions mostly based on gut-feeling and not on what science shows us that works.

Despite of any potential reasons, the inability to bridge the gap between researchers and practitioners does end up leading to outdated or inflexible practices that are misaligned with what scientific research shows us that works, and that as such fall short from the goals they are created to achieve in the first place.

Another key characteristic of the workplace today is the rise of technology as a primary facet of the job context. In fact, not only does technology help achieve more and do things better and faster, but it is also "enabling profound changes in the ways that work is done in organizations" (Cascio & Montalegre, 2016, p.350).

For example, technology has created communication channels that obliterate geographical obstacles and exponentially increased the access to information in both quantity and speed, just to name a few of the disruptions it has made possible (Joyce, Fisher, Guszcza, & Hogan, 2018).

Moreover, these breakthroughs are happening at a surprisingly fast pace, so much so that some have called it the fourth industrial revolution, consisting of a change of societal paradigms caused by "blurring the lines between the physical, digital, and biological spheres" (Schwab, 2016). In their review, Cascio and Montalegre (2016) also put forth the idea that if technology is to enable people at work, it then must not only increase productivity, but also promote job satisfaction and organizational citizenship behaviors as well as nurture well-being and self-motivation.

The relevance of this point cannot be overstated, as stress in the workplace has become commonplace in today's labor market, fact supported by such organizations as the European Agency for Safety and Health at Work (EU-OSHA), which discovered that around half of European workers consider stress as a common facet of their workplace (EU-OSHA, 2013), and the American Psychological Association (APA), whose Stress in America™ survey has repeatedly shown the two highest sources of stress for working age Americans to be money and work since the year of its inception in 2007 (APA, 2016).

Additionally, Joyce and colleagues (2018) state that technology not only gives but also takes away when it comes to productivity and well-being. For example, the authors call our attention to the fact that being able to work away from the office leads to individuals working more hours at home, namely during weekends or even on vacations.

Considering this context, researchers such as Barley (2015) argue that there is still little research on how these technological changes are altering work structures and processes. The case is then made for additional research on this field. Endeavors must be made to close the gap created by the ever-accelerating pace at which technological breakthroughs in the workplace are made, specifically on seizing this golden opportunity to create tools that mesh both productivity and well-being at work. After all, technology can either hinder or improve life at work, it is up to us to make the best use of it.

Project Overview

The starting point for this project emerged from the need to develop a new product that would do exactly that – integrate the demand for efficiency and the goal of improving workplace happiness into a single solution that could provide an answer to both.

ITCup, a Portuguese start-up, set out to do just that, a software to merge business process management with workplace well-being. However, the team lacked in-depth knowledge of the theoretical background to do so, and as such required another input source for their project. To do so, they decided to reach out to the academic world to help anchor their conviction in not only their business acumen, but also in the foundation of psychology and human resource management theory. The main goal was to complement experience and research with each other to create something that would seamlessly act as a catalyst both simultaneously in the workplace.

As discussed above, the relevance of such a software cannot be overstated. Being a product that connects theory with the practical everyday reality, its contribution is of extreme value if correctly implemented, as it is one of many possible interventions in this context to serve the goals of both the scientific community (bettering the lives of workers) and the labor market (increasing productivity and, consequently, achieving organizational goals).

Upon the beginning of this project, a version of the software itself already existed. As such, the goal of maximizing its impact doubled into two objectives: (1) analyzing and assessing the initial state of the software to find out what sort of impact it already had, and (2) conceptualizing and proposing new implementations for the software to expand the level of impact it could have, in both scope and depth.

Although the first proposed goal was not accomplished due to external constraints, the thought process and instruments created for both objectives are examined further ahead (see Methodology) and the resulting implementations and expected results are discussed in this work. We hope that it proves to be a valuable contribution to both scientific and organizational communities by offering insight into possible ways of transferring knowledge between them and, in the long run, translate into better work contexts for individuals and organizations alike.

Literature Review

Well-Being

The field of well-being and its studies is a vast subject, and one that has gained notoriety over the years. That has arguably been largely motivated by its many proven positive outcomes at different levels – from individual outcomes to organizational and even nation-wide ones (Judge & Kammeyer-Mueller, 2011). Even so, well-being has been studied under many different names, and that can be seen in the different existing conceptualizations for the construct (e.g. happiness, positive affect, satisfaction) (Judge & Kammeyer-Mueller, 2011). Being such an extensive but key aspect of life itself, it is then important to correctly define it in order to best understand and apply it to our work context.

Arguably the most important is the distinction between *hedonic* and *eudaimonic* well-being (Waterman, 1993). The first refers to the feeling of pleasure or happiness in the short-term, and is related to high levels of positive affect and low levels of negative affect (Diener, 2000), while the second is linked to feelings of personal growth and self-realization and the active pursuit of personal expressiveness and one's meaning in life (Waterman, 1993; Sonnentag, 2015).

In the context of work, well-being has been researched taking into consideration both facets, since although most scholars focused their studies on hedonic well-being (to the point that the term has at times been used interchangeably with the concept of happiness at work (Wright & Cropanzano, 2007)), some eudaimonic aspects have also been target of researchers' attention, such as meaning at work or personal growth (Sonnentag, 2015).

Two of well-being's key features are important to note. The first feature is that well-being predicts performance, as happy workers are more productive (Wright & Cropanzano, 2007), and it does so through direct and indirect mechanisms. For example, well-being directly impacts task performance, as engaged workers show a higher degree of dedication to their roles than those that are not (Akkermans, Brenninkmeijer, van den Bossche, Blonk, & Schaufeli, 2013). Furthermore, well-being also predicted other beneficial extra role behaviors, such as organizational citizenship behaviors (Simbula & Guglielmi, 2013) that end up having indirect but beneficial impacts on performance in organizations.

The second key feature to take into account is the fact that well-being in individuals is mutable, and can fluctuate over time (Sonnentag, 2015). To that effect, several variables have been proven to impact well-being at work that will be discussed further ahead.

As a conclusion, the critical insight to retain is that workers' well-being is a desirable state for organizations as it contributes to higher individual performance and better work environments, and that those same organizations can work towards improving said state in employees by improving several features of the workplace. That endeavor ultimately results in better results for enterprises and a better work life for individuals.

To better comprehend how to obtain these results, it is important to first understand two main markers that are associated with well-being at work: burnout and engagement (Bakker, 2015).

Burnout and Engagement

Burnout

Burnout can be defined as a "psychological syndrome in response to chronic interpersonal stressors on the job" (Maslach, Schaufeli, & Leiter, 2001, p.399). As the definition states, burnout is a process that an individual undergoes when exposed to a variety of stressful inputs over a certain period of time, which usually prompts a specific set of actions in said individual.

This response manifests itself in three distinct facets: *emotional exhaustion*, encompassing feelings of not being able to give more to the job; *cynicism* or *depersonalization*, conceptualized as the actions individuals take to actively distance themselves from their job; and *reduced personal accomplishment*, which can be translated as the diminished belief in one's own capability to perform on the role. (Maslach *et al.*, 2001; Alarcon, 2011).

These three are posited to express themselves in a sequence (Alarcon, 2011), as a persistent state of emotional exhaustion, when initially triggered by a continued state of imbalance between job resources and demands (Bakker, Demerouti, & Euwema, 2005), will lead to individuals trying to cope by detaching from the job. This will in turn eventually lead to the decline in their personal sense of accomplishment at work, as "it is difficult to gain a sense of accomplishment when feeling exhausted or when helping people toward whom one is indifferent" (Maslach *et al.*, 2001, p.403).

Burnout is then seen as a detrimental psychological state for both individuals and organizations. On the one hand, a state of burnout has many negative consequences on the psychological and physical health of those who experience it, while on the other hand organizations will most certainly suffer the loss of a productive member. Burnout has been negatively related to job performance (Taris, 2006), and individuals who experience it can additionally become a negative influence on co-workers and eventually spread this state of mind to others (Bakker, Schaufeli, Sixma, & Bosveld, 2001).

Engagement

Responding to the extensive research into burnout, a more positive approach to well-being emerged with the concept of engagement at the turn of the century (Schaufeli, Salanova, González-Romá, & Bakker, 2002).

Work engagement is defined by Schaufeli and colleagues (2002, p.74; see also Bakker, Schaufeli, Leiter, & Taris, 2008) as "a positive, fulfilling, work-related state of mind that is characterized by *vigor*, *dedication*, and *absorption*". In other words, individuals who feel engaged in their job will be those who are energetic and enthusiastic about their work, and that will tend to both put more effort into completing their tasks and responsibilities (Costa, Passos, & Bakker, 2014) and be dedicated to doing so with excellent performance (Maslach, Jackson, & Leiter, 1996).

It is easy to see why companies would want to encourage this type of mental state towards work. Employees that are committed to their responsibilities on a personal level, and therefore strive to complete them both efficiently and with quality, will always be of extreme value to organizations of all types and sizes.

However, the process of triggering this mental state in employees is not yet fully understood or given its due importance, as workplace engagement is still at extremely low levels. For example, a study from Schaufeli (2018) reported feelings of engagement at work of only 21% on average among European countries, with the figure reaching as low as 11,4% in Germany. Engagement can easily be seen as one of the main focuses for organizations who want to grow their business through their people, but the gap in practical knowledge in the field is still quite evident, creating, therefore, the demand for further studies in the area to bridge it.

Relation Between Burnout and Engagement

Conceptually, scholars have long debated on relation between burnout and engagement, namely on whether they are on opposite poles of the same spectrum or are rather independent constructs that, although being negatively correlated with each other, require distinct measuring methodologies to be fully understood and quantified (Cole, Walter, Bedeian, & O'Boyle, 2012; Bakker *et al.*, 2008).

The first view emerged from the image that the constructs on which these concepts are based upon are polar opposites of each other, and consequently were measured in accordance by some instruments, with the most influential being the Maslach Burnout Inventory (Maslach & Leiter, 1997). The alternative perspective was that instead these were actually "distinct psychological states more adequately assessed using separate measures" (Cole *et al.*, 2012, p.1551), view that is championed by the authors of the recently developed Job Demands-Resources (JD-R) theory (Schaufeli, Salanova, González-Romá, & Bakker, 2002).

This latter leads to the logical conclusion that interventions aimed at, for example, positively impacting employee engagement in organizations may not always correspond to a negative effect on the mental state of burnout. In other words, organizations should consider including a package of different implementations that have a broad enough impact spectrum to hopefully have the desired effects on both variables.

Even though academics are still unsure of what perspective more accurately portrays reality and calls for more clear constructs have been made (Cole *et al.*, 2012), their overall relevance in the literature is undeniable. To better understand how these concepts have been studied, several models have to be mentioned in order to better comprehend their development over time.

Relevant Well-Being Models and Theories

A variety of different models and theories focused on studying well-being at work have been proposed over the years in an attempt to accurately measure and predict well-being levels in consistent and useful ways. Although in present days the Job Demands-Resources (JD-R) is the better-established model in the field to explain the influences of the work context on both burnout and engagement, and consequently on well-being at work, an overview of the previous attempts at defining these relationships is of relative importance to understand the background of the concepts at play, as well as the path taken over the years.

Job Characteristics Model

The first major contribution in the field was, arguably, the Job Characteristics Model (JCM; Hackman & Oldham, 1976). This model postulates that higher levels intrinsic work motivation and job satisfaction can be achieved by improving on three distinct Critical Psychological States (CPSs): (a) *Experienced meaningfulness of the work*, (b) *Experienced responsibility for outcomes*, and (c) *Knowledge of results of work activities*. This follows the proposition presented by Hackman and Lawler (1971) that an individual will have this positive affect only if he learns of his personal performance about a meaningful task that he executed. The model further explains that there are five important job characteristics that can prompt these three CPSs: for (a), *Skill variety*, *Task identity*, and *Task significance*; for (b), *Autonomy*; and for (c), *Feedback*.

At the time, the JCM was extremely influential as it was one of the first models to attempt to delineate the paths that positively influence job satisfaction, and the modest success it garnered in doing so established the model as a starting point for further research into the field of well-being (Fried & Ferris, 1987).

However, some flaws have been pointed out on the JCM by subsequent research. Renn and Vandenberg (1995) showed that there is only partial support for the mediating role of the CPSs in the proposed model. Moreover, their findings "did not support the requirement that all three CPSs need to be experienced to maximize the explanation of work outcomes" (Renn & Vandenberg, 1995, p.299).

The model has also been criticized by its limited number of contextual variables, and specifically by not taking into consideration any relational features of the work environment (Humphrey, Nahrgang, & Morgeson, 2007; Kanfer, Frese, & Johnson, 2017).

Demand-Control Model

Another influential model was the one put forth by Karasek (1979), the Demand-Control Model (DCM). This model aimed at creating an integrated way of analyzing both job demands and the control a worker had over how to deal with and meet those demands.

The model looks at three different variables: *Job demands* (measuring stress sources), *Job control* (measuring job decision latitude, i.e. the range of decision-making autonomy any one individual has over his job), and *Job strain* (equaling "the excess of demands over decision latitude" (Karasek, 1979, p.288) and that is related to symptoms of mental strain).

Karasek (1979) further explained that in his model jobs could be distinguished by measuring the first two variables and analyzing how they related to one another. We can label jobs as being *active* when they have high levels of both job demands and job control, with the hypothesis that in these cases individuals would develop new behavior patterns. On the opposite end, *passive* jobs, with low levels of both job demands and job control, would result in reductions in both overall activity and in problem-solving capabilities. Another important remark is bound to jobs with high demand levels, but low job control levels, resulting in an unbalanced relation between the two variables. This is posited to have a negative impact on mental health by creating and maintaining strain on individuals at work.

Karasek (1979) found that the highest levels of satisfaction occurred with *active* jobs, and while lower work demands are associated with increased satisfaction it is also possible, by implementing measures to increase job decision control, to improve mental health without detriment to performance.

Nevertheless, the model has some shortcomings, some of which are pointed out by its own author. Arguably, the most relevant ones are that it does not consider the social interactions that are present in organizations and that there are no distinctions between different types of both job demands and job decision control (Karasek, 1979).

In a later study, de Jonge and Kompier (1997) pointed out several critical flaws in both the structure of the model and the conceptualization of the variables themselves, among others. Additionally, empirical evidence on the model has not been consistent, with some studies not being able to reproduce the effects that the DCM proposed (Bakker & Demerouti, 2014).

Regardless, the model's focus on establishing links between job demands and concepts such as health and motivation as well as on reflecting how the amount of control over one's context can influence that relation served as a basis for academics to further delve into the topic over the following years (de Jonge & Kompier, 1997), cementing its position in the field as an influential model for well-being research.

Effort-Reward Imbalance Model

Following the DCM, another influential model was proposed, this time focusing instead on looking for asymmetries between the levels of effort and consequent rewards in the work environment, the Effort-Reward Imbalance (ERI) model (Siegrist, 1996).

As the name suggests, the model is based on a "lack of reciprocity between [efforts] and [rewards] [that] define a state of emotional distress with special propensity to autonomic arousal and associated stress reactions" (Siegrist, 1996, p.39). In other words, if individuals perceive some sort of imbalance between input and output (especially if the asymmetry occurs in favor of higher inputs rather than outputs) they will experience and show more stress symptoms.

The ERI model further distinguishes between two different sources of efforts: *extrinsic*, being caused by job context demands, and *intrinsic*, being a result of the specific motivations of an individual when faced with a demanding situation. On the other end, rewards are mainly distinguished between three categories: *money*, *esteem* or *approval*, and *status control* (i.e. security or career opportunities (Bakker & Demerouti, 2014)).

This model, with

However, the ERI model suffered from a few flaws. Bakker and Demerouti (2014) pointed out that, similar to its predecessors, the ERI model suffered from being too simplistic when it came to the variables it took into consideration. By only focusing on certain job demands and/or resources, the model failed to encapsulate the entire work context, making it ill-prepared to serve as a tool to analyze more complex job scenarios.

<u>Job Demands-Resources Theory</u>

As a result of the previous attempts to explain all the different and complicated relationships that caused both burnout and engagement in employees in a work environment, the JD-R theory was created (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Bakker & Demerouti, 2007, 2014, 2017).

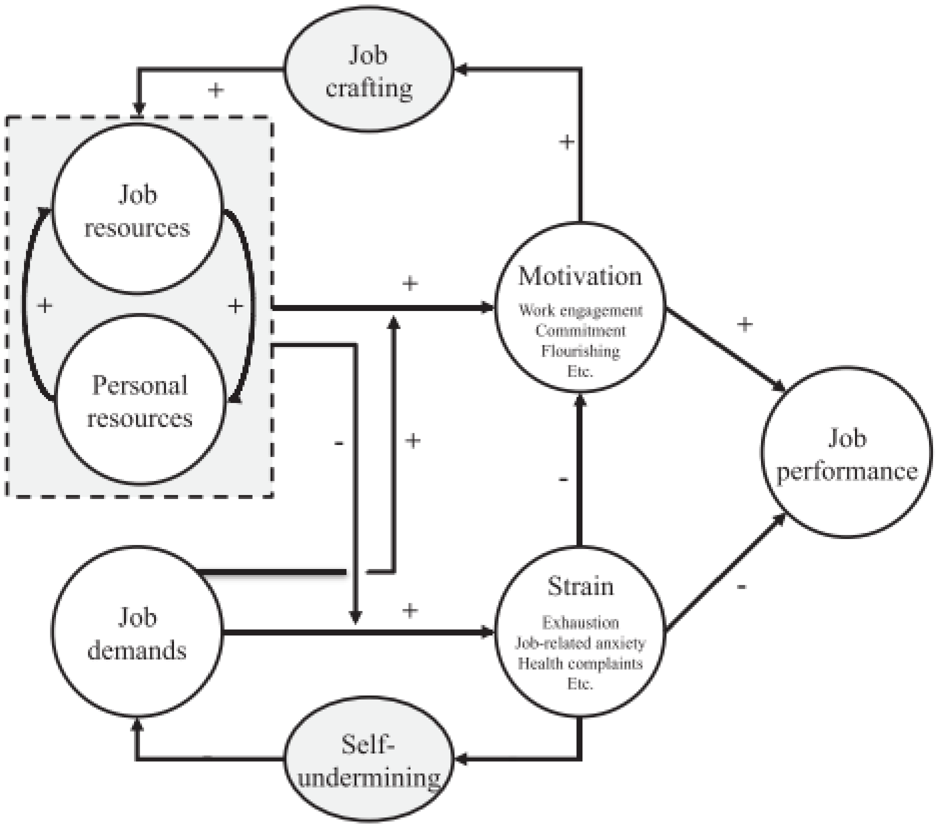


Figure 1 - Job Demands-Resources Model (Bakker & Demerouti., 2017)

This model describes the existence of sets of demands and resources in job environments as predictors of variance in both engagement and burnout / exhaustion, which in turn impact overall job performance (with positive and negative relations, respectively).

Demerouti *et al.* (2001) define job demands as aspects of a job that require effort from individuals to counteract and that as such have certain physiological and psychological costs, while job resources are defined as aspects of a job that "may do any of the following: (a) be functional in achieving work goals; (b) reduce job demands at the associated physiological and psychological costs; (c) stimulate personal growth and development" (Demerouti *et al.,* 2001, p.501).

The rationale behind these concepts is that with a lack of resources, individuals cannot endure the various demands their job environment requires. In these cases, they tend to retreat and shield themselves from those job requirements, outcomes that can be empirically observed as lack of motivation and commitment towards the job itself. In support of this perspective, the model suffered many additions and alterations, gaining complexity by encompassing other distinctive variables and relationships between them that help explain all the different interactions that lead towards both positive and negative outcomes when talking of well-being at work.

For example, the concept of resources expanded to include the constructs of both job resources and personal resources, with the latter referring specifically to an individual's sense of influence and control over their context (Hobfoll, Johnson, Ennis, & Jackson, 2003). Since these self-perceptions originate from the self and not from the environment, and are used to influence the latter, they are independent constructs. However, due to its nature, it ends up having an impact on both job resources and work engagement, since job resources and personal resources have positive relations with each other and they both are predictors of work engagement (Bakker & Demerouti, 2014; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009).

The theory further evolved to take into account the phenomenon through which individuals act to reshape and modify their jobs, which was coined the term *job crafting* (Wrzesniewski & Dutton, 2001). The modifications are the result of psychological, social, and physical acts that aim to change anything related to the context in which they must perform at work, from the number or complexity of tasks one must complete to the very way an individual perceives their job as a whole (Wrzesniewski & Dutton, 2001). Applied to the JD-R theory, job crafting is the method through which individuals attempt to change their job demands and resources to better adjust to their desires or needs (Bakker & Demerouti, 2014).

Finally, several other interactions between the concepts at play in this theory were theorized and eventually consolidated through empirical studies. On the one hand, job resources were found to buffer the impact of job demands by attenuating their negative effects on well-being, since they contribute towards better coping mechanisms and strategies from individuals (Bakker, Demerouti, & Euwema, 2005). On the other, job demands themselves were proven to amplify the benefits of job resources on engagement, since they highlight the impact of job resources. In other words, job resources are better applied (and therefore have a bigger impact) on challenging situations were job demands are also high (Bakker & Demerouti, 2007). Additionally, studies have found causal relationships that run in the opposite way, i.e. that burnout is positively related to some job demands over time (Zapf, Dormann, & Frese, 1996) and that work engagement is positively related to job resources over time (Xanthopoulou *et al.*, 2009). The idea is that individuals under high levels of stress will negatively affect individuals' perception of their own working environment (Zapf *et al.*, 1996), and that engaged individuals will work towards improving their working conditions, therefore creating a wider pool of job resources (Bakker & Demerouti, 2014).

The JD-R theory was created and developed to advance the research on burnout and engagement, and for that it tried to fix some of the flaws that were pointed out in previous well-being models. Namely, the JD-R model was designed to expand the spectrum of variables under analysis by previous models such as the DCM or the ERI model, which were criticized for having a narrow focus (and often mostly on negative outcome variables) (Bakker & Demerouti, 2007). Due to these and other features of the theory, JD-R rose to prominence among well-being academics and experts, being the better-established model of its kind at the present time.

Nevertheless, this theory is not without its own criticisms. Crawford, LePine, and Rich (2010) showed that not all job demands are equal in their effects and distinguished between challenging and hindering demands when it comes to the direction of the relation they have with engagement. Additionally, as seen previously the concepts of engagement and burnout are not yet well defined as independent constructs (Cole *et al.*, 2012), so scholars argue those issues need a solution to solidify the JD-R theory to avoid conceptual overlaps between the two. In another study, Schaufeli and Taris (2014) offered a number of issues that are still unclear about the theory, mostly related to conceptual definitions and relations between the different variables at play.

Even so, Bakker and Demerouti (2014) have argued that rather than contradict the model, most of these criticisms have ended up offering several avenues of further research. In the end, the raised issues turn out to be contributing to its widespread acceptance and use in the scientific community by spreading its influence and consolidating the entire theory, better adjusting it to the reality of the workplace.

This thesis fundamentally supports its findings on this theory, mainly due to its well-established standing in the field of well-being research and to the fact that it can encompass many different concepts. Since the scope we have is so wide in terms of the distinct variables we work with, the JD-R theory ends up being the perfect tool to relate any of them to either burnout or engagement (through their categorization as either job demand or job resource) and, consequently, to well-being as a whole, which is ultimately our end goal.

Methodology

Having consolidated the overarching aim of the project, we set about to determine how to proceed with gathering the necessary data for both our goals.

The first step was determining the aspects of well-being in which the software already touched. This served two functions: to establish the foundation for the data gathering phase required to evaluate the impact of the software in its "as is" state; and to serve as the basis for the debate on which new implementations to introduce to the software to expand its impact range.

After a few meetings with the start-up and an analysis of the software's functionalities it was possible to determine the main key variables it already addressed in some way, leaving space for the development of the two paths we took.

Existing Implementations

Firstly, we focused on assessing the functionalities the software already possessed, and we did so by performing literature review on the main well-being concepts behind said functionalities and consequently developing a data gathering method that would result in an understanding of their impacts on employees that used the software.

The initial focus was to identify on which variables the software could have an impact, based on the features it already possessed that influenced well-being in some way. After analyzing it together with the start-up, we identified a number of different variables for this initial study: *autonomy*, *role clarity*, *conflict management*, *task management*, *work-life balance*, *feedback*, and *collaboration and social support*.

A custom questionnaire was then developed to address the variables listed above. This was done by bringing items from several other well-established questionnaires – namely COPSOQ (Kristensen, Hannerz, Høgh, & Borg, 2003), UK Health and Safety Executive Management Standards Tool (Edwards & Webster, 2012), Work Design Questionnaire (Morgeson & Humphrey, 2006), Standifer Scale (Standifer, Raes, Peus, Passos, Dos Santos & Weisweller, 2015), and the 3 item version of the Utrecht Work Engagement Scale (Schaufeli, Shimazu, Hakanen, Salanova, & De Witte, 2017) – and creating an integrated solution to evaluate the identified variables to attempt to discern if the software did have an impact on them or not. To complement our results, a few interviews were also conducted, aimed at getting further insight into the participating organization's inner processes and overall culture.

Initially thought out to have two parts – before and after implementing the software in a specific organization – to quantify the differences between two distinct points in time, only the one meant to analyze the state of things in the initial moment was completed, since we were unable to gather the necessary data, as we were unable to proceed with the implementation of the software. As such, the results of that questionnaire are not discussed in this thesis, as they are mostly irrelevant without the possibility to compare them with the second phase questionnaire and consequent result analysis.

New Implementations

Since it became obvious that it would be impossible to collect the required data to assess the software's impact, the focus changed towards the debate and conceptualization of potential new implementations.

To go about doing this, we first needed to see what other concepts existing in both human resources and organizational psychology could influence well-being that were not already addressed in the initial research. This was done by analyzing several articles and books of reference that encompassed different aspects of the work context that could contribute towards these impacts (Schaufeli and Taris, 2014; Kozlowski, 2012; Schneider & Barbera, 2014; Cartwright & Cooper, 2009) and further describe the specific way through which they did so.

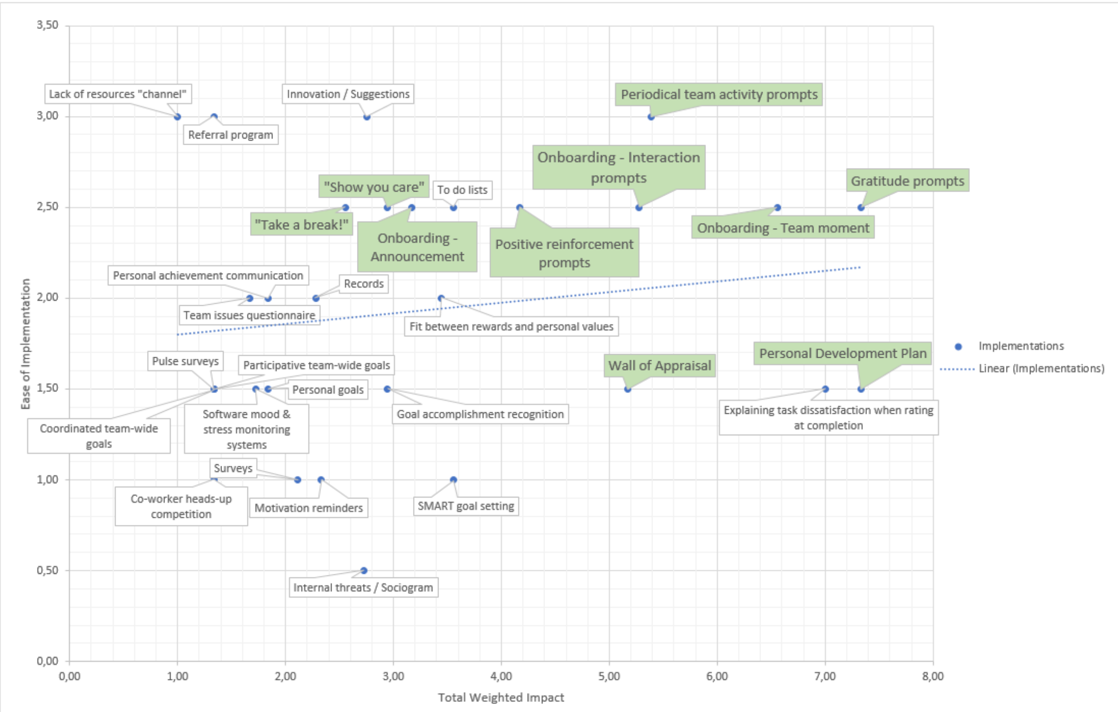
As we gathered possible variables, several meetings with the start-up were held over a period of roughly 3 months in which we brainstormed about potential implementations based on these theoretical foundations, balancing their potential impact and ease with which they could be integrated into the software.

To quantify their importance and relevance for our study, each variable was given a rating from 1 to 3 based on both how strong and well-established in theory its impact was. The same rating was given to how long effects were expected to be observed after they were worked on.

From there, the various brainstormed possible features were crossed with these variables so that an approximation of their potential impact could be achieved. Taking into consideration the potential difficulties each of the features could be present when being developed for the software, each possible implementation was also assigned a value from 1 to 3 (from hardest to easiest to implement).

The goal was to translate what was qualitative information into quantitative data that could aid our decision process. It is important to note that this entire process only served to better process the amount of information we had at our disposal regarding the variables at play as well as the implementations under analysis. In other words, although all value attributions were given taking into account the impacts given by theory, those attributions did not have a high degree of scientific accuracy. As such, this process should only be regarded as an aiding instrument in the final decision on what features to push forward on.

Our final result was the graph below (Graph 1) that crosses both expected impact and relative ease for development and integration into the software. In it, our chosen features, that are further discussed ahead, are highlighted.



Graph 1 - Implementation Matrix

Implementation Analysis

Our proposed software features were conceived with the aim of enabling a broad range of action, in the sense that they intend to reach the same goal of improving employee well-being but through several interventions on a number of different variables.

These areas are *onboarding*, *gratitude*, *workplace breaks*, *feedback*, *supervisor support*, *performance management*, and *group cohesion*, with some of the implementations touching on more than one of these topics at once. Even though some share the same topics, the way in which they act towards their goal of improving well-being at work is different, as they are constructed in distinct forms.

It is important to note that the following implementations are only expected to wield results if the individuals they aim to have an impact on actually put them into practice. As a software, it is close to impossible to force habits to change without the necessary will to do so from users and / or organizational focus on expecting that change, making this point a critical one for the success of these or any other similarly implemented solutions.

With that in mind, the following suggestions touch on different subjects that are shown by academic research to have positive impacts on both well-being and job performance. As such, theory suggests that through their implementation several positive outcomes can be expected for both individuals and organizations.

Onboarding

Organizational socialization (or onboarding, as it is more commonly referred to) can be defined as “the process by which an individual acquires the social knowledge and skills necessary to assume an organizational role” (Van Maanen & Schein, 1979, p.3). This process has been shown to be influenced by two factors in particular: information seeking and organizational socialization tactics, i.e. the proactive behaviors from newcomers attempting to better fit in their new surroundings and the organizational measures put in place to facilitate that process (Bauer, Bodner, Erdogan, Truxillo, & Tucker, 2007).

Bauer *et al.* (2007) showed as a part of their study that among other relationships, organizational socialization tactics are positively related with social acceptance (one of the aspects that integrates the concept of newcomer adjustment), which in turn is positively related with performance, job satisfaction, organizational commitment and intentions to remain, as well as negatively related with turnover.

A study by Kammeyer-Mueller, Wanberg, Rubenstein, and Song (2013) also found that the way supervisors and coworkers act towards newcomers in organizations has several impacts on their well-being at work. Their study showed that supervisors and coworkers showing support towards new employees positively affects how the latter both feel in terms of happiness vs unhappiness and how he proactively engages in socialization behaviors. This effect can be observed if this support is shown in the initial moments of entering the organization (and even during the first 90 days in the case of supervisor support).

The same study also discovered that these supportive behaviors can lead to positive socialization outcomes, such as work proactivity, social integration, organizational commitment and less withdrawal behaviors. Furthermore, another important finding was the fact that newcomers who experienced more undermining attitude from their supervisors ended up leaving sooner than those who did not.

All this data helps solidify the idea that both managers and team members should be aware that they have a critical role in not only introducing new employees to the organizational norms and culture, but also in ensuring that they are emotionally well and have the space to adapt and connect with their environment. By doing so, company “veterans” are actively contributing to a better integration process for newcomers and, consequently, having a beneficial impact on both the individual and the organization.

In this regard, we propose three implementations aimed at ensuring that the integration period of each newcomer remains top of mind among existing co-workers. Firstly, before the newcomer’s arrival at the company the software would provide a template for an entry announcement to be posted in the “wall” (an area in the software that allows for individuals to share posts and files with other employees in a public fashion – similar to current social media platforms) as to create widespread awareness for that person’s integration in the organization. After the individual effectively enters the company, the software would on one hand prompt all team members to remind them to take a proactive step in interacting with the new addition to the team during that person’s initial period in the organization. On the other hand, the software would also prompt the supervisor to schedule an informal team moment, aiming to promote socialization between all team members.

While the announcement of their entry aims to create organizational awareness, the remaining two are more focused on creating exactly the sort of supportive behavior described above. By prompting team members to interact during the initial period, and even more so by creating a task for supervisors to schedule a moment in which the team can interact outside the workplace, the software initiates this sort of relationships and acts as a kickstart for future relations.

We can then expect the software to have a direct positive relation on the onboarding experience during the initial period of integration, as well as an indirect impact on the ongoing onboarding period from then on as a result of the push it offers in that direction.

Gratitude Prompts

A concept that has recently surfaced in organizational well-being literature is the one of gratitude. As a relatively new concept in organizational psychology, the literature has not yet agreed on a common definition for the overall construct as "in only a handful of studies have scholars examined its role in organizations" (Fehr, Fulmer, Awtrey, & Miller, 2017, p.361).

However, Fehr and colleagues (2017) have proposed a multilevel model of gratitude in which they put forth three definitions of gratitude in organizations, depending on the level in which it takes place. At the episodic level, gratitude is defined as "a feeling of appreciation in response to an experience that is beneficial to, but not attributable to, the self". At the individual level, gratitude is the "stable tendency to feel grateful within a particular context". Lastly, at the organizational level it is defined as "persistent gratitude that is shared by the members of the organization" (Fehr *et al.*, 2017, p.363-364).

When referring to the latter, the same authors (2017) present three distinct sets of initiatives, two of which are particularly relevant for our purposes: appreciation programs, i.e. institutionalized occasions in which individuals have the opportunity to show gratitude towards others; and contact with beneficiaries, i.e. opportunities for individuals to interact directly with those who most benefitted from their aid. In other words, both can be summed up as giving individuals in an organization the space to both give and receive appreciation.

Our suggestion aims to create those opportunities for individuals. The software would show a message upon login that would propel users to either think about their recent tasks and decide if someone deserves to be thanked for their contribution, or think about someone they consider would benefit from help with completing an especially long and / or complex task.

Considering these definitions, the implementations we propose are well-suited to act on various levels, since by creating a concerted effort to positively influence gratitude at the episodic stage in a persistent fashion we are able to impact it at the organizational level as a whole.

When it comes to the impact of said measures, research supports the positive effects on well-being for all parties involved. On a more generic level, Schwartz and Sendor (1999) found that individuals intrinsically enjoy helping others, therefore supporting the argument that lending a helping hand is in its own merit a well-being inducing practice. Additionally, further studies have found positive connections between gratitude and OCBs (Spence, Brown, Keeping, & Liam, 2014), as well as certain coping strategies – through mechanisms such as support-seeking behavior and tendency to identify growth opportunities, to name a few (Wood, Froh, & Geraghty, 2010; Wood, Maltby, Gillett, Linley, & Joseph, 2008), that end up influencing employee well-being as well.

Therefore, we can argue that regular prompts to be on both the giving and receiving ends of gratitude will work towards creating and maintaining a culture of appreciation towards others' efforts and of cooperation across various levels of the organization – ultimately having an impact on co-worker well-being due to the aforementioned effects.

“Take a Break!”

A current widespread workplace concern are the effects on individual well-being caused by working longer hours and, on another level, putting more and more effort into fulfilling their job requirements (Kasai, 2016; Carmichael, 2015). This latter phenomenon is labeled as work intensity, term defined as “a job demand that reflects the required pace, effort, and affective energy to perform work tasks and duties” (Boekhorst, Singh, & Burke, 2017, p.891).

Indeed, studies have shown that work intensity has increased throughout industries over the years (Green, 2001). Green (2001) also concluded that rise in effort is linked with increased perceived stress and that peer pressure is one of its most influential sources. Recently, Boekhorst *et al.* (2017) found that work intensity is positively related with emotional exhaustion, which is in turn negatively related with life satisfaction. Additionally, they found that the level of psychological detachment moderates the latter relationship, with lower levels of detachment having a stronger negative impact on it. The fact that work intensity leads to emotional exhaustion is another factor that merits attention, as it is proven to lead to poorer job performance overall (Demerouti *et al.*, 2001).

All this research points towards the importance of keeping work intensity in check, and it urges organizations to take an active role in achieving this goal by introducing different programs and measures. From the academic perspective, work recovery research comes to support that identified need, by gathering knowledge on if and how time away from work improves performance and well-being for employees.

In her article, Sonnentag (2003) shows that employees that have time to recover from work turn out to experience higher levels of work engagement and proactive behavior. In this respect, it is also important to note that individuals with a higher degree of stressful situations require extra time to fully recover from work.

Research in this field has focused heavily on longer periods of time away from work, unfortunately leaving the concept of taking breaks at work to be less delved into over the years (Trougakos *et al.*, 2008; Demerouti, Bakker, Sonnentag, & Fullagar, 2012; Kim, Park, & Niu, 2017). Even so, some studies have been made in this regard.

Breaks at work are low-duration pauses individuals take from a specific task that are either anticipated or self-initiated (Jett & George, 2003). Kim and colleagues found in their study that “ceasing work temporarily and taking momentary breaks to replenish resources can help individuals recover from negative load reactions of doing work demands" (Kim *et al.*, 2017, p.39). However, the nature of said pauses is important. To be effective in replenishing resources, breaks away from work must not require individuals to engage in self-regulatory behavior (Trougakos, Beal, Green, & Weiss, 2008). A few other studies have tried to pinpoint exactly what type of break activities would be more beneficial for individuals, with research pointing towards activities linked with learning, relationships or meaning at work as the most likely to have positive effects. However, that conclusion has still to be fully consolidated with further research as there is still a need for more concrete evidence on the subject (Fritz, Lam, & Spreitzer, 2011; Kim *et al.*, 2017).

In any case, the link between taking breaks at work and higher levels of positive affect (Trougakos *et al.*, 2008), and better recovery from job demands (Fritz *et al.*, 2011; Kim *et al.*, 2017) has been somewhat well-established.

Therefore, to contribute towards employees taking breaks from work we propose the implementation of a series of periodic prompts on certain occasions to remind workers that they should take short pauses every so often during the workday.

It is important to note that these prompts must only appear at specific points during the day. Poorly-timed breaks can in fact be detrimental as they can interrupt the flow of work by making individuals forget certain details related to the task at hand, as well as making them lose motivation towards retaking said task (Jett & George, 2003). To avoid these issues, the software should only issue these prompts, for example, right after an employee has checked a complex or time-consuming task as completed. The software should also allow users to regulate its recurrence or deactivate it completely if desired. To take into account advances in literature, software updates should also include adjustments to the message of the prompt itself so that they recommend specific activities that are proven to bring the best benefits for the individual.

Positive Reinforcement Prompts

In the fields of positive psychology and organizational behavior management (OBM) the concept of positive reinforcement has garnered increased attention over the past few years after some researchers pointed to the fact that it was hypothesized that it could play an integral role in creating a transition from other, more negative practices when it comes to inducing desired behavior in others (Catania, 2001).

In fact, scholars have debated on what type of reinforcement would be more effective in promoting the desired behaviors in employees. For instance, Malott (2003, p.82) states that "fear of failure is not why people fail to achieve, but rather fear of failure is why people do achieve", and as such negative reinforcement on the quality of the work must be presented to create the necessary amount of pressure (either from the self or from outside sources). However, research has shown that positive reinforcement instead of taking a negative approach would yield the best results. Skinner (1971) stated that negative reinforcement has detrimental effects on one's sense of freedom, and behavioral analysts such as Daniels (2000) proposed that such an approach would result in individuals working only the bare minimum to avoid negative consequences, instead of towards more desirable outcomes.

On the contrary, positive reinforcement can be seen as a primary driver of "developing well-adjusted, successful individuals" (Wiegand & Geller, 2005, p.21) with a strong feeling of self-worth and personal drive by reinforcing desired behaviors through empathetic, well-timed interventions (Wiegand & Geller, 2005). Positive feedback is also expected to lead towards higher self-efficacy levels, since that type of feedback would result in individual's knowledge of their own achievement (Waldersee & Luthans, 1994).

It is important to note however that positive feedback's effects on productivity are not completely supported by all scholars. In their study, Waldersee and Luthans (1994) also mention that in some cases positive feedback may actually be counterproductive, for example when it comes to feedback given with regards to very easy tasks.

The implementation we propose would ultimately take all of these theoretical inputs into account. The software is to show periodical prompts to a manager after one of the team members (or the team as a whole) complete a rather meaningful and/or complex task within the parameters set for its completion (time, budget, among others). The idea is that by reminding the manager to approach the co-workers in question and incentivize the behavior that allowed for that task's conclusion, the employees will focus on repeating said behavior in future situations. In other words, a desirable attitude would more likely be echoed beyond that point.

One of the negative side effects that we considered was that if this type of prompt were to appear too often it might result in the opposite result. To avoid such a consequence, the prompt would only appear after significantly impactful tasks, as those would deserve the highest level of recognition. Additionally, the prompt would also not appear if, by any chance, a number of tasks fitting these criteria were completed in quick succession by the same individual. Ideally, the specific parameters for the prompts would be adjusted as the software is further developed and improved over time to maximize its positive effects.

As a result, we expect to see increased feelings of self-efficacy (Waldersee & Luthans, 1994), self-esteem, and empowerment (Wiegand & Geller, 2005), as discussed above, which combined ultimately lead to work engagement and better job performance.

“Show you care”

It has long been a standing belief in the HR community that one of the reasons, if not the most prominent, for an employee to leave his current job is the direct manager, and although practitioners and experts debate on how that process occurs, that belief has mostly held up over time (Goler, Gale, Harrington, & Grant, 2018; Ryan, 2017). Those same experts do state that managers have a significant role in ensuring that employees feel appreciated and recognized inside organizations (Goler *et al.*, 2018; Ryan, 2017), claim that has also been supported by academic studies (Biron & Bamberger, 2012).

In fact, Biron & Bamberger (2012) discovered that perceived supervisor support had a moderating effect on the relationship between aversive conditions and workplace absence, suggesting that employees that perceive their direct managers as being more supportive will generally exhibit less absenteeism-related behaviors. Hämmig (2017) also found that perceived supervisor support was the strongest risk factor among all support sources for individuals when it came to health and well-being at work.

We can therefore argue that there is a need to humanize leadership in organizations, to push managers towards being more aware of the pressures that loom over their employees and incentivizing a culture of support between these two parties.

Our recommended implementation in this case is what we called “Show You Care!”, as it consists in nudging managers towards showing the required support in a certain type of out-of-work situations that are of exceptional strain to individuals under his supervision. Specifically, the idea would be that the software would release prompts for managers who had direct reports absent on extended leaves (e.g. maternity leave or medical leave) or that had to leave for their work stations for personal emergencies that would incentivize them to call those employees to check in on their situation and / or support them during these periods.

Our goal is to increase the perception of support from managers in situations other than those strictly related with the workplace role of that individual. We posit that by doing so, employees will develop a closer relation to their direct supervisor due to the formulation of an internal sense that their managers care for them as people. This will ultimately lower absenteeism and feelings of alienation, which in itself can contribute to lower levels of burnout and higher levels of engagement.

Personal Development Plan

Another one of our suggestions originated from the need to update and innovate on the process of performance appraisal and performance management for organizations. A recent survey on performance management from McKinsey (Chowdhury, Hioe, & Schaninger, 2018) found that respondents perceive their organizations' processes and systems are being ineffective and, in some cases, even detrimental to company performance. To change this, the labor market must first transition fully from performance *appraisal* processes to performance *management* processes.

While the former is usually a formal evaluation process that consists on a one-way communication flow from supervisor to employee to rate him according to set criteria that happens usually only on a predetermined moment once or twice a year (DeNisi & Murphy, 2017), the latter can be defined as "a continuous process of identifying, measuring, and developing the performance of individuals and teams and aligning performance with the strategic goals of the organization" (Aguinis & Pierce, 2008, p.139).

In other words, performance management is wider in both scope and goal. As it encompasses many other procedures and activities that are also designed to not only evaluate, but also improve that employee's performance at work during the year (DeNisi & Murphy, 2017), it manages to better achieve its organizational objectives.

As a process, performance management has various stages (Aguinis & Pierce, 2008; see also Aguinis, 2009) – of which performance appraisal is one – that comprise an entire path from analyzing and company priorities and defining goals together with the employee to measuring the results and jointly figuring out what are the necessary adjustments for both parts to benefit. And both parts do indeed benefit. Cascio (2012) found that organizations that implement performance management systems are 51% more likely to outperform others when it comes to financial outcomes and 41% in topics such as customer satisfaction and employee retention, among others.

However, implementing such a system is not a quick win on its own, as not all such processes present the intended results (Aguinis & Pierce, 2008). In fact, Chowdhury and colleagues (2018) state that to enable positive outcomes, these systems need to be perceived as fair by both employees and the company, and for that to occur three practices need to exist: "linking individuals' goals with business priorities, coaching effectively, and differentiating compensation across levels of performance" (Chowdhury *et al.*, 2018).

While changes in the compensation structure requires a wider alignment between different organizational systems, the other two practices mentioned previously are purely related to how performance management systems themselves are put together, and are therefore easier to adapt and improve. And the fact is that academic research supports these two claims. In their study, Doest and colleagues (Doest, Maes, Gebhardt, & Koelewijn, 2006) concluded that facilitating the pursuit of personal goals through the work environment led to higher job satisfaction and employee well-being. Continued efforts related to maintaining both coaching and feedback moments during this process have also proven to be critical for their effectiveness. (Cascio, 2012).

Aligned with these two factors – personal and organizational goal alignment, and coaching interventions – our implementation would focus on creating a space on employee's personal profiles (accessible to both them and their direct supervisor) through which they could both define the co-worker's personal development plan. The software would prompt the manager to start this process a certain period of time after said employee entered the organization (to let that individual consolidate his integration first). The software would then provide a space for manager and co-worker to define the latter's personal goals – which ideally should also be aligned with organizational and job goals – and further down the road prompt the manager regularly to follow-up on said goals according to the timings both participants set. As some goals are bound to take longer to accomplish than other, this process would be based on flexibility, to allow for individually adjusted timelines (falling outside of traditional yearly performance milestones).

We posit that by doing so, we ensure that parallel to performance goals, individuals will be able to work on their personal ambitions as well, and more importantly do so with the support of their direct supervisor along the way, contributing in the end towards higher levels of both employee well-being and productivity.

Wall of Appraisal

Connected with a previously discussed implementation – the Gratitude Prompts – is our suggestion to create an area in the software where individuals can share their feedback openly with one another. The main goal of this feature is to create an avenue for feedback to become more widespread and available throughout the organization.

However, the Wall of Appraisal is purely virtual in the interaction it creates between employees. This implementation consists of creating a space in each person's profile within the software where anyone in the organization can share their feedback and comments directly with that individual.

This implementation is supported by research that has been made on the concept of multisource (or 360 degree) feedback. This concept relates to the process through which subordinates, peers, supervisors and / or external stakeholders relay feedback to a specific recipient (Atwater, Waldman, & Brett, 2002), differing in that way from traditional feedback systems that only see feedback from a top-down, supervisor to subordinate perspective. Feedback itself has been established as a tool that can be used to improve the work context in many ways. For example, Fried and Ferris (1987), upon their review of the JCM, proved that feedback has a positive impact on job satisfaction. Additionally, Kluger and DeNisi (1997) showed through their meta-analysis that feedback interventions do result, in general, in higher levels of performance. When it comes to the impact of multisource feedback in particular, "numerous studies have reported improvements in overall performance following 360 or upward feedback interventions" (Atwater *et al.*, 2002).

This topic does nevertheless draw some controversy. Although feedback interventions in general have been proven to have positive impacts in organizations, many caveats exist on how to make that process more efficient – and even in some cases prevent it from being counterproductive (Kluger & DeNisi, 1997). For example, the open-mindedness of feedback receivers has a sizable impact on the likeliness of said comments being used as a starting point for meaningful improvements (Taylor & Bright, 2011).

To solve this issue, the individual's supervisor also needs to have access to the full record of the received feedback. This will allow him to adjust the employee's Personal Development Plan accordingly if both manager and co-worker identify improvement points that can be worked on. By doing so, the impact of receiving this feedback is better harnessed, as it has proven to result in more positive outcomes when paired with goal setting interventions (Kluger & DeNisi, 1997) and follow-up coaching (Atwater *et al.*, 2002).

Additionally, there would be the option of, on the giving side, making it anonymous, and, on the receiving end, to turn any feedback that said individual wishes to share public on the platform. By doing so, feedback givers may be more inclined to be more honest and accurate with their comments (Taylor & Bright, 2011) and feedback receivers get the opportunity to share feedback that they deem would improve their recognition among peers.

Nevertheless, we recognize the potential negative implications that an incorrect application can produce, and as such we recommend that this implementation receives extra focus on the analysis of its day-to-day impact on the people that it affects, as well as on relatable research that may serve to adjust and improve on the potential benefits it can bring to organizations.

Periodical Team Activity Prompts

As previously stated, positivity in the workplace as a topic has gained notoriety in the business community, trend that is easily spotted in publications within the area (e.g. Craig, 2017; Seppala, 2015).

Cameron, Mora, Leutscher and Calarco (2011) point out some of the behaviors that characterize a positive workplace, including for example caring for colleagues as friends, providing support and treating one another with respect and gratitude. The same article (Cameron *et al.*, 2011) notes that these behaviors translate into individual positive affect, namely when it comes to higher levels of satisfaction at work, well-being, social satisfaction and lower levels of conflict and intentions to quit.

For these attitudes to occur, there must be a sentiment of belonging among individuals to enable the formation of a cohesive group that will exhibit these behaviors to one another. Group cohesion can be defined as social and motivational forces that create a bond among group members (Beal, Coen, Burke, & McLendon, 2003). This construct is further decomposed into three different components (Festinger, 1950; Mullen & Copper, 1994): interpersonal attraction, group pride, and task commitment. It is important to note that in their meta-analysis, Beal and colleagues (2003) concluded that all three components are positively related with group performance.

Overall, we can see that group cohesion in general (and interpersonal attraction in particular) overlaps with the positive workplace behaviors cited above. Additionally, Jehn and Shah (1997) concluded in their study that groups in which individuals see other members as friends rather than mere acquaintances tend to communicate more, provide more positive encouragement and are more committed and cooperative.

Becoming a tighter group with close social connections ultimately leads towards better performance and well-being by promoting a culture of positivity and interdependence. As such, it becomes imperative that team members get the opportunities to develop these bond, making the role of the team leader crucial as the main enabler.

Our proposal is that the software would trigger periodical prompts to managers to set up different moments that would enable the team to connect. These could be anything from sharing a meal to full-day team building activities. The main point is that the manager takes responsibility for creating the conditions for team members to connect with one another.

The idea is that by providing said moments, individuals would get the necessary opportunities to deepen their bonds with each other, and consequently develop higher levels of cohesion. In the end, that is expected to result in both higher levels of performance and well-being among team members, as well as a positive impact on workplace positivity as a whole.

Conclusion

With this work our main objective was to help bridge the gap between the theoretical and the practical sides of people management in organizations. Due to the increasing relevance that technology is taking in the workplace, closing this gap by collaborating with entrepreneurs that are developing and commercializing a digital solution further contributes to the relevance of this project.

Since we were working with a start-up, one of our goals was to also provide a set of implementations that could impact well-being in different ways. Our rationale was that by presenting a wide range of possible solutions for the software, its impact would be felt across various processes within the organization, potentially maximizing its effects.

That impact is assured by connecting all implementations with at least one specific variable that is proven to have an impact on well-being in some way. By doing so, and basing our entire thesis on the JD-R model, we can more confidently conclude that they will produce the expected results as they all possess solid foundations on well-established theory. Additionally, by having been constructed in partnership with professionals from the area we were also able to include expert inputs from the business side into the implementations' conception process, once again contributing towards bringing both sides of people management together.

Overall, we are confident that our work is a good contributor towards the general path that the HR field is on when it comes to improving well-being at work. We hope that more such projects take place in the near future, working towards better life at work for individuals and organizations alike around the world.

Limitations & Future Research

Nevertheless, there are some limitations that are important to point out. The first one, and perhaps one of the most obvious, is the fact that all the described implementations are still just proposals, and that therefore lack concrete evidence to back them up empirically. To evaluate their potential impact it is then necessary to measure them in practice so that the predicted results can be confirmed to occur or not.

Another limitation that our work faced lies in the fact that our first main objective with this study could not be completed due to external constraints. We originally aimed to evaluate the impact of the software in its "as-is" state, measuring the variables that could be identified at the time to conclude whether the solution could produce any significant results on well-being. However, we were unable to implement the software in any real organization, rendering that part of our project impossible to take place. As such, we are unable to empirically state that the software already possesses features that produce a positive impact on well-being (although, as mentioned previously – see Methodology – these are already expected to produce some sort of effect in that regard).

As discussed previously, some of our implementations (e.g. "Wall of Appraisal") require the organization that receives the software to support its implementation with a separate process for organizational change. Namely, employees (and especially those in leadership positions) need to embrace the change, since all of the proposals we present only work if the individuals they are meant to affect make the choice to follow the software's recommendations and to make the most out of the software's features. Ideally, this process would also include a training plan, if needed, to cover areas that would potentiate the positive impact some of the features are expected to create. One example is that the "Wall of Appraisal" implementation should be accompanied by training sessions aimed at improving both giving and receiving feedback mentalities within the organization, as its non-existence may render the implementation fruitless or even counter-productive.

Another possible avenue for future research is the fact that the main focus of nearly all suggestions was the impact on individual well-being. As such, there is still the potential to investigate possible features that work on a team-level basis, by influencing team processes and dynamics as opposed to only individuals.

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