

A Mediation Model among Individual Mindfulness, Work Engagement and Collective Mindfulness of Employees in Lima-Peru

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Abstract

Purpose: Nowadays, organizations face global and interconnected contexts that force them to change traditional structures and systems in order to survive. Therefore, novel individual, collective, and organizational skills are needed to achieve the new global demands. Latest empirical research has shown that individual mindfulness, collective mindfulness, and work engagement are crucial to organizations in order to be efficient and sustain internal well-being. **Methods:** Therefore, due to the already established significant and positive relationship between individual mindfulness and work engagement and the properties that collective and individual mindfulness share, the present study used the job demands-resources model to propose a mediation model where individual mindfulness was a personal resource, collective mindfulness was the job performance variable, and work engagement was the mediation variable. **Results:** The results showed that work engagement fully mediated the relationship between individual and collective mindfulness ($F(2, 169) = 28.528, p \leq .001; R^2 = .252$). It was also identified that, within the relationship between work engagement and collective mindfulness, dedication ($b = .194; \beta = .477; p \leq .001$) presented the strongest relationship; followed by vigour ($b = .196; \beta = .423; p \leq .001$) and absorption ($b = -.168; \beta = -.370; p \leq .001$) respectively. Finally, vigour ($\beta = .517, p < .001$) was the strongest predictor of the collective mindfulness dimension's commitment to resilience, while dedication ($\beta = .463, p < .001$) was the only significant predictor of reluctance to simplify and absorption the only negative predictor of all the collective mindfulness dimensions. **Implications:** The findings of this study provide valuable insights for delving deeper into the interplay between individual mindfulness, work engagement, and collective mindfulness within work settings. As such, this research highlights the significance of examining how individual mindfulness and work engagement

interact, in order to better understand this cognitive and behavioral phenomenon that enhances organizational performance and enables organizations to creatively grasp and effectively respond to the intricacies of their operating environments.

Keywords

Individual Mindfulness, Collective Mindfulness, Work Engagement, Job Demands-Resources Model

“Once you mindfully observe how much time is wasted on cognitive distractions and how that leaves you vulnerable to missing what is really going on around you now, you begin to work toward the vividness of a better-focused mind and wisdom”

Weick & Putnam, 2006

1. Theoretical Background

Nowadays, in a world that is rapidly changing, organizations face global and interconnected contexts that force them to change traditional structures and systems in order to adapt and survive (Gibson et al., 2012). Within this situation, organizations can find themselves exposed to unanticipated events and make poor choices (Ray et al., 2011). Therefore, a combination of different and novel individual and collective skills is needed in order to achieve the new global demands and organizational goals (Gibson et al., 2012; Weick et al., 1999). New empirical research have shown that variables such as individual mindfulness (Coo & Salanova, 2017; Dane, 2011; Glomb et al., 2011; Mesmer-Magnus et al., 2017; Montes-Maroto et al., 2018), collective mindfulness (Ray et al., 2011; Vogus & Sutcliffe, 2012; Weick & Sutcliffe, 2006; Weick, et al., 1999), and work engagement (Malinowski & Lim, 2015; Rich et al., 2010; Schaufeli & Bakker, 2004b) are crucial to organizations in order to be efficient, keep their reliability, achieve their goals, and sustain internal well-being.

1.1. Mindfulness

Mindfulness has recently become a strong field of research and knowledge development in diverse settings, such as clinical psychology, occupational health, education, and organizational environments (Coo & Salanova, 2017). Whether it is a stable trait for some people or a momentary state for others, mindfulness is an inherently human capacity that can be learned and developed in order to enhance the way thoughts, actions, and emotional states are attended (Coo & Salanova, 2017; Mellor et al., 2016). Nevertheless, to fully understand the concept of mindfulness, it is necessary to explain the different approaches toward this construct. As pinpointed by Weick & Putnam (2006), there are two different lines of thinking: one in concordance with an Eastern philosophy and the other linked to

a Western thinking. The Eastern thought is based on Buddhist wisdom and considers mindfulness as an individual enhancement of attentional stability and clarity in order to reduce a scattered attention and improve attentiveness to the present (Weick & Putnam, 2006). This capacity enables people to be engaged in the present and to observe one's mental processes in a more clear and open way (Weick & Putnam, 2006). Nevertheless, in order to develop a constant state of individual mindfulness there must be an ongoing awareness of three qualities: impermanence, unsatisfactoriness, and selflessness (Gunaratana, 2002; Weick & Putnam, 2006). Impermanence refers to the capacity of noticing that everything is changing, moving, rising and falling. It is also related to the understanding that all thoughts have a feeling tone that leads people to perceive their reality in a certain way. Unsatisfactoriness is related to the capacity to accept the notion that every material thing is impermanent and will not provide a stable sense of safety or comfort (Gunaratana, 2002; Weick & Putnam, 2006). Selflessness stands for "the nonexistence of an unchanging self" (Gunaratana, 2001: p. 196), which is related to the awareness and recognition that the self is not a static entity, it is constantly changing and interconnected with other beings (Gunaratana, 2002; Weick & Putnam, 2006).

Several studies have demonstrated the central role that this individual perspective of mindfulness has on people's lives: enhancing their physical and mental health, as well as their subjective well-being (Coo & Salanova, 2017; Dane, 2011; Giluk, 2009; Glomb, et al., 2011; Grossman et al., 2004; Keng et al., 2011; May & O'Donovan, 2007; Mesmer-Magnus et al., 2017). Likewise, numerous mindfulness-based interventions have been successfully able to reduce significantly perceived stress, depression, anxiety, and ruminative thinking in individuals (Bohlmeijer et al., 2010; Chiesa & Serreti, 2009; Mesmer-Magnus et al., 2017; Sedlmeier et al., 2012; Virgili, 2015). In relation to work environment, mindfulness can promote positive outcomes because the way employees focus their attention affects decision making and risk taking (Kotzé, 2018). Glomb and collaborators (2011) stressed that mindfulness enhances diversity of organizational key factors as decision making, communication, problem solving, creativity, job satisfaction, and the ability to perform under stress. In addition, Dane (2011) found that mindful individuals are able to maintain high levels of attention and focus, and are able to early identify and propose creative solutions when operations are not performing as they should. Finally, individual mindfulness presented also significant and positive correlations with work engagement (Malinowski & Lim, 2015) self-determination and confidence (Glomb et al., 2011), perceived job satisfaction (Mesmer-Magnus et al., 2017), job performance (Coo & Salanova, 2017; Mesmer-Magnus et al., 2017), and interpersonal relationships at work (Coo & Salanova, 2017; Glomb et al., 2011; Mesmer-Magnus et al., 2017).

On the other hand, the western perspective of mindfulness largely derives from Langer's (1989) work, which conceives mindfulness as a "flexible state of mind in which we are actively engaged in the present, noticing new things and

sensitive to context” (Langer, 2000; p. 220). Langer (1989) identified three characteristics within the concept of mindfulness: active differentiation and refinement of existing distinctions, creation of new discrete categories out of the continuous streams of events that flow through activities, and an enhanced appreciation of context and alternative ways to deal with it. It is important to mention that this type of mindfulness focuses their attention on external events and in the capacity to discriminate subtle cues of information and switch modes of thinking in order to accomplish effectively the work duties (Weick & Putnam, 2006).

1.2. Collective Mindfulness

Turning to collective mindfulness, the focus shifts from individual to organisational development. Compared to individual mindfulness, the body of research on collective mindfulness is relatively smaller, more targeted, and methodically informed by established sensemaking, processual, and decision-making approaches within the field of organizational studies (Badham & King, 2021). Following the western perspective, the concept of collective or organizational mindfulness was developed in an effort to explain, how organizations can perform reliably, if facing uncertain complex environments (Weick & Robert, 1993).

Collective mindfulness is a social phenomenon of shared cognition, described as “a mean of engaging in the everyday social processes of organizing that sustains attention on detailed comprehension of one’s context and on factors that interfere with such comprehension” (Sutcliffe et al., 2016; p. 61). Weick and colleagues (1999) describe organizational mindfulness as a matter of quality and conservation of attention, which allows people to bring awareness to details and enhance their capacity for action. They identified five interrelated processes within the concept of collective mindfulness: preoccupation with failure, reluctance to simplify interpretations, sensitivity to operations, commitment to resilience, and under specification of structures later that was named deference to expertise (Ray et al., 2011; Vogus & Sutcliffe, 2012; Weick & Sutcliffe, 2006; Weick et al., 1999). Preoccupation with failure refers to the organization’s increased attentiveness and sensitivity to the possibility of errors (Weick et al., 1999). Failures are treated as a whole and not as isolated events, and they are considered as learning opportunities for enhancement (Weick & Sutcliffe, 2006). Indeed, people are encouraged to report any kind of error or potential hazards in order to enlarge the set of failures that are available to learn from (Weick et al., 1999). Reluctance to simplify interpretations is related to the constant awareness that individuals must have in order to not reduce certain complex situations to frameworks or mindsets that could limit the precautions workers may take and the range of undesired consequences (Vogus & Sutcliffe, 2012; Weick & Sutcliffe, 2006; Weick et al., 1999). Simplifications are dangerous because they raise the possibility of unexpected events and lose the possibility to envision harmful consequences. The third cognitive process, sensitivity to operations, denotes “an effortful achievement of a high level of situational awareness” allowing people to

act thinkingly (Weick et al., 1999: p. 43). This reduces the danger of automation surprises (Vogus & Sutcliffe, 2012; Weick & Sutcliffe, 2006; Weick et al., 1999). Sensitivity to operations is mainly reached through an interaction of shared mental representations, common story creation, permanent condition evaluation, active analysis of already planned procedures, among others (Weick et al., 1999). The emphasis is permanently on actual operations and efforts are oriented toward accurate representations relying mainly on social and interactive exchanges (Fiol & O'Connor, 2003; Weick et al., 1999). Commitment to resilience is related to the prediction and prevention of potential damage and to the capability to cope with unexpected events after they have become visible (Weick et al., 1999). Finally, deference to expertise refers to the loss of hierarchy in favour of expertise (Vogus & Sutcliffe, 2012; Weick & Sutcliffe, 2006; Weick et al., 1999). This implies an anarchic mode of functioning, where hierarchical constraints are eliminated and expertise is linked to problems, solutions, and decision making (Weick et al., 1999). This flexibility and shared aptitude strength the organization and make it capable to rapidly solve any surprise enlarging its repertoire of capabilities and knowledge (Vogus & Sutcliffe, 2012; Weick & Sutcliffe, 2006; Weick et al., 1999).

Scholars have identified collective mindfulness as a critical characteristic for reliability-seeking organizations because it allows them the early detection of signals in complex environments. This cognitive social phenomenon gives them the ability to respond efficiently by losing tight coupling and being able to comprehend complexity, allowing taking alternative decisions and innovative action routes (Weick et al., 1999; Vogus & Welbourne, 2003). Although few companies might work with dangerous technologies as high reliability organizations (HROs), a vast number of organizations definitely face tight coupling—such as resource dependence, time pressure, and obligation of novelty—and complex organization-environment relationships (Vogus & Welbourne, 2003). For instance, as firstly demonstrated by Weick & Roberts (1993) after studying flight operations on aircraft carriers, operational errors decreased when employees performed heedfully and fully interrelated, this means with shared vigilance, sustained attention, and focus. Later, Vogus & Welbourne (2003) conducted a study with 184 IPO software firms and found that collective mindfulness was observed as a key factor able to contribute to innovation generation. Specifically, practices as the permanent report of problems and real-time information sharing were found to be indispensable in this process. Likewise, training was suggested to be the drive for commitment to resilience by developing knowledge and skills which in turn, provided creative coping ways (Vogus & Welbourne, 2003). Another positive impact of collective mindfulness has been suggested by Fiol & O'Connor (2003) within the context of U.S. health care market, where bandwagon behaviours around integrated systems were identified. The accurate perception of decision makers has shown to be determinant in regulating the firm when a bandwagon tries to negatively influence it. Nevertheless, when facing complex envi-

ronments together with the pressure felt by the need of having complete information and make the right decisions, risks to simplify and relied more on mindlessness behaviour might become a tendency. According to these authors, mindfulness would enable the perceptual accuracy, moving from category rigidity to category creation, from automatic behaviours to openness to new information, and from a fixed perspective to the awareness of different viewpoints. The dimensions of reluctance to simplify, commitment to resilience, and preoccupation with failure, have shown to boost individual mindfulness (Fiol & O'Connor, 2003). These social processes allowed an expanded scanning and a more context-relevant interpretation when facing decision making. Hence, mindful decision makers will be capable to assess the environment and their internal abilities, and therefore being able to distinguish and decide whether or not relying on a bandwagon is for the organization (Fiol & O'Connor, 2003). Finally, an important empirical contribution of the key role of collective mindfulness in positive organizational outcomes has been provided by Ray et al. (2011). They conducted a study within a setting of non high-reliability organizations using a sample of 180 colleges of business in the US. Their core findings empirically confirm the existing model of five dimensions of collective mindfulness and a prevailing difference regarding the role position, for instance, the deans perceived their colleges to be more mindful than the employees in other positions. According to Ray et al. (2011), a mindful college of business will keep attention to details and is organized in a manner that encourages rich thinking and gives capacity for action.

1.3. Work Engagement

In relation to work engagement, this concept is widely considered as an important indicator for individual and organizational development and success (Attridge, 2009; Bakker, 2011; Bakker & Demerouti, 2008; Kahn, 1990; Malinowski & Lim, 2015; Rich et al., 2010; Schaufeli, 2012; Schaufeli & Bakker, 2004b). According to Schaufeli (2012), engaged employees perform better, not only reporting fewer mistakes and being less often involved in work accidents, but also demonstrating more innovative behaviours. On the organizational level, work engagement is positively related to productivity, customer satisfaction, business success, and organizational competitiveness (Attridge, 2009; Bakker et al., 2011; Fleming et al., 2005). For instance, case studies from employers (Attridge, 2009; Vance, 2006) confirm the relevance of work engagement on the organizational context, reporting a positive relation between levels of engagement and increase in sales, job safety experiences, and customer service satisfaction.

Kahn (1990), denominated as the founding father of this concept, conceptualized engagement at work as the "...harnessing of organization members' selves to their work roles: in engagement people employ and express themselves physically, cognitively, emotionally, and mentally during role performances" (Kahn, 1990: p. 694). Therefore, work engagement stands for a multidimensional motivational concept that embraces the concurrent investment of an employee's physical, cogni-

tive, and emotional energy during job performance (Rich et al., 2010: p. 619). Rich et al. (2010) conducted a study with 245 fire fighters, where they found empirical evidence to associate the three types of energies deployed in work engagement to job performance. They stressed that engaged employees display not only their physical energy towards goal achievement but also their cognitive attention and concentration together with an emotional involvement. On contrary, disengaged individuals who hold back their energies, show rather an unresponsive and detached performance. It is relevant to mention that physical energy allows individuals to maintain augmented levels of effort over prolonged periods; meanwhile, cognitive energy promotes a more vigilant, attentive, and focused behaviour; finally, emotional energy enhances the connection among colleagues toward the achievement of the organization goals and enable people to meet emotional demands particular from their work roles (Kahn, 1990; Rich et al., 2010).

Based on Kahn's contributions, Schaufeli et al. (2002) continued developing the concept of work engagement till it "as a positive, fulfilling, work-related state of mind that is characterized by vigour, dedication, and absorption" (Schaufeli, Salanova et al., 2002: p. 74). Rather than a temporary state, engagement is perceived as a continuous affective-cognitive state that is not focused on any particular object or event. The first component, vigour, should be understood as the capability to maintain high levels of energy and resilience while performing. It includes the desire to invest effort in one's tasks and keep persistent when facing obstacles. Dedication, the second component, refers to one's involvement in the job, where feelings of meaningfulness, pride, and passion are present. Also, people feel strongly identified and positively challenged with their roles and tasks (Schaufeli & Bakker, 2004b). The last component, absorption, stands for being thankfully immersed and fully concentrated in one's work. As suspected, in relation to Kahn's work, vigour would refer to physical energy, while dedication would correspond to the emotional one, and absorption to cognitive energy (Schaufeli, 2012). As referred before, Rich et al. (2010) mention that, contrary to engaged employees, staffs who are highly disengaged withhold their physical, cognitive, and emotional energies, which is reflected in a more robotic and passive performance. This is the reason why work engagement and burnout were considered opposite poles from a continuum of work-related well-being. Nevertheless, after conducting a study with a total sample of 1698 employees from four different organizations in the Netherlands, Schaufeli & Bakker (2004a) concluded that burnout and engagement do not belong to one continuum. In fact, they are two independent states of mind which are negatively correlated. Likewise, Schaufeli, Taris, & Van Rhenen (2008) demonstrated that work a holism, burnout, and engagement are correlated constructs but three different types of workers' well-being. While burnout and engagement act as direct opposites, workaholism rather shares some characteristics with both. Absorption was the dimension which loaded on both engagement and workaholism. Nevertheless, the main difference between them lies in the source of motivation. Workaholics are generally motivated by the unhealthy necessity to meet external

ideals of self-worth and social consent and this becomes an internal drive that they cannot resist (Schaufeli et al., 2008; Schaufeli, 2012). Contrary, engaged employees work hard because they consider their job as interesting, inspiring, and exciting; they are authentically intrinsic motivated (Schaufeli et al., 2008; Schaufeli, 2012).

Bakker & Demerouti (2007) developed a model of work engagement, where this variable is considered as an in-between factor among job and personal resources, on one hand, and job performance, on the other hand. Indeed, job and personal resources—independently or combined—predict work engagement. This positive impact is boosted especially when high job demands appear, such as physical demands, time pressure, shift work, etc. Work engagement, in turn, has a positive impact on job performance. Job performance can be understood as the “aggregated value to an organization of the set of behaviours that an employee contributes both directly and indirectly to organizational goals” (Rich et al., 2010: p. 619). A positive gain spiral is formed because employees who are engaged and deliver high performance levels are capable to generate their own resources. Different studies have consistently supported this model (Bakker, 2011; Bakker & Demerouti, 2008; Hakanen et al., 2006; Rich et al., 2010; Salanova et al., 2005; Schaufeli et al., 2008), showing a positive relationship between job and personal resources as the main drivers of work engagement and a positive association between work engagement and job performance. Job resources, such as social support from colleagues, performance feedback, skill variety, and learning opportunities reduce work demands together with its physical and psychological effects, support work goals achievement, and enhance personal development (Schaufeli & Bakker 2004a; Bakker & Demerouti, 2008; Schaufeli, 2012). On the other hand, personal resources—such as optimism, self-efficacy, self-esteem, resilience, or active coping style—should be understood as “positive self-evaluations that are linked to resiliency and refer to individual’s sense of their ability to control and impact upon their environment successfully” (Bakker & Demerouti, 2008: p. 213). These personal resources enable employees to control and manage successfully their work environments (Bakker, 2011; Bakker & Demerouti, 2007, 2008). As demonstrated by Rich et al. (2010), work engagement fully accounts for the relationship between the antecedents (job and personal resources) and performance outcomes. Personnel who rated with higher engagement levels demonstrated enhanced task performance and higher organizational citizenship behaviour like helpfulness, sportsmanship, conscientiousness, and civic virtue, which provides an adequate social and psychological environment within the organization (Rich et al., 2010). For instance, Hakanen et al. (2006), in their three-year panel study among 2555 Finnish dentists, found individual gain spirals where job resources, such as the opportunity for creativity and positive feedback, predicted work engagement. Likewise, a vice versa positive relationship was found between work engagement and personal initiative, where both showed to have in turn a positive impact on future job resources. Also, it was demonstrated that personal initiative predicted perceptions of work-

unit innovativeness, suggesting that individual resources at work can be spreadable and transmitted to the team.

1.4. Interrelations

To conclude, although still limited, research shows that collective mindfulness is positively associated to successful organizational outcomes in organizations (Fiol & O'Connor, 2003; Khan et al., 2013; Ray et al., 2011; Vogus & Sutcliffe, 2012; Weick et al., 1999). Nevertheless, as recognized by Vogus & Sutcliffe (2012), organizational mindfulness is effortful and costly. One of the reasons is because, in order to adopt and maintain collective mindfulness, people must keep sustained commitment. Within this issue, Vogus et al. (2014) stressed there might be a reciprocal relationship between organizational commitment and collective mindfulness. In other words, high levels of work engagement may lead groups to adopt collective mindful processes and, therefore, deliver a more reliable performance (Vogus & Sutcliffe, 2012). Likewise, it is also plausible that collective mindfulness might increase employee's affective and normative commitment to the organization (Meyer et al., 1993; Vogus & Sutcliffe, 2012). Liu et al., (2020) tested a moderated mediating model to understand the conditions under which employee mindfulness can have a positive impact on work engagement. The results demonstrate that individual mindfulness has a positive influence on work engagement (Utrecht Work Engagement Scale) and that recovery level plays a mediating role in this relationship. Additionally, team mindfulness positively moderates the relationship between individual mindfulness and work engagement. It seems promising, to further investigate this relationship according to Schaufeli and Bakker's (2004b) view on it. Since vigour is understood as the capability to maintain high levels of energy and resilience while performing, we suggest, that it has the strongest relationship with commitment to resilience. Sutcliffe et al. (2016) suggests that the mindful integration of various approaches, without reluctance to simplify, can be achieved more easily when there is a solid relational foundation of respect and trust. Since dedication refers to experiencing a sense of significance and meaningfulness (Jenaro et al., 2011), we suggest, that dedication is the strongest predictor of reluctance to simplify. Lastly, absorption, as being thankfully immersed and fully concentrated on work, is very similar to sensitivity to operations, where people maintain an integrated big picture of operations in the moment, that allows them to be receptive to any problem during ongoing operations (Weick et al., 1999). Deference to expertise and preoccupation with failure are very specific action-related dimensions of collective mindfulness in HRO, which you can't normally find in mainstream organizations.

Although further investigation is needed in order to support these promising approaches—also on collective, and not teamlevel—research has widely evidenced that individual mindfulness is significantly and positively related to work engagement (Coo & Salanova, 2017; Hülshager et al., 2013; Kotzé, 2018; Leroy et al., 2013; Malinowski & Lim, 2015; Mesmer-Magnus et al., 2017). A recent study by Kuang et al. (2022) revealed, that there is a chain mediating effect of positive

emotions and work engagement on the relationship between mindfulness and employees' innovative behavior. Indeed, [Kotzé \(2018\)](#) mentions that individual mindfulness predicts work engagement due to the enhancement of sensitive states of involvement and wakefulness. It also improves the experience of being happily immersed and fully attentive to one's work ([Kotzé, 2018](#)). Open heed rises the clearness and vividness of individual's experiences so that they become more absorbed and positively engaged in their tasks ([Brown & Ryan, 2003](#)). Likewise, as stated by [Kahn \(1990\)](#), employees who are fully present in their job roles experience higher levels of engagement because they develop the ability to perceive existing activities in a novel way and easily shift their perspectives when facing familiar situations. Consequently, mindful employees keep also a stronger interest, attention, and involvement in relation to their job tasks ([Coo & Salanova, 2017](#)).

Due to the already established significant and positive relationship between individual mindfulness and work engagement, the properties that collective and individual mindfulness share, the job demands-resources model proposed by [Bakker & Demerouti \(2007\)](#), and the lack of information around the topic, the present study aimed to clarify the relationship between these three constructs in a sample of employees from diverse work backgrounds from the city of Lima in Peru. In order to analyse these possible relations, the following hypotheses were established:

- 1) Work engagement will mediate positively and partially the relationship between individual mindfulness and collective mindfulness.
- 2) Within the concept of work engagement, vigour will be the strongest predictor of collective mindfulness in comparison to dedication and absorption.

To intensively analyze connections between the condiments of work engagement and those of collective mindfulness, three additional hypotheses are stated. Deference to expertise and preoccupation with failure are very specific actions in HRO, which you can't always find in mainstream organizations. Because the participating companies for the present study origins many different professional sectors, specific hypotheses on these two subcategories are omitted.

- 1) Vigour will be the strongest predictor of the dimension commitment to resilience.
- 2) Dedication will be the strongest predictor of the dimension reluctance to simplify.
- 3) Absorption will be the strongest and a negative predictor of the dimension sensitivity to operations.

2. Method

2.1. Participants

A total of 172 employees from different working fields (education 22.1%, commercial 16.9%, services 16.9%, building 12.8%, aviation 7.6%, industrial 3.5%, communication 3.5%, medicine 1.2%, and others 15.7%) living in Lima-Peru have participated in this study. The age of the participants ranged between 23 and 69

years ($M = 44.19$, $SD = 12.14$). More than half of the sample identified as female (64%) and five participants did not identify themselves with any of the two conventional gender categorizations. In relation to work position, 38.4% self-reported as working in the operational level, 24.4% in the administrative level, and 36% in a management position. Finally, 36% of the sample had been working in the organization from 0 to 3 years, 20.9% from 4 to 7 years, and 43% more than 8 years.

2.2. Questionnaires

Socio-demographic characteristics. Through an online questionnaire, the following demographic information was collected from each participant: gender identity (female, male or “I do not identify myself within these categories”), age, number of years working in the organization (from 0 to 3 years, from 4 to 7 years, and from 8 to more years), working position (operational, administrative, and managerial), and working field (education, commercial, services, building, aviation, industrial, communication, medicine, and others). It is important to mention that, before the socio-demographic record, was a presentation of the study, followed by an introduction of the research topics and a data protection statement.

Individual Mindfulness. The Mexican Freiburg Mindfulness Inventory—FMI—(Pérez-Verduzco & Laca-Arocena, 2017) was used to assess participants’ dispositional mindfulness. The FMI is a one dimension 14-item scale that measures the process of regulating attention to the present and the capacity to perceive mental contents as sensations, cognitions, and affects in their subjectivity and transient nature (Pérez-Verduzco & Laca-Arocena, 2017). This short version of the original FMI, which has 30 items, was developed in order to measure dispositional mindfulness in individuals that were not familiarized with meditation practice. Nevertheless, despite the characteristics of the group of people the scale was developed for, it still preserves strong correlations with the original version: $r = .95$ (Walach et al., 2006). An example of an item from this scale is the following: “I am open to the experience of the present moment”. All answers are given on a four-point Likert scale: where 1 corresponds to “seldom”, 2 to “sometimes”, 3 to “fairly often”, and 4 to “almost always”. This Scale was translated to Spanish and validated in a sample of 200 Mexican people. Regarding the internal consistency, the one-factor scale had a Cronbach alpha of .80 (Pérez-Verduzco & Laca-Arocena, 2017).

Collective Mindfulness. The OrgA (Brandenberg, 2018) is a scale that went through a construction process during the year 2018 that resulted in a 25-item scale that measures the five dimensions of collective or organizational mindfulness (five items for each dimension): preoccupation to failure, reluctance to simplify, sensitivity to operations, commitment to resilience, and deference to expertise. The scale presented a Cronbach’s alpha of .93 and each sub-dimension presented a Cronbach’s alpha above .70. The following items are examples of the three dimension which were used:

- Reluctance to simplify ($\alpha = .70$): “We feel encouraged to contribute our view of things”.

- Sensitivity to operations ($\alpha = .80$): “We have an up-to-date overview of the state of our work”.
- Commitment to resilience ($\alpha = .72$): “We are constantly evolving”.

Work Engagement. The Utrecht Work Engagement Scale—UWES—(Schaufeli & Bakker, 2004b) was used in order to measure work engagement, which is defined as a reliable job-related state of mind characterized by three constructs: vigour (high levels of energy and mental resilience), dedication (work involvement and sense of pride, inspiration, etc.), and absorption (a fully concentrated and joyful state of mind related to one’s work). The UWES is 17-item with a 6-point Likert scale going from never (0) to always or every day (6). It presents an internal consistency above 0.70 in all their cases and could be used as a one (work engagement) or three (vigour, dedication, and absorption) factor scale. The following items are examples of each construct that integrate the concept of work engagement:

- Vigour: “At my work, I feel bursting with energy”.
- Dedication: “I am proud on the work that I do”.
- Absorption: “I get carried away when I’m working”.

2.3. Procedure

The study began with the translation of the OrgA scale into Spanish. Therefore, an official German-Spanish translator in Lima, Peru was contacted. After this process, the three scales and the socio demographic questions in Spanish were uploaded into a survey program called Umfrage Online[®]. The survey for the study was structured in five parts: the first one, was a brief presentation of the study and the researcher; the second part, explained the participants all the information related to their data protection and their freewill in the participation of this study; next, the socio demographic questions were presented; finally, the scales: OrgA, UWES, and FMI, were introduced respectively. Afterwards, the online survey was published along with a brief explanation of the study in two social media applications: LinkedIn[®] and Facebook[®]. The survey was available in spring 2019 to answer for one month. As well, invitational mails were sent to several Peruvian companies from diverse work fields. Nevertheless, only two organizations gave the permission to send the survey to their employees: one related to the construction field and the other one was an educational institution. All participants had an ongoing work contract and were at least 18 years old. Finally, all the data was transferred to the Statistical Package for Social Sciences (SPSS 24) in order to be analysed.

2.4. Data Analysis

All the analyses were performed using SPSS 24. First, the data was inspected for any missing values and outliers. Afterwards, reliability analyses of the three scales and their subscales were assessed using the internal consistency analysis Cronbach’s alpha coefficient. Commonly, this Cronbach coefficient would need to

score at least higher than .70 to be deemed as acceptable (Kline, 1999). Nevertheless, according to Nunnally & Bernstein (1994), consistencies above .60 are also accepted for newly developed measurement instruments. Finally, descriptive and correlation analyses were run in order to observe the characteristics of the variables of the study and if they presented a significant relationship between them. According to Cohen (1988) a low relationship has correlational coefficients between .10 and .23; a moderated relationship, present coefficients between .24 and .36; finally, in a strong relationship, coefficients must be around .37 or more.

2.5. Main Analyses

In order to answer the first hypothesis of the study, a mediation model analysis was performed using PROCESS v3.3 (Hayes, 2017) for SPSS. The variable OrgA total score was introduced as the dependent variable, while FMI total score as the independent variable, and, finally, UWES total score as the mediating variable. Likewise, a Sobel-Test was run to assess the significance of the indirect effect of the mediator. Finally, Freedman-Schatzkin Test was executed to measure if the direct effect in the mediated model is significantly smaller than in the unmediated model.

In relation to the second hypothesis, which attempts to find which of the three constructs of work engagement (vigour, dedication, and absorption) was a stronger predictor of collective mindfulness, one linear regression was run adding the OrgA total score as the dependent variable and vigour, dedication, and absorption total scores as the independent variables.

Finally, to deepen the relationship between the UWES total score and the dimensions of the organizational mindfulness scale, three linear regressions were performed, which included the dimensions which Cronbach's rated above .60 (Nunnally & Bernstein, 1994). In the three cases, the UWES total score was considered as the independent variable and the dimensions of commitment to resilience, reluctance to simplify, and sensitivity to operations total scores as the corresponding dependent variables.

3. Results

3.1. Preliminary Analysis

First, the data was reviewed in order to identify missing values. Then, descriptive statistics, internal consistencies, and Pearson correlations analyses of the three scales and their dimensions were executed to observe their descriptive statistical characteristics, to have a first approach to the relationship between the variables, and to know if the data was able to be used in a mediation model analysis (see Table 1). In relation with the internal consistencies of the scales (see Table 1), all of the total scores presented Cronbach's alpha coefficients above .85, and almost all the subscales had a Cronbach's alpha coefficient above .70. Nevertheless, one dimension from OrgA (deference to expertise) presented a Cronbach's alpha

Table 1. Means, standard deviations, internal consistencies (Cronbach's α), and Pearson correlation coefficients of) of OrgA, UWES, and FMI subscales.

Scale	Subscales N = 164	M	SD	α	1	2	3	4	5	6	7	8	9	10
OrgA														
1	Preoccupation to failure	3.62	.77	.78										
2	Reluctance to simplify	3.47	.50	.38	.60**									
3	Sensitivity to operations	3.71	.62	.72	.64**	.61**								
4	Commitment to resilience	3.78	.47	.52	.47**	.47**	.59**							
5	Deference to expertise	3.66	.56	.65	.54**	.48**	.57**	.40**						
6	Total Score	3.65	.47	.88	.85**	.78**	.86**	.71**	.75**					
UWES														
7	Vigour	5.62	1.01	.86	.34**	.36**	.44**	.40**	.45**	.50**				
8	Dedication	5.93	1.15	.92	.35**	.43**	.48**	.37**	.49**	.53**	.80**			
9	Absorption	5.30	1.03	.78	.17*	.28**	.37**	.23**	.34**	.34**	.82**	.76**		
10	Total Score	5.52	.99	.94	.31**	.38**	.46**	.36**	.46**	.49**	.94**	.91**	.93**	
FMI														
11	Total Score	2.97	.50	.88	.26**	.23**	.34**	.23**	.21**	.32**	.50**	.39**	.43**	.47**

Note: * = $p \leq 0.05$, ** = $p \leq 0.001$.

coefficient of .65, which was still a coefficient allowed (Nunnally & Bernstein, 1994) to scales that are in a process of development like OrgA. OrgA also presented two dimensions, reluctance to simplify and commitment to resilience, that had Cronbach's alpha coefficients below the lowest acceptable criteria of .60 (Nunnally & Bernstein, 1994): .38 and .52, respectively. Taking into account these results, the outcomes from these dimensions were taken with precaution.

Concerning Pearson correlation analyses (see Table 1), significant and positive correlation coefficients were found between the total scores from UWES (work engagement), FMI (individual mindfulness) and OrgA (collective mindfulness): individual mindfulness presented a significant, positive, and moderate correlation with collective mindfulness ($r = .33$, $p < .001$) and a significant, positive, and strong correlation with work engagement ($r = .48$, $p < .001$), and vice versa respectively; in the same way, work engagement had a significant, positive and strong correlation with collective mindfulness ($r = .49$, $p < .001$) and vice versa. Likewise, regarding the relationship between collective mindfulness dimensions with individual mindfulness and work engagement dimensions, it was found that these variables presented a significant positive association. Specifically, individual mindfulness presented a significant, positive, and low relationship with three collective mindfulness dimensions: reluctance to simplify ($r = .23$, $p < .001$), commitment to resilience ($r = .23$, $p < .001$), deference to expertise ($r = .21$, $p < .001$); and a significant, positive and moderate relationship with other two dimensions: preoccupation to failure ($r = .26$, $p < .001$) and sensitivity

to operations ($r = .34, p < .001$). On the other hand, all work engagement dimensions presented significant and positive correlational coefficients with the five dimensions of collective mindfulness, and vice versa: vigour (preoccupation to failure: $r = .34, p < .001$; reluctance to simplify: $r = .36, p < .001$, sensitivity to operations: $r = .44, p < .001$; commitment to resilience: $r = .40, p < .001$; deference to expertise: $r = .45, p < .001$), dedication (preoccupation to failure: $r = .35, p < .001$; reluctance to simplify: $r = .43, p < .001$; sensitivity to operations: $r = .48, p < .001$; commitment to resilience: $r = .37, p < .001$; deference to expertise: $r = .49, p < .001$), and absorption (preoccupation to failure: $r = .17, p < .001$; reluctance to simplify: $r = .28, p < .001$; sensitivity to operations: $r = .37, p < .001$; commitment to resilience: $r = .23, p < .001$; deference to expertise: $r = .24, p < .001$) Finally, in relation with the three dimensions from the UWES scale and individual mindfulness, the three dimensions presented significant, positive and strong correlation coefficients with individual mindfulness: vigour ($r = .50, p < .001$), dedication ($r = .39, p < .001$), and absorption ($r = .43, p < .001$).

In conclusion, the results mentioned above confirm an existing significant and positive relationship between individual mindfulness, work engagement, and collective mindfulness. These outcomes enable the possibility to execute a mediation model analysis between these concepts, in order to identify the direction and the amount of variance explained by the model proposed, and observe the indirect effect that work engagement could have between individual and collective mindfulness. It is important to mention that the data met the most important assumptions for linear regressions: linearity (the variables presented linear relationships), homoscedasticity (all Durbin-Watson values were close to 2) and no multicollinearity (all correlations coefficients between the constructs were below .6).

3.2. Main Analyses

A mediation model analysis was performed to determine whether the predictive effect of individual mindfulness on collective mindfulness was mediated by work engagement. The results are shown in **Table 2**. In the first model shown in the table, individual mindfulness significantly predicted the of collective mindfulness ($F(1, 170) = 20.139, p \leq 0.001; R^2 = .105$). In the second model, individual mindfulness also significantly predicted the mediator work engagement ($F(1, 170) = 50.603, p \leq 0.001; R^2 = .229$). The third model represents the mediation ($F(2, 169) = 28.528, p \leq 0.001; R^2 = .252$), where work engagement predicts significantly collective mindfulness ($b = .207; \beta = 0.436$), while individual mindfulness has now no significant effect on collective mindfulness ($b = .108; \beta = 0.116$). When comparing the direct effect in the unmediated and mediated model, it was reduced from a significant beta of .325 in the unmediated model to an insignificant beta of .116 in the mediated model when controlling for work engagement.

In order to test statistical significance of the mediation effect, the Sobel test as well as the Freedman-Schatzkin test were performed. The Sobel test indicated

that the indirect effect was statistically significant ($z = 4.473, p \leq .001$). The result of the Freedman-Schatzkin test indicated that the effect of individual mindfulness on collective mindfulness was significantly reduced, till the point that it became insignificant, when work engagement was included as a mediator ($t(170) = 2.755; p \geq .05$).

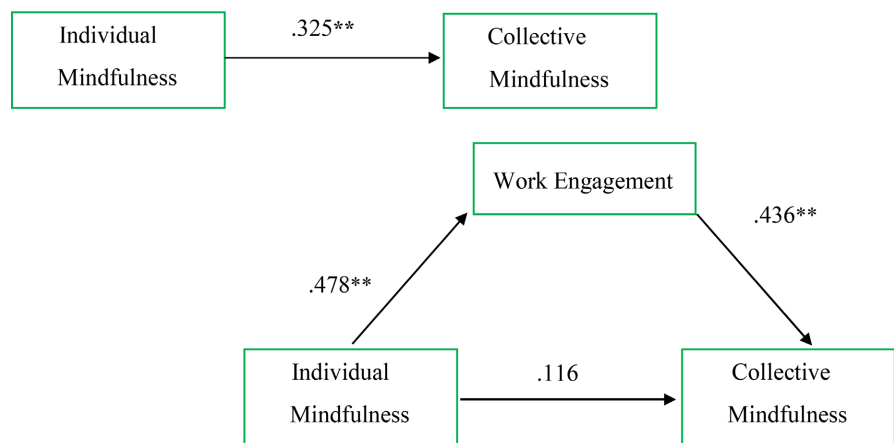
The indirect effect, computed as the product of the mediated path coefficients of .478 and .436, was .208, the total direct effect was .325, and the ratio of the two (.208/.325) is .64. The direct path between individual mindfulness and collective mindfulness in the mediated model was non-significant ($b = .108; \beta = .116; p = .125$); therefore, work engagement fully mediates the relationship between individual mindfulness and collective mindfulness in the present study (see **Figure 1**).

In relation to the second hypothesis (see **Table 3**), one linear regression analysis was performed in order to identify which of the three constructs that build the concept of work engagement (vigour, dedication, and absorption) is a stronger predictor of collective mindfulness. The result showed that these three constructs

Table 2. Multiple regressions Individual mindfulness, Work engagement, and Collective mindfulness.

	Predictors included	B	SE B	β	R
<i>Model 1</i>	Constant	2.754	.203		.325
Outcome: Collective mindfulness	Individual mindfulness	.301	.067	.325**	
<i>Model 2</i>	Constant	2.738	.396		.478
Outcome: Work engagement	Individual Mindfulness	.934	.131	.478**	
<i>Model 3</i>	Constant	2.185	.210		.502
Outcome: Collective Mindfulness	Individual mindfulness	.108	.070	.116	
	Work engagement	.207	.036	.436**	

Note: * = $p \leq 0.05$, ** = $p \leq 0.0001$.



Note: * = $p \leq 0.05$, ** = $p \leq 0.001$.

Figure 1. Full mediation model between individual mindfulness, work engagement, and collective mindfulness.

Table 3. Linear regression between work engagement constructs and collective mindfulness.

Predictor variables included	B	SE B	β	R ²	ΔR^2
Constant	2.297	.169		.339	.328
Vigour	.196	.058	.423**		
Dedication	.194	.045	.477**		
Absorption	-.168	.053	-.370**		

Note: * = $p \leq 0.05$, ** = $p \leq 0.001$.

significantly predict the outcome of collective mindfulness ($F(3, 168) = 28.776$, $p \leq 0.01$; $R^2 = .339$). Nevertheless, unlike the hypothesis which proposed vigour as the strongest predictor of collective mindfulness, dedication ($b = .194$; $\beta = .477$; $p \leq .001$) was found to be the strongest one; followed by vigour ($b = .196$; $\beta = .423$; $p \leq .001$) and, finally, absorption, which presented a negative relationship ($b = -.168$; $\beta = -.370$; $p \leq .001$).

Finally, three linear regression analyses were executed to know the relationship between vigour, dedication, and absorption with three dimensions from the organizational mindfulness scale (see **Table 4**): commitment to resilience ($F(3, 168) = 15.546$, $p \leq .001$; $R^2 = .217$), reluctance to simplify ($F(3, 168) = 14.219$, $p \leq .001$; $R^2 = .202$), and sensitivity to operations ($F(3, 168) = 18.777$, $p \leq .001$; $R^2 = .238$). As stated in hypothesis three, the results confirmed that vigour was the strongest predictor of commitment to resilience ($\beta = .517$, $p < .001$), followed by absorption ($\beta = -.397$, $p < .001$) and dedication ($\beta = .268$, $p < .001$). Likewise, hypothesis four was endorsed by the results, which exhibited dedication as the only significant predictor of reluctance to simplify ($\beta = .463$, $p < .001$). To finish, unlike what was assumed in hypothesis five, dedication was again the only significant predictor of sensitivity to operations ($\beta = .393$, $p < .001$).

In conclusion, the results of the study showed that individual mindfulness does explain significantly a small part of the variance of collective mindfulness. Nevertheless, when work engagement is introduced into this relationship a full mediation model is observed, where individual mindfulness does not present a significant direct effect on collective mindfulness any more. Within the relationship between the three constructs of work engagement and collective mindfulness, although all of them explained significantly collective mindfulness, dedication had the strongest relationship with collective mindfulness. On the other hand, absorption presented a significant but negative relationship between organizational mindfulness total scores.

4. Discussion

The first objective of the study was to prove the existence of a mediation path between individual mindfulness, work engagement, and collective mindfulness. The second, to observe the relationship between the three dimensions of work

Table 4. Linear regressions between vigour, dedication, and absorption and collective mindfulness dimensions.

Preoccupation with failure	B	SE B	β	R²	ΔR^2
Constant	2.146	.304		.204	.190
Vigour	.338	.105	.446**		
Dedication	.243	.081	.364**		
Absorption	-.354	.095	-.474**		
Reluctance to simplify					
Constant	2.379	.197		.202	.188
Vigour	.077	.068	.157		
Dedication	.200	.052	.463**		
Absorption	-.096	.062	-.200		
Sensitivity to operations					
Constant	2.071	.237		.251	.238
Vigour	.141	.082	.231		
Dedication	.211	.063	.393**		
Absorption	-.071	.074	-.119		
Commitment to resilience					
Constant	2.742	.184		.217	.203
Vigour	.239	.063	.517**		
Dedication	.109	.049	.268*		
Absorption	-.181	.058	-.397**		
Deference to expertise					
Constant	2.149	.214		.271	.258
Vigour	.182	.074	.327**		
Dedication	.208	.057	.423**		
Absorption	-.139	.067	-.253*		

Note: * = $p \leq 0.05$, ** = $p \leq 0.001$.

engagement and collective mindfulness. Finally, the third one was to understand how vigour, dedication, and absorption interact with certain dimensions of collective mindfulness.

Relating to the first aim of the study, it was expected that work engagement mediated significantly, positively, and partially the relationship between individual mindfulness and collective mindfulness. The results showed, in the unmediated model, that individual mindfulness predicted significantly and positively collective mindfulness. This means, dispositional states of mindfulness, like feeling connected to the experience here and now or non-reacting immediately when

facing stressful situations, will positively influence the individual's capacity to openly concern about mistakes, avoid taking for granted processes and information, having an understanding of the whole picture, improvising to recover from setbacks, and letting the experts make decisions instead of escalating them. This outcome could be explained by the positive impact that individual mindfulness has on a diversity of organizational key factors such as decision making, communication, problem-solving, creativity, job satisfaction, and the ability to perform under stress (Dane, 2011; Glomb et al., 2011). Variables that, in theory, are positively related to the dimensions of collective mindfulness (Ray et al., 2011; Vogus & Sutcliffe, 2012; Weick & Sutcliffe, 2006; Weick et al., 1999). Previous studies (Glomb et al., 2011; Coo & Salanova, 2017) have demonstrated that individual mindfulness enhances self-regulation of thoughts, emotions, behaviours, and physiological reactions, which in turn together influence positively job performance. According to Glomb et al. (2011), individual mindfulness can decrease automaticity of mental processes; therefore, past experiences, schemas, and cognitive habits do not constantly constrain information processing anymore. As mentioned before, collective mindfulness implies the organization ability to develop a rich awareness of discriminatory detail and a capacity for action (Weick et al., 1999). For instance, due to the emphasis that collective mindfulness places in the constant alertness to failure, a mindful person would be constantly aware and identifying subtle stresses that might harm the operations and actively looking, together with the team, for ways to solve them in an early stage (Weick & Putnam, 2006). Finally, as stressed by Weick & Putnam (2006), the five dimensions that build up the concept of organizational mindfulness reflect the three core qualities of individual mindfulness: impermanence, unsatisfactoriness, and selflessness. In fact, the identification and acceptance that neither the self nor the things are static, might generate and augment a sensible predisposition towards the individual's capacity to actively engage with the social cognitive processes. Hence, it is possible that the more mindful the employees are, the more likely to implement a collective mindful performance within their jobs. In summary, the core qualities of individual mindfulness in combination with all the processes that this concept enhances, represent key factors when engaging in a complex social phenomenon like collective mindfulness "where people pay more attention to failure than success, avoid simplicity rather than cultivate it, are just as sensitive to operations as they are to strategy, organize for resilience rather than anticipations, and allow decisions to migrate to experts wherever they are located" (Weick & Putnam, 2006: p. 284).

As proposed by Bakker & Demerouti (2007) in their job demands-resources model, personal resources can be independent predictors of work engagement; which, in turn, impact positively on job performance. Within the present study, individual mindfulness, identified as a personal resource, predicted significantly and positively work engagement. This outcome is related to the results from Coo & Salanova (2017), Kotzé (2018), and Malinowski & Lim (2015), who found that

dispositional mindfulness in working adults from various job sectors and countries was positively related to work engagement. As stated by [Coo & Salanova \(2017\)](#), mindfulness develops the ability of employees to be fully present at work and maintain an open disposition to experience the present moment. It also allows to change perspective easily and experience novelty within different work situations ([Coo & Salanova, 2017](#)). Likewise, [Malinowski & Lim \(2015\)](#) highlighted the capacity of non-reacting (ability to manage stressful situations without being taken over emotionally and cognitively by them) as one of the main variables within individual mindfulness that positively influences work engagement. As referred by [Kotzé \(2018\)](#), individual mindfulness strengthens the individual's beliefs of being able to accomplish job-related tasks and keep positiveness while facing difficult situations. Another possibility to understand why individual mindfulness predicts work engagement, could be related to certain characteristics that engaged employees manifest, like positive emotions or better health ([Bakker, 2011](#); [Bakker & Demerouti, 2008](#); [Bakker & Demerouti, 2007](#)); which have a significant and positive relationship with individual mindfulness ([Coo & Salanova, 2017](#); [Dane, 2011](#); [Giluk, 2009](#); [Glomb, et al., 2011](#); [Grossman et al., 2004](#); [Keng et al., 2011](#); [Kotzé, 2018](#); [Mesmer-Magnus et al., 2017](#)). In conclusion, the ability of an individual to observe and pay attention to their emotions and mistakes without judging them, and the capability to not react immediately in a stressful situation, appear to be central behaviours to understand and predict work engagement.

Concerning the main question of this research, if work engagement mediates the relationship between individual and collective mindfulness, it was found that work engagement fully mediated the relationship between these two concepts. This supposes, that an increase in workers individuals' mindfulness will not enhance directly collective mindfulness performance; nevertheless, it will boost work engagement which, in turn, will increase the capacity to be more collective mindful. This result is in line with the job demand-resources model ([Bakker, 2011](#); [Bakker & Demerouti, 2007, 2008](#)) which places work engagement as an in-between variable among job and personal resources, on one hand, and job performance, on the other hand. Based on this model and aligned with [Kotzé's \(2018\)](#) findings, individual mindfulness could be considered as a relevant personal resource within the work environment. As a personal resource, individual mindfulness allows holistic self-regulation through complete presence, thoughtfully information processing, and decreased automaticity ([Kotzé, 2018](#); [Malinowski & Lim, 2015](#); [Mesmer-Magnus et al., 2017](#)). On the other hand, collective mindfulness is viewed in this study as a collective job performance outcome variable, because it is considered as the group's mindful shared cognition and collective behaviour that focus attention to what is currently going on, stay alert to novel possibilities, and consciously avoid working under automatic pilot in order to prevent errors and enhance the joint operation that keeps alive the organization ([Ray et al., 2011](#); [Weick et al., 1999](#)). Nevertheless, as conceived on the above model, work engagement appears as the crucial element which fully

accounts for this relationship. This variable is needed to bridge the relationship between individual mindfulness as a personal resource and collective mindfulness as a job performance outcome. This mediating function goes along with a previous research from Rich and collaborators (2011), whose results showed that job engagement, among other factors, mediated the relationship between antecedents of work engagement and job performance. Overall, this model enables the understanding of how these three key organizational variables interact and by setting down its complexity orients and gives directions for practitioners to develop and implement them in organizational contexts. Likewise, it shows how the enhancement of soft skills that promote positive emotions, well-being, and attentional awareness, can have an impact on the collective *modus operandi* of organizations at large, and also within the different organizational levels.

Relating to the second aim of the study, it was assumed that within the concept of work engagement, vigour was supposed to be the strongest predictor of collective mindfulness in comparison to dedication and absorption. This hypothesis was developed to understand how and which of the work engagement mechanisms influence positively and strongly organizational mindfulness. Although the results exhibited that the three dimensions do predict collective mindfulness, dedication was found to be the strongest predictor. This outcome may be explained by the fact that vigour is only oriented to the amount of energy and desire the job produces on an individual while dedication implies cognitive, emotional, and attitudinal beliefs related to one's work as full of meaning, inspirational, and challenging (Schaufeli & Bakker, 2004a, 2004b). Likewise, aligned with what has been proposed by Vogus & Sutcliffe (2012), collective mindfulness involves making a conscious decision by members of the organization to adopt mindful collective information processing and act accordingly. This way of being and functioning implies a permanent cognitive and emotional effort, which could be especially influenced by the degree to which people feel identified with their work. As long as employees feel proud and challenged by their job, adopting heedful ways of thinking and working, which will avoid a robotic and passive group performance, could become a natural way of working. Therefore, according to this result, to understand collective mindfulness, the beliefs that employees have around their jobs are more important than the amount of energy they could manifest within it. Finally, absorption also predicted significantly collective mindfulness, nevertheless, the relationship between them was, as hypothesised, negative. This assumes that employees who are entirely immersed in their jobs, will reduce their capacity to be more collectively mindful. One possible explanation could be that the state of being completely absorbed in a certain task, to the point of losing track of time and awareness about the surrounding context, might lead to a decrease in the capacity to be part of a social cognition process like collective mindfulness, where all team members are interdependent. Indeed, the social nature of collective mindfulness' concept requires that the team members maintain constant communication, that their actions are aligned with each other, and that they can delegate difficult decisions to expert col-

leagues. For accomplish this *modus operandi*, it is not possible when people are fully engrossed on their topics because although being focused, they start to process information and work as islands, an option completely far away from what collective mindfulness stands for.

Concerning the last objective, analyses to analyze the specific relationships between the three constructs that build the concept of work engagement and collective mindfulness' dimensions were performed. It was expected that vigour was likely to be the robust predictor of commitment to resilience; meanwhile, dedication would be the strongest predictor of reluctance to simplify; lastly, absorption was predicted as the strongest and negative predictor of sensitivity to operations. The results mostly confirmed the hypotheses, since vigour was found to be the strongest predictor of commitment to resilience; while dedication was found as the only significant predictor of reluctance to simplify operations. Absorption was in fact negatively related to sensitivity to operations, however, it was not the strongest predictor; instead, it was vigour again. Lastly, is important to mention that the dimensions reluctance to simplify and commitment to resilience obtained alpha Cronbach's coefficients below the established criteria (Kline, 1999; Nunnally & Bernstein, 1994), therefore, these results should be taken only as tentative. Further studies should improve the reliability from these dimensions in order to have more accurate results.

The first relationship between vigour and commitment to resilience puts in evidence that the feelings related to how strong and energetic a person feels in relation to his or her job, in combination with the self-perception about being able to work for long periods of time and to cope successfully with unexpected events (Schaufeli & Bakker, 2004b), are key factors to develop the ability to predict, prevent, and manage efficiently and collectively unexpected problems. Concerning to the second relationship, where dedication was the strongest predictor of reluctance to simplify operations, this result bring valuable information regarding the importance of the perception of having a meaningful and challenging job, that inspires and produces feelings of proudness, in the capacity to maintain a constant awareness that disables the tendency to reduce complex situations to frameworks or mindsets. At last, it was observed that the ability to immersed in one's work to the degree that the person forgets everything around him or her, affects negatively the capacity to participate in social exchanges in favour of certain shared mental representations and social performances. Nevertheless, the negative influence that absorption has within this dimension is irrelevant in comparison with vigour or dedication. In other words, to understand the dynamic of this dimension is more appropriate to focus on the amount of energy or appreciation that a person has for his or her job than in the level of job immersion that he or she experiences within the work environment.

5. Strengths and Limitations

The first strength concerned with the diversity of the sample because it allowed

to expand the ratio of understanding in how collective mindfulness is perceived in individuals whose jobs are not directly related to high-reliability organizations. To date, there is only one study that has applied this concept to workers from non-high reliability organizations (Ray et al., 2011). The second strength was the capacity to create and adapt a mediation model between individual mindfulness, work engagement, and collective mindfulness based on the job demands-resource model (Bakker, 2011; Bakker & Demerouti, 2007, 2008). This allowed the study to have a solid theoretical background to sustain, and later validate, the research hypotheses. Finally, to the knowledge of the author, this is the first study that analysed such relationships in employees from different working fields in a Peruvian sample, which brings valuable information about the validation and reliability of these concepts in different cultural backgrounds. Likewise, most of the research available study the relationship between collective mindfulness and certain outcomes (Vogus & Sutcliffe, 2012), this is the first study that uses collective mindfulness as a job performance variable, which brings the possibility to clarify how it works and relate with other important concepts.

On the other hand, the current study presented certain limitations that are important to mention and consider for future research. First, the data was obtained through an online cross-sectional survey, therefore any causal interpretation should be treated with precaution. Future studies can take a longitudinal approach to observe how these variables interact over time or an experimental method. For example, measuring the impact that a mindfulness-based stress reduction intervention could have on work engagement or collective mindfulness levels. Likewise, the fact that the survey was filled online limited the possibility to clarify any doubt the participants could have concerning the study or the questionnaires. Second, the use of individual mindfulness as a one-dimension concept restricted the opportunity to observe specific relationships between the different dimensions of individual and collective mindfulness together with work engagement. Future research could include a multidimensional mindfulness scale, as the Five-Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2006), to deepen the dynamics between mindfulness core characteristics and work engagement, and organizational mindfulness. Third, due to time and sample limitations the present study did not include any job resources variables in the analyses; therefore, in order to observe the real complexity of the job demand-resources model (Bakker & Demerouti, 2007), it will be important to add concepts as social support or performance feedback, in addition with individual mindfulness, as independent variables. Finally, the low internal reliability of the dimensions reluctance to simplify and commitment to resilience from OrgA enables only the possibility to analyse tentatively the results from these dimensions.

6. Conclusions

In conclusion, this study brings important insights for further exploring the role and interaction of individual mindfulness, work engagement, and collective

mindfulness in work environments. Highlighting how collective mindfulness works and interacts with other variables, gives the possibility to identify how to develop and enhance it in different workplaces. Therefore, the present research stresses the importance of the interaction between individual mindfulness and work engagement to understand this cognitive and behavioural social phenomenon that improves organizational functioning and allows organizations to comprehend their working reality innovatively and respond efficiently to the complexities of their environments. Contrary to previous approaches that point collective mindfulness as a costly process because it requires continuous attention to deep signals (Ray et al., 2011; Vogus & Sutcliffe, 2012; Vogus & Welbourne, 2003), this study evidence that the enhancement of certain dynamic variables as individual mindfulness and work engagement has a positive impact on organizational mindfulness. Adopting this organizational perspective and way of functioning could not only preserve the existence and success of a variety of organizations in a changing, complex, and demanding environment, but could also generate a positive social impact inside and outside them.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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