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Mindfulness at Work: Antecedents and Consequences of Employee Awareness and Absent-mindedness

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ABSTRACT

The present study examines antecedents and consequences of two aspects of mindfulness in a work setting: employee awareness and employee absent-mindedness. Using two samples, the study found these two aspects of mindfulness to be beneficially associated with employee well-being, as measured by emotional exhaustion, job satisfaction, and psychological need satisfaction, and with job performance, as measured by task performance, organizational citizenship behaviors, and deviance. These results suggest a potentially important role of mindfulness at the workplace. The study also found that organizational constraints and organizational support predicted employee mindfulness, pointing to the important role that the organizational environment may play in facilitating or hindering mindfulness at the workplace. The results further suggest that employee awareness and absent-mindedness are different constructs that have distinct nomological networks. Implications and future directions are discussed.

Keywords: Absent-mindedness; Awareness; Mindfulness; Performance; Well-being

INTRODUCTION

Research suggests that mindfulness is associated with increased health, well-being, and functioning (Brown, Ryan, & Creswell, 2007; Chiesa & Serretti, 2009; Eberth & Sedlmeier, 2012). For example, mindfulness training has been found to reduce chronic pain (Kabat-Zinn, Lipworth, & Burney, 1985), reduce anxiety (Kabat-Zinn et al., 1992) and increase immunity (Davidson et al., 2003). In a non-clinical setting, Brown and Ryan (2003) found mindfulness to be positively related to life satisfaction, self-esteem, optimism, positive affect, and vitality, and negatively related to depression, negative affect, and anxiety. Encouraged by these findings, organizational scholars have started to explore the role of mindfulness in organizations (e.g., Dane, 2011; Glomb, Duffy, Bono, & Yang, 2011; Weick & Putnam, 2006). However, at this point, most of this research has been conceptual and little empirical research has examined the antecedents and consequences of mindfulness at the workplace (for exceptions, see, e.g., Reb, Narayanan, & Chaturvedi, 2012; Shao & Skarlicki, 2009).

Modern scientific research has adapted a variety of perspectives on mindfulness, including mindfulness as a (meditation) practice, mindfulness as a mode of being, mindfulness as a state, mindfulness as an ability, and mindfulness as a trait. Further, existing interventions, manipulations, and measures show considerable differences in the underlying conceptualizations of mindfulness. Processes that have been included as aspects of mindfulness include attention, awareness, intention, attitudes such as openness and acceptance, cognitions such as judgments, and actions such as absent-minded behaviors (e.g., Kabat-Zinn, 1994; Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006; Bishop et al., 2004; Brown et al., 2007). Given this state, Chiesa (2012) recommended that rather than referring to mindfulness in general, researcher could refer to the specific aspect or process of mindfulness that they are focusing on in their research.

One specific aspect of mindfulness is awareness. According to Mikulas (2011), awareness "refers to one's conscious experience of the contents [of the mind]" (p. 1). Brown et al. (2007) define awareness as "the conscious registration of stimuli, including the five physical senses, the kinesthetic senses, and the activities of the mind" (p. 212). To be aware means to do, feel, think, perceive, or sense something, *and know (i.e., be aware) that one is doing so*. In practice, most people appear to vary in the degree to which they are aware and also spend varying amounts of their time without awareness of what they are doing, feeling, thinking etc. Awareness is widely considered to be a fundamental aspect of mindfulness (Baer et al., 2006; Bishop et al., 2004; Brown & Ryan, 2003; Grabovac, Lau, & Willett, 2011; Kabat-Zinn, 2003; Mikulas, 2011; Teasdale et al., 2002). For example, Brown et al. (2007) argue that clear awareness of the internal and external world in the present moment is the first and foremost aspect of mindfulness.

Mikulas (2011) notes that attention and awareness are distinct but are understandably often confused because they are so closely intertwined. Van Dam, Earleywine, and Borders (2010) observe that "attention and awareness [are] interacting, but arguably distinct components of consciousness" (p. 808-809). The distinction between attention and awareness is empirically supported, for example in research on mind wandering (a state lacking attention) with awareness and without awareness (Smallwood, McSpadden, & Schooler, 2007).

Absent-mindedness is another prominent aspect of (lack of) mindfulness (Brown & Ryan, 2003). To be absent-minded is to be neither aware nor pay attention while trying to perform a task, such as having a conversation, listening to a lecture, or reading a paper. The mind is absent and one performs the task on autopilot or not at all for example because the mind wanders or goes entirely blank (e.g., Brown & Ryan, 2003; Smallwood & Schooler, 2006). Absent-mindedness, thus, refers to an aspect of mindlessness (e.g., Mrazek,

Smallwood, & Schooler, 2012). Being absent-minded appears to be a fairly common experience (Smallwood & Schooler, 2006). Note that absent-mindedness is conceptually not the direct opposite of awareness as it implies both lack of awareness and lack of attention. In other words, one may lack awareness even while paying attention. For example, one may pay attention to a movie, but not be aware that one is doing so.

There are several reasons to believe that employee awareness and absent-mindedness may be associated with well-being at the workplace. First, a major cause of reduced well-being in the workplace is emotional exhaustion. Emotional exhaustion is considered the central aspect of job burnout and is commonly defined as depletion in emotional energy to an extent that people fail to meet job demands (Maslach, Schaufeli, & Leiter, 2001). Emotional exhaustion manifests itself as reluctance to go to work and, in extreme cases, a total dreading of work itself, and is associated with lower job performance (Wright & Cropanzano, 1998).

Awareness allows employees to be aware of their thoughts and feelings, without necessarily reacting upon them (Brown & Ryan, 2003). Such awareness encourages a "stepping back" (Weick & Putnam, 2006), or the adopting of a witnessing stance. Such a stance may help mindful employees to reduce the impact of potentially stressful situations. In contrast, attempting to suppress such negative feelings, as compared to simply observing them, may further stress employees, which over time may result in emotional exhaustion (Gross, 1998). Further, absent-mindedness may lead to a more reactive, rather than reflective, response to challenging situations, further exacerbating the problem.

Second, research also suggests that mindfulness leads to more skilful emotional relating to others (Wachs & Cordova, 2007) and is associated with better interpersonal relationships (Barnes, Brown, Krusemark, Campbell, & Rogge, 2007). Relatedness is considered a fundamental psychological need; having good relationships with colleagues is an important determinant of employee satisfaction and well-being (Deci et al., 2001). Poor or

unpleasant relationships at work can be a major cause of stress and a motivation to seek employment elsewhere (Gerstner & Day, 1997). Inasmuch awareness and absent-mindedness are aspects of mindfulness, one could expect the former to be positively and the latter to be negatively associated with relationship quality and well-being.

Furthermore, Kiken and Shook (2011), in a laboratory study, found that a brief manipulation of mindfulness led to a reduction in negativity bias, or the tendency to weigh negative information more heavily than positive information, as well as more positive judgments and increased optimism. This may allow employees to maintain higher levels of optimism, self-efficacy, and positive affect, contributing to employee well-being. Inasmuch as their manipulation of mindfulness overlaps with awareness and absent-mindedness, one might expect the same relations to hold for awareness and absent-mindedness.

Employee awareness and absent-mindedness might also be related to employee performance (cf. Glomb et al., 2011; Shao & Skarlicki, 2009). Research has found that mind wandering, reduces task performance (Smallwood & Schooler, 2006). Awareness, on the other hand, should enable individuals to be more receptive to developments in their environments, allowing them to respond more effectively to challenging and changing situations (Dane, 2011; Salvato, 2009; Weick & Sutcliffe, 2006). Further, Beal, Weiss, Barros and MacDermid (2005) argue that affective processes, such as rumination and arousal, take attentional resources away from the task at hand, thus negatively influencing performance. Mindfulness is associated with better emotion regulation and reduced rumination (Brown & Ryan, 2003), thus potentially reducing the interference of affective processes with performance.

Finally, performing well not only requires paying attention to the here and now, it also requires actively implementing one's plans and intentions into action (Ajzen, 1991). Recent research suggests that mindfulness may facilitate the implementation of intentions into action

(Chatzisarantis & Hagger, 2007). In this way, more mindful employees may be able to better achieve intended work-related goals. Thus, inasmuch awareness and absent-mindedness are aspects of mindfulness, one could expect the former to be positively and the latter to be negatively associated with relationship quality and well-being.

To date, little is known about organizational antecedents to aspects of mindfulness. Partly, this is because of the lack of research on mindfulness at the workplace in general. However, partly this is arguably also because most existing scales conceptualize mindfulness as a relatively stable trait (with the Toronto Mindfulness Scale of Lau et al. (2006), which exists in both state and trait versions, being a noteworthy exception). This approach de-emphasizes questions about antecedents. Further, research that has examined antecedents of mindfulness has typically looked at mindfulness meditation practice.

We argue that mindfulness may be influenced not only by personal factors, such as mindfulness practice or genetic factors, but also by environmental or situational variables. In particular, we posit that organizational constraints will lead to lower levels of workplace awareness and higher levels of absent-mindedness. When employees are constrained by the routineness of their task, a lack of resources, ambiguity of their work role, or other such factors, they will experience more stress and higher negative affect. They will then also use more of their mental energy to deal with this constrained situation and as a result will have little resources left at their disposal to perform their work mindfully. In contrast, when there is greater organizational support, employees will have the resources to be more aware and will tend to be less absent-minded.

The purpose of the present research was to examine how two aspects of mindfulness – awareness and absent-mindedness – relate to different dimensions of well-being and performance at the workplace. A second purpose was to provide explore possible antecedents of employee mindfulness in order to better understand the conditions that facilitate

mindfulness at work. Based on the discussion above, we hypothesize as follows.

Hypothesis 1: Employee awareness is positively related to employee well-being (H1a) and employee performance (H1b).

Hypothesis 2: Employee absent-mindedness is negatively related to employee well-being (H2a) and employee performance (H2b).

Hypothesis 3: Organizational constraints are negatively related to employee awareness (H3a) and positively related to employee absent-mindedness (H3b).

Hypothesis 4: Organizational support is positively related to employee awareness (H4a) and negatively related to employee absent-mindedness (H4b).

In the present study, emotional exhaustion, job satisfaction, and psychological need satisfaction were used to assess different dimensions of employee well-being, with emotional exhaustion indicating a lack of well-being. Task performance, organizational citizenship behaviors (OCBs), and deviance were used to assess different aspects of employee performance, with deviance being a form or negative performance. Organizational constraints and task routineness were used to assess different aspects of organizational constraints. Finally, job autonomy and supervisor support were used to assess different aspects of organizational support.

METHOD

Design, Procedure, and Samples

We used a field survey approach to collect data on all variables from employees and their supervisors. To avoid common method variance due to predictor and criterion variables being measured at the same point in time, data were collected over three waves, with approximately two weeks between subsequent waves. An overview of all measures and the wave in which they were collected is given in Table 1.

Measures related to employee performance were provided by the employees'

supervisors, as is standard in organizational research. Using supervisor ratings helps to avoid common source bias in which observed relationships may be at least partly due to common method variance of the same person providing both independent and dependent variable. Further, in practice, supervisors rate employee performance for various purposes, such as pay increase, promotion, or termination, and supervisors may be better able at judging performance due to their knowledge, experience, and expertise (Campbell & Lee, 1988). Finally, while not perfect, supervisor ratings may be less affected by certain biases, such as self-serving inflation of ratings (Campbell & Lee, 1988).

Insert Table 1 around here

Data were collected using online surveys. Only participants who agreed to participate were allowed to complete the online survey. Working adult participants were recruited by trained students who received course credit for doing so. Each student recruiter could recruit up to two participants only. This is a commonly used method and several studies suggest that data quality using this method is comparable to using more traditional procedures (e.g., Hazer & Highhouse, 1997; Reeve & Smith, 2001). The study was approved by the first author's ethical review board.

We collected data from two samples. Table 2 provides an overview of sample characteristics. Sample 1 consisted of a total of 124 and Sample 2 of a total of 107 working adult participants working adult respondents. Because the two samples were drawn from the same general population and are similar (see Table 2), they were combined to increase the power of analyses (total sample size of 231). However, several measures were included in one sample only (see Table 1) and not every respondent in these samples participated in all three waves of the survey and had a supervisor response as well, resulting in smaller effective

sample sizes depending on the specific analysis (the actual degrees of freedom are reported with the respective analysis).

Insert Table 2 around here

Measures

All measures used a 7-point (1: strongly disagree, 7: strongly agree) scale unless otherwise noted.

Employee awareness and absent-mindedness. Employee awareness and absent-mindedness were measured with items selected and adapted from the Five Factor Mindfulness Questionnaire (Baer et al, 2006) to fit the work context. Using a 1-7 (1: almost never, 7: almost always) scale, three items measured awareness at work and four items measured absent-mindedness at work. Respondents were instructed to rate the items specifically with respect to their behaviors and experiences at work rather than their behaviors and experiences in general or outside of work. The items measuring awareness were "I am aware of my experiences at work," "I am aware of my actions and their motives when I am working," and "I am aware of my feelings or emotions at work." The items measuring absent-mindedness were "I find myself thinking about non-work matters while I am working," "I daydream or think of other things when I am working on simple tasks such as photocopying documents," "Instead of focusing on the task at hand, I am preoccupied with thoughts about the future or the past," and "At work I fidget or engage in non-work activities such as chatting or snacking."

Both awareness and absent-mindedness showed satisfactory internal consistency reliability as indicated by Cronbach α values above the .7 norm. For awareness, Cronbach α values were .85 in Wave 2 and .87 in Wave 1 (Sample 1 only). For absent-mindedness,

Cronbach α values were .90 in Wave 2 and .87 in Wave 1 (Sample 1 only). Using Wave 2 measurements, employee awareness and absent-mindedness were not significantly related, $r(230) = -.08$, $p = .20$.

Emotional exhaustion. Emotional exhaustion, as the central component of burnout, is an important measure of the cumulative effects of work stress. We measured emotional exhaustion with Maslach and Jackson's (1981) 9-item scale, $\alpha = .92$. Example items include: "I feel emotionally drained from my work" and "I feel used up at the end of the workday".

Job satisfaction. Job satisfaction is perhaps the most widely studied attitude towards work. It includes both affective and cognitive components. We measured job satisfaction with Cammann and colleagues' (1979) 3-item scale, $\alpha = .80$. Example items are: "All in all I am satisfied with my job" and "In general, I like working here".

Psychological need satisfaction. Work on self-determination theory emphasizes the importance of psychological need satisfaction for well-being and posits three fundamental needs of autonomy, competence, and relatedness (Deci et al., 2001). We measured psychological need satisfaction with Deci et al.'s (2001) 21-item need satisfaction scale. As is common practice (e.g., Lian, Ferris, & Brown, 2012), all 21 items were averaged into a single score, $\alpha = .86$. Example items include: "I feel like I can make a lot of inputs to deciding how my job gets done", "I really like the people I work with", and "I do not feel very competent when I am at work".

Task performance. Task performance refers to performing the essential aspects of one's job. Task performance was rated by employees' supervisors on three items from Motowidlo and Scotter (1994) on a 1 – 5 scale, $\alpha = .92$.

Organizational citizenship behaviors (OCBs). OCBs refer to employee behaviors that go beyond that which is considered part of the formal job description (or task performance). Supervisors rated employees' OCBs on Moorman and Blakely's (1995) 17-item scale, α

= .93. Example items include: “This employee always goes out of the way to make newer employees feel welcome in the work group” and “Encourages others to try new and more effective ways of doing their job”.

Deviance. Deviance can be considered a negative form or performance and we expected that mindfulness is negatively related to deviance at the workplace. Supervisors rated employees’ deviance at the workplace on Bennett and Robinson’s (2000) 19-item scale. The scale includes two components of deviance: organizational and interpersonal. Both components were combined into a single score, $\alpha = .96$. Example items include: “This employee publicly embarrassed someone at work” and “This employee has taken property from work without permission”.

Organizational constraints. Participants responded to Spector and Jex’ (1998) 11-item organizational constraints scale using a 5-point scale (1: rarely or never, 5: several times a day), $\alpha = .90$. Constraints rated include poor equipment, inadequate training, and conflicting job demands, among others.

Task routineness. Task routineness can be considered a form of constraint, as it constraints the autonomy and variety employees experience during work. We used three items from Withey and colleagues (1983) to measure task routineness, $\alpha = .92$. Example items include “My work is fairly routine” and “I perform the same tasks in the same way from day-to-day”.

Job autonomy. Job autonomy can be considered a form of organizational support, as it allows employees more freedom in accomplishing their work. Thus, we expect that job autonomy promotes mindfulness and is positively related to mindfulness. Job autonomy was measured with four items from Hackman and Oldham (1975), $\alpha = .90$. Example items are: “My job gives me considerable opportunity for independence and freedom in how I do my work” and “My job provides the opportunity for independent thought and action”.

Supervisor support. We measured supervisor support with the 8-item perceived supervisor support scale of Eisenberger and colleagues (2002), $\alpha = .91$. Example items are: "Help is available from my supervisor when I have a problem" and "My supervisor would forgive an honest mistake on my part".

Control variables. We controlled for the demographic variables of age and gender in all regression analyses.

RESULTS

Means, standard deviations, and correlations of all study variables are reported in Table 3.

Employee Awareness, Absent-mindedness, and Well-being

We expected employee awareness to be positively related to well-being (Hypothesis 1a). As expected, employee awareness was positively related to job satisfaction, $r(158) = .46$, $p < .001$, psychological need satisfaction, $r(70) = .32$, $p < .01$, and negatively related to emotional exhaustion, $r(123) = -.23$, $p = .01$. Hypothesis 2a stated that employee absent-mindedness would be negatively related to well-being. Employee absent-mindedness was positively related to emotional exhaustion, $r(123) = .23$, $p < .01$, but not significantly related to job satisfaction, $r(158) = -.14$, $p = .08$, or psychological need satisfaction, $r(70) = -.15$, $p = .20$.

Insert Table 3 around here

To further examine the relative contribution of awareness and absent-mindedness in predicting employee well-being, we conducted multiple regression analyses on each of the three dependent variables, with age and gender added as control variables in a first step (see Table 4). Looking at job satisfaction as a dependent variable, employee awareness was a

significant predictor, β = .45, p < .001, but absent-mindedness was not, β = -.07, p = .36. Regarding psychological need satisfaction, employee awareness was again a significant predictor, β = .29, p < .05, but absent-mindedness was not, β = -.12, p = .36. Emotional exhaustion was predicted by both awareness, β = -.19, p = .05, and absent-mindedness, β = .23, p < .05. These regression analyses are consistent with the results of the correlation analyses.

Overall, these analyses provide support for Hypothesis 1a, and qualified support for Hypothesis 2a. Specifically, whereas employee awareness was related all three aspects of employee well-being in the hypothesized direction, employee absent-mindedness was only positively related to emotional exhaustion in the expected direction, but not to job satisfaction and psychological need satisfaction.

Insert Table 4 around here

Employee Awareness, Absent-mindedness, and Performance

According to Hypothesis 1b, employee awareness should be positively related to performance. As expected, employee awareness was positively related to task performance, r(167) = .20, p = .01, and OCBs, r(72) = .32, p <.01 (see also Table 3). However, it was not related to employee deviance, r(94) = -.04, p = .73. Hypothesis 2b stated that employee absent-mindedness would be negatively related to job performance. Employee absent-mindedness was negatively related to task performance, r(167) = -.22, p < .01, and positively related to deviance, r(94) = .30, p < .01. It was not, however, related to OCBs, r (72) = -.17, p = .14.

We next conducted multiple regression analyses on each of the three dependent variables, with age and gender added as control variables in a first step and both awareness

and absent-mindedness entered in a second step (see Table 5). For task performance, employee awareness was a significant predictor, $\beta = .18$, $p < .05$, as was absent-mindedness, $\beta = -.19$, $p < .05$. Regarding OCBs, employee awareness was again a significant predictor, $\beta = .29$, $p < .05$, but absent-mindedness was not, $\beta = -.14$, $p = .31$. Finally, absent-mindedness predicted deviance, $\beta = -.31$, $p < .01$, but awareness did not, $\beta = -.02$, $p = .83$. These regression analyses are consistent with the results of the correlation analyses.

Overall, these analyses provide qualified support for Hypotheses 1b and 2b. Specifically, whereas employee awareness was related to task performance and OCBs (but not deviance) in the hypothesized direction, employee absent-mindedness was related to task performance and deviance (but not OCBs) in the expected direction.

Insert Table 5 around here

Organizational Constraints, Organizational Support, and Employee Mindfulness

According to Hypothesis 3, organizational constraints should be negatively related to employee awareness (3a) and positively related to employee absent-mindedness (3b). As expected, organizational constraints were negatively related to awareness, $r(186) = -.20$, $p < .01$ (see also Table 3). However, task routineness was not significantly related, $r(186) = -.03$, $p = .66$. Both organizational constraints, $r(186) = .26$, $p < .001$, and task routineness, $r(186) = .18$, $p < .05$, were positively related to absent-mindedness.

We next conducted multiple regression analyses on both awareness and absent-mindedness as dependent variables, and the two aspects of organizations constraints as predictors, with age and gender added as control variables in a first step (see Table 6). For employee awareness, organizational constraints were a significant predictor, $\beta = -.21$, $p < .01$, but task routineness was not, $\beta = .01$, $p = .93$. Regarding absent-mindedness, both

organizational constraints, $\beta = .21$, $p < .01$, and task routineness, $\beta = .16$, $p < .05$, were significant predictors. These regression analyses are consistent with the results.

Overall, these results provide support for Hypothesis 3b and qualified support for Hypothesis 3a. Specifically, whereas both organizational constraints and task routineness were positively related to employee absent-mindedness, only organizational constraints (but not task routineness) were negatively related to employee awareness.

Insert Table 6 around here

According to Hypothesis 4, organizational support should positively related to employee awareness (4a) and negatively related to employee absent-mindedness (4b). As expected, job autonomy was positively related to awareness, $r(186) = .23$, $p = .001$ (see also Table 3), as was supervisor support, $r(123) = .54$, $p < .001$. However, neither job autonomy, $r(186) = -.07$, $p = .32$, nor supervisor support, $r(123) = -.16$, $p = .08$, were significantly related to absent-mindedness.

We next conducted multiple regression analyses on both awareness and absent-mindedness as dependent variables, and the two aspects of organizational support as predictors, with age and gender added as control variables in a first step (see Table 7). For employee awareness, supervisor support was a significant predictor, $\beta = .54$, $p < .001$, but job autonomy was not, $\beta = -.01$, $p = .96$. Regarding absent-mindedness, neither supervisor support, $\beta = -.19$, $p = .08$, nor job autonomy, $\beta = .01$, $p = .93$, were significant predictors. These regression analyses are consistent with the results except that job autonomy became a non-significant predictor when entered together with supervisor support.

Overall, these results provide qualified support for Hypothesis 4a and no support for Hypothesis 4b. Specifically, whereas supervisor support (and job autonomy in a correlation

analysis) was positively related to employee awareness, neither supervisor support nor job autonomy were significantly related to employee absent-mindedness.

Insert Table 7 around here

DISCUSSION

People routinely work long hours (Perlow, 1998) and often switch between multiple tasks to get work done in organizations (Leroy, 2009). These conditions place heavy strains on employees' attentional and self-regulatory resources and make it difficult for employees to remain productive and healthy. At the same time, researchers have argued that mindfulness can help employees in achieving higher levels of well-being and performance (e.g., Dane, 2011; Glomb et al., 2011). The main purpose of this research was to provide evidence for the relation of the two aspects of employee mindfulness – awareness and absent-mindedness – with different aspects of well-being and performance. A second purpose was to examine potential organizational antecedents of employee mindfulness.

We chose to focus on awareness because it features prominently in many conceptualizations of mindfulness, suggesting its importance, yet little empirical research has specifically examined. We chose to focus on absent-mindedness because it has received much empirical attention in psychological research through research using the Mindful Attention Awareness Scale (MAAS, Brown & Ryan, 2003). We make no claim that these two comprehensively capture the concept of mindfulness or are even the most important aspects of mindfulness. Indeed, we hope that future research will explore additional constructs.

The data for this study came from two working adult samples representing respondents from a variety of organizations, professions, and backgrounds. The data were collected over several waves in order to avoid common method bias. Also, performance

measures were provided by the employees' supervisors in order to avoid single-source biases.

Overall, the results provide considerable support for the idea that employee mindfulness is beneficial for both employee well-being and performance (Hypotheses 1 and 2). Considering the results for both awareness and absent-mindedness, the empirical results suggest a potentially important role of mindfulness at the workplace. The measures were significantly related to emotional exhaustion, job satisfaction, need satisfaction, task performance, OCBs, and deviance. It is worth noting that all three measures of performance (task performance, OCBs, and deviance) were rated by the employees' supervisors, rather than the employees themselves.

Regarding employee well-being, mindfulness was related to emotional exhaustion, job satisfaction, and psychological need satisfaction. When looking at the results in more detail, differences between the two aspects of mindfulness emerged. Whereas employee awareness was negatively related to emotional exhaustion and positively related to job satisfaction and psychological need satisfaction, absent-mindedness was only positively related to emotional exhaustion. A tentative interpretation of these results is that both awareness and lack of absent-mindedness help employees avoid negative states of well-being, such as emotional exhaustion, but that awareness also promotes positive states of well-being at the workplace as indicated by the satisfaction measures.

Both aspects of mindfulness were significantly related to task performance, as expected. The more absent-minded (aware) an employee, the lower (higher) the supervisor-rated task performance. However, regarding the other two dimensions of performance, the results diverged. Whereas employee awareness was positively related to OCBs (and unrelated to deviance), employee absent-mindedness was positively related to deviance (and unrelated to OCBs). Thus, employee awareness was associated more with positive discretionary behaviors (OCBs), but absent-mindedness did not seem to lead to fewer such behaviors. At

the same time, employee absent-mindedness seemed to lead to more deviant behaviors, but awareness not necessarily to fewer such behaviors. Similar to the results concerning well-being, these results suggest the possibility that awareness may be associated with the presence of positive states and behaviors (satisfaction, OCBs), whereas lack of absent-mindedness may be associated with the absence of negative states and behaviors (emotional exhaustion, deviance).

Our conceptualization of these constructs as a state-like allowed us to examine not only consequences, but also potential antecedents of mindfulness. In the present research, we focused on several variables representing different aspects of organizational constraints and supports. Results across these variables provide evidence for the idea that employee mindfulness is influenced by organizational circumstances.

The results provided qualified support for Hypotheses 3 and 4, that organizational constraints hinder, and organizational support facilitate, workplace mindfulness. Specifically, organizational constraints and task routineness were positively related to employee absent-mindedness, and the former was negatively related to employee awareness. Regarding organizational support, supervisor support positively predicted employee awareness (but not absent-mindedness). The relatively high correlation with supervisor support is particularly noteworthy, suggesting that supervisors may play an important role in promoting or impeding employee mindfulness.

These findings are exciting in that they suggest that mindfulness can be increased not only through personal practice, such as mindfulness meditation practice, but also through organizational factors. Future research should examine additional situational, contextual, organizational, and cultural antecedents of employee mindfulness to complement the study of interventions employing personal practice, such as MBSR (Kabat-Zinn, 2003). This research should also examine possible mediating mechanisms through which such antecedents

influence different aspects of employee mindfulness.

Limitations and Future Research

The present study needs to be interpreted in light of the limitations of its method. First, given the observational nature of the field survey data, there are clear concerns with regards to causal interpretation of the results presented. We addressed these concerns to some extent by separating data collection into three waves such that all antecedents except supervisor support were measured in Wave 1, approximately two weeks before the measurement of employee awareness and absent-mindedness (Wave 2), and all dependent variables except emotional exhaustion were measured in Wave 3, approximately two weeks after (see also Table 1). Further, all measures of employee performance (task, OCBs, deviance) were rated by the employees' supervisors, without any knowledge of the mindfulness scores. While these design features address concerns about internal validity to some extent, clearly future research should attempt to replicate the present result using different methodologies and designs, such as mindfulness-based interventions.

The participants in our study consisted of working adults, the majority of whom likely have little to no experience in mindfulness meditation or other mindfulness practices. It is not clear whether the present results would generalize to experienced mindfulness practitioners. Even though one might argue that such experienced mindfulness practitioners would score higher (lower) on awareness (absent-mindedness), some past research suggests that non-meditator may score at the same level on mindfulness scales as to experienced meditators, possibly because non-meditators may be less aware of their lack of mindfulness than meditators (e.g., MacKillop & Anderson, 2007). Thus, future research should attempt to replicate the present findings with experienced mindfulness practitioners.

The present research provides substantial evidence that mindfulness is beneficial for outcomes that individuals and organizations care about: employee well-being and

performance. Future research should extent this research by empirically examining both mediating and moderating processes (e.g., Shapiro, Carlson, Astin, & Freedman, 2006). What are the processes through which mindfulness influence employee well-being and performance? And what are the conditions under which being mindful at work facilitates employee well-being and performance? Further, are there conditions under which mindfulness may be detrimental, or at least not beneficial (e.g., Dane, 2011)? These are important questions in need of empirical answers.

In attempting to provide answers to these questions, we suggest that it may be useful for researchers to clearly identify which aspect of mindfulness they are focusing on, as we have attempted to do in this research by focusing specifically on employee awareness and absent-mindedness (cf. Chiesa, 2012). As discussed earlier, no consensus on a definition of mindfulness exists. However, most researchers agree that more than one process is involved in mindfulness, including attention, awareness, intention, attitude, cognition, and action (e.g., Kabat-Zinn, 1994; Baer et al., 2006, Bishop et al., 2004; Brown et al., 2007).

One direction for research in a business context that we find particularly interesting is the relation between mindfulness and ethical behavior. Specifically, one can wonder whether mindfulness will generally lead employees to behave more ethically or whether may actually increase their capacity for unethical behavior (such as fraud, bullying, or unethical political games) through the increased ability to sustain attention and awareness. Clearly, in this context it will be important which aspect of mindfulness, broadly construed, one is referring to. Empirically, our results suggest that employee absent-mindedness is positively related to deviance. Ruedy and Schweitzer (2010) provided evidence that mindfulness, as measured via the MAAS, may lead individuals to act more ethically, to value upholding ethical standards (self-importance of moral identity), and to use a principled approach to ethical decision making.

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Table 1: Overview of Measures

Sample	*Type of Variable*	*Measure*	*Reference*	*Rating Source*	*Wave*
1		Employee Awareness and Absent-mindedness		Self	1, 2
	Employee Well-being	Emotional Exhaustion	Maslach & Jackson, 1981	Self	2
		Job Satisfaction	Cammann et al., 1979	Self	3
	Employee Performance	Task Performance	Motowidlo & Scotter, 1994	Supervisor	3
		Deviance	Bennett & Robinson, 2000	Supervisor	3
	Antecedents of Employee Mindfulness	Organizational Constraints	Spector & Jex, 1998	Self	1
		Job Autonomy	Hackman & Oldham, 1975	Self	1
		Supervisor Support	Eisenberger et al., 2002	Self	2
2		Employee Awareness and Absent-mindedness		Self	2
	Employee Well-being	Job Satisfaction	Cammann et al., 1979	Self	3
		Need Satisfaction	Deci et al., 2001	Self	3
	Employee Performance	Task Performance	Motowidlo & Scotter, 1994	Supervisor	3
		OCBs	Moorman & Blakely, 1995	Supervisor	3
	Antecedents of Employee Mindfulness	Organizational Constraints	Spector & Jex, 1998	Self	1
		Job Autonomy	Hackman & Oldham, 1975	Self	1
		Task Routineness	Withey et al., 1983	Self	1

Table 2: Characteristics of Samples

Characteristic	Sample 1	Sample 2
N	124 working adults	107 working adults
Location	Singapore	Singapore
Female (%)	58	56
Age range (years)	20 to 58	20 to 62
Age mean (years)	36	36
Mean tenure in current organization (years)	5.6	6.2
Ethnically Chinese (%)	77	86
Two most frequent industries (%)	Service (24) Manufacturing (14)	Service (22) Financial (19)
Management-level (%)	Non-manager: 47 First-level: 15 Mid-level: 33 Top-level: 5	Non-manager: 56 First-level: 18 Mid-level: 17 Top-level: 9

Notes. Ethnicities other than Chinese include Malay and Indian; responses were distributed across a large range of self-reported ethnicities with no single one making up more than 4%.

Table 3: Means, Standard Deviations, N, and Correlations of all Study Variables

	Mean	SD	N	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Age	35.97	12.78	231													
2. Gender	1.57	.50	231	-.10												
3. Organizational constraints	2.05	.72	231	-.13	-.03											
4. Task routineness	4.41	1.57	231	-.04	.15*	.11										
5. Job autonomy	5.41	1.13	231	.05	-.14*	-.21**	-.25**									
6. Supervisor support	5.02	1.06	124	-.04	-.12	-.16	-.21*	.43**								
7. Employee awareness	4.37	.91	231	-.01	-.11	-.20**	-.03	.23**	.54**							
8. Employee absent-mindedness	2.85	1.06	231	-.29**	-.03	.26**	.18*	-.07	-.16	-.08						
9. Emotional exhaustion	3.49	1.08	124	-.07	.21*	.52**	.16	-.25*	-.29**	-.23*	.23**					
10. Job satisfaction	5.38	1.11	178	.12	-.06	-.37**	-.05	.45**	.58**	.46**	-.14	-.28**				
11. Need satisfaction	5.05	.67	82	.09	-.14	-.37**	-.28*	.51**	–	.32**	-.15	–	.68**			
12. Task performance	4.03	.58	175	.10	.02	-.25**	-.25**	.12	.24*	.20*	-.22**	-.21*	.40**	.56**		
13. OCBs	5.41	.76	79	.10	-.17	-.17	-.19	.22	–	.32**	-.17	–	.47**	.59**	.58**	
14. Deviance	1.37	.60	96	-.01	-.15	.46**	.07	-.03	-.13	-.04	.30**	.30**	-.16	–	-.33**	–

** $p \leq .01$; * $p \leq .05$.

Notes. Gender coded as 1 = male, 2 = female. OCBs: organizational citizenship behaviors. N depends on sample and wave, see also Tables 1 and 2. Empty cells are due to some variables only having been collected in one sample.

Table 4: Multiple Regression Analyses of Employee Awareness and Absent-mindedness Predicting Employee Well-being Variables

Model		Emotional Exhaustion			Job Satisfaction			Need Satisfaction		
		B	S. E. (B)	t	B	S. E. (B)	t	B	S. E. (B)	t
1	(Constant)	2.96	.49	6.06**	5.21	.43	12.20**	5.19	.39	13.23**
	Age	.00	.01	-.51	.01	.01	1.33	.00	.01	.60
	Gender	.44	.22	2.02*	-.12	.19	-.62	-.18	.17	-1.06
		R^2 = .05, ΔR^2 = .05, F(2, 99) = 2.31			R^2 = .02, ΔR^2 = .02, F(2, 139) = 1.18			R^2 = .03, ΔR^2 = .03, F(2, 60) = .81		
2	(Constant)	3.12	.84	3.71**	2.90	.68	4.24**	4.46	.68	6.58**
	Age	.00	.01	.12	.01	.01	1.25	.00	.01	.37
	Gender	.42	.21	2.02*	-.02	.17	-.12	-.15	.17	-.89
	Employee awareness	-.23	.11	-1.99*	.55	.09	5.98**	.22	.09	2.37*
	Employee absent-mindedness	.23	.10	2.28*	-.08	.08	-.93	-.07	.08	-.92
		R^2 = .14, ΔR^2 = .10, F(2, 197) = 5.07**			R^2 = .23, ΔR^2 = .21, F(2, 137) = 19.04**			R^2 = .13, ΔR^2 = .10, F(2, 58) = 3.48*		

** $p \leq .01$; * $p \leq .05$.

Notes. Gender coded as 1 = male, 2 = female. F values are of the R^2 change. Degrees of freedom depend on sample and wave, see also Tables 1 and 2.

Table 5: Multiple Regression Analyses of Employee Awareness and Absent-mindedness Predicting Employee Performance Variables

Model		Task Performance			OCBs			Deviance		
		B	S. E. (B)	t	B	S. E. (B)	t	B	S. E. (B)	t
1	(Constant)	3.80	0.22	17.58**	5.60	0.42	13.27**	1.70	0.30	5.63**
	Age	0.00	0.00	1.31	0.01	0.01	0.70	0.00	0.01	-0.26
	Gender	0.03	0.10	0.36	-0.24	0.19	-1.29	-0.18	0.13	-1.37
		R^2 = .01, ΔR^2 = .01, F(2, 150) = .88			R^2 = .04, ΔR^2 = .04, F(2, 65) = 1.17			R^2 = .02, ΔR^2 = .02, F(2, 82) = .94		
2	(Constant)	3.65	0.38	9.71**	4.83	0.72	6.68**	1.09	0.52	2.09*
	Age	0.00	0.00	0.66	0.00	0.01	0.41	0.00	0.01	0.54
	Gender	0.04	0.09	0.47	-0.21	0.18	-1.14	-0.16	0.13	-1.25
	Employee awareness	0.12	0.05	2.30*	0.25	0.10	2.50*	-0.02	0.07	-0.22
	Employee absent-mindedness	-0.10	0.05	-2.28*	-0.10	0.09	-1.14	0.17	0.06	2.76*
		R^2 = .8, ΔR^2 = .7, F(2, 148) = 5.82**			R^2 = .15, ΔR^2 = .11, F(2, 63) = 4.09*			R^2 = .11, ΔR^2 = .09, F(2, 80) = 3.93*		

** $p \leq .01$; * $p \leq .05$.

Notes. Gender coded as 1 = male, 2 = female. OCBs: organizational citizenship behaviors. F values are of the R^2 change. Degrees of freedom depend on sample and wave, see also Tables 1 and 2.

Table 6: Multiple Regression Analyses of Organizational Constraints Variables Predicting Employee Awareness and Absent-Mindedness

Model		Employee Awareness			Employee Absent-mindedness		
		B	S. E. (B)	t	B	S. E. (B)	t
1	(Constant)	4.72	0.30	15.49**	3.93	0.34	11.43**
	Age	0.00	0.01	-0.22	-0.02	0.01	-4.11**
	Gender	-0.20	0.13	-1.45	-0.13	0.15	-0.85
		R2 = .01, ΔR2 = .01, F(2, 184) = .35			R2 = .09, ΔR2 = .09, F(2, 184) = 8.55**		
2	(Constant)	5.35	0.40	13.52**	2.80	0.44	6.38**
	Age	0.00	0.01	-0.61	-0.02	0.01	-3.77**
	Gender	-0.21	0.13	-1.59	-0.16	0.15	-1.07
	Organizational constraints	-0.27	0.09	-2.92**	0.30	0.10	2.97**
	Task routineness	0.00	0.04	0.09	0.11	0.05	2.26*
		R2 = .06, ΔR2 = .05, F(2, 182) = 4.29*			R2 = .16, ΔR2 = .08, F(2, 182) = 7.79**		

** $p \leq .01$; * $p \leq .05$.

Notes. Gender coded as 1 = male, 2 = female. F values are of the R^2 change. Degrees of freedom depend on sample and wave, see also Tables 1 and 2.

Table 7: Multiple Regression Analyses of Organizational Support Variables Predicting Employee Awareness and Absent-Mindedness

Model		Employee Awareness			Employee Absent-mindedness		
		B	S. E. (B)	t	B	S. E. (B)	t
1	(Constant)	4.72	0.42	11.36**	3.93	0.47	8.38**
	Age	0.00	0.01	-0.16	-0.02	0.01	-3.02**
	Gender	-0.20	0.18	-1.06	-0.13	0.21	-0.62
		R2 = .01, ΔR2 = .01, F(2, 99) = .57			R2 = .09, ΔR2 = .09, F(2, 97) = 4.60*		
2	(Constant)	2.16	0.60	3.60**	4.93	0.79	6.27**
	Age	0.00	0.01	0.13	-0.03	0.01	-3.13**
	Gender	-0.07	0.16	-0.45	-0.18	0.21	-0.85
	Job autonomy	0.00	0.08	-0.06	0.01	0.10	0.09
	Supervisor support	0.46	0.08	5.67**	-0.19	0.11	-1.75
		R2 = .29, ΔR2 = .28, F(2, 97) = 19.41**			R2 = .12, ΔR2 = .03, F(2, 97) = 1.79		

** $p \leq .01$; * $p \leq .05$.

Notes. Gender coded as 1 = male, 2 = female. F values are of the R^2 change. Degrees of freedom depend on sample and wave, see also Tables 1 and 2.