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Mindful emotion regulation, savouring and proactive behaviour: The role of supervisor justice

Abstract

The global financial crisis and recession-prompted budget cuts represent significant challenges to public sector organisations, limiting their ability to make changes to job design and increasing job demands. In such environments, primary interventions targeted at changing the job or the work are not always viable. In this research, we examine the effectiveness of a mindful emotion regulation (MER) intervention versus a ‘control’ savouring nature (SN) intervention in terms of facilitating the investment of work engagement into proactive behaviours. We also examine how the job resource of supervisor justice impacts these relationships. We collected data from an Irish public sector organization using a cluster randomised controlled trial design. The final sample comprised 108 participants (MER = 74; SN = 34). Results highlight the valuable role that job resources play as boundary conditions of psychological-based interventions since the success of MER and SN depended on the participants’ perceptions of supervisor justice. When supervisor justice was high, a restorative SN exercise was effective in promoting proactive behaviours. When supervisor justice was low, a more complex cognitive and emotional exercise in the form of MER was required. We explain these results and consider their implications for future research.

Keywords: supervisor justice, emotion regulation, mindfulness, savouring nature, proactivity, work engagement, job resources, intervention, randomised controlled trial
Mindful emotion regulation, savouring and proactive behaviour: The role of supervisor justice

The global financial crisis had a substantial impact on well-being and life satisfaction particularly for individuals who experienced a loss of income (Boyce, Delaney, & Wood, 2018). Recession-prompted budget cuts represented significant challenges to public sector organisations in particular, by limiting their ability to make changes to job design and increasing job demands (Demerouti, Xanthopoulou, Petrou, & Karagkounis, 2017). Austerity measures as a result of economic recessions are a particular type of job insecurity, coupled with work intensification and heightened work pressure (Mercille & Murphy, 2017; Russell & McGinnity, 2014). Little research to date has considered the ways in which psychological interventions operate during times of austerity. Economic recessions represent a type of omnibus context (Johns, 2006) that may act as an external boundary condition influencing how interventions have their effects. However, we do not know yet how recessions might do this.

Ireland was one country severely impacted by the global financial crisis which began in September 2007 (Mercille & Murphy, 2017; O'Shea, Monaghan, & Ritchie, 2014; Russell & McGinnity, 2014). It provides an appropriate environment to examine how psychological workplace interventions operate in omnibus contexts that impose high job demands and low job resources. The global financial crisis left public sector organisations with a downsized workforce, who experienced a much-increased workload, substantial pay reductions, and a fairly negative public opinion of their value (Mercille & Murphy, 2017). Not surprisingly, this led to reduced psychological well-being and increased burnout amongst many public sector employees (Russell & McGinnity, 2014). This presents a challenging environment in which to implement interventions to aid workers to meet their increased performance requirements.
Austerity creates a context very similar to a high strain job (Karasek, 1979). The need to do more with less during austerity leads to social exchange violations and feelings of inequity and relative deprivation. One way to redress these feelings of relative deprivation could be to reduce work effort or to engage in neglect of one’s work (Hagedoorn, Van Yperen, Van de Vliert, & Buunk, 1999). However, in the long term, this would lead to higher levels of collective stress and a lack of provision of public services. Thus, proactivity is an important behaviour for employees when uncertainty is high (Griffin, Neal, & Parker, 2007), but employees are less likely to be proactive when job resources are limited. An intervention which would encourage employees to take initiative would be beneficial. This research examined the relationship between intervention effectiveness, job resources and proactive behaviour, taking into account factors at the global and national level (Parker, Van den Broeck, & Holman, 2017).

During austerity, public sector leaders and managers are often the ones tasked with imposing the austerity measures. Thus, the level of justice from a salient organizational source such as the supervisor is an important job resource that may influence whether an employee will strive to meet their increased performance requirements. Supervisor justice offers employees information that allows them to estimate and control the long-term work benefits they might receive in the future, and whether they are respected and esteemed by others in the organization (Cropanzano, Byrne, Bobocel, & Rupp, 2001). This is particularly important for public sector employees during austerity where public opinion of their value was extremely low.

In this study, we examine the effectiveness of a mindful emotion regulation (MER) intervention versus a ‘control’ savouring nature (SN) intervention in terms of facilitating the investment of work engagement into proactive behaviours. In doing so, we considered both
internal (supervisor justice) and external (austerity) boundary conditions and thus, examine the question of when job resources are beneficial for intervention studies.

**Proactive behaviour during economic recession**

Proactive behaviour at work involves self-initiating change, or making things happen in order to achieve a different future (Parker, Bindl, & Strauss, 2010). It has many benefits for organisations and is argued to be especially important in uncertain environments where it is not possible to anticipate contingencies and pre-specify role requirements (Griffin et al., 2007), making it particularly beneficial during recession and times of job insecurity (Lu, Wang, Lu, Du, & Bakker, 2014). For example, research has demonstrated that job crafting (a type of proactive behaviour) was beneficial for aiding employees to adapt to austerity related changes in Greece (Demerouti et al., 2017; Petrou, Demerouti, & Xanthopoulou, 2017). However, due to the lack of available job resources during times of austerity, employees are less likely to engage in effortful proactive behaviour (Strauss, Griffin, Parker, & Mason, 2015; Strauss, Parker, & O’Shea, 2017).

The self-initiated aspect of proactive behaviour means that individuals need to decide for themselves how and why to engage in proactive work behaviour, and making such decisions uses self-regulatory resources (Baumeister & Alquist, 2009). The model of proactive motivation (Parker et al., 2010) posits that individuals will be more likely to engage in proactive behaviour when they are autonomously motivated by their work tasks. Work engagement, defined as a positive affective-motivational work-related state characterised by vigour, dedication and absorption (Bakker, Demerouti, & Sanz-Vergel, 2014; Schaufeli, Salanova, González-Romá, & Bakker, 2002), has similarities with the concept of autonomous motivation (Meyer, Gagné, & Parfyonova, 2010). Importantly, engaging in proactive behaviour when one is motivated by a sense of pressure (i.e. controlled motivation) can be harmful both for well-being and
performance (Grant, Nurmohamed, Ashford, & Dekas, 2011; Strauss, Parker, & O'Shea, 2017). Thus, we would expect that individuals would engage in more effective and sustainable proactive behaviour when it is driven by engagement (Strauss & Parker, 2014).

Conservation of resources theory (COR; Halbesleben, Neveu, Paustian-Underdahl, & Westman, 2014; Hobfoll, 1989) suggests that individuals make choices with regard to the investment of their resources, particularly when resources are limited. One such decision relates to the investment of limited resources, such as engagement. Past research has found a positive relationship between work engagement and proactive behaviour (Bindl & Parker, 2010; Den Hartog & Belschak, 2007), and this relationship is strengthened under conditions of high job insecurity (Lu et al., 2014). During times of austerity, employees must make decisions with regard to how they can “do more with less” ("http://implementationbody.gov.ie/productivity/," 2017). Interestingly, reducing job demands does not seem to be helpful for employees in adjusting to austerity-lead organizational changes (Demerouti et al., 2017). Employees must make a strategic choice regarding where their engagement is best invested.

**Emotion regulation as a beneficial self-regulatory strategy during recession**

In times of austerity, public sector workers and their managers have little latitude to harness job-related resources to help them cope with the changes being imposed and the lowered standard of pay and conditions. In such circumstances, the proverbial phrase of considering whether the glass is half empty or half full becomes one of the only remaining resources available to employees. Emotion regulation is a set of self-regulatory strategies that workers can use, referring to a process whereby “individuals modify their emotional experiences, expressions, and physiology and the situations eliciting such emotions in order to produce appropriate responses to the ever-changing demands posed by the environment” (Aldao, 2013, p. 155). In
particular, emotional reappraisal, a strategy of re-framing thoughts for more adaptive emotional responding (Folkman, 1997; Ng & Diener, 2013) may be beneficial. Reappraisal changes the emotional tone of events in the workplace by paying attention to potential benefits and thus, may act as an adaptive strategy (Wadlinger & Isaacowitz, 2011). Activated positive affect is a key motivator of proactive behaviour (Bindl & Parker, 2010), and energises employees to engage in proactivity (Parker et al., 2010). Thus, emotion regulation should help employees to deal with the changes being experienced and provide them with the energised to motivation to engage in proactive behaviours. Drawing on COR theory (Halbesleben et al., 2014; Hobfoll, 1989), we expected that encouraging employees to engage in emotion regulation would influence their choice regarding the investment of their effort or resources. We explain why next.

**Mindful emotion regulation (MER) intervention**

Given the importance of proactive behaviour during times of insecurity, we wanted to investigate whether our interventions would encourage employees to invest their resources to take initiative, which would encourage the positive spiral between engagement and proactive behaviour. The mechanistic revision of ego depletion postulates that when individuals are fatigued, there is a shift in cognitive, affective and motivational processes such that individuals focus more on the gratification of short-term impulses, rather than long-term goals (Inzlicht & Schmeichel, 2012). However, in times of recession where employees are required to do more with less for the foreseeable future, a motivational shift to the gratification of short-term impulses will not be beneficial. Rather, taking initiative to improve current circumstances is important (Griffin et al., 2007). Thus, an intervention to counteract this motivational shift when resources are severely limited would have many benefits.
Mindful emotion regulation is “the capacity to remain mindfully aware at all times, irrespective of the apparent valence or magnitude of any emotion that is experienced” (Chambers, Gullone, & Allen, 2009; p. 569). Mindfulness is used in conjunction with emotion regulation as a mindful state of consciousness that facilitates the awareness and observation of emotions without judgement (Brown, Ryan, & Creswell, 2007; Glomb, Duffy, Bono, & Yang, 2011; Reb, Narayanan, & Ho, 2013). Past research has demonstrated a relationship between mindfulness and emotion regulation in workplace settings (Hülsheger, Alberts, Feinholdt, & Lang, 2013) and a mindful emotion regulation intervention decreased negative affect in university students (Pogretsova, Craig, Chris, O'Shea, & González-Morales, 2017).

Chambers et al. (2009) model of mindful emotion regulation (MER) suggests that it involves a systematic retraining of awareness and non-reactivity, allowing the individual to consciously choose the thoughts and emotions they want to identify with, rather than habitually reacting to them. Relatively, Michel, Bosch and Rexroth (2014) demonstrated that mindfulness can be used as a cognitive-emotional segmentation strategy. We drew on these in the development of our MER intervention. The intervention focused on four self-regulation strategies: developing awareness of how one feels at work, broadening attention through positivity, and using process reappraisal to change emotional habits and shift perspective. The integration of mindfulness with emotion regulation moves the focus from content reappraisal to process reappraisal (Chambers et al., 2009), allowing one to integrate reappraisal into an intervention while maintaining the antecedent focus of it as a strategy (Gross, 2001). Drawing on COR, we expected that the MER intervention would influence employees decision regarding the investment of their resources and encourage proactivity by increasing the likelihood of a switch in attention from short-term gratification to long-term goals (Inzlicht & Schmeichel, 2012).
Savouring nature (SN) intervention

Attention restoration theory (Kaplan, 1995) posits that attending to nature represents a type of involuntary attention or fascination that requires no effort. Thus, savouring nature is a type of restorative experience comprising the components of being away, fascination and extent (e.g. being connected to different environments), and compatibility between the natural setting and human inclinations (Kaplan, 1995). Steidle et al. (2017) demonstrated that savouring nature is an effective workplace intervention which can enhance vigour amongst workers.

The control condition focused on savouring nature. It involved reflecting on different nature images while listening to a piece of music. The MER intervention received the same images and background music while listening to audio reflection activities. Thus, the SN condition served as a control condition to examine the added value of the MER components. However, as past research has demonstrated, SN is an intervention itself, and thus, was a very stringent comparison.

Given that the MER intervention promotes the capacity to engage in process reappraisal (Chambers et al., 2009), we expected that those in the MER intervention would be more willing to invest their work engagement in proactive behaviour than those in the SN group. The SN intervention had the potential to aid employees to enhance vigour (Steidle et al., 2017), but did not include any activities to encourage employees to invest this in behaviours such as taking initiative. Thus, we proposed the following:

Hypothesis 1: The positive relationship between work engagement and proactive behaviour will be stronger for those in the MER intervention group in comparison to those in the SN intervention group.

The decision to invest resources is captured in a direct relationship between work engagement and proactive behaviour. To examine the impact of the intervention, we must
consider whether this relationship is different for the MER group and the SN group (i.e. a moderated relationship).

The role of supervisor justice

Supervisors have a key role to play in the provision of job resources and can influence the perception of the decision-making environment (e.g. Molina, Moliner, Martinez-Tur, Cropanzano, & Peiro, 2015), even during an environment of austerity. Being treated fairly by a supervisor is a job resource (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001), which captures hierarchical power (Anderson & Brion, 2014) and justice perceptions, which are the key of social exchange relationships (Lavelle, Rupp, & Brockner, 2007). In an environment where employees may justifiably feel that they have been treated unfairly by the public sector austerity measures put in place (on average, a 14% paycut; Mercille & Murphy, 2017), fair treatment by the supervisor may be particularly relevant. For example, justice perceptions play a key role in moderating the relationship between job insecurity and performance (Wang, Lu, & Siu, 2015).

Supervisor justice refers to judgments of fair treatment from one’s superior (Skarlicki, van Jaarsveld, Shao, Song, & Wang, 2016). Although these judgments seem to be limited to interactional criteria (e.g., dignity and respect), employees also form supervisor perceptions based on distributive (e.g. equity and equality) and procedural (e.g. lack of bias, accuracy) criteria (Karriker & Williams, 2007). Supervisor justice plays a salient role in influencing workers’ attitudes and behaviours (for a meta-analysis see Rupp, Shao, Jones, & Liao, 2014). For instance, when supervisors show real concern toward their subordinates, treating them in a fair manner, those subordinates become more tolerant against unfair payment and decision-making processes, reducing their retaliation towards the organization (Skarlicki & Folger, 1997). That is, supervisor justice represents an important job resource moderating employee’s behaviour.
Based on the model of proactive motivation (Parker et al., 2010), we expect that justice would moderate the impact of engagement on proactive behaviour. As a stressor, low justice perceptions may prompt greater initiative to improve work methods (Parker et al., 2010). Conversely, individuals are more likely to engage in proactive behaviour when they perceive their organisation is high in procedural justice (McAllister, Kamdar, Morrison, & Turban, 2007).

The question that arises then is what impact supervisor justice will have in combination with the effects of the MER and SN intervention? Underlying this question is the need to better understand the boundary conditions of job resources under which workplace interventions take place. This need to understand when interventions are successful has been repeatedly highlighted by scholars (Egan et al., 2007; Kröll, Doebler, & Nüesch, 2017; Richardson & Rothstein, 2008). Recession-based austerity measures arguably create a context of perceived injustice in public sector organisations. Past research suggests that supervisor justice can buffer the effects of other types of injustice. For example, Greenberg (1993) found that differences in pay cuts (distributive injustice) had differential effects on counterproductive workplace behaviours depending on the interpersonal justice treatment provided by managers. Given that low justice acts as a stressor that triggers negative emotional reactions and counterproductive behaviours, we expect that the benefits of the MER condition will become more evident when employees perceive low rather than high justice from their supervisors. That is to say, we do not expect the benefits of MER to manifest with equal strength when participants perceive high versus low justice. This is further supported by the primacy of resource loss proposed by COR theory (Halbesleben et al., 2014; Hobfoll, 1989). As stated by this principle, “resource loss is disproportionally more salient than resource gain” (p. 343). Given equal amounts of loss (i.e. low supervisor justice) and gain (i.e. high supervisor justice), loss will have significantly greater impact. Moreover, prior loss elicits
gain seeking (e.g. Holahan, Moos, Holahan, & Cronkite, 1999). This primacy of resource loss has been shown to affect workplace interventions (Seppälä, Hakanen, Tolvanen, & Demerouti, 2018; p. 1431). Thus, we hypothesise the following:

**Hypothesis 2:** There will be a three-way interaction between supervisor justice, intervention group (MER versus SN) and work engagement, such that for those in the MER group who experience low supervisor justice, there will be a stronger positive relationship between work engagement and proactive behaviour.

**Method**

**Sample**

All employees (N = 840) in the organisation were invited to take part in the research. 386 participants (46%) completed the baseline survey and 237 (28.2%) volunteered to take part in the research. Participants were cluster randomised to one of the two conditions (MER or SN) based on the location where they worked, resulting in 173 in the MER, and 63 in the SN conditions. Thirty-seven participants did not attend the face-to-face training session and were excluded. We excluded 92 individuals because they did not complete the follow-up survey or completed two or less of the intervention activities. The final sample consisted of 108 participants comprising 74 in the MER group and 34 in the SN group (see Figure 2 for the CONSORT flow diagram; Schulz, Altman, & Moher, 2010).

Participants in the final sample were 68.5% women and 31.5% men with a mean age of 48.49 years (SD = 8.18), average job tenure of 6.04 years (SD = 5.46), and 59.3% had earned a university diploma. Most participants were permanently employed (99.1%) and full-time employees (88.0%). There were no baseline differences in the core variables, proactive behaviour, work engagement, and supervisor justice at Time 1, between the MER and the SN
group (t = -0.460, p > .05; t = -0.464, p > .05; t = -1.034, p > .05; respectively). Moreover, there were no baseline differences between the work locations that formed the basis of our cluster randomisation. Thus, our randomisation procedure was successful.

Procedure

The HR department of a large public-sector organisation in Ireland conducted an annual survey which identified issues with employee engagement and morale. The second author was asked to design an intervention programme to address these issues. The authors met with the senior management team to understand their needs and consult them on aspects of the intervention design. The interventions were pilot tested by a member of the Human Resources team (who subsequently was not a participant). All employees were invited to complete a baseline survey, in which they were also invited to sign up for the intervention. For all surveys, participants were asked to generate a code using part of their work ID (to ensure they were not identifiable).

The organisation was located across 11 towns/cities in Ireland. We used a cluster randomised controlled trial design (Torgerson, 2001), whereby we randomised the locations to one of two conditions, to ensure that individuals working in the same location received the same intervention and avoid issues of contamination. To train participants in the interventions, we met with participants at their place of work (in groups ≤ 40) for approximately one hour. During this time, we introduced them to the research, gave them an overview of what participating involved, and trained them in the relevant intervention.

Our mindful emotion regulation (MER) intervention comprised exercises incorporated into participants workdays, drawing on the principles of mindful emotion regulation (Chambers et al., 2009). It followed a sequential self-regulation process where participants first became aware of their emotions at work, using the mindfulness strategy of presence (week 1). Then,
participants practiced recognizing and accepting their emotions (week 2). The purpose was to broaden and expand thought processes, in line with broaden and build theory (Fredrickson, 2013). Following this, participants practiced effective strategies for managing their emotions (week 3). Finally, participants practiced emotion regulation (i.e. developed their skills in changing their emotions; week 4), drawing on the mindfulness tool of orienting.

Those in the savouring nature (SN) condition were given the same expectations in the training as those in the MER intervention. However, instead of receiving the training in the various types of MER, they received training in SN. Following the training, the participants were reminded to practice their intervention activity during work three times per week for four weeks. They were sent a link via e-mail with access to the intervention activities in an online platform. Participants were required to insert their code so we could check compliance. In the week after completion of the intervention activities, participants were asked to complete a follow-up survey.

**Measures**

Work engagement was assessed at Time 1 ($\alpha = .86$) using the nine-item version of the Utrecht Work Engagement Scale (UWES; Schaufeli, Bakker, & Salanova, 2006), which captures its three underlying dimensions: vigour (e.g. “At my work, I feel bursting with energy”), dedication (e.g. “When I get up in the morning, I feel like going to work”), and absorption (e.g. “I get carried away when I am working”). Items were scored from 0, never, to 6, always.

Proactive behaviour was measured at Time 1 ($\alpha = .88$) and Time 2 ($\alpha = .88$) using Belschak and Den Hartog’s (2010) eleven-item scale, which captures three foci of proactive behaviour: organizational proactive behaviour (e.g. Over the last week, at work, I took the initiative… “to suggest ideas for solutions for company problems”), interpersonal proactive behaviour (e.g. “...take over colleagues’ tasks when needed even though I was not obliged to”),
and personal proactive behaviour (“...take on tasks that will further my career”). Responses were recorded on a 7-point Likert scale ranging from 1, strongly disagree, to 7, strongly agree.

Supervisor justice (α = .96) was assessed by adapting the three items from the Perceived Overall Justice (POJ) scale designed to assess individuals’ personal justice experiences (Ambrose & Schminke, 2009) to focus on the fairness of the supervisor (e.g. “In general, I can count on my supervisor to be fair”). Participants rated their level of agreement on a 7-point Likert scale ranging from 1, strongly disagree, to 7, strongly agree.

Control variables. Since research suggests age is related to proactivity traits (Thomas, Whitman, & Viswesvaran, 2010) and the average time spent doing intervention exercises may alter intervention findings (Lyubomirsky & Layous, 2013), we controlled for these variables.

Data Analysis

Before testing the proposed hypotheses, we assessed the measurement model as outlined in Figure 1. We compared competing models based on several modelling rationale criteria. According to Cheung and Rensvold (2002) and Widaman (1985), an improvement in model fit should be supported by an increase of .010 in CFI (ΔCFI), whereas Chen (2007) suggests a decrease of .015 in RMSEA (ΔRMSEA) or .030 in SRMR (ΔSRMR) also supports an improvement in model fit. Differences in fit indices below these thresholds indicate negligible practical differences (e.g. Martínez-Córcoles, Gracia, Tomás, Peiró, & Schöbel, 2013).

Since participants working in the same geographical location received the same intervention, we ran a hierarchical linear model in which no predictors were specified. We ran this model to examine the proportion of variance in the dependent variable that resided between locations (Raudenbush & Bryk, 2002). As the total variance of proactive behaviour (Time 2) that resided between locations was below 5% (it was 2.4%), and considering the small number of
locations (n = 11), we followed previous guidelines (Finch & French, 2011; Julian, 2001; Maas & Hox, 2004) and proceeded to test the proposed hypotheses using ordinary least squares regression (for a recent review on multi-level modeling see González-Romá & Hernández, 2017) based on the recommendations of Aiken and West (1991). This analysis included the three-way interaction between work engagement, type of intervention (SN versus MER), and supervisor justice, while controlling for age, average time spent doing the exercise, and proactive behaviour at Time 1. We used Stride, Gardner, Catley, and Thomas’s (2015) Mplus code for estimating Model 3 of Hayes’ (2015) PROCESS macro, which provides bootstrap estimates for each slope in the three-way interaction, to assess their significance.

**Results**

**Measurement Model**

Before testing the proposed measurement model, we assessed the dimensionality of proactive behaviour (Time 1 and 2), as this measure captures three foci: organizational, interpersonal, and personal proactive behaviour. To this end, we compared a three-factor model against a one-factor model. Time 1 results indicated that the one-factor model which included two covariances between items fit the data well ($\chi^2 = 68.49, df = 42, p < .01; \text{RMSEA} = .076; \text{CFI} = .943; \text{SRMR} = .056$). The three-factor model ($\chi^2 = 81.54, df = 41, p < .01; \text{RMSEA} = .096; \text{CFI} = .913; \text{SRMR} = .057$) showed negligible practical differences against the former – general -structure ($\Delta \text{RMSEA} < .015$ and $\Delta \text{SRMR} < .030$). Time 2 results, replicated this pattern: the one-factor model with three covariances between items fit the data well ($\chi^2 = 68.73, df = 41, p < .01; \text{RMSEA} = .079; \text{CFI} = .956; \text{SRMR} = .054$), while the three-factor model ($\chi^2 = 136.86, df = 41, p < .01; \text{RMSEA} = .147; \text{CFI} = .849; \text{SRMR} = .073$) showed negligible practical differences.
Similarly, we assessed the dimensionality of work engagement (Time 1), as this measure also captures three underlying dimensions: vigour, dedication, and absorption. Once again, results provided support for a one-factor model ($\chi^2 = 43.11$, $df = 27$, $p < .01$; RMSEA = .074; CFI = .954; SRMR = .051) rather than the three-factor structure ($\chi^2 = 34.05$, $df = 24$, $p < .01$; RMSEA = .062; CFI = .971; SRMR = .044), which presented negligible practical differences.

We continued by testing the full measurement model. Using a series of confirmatory factor analyses, we examined the distinctiveness of the constructs proposed in Figure 1. The first model we tested included all Time 1 constructs (i.e. work engagement, supervisor justice, and proactive behaviour) and specified that all indicators load only onto their corresponding latent constructs. This three-factor model fit the data well and all the estimated parameters were statistically significant ($\chi^2 = 346.94$, $df = 227$, $p < .01$; RMSEA = .070; CFI = .907; SRMR = .069). We compared this model to three alternatives: a two-factor model that forced work engagement and supervisor justice indicators to load onto one dimension ($\chi^2 = 772.11$, $df = 229$, $p < .01$; RMSEA = .148; CFI = .578; SRMR = .113), a two-factor model that forced work engagement and proactive behaviour indicators to load onto one dimension ($\chi^2 = 598.66$, $df = 229$, $p < .01$; RMSEA = .122; CFI = .713; SRMR = .120), and a one-factor model that forced all items onto one general dimension ($\chi^2 = 1024.72$, $df = 230$, $p < .01$; RMSEA = .179; CFI = .383; SRMR = .150). None of these alternative models fit the data as well as the proposed congeneric model, which presented a significant decrease in RMSEA ($\Delta$RMSEA > .015) and SRMR ($\Delta$SRMR > .030), and a significant increase in CFI ($\Delta$CFI > .010). Altogether, these results provide support for the proposed measurement model.
Hypothesis Testing

To test our hypotheses, we ran a three-way interaction amongst work engagement, type of intervention, and supervisor justice on proactive behaviour (Time 2). As presented in Table 2, we ran these analyses in a stepwise fashion without including age nor time spent doing the exercise as these control variables were not related to the dependent variable (Bernerth & Aguinis, 2016; see Table 1). As indicated in Model 2 (see Table 2), the interaction between work engagement (Time 1) and intervention (SN versus MER) was not significant; thus, Hypothesis 1 was not supported. Model 3 indicated a statistically significant three-way interaction (b = -.21, SE = .10, p < .05), even after controlling for proactive behaviour (Time 1; b = .48, SE = .09, p < .01). To interpret the pattern of the three-way interaction, we proceeded to plot the slopes at ±1 SD (Aiken et al., 1991; see Figure 3). To test the significance of the slopes we generated 1,000 bootstrap samples and examined the confidence interval of each slope. If a confidence interval did not include zero, we considered the slope as significant. This technique negates the need to assume normality and homoscedasticity of the errors in estimation (Hayes, 2015).

As presented in Table 3, slopes 2 and 3 were both positive and significant at a 90% confidence interval. That is, even after controlling for proactive behaviour at Time 1, work engagement at Time 1 promoted a significant increase in proactive behaviour at Time 2, under two conditions: when they participated in the MER intervention and reported low levels of supervisor justice (slope 3: point estimate = .227; 90% CI = .081, .381), providing initial support for Hypothesis 2, and when they participated in the SN intervention and reported high levels of

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1 Despite the low variance of proactive behaviour that resided between locations and the small number of locations, we run a true multilevel model to examine if the findings replicated the results observed with ordinary least squares regression. The results were essentially the same; the main difference is that the three-way interaction went from being below .05 to being below .10. More important, the slopes remained the same in terms of significance, direction of effects, and estimate sizes.
supervisor justice (slope 2: point estimate = .255; CI 90% = .030, 491), which was not hypothesised. None of the remaining slopes presented significant estimates.

To increase the generalizability of these results, we also examined each of the four slopes at a more restricted confidence interval of 95%. It is important to recall that the supervisor justice variable was split into artificial groups (±1 SD from the mean) and thus, the slopes should be considered for illustration purposes rather than actual groups. Slope 3 was the only one to remain significant at a 95% confidence interval (slope 3: point estimate = .202; 95% CI = .049, .419; see Table 3), providing additional support for Hypothesis 2. Considering the distinctive positive pattern of slope 2 presented in Figure 3 and the reduced sample size used, we provide, in Figure 4, a visual representation of the bootstrapped distributions for each of the slope estimates at this more restricted 95% confidence interval. In this figure, it is possible to see that despite their different treatment (2 interventions x 2 supervisor justice), the estimates of slopes 1 and 4 tend to accumulate around zero, whereas estimates of slopes 2 and 3 both tend to accumulate around .22 and .25. These results suggest that both MER participants under low justice conditions and SN under high justice conditions invested engagement in proactive behaviour.

Discussion

In a setting characterized by the external scarcity of organizational resources, we tested two psychological-based interventions which focus on different cognitive and emotional resources: a mindful emotion regulation (MER) intervention and a ‘control’ savouring nature (SN) intervention. The aim of this research was to motivate public sector employees undergoing austerity measures to harness their work engagement to engage in proactive behaviours. Results highlighted the valuable role that job resources play as boundary conditions of psychological-based interventions. These results demonstrated that the effects of MER and SN depended not
only on the type of intervention but also on the participants’ perceptions of the job resource, supervisor justice. When supervisor justice was high, a simple restorative experience through a SN exercise was enough to encourage employees to use their engagement to engage in proactive behaviours. It is important to note that this effect of the SN intervention was significant at a 90% confidence interval, but not at the more restricted 95% interval. When supervisor justice was low however, the simple restorative experience facilitated by SN was not enough. Encouraging participants who reported low levels of supervisor justice required a more complex exercise. The MER intervention provided the additional cognitive and emotional strategies needed for participants to more consciously choose their actions and thus, use their work engagement to engage in proactive behaviours. In other words, individuals in the MER intervention, seem to have been motivated to appraise their work situation and interactions differently than those in the SN. Interestingly, these MER participants were only motivated to invest their engagement when they perceived low supervisor justice (see Figure 3, Slope 3). When supervisor justice was high, there may not have been a need for such reappraisals (see Figure 3, Slope 4).

As a job resource, the level of justice from a supervisor signals to employees how likely they are to receive benefits (e.g. a key role in an interesting project, a new computer, the client of a former colleague) if they put effort into their jobs. These signals are important since they highlight humans’ need to control their future and to be accepted and valued by others (Cropanzano et al., 2001). Hence, when supervisor justice is high, employees tend to reciprocate the fair treatment received by engaging in behaviours that are effortful but advantageous for the organization, such as extra-role behaviour (Rupp et al., 2014). In other words, employees tend to ‘return the favour’ or ‘give back’ the perceived fairness by putting more effort into their jobs, even if those tasks are not prescribed as part of their job role. From this perspective, when
individuals who perceive high supervisor justice restore their energetic resources through a SN exercise, they may increase the process of ‘returning the favour’ or ‘giving back’ to their direct managers. In an austerity context, they do so by engaging in proactive behaviours; that is, they try to do more with the little they have (see Figure 3, Slope 2). When individuals perceive low levels of justice, the feeling of obligation to ‘give back’ or ‘return the favour’ disappears, regardless of their engagement levels (see Figure 3, Slope 1).

Interestingly, the pattern of results changes when we move from the simple restorative experience promoted by the SN exercise to the more the complex MER exercise, which not only includes the restorative experience but is a more complex exercise that invites individuals to consciously choose the thoughts, emotions and sensations they want to identify with, rather than habitually reacting to them (Chambers et al., 2009). That is, participants in the MER condition were invited to develop new cognitive and emotional strategies to deal with their current situation. The results of the present study support this difference in training as the participants in the MER intervention behaved differently than those in the SN condition. On the one hand, individuals in the SN intervention seem to have followed a social exchange logic (Cropanzano et al., 2001) where the fair treatment received was reciprocated by the execution of voluntary and effortful proactive behaviours that are known to benefit the organization as a whole (Griffin et al., 2007). On the other hand, individuals in the MER intervention seem to have behaved based on a conservation of resources (COR) logic (Halbesleben et al., 2014; Hobfoll, 1989). As suggested by this framework, when employees invest resources, they usually do it to protect themselves against resource loss, recover from resource losses or gain new resources. In an environment characterized by the scarcity of organizational resources, a lack of supervisor justice signals the possibility of further resource loss (e.g. Colquitt, LePine, Piccolo, Zapata, &
Rich, 2012). Thus, when individuals trained in MER are invited to see the ‘big picture’ and not simply react, they seem to be unwilling to engage in the social exchange logic (i.e. they seem to question the ‘give back’ or ‘return the favour’ logic). Rather than saving resources when they perceive low supervisor justice (as the SN participants did), results show that participants of the MER intervention actually increase their proactive behaviours. From a COR perspective, this represents an investment to protect from further resource loss. Being proactive in an environment characterized by the lack of external resources where dismissals are common and while having an unfair supervisor may be the only decision available to prevent further resource losses.

The question that arises is: why did MER participants perceiving high supervisor justice not follow the same logic and increase their proactive behaviours as a means to gain even further resources, as proposed by COR theory (Halbesleben et al., 2014; Hobfoll, 1989)? As proposed by COR’s primacy of resource loss principle (Hobfoll, 2001), MER participants perceiving high supervisor justice might not have increased their proactive behaviours because loss is a more powerful motivator than gain (e.g. Holahan et al., 1999). This is not the first workplace intervention study that does not observe a gain cycle rationality in the subgroup of participants showing initial high levels of a job resource (Seppälä et al., 2018; Knight et al., 2017). Given the salience of loss, we believe future research should address the role of negativity bias in intervention research. We cannot disregard, however, that “gain spirals are made up more slowly than loss cycles” (Seppälä et al., 2018, p. 1431). Based on this reasoning, these participants may need a longer timeframe to engage in resource gain than the one used in this study. Moreover, we cannot disregard the possibility that MER participants perceiving high supervisor justice might not have increased their proactive behaviours because they might had already achieved a plateau. Future research should take into account these observations.
In recent years, there has been an examination of the boundary conditions regarding the effectiveness of organisational level interventions (Nielsen, Randall, Holten, & Gonzalez, 2010). In particular, the appraisal processes of participants has been shown to substantially impact interventions at the organisational level (Nielsen, Randall, & Albertsen, 2007). Little research has considered boundary effects of individual level interventions in the workplace, although there is emerging research to suggest that we should do so. For example, Clauss et al. (2018) demonstrated that a positive thinking intervention was more effective for those with a high need for recovery. Our research points to the need to also consider job resources, and particularly supervisor justice, as boundary conditions of intervention effectiveness.

Furthermore, little research to date has considered the ways in which interventions operate during times of austerity. Economic recessions represent a type of omnibus context (Johns, 2006) which may influence the acceptance and effects of an intervention. Demerouti et al. (2017) examined the impact of a job crafting intervention in Greece in times of similar economic austerity as our study was conducted. Job crafting is considered a type of proactive behaviour, and thus, has some synergies with the present research. Taken together, both the present study and that of Demerouti et al. (2017) suggest that interventions can facilitate employee functioning due to insecurity and adverse working conditions resulting from austerity measures. However, they also suggest that the picture is not an entirely straight forward one, influenced by reactions to change and job resources such as supervisor support, for example.

Limitations and directions for future research

Our results show the impact of factors at the global and national level (Parker et al., 2017) that may influence the relationship between intervention effectiveness and job resources. This research was conducted in the very specific economic context of a recession. The
generalisability of our findings is limited by this contextual and temporal boundary, but their effects are important to understand. The unique conditions of our study presented a kind of natural experiment characterised by scarcity of external resources and future research is needed to examine how individual level interventions operate under such conditions. Our study focused on a public-sector workforce, which was interesting in this situation due to austerity measures and the limited scope for organisational change. Future research should explore whether similar effects are found in other contexts where organisational change is not possible or not wanted.

The interventions focused on the individual and thus, were at the micro-level. Organizational level interventions (e.g. Nielsen & Abildgaard, 2013; Nielsen, Taris, & Cox, 2010) would have been an alternative approach, but given the unique organisational and economic circumstances, they were not feasible. Furthermore, past systematic reviews and meta-analysis demonstrate that organisational level interventions have mixed results, and that cognitive-emotional interventions at the individual level showed the strongest effects sizes (Daniels, Gedikli, Watson, Semkina, & Vaughn, 2017; Richardson & Rothstein, 2008). Our research demonstrated that individual level interventions can be effective under certain conditions. This study also identified a unique situation where macro influences interact with individual sense-making behaviours in the utilisation of personal engagement and job resources.

In the design of our research, we used a very stringent control group which represented an intervention itself. The intervention group received the same stimuli as the control (savouring nature) group in addition to the mindful emotion regulation instructions. This is a strength in that our results cannot be attributed to differential expectations regarding the two groups. However, it would have been beneficial to also include a true control condition that did not receive any treatment; contextual and ethical constraints did not allow for this.
Moreover, it is not possible to rule out that SN participants in the low supervisor justice condition did not increase their proactive behaviours because such feelings of unfairness may have held them up from being open to what the organization had to offer (i.e. a SN intervention). Indeed, employees might have responded to this well-intended organizational initiative with cynicism and thus, its effectiveness would have been limited from the outset.

In addition, we focused on only two types of intervention. Future research would benefit from examining whether other types of interventions would show similar effects, or even different effects. For example, job crafting interventions can also be beneficial during economic recessions (Demerouti et al., 2017). We only examined supervisor justice, which is one type of job resource. Researchers should investigate a broader range of job resources and other potential boundary conditions of intervention effectiveness that these resources may demonstrate.

Finally, as in any other study, the relatively small sample used here limited the statistical power of the analyses. Thus, even though we controlled for proactive behaviour at Time 1, included a strong control group, used a randomised control trial, and based the proposed hypotheses on strong theoretical and empirical arguments, scholars and practitioners should keep in mind that we cannot draw definitive conclusions. Future research should endeavour to recruit larger sample sizes, although we acknowledge the challenges in doing so. Past research investigating workplace interventions demonstrate similar sample sizes to that in the present research (e.g. Clauss et al., 2018; Steidle et al., 2017). Future research using online platforms (for collecting data and/or delivering exercises) may consider including brief face-to-face interactions during the duration of the activity (e.g. one time per week, in addition to the initial training sessions) to increase response compliance. More important, future research should address participants compliance as a critical outcome to explore.
Conclusion

Austerity measures as a result of recession represent a significant challenge to public sector organisations, limiting their ability to make changes to job design or increasing job demands. In such environments, primary interventions targeted at changing the job or the work are not always viable. Our research demonstrated that individual level interventions hold promise even in such restrictive environments and that supervisor justice represents an easy-to-screen boundary condition (see Ambrose & Schminke, 2009), profoundly rooted in evidence (Rupp., 2014), which may help scholars and practitioners select the appropriate psychological-based activities for increasing the effectiveness of their interventions.

REFERENCES


Table 1

Means, standard deviations, and correlations among the study variables

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<tbody>
<tr>
<td>1. Age</td>
<td>48.49</td>
<td>8.18</td>
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<td></td>
<td></td>
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<td>2. Average time spent doing the exercise (minutes)</td>
<td>289.77</td>
<td>172.77</td>
<td>.17†</td>
<td>-</td>
<td></td>
<td></td>
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<td>3. Intervention (SN = 0, MER = 1)</td>
<td>.69</td>
<td>.47</td>
<td>.03</td>
<td>.11</td>
<td>-</td>
<td></td>
<td></td>
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<tr>
<td>4. Work engagement (Time 1)</td>
<td>3.97</td>
<td>1.16</td>
<td>.19*</td>
<td>.16†</td>
<td>.05</td>
<td>(.86)</td>
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<tr>
<td>5. Supervisor justice (Time 1)</td>
<td>5.59</td>
<td>1.32</td>
<td>-.03</td>
<td>.08</td>
<td>.10</td>
<td>.03</td>
<td>(.96)</td>
<td></td>
<td></td>
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<tr>
<td>6. Proactive behaviour (Time 1)</td>
<td>4.79</td>
<td>0.99</td>
<td>-.09</td>
<td>.01</td>
<td>.05</td>
<td>.35**</td>
<td>-.01</td>
<td>(.88)</td>
<td></td>
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<tr>
<td>7. Proactive behaviour (Time 2)</td>
<td>4.55</td>
<td>0.93</td>
<td>.09</td>
<td>.11</td>
<td>.16†</td>
<td>.34**</td>
<td>.04</td>
<td>.57**</td>
<td>(.88)</td>
</tr>
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Note: n = 108. Reliability estimates are shown on the diagonal in parentheses. †p < .10, *p < .05, **p < .01
Table 2

*Regression results predicting proactive behaviour measured at Time 2*

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th></th>
<th>Model 2</th>
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<th>Model 3</th>
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<td>B</td>
<td>SE</td>
<td>B</td>
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<td>.09</td>
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<td>.09</td>
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<td>.13</td>
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<td>.13</td>
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<td>Condition (SN = 0, MER = 1)</td>
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<td>.16</td>
<td>.24</td>
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<td>.16</td>
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<td>Work engagement x Intervention</td>
<td></td>
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<td>.13</td>
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<tr>
<td>Work engagement x Supervisor</td>
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<td>.08</td>
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<td>justice</td>
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<td></td>
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<td>Intervention x Supervisor</td>
<td>-.16</td>
<td>.15</td>
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<td>.16</td>
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<td>Work engagement x Intervention</td>
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</table>

*Note: n = 108. †p < .10, *p < .05, **p < .01*
Table 3

Slopes’ confidence intervals based on 1,000 bootstrap samples for the three-way interaction predicting proactive behaviour measured at Time 2

<table>
<thead>
<tr>
<th>Slope 1 (SN, low supervisor justice)</th>
<th>Estimate</th>
<th>95% CI</th>
<th>90% CI</th>
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<td></td>
<td>.028</td>
<td>-.224, .320</td>
<td>-.163, .264</td>
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<tr>
<td>Slope 2 (SN, high supervisor justice)</td>
<td>.255</td>
<td>-.012, .523</td>
<td>.030, .491</td>
</tr>
<tr>
<td>Slope 3 (MER intervention, low supervisor justice)</td>
<td>.227</td>
<td>.049, .419</td>
<td>.081, .381</td>
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<tr>
<td>Slope 4 (MER intervention, high supervisor justice)</td>
<td>.038</td>
<td>-.194, .221</td>
<td>-.145, .190</td>
</tr>
</tbody>
</table>

*Note: n = 108.*
Figure 1

Figure 1. Hypothesized model.
Figure 2. Summary of participant flow adapted from CONSORT 2010 flow diagram (Schulz et al., 2010).
Figure 3. Three-way interaction effect of work engagement (Time 1), type of intervention (MER versus SN), and supervisor justice (Time 1) on proactive behaviour at Time 2, after controlling for proactive behaviour at Time 1.

Note: SN = Savouring nature; MER = Mindful emotion regulation.
Figure 4. Bootstrapped distributions for each of the slope estimates of the three-way interaction (95% confidence interval).