

Career resilience of the tourism and hospitality workforce in the COVID-19: The protection motivation theory perspective

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ARTICLE INFO

Keywords:

Career resilience
Perceived vulnerability
Perceived severity
Self-efficacy
Response efficacy
Health risk preventative behavior

ABSTRACT

By applying the protection motivation theory, the study aims to investigate factors influencing tourism and hospitality (T&H) workers' career resilience when faced with health-related risks at work during a pandemic. Data were collected from 495 part-time and full-time employees in the Vietnamese tourism and hospitality sector. The study found that workers' perceived vulnerability and perceived severity of the pandemic were positively associated with career resilience. Perceived severity was positively related to self-efficacy and response efficacy, while perceived vulnerability was positively associated with self-efficacy only. Both self-efficacy and response efficacy positively influenced career resilience through the mediating role of health risk preventative behavior. Theoretically, the study advances the stream of research in resilience in general and career resilience in particular among T&H workers when faced with a health-related crisis. Practical implications are provided with recommendations on how to facilitate career resilience among T&H employees working in the current high-risk environment.

1. Introduction

The twenty-first century has experienced several infectious pandemics such as Severe Acute Respiratory Syndrome (SARS) in 2003, the Middle East Respiratory Syndrome (MERS) in 2012, and Ebola in 2014, which had devastating consequences for the economies, politics and society of affected countries (Jones et al., 2008). Following the discovery of the first case in Wuhan, China at the end of 2019, the novel coronavirus (Covid-19), spread rapidly to the rest of the world, causing far-reaching effects on many industries, but arguably most profoundly in tourism and hospitality (T&H) (Sharma, Thomas, & Paul, 2021; UNWTO, 2020; Zheng, Luo, & Ritchie, 2021). According to a report by UNWTO (2022), for example, the Covid-19 pandemic resulted in a 73% drop in international tourist arrivals in 2020 compared to 2019, and an 87% fall in international arrivals in January 2021 compared to figures reported in 2020. However, the tourism industry is well on the road to recovery throughout 2022, although international tourism remains 61% below the level of 2019 (UNWTO, 2022).

Since the beginning of 2022, many destinations began to ease or lift

travel restrictions although efforts to contain the virus have varied from country to country. Until June 2022, 45 destinations with most in Europe (31 countries) had no Covid-19 related restrictions in place (UNWTO, 2022). Asia is also seeing more and more countries beginning to ease those restrictions. Vietnam, for example, has been fully open since May 15th, 2022 with no required self-isolation or regulations for SARS-CoV-2 testing for travelers (VNA, 2022). As a result, Vietnam has witnessed a significant wave of tourism, especially domestic tourism; however, despite all efforts to contain Covid-19, Vietnam could not avoid several Covid-19 outbreaks during the recovery period. While the case of Vietnam is described in this paper, most tourism destinations have experienced similar scenarios when reopening to tourism (Dupeyras, Haxton, & Stacey, 2020). Although the sector is likely to continue to face challenges when re-opening, among the biggest challenges is the management of the safety and health of the T&H workforce (Hamouche, 2021; Su, Tra, Huynh, Nguyen, & O'Mahony, 2021). Since the sector is reliant on a customer-facing workforce for service delivery (e.g., waiters/waitresses, hotel receptionists, tour guides), frontline staff are exposed to the health risks of viral infection. As a result, there is a

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<https://doi.org/10.1016/j.tmp.2022.101039>

Received 25 July 2021; Received in revised form 19 October 2022; Accepted 25 October 2022

Available online 31 October 2022

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need to understand how T&H workers perceive health-related risks in the Covid-19 environment and how these perceptions impact their behavioral responses to the pandemic and to the development of career resilience.

An important focus of studies within the field of occupational psychology is understanding why and how some individuals resolve difficult and adverse career-related situations while others do not (Rochat, Masdonati, & Dauwalder, 2017). As a result, career resilience, which refers to the ability of an individual to persist, adapt, or flourish in a career despite obstacles, changing events, and disturbances, has increasingly attracted the research interest of academics (Mishra & McDonald, 2017). Career resilience has been studied in various fields including health, education, business, and psychology (Cooke, Wang, & Bartram, 2019; Kolar, Treuer, & v., & Koh, C., 2017; Kutsyuruba, Walker, Stasel, & Al Makhameh, 2019; Papatraianou, Strangeways, Beltman, & Schuberg Barnes, 2018; Salisu, Hashim, & Galadanchi, 2019; Wyllie, Levett-Jones, DiGiacomo, & Davidson, 2020). Studies of career resilience in the T&H literature are scarce, however, the covid-19 pandemic has raised its significance due to the extreme vulnerability of the T&H workforce (Martins, Riordan, & Dolnicar, 2020; Su et al., 2021). Moreover, in the prior literature, career resilience was found to be negatively affected by interventions from human resource management practices such as training and mentoring (Bardoel, Pettit, De Cieri, & McMillan, 2014) but positively influenced by workplace-related factors such as supportive working environments and job characteristics (Brotheridge & Power, 2008; Kidd & Smewing, 2001). Nevertheless, none of the previous studies have investigated the influence of external contextual factors such as a crisis event related to health or the economy. As a result, the objective of this study is to understand the formation of T&H workers' career resilience when they faced with health-related risks at work in the context of a global health-related crisis. More specifically, the study aims to employ the Protection Motivation Theory (PMT) (Rogers, 1983) to validate the direct and indirect influences of threat appraisals (i.e., perceived vulnerability and severity) and coping appraisals (i.e., self-efficacy and response efficacy) on career resilience through health risk preventative behaviors.

Since the Covid-19 pandemic, many studies have focused on understanding resilience from macro perspectives, such as tourist destinations (McCartney, Pinto, & Liu, 2021; Traskevich & Fontanari, 2021), the T&H industry (Ntounis, Parker, Skinner, Steadman, & Warnaby, 2021; Prayag, 2020; Sharma et al., 2021), to micro perspectives such as tourism firms/ business enterprises/ organizations (Kaczmarek, Perez, Demir, & Zaremba, 2021; Sobaih, Elshaer, Hasanein, & Abdelaziz, 2021; Su et al., 2021) and tourists (Zheng et al., 2021). Our research theoretically contributes to the literature by providing an understanding of resilience in the Covid-19 pandemic from the micro perspective of employees within the T&H industry. Human resources play a vital role in developing organizational resilience capacity during the crisis and accelerating post-crisis recovery strategies for the T&H industry (Su et al., 2021). Consequently, the findings of this study can also assist the industry and tourism enterprises to establish human resource practices that can support workforce resilience capabilities during and after the Covid-19.

2. Literature review

2.1. Career resilience

Researchers from various disciplines have widely studied career resilience; however, there is little agreement on how to conceptualize it (Caza & Milton, 2012; Hall, Prayag, & Amore, 2017). The typical difference between definitions is that career resilience is considered to be either a personal trait or a dynamic developmental process. In the former case, career resilience was first defined by London (1983) within the Career Motivation Theory as an individual's ability to cope with career disruptions or rebound from career-related setbacks (Barto,

Lambert, & Brott, 2015; Shin & Kelly, 2015). It can be implied from this definition that the recovery ability of an individual tends to be a fixed or a constant characteristic that is not affected by the influences of environmental and contextual factors.

However, others viewed career resilience as a complex phenomenon in which the context needs to be considered, especially when individuals face anticipated or unanticipated changes, adversity or disruptions (Caza & Milton, 2012; Mansfield, Beltman, Price, & McConney, 2012). From this viewpoint, career resilience has been conceptualized as a developmental process among individuals who have experienced their work through interactions with the environment over time (Mansfield et al., 2012).

Over a couple of decades, career resilience has been studied in many fields such as health (Wyllie et al., 2020), education (Kutsyuruba et al., 2019; Mansfield, Beltman, & Price, 2014; Papatraianou et al., 2018), business (Cooke et al., 2019; Salisu et al., 2019; Salisu, Hashim, Ismail, & Isa, 2017), and psychology (Kolar et al., 2017). However, career resilience has not yet been well-explored in the field of T&H. In the context of the Covid-19 pandemic, which is still an ongoing pandemic globally with no end in sight, and workers within the T&H industry have been among the hardest hit. The industry's workforce has experienced uncertainty, compromised safety and insecurity at work during the shutdown and re-opening of businesses in attempts to both control the spread of the virus and assist in economic recovery (Su et al., 2021). As a result, career resilience within the T&H workforce during Covid-19 merits further study.

By consolidating the varied views on career resilience and considering the research context of Covid-19, in this study career resilience is conceptualized as "a development process of persisting, adapting, and/or flourishing in one's career despite challenges, changing events, and disruptions over time" (Mishra & McDonald, 2017, p.10). From this viewpoint, this study investigated the adaption capability of individuals in their career when faced with a health-threatening working environment. A review of 43 articles in the literature on career resilience has found that quantitative studies examining the contextual factors of career resilience tend to be scarce compared to those that are qualitative in nature (Misha and McDonald, 2017). Additionally, previous studies mainly analyzed workplace factors such as supportive workplaces (Brotheridge & Power, 2008; Kidd & Smewing, 2001), and job characteristics (Brotheridge & Power, 2008). The most recent work by Rieckert et al. (2021) found that workplace attributes such as information, peer support and work patterns influenced resilience among health care professionals during Covid-19. One other study into worker resilience during the Covid-19 crisis has been uncovered but this study only examined the role of personal characteristics such as core beliefs (Luu, 2021). To examine the gaps identified within the literature, our study quantitatively investigates the cognitive processes that T&H workers employ to develop career resilience during the pandemic based on their perceptions of contextual factors, particularly health-related risks

2.2. The protection motivation theory (PMT)

The PMT is designed to explain the mechanism by which individuals deal with threats (Rogers, 1983). In other words, to reduce risks, individuals have a process of identifying and assessing threats and devising ways to deal with them. This process leads to changes in individual attitudes and behaviors related to the context in which risks are occurring (Verkoeyen & Nepal, 2019). The PMT is widely applied in the domain of health behavior and has a strong ability to predict individuals' intentions towards protective behavior (DeFranco & Morosan, 2017). In particular, PMT has been applied to explore a variety of health-related behaviors, such as cancer-preventive behaviors (Zare Sakhvidi et al., 2015), sun-protection behaviors (Lowe et al., 2000), SARS preventive behaviors (Jiang et al., 2009), or even preventive behaviors during the Covid-19 crisis (Rad et al., 2021). Floyd, Prentice-Dunn, and Rogers (2000) argued that PMT could be applied to

evaluate any kind of threat for which an individual can take adequate preventive measures. This has proven to be true when the application of PMT has extended to other sectors beyond the health area over the last four decades, such as environmental issues and climate change (Koerth, Vafeidis, Hinkel, & Sterr, 2013; Oakley, Mohun Himmelweit, Leinster, & Casado, 2020), or cybersecurity and information security (Johnston & Warkentin, 2010; Shillair et al., 2015; van Bavel, Rodríguez-Priego, Vila, & Briggs, 2019).

From a tourism perspective, the PMT has been extensively applied, especially in previous studies exploring tourists' disease prevention behavior at travel destinations (Wang, Liu-Lastres, Ritchie, & Mills, 2019). Since the global Covid-19 pandemic the PMT has also been utilized as the foundation to study tourists' intention and travel decision-making (Rather, 2021; Zheng et al., 2021). For example, Zheng et al. (2021) applied the PMT to explore tourists' perceptions of threat, including perceived severity, perceived susceptibility, and their psychological resilience to deal with potential threats. Considering that Covid-19 has also created unprecedented health challenges for employees and few studies have investigated how T&H workers evaluate the health-related threats of the epidemic or its influence on their protective behavior and resilience to career uncertainty (Coulombe et al., 2020), we applied the PMT to understand how T&H workers perceive health-related risks in the Covid-19 environment and how these perceptions influence their behavioral responses to the pandemic and to the development of career resilience. Accordingly, hypotheses of relationships between PMT's variables and career resilience are proposed and presented in the following section.

2.3. Research hypotheses development and conceptual framework

Perceived severity and perceived vulnerability are attributes of perceived threat and are also central components of the PMT (Rogers, 1983). Perceived vulnerability refers to an individual's subjective evaluation of the probability of experiencing a health problem, while perceived severity refers to his or her own assessment of the gravity of a health problem and its potential effects (Rosenstock, 1974). Several studies have shown a relationship between perceived health threat and response efficacy, which refers to an individual's belief in the efficiency of recommended coping responses in minimizing their threats (Lin & Bautista, 2016; Rogers, 1983). Indeed, the findings of Lin and Bautista's (2016) research revealed the relationships between perceived vulnerability, perceived severity and response efficacy in the study of intentions to take precautions during annual haze pollution in Singapore. In addition, self-efficacy, which reflects an individual's judgment of their own competencies to carry out the adaptive actions, also has a relationship with perceived health threats (Haapala & Probart, 2004; Schafer, Schafer, Bultena, & Hoiberg, 1993). For instance, Schafer et al.'s (1993) study of safe food-handling behaviors discovered that perceived threat is a predictor of perceived self-efficacy. As a result, when a pandemic occurs, if T&H employees perceive higher levels of threat, their motivation to engage in actions to prevent or reduce their severity will be higher. Thus, the current research hypothesizes that:

H1: Perceived vulnerability has a significant influence on self-efficacy.

H2: Perceived vulnerability has a significant influence on response efficacy.

H3: Perceived severity has a significant influence on self-efficacy.

H4: Perceived severity has a significant influence on response efficacy.

Previous studies on infectious disease found that perceived vulnerability and perceived severity positively influenced precautionary measures (Bashirian et al., 2021; Huang, Dai, & Xu, 2020; Luo, Cheng, & Sui, 2021; Rad et al., 2021; Stangier, Kananian, & Schüller, 2021; Tang & Wong, 2005). For instance, Bashirian et al. (2021) reported that a health staff member with a strongly perceived vulnerability and

perceived severity had a better likelihood of engaging in preventative behaviors in the context of Covid-19. In addition, Stangier et al. (2021) indicated that perceived vulnerability was closely related to preventive behaviors and could help people to adapt to the Covid-19 pandemic. Based on the PMT, Roozbahani, Kaviani, and Khorsandi (2020) discovered the perception of the perceived severity was a direct predictor of skin cancer preventative behaviors, showing that if people perceived the disease's severity, they would be able to take more preventative measures. Luo et al. (2021) also claimed that older generations with a more robust perception of the pandemic's seriousness were more inclined to use Covid-19 precautions. Thus, if T&H workers are aware of the severity of, and their vulnerability to the pandemic, they will be motivated to take preventative behaviors. As a result, the study proposes the following hypotheses:

H5: Perceived vulnerability has a significant influence on health risk preventative behaviors.

H6: Perceived severity has a significant influence on health risk preventative behaviors.

Many empirical works have looked into a range of personal factors (traits, skills, attitudes, behaviors, and career history) and contextual factors (supportive workplace, family, and job characteristics) that have significant influences on career resilience (Mishra & McDonald, 2017). Few studies, however, have sought to understand how employees deal with disruption to their jobs caused by negative circumstances or the link between vulnerability and resilience. One review of literature has found that the ability of nurses to manage risks was influenced by the degree of perceived vulnerability (East, Heaslip, & Jackson, 2020). Meanwhile, Scholz, Blumer, and Brand (2012) considered vulnerability as a risk extension that strengthens resilience. Perceived risks that increase vulnerability can create protective measures and mechanisms that can promote resilience. Potential vulnerability and severity does, however, create coping or defensive mechanisms that can help people to become more resilient (Zheng et al., 2021). Thus, two hypotheses are proposed to define the relationships between perceived threats (vulnerability and severity) and career resilience.

H7: Perceived vulnerability has a significant influence on career resilience.

H8: Perceived severity has a significant influence on career resilience.

According to the PMT, decisions of individuals to engage in precautionary risk measures are influenced by the outcomes of threat and coping appraisal (including self-efficacy and response efficacy). Previous studies have also found that self-efficacy and response efficacy were closely related to the intention to participate in protective behaviors (Mortada, Abdel-Azeem, Al Showair, & Zalat, 2021; Rad et al., 2021). For example, self-efficacy was discovered as the strongest predictor of rabies protective behaviors (Laorujisawat, Wattanaburanon, Abdulkasim, & Maharachpong, 2021), skin cancer preventative behaviors (Maleki, Shahnazi, & Hasanazadeh, 2019) and Covid-19 preventative behaviors (Rad et al., 2021) based on PMT. Indeed, people who have a greater level of self-efficacy are more likely to engage in disease-prevention behaviors (Leigh, Taylor, Glassman, Thompson, & Sheu, 2020; Zare Sakhvidi et al., 2015). Moreover, to explore the origin of SARS risk perceptions and how they affect preventative behavior, Jiang et al. (2009) applied the PMT and showed that response efficacy was the most important predictor related to SARS precautionary actions. Since the spread of Covid-19, self-efficacy and response efficacy have also been studied as an enhancing factor of preventive behaviors (Kim & Chon, 2022; Kim & Kim, 2020; Shahnazi et al., 2020). Roozbahani et al. (2020) also indicated response efficacy was one of the strongest predictors of skin cancer preventative behaviors. Thus, it can be concluded from the literature that self-efficacy and response efficacy positively impact health risk preventative behaviors. The following two hypotheses are proposed:

H9: Self-efficacy has a significant influence on health risk preventative behaviors.

H10: Response efficacy has a significant influence on health risk preventative behaviors.

In the fields of health and education, previous works reported the significant impact of self-efficacy and response efficacy on career resilience (Clendon & Walker, 2016; Hodges, Keeley, & Troyan, 2008; Lyons, Schweitzer, & Ng, 2015). Particularly, Sidiropoulou-Dimakakou, Argyropoulou, Drosos, Kaliris, and Mikedaki (2016) indicated a relationship from a moderate to a high degree between self-efficacy in career, career resilience, and career adaptability in the education field. Yada et al. (2021) also found that self-efficacy of pre-service teachers had a relationship with teachers' resilience and was the most influential factor of their resilience. Arguably, individuals, who have higher levels of self-efficacy, have more resilience and better ability to cope with hardship (Lau, Willetts, Hood, & Cross, 2015). Similarly, response efficacy was discovered to play an essential role in forming health resilience (Park, Sarnikar, & Cho, 2020). Specifically, response efficacy-oriented messages were found to positively impact people's health-related resilience in online health communities. Consequently, direct links between self-efficacy and response efficacy and career resilience are hypothesized in this study.

H11: Self-efficacy has a significant influence on career resilience.

H12: Response efficacy has a significant influence on career resilience.

In the health literature, a significant positive correlation between resilience and health behavior was discovered (Nikolaus, Suchy-Dicey, Sinclair, & i., & Buchwald, D., 2020). In research with patients suffering from chronic kidney disease, for example, Ma et al. (2013) found that health-promoting behaviors had a significant effect on resilience. Specifically, failure to pay enough attention to health-promoting behaviors was found to make patients less resilient to chronic kidney disease. Accordingly, when facing health-related risks during a global pandemic, the preventative behaviors of T&H workers are considered to be determinants for them to persist and adapt to the unsafe and insecure environment. Therefore, a link between health risk preventative behaviors and career resilience is anticipated in this study.

H13: Health risk preventative behaviors has a significant influence on career resilience.

While career resilience was hypothesized to be directly influenced by perceived vulnerability, perceived severity, self-efficacy, and response efficacy, these relationships can possibly be better explained by health risk preventative behaviors as a mediator. As mentioned above, threat appraisals (including perceived vulnerability and perceived severity) and coping appraisals (including self-efficacy and response efficacy) might lead to increased health risk preventative behaviors. By applying the PMT, threat appraisals and coping appraisals were found to be predictors of protection motivation to conduct Covid-19 preventative behaviors of healthcare workers (Bagherzadeh, Salehi, & Mahmoodi, 2021; Bashirian et al., 2021; Pilch, Wardawy, & Probiez, 2021). Indeed, threat appraisals referred to one's perception of the seriousness and likelihood of contracting a particular disease (Maleki et al., 2019), and coping appraisals were the belief that one was able to deal with health risks posed by the pandemic and the belief that recommended preventative behaviors could help individuals prevent the infection (Pilch et al., 2021). Clearly, the more a person is properly aware of the seriousness of a pandemic and believes that recommended preventative behaviors are effective, the more motivated they are to engage in such measures.

Additionally, Reisinger and Mavondo (2005) identified that the mediating role of perceived safety in the relationship between the anxiety of tourists and travel intentions. Meanwhile, in the context of Covid-19, by applying the PMT, Nazneen, Xu, Din, and Karim (2021) found

that travel risk perception and safety perception can moderate the relationship between the perceived Covid-19 impacts and travel avoidance. Accordingly, travelers evaluated the seriousness of travel hazards and took precautions, which affected their travel behavior and resulted in travel avoidance in Covid-19. Liu-Lastres, Mirehie, and Cecil (2021) also found the mediating role of perceived safety, anxiety, and confidence in the relationship between risk perception attitudes and willingness to travel of female business travelers in the Covid-19 pandemic. Moreover, Yildirim and Arslan (2020) demonstrated that preventive behaviors played a mediator role in the relationship between hope and resilience, and directly affect resilience. It is believed that taking preventive behaviors, which is a way for employees to develop their ability to cope with challenges at work, may lead to their greater resilient in the context of the Covid-19 pandemic. However, there is still a noticeable gap in the literature regarding the impact of preventative behaviors in the relationship between threat appraisals and coping appraisals and career resilience in a pandemic situation. As stated in the above hypotheses (H5, H6, H9, and H10), perceived vulnerability, perceived severity, self-efficacy, and response efficacy may have direct effects on health risk preventative behaviors, and health risk preventative behaviors were also proposed to affect career resilience (H13). Thus, by adopting the transmittal approach of a mediation effect (Rasoolimanesh, Wang, Roldán, & Kunasekaran, 2021), this study considered health risk preventative behaviors would be a potential mediating factor in the relationships between perceived vulnerability, perceived severity, self-efficacy, and response efficacy and career resilience. Specifically, individuals with better threat appraisals and coping appraisals may have a better response to challenging situations through preventative behaviors. As a result, four hypotheses of mediating effects of health risk preventative behaviors were developed and presented as below.

H14a: Perceived vulnerability has an indirect effect on career resilience through health risk preventative behaviors.

H14b: Perceived severity has an indirect effect on career resilience through health risk preventative behaviors.

H14c: Self-efficacy has an indirect effect on career resilience through health risk preventative behaviors.

H14d: Response efficacy has an indirect effect on career resilience through health risk preventative behaviors.

In summary, the 13 hypotheses of direct relationships of five variables of PMT (perceived vulnerability, perceived severity, self-efficacy, response efficacy, and health risk preventative behavior) and career resilience and four hypotheses of mediating effects of health risk preventative behavior are graphically presented in Fig. 1.

3. Research methodology

3.1. Measurement instrument development

The scales for measuring six variables in the proposed framework shown in Fig. 1 were adapted from existing scales in previous studies, particularly three items measuring perceived vulnerability (Wang, Liu-Lastres, Ritchie, & Pan, 2019; Zheng et al., 2021), three items measuring perceived severity (Wang, Liu-Lastres, Ritchie, & Pan, 2019), four items measuring health risk preventative behavior (Huang et al., 2020; Wang, Liu-Lastres, Ritchie, & Pan, 2019). Four items and five items measuring response efficacy and self-efficacy, respectively, were all adapted from Zheng et al. (2021). Career resilience was measured by seven items taken from the Employee Resilience Scale (Näswall, Kuntz, Hodliffe, & Malinen, 2013) and Connor-Davidson Resilience Scale (Connor & Davidson, 2003). All 26 measurement items were used to develop an initial survey on the career resilience of T&H workers during Covid-19. Each measurement item was evaluated with the level of agreement on a seven-point Likert scale (1 equals to 'strongly disagree'

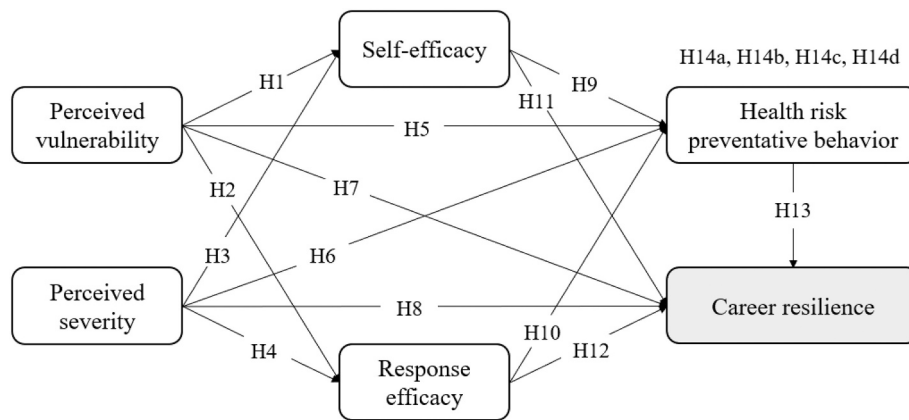


Fig. 1. Proposed conceptual framework of career resilience

and 7 equals to 'strongly agree').

To evaluate the content validity of the measurement scales, we invited three academics with expertise in T&H, and five industry experts who are human resource managers in resorts and travel agencies to review and evaluate the instrument. These experts were provided with the conceptualizations of constructs in the research and asked to assess each item's relevance based on a four-point rating scale with 1 anchored as not relevant and 4 anchored as very relevant (Bertea & Zait, 2013). This review indicated that most academic and industry experts agreed on the scales to measure all six constructs with some items being amended. For example, many experts suggested adding examples such as masks, gloves, and hand sanitizers to clarify what was meant by the personal protective equipment noted in some items. In addition, experts argued that the item 'I believe I am not infected with Covid-19 while working' was not appropriate to measure self-efficacy, which refers to individuals' belief about their own capabilities in performing the recommended coping response. Consequently, this item was removed, and the final 25 items were retained and used to develop a survey questionnaire. The questionnaire was initially designed in English (see Appendix A) and then translated into Vietnamese by an English-Vietnamese bilingual translator. A second translator was then engaged to back translate the Vietnamese version into English to ensure that the conceptual meaning and equivalence between the Vietnamese and English versions was maintained. A pilot study was then conducted with 30 alumni of the Tourism Department of the University of Economics, Danang, Vietnam who have been working in the tourism industry. They completed an online survey and provided feedbacks regarding the survey's structure and the appropriateness of language used in the questionnaire.

3.2. Methods of collecting and analyzing data

We aimed to collect data from those who were still working part-time or full-time in the T&H industry despite the Covid-19 crisis. By using a non-probability convenience sampling technique, we conducted a self-administered survey both online and offline to collect data during the fourth wave of Covid-19 in Vietnam (April 2021). A Google form link to the survey was uploaded on Facebook and LinkedIn T&H career groups in Vietnam. Each has at least 10,000 members. After one week, a reminder invitation was posted to increase survey participation. At the same time, onsite surveys were provided directly to employees who were working in hotels, resorts, and travel agencies in several cities in Vietnam. In total, we collected 529 responses, however, only 495 were valid after data were checked including scanning missing and unengaged cases and removing cases with extreme outliers. Table 1 presents the demographic, and industry related information of respondents including gender, age, education level, monthly income before Covid-19, marital status, and dependents, work experience, T&H work sector and the current job position of respondents. (See Table 1

Table 1
Descriptions of respondent profile ($n = 495$).

Group	Frequency	%	Group	Frequency	%
Gender			Age		
Male	168	33.9	15–24	208	42.0
Female	327	66.1	25–34	181	36.6
Marital status			35–44	71	14.3
Single	321	64.8	45–54	25	5.1
Married but no children	46	9.3	55–64	10	2.0
Married and have children	128	25.9	Monthly income before the Covid-19 (US\$)		
Education			Under 300	147	29.7
High school or equivalent	44	8.9	From 300 to under 500	238	48.1
Intermediate or college	77	15.6	From 500 to 800	74	14.9
Bachelor's degree	326	65.9	Over 800	36	7.3
Post-graduate	29	5.9	Working experiences in T&H		
Others	19	3.8	< 3 years	260	52.5
Working sector			3 years to 5 years	131	26.5
Accommodation	188	38.0	> 5 years to 10 years	71	14.3
Food and Beverage	119	24.0	> 10 years	33	6.7
Travel	102	20.6	Current job position		
Transport facility	8	1.6	Manager	37	7.5
Tourist attraction	24	4.8	Supervisor	54	10.9
Tourism department	14	2.8	Employee	404	81.6
Others	40	8.1			

The aim of this study was not only to confirm the theoretical relationships among constructs of the PMT, but also to explore the role of such constructs in forming career resilience. Indeed, the study's purpose was more towards the prediction of career resilience based on an existing theory (PMT) rather than theory testing. As a result, the Partial Least Squares-based SEM (PLS-SEM) approach was employed in this study as it allows the researcher to estimate an extension of the existing theory (Hair, Sarstedt, Hopkins, & Kuppelwieser, 2014). Accordingly, the procedure of data analysis includes evaluating the reliability and validity of the measurement instrument and evaluating the significance of proposed relationships between constructs in the model.

3.3. Common method variance (CMV)

To reduce the risk of CMV associated with collecting data from the same source of T&H employees in Vietnam, we undertook a number of

procedural and statistical treatments. The procedural remedies included separating scales measuring independent and dependent variables, removing all the labels in the questionnaire survey, ensuring the confidentiality of respondents, and eliminating words with multiple meanings or multiple ideas (Podsakoff, MacKenzie, & Podsakoff, 2012). We also undertook the statistical treatment by testing the full collinearity with the values of variance inflation factors (VIFs) (Kock, 2015). In particular, a new random dummy variable, which was described as a latent variable with a single indicator, was used as the dependent variable. By running a PLS-SEM analysis using the PLS Algorithm, all the variables of the proposed model were regressed on that dummy variable. The results showed that no collinearity exists in the baseline model with all the VIFs smaller than 3.3; therefore, the model has no common method variance issues.

4. Results

4.1. Measurement model evaluation

The evaluation criteria for the reflective measurement model, including reliability and validity, were to evaluate the measurement models (Ali, Rasoolimanesh, Sarstedt, Ringle, & Ryu, 2018). First, the outer loadings, the internal consistency reliability by using composite reliability (CR), and the rho_A of all six constructs was greater than the suggested value of 0.7, revealing that measurement scales have a high level of reliability (Ali et al., 2018; Hair, Risher, Sarstedt, & Ringle, 2019). Second, the average variance extracted (AVE) were computed to assess convergent validity. The findings showed that the outer loadings of most items exceeded the 0.7 benchmark (Hair et al., 2019). However, the item 'With my health condition, I am at high risk of Covid-19' only had a factor loading of 0.241, which was much lower than 0.708, and was excluded from the measurement model. Two items, SE1 and PB3, with factor loadings of 0.668 and 0.689, respectively, were retained in the measurement model as the values were just below 0.708, and the CR and AVE of their related constructs did not alter significantly when these two items were removed. After removing one item, the AVE of all six constructs varied from 0.598 (for self-efficacy) to 0.799 (for perceived severity), surpassing the 0.5 threshold value (Ali et al., 2018; Fornell & Larcker, 1981; Hair et al., 2019) (see Table 2).

Finally, the Fornell-Larcker criterion and the heterotrait-monotrait (HTMT) ratio were applied to evaluate the discriminant validity (Hair et al., 2019; Henseler, Ringle, & Sarstedt, 2015) (see Table 3 and Table 4). Accordingly, in comparison to correlation values of each construct with other factors, the square root of its AVE was the highest and the HTMT ratio value should be smaller than 0.9 to show the discriminant validity. In summary, the findings indicated that the measurement models of this study met all the requirements of reliability and validity.

4.2. Structural model evaluation

4.2.1. Evaluation of predictive capability

Since the high levels of collinearity within predictor constructs led to the imprecise estimation of path coefficients, it was important to estimate the structural model for collinearity (Hair et al., 2019). The multicollinearity issues were checked by the variance inflation factor (VIF) (Hair et al., 2019). The VIF values of perceived vulnerability, perceived severity, self-efficacy, response-efficacy, and health risk preventative behavior as predictors of career resilience were described in Table 5, revealing that all VIF values were below the required value of 3.0 suggested by Hair et al. (2019). Therefore, it can be said that the proposed structural model had no issues with multi-collinearity among the predictor constructs.

The first criterion for testing the model's predictive accuracy is the coefficient of determination (R^2), representing the amount of variation of the endogenous variable explained by exogenous variables in the

Table 2

Evaluation of measurement model.

Variable	Mean (Standard deviation)	Outer loading	Composite reliability (CR)	rho_A	Average variance extracted (AVE)
Perceived vulnerability (PV)			0.905	0.894	0.761
PV1_I am likely to be exposed to coronavirus while working.	5.03 (1.74)	0.883			
PV2_I am likely to be infected by customers while working.	5.31 (1.58)	0.878			
PV3_I am likely to be infected by colleagues while working.	5.37 (1.42)	0.855			
Perceived severity (PS)			0.888	0.756	0.799
PS1_Covid-19 is a serious threat.	6.36 (0.91)	0.865			
PS2_There are serious health consequences if one is infected with the Covid- 19.	6.30 (0.89)	0.922			
Self-efficacy (SE)			0.855	0.809	0.598
SE1_Taking measures to prevent Covid- 19 infection during working is easy for me.	5.86 (1.35)	0.668			
SE2_I have enough essential skills to protect myself from being infected with Covid-19 while working.	5.63 (1.08)	0.766			
SE3_I have enough personal protective equipment (e.g., masks, gloves, hand sanitizers) to protect myself from being infected with Covid-19 while working.	5.83 (1.04)	0.823			
SE4_I could learn to perform preventive measures to protect myself from being infected with Covid-19 while working.	5.93 (0.95)	0.827			
Response efficacy (RE)			0.859	0.799	0.605
RE1_Efforts of the T&H industry to keep me safe from Covid-19 threats are effective.	5.47 (1.20)	0.738			
RE2_Personal protective equipment (e.g., masks, gloves, hand sanitizers)	5.46 (1.15)	0.787			

(continued on next page)

Table 2 (continued)

Variable	Mean (Standard deviation)	Outer loading	Composite reliability (CR)	rho_A	Average variance extracted (AVE)
is effective for me to prevent the infection of Covid-19.					
RE3_Available health and safety measures to prevent the infection of Covid-19 in my workplace are effective.	5.38 (1.15)	0.775			
RE4_Precautions provided by my workplace to prevent the infection of Covid-19 are helpful.	5.71 (1.04)	0.808			
Health risk preventative behavior (PB)			0.866	0.795	0.620
PB1_I use all personal protective equipment (e.g., masks, gloves, hand sanitizers) while working during the pandemic.	5.87 (1.05)	0.855			
PB2_I adopt all preventative measures to protect myself while working during the pandemic.	5.94 (0.95)	0.846			
PB3_I actively attend training for health protection for T&H workers.	5.39 (1.29)	0.689			
PB4_I ask my guests and colleagues to take measures to prevent virus transmission while working.	6.01 (0.10)	0.746			
Career resilience (CR)			0.915	0.895	0.607
CR1_I am making my best effort to keep working in the T&H industry despite the pandemic impacts.	5.49 (1.38)	0.738			
CR2_I am doing my best to achieve my job goals in the T&H industry despite the pandemic impacts.	5.52 (1.23)	0.792			
CR3_Having to cope with stress due to the pandemic makes me stronger with the career in the T&H industry.	5.58 (1.21)	0.806			
		0.742			

Table 2 (continued)

Variable	Mean (Standard deviation)	Outer loading	Composite reliability (CR)	rho_A	Average variance extracted (AVE)
CR4_I believe I could bounce back in the T&H industry after the pandemic.	5.69 (1.18)				
CR5_I am confident I can perform my job in the T&H industry well despite the pandemic impacts.	5.36 (1.30)	0.795			
CR6_Dealing with the pandemic is an opportunity for me to grow in the T&H industry.	5.37 (1.32)	0.796			
CR7_Under pressure due to the pandemic, I still stay focused and think clearly about my job in the T&H industry.	5.40 (1.22)	0.783			

Table 3

Discriminant validity using Fornell-Lacker criterion for measurement model.

Construct	CR	PB	PS	PV	RE	SE
CR	0.779					
PB	0.457	0.787				
PS	0.258	0.283	0.894			
PV	0.213	0.097	0.231	0.872		
RE	0.444	0.601	0.180	0.069	0.778	
SE	0.394	0.528	0.277	0.189	0.554	0.774

CR = Career resilience; PB = Health risk preventative behavior; PS = Perceived severity; PV = Perceived vulnerability; RE = Response efficacy; SE = Self-efficacy.

Table 4

Discriminant validity using HTMT_{0.9} for measurement model

Construct.	CR	PB	PS	PV	RE	SE
CR						
PB	0.540					
PS	0.312	0.359				
PV	0.241	0.114	0.288			
RE	0.519	0.741	0.224	0.082		
SE	0.460	0.662	0.350	0.216	0.694	

CR = Career resilience; PB = Health risk preventative behavior; PS = Perceived severity; PV = Perceived vulnerability; RE = Response efficacy; SE = Self-efficacy.

model (Hair et al., 2019). Accordingly, perceived severity, self-efficacy, and response efficacy explained 43.4% of health risk preventative behavior variance and 29.7% of the variance in career resilience was explained by all five proposed variables (perceived vulnerability, perceived severity, self-efficacy, response-efficacy, and health risk preventative behavior). Next, the value of Q^2 , which was obtained by running the blindfolding procedure in PLS-SEM, was the second

Table 5
The VIF values of predictor constructs.

Predictor constructs	VIF
PB	1.765
PS	1.159
PV	1.079
RE	1.789
SE	1.654

CR = Career resilience; PB = Health risk preventative behavior; PS = Perceived severity; PV = Perceived vulnerability; RE = Response efficacy; SE = Self-efficacy.

criterion for the evaluation of predictive relevance. According to Hair et al. (2019), the Q^2 value was higher than 0, indicating the predictive accuracy of the model. Accordingly, the Q^2 values of health risk preventative behavior and career resilience were 0.192 and 0.127, respectively, which were both greater than the 0, exceeding the benchmark. In summary, the results of R^2 and Q^2 indicated the sufficient predictive capability of the proposed model.

In addition, the out of sample approach using PLSpredict was used. The results illustrated a medium predictive power of model to predict career resilience and a high predictive power of model to predict health risk preventative behavior by evaluating the value of Q^2_{predict} for the items of each variable comparing the root mean squared error (RMSE) between PLS-SEM and linear model (LM) (see Table 6) (Danks & Ray, 2018; Hair et al., 2019; Shmueli et al., 2019).

4.2.2. Evaluation of path relationships

The significance of the path coefficient (β) was investigated for each path relationship using SmartPLS software by running the Bias-corrected and Accelerated (BCa) Bootstrapping confidence intervals with 495 cases and 10,000 samples as the recommendation of Streukens and Leroi-Werelds (2016). Table 7 shows the results of path coefficients, t-values, and p-values of thirteen proposed direct relationships between six measurement constructs. According to Hair, Hult, Ringle, and Sarstedt (2014), the path coefficient was significant when the empirical t-value was higher than the critical t-value of 1.65, 1.96, and 2.57 at a significant level of 10%, 5%, and 1%, respectively. As a result, eleven of thirteen hypotheses were supported at a significant level of at least 1% in this study. Particularly, all direct causal links to career resilience (H7, H8, H11, H12, H13) were supported with t-values varying from 1.720 (for H11) to 3.906 (for H12). Out of five constructs, health risk preventative behavior had the strongest influence on career resilience ($\beta_{\text{PB} \rightarrow \text{CR}} = 0.231$), followed by the influence of response efficacy ($\beta_{\text{RE} \rightarrow \text{CR}} = 0.227$).

Health risk preventative behavior was significantly affected by perceived severity ($\beta_{\text{PS} \rightarrow \text{PB}} = 0.137$, $p < 0.01$), self-efficacy ($\beta_{\text{SE} \rightarrow \text{PB}} = 0.249$, $p < 0.1$), and response efficacy ($\beta_{\text{RE} \rightarrow \text{PB}} = 0.439$, $p < 0.01$);

Table 6
Results of predictive power using PLS_{predict}.

Items	Q^2_{predict}	RMSE			
	PLS-SEM	PLS-SEM	LM	PLS-SEM - LM	
CR1	0.067	1.337	1.330	0.007	
CR2	0.048	1.201	1.205	-0.004	
CR3	0.063	1.172	1.180	-0.008	
CR4	0.039	1.163	1.168	-0.005	
CR5	0.016	1.291	1.292	-0.001	
CR6	0.051	1.292	1.299	-0.007	
CR7	0.054	1.191	1.200	-0.009	
PB1	0.052	1.026	1.027	-0.001	
PB2	0.051	0.927	0.933	-0.006	
PB3	0.023	1.280	1.290	-0.010	
PB4	0.043	0.978	0.979	-0.001	

CR = Career resilience; PB = Health risk preventative behavior.

Table 7
Results of direct paths in the proposed model.

Path relation (Hypothesis)	Path coefficient	t-value	p-value	Confidence Interval (95%) Bias Corrected	Conclusion
H1: Perceived vulnerability → Self-efficacy	0.133	2.441**	0.015	[0.036; 0.215]	Supported
H2: Perceived vulnerability → Response efficacy	0.029	0.507 ^{ns}	0.612	[-0.067; 0.122]	Rejected
H3: Perceived severity → Self-efficacy	0.247	4.769***	0.000	[0.159; 0.329]	Supported
H4: Perceived severity → Response efficacy	0.173	3.723***	0.000	[0.094; 0.246]	Supported
H5: Perceived vulnerability → Health risk preventative behavior	-0.012	0.314 ^{ns}	0.753	[-0.075; 0.049]	Rejected
H6: Perceived severity → Health risk preventative behavior	0.137	3.384***	0.001	[0.073; 0.205]	Supported
H7: Perceived vulnerability → Career resilience	0.136	3.340***	0.001	[0.070; 0.204]	Supported
H8: Perceived severity → Career resilience	0.094	2.216**	0.027	[0.026; 0.166]	Supported
H9: Self-efficacy → Health risk preventative behavior	0.249	4.504***	0.000	[0.154; 0.337]	Supported
H10: Response efficacy → Health risk preventative behavior	0.439	8.877***	0.000	[0.355; 0.520]	Supported
H11: Self-efficacy → Career resilience	0.094	1.720*	0.085	[0.006; 0.185]	Supported
H12: Response efficacy → Career resilience	0.227	3.906***	0.000	[0.129; 0.319]	Supported
H13: Health risk preventative behavior → Career resilience	0.231	3.726***	0.000	[0.124; 0.328]	Supported

^{ns} non-significant, * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

however, its direct relationship with perceived vulnerability was not supported with t-value lower than 1.65 at a significant level of 1%. Perceived vulnerability and perceived severity directly affected self-efficacy with p-values lower than 0.05, supporting hypotheses H1 and H3. While perceived severity significantly influenced response efficacy ($\beta_{\text{PS} \rightarrow \text{RE}} = 0.173$, $p < 0.01$), the relationship between perceived vulnerability and response efficacy (H2) was not supported.

In addition, according to Fritz and MacKinnon (2007), the sample size of this study ($n = 495$) was adequate for mediation analysis.

Therefore, a test of indirect paths was also conducted by applying the procedure of mediating effects evaluation by [Zhao, Lynch, and Chen \(2010\)](#). Table 8 presents the results of four indirect paths linked to career resilience with the values of path coefficient, p-values, t-values, and 95% confidence intervals. The total effects were also evaluated to determine the type of mediation. The findings indicated that perceived vulnerability had no indirect effects on career resilience. Three variables, including perceived severity, self-efficacy, and response efficacy, had significant influences on career resilience mediated by health risk preventative behavior, with t-values >1.96 at a significant level of 5%. Further, the results showed the same direction of the indirect effect and direct effect. Thus, it could be concluded that the mediation effects are complementary ([Zhao et al., 2010](#)).

5. Discussion and conclusion

5.1. Theoretical implications

The Covid-19 pandemic has severely affected the tourism and hospitality industry and created career uncertainty for tourism workers. While career resilience in the general management context has been investigated as reflected in [Mishra and McDonald \(2017\)](#) integrated review of empirical studies on career resilience, a gap remains in terms of how employees in the tourism sector develop career resilience in the face of a pandemic such as Covid-19. Applying the PMT from the health psychology realm to the tourism management context, the current study examined factors behind career resilience among tourism workers in the Covid-19 pandemic. Our findings demonstrate that threat appraisals (perceived vulnerability and severity of the pandemic) and tourism workers' coping appraisals (self-efficacy, response efficacy) are antecedents of tourism workers' health risk preventative behavior and in turn career resilience towards the pandemic. Our results further reveal the role of health risk preventative behavior as a mediation pathway for the indirect effects of threat appraisals and coping appraisals on tourism workers' career resilience. These findings, contribute to the career resilience literature in the tourism domain in several ways.

First, the study advances the stream of research on career resilience among tourism workers in the face of a pandemic. It builds on the limited number of papers into perspectives of career resilience in the face of the Covid-19 pandemic such as [Akkermans, Richardson, and Kraimer \(2020\)](#) and [Hite and McDonald \(2020\)](#) by using a quantitative approach to investigate the development of career resilience within the T&H sector during the crisis. The study also distinguishes itself from prior studies in the tourism domain that have concentrated more on macro-level resilience, that is, industry- or organization-level resilience in the tourism and hospitality context ([Ntounis et al., 2021](#); [Prayag, 2020](#); [Sharma et al., 2021](#)) rather than on individual resilience ([Zheng et al., 2021](#)). This is a considerable gap to address since resilience at the macro level may not be achieved if threat appraisals, self-efficacy, and response efficacy of tourism workers prevent them from developing resilience in general and career resilience in particular.

Second, our results demonstrate the positive links of perceived vulnerability and the severity of the pandemic with the development of

tourism workers' career resilience. These findings advance our understanding of career resilience in crises by adding perceived vulnerability and severity of disease transmission as factors that can activate work-force resilience for their career. This study adds to our understanding of the view that workers perceptions of a pandemic, such as, Covid-19 is a career shock and they need career competencies and resilience to manage it ([Akkermans et al., 2020](#)), rather than the belief that career resilience can organically emerge from such a career shock. Nonetheless, our findings partly resonate with those of some prior inquiries into the positive direct effects of perceived severity and vulnerability on behavioral control ([Ong et al., 2021](#)), the positive direct effects of individuals' perceived severity and vulnerability to COVID-19 on their protective behaviors ([González-Castro, Ubillos-Landa, Puente-Martínez, & Gracia-Leiva, 2021](#)), and the indirect links of perceived threat vulnerability and perceived threat severity with coping mechanisms for resilience among hotel employees ([Ghaderi, Hall, & Beal, 2022](#)) or travelers in the face of the COVID-19 pandemic ([Zheng et al., 2021](#)). Moreover, confirming the positive effects of perceived vulnerability and severity on tourism workers' career resilience, the current study also addresses a knowledge gap in terms of mixed results from prior findings on the positive link of perceived vulnerability with protective behaviors ([González-Castro et al., 2021](#)) and the negative link of vulnerability with resilience ([Judkins et al., 2021](#)).

Third, to cast further light on the role of the perceived severity and vulnerability of the pandemic in triggering career resilience among tourism workers, this study examines and provides evidence for the role of worker efficacy, in terms of both general self-efficacy and response efficacy, in underlying the link between perceived vulnerability and severity of the pandemic and career resilience. With its results regarding the positive links of perceived vulnerability or perceived severity on response efficacy or self-efficacy, our study further confirms the findings of previous studies regarding the positive relationship between threat and coping self-efficacy in the general organizational psychology area ([Vagni, Maiorano, Giostra, & Pajardi, 2020](#)). In addition, based on our findings concerning the positive associations of self-efficacy and response efficacy with health risk preventative behavior as well as career resilience, the current study expands the body of empirical studies on the positive links of self-efficacy and response efficacy with preparedness for terrorism ([Wirtz & Rohrbeck, 2017](#)), cancer preventive behaviors ([Zare Sakhvidi et al., 2015](#)), emergency nurses' proactive protection motivation ([Leigh et al., 2020](#)), travelers' protection motivation ([Zheng et al., 2021](#)), and hotel employees' protection motivation ([Ghaderi et al., 2022](#)).

This study departs from the extant literature by offering evidence for the mediating role of health risk preventative behavior for the positive effects of perceived threat vulnerability, perceived threat severity, response efficacy, and self-efficacy on career resilience. This fills a gap in prior studies, which have largely focused on coping mechanisms as mediators for the indirect links of perceived threat vulnerability or perceived threat severity with resilience ([Ghaderi et al., 2022](#); [Zheng et al., 2021](#)). Furthermore, while the current study delves into the mediation pathway of health risk preventative behavior for response efficacy or self-efficacy and resilience, some prior studies have

Table 8
Results of mediating testing.

Hypothesis	Path	Total effect		Direct effect		Indirect effect			Confidence Interval (95%) Bias Corrected		Mediation type
		β	p-values	β	p-values	β	p-values	t-values			
									Lower	Upper	
H14a	PV → PB → CR	0.133***	0.001	0.135***	0.001	−0.002 ^{ns}	0.778	0.282	−0.030	0.097	Non mediation
H14b	PS → PB → CR	0.128***	0.003	0.096***	0.023	0.032**	0.016	2.418	0.014	0.060	Complementary mediation
H14c	SE → PB → CR	0.150***	0.005	0.093*	0.083	0.057***	0.004	2.886	0.030	0.097	Complementary mediation
H14d	RE → PB → CR	0.328***	0.000	0.226***	0.000	0.102***	0.000	3.492	0.058	0.154	Complementary mediation

^{ns} non-significant, *p < 0.1, **p < 0.05, ***p < 0.01.

concentrated on protection motivation as a mediation mechanism for the indirect effect of response efficacy or self-efficacy on cautious contact (Ghaderi et al., 2022) or cautious travel (Zheng et al., 2021).

Finally, the study's findings provide further empirical support for PMT (Floyd et al., 2000) by lending credence to the role of cognitive processes, comprising perceptions towards the pandemic and perceived efficacy, in facilitating protective behavior (i.e., health risk preventative behavior) and in turn career resilience. PMT has been applied predominantly to common health risk behaviors such as disease prevention (Anderson et al., 2020) or vaccination uptake (Ling, Kothe, & Mullan, 2019) and rarely to protective behaviors in a pandemic setting (Nguyen-Phuoc, Oviedo-Trespalacios, Nguyen, Dinh, & Su, 2022; Tang, Chen, Lin, & Feng, 2021; Zheng et al., 2021). Our study applies this theory not only to a pandemic context but also to the tourism sector. Moreover, while PMT merely holds that threat appraisals (e.g., perceived vulnerability and severity) and coping appraisals (e.g., self-efficacy, response efficacy) are cognitive processes behind protective behaviors, our findings further demonstrate that self-efficacy and response efficacy can function as cognitive mediational mechanisms for the relationships between perceived severity and health risk preventative behavior. Additionally, the present research goes further by presenting insights into the relationships between cognitive mediational mechanisms of protective behavior and career resilience. It provides evidence that based on the perceived severity of the pandemic, tourism employees are more likely to develop career resilience by first developing response efficacy and then engaging in health risk preventative behavior.

5.2. Managerial implications

Practically, by exploring factors affecting career resilience within the T&H workforce in the Covid-19 pandemic, the findings of the study offer several implications for human resource (HR) managers and the managers of tourism businesses. First, response efficacy and health risk preventative behavior are found to be the two strongest predictors of career resilience during the Covid-19 pandemic. As response efficacy was perceived by workers as the degree to which performing the suggested behaviors can prevent infection while working, T&H organizations can promote workers' career resilience by employing several key initiatives. First, it is essential to enhance staff and managers' awareness of preventative measures from reliable sources such as the World Health Organization (WHO) or national/ local public health authorities. For example, the World Health Organization (2020) has provided measures to prevent transmission of Covid-19 including frequent hand-washing or disinfection with alcohol based hand sanitizer, respiratory hygiene, physical distancing of at least 1 m or wearing of masks. Second, businesses need to ensure the availability of quality assured protective equipment (e.g., masks, gloves, alcohol-based hand sanitizers) that can help employees feel safe at work. Third, to encourage workers to carry out preventive behavior, HR managers should organize training sessions for their employees, for example, training on how to prevent virus transmission while working or how to maintain physical and mental health during the pandemic, or how to effectively use personal protective equipment and devices to prevent virus transmission. Fourth, communication and cooperation between management and workers is crucial to help employees to improve their self-efficacy, which is a determinant of their resilience in the uncertain working conditions. In

summary, training and communication are key measures for employees to understand the importance of health preventative behavior in protecting themselves, their organizations and their customers.

The significant influence of perceived vulnerability on career resilience also has several implications. First, preparedness and response plans are recommended for managers of tourism businesses to help their employees increase their awareness of the perceived severity of the disease. Once, workers are more aware of their potential for infection, for example, the more resilient they will be during the pandemic. Particularly, managers should regularly communicate with their employees about the risk of exposure to the disease within the workplace, update the spread of virus in the community including the severity and spread of viral variants, and support employees with occupational health and safety advice during this difficult time. Moreover, managers and HR managers should trigger a risk assessment system with policies and procedures for prompt identification and isolation of sick people and active steps for the prevention of virus spread (Occupational Safety and Health Administration, 2020). Workers are believed to be more proactive and resilient when they see urgent and serious responses to the pandemic. Finally, employers should regularly update the risk assessment to flexibly change business plans (e.g., downsizing operations or service delivery) and human resources (e.g., increasing rates of worker absenteeism, changing work shifts/work hours) in the organization when facing the possibility of a work-related exposure risk of the outbreak.

5.3. Limitations and suggestions for further research

Despite the theoretical and managerial implications provided, this study has limitations that suggest opportunities for further research. First, the current research collected data from Vietnam, which may have different levels of Covid-19 outbreaks than other countries or regions, which could result in differences in respondents' perceived threats. An extension of the current research might also entail examining the career resilience of T&H workers from other research contexts. For example, a comparison of career resilience between different countries and regions. Work-related risks can also include work-related health risks and work-related psychosocial risks (Kortum, Leka, & Cox, 2010); however, this study is limited to the study of the process of the health risk perceptions informing career resilience within the T&H industry. Future research, therefore, could explore the influences of other kinds of work-related risks on career resilience. Perceptions of work-related risks are also important in studying career resilience in the context of global health-related crises policies or strategies supporting the workforce or industry and coping with the Covid-19. As a result, government or business level research should also be considered in future research. Finally, in future studies, sociodemographic data could be evaluated as control or moderating variables in the model to comprehensively understand the formation of career resilience in the context of health-related crises.

Acknowledgement

This research is funded by Funds for Science and Technology Development of the University of Danang under project number B2020-DN04-38"

Appendix A. Survey about perception of career resilience in the tourism and hospitality industry in the COVID-19

Dear Sir/ Madam,

We would like to invite you to participate in a research project on the perception of career resilience in the Covid-19 crisis by responding to the below questionnaire.

We would be grateful if you could take 15 min to complete this survey. Your information and responses are very important for our project's success and are kept confidential.

Thank you very much for your cooperation!

Please tick ✓ in the box with the best corresponds to your answer.

Part 1: Description of Your Current Situation

1. Please describe your current job status

- ☐ I am working full-time in the hospitality and tourism industry.
☐ I am working part-time in the hospitality and tourism industry.
☐ I quit my job in the hospitality industry and moved on to another career.
☐ I quit my job in the hospitality industry and but has not had another job yet.

2. Your current or most recent job position in the tourism and hospitality industry is

- ☐ Manager ☐ Supervisor ☐ Employee

3. Your field of work in the tourism and hospitality industry

- ☐ Accommodation ☐ Food and Beverage
☐ Travel ☐ Tourism department
☐ Tourist attraction ☐ Transport facility
☐ Others

4. Your work experience in the tourism and hospitality industry

- ☐ <3 years ☐ 3–5 years ☐ 5–10 years ☐ >10 years

5. Have you ever worked in any job other than the tourism and hospitality industry?

- ☐ Yes ☐ No

Part 2: Perception of career resilience in the tourism and hospitality industry in the COVID-19

On a scale of 1 to 7, “Strongly disagree” to “Strongly agree” please demonstrate the level of agreement of you of the following statement.

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neutral (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
1. Your perception towards the risk of COVID-19							
I am likely to be exposed to coronavirus while working	☐	☐	☐	☐	☐	☐	☐
I am likely to be infected by customers while working	☐	☐	☐	☐	☐	☐	☐
I am likely to be infected by colleagues while working	☐	☐	☐	☐	☐	☐	☐
Covid-19 is a serious threat	☐	☐	☐	☐	☐	☐	☐
There are serious health consequences if one is infected with Covid-19	☐	☐	☐	☐	☐	☐	☐
With my health condition, I am at high risk with Covid-19	☐	☐	☐	☐	☐	☐	☐
2. Self-efficacy							
Taking measures to prevent Covid-19 infection during working is easy for me	☐	☐	☐	☐	☐	☐	☐
I have enough essential skills to protect myself from being infected with Covid-19 while working	☐	☐	☐	☐	☐	☐	☐
I have enough personal protective equipment to protect myself from being infected with Covid-19 while working	☐	☐	☐	☐	☐	☐	☐
I could learn to perform preventive measures to protect myself from being infected with Covid-19 while working	☐	☐	☐	☐	☐	☐	☐
I believe I am not being infected with Covid-19 while working	☐	☐	☐	☐	☐	☐	☐
3. Response efficacy							
Efforts of the H&T industry to keep me safe from Covid-19 threats are effective	☐	☐	☐	☐	☐	☐	☐
Personal protective equipment are effective for me to prevent the infection of Covid-19	☐	☐	☐	☐	☐	☐	☐
Available health and safety measures to prevent the infection of COVID-19 in my workplace are effective	☐	☐	☐	☐	☐	☐	☐
Precautions provided by my workplace to prevent the infection of Covid-19 are helpful	☐	☐	☐	☐	☐	☐	☐
4. Health risk preventative behavior							
I use all personal protective equipment (e.g, masks, gloves, hand sanitizers) while working during the pandemic	☐	☐	☐	☐	☐	☐	☐
I adopt all preventative measures to protect myself while working during the pandemic	☐	☐	☐	☐	☐	☐	☐

(continued on next page)

(continued)

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neutral (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
I actively attend training for health protection for H&T workers	☐	☐	☐	☐	☐	☐	☐
I ask my guests and colleagues to take measures to prevent virus transmission while working	☐	☐	☐	☐	☐	☐	☐
5. Career resilience							
I am making my best effort to keep working in the H&T industry despite of the pandemic impacts	☐	☐	☐	☐	☐	☐	☐
I am making my best to achieve my job goals in the H&T industry despite of the pandemic impacts	☐	☐	☐	☐	☐	☐	☐
Having to cope with stress due to the pandemic makes me stronger with the career in the H&T industry	☐	☐	☐	☐	☐	☐	☐
I believe I could bounce back in the H&T industry after the pandemic	☐	☐	☐	☐	☐	☐	☐
I am confident I can perform my job in the H&T industry well despite of the pandemic impacts	☐	☐	☐	☐	☐	☐	☐
Dealing with the pandemic is an opportunity for me to growth in the H&T industry	☐	☐	☐	☐	☐	☐	☐
Under the pressure due to the pandemic, I still stay focused and think clearly with my job in the H&T industry	☐	☐	☐	☐	☐	☐	☐

Part 3: Personal Information

1. Living area

- ☐ Da Nang ☐ Ho Chi Minh
☐ Ha Noi ☐ Others

2. Gender

- ☐ Male ☐ Female

3. Age

- ☐ 15–24 ☐ 35–44 ☐ 55–64
☐ 25–34 ☐ 45–54 ☐ 65 and above

4. Education

- ☐ High school or equivalent ☐ Bachelor's degree
☐ Intermediate or college ☐ Post-graduate
☐ Others

5. Marital status

- ☐ Single
☐ Married but no children
☐ Married and have children

6. Monthly income before COVID-19

- ☐ Under US\$300 ☐ From US\$500 to US\$800
☐ From US\$300 to < US\$500 ☐ Over US\$800

Thank you very much!

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