Worker resilience during the COVID-19 crisis: The role of core beliefs challenge, emotion regulation, and family strain

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ABSTRACT

It is crucial to understand how to promote workforce resilience to a crisis such as the COVID-19 outbreak. The main aim of this study is to examine the role of workers' core beliefs challenge in fostering their resilience. Core beliefs challenge is the constructive rebuilding of an individual's fundamental assumptions about life, the world, the self and others. The data were collected from 672 tourism employees during the pandemic crisis. The results revealed the positive association between workers' core beliefs challenge and their resilience. Cognitive reappraisal was detected as a mediator for the relationship between core beliefs challenge and resilience, while evidence was not found for the mediating role of expressive suppression for such a relationship. Family strain negatively moderated the links between core beliefs challenge and both emotion regulation strategies. Discussions on theoretical and practical implications are displayed.

1. Introduction

As a global health crisis and an economic threat, the COVID-19 pandemic has seriously impacted various facets of individuals' lives, such as health, family life, and employment (Coulombe et al., 2020). The industry and business shutdowns implemented to control the virus spread have created unprecedented challenges for employees (e.g., layoff, working from home) (Kniffin et al., 2021). Research has reported that the COVID-19 outbreak, which impacted individuals' occupational, social, and financial situation, could lead to psychological consequences (Coulombe et al., 2020) such as anxiety, functional impairment, reduced well-being, and reduced quality of life experienced by the workforce (Restubog, Ocampo, & Wang, 2020).

Resilience refers to an individual's ability to adapt effectively and restore equilibrium in the face of severe adversity (Cooke, Cooper, Bartram, Wang, & Mei, 2019). Many works such as Coulombe et al. (2020) and Song, Wang, Li, Yang, and Li (2020) have reported resilience as a protective factor for workers in the face of the COVID-19. A meta-analytic work by Rieckert et al. (2021) further analyzed workplace factors such as proper provision of information, peer support, work patterns, which could promote health care professionals' resilience during the COVID-19.

Since research about personal resources that contribute to worker resilience to crises such as the COVID-19 has remained scarce compared to research on the workplace factors behind employee resilience (Rieckert et al., 2021), our study takes a step further to examine the role of a personal resource, namely core beliefs challenge, in predicting worker resilience. Core beliefs challenge refers to an individual's constructive rebuilding of fundamental assumptions about life and the understandings of the world, the self and others that lead to the identification of positive changes from an event (Eze, Ifeagwazi, & Chukwuorji, 2020). Core beliefs challenge can fuel individuals' efforts to develop problem-solving coping behaviors (Lianchao & Tingting, 2020), which may lead to their engagement in seeking new possibilities and opportunities. It is thus plausible to expect that core beliefs challenge relates to worker resilience.

Furthermore, individuals' ability to cope with negative emotions may relate to psychological effects they experience in the face of the COVID-19 crisis (Blackledge & Hayes, 2001; Panayiotou, Panteli, & Leonidou, 2021). Restubog et al. (2020) underscored the role of emotion regulation in maintaining psychological well-being during the COVID-19 crisis. Prior studies have further indicated that emotion regulation strategies could be employed in response to stressful work situations (Too & Butterworth, 2018). Due to the role of emotion regulation strategies in response to stressful events in the workplace as well as crises such as the COVID-19, we expect that emotion regulation strategies can function as mechanisms through which core beliefs challenge during the COVID-19 may relate to employee resilience.

The two most commonly used strategies of emotion regulation comprise cognitive reappraisal and expressive suppression (Gross &

John, 2003). Cognitive reappraisal refers to an antecedent-focused strategy used to induce the active interpretation of an event prior to the full generation of emotions, while expressive suppression refers to a response-focused strategy used to inhibit behavioral expressions of internal emotional states (Gross & John, 2003). Research has reported that, in the face of high stress levels, individuals tend to experience burnout if they use expressive suppression more frequently and use cognitive reappraisal less frequently (Too & Butterworth, 2018). Cognitive reappraisal can buffer the negative affect experienced by COVID-19 isolated individuals (Xu et al., 2020). Situations that elicit threat, such as the COVID-19, may drive individuals to reduce the expression of their emotions (Trougakos, Chawla, & McCarthy, 2020). Since high in core beliefs challenge, individuals reconstruct their fundamental assumptions about the world and the life in a positive way (Eze et al., 2020), they are likely to find the positive aspects in the crisis and perceive less stress from the crisis. Therefore, workers with core beliefs challenge are more inclined to use cognitive reappraisal to buffer negative emotions and less inclined to suppress their emotions.

By reinterpreting a stressful event through a positive lens (English & John, 2013), cognitively reappraising individuals are inclined to reduce negative emotions and enhance the intensity and frequency of positive affect (Pace, Di Folco, & Guerriero, 2018). These benefits of cognitive reappraisal on positive affect have been further validated in Webb, Miles, and Sheeran's (2012) meta-analytic work. Inducing adaptive emotions, cognitive reappraisal can help individuals bounce back from adversities and develop psychological resilience (Troy & Mauss, 2011). Moreover, utilizing cognitive reappraisal strategy, individuals are inclined to label stressful situations not as threats but as opportunities (De Cock, Denoo, & Clarysse, 2020; Haver, Olsen, & Akerjordet, 2019), adapt to the circumstances, and create an upward positive spiral (Haver et al., 2019), which may contribute to their resilience (Kay, 2016; Tugade & Fredrickson, 2007). Taken together, cognitive reappraisal can be expected to serve as a mediator for the relationship between core beliefs challenge and worker resilience.

Since expressive suppression is a strategy consciously adopted after the full activation of emotional responses (Gross & John, 2003), it apparently breaches the evolutionarily adaptive response patterns (Kao, Su, Crocker, & Chang, 2017). Expressions are innate attributes of emotions that function to activate adaptive behaviors (Polivy, 1998). Hence, the inhibition of emotional expression is of counterproductive nature (Kao et al., 2017) and may be linked with negative social outcomes (e.g., low relationship closeness) and negative psychological outcomes (e.g., negative emotions) (Gross & John, 2003), which may undermine the development of resilience (Cooke et al., 2019; Tugade & Fredrickson, 2004). Expressed differently, expressive suppression can be presumed to mediate the association between core beliefs challenge and worker resilience.

In addition to personal resources, resources from the family are vital for workers' development of resilience during a crisis (Özmete & Pak, 2020). Hence, family strain, which is defined as the degree to which family members impose strain on a family member (Walen & Lachman, 2000), can serve as a demand that may deplete an individual's resource pool (Li, Shaffer, & Bagger, 2015). Mahmood, Jafree, Jalil, Nadir, and Fischer (2021) reported family strain as a contributor to physicians' anxiety during the COVID-19. Liang et al. (2019) revealed the association of family strain with caregivers' psychological distress. While research has largely focused on the association of family strain with negative psychological state as discussed above, the contingent role of family strain behind resilience has been hardly studied. Our study takes a step further to examine the interplay between core beliefs challenge (personal factor) and family strain (contextual factor) in relation to emotion regulation. Since family strain may deplete the resource pool (Li et al., 2015) that workers build through core beliefs challenge, we postulate that strain from family members may attenuate the relationship between core beliefs challenge and workers' emotion regulation strategies.

2. The current study

To extend prior studies that, as earlier discussed, have largely focused on contextual antecedents to worker resilience, our study examines how workers' core beliefs challenge relates to their resilience in the face of a pandemic crisis such as the COVID-19 particularly in an Asian context. As presented in Fig. 1 (and later in Table 3), we first hypothesize that core beliefs challenge is positively associated with worker resilience (hypothesis H1). The second hypothesis involves the role of cognitive reappraisal in mediating the positive relationship between core beliefs challenge and worker resilience (hypothesis H2). In the third hypothesis, we postulate that expressive suppression serves as a mediator for the positive link between core beliefs challenge and worker resilience (hypothesis H3). The fourth and fifth hypotheses (hypotheses H4 and H5) respectively involve the moderating role of family strain in attenuating the association between core beliefs challenge and cognitive reappraisal as well as expressive suppression.

3. Research methods

3.1. Sampling

Vietnam reported its first two COVID-19 cases on 23 January 2020 and implemented early response measures in relation to health system preparedness and international travel restrictions (Vietnamplus, 2020). With increasing confirmed cases, on 1 April 2020, a complete 14-day national lockdown was instituted (Vietnamplus, 2020). Our data collection was conducted between mid-April and mid-June 2020 when the lockdown was eased and social distancing with obligatory face mask wearing was implemented in Ho Chi Minh City, Vietnam (research context). During these times, many tourism workers were on unpaid leave or lay-off, while others switched to work part-time or from home with reduced income benefits (Nhu Binh, 2020).

The current study recruited participants from tour companies operating in Ho Chi Minh City, Vietnam. Via a researcher's connections with four tour companies, we were further connected to other companies. When receiving the support for surveys from the managing director of each company, we approached its HR manager for the list of employees. We sent employees the link to the survey questionnaire and invited their voluntary participation.

The data were garnered in the two survey waves with a six-week time lag. Mediation paths should be assessed based on data collected from at least two measurement waves (Cole & Maxwell, 2003). The first wave measurement (T1) harvested the data on core beliefs challenge, family strain, and emotion regulation strategies. The data regarding control variables (demographic attributes) were garnered in this survey wave as well. In the second measurement time (T2), workers participating in T1 were invited to provide the data on resilience.

We removed data from tour companies in which there were under five respondents as prior research has reported that with groups of five or more respondents, biases in utilizing aggregate scores decrease (van Woerkom & Sanders, 2010). After this data removal, participants who completed the two wave surveys consisted of 672 tourism workers (response rate: 58.9%) from 48 tour companies. Demographic attributes, comprising age, gender, marital status, educational level, organizational tenure, family size, and organizational size are presented in Table 1 (see the Supplementary file).

3.2. Measures

The questionnaire was first constructed in English and then translated into Vietnamese in light of Schaffer and Riordan's (2003) back-translation approach. Core beliefs challenge was estimated through nine items from Cann et al. (2010) (1 = not at all; 5 = to a very great degree) (e.g., "Because of the event, I seriously examined my beliefs about my own abilities, strengths and weaknesses") (Cronbach's α =
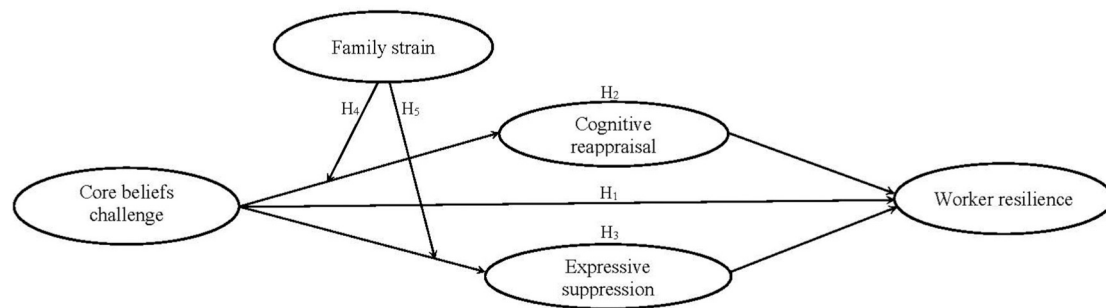
Fig. 1. Research model.

0.78). Worker resilience was measured through Wang, Cooke, and Huang's (2014) scale (1 = strongly disagree, 5 = strongly agree) (e.g., "When an unwelcome change involves me, I can usually find a way to make the change benefit myself") (Cronbach's α = 0.86). Emotion regulation strategies were assessed via Gross and John's (2003) scale (1 = strongly disagree, 5 = strongly agree), which comprises six items for cognitive reappraisal (e.g., "When I want to feel more positive emotion, I change the way I'm thinking about the situation") (Cronbach's α = 0.85) and four items for expressive suppression (e.g., "When I am feeling negative emotions, I make sure not to express them") (Cronbach's α = 0.81). Family strain was gauged via four items from Walen and Lachman (2000) (1 = often; 5 = never) (e.g., "How often do family members (i.e., parents, siblings, spouse, children) let you down when you are counting on them?"; "How often do they criticize you?"; "How often do they get on your nerves?"; "How often do they make too many demands on you?") (Cronbach's α = 0.82). Composite scores of the scale items were utilized as observed indicators of the constructs for data analyses.

3.3. Data analysis strategy

By virtue of the nested nature of the data within tour companies, as per Preacher, Zyphur, and Zhang's (2010) suggestion, multilevel structural equation modelling (MSEM) was conducted using MPlus version 7.2. In light of Preacher et al.'s (2010) typology, our study adopted a 1-(1,1)-1 model with cognitive reappraisal and expressive suppression as two mediators. Further, according to Cheong, Fotiu, and Raudenbush (2001), results with robust standard errors in MSEM should be reported when the sample size of level-2 observations is at least 100. Since level-2 (firm-level) observations in our study were 48 tour companies, robust standard errors were not necessarily used.

With 2.94 as the highest value, variance inflation factors (VIF) fell under Hair, Black, Babin, and Anderson's (2010) 5.0 threshold value. Along with tolerance above the 0.3 cutoff point (Hair et al., 2010), those results demonstrated a low concern for multi-collinearity. Multi-collinearity risk was further mitigated by multiplying the mean-centered values of the predictor variables to produce interaction terms (Cohen, Cohen, West, & Aiken, 2003).

We calculated intra-class correlations 1 (ICC1s), ICC2s, and rwg values for all constructs. ICC1s for core beliefs challenge, cognitive reappraisal, expressive suppression, worker resilience, and family strain were 0.23, 0.26, 0.16, 0.21, and 0.19 respectively, while their ICC2s were 0.71, 0.75, 0.68, 0.72, and 0.74 respectively. These values exceeded the median value of 0.12 for ICC1 and the 0.60 cutoff point for ICC2. The r_{wg} average value was 0.76 [0.72, 0.87] for core beliefs challenge, 0.81 [0.75, 0.89] for cognitive reappraisal, 0.73 [0.69, 0.80] for expressive suppression, 0.77 [0.73, 0.85] for worker resilience, and 0.75 [0.71, 0.83] for family strain, surpassing the 0.70 threshold. These between-firm variances provided support for multilevel modelling.

4. Results

4.1. Measurement models

Confirmatory factor analyses (CFAs) indicated a good model-data fit ($\chi 2/df$ = 858.06/454 = 1.89 < 2, TLI = 0.95, IFI = 0.95, CFI = 0.96, $SRMR_{within}$ = 0.048, $SRMR_{between}$ = 0.091; RMSEA = 0.045 [0.039, 0.057]). Discriminant validity was achieved since each construct's correlations with the other constructs were surpassed by the square root of its average variance extracted (AVE) (see Table 2 in the Supplementary file) and the heterotrait-monotrait ratios of correlations (HTMT) (Voorhees, Brady, Calantone, & Ramirez, 2016) ranged between 0.14 and 0.57, meeting Kline's (2011) 0.85 threshold.

4.2. Hypothesis testing

As presented in Table 3 (see the Supplementary file), hypothesis H1 on the positive association between core beliefs challenge and worker resilience was supported through a positive and statistically significant coefficient (B = 0.28, p = .006).

Hypothesis H2 posits that cognitive reappraisal mediates the relationship between core beliefs challenge and worker resilience. The positive link between core beliefs challenge and cognitive reappraisal was supported due to a positive and statistically significant coefficient (B = 0.32, p = .003). A positive and statistically significant coefficient (B = 0.37, p = .000) lent credence to the positive association between cognitive reappraisal and worker resilience. The indirect relationship between core beliefs challenge and worker resilience through the mediating role of cognitive reappraisal was 0.11 (SE = 0.06, p = .008). The result from the Monte Carlo test indicated that 95% confidence interval (CI) for the coefficient distribution varied from 0.05 to 0.29 without zero being straddled in the range, which lent further credence to hypothesis H2.

Hypothesis H3 posits that expressive suppression mediates the relationship between core beliefs challenge and worker resilience. A negative and statistically significant coefficient (B = −0.25, p = .007) provided support for the negative relationship between core beliefs challenge and expressive suppression. The negative association between expressive suppression and worker resilience was not corroborated (B = −0.14, p = .382). Hypothesis H3, moreover, was not evidenced on account of the non-significant indirect relationship between core beliefs challenge and resilience via expressive suppression as a mediator and the existence of zero in the CI interval (0.03 [−0.09, 0.02], SE = 0.02, p = .261).

Hypothesis H4 was supported on account of the negative and statistically significant interaction term (B = −0.23, p = .014) for the interactional relationship between employees' core beliefs challenge and family strain in the equation of cognitive reappraisal. Furthermore, following Aiken and West's (1991) suggestion, to explore the nature of the interaction pattern between a predictor (core beliefs challenge) and a moderator (family strain), we plotted its form and computed simple

slopes of the relationship between the predictor and the outcome at high (one SD above the mean) and low (one SD below the mean) values of the moderator. The slope test graph (Fig. 2) demonstrated that employees' core beliefs challenge was more positively related to cognitive reappraisal at low levels of family strain (simple slope = 0.68, p = .009) than at its high levels (simple slope = 0.22, p = .037).

The term for the interactional relationship between employees' core beliefs challenge and family strain in the equation of expressive suppression (hypothesis H5) was negative and statistically significant (B = −0.18, p = .032). The interactional graph, as shown in Fig. 3, indicated that employees' core beliefs challenge was negatively associated with expressive suppression to a greater extent under conditions of low family strain (simple slope = −0.44, p = .028) than under conditions of high family strain (simple slope = −0.15, p = .041). These results provided endorsement for hypothesis H5.

5. Discussion

Our research contributes to the literature in four major ways. First, our study extends the stream of research on resilience to crises by examining how workers develop resilience during the COVID-19 crisis in an Asian emerging market context (Vietnam). By examining resilience among workers during a pandemic crisis, this study distinguishes itself from prior employee resilience research, which has focused on employee resilience as openness towards organizational changes (e.g., Wanberg & Banas, 2000).

Second, the role of employees' core beliefs challenge has not been explored in research on workforce resilience in the face of crises. Our study adds core beliefs challenge to the limited but growing body of antecedents of resilience, as well as highlight the magnitude of core beliefs challenge as a personal resource particularly for individuals who work in service areas vulnerable to crises and disasters such as tourism (Zhang, Xu, Zhang, & Liu, 2019).

Third, our study advances the stream of research on workforce resilience to crises by lending credence to cognitive reappraisal as a mediation mechanism underlying worker resilience. Since emotion regulation approaches have been viewed to play a role in translating personal resources into resilience (Kay, 2016; Tugade & Fredrickson,
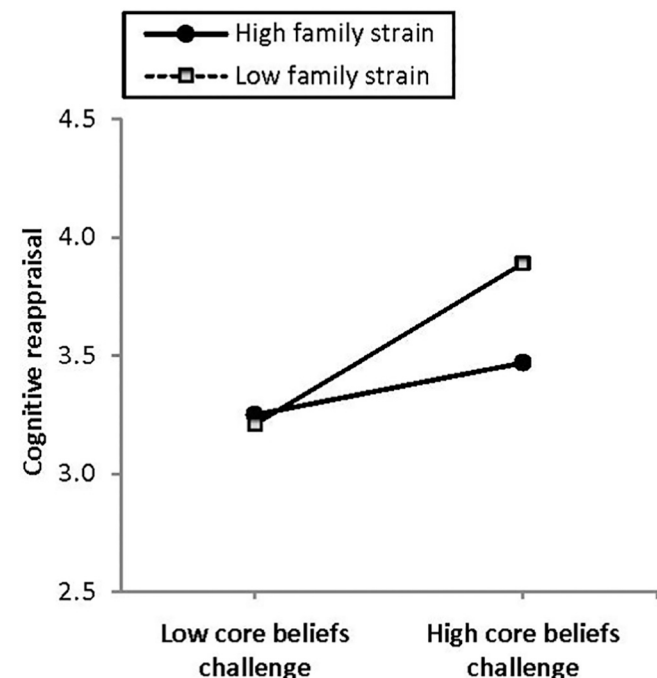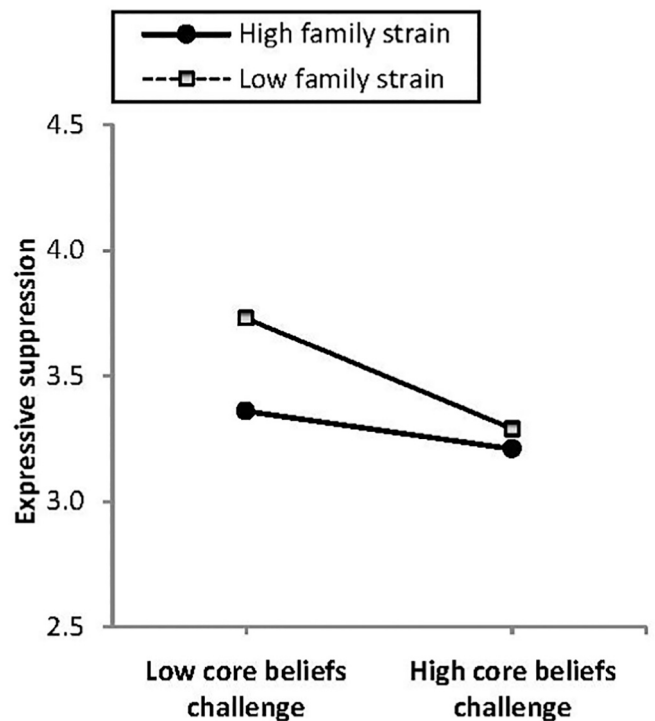

Fig. 3. Moderating effect of family strain behind expressive suppression.

2007), our study takes a step further to empirically examine the role of emotion regulation strategies in mediating the association between a personal resource (i.e., core beliefs challenge) and resilience among workers.

Last, our results provide evidence for the contingency lens through which workers' core beliefs challenge relates to their emotion regulation strategies, leading to their resilience. Our findings unveil that workers would be most likely to develop cognitive reappraisal and express emotions constructively when high core beliefs challenge was coupled with low strain from family. These findings provide further insights into the conservation of resources (COR) perspective (Hobfoll, 1989), holding that both resource gains and resource losses may interact to influence individuals' attitudinal and behavioral reactions. While previous empirical tests of the COR perspective have focused on the impacts of resource losses or gains on individual reactions in a piecemeal manner (Li et al., 2015), our research tests the interaction between resource gains (core beliefs challenge) and resource losses (family strain) in relation to workers' emotion regulation strategies.

Our research provides some practical implications for companies and workers in the face of a crisis such as COVID-19. It is advisable for companies to provide training not only on core beliefs but also on the flexibility in adapting these beliefs in the face of a crisis. Furthermore, due to the links between emotion regulation strategies and worker resilience, organizations should provide training on how to develop cognitive reappraisal to optimistically reinterpret a crisis, as well as how to express emotions constructively during the crisis.

This study has some noteworthy limitations. The data of our research were vulnerable to CMV bias that might emanate from self-report data (Podsakoff, MacKenzie, & Podsakoff, 2012). Nevertheless, the current study alleviated this threat through the multi-wave surveys, the marker variable technique, and the interactional effect tests. An extension of the current study may entail examining social antecedents of resilience rather than individual factors. Another extension should be to investigate different mediation mechanisms. Rather than focusing on emotion regulation processes as influence channels of core beliefs challenge, future research may take cognitive processes (e.g., ruminative thinking

Fig. 2. Moderating effect of family strain behind cognitive reappraisal.

styles) into consideration.

In summary, this study extends the stream of research on worker resilience to crises by identifying core beliefs challenge as an antecedent to worker resilience. It further advances our understanding of resilience by identifying cognitive reappraisal as an influence channel of core beliefs challenge as well as the interaction between core beliefs challenge and family strain.

CRediT authorship contribution statement

Luu Trong Tuan: Conceptualization, Methodology, Investigation, Data curation, Formal analysis, Validation, Visualization, Writing – original draft, Writing – review & editing.

Declaration of competing interest

Authors declare that they have no conflict of interest.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.paid.2021.110784.

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