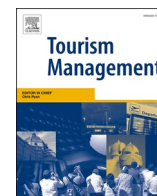




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Family support and posttraumatic growth among tourism workers during the COVID-19 shutdown: The role of positive stress mindset

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ARTICLE INFO

Keywords:

Posttraumatic growth (PTG)
Family support
Positive stress mindset
Rumination
COVID-19
Vietnam

ABSTRACT

The COVID-19 pandemic has taken a severe hit on the health of workers in the tourism industry. It is crucial to understand how to help the workforce in this service industry become resilient and adaptive through this crisis. The primary objective of this research is to examine how family support nurtures tourism workers' posttraumatic growth (PTG), an adaptation form in the resilience process. The valid data were collected from 384 tourism workers who were on unpaid leave or layoff during the COVID-19 crisis. The results demonstrated the positive relationship between family support and tourism workers' PTG, for which positive stress mindset was identified as a mediation mechanism. Deliberate and intrusive ruminative thinking styles moderated the effect of family support on positive stress mindset. Theoretical and practical implications of the mechanisms through which family support promotes tourism workers' PTG are discussed.

1. Introduction

One of the hardest-hit industries by the COVID-19 outbreak is tourism (Baum & Nguyen, 2020; Ntounis et al., 2021) as it is an industry that operates in peacetime and as such is more vulnerable to crises and disasters (Liu & Pratt, 2017; Okumus & Karamustafa, 2005). Border closures and nationwide lockdowns have led to the suspension of domestic and international flights and the closure of tourist destinations and hotels (Minh Khoi, 2020; Nguyen, 2020). The closure of tourism in Vietnam during this pandemic crisis (Morisset, 2020) has led to unpaid leave or dismissal of tourism workers (Morisset, 2020; Nguyen, 2020). In addition to the job and career uncertainty, tourism workers have witnessed the spread of the disease and its severity (the daily growing numbers of confirmed cases and deaths) and the threats of the pandemic to the tourism industry, their colleagues, and their family members (Duong Lan, 2020; Ha Kieu, 2020). Since traumatic events may involve experiencing serious or life-changing threats and/or witnessing such threats to others (Peterson et al., 1991) and can range from mild (e.g., threats to daily routines such as layoff or change to a new type of work) (Leppma et al., 2018) to severe traumas (e.g., disasters), the COVID-19 pandemic can represent a traumatic situation for people (Cooke et al., 2020; Liu et al., 2020) as well as for tourism workers.

Industry- or organization-level resilience has been the main theme among the studies on the impact of the crises in the tourism discipline (Brown et al., 2018; Khan et al., 2020; Prayag et al., 2020; Sobaih et al.,

2021). A gap remains about how tourism workers experience a crisis such as the COVID-19 (Aguilar-Quintana et al., 2021; Karsavuran, 2020) as well as develop resilience to it (Karsavuran, 2020; Mao et al., 2020; Martins et al., 2020). Prior works, including management studies, have paid attention to an adaptation form in the resilience process known as posttraumatic growth (PTG) (Vogel & Bolino, 2020). PTG refers to the experience of positive change that occurs as a result of dealing with a highly challenging life crisis (Lianchao & Tingting, 2020). It entails positive changes or adaptations such as greater appreciation of life, planning new life paths, improving personal strength, strengthening social relations, and openness to spirituality (Tedeschi & Calhoun, 2004). PTG is of interest to our study on tourism workers in the face of the COVID-19 outbreak due to its critical implication for well-being, positive self-regard, proactive adaptation, as well as an inverse relationship with depression (Ogińska-Bulik & Zadworna-Cieślak, 2018; Veronese et al., 2017). Regardless of the importance of this positive change among workers in the resilience process through a crisis such as the COVID-19, research remains relatively quiet about PTG among tourism workers and the mechanisms behind the impact of a social support resource on their PTG.

To address this gap in the literature, our study aims to examine (1) if family support is positively related to PTG among tourism workers in face of the COVID-19 crisis; (2) how tourism workers' positive stress mindset channels support from the family into their PTG; and (3) how differently deliberate rumination and intrusive rumination moderate the

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<https://doi.org/10.1016/j.tourman.2021.104399>

Received 11 June 2020; Received in revised form 5 July 2021; Accepted 20 July 2021

Available online 5 August 2021

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relationship between family support and positive stress mindset.

Support from family members is a type of social support for workers (Huffman et al., 2015; Zhang et al., 2019). Families are a primary source of support in collectivistic and family-oriented Asian cultures such as Vietnam (Matsumoto et al., 2017), where family members have a propensity to share experiences and offer each other support when they are in difficulty (Tingvold et al., 2012; Truong & Barraket, 2018). Research has highlighted the salience of supportive family relationships in cushioning the negative effects of crises on workers particularly in the tourism industry (Agarwal, 2021; Karsavuran, 2020) as well as called for further investigations into mechanisms behind social support in the equation of PTG (Sörensen et al., 2021). We draw on the conservation of resources (COR) theory (Hobfoll, 1989) to deduce the role of family support as a resource in nurturing PTG among tourism workers in face of a pandemic crisis such as the COVID-19, as well as propose that tourism workers' positive stress mindset is a mediating channel for this effect. Positive stress mindset is defined as the mindset that looks at stress as a source of proactive and developmental actions (Crum et al., 2013). As a cognitive process, positive stress mindset can function as this mediation mechanism due to the impact of social support on cognitive processes (Kelly et al., 2017) as well as the role of cognitive processes in triggering positive change in a traumatic situation (Calhoun et al., 2010; Calhoun & Tedeschi, 2006).

Drawing upon a contingency perspective, we further investigate the moderating role of ruminative thinking styles, namely deliberate rumination and intrusive rumination. Deliberate rumination is a proactive pursuit of the meaning of a crisis event (Lianchao & Tingting, 2020), while intrusive rumination entails individuals' invasive thoughts of its negative consequences (Schmaling et al., 2002). Individual factors have been viewed crucial for building strong contingencies through which individuals interpret the signals from the environment (e.g., their family) (Tement, 2014). We hence infer that tourism workers with different ruminative thinking styles may differently react to support from the family and develop positive stress mindset.

Our study contributes to research on worker resilience to crises in the tourism discipline in various ways. First, it adds to this research stream by investigating the interplay between a social support factor (i.e., support from family members) and individual factors in predicting tourism workers' PTG as a form of resilience in the face of a pandemic crisis. This interplay in our study is a valuable extension of prior works that have primarily focused on the effects of individual factors on PTG (Eze et al., 2020; Lianchao & Tingting, 2020; Ogińska-Bulik & Zad-worna-Cieślak, 2018).

Second, this study proposes workers' positive stress mindset as a cognitive mechanism that explains the relationship between family support and worker PTG. This is salient since until recently research on positive stress mindset has mostly centered on its benefits in relation to employee wellbeing in general (Huettermann & Bruch, 2019). Third, distinguishing itself from prior works, which have largely unpacked the predictive role of ruminative thinking styles (Eze et al., 2020; Lianchao & Tingting, 2020), the current study investigates deliberate rumination and intrusive rumination as individual contingencies for the effect of family support on tourism workers' positive stress mindset. This is vital as it advances our understanding of when support from the family is most effective in helping tourism workers to develop positive stress mindset and positive change in the face of a crisis such as the COVID-19.

2. Hypothesis development

2.1. Family support and posttraumatic growth

Albeit Hobfoll's (1989) conservation of resources (COR) theoretical framework has been viewed to relate to human adaptation (Hou et al., 2010) and PTG (Hollifield et al., 2016), it has barely been employed to elucidate the role of social resources in activating PTG (Sörensen et al., 2021). The current study applies the COR perspective, which identifies

family support as a social resource that enables workers to survive during the COVID-19 crisis.

Through the COR lens, experiencing that their resources are threatened or lost, or there may be a lack of gain from resources invested, individuals may develop negative psychological state (e.g., stress) (Hobfoll, 1989). Types of resources that individuals value comprise condition resources, object resources, energy resources, and personal resources (Hobfoll, 1989). Resources under the COR theory are thus not limited to material or financial resources but consist of psychosocial resources such as social support (Hobfoll et al., 2003). The availability of resources, such as social support, can fuel individuals' development of positive affect and thinking, proactive coping strategies (Ito & Broth-eridge, 2003), and adaptation and resilience (Hobfoll et al., 2007).

Social support is viewed as a resource that enables individuals to conserve valued resources (Hobfoll, 1989, p. 517). Unemployed workers with social support cope psychologically better than those without social support (Blustein et al., 2013; Milner et al., 2016). Support from the family serves as a social support resource for individuals in general and for workers in particular (Huffman et al., 2015; Zhang et al., 2019). Such support may be derived from family members such as spouse, children, parents, siblings, and other relatives (Voydanoff, 2007). Family is viewed as a major source of ego strength for individuals (Lu et al., 2011). Family members can help workers replenish their resource pool by providing them with instrumental resources (e.g., financial resource, a temporary work) as well as affective resources (e.g., care, empathy, companionship) (Nasuridin & O'Driscoll, 2012; Zhang et al., 2019).

During unpaid leave or temporary layoff in a crisis such as the COVID-19, support from the family can function as a source of collective purpose, security, and structure (Huffman et al., 2015) and impact the way a tourism worker experiences and copes with stress. With strong family ties and support, individuals in the crisis can experience a sense of community from social relationships associated with their family members (Huffman et al., 2015). They may thus develop positive attitudes and positive changes through the crisis, leading to higher levels of PTG.

With a family who depends on them and on whom they depend, workers during the pandemic crisis still have structured days with responsibilities to their home and family members (e.g., sharing cooking and washing tasks, tutoring kids, calling parents). They can also fulfill social roles that they might have neglected during hectic working schedules (Huffman et al., 2015), thereby enhancing personal strength, self-esteem (Cast & Burke, 2002), interpersonal bonds, and life appreciation.

Besides the COR perspective, relational regulation perspective (Lakey & Orehek, 2011) can further illuminate the nexus between family support and employee PTG. In light of this perspective, when individuals' need for social interactions is fulfilled, they develop positive thinking (Bowlby, 1969; Lakey & Orehek, 2011). Social contact and sense of community that supportive family relationships build can therefore promote positive thinking among tourism workers in the face of the COVID-19, which may drive them to proactively seek further resources (Halbesleben et al., 2014) such as new relationships or opportunities.

In a nutshell, from the COR perspective, as a source of instrumental and affective resources (Zhang et al., 2019), as well as a source of collective purpose, structure, and security (Huffman et al., 2015), family support can be expected to nurture PTG among tourism workers in the face of the pandemic crisis:

H1. Family support is positively related to tourism workers' post-traumatic growth.

2.2. Mediating effect of positive stress mindset

Stress mindset is defined as an individual's view of how stress influences his or her life and how he or she responds to stress (Crum et al.,

2013). Building on the evidence regarding positive consequences of stressful experiences such as enhanced physiological and mental functioning (Park & Helgeson, 2006), Crum et al. (2013) introduce and refer to positive stress mindset as individuals' view of stress as bearing beneficial consequences in relation to their performance, well-being, and growth. Experiencing an event as stressful, an individual still may hold the mindset with reference to the positive outcomes of such a stressful event (Crum et al., 2013; Huettermann & Bruch, 2019). Positive stress mindset is a meta-cognitive attitude toward the positive consequences of stress and may act as a mental context for making sense of stressful events and selecting coping actions rather than constituting coping tactics (Huettermann & Bruch, 2019).

Support from the family is a source of resources for workers (Huffman et al., 2015), whose resources from their employer are depleted during a pandemic crisis such as the COVID-19. Living in a supportive family, individuals can experience comfort and concern from their family members, sense of community through social interactions with them, and meaningful days in fulfilling responsibilities to their loved ones (Huffman et al., 2015). From the COR perspective, with bountiful resources such as from supportive family relationships, individuals have the propensity not to act defensively, but adopt a proactive resource gain strategy (Halbesleben et al., 2014) to accrue further resources to buffer against resource loss as well as seek meaning in a situation. Thus, supported by resources from their family, tourism workers in face of the pandemic crisis are inclined to evoke perceptions of stressful challenges as opportunities for them to improve themselves, learn to develop the mastery of their life, and live in a more proactive manner rather than following routines as previously. This reasoning is in line with Salancik and Pfeffer's (1978) social information processing perspective, through which cues from the environment (e.g., supportive and optimistic family environment) may rationalize the development of individuals' attitudes (Wu et al., 2019). Moreover, in light of social cognitive perspective (Bandura, 1997), signals from social support may serve as a modelling function that shapes individuals' positive attitudes towards challenges. Signals from a supportive family may help individuals re-construct cognitive balance (Lianchao & Tingting, 2020; Ogińska-Bulik & Kobylarczyk, 2018), which may drive them to actively reflect on the clues of the event and build the meaning from it (Zhou et al., 2015). In a nutshell, resources including cues and signals from a supportive family may foster tourism workers' perceptions of a traumatic event such as COVID-19 as not containing only detrimental effects but as a potential source of positive change, leading to a positive mindset of the event. We consequently postulate that:

H2a. Family support is positively related to tourism workers' positive stress mindset.

With a mindset that a stressful event can be a source of well-being and positive change, individuals tend not to perceive a traumatic event such as the COVID-19 crisis as a sheer threat to their resources, but as an opportunity for them to proactively accrue new resources to enhance their personal mastery and appreciate life. Through the lens of resource caravan pathways in the COR theoretical framework (Hobfoll, 2001), a positive stress mindset may fuel individuals' motivation to transfer their cognitive resource (i.e., positive stress mindset) to affective or other cognitive resources such as appreciation of life or openness to spirituality. In addition, with positive stress mindset as a resource for growth (Crum et al., 2013; Huettermann & Bruch, 2019), individuals have the inclination to act proactively above the minimum expectations (Halbesleben et al., 2014) such as finding new relationships, new life paths, or new career opportunities. Expressed differently, a positive stress mindset may nurture the positive change and growth among tourism workers from a traumatic event such as the COVID-19. In juxtaposition with hypothesis 2a, support from the family is expected to have a positive indirect relationship with tourism workers' PTG via the mediating path of their positive stress mindset.

H2b. Positive stress mindset is positively related to posttraumatic growth.

H2c. Positive stress mindset mediates the positive relationship between family support and posttraumatic growth.

2.3. Ruminative thinking styles as moderators

Rumination alludes to a cognitive process in which individuals re-establish their assumptions that guide their understanding and reasoning of life or stressful events and their actions (Tedeschi & Calhoun, 2004). Though tourism workers are more likely to face stressful events (Tsaour & Tang, 2012), rumination has been less explored in the tourism literature (Gong et al., 2020). Individuals can cognitively process an event in the two forms consisting of deliberate and intrusive ruminative thinking styles (Cann et al., 2011). Deliberate ruminative thinking is a constructive rumination form that reflects individuals' proactive endeavors to regain the control and make sense of the event (Calhoun et al., 2010; Wu et al., 2015) while intrusive rumination is a destructive rumination form in which repetitive thoughts against individuals' will undermine their control of the situation.

Individuals who are high in deliberate rumination tend to identify the meaning of the event, derive potential benefits from the event, and adopt a future-oriented perspective (Cann et al., 2011; Lianchao & Tingting, 2020). Therefore, individuals with deliberate ruminative thinking are less likely to give up to the crisis event, but more inclined to utilize resources from family members to buffer against resource loss from the crisis, as well as invest resources in seeking new opportunities, leading to higher levels of positive stress mindset.

Moreover, individuals with deliberate rumination have cognitive balance and problem-solving coping behaviors (Lianchao & Tingting, 2020). Compared to those with cognitive imbalance, individuals with cognitive balance are more proactive in ruminating on the clues of the event and seeking resources to build the meaning from the event (Zhou et al., 2015). As a result, in face of the COVID-19 crisis, tourism workers with deliberate rumination are more inclined to develop positive stress mindset through the support of their families. While individuals with poor coping ability may be less effective in investing resources from family support in coping with the situation, deliberately ruminative individuals with problem-solving coping behaviors are more likely to psychologically cope with the event (George et al., 2016) and invest resources from the support of family members in developing a positive stress mindset and regaining the control of the event. Expressed differently, deliberately ruminative tourism workers are more likely to translate family support into their positive stress mindset:

H3. Deliberate rumination moderates the positive relationship between family support and positive stress mindset such that this relationship is stronger when tourism workers are high in deliberate rumination.

Intrusive rumination tends to be negatively related to well-being and positively related to psychological distress (Hill & Watkins, 2017). Besides, intrusively ruminative individuals are inclined to let their thoughts of negative consequences of an event invade their assumptive world against their will (Eze et al., 2020). These effects of intrusive rumination prevent individuals from efforts to make sense of a stressful event and appreciate its beneficial effects. Therefore, high in intrusive rumination, individuals who obtain resources from a supportive family may be less inclined to translate such resources into a positive stress mindset. Additionally, since intrusive rumination hampers individuals' recovery and undermines problem-solving ability (Schmaling et al., 2002), individuals with intrusive ruminative thinking may exhibit lower confidence and motivation in finding resolutions or opportunities during a crisis event albeit they are exposed to the support of their family members. In other words, the effect of family support on tourism workers' positive stress mindset may be less pronounced among

intrusively ruminative tourism workers:

H4. Intrusive rumination moderates the positive relationship between family support and positive stress mindset such that this relationship is less strong when tourism workers are high in intrusive rumination.

Fig. 1 is the depiction of the construct relationships in our research model.

3. Research methods

3.1. Sampling

The current study recruited the participants from four companies based in Vietnam. Through a researcher's connections with five tour companies, connections with other companies were established. Upon receiving the support for surveys from the chief executive or managing director of each tour company, we approached its HR manager for the list of employees who were on unpaid leave or layoff during the COVID-19 crisis. We sent the survey link to the employees and invited their voluntary participation.

We conducted the data collection around mid-April 2020 when the lockdown was eased and social distancing with limited gathering sizes and obligatory face mask wearing was implemented in Vietnam. We collected the data on family support, ruminative thinking styles, positive stress mindset, PTG, and control variables from tourism workers. After the data screening, we collected 384 valid responses from tourism workers (response rate: 60.9 %) from 36 tour companies (85.7 %). Tourism workers' (57.6 % female) mean age was 33.4 years ($SD = 7.1$) (age range: 18–62) and average tenure with their organization was 6.4 years ($SD = 3.7$). In light of [Armstrong and Overton's \(1977\)](#) suggestion, non-response bias was tested through a comparison of the responses from early participants and late participants in terms of key variables. Chi-square difference tests demonstrated no significant disparities between these two participant groups. It is hence concluded that the results would not be affected by non-response bias ([Dillman et al., 2014](#)).

3.2. Measures

We developed the questionnaire in English. A management lecturer who was bilingual in English and Vietnamese was invited to translate the questionnaire into Vietnamese. Through the lens of [Schaffer and Rioridan's \(2003\)](#) back translation approach, another bilingual academic was invited to translate the Vietnamese version back into English. These two translators engaged in discussion to resolve the linguistic equivalence issues between the Vietnamese version, the back-translated version, and the original version of the questionnaire. The last comparison of the Vietnamese version and the English version was conducted by the other bilingual management scholar.

A five-point Likert scale (1 = not at all; 5 = a lot) was utilized unless otherwise stated. Family support was assessed utilizing four items from [Walen and Lachman \(2000\)](#) (e.g., "How much can you rely on family members (i.e., spouse, children, parents, siblings) for help if you have a serious problem?"). Personal growth from trauma in the COVID-19 crisis

was gauged via 21 items from [Tedeschi and Calhoun \(1996\)](#) (e.g., "I established a new path for my life"; "I have an appreciation for the value of my own life"). Positive stress mindset was gauged through eight items (1 = strongly disagree; 5 = strongly agree) from [Crum et al. \(2013\)](#) (e.g., "Experiencing stress improves my health and vitality"). Ruminative thinking styles were estimated through [Cann et al.'s \(2011\)](#) scale, comprising ten items for intrusive ruminative thinking (e.g., "I thought about the event when I did not mean to") and ten items for deliberate ruminative thinking (e.g., "I thought about whether I could find meaning from my experience"). Our study controlled for employees' gender, age, marital status, education, and organizational tenure as well as family size, which have been reportedly of relevance to employees' attitudes and behaviors ([Augustine, 2014](#); [Fu & Deshpande, 2014](#)). We further controlled for stress on exposure to the COVID-19 crisis, which was measured via 20 items from [Weathers et al. \(2013\)](#) (e.g., "Trouble falling or staying asleep?") and controlled for career insecurity assessed through five items from [Colakoglu \(2011\)](#) (e.g., "I am worried that I will experience long periods of unemployment in the future").

3.3. Data analysis strategy

Covariance-based structural equation modeling (CB-SEM) with maximum likelihood estimation through IBM AMOS 26 was conducted since it can enable observed or latent variables to be included as independent or dependent variables and can handle the fit of complex model structures with different layers ([Dey et al., 2020](#)). Variance inflation factors (VIFs) (2.97 as the highest value) fell under [Hair et al.'s \(2010\)](#) 5.0 threshold value. Along with the tolerance surpassing [Hair et al.'s \(2010\)](#) 0.3 cutoff point, those findings indicated a low risk of multi-collinearity. Multi-collinearity risk was further minimized by calculating interaction terms based on the multiplication of the mean-centered parameters of the predictor variables ([Cohen et al., 2003](#)).

3.4. Common method variance (CMV)

CMV risk might be alleviated in the current research by means of warranting respondent anonymity and mitigating item ambiguity ([Podsakoff et al., 2012](#)). Yet, as all variables in the present study were estimated via the participants' perspectives, and the data were gathered from the same participants (i.e., tourism workers), CMV bias might emerge in the data. CMV bias was therefore statistically tested using [Lindell and Whitney's \(2001\)](#) marker variable approach. "Attitude toward social media usage" was added as a marker to the survey by virtue of its theoretical unrelatedness to other constructs. The elimination of the marker variable did not impact the significance of the significant zero-order correlations, indicating a low CMV risk. The significant interaction effects further support this low risk due to the likelihood of high CMV bias to deflate interaction effects ([Siemsen et al., 2010](#)).

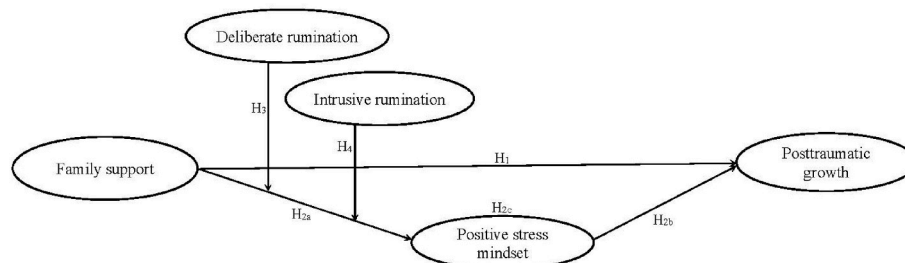


Fig. 1. Research model.

4. Results

4.1. Pilot test results

To estimate and refine the scales, the pilot test was conducted with 70 tourism workers on layoff or unpaid leave from tour companies different from those in the main study. The pilot test participants were invited to complete the survey questionnaire and provide suggestions for improving it. 63 valid responses were obtained for the pilot test. Content validity and reliability tests were conducted as preliminary validation of the scales. Content validity was warranted since the scale items were adapted from the established measures and suggestions from academics and practitioners in the field. Additionally, the pilot test participants indicated that the contents of the constructs were well represented by the measurement items. The pilot test results are displayed in [Table 1](#).

Exploratory factor analyses (EFAs) are traditionally conducted prior to confirmatory factor analyses (CFAs) utilizing an independent sample from the same population ([Gorsuch, 1983](#); [Schumacker & Lomax, 1996](#)). Nevertheless, EFA was not conducted in this study for the following reasons. First, a strong a priori basis (e.g., [Tedeschi & Calhoun, 1996](#)) ensures the use of CFA rather than EFA for PTG. Second, the measures were developed, tested, and confirmed for their validity in prior works (e.g., [Cann et al., 2011](#); [Crum et al., 2013](#); [Tedeschi & Calhoun, 1996](#); [Walen & Lachman, 2000](#)). Third, the measures for family support, positive stress mindset, and ruminative thinking styles assumed the one-dimensionality and the PTG measure was used as a unidimensional construct ([Arias Gallegos et al., 2018](#)). Last, the small sample size ($N = 63$) did not suffice for EFA ([MacCallum et al., 1999](#)).

4.2. Measurement models

Confirmatory factor analyses (CFAs) demonstrated a decent fit between the data and the hypothesized five-factor model ($\chi^2/df = 484.96/265 = 1.83 < 2$, $TLI = .96$, $IFI = .95$, $CFI = .95$, $SRMR = .038$, $RMSEA = .042$ [0.036, 0.051]). It was a better fit than the fits of alternative models, in which some construct variables were merged (see [Table 2](#)). These results provided support for discriminant validity among the constructs. Discriminant validity was further evidenced because the heterotrait-monotrait ratios of correlations ([Voorhees et al., 2016](#)) ranged between 0.14 and 0.61, meeting [Kline's \(2011\)](#) 0.85 threshold, as well as each construct's correlations with the other construct variables were exceeded by the square root of its average variance extracted ([Table 3](#)).

Scale reliability was tested using (a) Cronbach's α , (b) total item correlation, (c) composite reliability, and (d) average variance extracted. As shown in [Tables 1 and 3](#), the values for Cronbach's α ranged between 0.78 (for the intrusive rumination scale) and 0.86 (for the positive stress mindset scale), exceeding 0.75 ([Robinson, 2018](#)). The correlations between the items on each scale surpassed .50, and the values for composite reliability and average variance extracted exceeded

Table 1
Summary of measurement results in the main study and the pilot test.

Construct	Mean	SD	Cronbach's α	Range of item-to-total correlations
Family support	3.56 (3.59)	.42 (.51)	.85 (.82)	[.56, .74] ([.49, .61])
PTG	4.13 (3.91)	.48 (.54)	.82 (.76)	[.68, .85] ([.54, .73])
Positive stress mindset	3.71 (3.67)	.52 (.47)	.86 (.73)	[.65, .79] ([.51, .65])
Intrusive rumination	2.59 (2.62)	.34 (.38)	.78 (.69)	[.59, .76] ([.48, .64])
Deliberate rumination	3.62 (3.54)	.39 (.42)	.84 (.71)	[.62, .81] ([.46, .57])

Note: Entries in the parentheses are pilot test results.

0.70 and 0.50 respectively ([Hair et al., 2010](#)). These results support the internal consistency and reliability of all scales.

4.3. Hypothesis testing

As displayed in [Table 4](#), hypothesis **H1** on the positive link between family support and tourism worker PTG was corroborated through the positively significant coefficient ($B = .32$, $p < .01$).

Hypothesis **H2a** positing the positive link between family support and positive stress mindset was statistically evidenced on account of the positively significant coefficient ($B = .37$, $p < .001$). The positively significant coefficient ($B = .43$, $p < .001$) provided evidence for hypothesis **H2b** regarding the positive effect of positive stress mindset on tourism workers' PTG.

The indirect effect of support from the family on tourism workers' PTG via the mediating channel of positive stress mindset was 0.15 ($SE = .04$, $p < .01$). The result of the Monte Carlo test demonstrated that 95 % confidence interval (CI) varied from 0.05 to 0.24 without zero being straddled in the range, which further supported hypothesis **H2c** regarding the mediation path of positive stress mindset underlying the relationship between family support and PTG.

Hypothesis **H3** was supported on account of the significantly positive interaction term ($B = .26$, $SE = .11$, 95 % CIs = [0.09, 0.42], $p < .01$) for the interaction effect of family support and deliberate rumination on positive stress mindset. The simple slope plot for this interaction ([Fig. 2](#)) revealed that support from family members yielded a higher variance in positive stress mindset at high levels of deliberate rumination (simple slope = .58, $p < .01$) than at its low levels (simple slope = .16, $p < .05$).

The term for the interaction effect of family support and intrusive rumination on positive stress mindset (hypothesis **H4**) was significantly negative ($B = -0.18$, $SE = .07$, 95 % CIs = [-0.26, -0.07], $p < .05$). The simple slope plot, as presented in [Fig. 3](#), demonstrated that family support enhanced positive stress mindset to a greater extent at low levels of intrusive rumination (simple slope = .46, $p < .05$) than its high levels (simple slope = .12, $p < .05$). The above results supported hypothesis **H4**.

As per the supplementary analyses, career insecurity demonstrated the significant and negative interaction term with family support in predicting positive stress mindset ($B = -0.21$, $SE = .12$, 95 % CIs = [-0.43, -0.11], $p < .05$). The simple slope graph (see [Fig. 4](#)) indicated that support from the family promoted positive stress mindset to a higher degree at low levels of career insecurity (simple slope = .65, $p < .05$) than at its high levels (simple slope = .18, $p < .05$). Consequently, career insecurity negatively interacted with family support in predicting positive stress mindset.

The supplementary analyses that controlled for stress on exposure to the pandemic crisis revealed the significantly negative association between stress and worker PTG ($B = -0.16$, $p < .05$). Stress further demonstrated the significant and negative interaction term with family support in predicting worker PTG ($B = -0.17$, $SE = .09$, 95 % CIs = [-0.31, -0.05], $p < .05$). The simple slope graph (see [Fig. 5](#)) indicated that support from the family promoted PTG to a higher degree at low stress levels (simple slope = .44, $p < .05$) than at high stress levels (simple slope = .15, $p < .05$). Thus, worker stress negatively interacted with family support in predicting worker PTG. The Spearman's rank-order correlation indicated that older participants reported higher stress levels ($r_s = .14$, $p < .05$) and the chi-square difference test demonstrated that female participants reported higher stress levels ($M = 3.63$, $SD = .61$) than did male participants ($M = 3.27$, $SD = .54$, $\Delta\chi^2(1) = 8.13$, $p = .007$).

Additional supplementary analyses demonstrated that older participants scored lower PTG ($r_s = -0.16$, $p < .05$) and that female participants scored higher PTG ($M = 4.29$; $SD = .57$) than did male participants ($M = 3.91$; $SD = .46$, $t = 2.57$, $p = .038$). Moreover, the interaction term of age and family support in the equation of worker PTG was significantly positive ($B = .20$, $SE = .08$, 95 % CIs = [0.06, 0.34], $p < .05$). The

Table 2
Measurement models.

Models	χ^2	df	$\Delta\chi^2$	TLI	IFI	CFI	SRMR	RMSEA [90 % CI]
Hypothesized five-factor model	484.96	265		.96	.95	.95	.038	.042 [.036, .051]
Four-factor model:	607.94	269	122.98**	.91	.92	.92	.091	.087 [.079, .095]
Family support and deliberate rumination combined								
Three-factor model:	682.72	272	197.76**	.86	.84	.85	.107	.109 [.098, .116]
Family support, deliberate rumination, and intrusive rumination combined								
Two-factor model:	761.38	274	276.42**	.77	.77	.76	.119	.122 [.118, .130]
All antecedent variables combined								
One-factor model:	814.61	275	329.65**	.68	.69	.69	.143	.141 [.132, .154]
All variables combined								

*p < .01.

Table 3
Correlation matrix.^a

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1 Employee age											
2 Employee gender	-.03										
3 Marital status	.08	.10									
4 Employee education	.05	.04	-.01								
5 Employees' organizational tenure	.05	.07	.05	-.03							
6 Family size	.03	.03	.04	-.02	.01						
7 Event-exposure stress	.14*	.11*	.08	-.09	.10	-.04	(.81)					
8 Family support	.04	.05	.09	.10	.02	.05	-.24*	(.87)				
9 PTG	-.16*	.10	.07	.09	-.05	.07	-.18*	.35***	(.78)			
10 Positive stress mindset	-.12*	.09	.05	.10	-.04	.04	-.15*	.41***	.46***	(.84)		
11 Intrusive rumination	.09	.07	.02	-.06	.07	-.01	.22*	-.22*	-.09	-.17*	(.80)	
12 Deliberate rumination	-.11	.06	.06	.08	-.02	.04	-.19*	.29**	.34**	.25**	-.16*	(.85)
Mean	33.42		.32		6.38	4.6	3.48	3.56	4.13	3.71	2.59	3.62
SD	7.08		.39		3.71	2.2	.56	.42	.48	.52	.34	.39
Cronbach's α							.78	.85	.82	.86	.78	.84
CCR							.77	.84	.81	.86	.79	.83
AVE							.65	.75	.60	.70	.64	.72

CCR = Composite construct reliability, AVE = Average variance extracted.

Values in parentheses exhibit the square root of the average variance extracted.

Standardized correlations reported * p < .05; **p < .01; ***p < .001.

^a Spearman's rank-order correlation, the non-parametric version of the Pearson product-moment correlation, was utilized for the analysis. Data collected through Likert items anchored on several points can be deemed to be ordinal data (Cheng & Tsai, 2019; Knapp, 1990).

simple slope graph (Fig. 6) revealed that support from family members was more positively associated with PTG among older workers (simple slope = .51, p < .05) than among younger workers (simple slope = .17, p < .05). Nonetheless, the interaction term of gender and family support was non-significant in the equation of worker PTG (B = .11, SE = .03, 95 % CIs = [-0.02, 0.16], p = .14).

4.4. Supplementary study

To infer the causal relationships in our hypothesized model as well as assess variances in worker PTG over the different stages of the pandemic crisis in our research context, we collected additional data using the same measures as in the main study. The collection of additional data was implemented 3 months (T2) (when the number of new cases reached a plateau) and 6 months (T3) (when a complete national lockdown was lifted) after the main study (T1). The survey links were sent to tourism workers who participated in the main study. 316 valid responses (response rate: 82.3 %) were collected at T2 and 249 valid responses (response rate: 78.8 %) were collected at T3. As per Cole and Maxwell's (2003) recommendation, mediation paths should be estimated based on the data gathered from such multiple measurement waves. The mean values of TPG at T1, T2, and T3 were 4.13 (SD = .48), 4.36 (SD = .61), and 4.29 (SD = .54) respectively.

The findings are presented in Fig. 7. The results revealed the significant autoregressive paths for family support, positive stress mindset, and PTG. Specifically, T1 family support was significantly and positively associated with T2 family support (B = .35, p < .001), which was positively and significantly linked with T3 family support (B = .27, p <

.01). T1 positive stress mindset displayed a positive and statistically significant link with T2 positive stress mindset (B = .38, p < .001), which was significantly and positively associated with T3 positive stress mindset (B = .44, p < .001). Moreover, T1 PTG was significantly and positively related to T2 PTG (B = .41, p < .001), which demonstrated a significant and positive association with T3 PTG (B = .32, p < .01). These findings demonstrated the impact of prior states on the variables as well as a need for controlling for autoregression in testing the causality among the variables.

The findings demonstrated that T1 family support was significantly and positively linked with T2 positive stress mindset (B = .29, p < .01), which had a positive and significant association with T3 PTG (B = .34, p < .01). By virtue of non-significant reciprocal effects, the results supported the unidirectional relationship from family support, through positive stress mindset, to PTG. The findings further indicated that deliberate rumination positively and significantly interacted with T1 family support in the equation of T2 positive stress mindset (B = .23, p < .05), while intrusive rumination negatively and significantly moderated the link between T1 family support and T2 positive stress mindset (B = -0.16, p < .05), in support of hypotheses H3 and H4 respectively.

5. Discussions

5.1. Theoretical implications

This study contributes to the current literature in four respects. First, it advances research in terms of resilience to crises in the tourism domain by examining how tourism workers grow in a form of resilience

Table 4
Path analysis results.

Outcomes	Positive stress mindset			PTG		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Controls						
Employee age	-.12* (.06)	-.12* (.04)	-.10* (.05)	-.14* (.06)	-.14* (.05)	-.13* (.08)
Employee gender	.09* (.04)	.09* (.03)	.08 (.03)	.12* (.06)	.11* (.06)	.09* (.05)
Marital status	.06 (.04)	.06 (.02)	.05 (.03)	.08 (.04)	.07 (.04)	.07 (.02)
Employee education	.09 (.04)	.08 (.04)	.07 (.03)	.06 (.02)	.06 (.01)	.05 (.03)
Employees' organizational tenure	-.04 (.02)	-.03 (.01)	-.02 (.00)	-.05 (.03)	-.05 (.02)	-.03 (.01)
Family size	.06 (.05)	.06 (.04)	.04 (.02)	.08 (.04)	.08 (.03)	.07 (.04)
Event-exposure stress	-.16* (.07)	-.15* (.06)	-.14* (.08)	-.17* (.08)	-.17* (.06)	-.16* (.07)
Predictors						
Family support		.38*** (.14)	.37*** (.11)		.34** (.10)	.32** (.08)
Positive stress mindset					.44*** (.16)	.43*** (.09)
Interaction effects						
Family support x Deliberate rumination			.26** (.07)			
Family support x Intrusive rumination			-.18* (.09)			
Family support x Career insecurity ^a			-.21* (.12)			
Family support x Event-exposure stress ^a						-.17* (.08)
Family support x Employee age ^a						.20* (.06)
Family support x Female ^a						.11 (.05)
R ²	.23	.27	.34	.28	.31	.38
Pseudo R ²	.18	.22	.28	.17	.24	.31

Path coefficients are maximum likelihood estimates (N = 384 tourism workers).

*p < .05; **p < .01; ***p < .001. Standard errors are presented in parentheses.

^a Supplementary analyses.

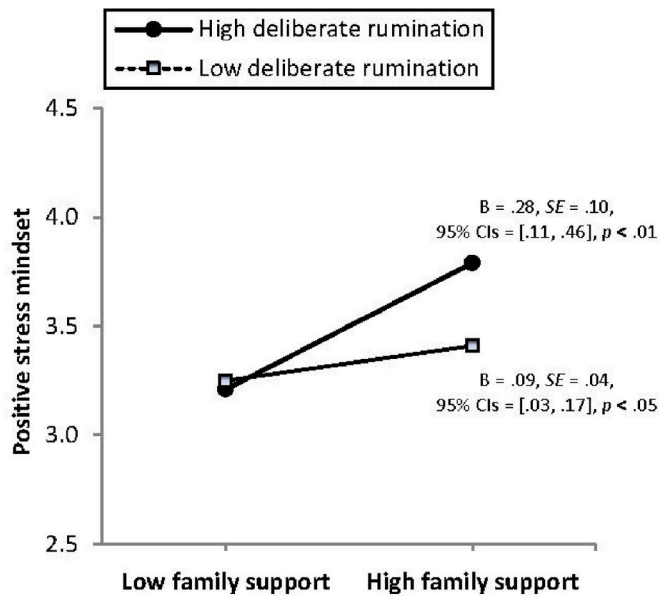


Fig. 2. Moderating role of deliberate rumination.

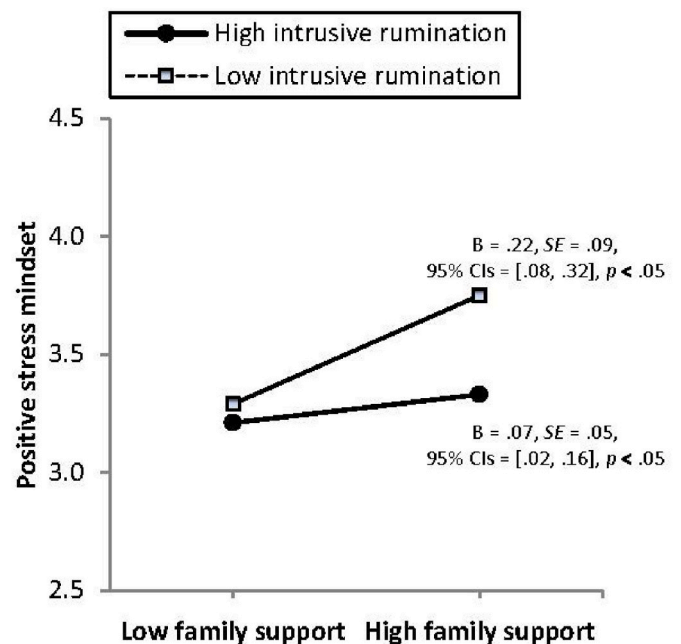


Fig. 3. Moderating role of intrusive rumination.

known as PTG (Ogińska-Bulik & Zadworna-Cieślak, 2018; Vogel & Bolino, 2020) in the COVID-19 pandemic in an Asian context (Vietnam). This marks the deviation of our study from the existing tourism research, which has predominantly focused on industry- or organization-level resilience to crises such as pandemics (Alonso et al., 2020; Kaczmarek et al., 2021; Sobaih et al., 2021). Furthermore, few recent studies have delved into PTG among workers in business contexts (Vogel & Bolino, 2020). Our study extends this stream of research by advancing PTG to the tourism discipline.

Second, irrespective of underscoring that the link between social

support resources, such as support from the family, and PTG is complex, prior studies have tended to focus on their direct relationship (Sørensen et al., 2021). Our study takes an additional step to examine employees' positive stress mindset as a mediation mechanism that sheds light on how support from family members fosters worker PTG. The finding on the mediating effect of positive stress mindset provides further support for the role of cognitive processes in the PTG model (Calhoun et al., 2010). Additionally, our study extends the mindset literature in general

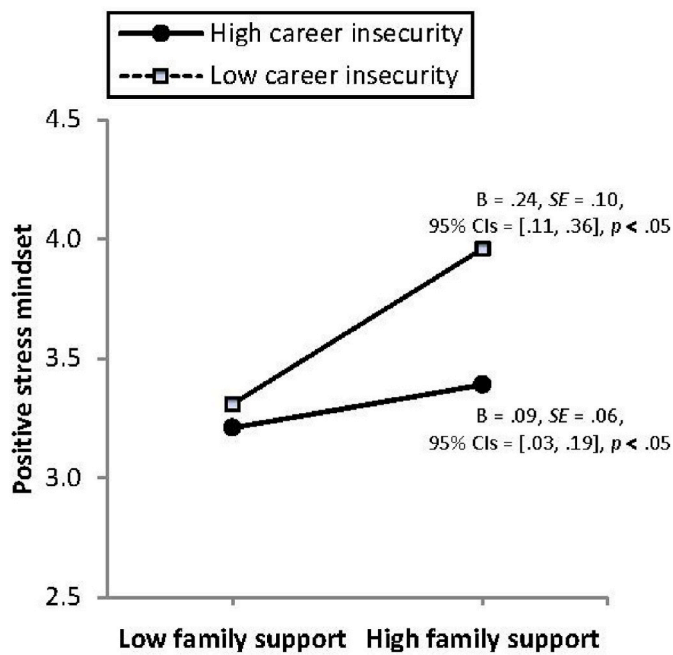


Fig. 4. Moderating role of career insecurity.

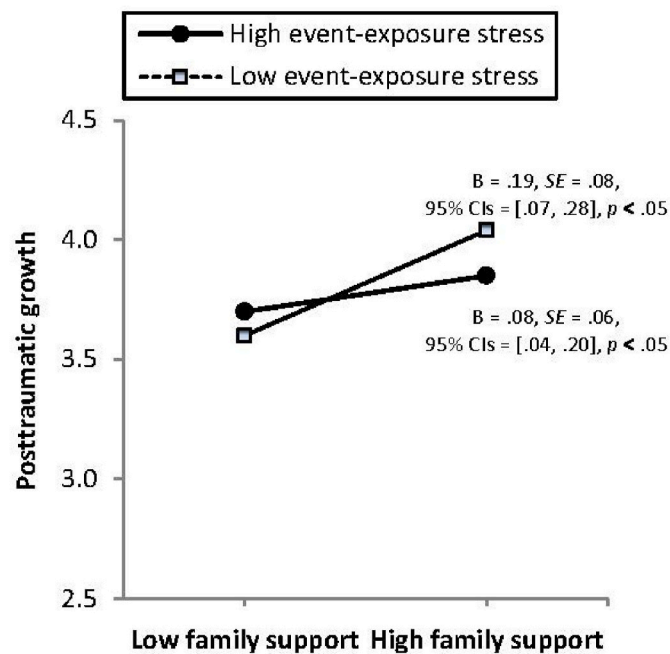


Fig. 5. Moderating role of event-exposure stress.

and the stress mindset research in particular by adding family support to the growing body of the predictors of stress mindset as well as providing evidence for the role of domain-specific mindsets (e.g., stress mindset) in influencing individuals' attitudinal and behavioral responses (e.g., PTG). This research introduces mindset as a promising approach to deciphering the formation of PTG.

The predictive role of positive stress mindset for PTG also distinguishes the current study from prior PTG studies that have largely investigated antecedents such as trait resilience (Bensimon, 2012; Ogińska-Bulik & Zadworna-Cieślak, 2018), core beliefs challenge (Eze et al., 2020), cognitive appraisal, coping strategies (Yeung et al., 2016), emotion regulation (Orejuela-Dávila et al., 2019), self-compassion

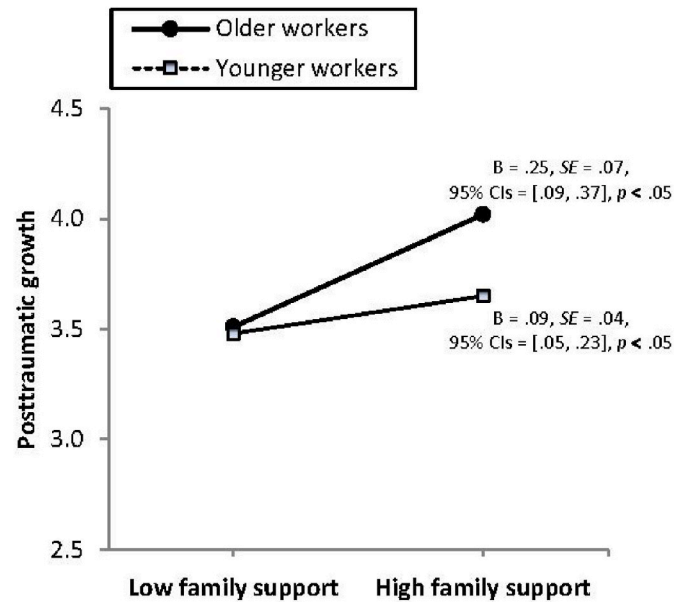


Fig. 6. Moderating role of worker age.

(Wong & Yeung, 2017), and mindfulness (Lianchao & Tingting, 2020).

Third, our analysis supports the contingency lens through which support from the family shapes positive stress mindset and in turn PTG. While prior works have focused on the antecedent role of ruminative thinking styles for stress disorder or PTG (Zhou & Wu, 2016), our analysis indicates that ruminative thinking styles may constitute a novel contingency approach to understanding the impact of family support on positive stress mindset. Moreover, our findings reveal the interaction effects of a family factor (family support) and individual factors (ruminative thinking styles) on positive stress mindset in the face of a crisis such as the COVID-19. This provides further support for the COR framework underscoring the role of bounteous resources (e.g., both family support and deliberate rumination) in triggering proactive thinking (Halbesleben et al., 2014) such as in the form of positive stress mindset to cope with the event and find the meaning in it. Our study also adds to the COR theory that the impact of resource availability on the resource investment in buffering against resource loss and developing proactive actions (Halbesleben et al., 2014) is contingent on cognitive styles (i.e., deliberate or intrusive rumination) that individuals hold.

Last, the supplementary results offer further theoretical implications. Though the negative interaction effect of career insecurity and family support on positive stress mindset in the face of a crisis such as the COVID-19 has not been established in the literature, our supplementary finding on such an effect partly resonates with the prior finding on the negative association between career insecurity and self-management (Alisic & Wiese, 2020). The result of the supplementary analysis on the interaction between event-exposure stress and support from the family is in line with the finding of a prior work on the negative interaction effect of traumatic stress and social support on PTG (Mairean, 2016). The supplementary result regarding the positive association of female gender with stress on exposure to the COVID-19 is consistent with recent works by Liu et al. (2020) and Qiu et al. (2020) on COVID-19 induced distress among Chinese people. However, the result on the positive link of age with event-exposure stress is partly consistent with Qiu et al.'s (2020) work revealing that very old people (over 60) or young people (under 30) scored higher stress on exposure to the COVID-19 crisis.

Furthermore, the slope test indicates that, when receiving low support from family members, workers with higher stress levels demonstrate higher PTG, whereas under conditions of high support from the family, workers with higher stress levels demonstrate lower PTG. These

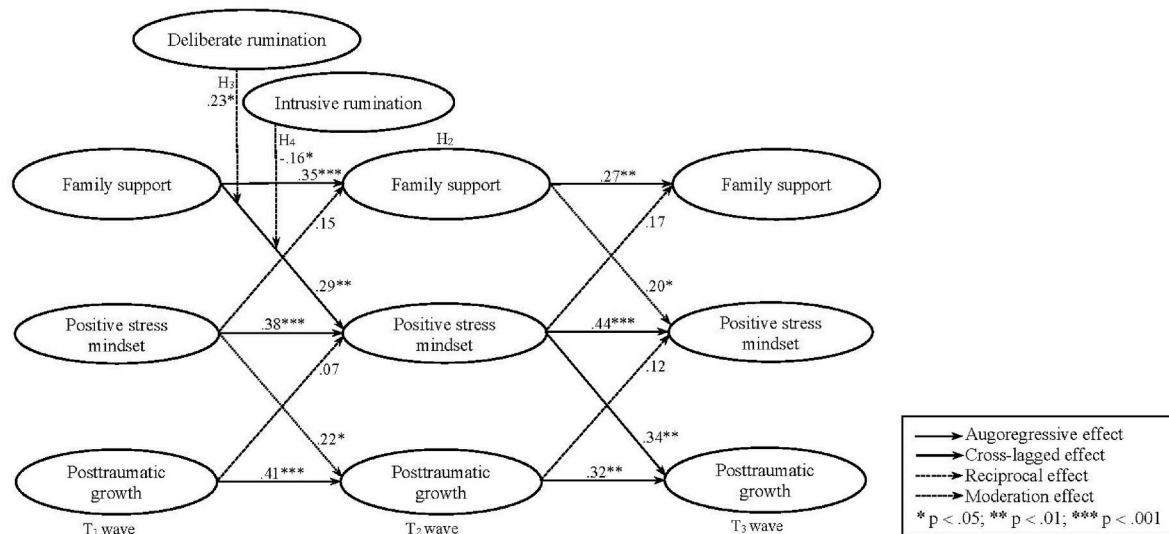


Fig. 7. Cross-lagged results.

results reflect that when workers lack supportive family relationships, high stress levels may render workers more proactive to make sense of the event and grow through it. On the contrary, when workers with lower stress levels gain high support from family members, this strong source of support serves an adequate resource for them to buffer against stress and grow. However, too much support may negatively influence an individual's motivation, self-worth, and autonomy (Schueller et al., 2017). Therefore, if workers who experience low stress receive too much support from family members, such a strong support may undermine workers' motivation to grow. Future research should further examine this negative relationship between too much family support and worker PTG particularly under conditions of low stress levels among workers.

The supplementary analysis indicates that female workers' PTG is significantly higher than their male counterparts'. This finding resonates with the results of prior works (e.g., Meng et al., 2018; Wang & Xu, 2016). Females tend to gain more affective support to cope with stress than males since, compared to their male counterparts, their perception of emotion is more sensitive and they have closer relationships with others (Meng et al., 2018; Wang & Xu, 2016). In line with Jin et al.'s (2014) findings, the supplementary analysis indicates that PTG has a propensity to diminish with age. The significant interaction effect of age and family support on worker PTG further indicates that compared to young workers, older workers need more support from their families and thus the relationship between family support and PTG is more pronounced among older workers. Nevertheless, due to the non-significant interaction effect of gender and support from the family in the current study, research should further examine gender differences in the relationship between family support and worker PTG.

5.2. Implications for practice

Some practical implications can be derived from this study for tourism workers, tour companies, and the tourism industry. First, tourism workers should be aware of family as a crucial social support resource since they not only work in a stressful environment but may likewise be severely affected by crises such as pandemic events. Tourism workers should care about their family and share thoughts and issues with their family members on a regular basis (Zhang et al., 2019). Such close interactions can lead to strong ties with their family, which can provide strong support for them to buffer against daily stress and stressful events such as the COVID-19, as well as develop positive stress mindset and positive change through the events.

Second, tour companies are encouraged to build family-friendly

management policies (Chen et al., 2018; Garg & Agrawal, 2020) to help enhance family ties and in turn family support for workers (Zhang et al., 2019), which can promote their PTG as a crisis occurs. For instance, managerial policies, such as assigning feasible workloads, avoiding excessive overtime work, and offering reasonable vacations, can enable employees to have adequate time with their family to build strong family bonds and potentially have opportunities to receive support from their family members (Kusluvan et al., 2010) when exposed to a traumatic event.

Third, due to the mediating role of positive stress mindset, it is advisable that organizations in the tourism industry foster positive stress mindset among employees by including HR practices such as health-related HR practices that concentrate on prevention of and recovery from psychological issues among workers (Huettermann & Bruch, 2019) or resilience-oriented HR practices that focus on promoting positive psychology (Su et al., 2021). In addition, since thinking styles may influence the way workers react to support from their families and develop positive stress mindset, HRM system should incorporate training on positive thinking, namely deliberate rumination, with which workers can explore the positive meaning of their experience during a crisis.

Fourth, policy makers in the tourism industry should develop long-term strategies for crises. Specifically, support groups should be built to provide employees with ways to expand connections with and support from family members. Support groups for workers in the face of the COVID-19 crisis should also involve family members. Educational programs from support groups should equip family members with ways to help a family member cope with the crisis. Besides, the tourism industry should update tour companies with information on the pandemic crisis, its impacts on the industry, and governmental supports so that they can provide update information for workers, strategically plan temporary works for them, and provide them with training in preparation for job transfer or new work procedures (especially with online platforms, Breier et al., 2021) so that workers can feel less insecure in their career, and develop positive stress mindset and positive change while waiting to return to work.

5.3. Limitations and paths for future research

There are several limitations in this study that should be acknowledged. One limitation of the study is the use of the convenient sampling approach to the recruitment of tour companies, which may prevent the generalization of the findings to the tourism industry and should be addressed in future research attempts.

Although the study participants' age ranged between 18 and 62, their mean age of 33.4 indicated that they were relatively young and hence might have cognitive distortion in answering the questionnaires. We acknowledge this as another limitation of our study and recommend the collection of a larger random sample for a more balanced age range. Another limitation involves collecting the data only from employees on unpaid leave or layoff during the COVID-19 crisis. Further studies should be conducted to collect data from different types of employees and managers and explore how they respond to family support and develop PTG in the different stages of the crisis as well as how manager PTG exerts trickle-down effects on employee PTG.

Moreover, albeit most constructs of interest, such as PTG, positive stress mindset, and rumination, fall under the psychological construct category and should be examined through self-reported information (Conway & Lance, 2010), the self-reported data of the current study might be vulnerable to CMV bias (Podsakoff et al., 2012). However, as earlier discussed, this risk was mitigated via the marker variable procedure, the interactive effect tests, and the multi-wave surveys.

While the causality was drawn from the cross-lagged design of the main study (T1 wave) and the supplementary study (T2 and T3 waves), such a causal relationship among the variables of interest should be further established through field-experimental research designs. In addition, though the main study, along with the supplementary study, examined family support and PTG in three different stages of the COVID-19 in the research context (after the easing of the national lockdown, when the number of new confirmed cases reached a plateau, and six months later), examining the variances in the effects of support from family members on worker PTG before and after the pandemic is over should be recommended for future research.

The fact that our study focused on a single service industry, namely tourism, limited the generalizability of its findings. Retesting our research model in mixed industries or comparing the findings from service and manufacturing industries would offer further insights. More contextual insights can be captured if the current research model is comparatively analyzed in the current context versus other non-Western and Western contexts due to the disparities in culture, economic strategies, public support, and COVID-19 control measures among such contexts (Pearce et al., 2020; Pham et al., 2020).

Due to the inability of a single study to unfold every mechanism behind PTG, extensions to the current study should include other mechanisms. An extension of our research should be to examine the predictive role of other forms of social support such as governmental support, organizational support, or peer support for workers' positive thinking and change as well as the moderating role of family support for such relationships. The role of resources from HR practices such as health-related HR practices (Huettermann & Bruch, 2019) or resilience-oriented HR practices (Su et al., 2021) should be investigated in relation to workers' positive stress mindset and positive change. Support from the family should be further explored as a mediation mechanism for the effect of governmental support (e.g., support groups) on worker growth from a crisis.

Another extension may involve investigations into different mediation mechanisms for the relationship between support from family members and worker PTG. Future research should consider affective processes (e.g., emotional regulation, positive affect) as influence channels of family support in addition to cognitive processes. Besides, despite having been validated in the literature (Huettermann & Bruch, 2019), the measure of positive stress mindset may be subjective due to its assessment of general attitudes towards the positive consequences of stress. Future research should adapt its current measure to a specific stressor and retest its mediating role.

Credit author statement

Luu Trong Tuan (Tuan Luu) was responsible for Conceptualization, Methodology, Investigation, Data curation, Formal analysis, Validation,

Visualization, Writing - original draft, and Writing - review & editing.

Impact statement

This study provides crucial implications for companies in the tourism industry, support groups, and tourism workers. Workers in the tourism industry should be cognizant of family as a crucial social support resource and build strong ties with their family to garner strong support to buffer against daily stress and traumatic events such as the COVID-19 as well as develop positive stress mindset and grow from the trauma.

Support groups for workers in the face of the COVID-19 crisis should involve family members. Educational programs from support groups should equip family members with ways to help their family member cope with the crisis.

On account of the role of positive stress mindset and ruminative thinking styles, especially in a crisis event, tour companies should incorporate health-related HR practices that shape positive stress mindset and deliberate rumination among workers so that they can cope optimistically with life-challenging events.

Declaration of competing interest

Authors declare that they have no conflict of interest.

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