Why employees with higher challenging appraisals style are more affectively engaged at work? The role of challenging stressors: A moderated mediation model

Challenging stressors have been positively linked to various work outcomes. However, the role of individual differences in stress appraisal in shaping the function of challenging stressors and work outcomes has been rarely discussed. Drawing on the individual differences perspective, the authors propose that employees higher in challenge appraisal are more likely to have challenging stressors and are more responsive to such stressors to have a higher positive affect at work. Results obtained from 117 employees supported the hypotheses. The results indicated that challenge appraisal is positively related to challenging stressors. In addition, challenging stressors has a positive association with positive affect at work when challenge appraisal is high but has a null association when challenge appraisal is low. The findings suggest that challenging stressors does not necessarily bring positive work outcomes as suggested in past studies and highlight the importance of considering dispositional tendency in stress appraisal when looking into the function of challenging stressors and work outcomes.

Keywords: Challenging appraisal; Challenging stressors; Self-verification; Trait activation.
Although it seems that challenging stressors are beneficial to employees for bringing positive work outcomes, the role of dispositional appraisal in shaping the function of challenging stressors is overlooked in past studies. Understanding such dispositional appraisal is theoretically important because it would be that rather than all, but only employees with certain dispositions will seek challenging stressors and be responsive to such stressors to enhance their work outcomes. This speculation is theoretically warranted because individuals differ in interpreting and reacting to stressors (Lazarus & Folkman, 1984) and such individual differences may influence employees’ tendencies in seeking challenging stressors and being responsive to such stressors. This investigation is practically important because it helps to understand the boundary condition for when challenging stressors are more likely to bring positive work outcomes and therefore, managerial implications on stressor and stress management.

To investigate the dispositional appraisal, we specifically focus on challenge appraisal, or the extent to which employees believe that work stressors can bring personal growth or future gains (Peacock & Wong, 1990). As we elaborate on shortly, we propose that those high in this disposition are more likely to seek challenging stressors and be more appreciated and responsive to such stressors to display a higher positive affect at work. As shown in Figure 1, we therefore propose a moderated mediation model (Podsakoff et al., 2007, Model 1) to understand the proposed association among challenge appraisal, challenging stressors and positive affect at work. We now provide more elaboration to underpin our hypothesis.

**Effect of challenge appraisal on challenging stressors**

We first elaborate on why employees with higher challenge appraisals are more likely to seek challenging stressors. Challenge appraisal reflects the degree to which an individual’s expectation of achieving growth from stressful experience (Peacock & Wong, 1990). As indicated by Lazarus and Folkman (1984), individual differences in stressor appraisal will shape individuals’ interpretation and judgment of and coping strategies for, facing external events. We propose that those high in challenge appraisal tend to perceive, seek and hold jobs with higher challenging stressors. First, because individuals tend to perceive and select an environment that is consistent with their self-views (Swann, Rentfrow, & Guinn, 2002) or expectations (Higgins & Bargh, 1987), employees with higher challenge appraisal are more likely to pay more attention to relevant information in order to support their beliefs. Accordingly, to seek more self-confirmatory evidence, they might intensify the constructed positiveness of challenging stressors, minimise the negative of challenging stressors or strengthen the connection between the potential gains and challenging stressors at work. Second, as those high in challenge appraisal believe that they can achieve personal growth via overcoming encountered stressors, they will be more likely to seek stressors that can help them achieve this goal. As such, seeking stressors that can facilitate personal growth (i.e. challenging stressors) is a goal-consistent approach for them (Shah & Kruglanski, 2000). Third, employees with higher challenge appraisal will also be likely to offer or have jobs with higher challenging stressors because their positive beliefs may send signals to managers or colleagues that they are more appreciated and willing to take challenging assignments (Schneider, Rivers, & Lyons, 2009). Moreover, those high in challenge appraisal have been found to be more capable and to use effective strategies, which make them more competent to take on challenges. For example, past studies have shown that challenge appraisal was associated with more proactive behaviour and creativity (Ohly & Fritz, 2010) and more strategy usage and better performance of negotiation (O’Connor, Arnold, & Maurizio, 2010), which helps in mastering situations. Because of these reasons, we hypothesise that employees high in challenge appraisal are more likely to have higher challenging stressors.

**Hypothesis 1:** The greater an individual’s challenge appraisal, the more challenge-related stress he/she will experience in his/her work.

**Moderating effect of challenge appraisal in shaping the association between challenging stressors and positive affect at work**

We further suggest that challenging stressors will lead employees to demonstrate a higher positive affect at work, but this effect will occur only among those who have higher challenge appraisal. Previous studies have indicated that challenging stressors can lead employees to be more energetic at work, such as triggering positive emotions (Lepine, Podsakoff, & Lepine, 2005), as challenging stressors offer “the potential for growth, mastery, or gain” (Boswell et al., 2004, p. 169). Although challenging stressors may bring strains (Lepine et al., 2005; Podsakoff et al., 2007), the effects of positive affect generated from challenging stressors is rather vigorous to “evoke positive affective responses that should more than offset the negative effects that occur through strain”
stressors and also a moderator of the association between that challenge appraisal is an antecedent of challenging have a higher positive affect at work. This suggests those that tend to be more responsive to such stressors appraisal tend to have higher challenging stressors and Altogether, we propose that those high in challenge stressors because they did not see the value of having challenging situations and may also have a higher positive affect at work in facing challenging stressors. In line with this view, Macey and Schneider (2008) suggested that work engagement is enhanced when employees believe that their investment of time and energy is in return for something meaningful in a challenging situation. In contrast, those who are low in challenge appraisal will be less responsive to challenging stressors because they did not see the value of having such stressors and they are less proactive in handling challenging situations. Based on the above reasons, we therefore suggest that employees high in challenge appraisal will be more responsive to challenging stressors and have a higher level of positive affect at work. Our expectation is consistent with the trait activation theory (Tett & Guterman, 2000), which suggests that personal traits are stirred in response to trait-related situational hints such that only people who have a corresponding dispositional tendency (i.e. challenge appraisal) will act upon challenging stressors to have more affective energy at work. Based on the above arguments, we propose:

Hypothesis 2: Challenge appraisal will moderate the relationship between challenging stressors and positive affect at work. Specifically, challenging stressors will have a stronger positive association with positive affect at work when challenge appraisal is higher rather than lower.

The moderated mediation model

Altogether, we propose that those high in challenge appraisal tend to have higher challenging stressors and those that tend to be more responsive to such stressors have a higher positive affect at work. This suggests that challenge appraisal is an antecedent of challenging stressors and also a moderator of the association between challenging stressors and positive affect at work, which overall, constitutes a specific moderated mediation model identified by Preacher et al. (2007, Model 1). This model, put alternatively, suggests that challenging stressors can be regarded as a mediator between challenge appraisal and positive affect at work, and such mediation effects are moderated by the level of the challenge appraisal. In other words, the function of challenging stressors on positive affect at work is embedded in a dispositional mechanism reflecting how one’s challenge appraisal can shape positive affect at work. To acknowledge this moderated mediation effect in our proposed model, we therefore propose the following hypothesis:

Hypothesis 3: Challenging stressors will have a stronger mediation effect on the association between challenge appraisal and positive affect at work when challenge appraisal is high rather than low.

METHOD

Sample and procedures

One hundred and seventeen full-time employees recruited from several sports centres in Taiwan participated in this study on a voluntary basis. These sports centres are private, but they undertake a variety of sporting programmes set and delegated by local governments, warranting the income from the designated sporting programmes, and disbursing the feedback funds to local governments. Consequently, in addition to serving and satisfying guests, keeping and maintaining sporting equipment and achieving the company’s requests and standards, guaranteeing that there would be sufficient people who (pay to) participate in various sporting programmes is one of the jobs that employees working in sports centres also need to deal with. In exchange for their participation, the participants were compensated with a NT $100 gift voucher. Among the participants, 48% were male, with a mean age of 31.71, and the average tenure is 33.83 months for formal employment. After the authors contacted the managers of the sports centres, explained the purpose of the study and acquired their approval, questionnaires were mailed to the managers, who sent the questionnaires to the employees. It took about 20 minutes to complete the questionnaire. To maintain confidentiality, the completed questionnaires were collected by study assistants.

Measures

For each measure, items were rated on a 7-point rating scale with a response format for respondents to evaluate their agreement with diverse statements ranging from 1(completely disagree) to 7 (completely agree).
TABLE 1
Means, standard deviations and correlations among variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Gender</td>
<td>1.52</td>
<td>0.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Age</td>
<td>31.71</td>
<td>9.99</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Tenure (months)</td>
<td>33.83</td>
<td>54.60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Challenging stressors</td>
<td>3.99</td>
<td>1.20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Challenge appraisal</td>
<td>5.00</td>
<td>1.15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Positive affect at work</td>
<td>4.93</td>
<td>1.11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

*p < .05; **p < .01; ***p < .001.

Challenge appraisal

The items for the measure of challenging appraisal were adopted from the Stress Appraisal Measure (SAM), which was developed by Peacock and Wong (1990). The four items of the measure of challenge appraisal refer to the extent to which an employee expects that work stress will result in positive and favourable outcomes at work. Items used are, “Stress at work will bring positive impact on me; stress at work will make me become stronger; stress at work will make me feel eager to tackle; and I am excited thinking about the outcome of stressful situation at work.” Cronbach’s alpha was .95.

Challenging stressors

Research suggested that time pressure, workloads and attention required by job demands are included as the measures of challenging stressors (Lepine et al., 2005; Podsakoff et al., 2007). Based on Van Yperen and Hagedoorn (2003), the measure of challenging stressors consisted of six items measuring time pressure and quantitative work load. The participants were asked to evaluate the degree of the requirements of speed, effort and work load during work time. Items used include, “Do you have to work fast; do you have too much work to do; do you have to work extra hard to finish a task; do you work under time pressure; do you have to rush; and do you have to deal with a backlog at work?” Cronbach’s alpha was .85.

Positive affect at work

Five items from the positive and negative affect schedule (PANAS; Crawford & Henry, 2004; Watson, Clark, & Tellegen, 1988) were adapted to measure positive affect at work. The participants were asked to assess the distinct feelings that they have experienced during work. The items include, “excited, enthusiastic, determined, interested, and inspired.” We named this measure “positive affect at work” because these items are used to measure emotional job engagement (Rich, Lepine, & Crawford, 2010). Cronbach’s alpha was .93.

RESULTS

Means, standard deviations and correlations matrix are presented in Table 1. In accordance with our expectations, the results of the correlations indicated that challenge appraisal, challenging stressors and positive affect at work were positively correlated (ps < .05). Nevertheless, we also found that demographic variables were also significantly related to our research variables. As such, we conducted a regression analyses to test our hypotheses.

The results of the regression analysis are presented in Table 2. We first predict challenging stressors using control variables (gender, age and job tenure) and challenge appraisal. Supporting Hypothesis 1, we found that challenge appraisal was positively associated with challenging stressors after controlling for demographic variables (B = .23, p < .05).

We then performed a regression analysis to test Hypothesis 2. In the first step, we used control variables (gender, age and job tenure) to predict positive affect at work. In the second step, we included challenge appraisal and challenging stressors as predictors. Finally, in the third step, we added an interaction term (Challenge Appraisal × Challenging Stressors) as a predictor. To diminish the multicollinearity between the main effects and the interaction term, challenge appraisal and challenging stressors were centred around their means (Aiken & West, 1991).

Supporting Hypothesis 2, we found that the model (step 3) including the interaction effect (Challenge Appraisal × Challenging Stressors) significantly increased R² from the previous model in step 2, revealing that the interaction effect was substantial. The parameter of the interaction effect was also significant. To gauge the interaction pattern, Figure 2 presents the interaction plot. The figures show that challenging stressors were positively associated with positive affect at work when challenge appraisal is high (simple slope = .32, t = 3.273, p < .01), but challenging stressors were not significantly associated with positive affect at work when challenge appraisal is low (simple slope = -.14, p = .22), supporting Hypothesis 2.

Finally, to test Hypothesis 3, we perform a moderated mediation effect using syntax from Preacher et al. (2007,
**TABLE 2**
Results of hierarchical regression with challenging stressors and positive affect at work

<table>
<thead>
<tr>
<th>Variables</th>
<th>Challenging stressors</th>
<th>Positive affect at work</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Step 1</td>
<td>Step 2</td>
</tr>
<tr>
<td>Constant</td>
<td>3.58***</td>
<td>2.19*</td>
</tr>
<tr>
<td>Gender</td>
<td>−.24</td>
<td>−.05</td>
</tr>
<tr>
<td>Age</td>
<td>.02</td>
<td>.02</td>
</tr>
<tr>
<td>Tenure</td>
<td>.00</td>
<td>.00</td>
</tr>
<tr>
<td>Challenge appraisal</td>
<td>.23*</td>
<td>.66***</td>
</tr>
<tr>
<td>Challenging stressors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Challenge Appraisal × Challenging Stressors</td>
<td>3109</td>
<td>4108</td>
</tr>
<tr>
<td>( F )</td>
<td>3.61*</td>
<td>3.90**</td>
</tr>
<tr>
<td>( df )</td>
<td>19.54***</td>
<td>6106</td>
</tr>
<tr>
<td>( R^2 )</td>
<td>3109</td>
<td>4108</td>
</tr>
<tr>
<td>Adjust ( R^2 )</td>
<td>.09</td>
<td>.13</td>
</tr>
<tr>
<td>( R^2 )</td>
<td>.07</td>
<td>.09</td>
</tr>
<tr>
<td>( R^2 )</td>
<td>.09*</td>
<td>.04*</td>
</tr>
</tbody>
</table>

*p < .05; **p < .01; ***p < .001.

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Model 1). The results showed that challenging stressors positively mediated the association between challenge appraisal and positive affect at work when challenge appraisal was high (conditional mediation effect = .08, \( p < .05 \)); challenging stressors did not mediate the association between challenge appraisal and positive affect at work when personal challenge appraisal was low (conditional mediation effect = −.04, \( p = .28 \)). Thus, Hypothesis 3 was supported.

**DISCUSSION**

In this study, we unpack the role of dispositional impact in shaping the impact of challenging stressors on positive affect at work. Our main concern is to offer a perspective that challenging stressors will be more appreciated and be more beneficial to work outcomes for employees with certain dispositions. Supporting our view, we found that employees high in challenge appraisal are more likely to experience challenging stressors and they are also more likely to possess a positive affect at work in facing of such stressors.

Our investigation offers several contributions. First, broadly speaking, our study highlights the importance of individual differences in stress appraisal in shaping the function of stressors on work outcomes. Although individual differences in stress appraisal have been well-discussed in stress literature, its impact has been rarely discussed in the research line differentiating challenging and hindrance stressors. One reason could be that researchers have imposed the meaning of appraisals when differentiating between the two types of stressors. Such approaches help us to understand the different natures of stressors and overlook the role of individual differences in responding to different types of stressors. As we found within this study, individuals’ challenge appraisal does influence the level of challenging stressors and also the effects of such stressors on positive affect at work. As such, the role of individual differences in stress appraisal is still relevant and important even though the types of stressors can be differentiated based on their challenging or hindrance nature. For example, challenging stressors cannot contribute to positive affect at work among those low in challenge appraisal, suggesting that challenge stressors may not necessarily bring positive work outcomes as implied in past studies, which indicates a boundary condition for when challenging stressors can enhance higher positive affect at work.

At the same time, our examination also highlights the importance of the interaction effect between personal and environmental factors in shaping one’s positive affect at work. Research in general occupational stress has adopted person-situation interactionism to suggest that, in addition to the main effects, the interaction effect between environmental factors and personal characteristics should also be considered (Bechr & Newman, 1978; Tetrick & Larocco, 1987). In line with this perspective, we found that...
challenge appraisal and challenging stressors do have an interaction effect in shaping one’s positive affect at work. This understanding is important, as our findings indicate that challenging stressors alone cannot lead directly to positive affect at work. Rather, stress appraisal is critical, as only those who have a challenge appraisal will appreciate and react to challenging stressors in a positive way in order to enhance their positive affect at work.

In terms of managerial implications, our findings suggest that for the organisations in which challenging stressors inherent in general projects or tasks, in the process of selecting and hiring employees, managers or interviewers could select interviewees with the trait of challenge appraisal. When organisations introduce new systems or procedures, enhance standers or launch new projects and require a person or a team to devote to the new field functioning as a leading paragon, employees high in challenge appraisal might properly play the role. They tend to naturally approach challenging stressors inherent in an encounter and highlight the accompanied reputation, promotion and/or growth, the disposition of which would simultaneously make them generate a higher positive affect at work. Today’s demanding environment would not be destructive but instead be constructive for the employees’ well-being, which would be a competitive advantage for organisations if they administer their human resources well (Beer, Spector, Lawrence, Mills, & Walton, 1985).

There are several limitations in this study. First, a cross-sectional design was adopted. The authors believe that it is imperative for a number of studies like this one to be conducted, although it limits the possibility of drawing a conclusion with regard to causality. Research on workplace-relevant stresses is dominated by single-snapshot designs (Widmer, Semmer, Kalin, Jacobshagen, & Meier, 2012). The authors agree that results from a longitudinal study would provide an important resource for the research to focus on the selection of coping strategies and the development of coping skills (Widmer et al., 2012; Wincent & Orqvist, 2011). Second, a small sample with single-source data was used in this study. Therefore, to alleviate the problem of common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), future research could expand the sample pool and collect multiple-source data, that is, employees, their colleagues and their managers. Nevertheless, we do not think that common method bias is a serious issue here as it is hard to observe a significant interaction effect when common method bias is strong (Siemsen, Roth, & Oliveira, 2010). Third, organisational characteristics might be a condition boundary. The participants in this study work in sports centres, where various physical norms are essential requirements, and this distinction is obviously unlike general organisations. Future research may be devoted to investigating the influences of organisational characteristics.

Based on our findings, future studies can look further into the role of stress appraisal in shaping the function of different types of stressors in shaping work outcomes. For example, in this study we only focus on challenge appraisal, challenging stressors and positive affect at work specifically. Nevertheless, there are also other types of stress appraisals, such as threat appraisal, other types of stressors, such as hindrance stressors and various dimensions of work outcomes, such as job attitude and behaviours. As such, our study only indicates a direction to take individual differences in stress appraisal into account, and future studies can extend our work to expand such considerations. Moreover, we did not exactly examine the mechanisms that we proposed to develop our hypotheses in linking different research variables. To consolidate our arguments, future studies are required to examine the proposed underlying mechanisms between our research variables.

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