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The Role of Resilience, Risk Perception, Efficacy Belief on Protective Behaviours and Travel Intention During a Crisis

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Abstract

COVID-19 has caused an unparallelled crisis for the global tourism industry. This study examines the determinants of tourists' intended self-protective behaviours and travel intentions during this crisis, drawing on Protection Motivation Theory (PMT) and psychological resilience. Additionally, reflective-formative hierarchical component models (HCMs) of risk perception, self-efficacy, and response efficacy are proposed for capturing their intricate and multifaceted nature. Empirical results indicate that self-efficacy strongly drives protective behaviours, while psychological resilience positively impacts travel intentions and moderates the effect of self-efficacy. Furthermore, the integration of Risk Homoeostasis Theory (RHT) with PMT sheds light on the role of descriptive norms in weakening the relationship between response efficacy and protective behaviours. The study provides an integrated theoretical framework explaining tourist behaviours during crisis.

Keywords

protection motivation, resilience, travel intention, hierarchical component model, PLS-SEM

Introduction

The COVID-19 pandemic, first reported in Wuhan, China, in December 2019, has had an unprecedented impact on global tourism, significantly disrupting international mobility through travel restrictions and lockdowns (Gössling et al., 2020). Compared to previous epidemics, such as SARS or MERS, COVID-19 has led to a more extensive economic downturn, with global tourism suffering a 72% decline in international arrivals from January to October 2020 (UNWTO, 2020). Vietnam, recognised for its effective pandemic response, managed to maintain positive economic growth during COVID-19 through rapid implementation of self-protective measures (Huynh, 2020; Quy Nguyen-Phuoc et al., 2023; Trinh Minh, 2020). On September 23, 2020, Vietnam reported only 1,069 COVID-19 cases and 35 deaths, illustrating the success of these interventions (Huaxia, 2020). Vietnam's ability to balance public health safety with economic growth during the pandemic provides valuable insights into how individual protective behaviours, such as mask-wearing and social distancing, influence tourism recovery. Research in Vietnam's context is therefore crucial for understanding how these self-protective behaviours can influence travel decisions during future health crises.

According to prior literature on the protection motivation of infectious diseases, research in psychology has mainly employed the PMT to investigate the antecedents of this concept. Key antecedents studied are comprised of risk perception, self-efficacy, response efficacy (Girish et al., 2023), perceived benefit (Huang et al., 2020), perceived rewards, and perceived response cost (Ryu et al., 2023). Previous studies have also explored various

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outcomes, such as visit frequency (Ryu et al., 2023), behavioural intention (Girish et al., 2023), satisfaction (Huang et al., 2020), and travel intention (Alhemimah, 2023). However, considering the most popular antecedents of risk perception and efficacy beliefs, prior studies often focus solely on the multi-dimensional nature of risk perception. Even so, the two primary forms of risk perception, perceived severity and perceived vulnerability, have never been combined into a single construct of *overall risk perception* within the COVID-19 pandemic context, with the exception of Kojan et al. (2022), which excluded the findings related to this formative construct due to insignificant results. Furthermore, when they were included in other research, they were either measured and investigated separately or treated as interchangeable components (Trifiletti et al., 2022). In other words, they have not acknowledged the distinct conceptual nature of each form, nor have they recognised that each form individually holds importance in a pandemic setting. In addition, efficacy belief is often operationalised as the combination of self-efficacy and response efficacy (Rimal & Real, 2003). This is a complex and multifaceted concept that can vary across divergent contexts (Bandura, 1999) but is often examined as separate constructs (Alhemimah, 2023). Individuals may exhibit different levels of response efficacy and self-efficacy depending on the behaviours being considered that may require a certain level of skills to perform (Bandura, 1999). In the COVID-19 context, a variety of self-protective behaviours have been recommended by various authorities (Fontes et al., 2022), contributing to an intricate and multifaceted approach to efficacy beliefs. A more in-depth investigation of this concept and practice from a multifaceted perspective would not only strengthen the concept itself but also provide meaningful implications for future health crises.

While previous studies such as Girish et al. (2023) and Zheng et al. (2021) have successfully identified the associations between efficacy beliefs, protection motivation and travel-related behaviours, they did not successfully reflect the multifaceted nature of these concepts. This study, therefore, considers protective behaviours from both active engagement and passive avoidance perspectives to better reflect its multifaceted nature. This means that self-efficacy, response efficacy and self-protective behaviours included both active and avoidant components. A Hierarchical Component Models (HCMs) approach was applied to discover and confirm their multidimensionality as well as enable an in-depth analysis of how their underlying dimensions interact and form higher-order components that influence efficacy and behaviours.

Besides, while the PMT generally describes how individuals cognitively evaluate a specific risk and engage in protective behaviours (Maddux & Rogers, 1983), in another scenario, considering resilient people, who are characterised by a strong resistance to help them alleviate psychological threat perception in high-risk situations, they may or may not engage in protective behaviours, but are likely to have an intention to travel due to their adaptability and resistance (Zheng et al., 2021). Attention has been drawn to the psychological resilience of the destination and hospitality industries (Rittichainuwat et al., 2020), but scholarly research on individuals' psychological resilience is limited in the COVID-19 tourism context.

This paper is therefore concerned with intended self-protective behaviours and their impact on travel intention among Vietnamese from a PMT perspective and investigates the influence of individuals' resilience on their self-protective behaviour and travel intention. More particularly, it examines the relationships between individuals' perceptions of risk, self-efficacy, and response efficacy, as well as protective behaviours and, as a result, travel intention, while also investigating the moderating influence of descriptive norms on the association between response efficacy and protective behaviours. The research's results could provide meaningful insights and suggestions for business managers and destination management organisations to develop tourism strategies and prepare to protect the tourism and hospitality sectors in the event of future health crises.

Theoretical Foundation and Hypothesis Development

This study utilises PMT and psychological resilience for health crisis travel. The purpose is to explore the impact of risk perception, response efficacy, self-efficacy, resilience, and descriptive norms on the intended self-protective behaviours. This, in turn, influences travel intention during the crisis, as illustrated in the theoretical framework (Figure 1).

Protection Motivation Theory

Earlier applications of PMT focussed on examining how individuals react to threats and risks, resulting in the activation of their protection motivation process. The protection motivation can be explained by the two cognitive processes: threat appraisal and coping appraisal, impacted by both environmental and intrapersonal factors. Threat appraisal involves evaluating the perceived threat severity and one's perceived vulnerability to it. On the other hand, coping appraisal relates to people' responses to the threat, incorporating self-efficacy – one's confidence in performing a certain action, and response efficacy – the belief in the effectiveness of these actions

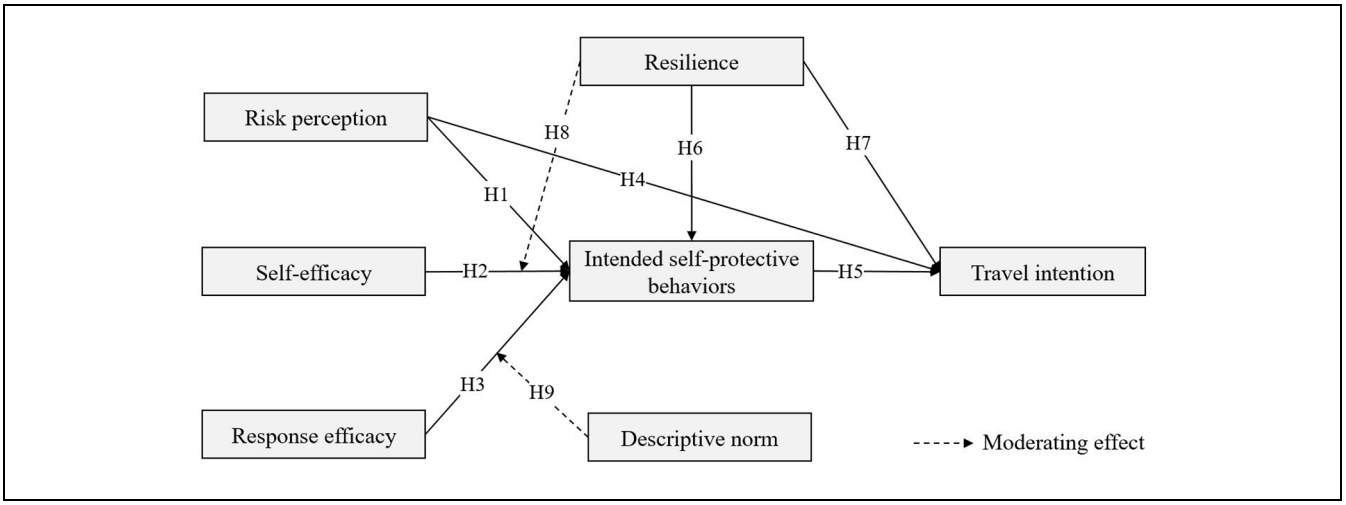

Figure 1. Research framework.

(Maddux & Rogers, 1983). The literature reveals that several studies have utilised perceived risk and efficacy belief to predict individuals' behaviours, drawing on Risk Perception Attitude (RPA) framework (Abbaspour et al., 2023; Su et al., 2022). Unlike PMT, which provides a comprehensive model for understanding the cognitive processes leading to protection motivation and subsequent behaviour change, the RPA framework initially features a segmenting approach. The RPA framework categorises individuals into groups based on the interaction between risk perception and efficacy beliefs, aiming to predict behaviour more directly (Liu-Lastres et al., 2019; Rimal & Real, 2003).

PMT has been extensively used to clarify the engagement of preventive behaviours in various contexts, including the adoption of health-conscious habits (Scarpa & Thiene, 2011), safe food choice behaviours (Chen, 2016), self-protective behaviours in ride-hailing services (Quy Nguyen-Phuoc et al., 2023) and the vaccinations' acceptance (McNeill et al., 2016). However, the relationships among these concepts sometimes contradict Maddux and Rogers's (1983) original hypotheses. For example, young drivers who realised they were more susceptible to the hazards of drunk driving were surprisingly more inclined to engage in (Greening & Stoppelbein, 1999). Additionally, Girish et al. (2023) argue that the protection motivation of individuals visiting travel bubble destinations is not impacted by the perceived severity and vulnerability of COVID-19, which are factors considered in the appraisal of threat. These inconsistencies underscore the need for further research to explore the complex interactions between risk perception, efficacy, and protective behaviours in the PMT across various research contexts.

Self-protective behaviour is defined as a response function to customers' perceived risks, specifically referring to actions customers take to reduce the likelihood of an adverse outcome or to lower personal or group vulnerability to risk (Taylor, 1974). In the context of COVID-19, self-protective measures were recommended by most governments as they were crucial to preventing the spread of the virus and ending a health crisis (Figueroa, 2017). Self-protective behaviours including washing hands, wearing face masks, keeping distance, etc. were adopted by both tourists and residents, due to their perception of the threat and their efficacy to avoid any potential negative consequences. The PMT has been employed to explore the role of travel-related health information as a form of protection motivation (Alhemimah, 2023). The link between risk perceptions and self-protective behaviours (Ryu et al., 2022; Zhou et al., 2022), and the appraisal of threat, coping and motivation for protective behaviours of tourists (Girish et al., 2023; Shah Alam et al., 2023). The findings illustrated that the PMT is appropriate for the tourism context.

In this study, the PMT was selected as the primary conceptual foundation, and the inclination to adopt self-protective behaviours in response to COVID-19 (or intended self-protective behaviours) is conceptualised as a form of protection motivation. This study examined the determinants of people's intended self-protective behaviours when travelling in the COVID-19 context. Additionally, risk perception is conceptualised as an appraisal of the threat posed by COVID-19, specifically regarding an individual's perception of the severity of the virus and their vulnerability to infection while travelling. In addition, response efficacy and self-efficacy are considered as the coping appraisal. The former relates to an individual's perceived performing confidence in their ability to take self-protective actions to avoid COVID-19, while the latter pertains to the effectiveness of those self-protective

measures. Earlier studies have demonstrated that self-efficacy plays a significant role in influencing intentions related to safe sexual practices (Basen-Engquist & Parcel, 1992), motivating young people to participate in physical activities (Hagger et al., 2001), and encouraging adolescents in New York to engage in behaviours that prevent the spread of AIDS (Goh et al., 1996). Additionally, response efficacy has been identified as positively associated with protection motivation in the context of phishing threats (Jansen & van Schaik, 2018), and wildfire risks (I. M. Martin et al., 2007; R. Martin et al., 2007). As such, the following hypotheses were proposed:

H1: Self-efficacy has a positive association with intended self-protective behaviours.
H2: Response efficacy has a positive association with intended self-protective behaviours.
H3: Risk perception has a positive association with intended self-protective behaviours.

Self-Protective Behaviours and Travel Intention

Behavioural intention is defined as a person's intention to engage in a specific behaviour in the future (Ajzen, 1991). The PMT posits that the stronger the protection motivation, the more likely it is that this motivation will manifest actual behaviours (Milne et al., 2000). Prior research employing PMT in the travel context has aimed at motivating people to engage in protective behaviours, thereby adjusting their travel behaviours accordingly (Alhemimah, 2023; Girish et al., 2023; Hedayati et al., 2023; Zheng et al., 2021). Rogers (1975) emphasised that protection motivation serves as an intermediary factor, which stimulates, maintains, as well as guides actions. Girish et al. (2023) demonstrated that protection motivation significantly impacts the intention to travel to bubble destinations amid the pandemic. Thus, the protection motivation could lead individuals to the intention to actually travel, under the assumption that they can adopt protective behaviours to avoid infection. As discussed above, intended self-protective behaviours in this study are considered a form of protection motivation, which is expected to trigger the travel intention directly. Therefore, the following hypothesis was proposed:

H4: Intended self-protective behaviours have a positive association with travel intention.

Risk Perception and Travel Intention

Behavioural sociologists posit that risk perception, an individual's subjective evaluation of the severity and vulnerability of risks, is the key factor influencing behavioural changes (Bourque et al., 2013). Generally, tourists tend to travel to safe places or low-risk environments (Farmaki et al., 2019) since they consider safety an essential priority and necessity while travelling (Chua et al., 2020). Therefore, risk perception is widely recognised as a determinant influencing travel intention, decision-making and behaviours (Han et al., 2022; Liang et al., 2023). Tourists exhibit particular concern regarding health-related threats, so risk perception considerably rose within a brief time and negatively impacts travel intention in the COVID-19 pandemic context (Caniëls et al., 2022). Likewise, a higher risk perception may result in a greater inclination to refrain from travelling and change behaviours (Chua et al., 2020; Neuburger & Egger, 2021). Thus, we proposed:

H5: Risk perception has a negative association with travel intention.

Resilience

In the psychological field, resilience generally stands for the ability of individuals to adapt and react to crises or negative events (Luthar & Cicchetti, 2000). In tourism research, this concept has been employed to examine the manner in which tourists react to challenges, sustain their adaptability and recovery during times of crisis, and subsequently influence their travel choices (Zheng et al., 2021). Psychological resilience is believed to enhance people's ability to adapt to threats by improving their adaptive behaviours such as planning and protection (Hua et al., 2018). Therefore, individuals with a certain level of psychological resilience are more likely to evoke self-protective behaviours as a means of adapting to adversity. Moreover, in the tourism context, this psychological resilience may motivate tourists to undertake risky activities, including starting new travel arrangements or the continuation of previously planned journeys, even with an understanding of the potential dangers during the pandemic (Han et al., 2022). Despite a large body of tourism literature on the resilience of tourism destinations, organisations, and communities, the scope of research on individuals' psychological resilience to cope with significant crises, such as travelling during COVID-19 pandemic is quite limited (Zheng et al., 2021). Thus, the following hypotheses were proposed:

H6: Resilience has a positive association with intended self-protective behaviours.
H7: Resilience has a positive association with travel intention.

The Moderating Role of Resilience. Psychological research often commonly considers both self-efficacy and resilience as internal states that determine how an individual

perceives and reacts to adverse situations (Bandura, 1999; Southwick, 2011). While travelling during COVID-19 period, resilient tourists are able to effectively adapt to high-risk situations (Xie et al., 2023). This, coupled with a strong confidence in their own ability to take self-protective actions to avoid infecting COVID-19 (self-efficacy), fosters an adaptive approach towards health and safety. This involves actively and confidently managing risky situations through inclining more with self-protective actions. Both self-efficacy and resilience are intrinsic to the individual. In contrast to individuals with low resilience, high-resilient individuals may exhibit greater behavioural adaptability, specifically in terms of self-protective behaviours, when travelling during a pandemic. Thus, we proposed:

*H8: Resilience moderates the positive association between self-efficacy and intended self-protective behaviours, such that the relationship will be stronger for individuals with higher (*vs. *lower) levels of resilience*.

Descriptive Norms

Descriptive norms refer to the social influence exerted when individuals observe important others, such as friends, family, or colleagues, engaging in specific behaviours, thus creating a normative pressure to follow suit (La Barbera & Ajzen, 2020). These norms strongly influence behaviours because they involve a straightforward cognitive evaluation based on the behaviours of others, leading people to easily comply with these norms through simple imitation. However, descriptive norms can sometimes result in counterproductive outcomes if they are presented inappropriately (Elgaaied-Gambier et al., 2018). Specifically, in the scenario of adopting self-protective behaviours, individuals' perceptions that their close social circles (such as travel companions) are engaging in protective measures, combined with the belief in the effectiveness of these measures (response efficacy), could lead to a perceived reduction in their personal risk.

Previous research on influenza prevention found that individuals' preventive behaviours, such as mask-wearing and social distancing, were influenced by social norms; people were more reluctant to adopt these behaviours if they felt others were not doing so (Kozlowski et al., 2010). Similarly, Parsons et al. (2010) further noted that individuals are more inclined to take risks when they perceive the situation as less risky, while perceived higher risks lead to more cautious behaviour. In the COVID-19 context, Jiang et al. (2022) found that social norms exerted a negative moderating role in the association between perceived effectiveness and social-distancing behaviour. Specifically, if individuals perceive a strong social norm for practicing social distancing within their social circle, people may feel less of a need to practice it themselves, even if they personally believe in its effectiveness. This suggests that if travellers perceive a reduced personal risk due to the protective measures practiced by those around them, and consider these measures effective, they may engage in riskier behaviours to maintain a perceived balance in personal risk, potentially reducing their own intention to engage in self-protective behaviours. Thus, the following hypothesis was proposed:

*H9: Descriptive norm moderates the positive relationship between response efficacy and intended self-protective behaviours, such that the relationship will be weaker when descriptive norm is higher (*vs. *lower)*.

Research Methods

Research Setting: The Context of COVID-19 in Vietnam

From May 30 to September 30, 2021, several provinces and cities were in turn placed under social distancing in an effort to quickly prevent the transmission of COVID-19 and mitigate the number of cases and fatalities on national territory. Throughout this short and exceptional time, many Vietnamese people found themselves in a circumstance in which they wished to go travelling but were unable to do so due to the health crisis, which prevented travel between nations and interpersonal contact. They were instructed to remain indoors and could only leave the house for vital services such as purchasing food, medicine, or other emergency situations. At the same time, they must be approved by the government to travel to provinces other than their own with specific reasons.

Measurement Scales

A survey questionnaire was developed to measure Vietnamese travellers or non-travellers' demographic information and all latent constructs. The questionnaire included the study constructs, socio-demographic characteristics, and travel information. The risk perception as a second-order construct adapted from Lwin and Saw (2007) and Wang et al. (2019) is represented by perceived vulnerability and perceived severity. Similarly, the scale of self-efficacy, response efficacy and intended self-protective behaviour were adapted from Bandura (2006), Wang et al. (2019), Rimal and Real (2003), I. M. Martin et al. (2007), and R. Martin et al. (2007) and are considered second-order constructs. However, the dimensions representing self-efficacy and response efficacy were identified through Exploratory Factor Analysis (EFA) conducted on each construct. Seven items were adapted to measure respondents' resilience (Connor & Davidson, 2003; Hua et al., 2018; Xie et al., 2023; Zheng et al.,

2021). A three-item scale was chosen to measure descriptive norm, and another three items was selected to detect individuals' travel intention (Ajzen, 2002; Lam & Hsu, 2006). All the research constructs were assessed using a 7-point Likert scale of 1 (strongly disagree) to 7 (strongly agree). The first version of the scale was delivered to a small number of participants as a pilot stage in May 2021. Their responses to the scales were carefully observed, and they were asked to provide feedback and verify the comprehensibility of the questionnaire's wording, with only a few minor changes made before the final version of the scale was shaped.

Data Collection

The survey was administered online in June 2021, during the pandemic's fourth wave, utilising Google Forms. Conducting the survey online facilitates efficient access to larger populations of interest that may be difficult to approach due to challenges in locating or identifying them (Rao, 2008). The target population of this survey were residents in Vietnam territory who potentially be travellers in the near future during the pandemic. The survey link was disseminated through social networks, including Facebook and Zalo, the two predominant social media platforms in Vietnam (A. N. Nguyen et al., 2021). A convenience sample of 619 respondents completed the questionnaire. Several incomplete filled-out surveys, extreme outliers, and unengaged responses were removed. Finally, there were 603 valid cases in total. Table 1 provides the respondents' demographic profile, including 360 females (59.8%) and 243 males (40.3%). A significant majority of respondents (98.2%) have attained high levels of education, with 378 holding university degrees and 214 obtaining postgraduate or doctoral degrees. The age distribution of the respondents reveals that the largest segment, consisting of 252 individuals (41.8%), is under the age of 24, indicating a relatively young demographic among the participants. Employment statistics indicate that 210 of the participants worked in the public sector (34.8%), 148 in the private sector (24.5%), and 138 as freelancers (22.9%). This reflects a diverse range of professional backgrounds among the participants.

Table 1. Demographics of the Sample (603 Participants).

Characteristic	Frequency	Percent
Gender		
Male	243	40.3
Female	360	59.8
Age		
18–24	252	41.8
25–34	133	22.1
35–44	111	18.4
45–54	75	12.4
55–65	31	5.1
>65	1	0.2
Educational level		
Postgraduate degree	214	35.5
Bachelor degree	378	62.7
High school graduation	7	1.2
Others	4	0.7
Occupation		
State employees	210	34.8
Private company employees	148	24.5
Freelancer	138	22.9
Others	107	17.7

Common Method Bias (CMB)

Before gathering the data, the questionnaire was explicitly formulated with a statement to ensure that respondents fully understand the academic research nature of the survey and its non-commercial purpose. Following the data collection, where the assessments were self-reported, the risk associated with CMB was assessed using Harman's single-factor test with principal axis factoring analysis (Podsakoff et al., 2003). The analysis revealed 10 factors with an eigenvalue greater than one, accounting for 76% of the variance. The first factor accounts for 26% of the variance only, thus illustrating that no single factor emerged. Furthermore, the variance inflation factor (VIF) values were assessed via a full collinearity test. The VIF values were below 5, suggesting no evidence of multicollinearity between the variables. To summarise, these figures demonstrate that CMB does not appear to be a problem in our study.

Data Analysis

The data was analysed across several stages. First, we used SPSS 25.0 to generate descriptive statistics and conduct an EFA on response efficacy and self-efficacy scales to refine items and measure and verify inner structure with sample. To validate the measurement model and assess construct structural relations, SmartPLS 4.0 was used to perform a PLS-SEM.

The reflective-formative hierarchical components or a two-step repeated indicator approach were employed to assess the risk perception, response efficacy, and self-efficacy of the HCM (Hair et al., 2017). With reflective-formative hierarchical constructs, this approach is believed to be more reliable (Duarte & Amaro, 2018; T. H. H. Nguyen, 2020). An evaluation of the measurement model was conducted to test the reliability and validity of the constructs. Subsequently, the weights of all lower-order constructs on the designated second-order construct and multicollinearity concerns were analysed. The model's predictability for self-protective behaviours and travel intention was assessed using a structural model

that included higher-order constructs, including self-efficacy, response efficacy, risk perception, and resilience. Finally, path coefficients, prediction accuracy (R^2), and predictive relevance (Q^2) were identified.

Results

Item Refinement

To refine the measurement items of sell-efficacy and response efficacy, a quantitative approach was employed. An EFA was conducted to investigate the dimensionality of these two constructs. Principal component factor analysis using varimax rotation was undertaken for the EFA analysis. The values obtained for the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy surpassed the threshold of 0.5 recommended by Kaiser (1974) for these two constructs, revealing that the EFA application was appropriate. In addition, Barlett's Test of Sphericity indicated significant correlations between the factors on each of these constructs based on its significant value.

The factor analysis revealed that one item from each of the self-efficacy (SE6) and response efficacy (RE6) constructs had to be removed due to low factor loadings (below 0.5). For the Self-efficacy construct, two dimensions emerged, explaining 75.82% of the total observed variance. The two dimensions were named Proactive Self-efficacy (Dimension 1) and Avoidant Self-efficacy (Dimension 2). Similarly, the response efficacy construct indicated a two-dimensional latent structure, accounting for 80.41% of the variance. These two dimensions were named Proactive response efficacy (Dimension 1), Avoidant response efficacy (Dimension 2). Accordingly, Proactive efficacy refers to individuals' belief in actively taking actions to reduce their infection risk (e.g., the belief in seeking travel advice, preparing sufficient PPE and sanitising gel), while Avoidant efficacy relates to their belief to avoid situations with a high risk of infection (e.g., the belief in avoiding entering enclosed spaces, using public transport). The Efficacy beliefs captured by these dimensions' items align with local safety guidelines to prevent COVID-19 outbreak. This structure is also in line with findings by Fontes et al. (2022), where health-protective behaviours are comprised of active protective behaviours and avoidant behaviours. The Cronbach's alpha values for each of the mentioned dimensions ranged from .908 to .936, surpassing the threshold value of .7. This indicates that the measured constructs exhibit satisfactory levels of internal consistency.

Assessment of the Measurement Model: First-Order Factor Model

All 13 constructs were reflectively measured and evaluated for their validity and reliability in the first order (Hair et al., 2019). First, the analysis revealed that all Cronbach's alpha surpassed the threshold of .7, indicating the measurement model is reliable. Second, the factor loadings, CR and AVE values were used to assess convergent validity. The results reveal that the majority of item factor loadings exceeded the threshold of 0.7 (Hulland, 1999). However, items R5, R6, R8, ISB1, ISB4, and ISB6 fell below this threshold. By eliminating these six items, the CR and AVE values of their respective constructs were improved. The outer loadings of ISB2 and ISB3 ranged from 0.6 to 0.7. However, these items were retained because their removal did not have a substantial impact on the CR and AVE values of the constructs they belong to. Following the removal of the above-mentioned items, the CR values of all constructs met the minimum recommended 0.7 threshold (Hair et al., 2013), and AVE values were satisfactory, ranging from 0.524 to 0.909 (as presented in Table 2). In summary, the measures of the 13 first-order constructs in the model demonstrated high levels of convergent validity.

Lastly, discriminant validity was examined by the value of heterotrait-monotrait ratios (HTMT) and Fornell-Larcker criterion. Table 3 reveals that none of lower order constructs' HTMT values surpassed 0.85 threshold, indicating the strong discriminant validity of the model (Hair et al., 2017). Furthermore, in terms of Fornell-Larcker criteria results, the AVE values marked in bold suggest that the strongest correlations between each construct and itself are detected within each column (Table 4). Therefore, the reliability and validity standards were met, supporting the measurement model.

Assessment of the Measurement Model: Second-Order Factor Model

In this study, self-efficacy, response efficacy and risk perception were considered second-order formative constructs, as each of these constructs is comprised of two distinct attributes that are forming the constructs (Hair et al., 2017). Second-order measurement models were evaluated for examining construct-component hierarchical relationships. It is recommended that the indicator weight should exceed 0.2 (Chin, 1998). All indicators, as illustrated in Table 5 and Figure 2, hold a positive weight exceeding 0.2. Specifically, proactive efficacy showed the stronger effect on self-efficacy and response efficacy compared to avoidant efficacy. Perceived vulnerability illustrated a stronger impact on risk perception than perceived vulnerability. The significance of the lower order indicators' weights is determined using a bootstrapping technique with 10,000 samples. The T statistics for these weights are well above 1.96 (95% CI; Table 5). To determine the extent of multicollinearity, the variance inflation factor (VIF) values was assessed (Fornell &

Table 2. Assessment of the First-Order Factor Model.

Measurement scales	Mean (SD)	Loadings	CR	AVE
Self-efficacy's dimension 1 – Proactive self-efficacy (PSE)			0.908	0.727
I am confident to …				
SE1_Seek travel advice regarding COVID-19 before and during the trip	6.13 (1.25)	0.834		
SE2_Check the local COVID-19 news frequently/daily during travelling	6.31 (1.10)	0.851		
SE3_Follow the local guidelines to prevent infection with COVID-19	6.39 (1.05)	0.849		
SE4_Use mobile phone apps to keep track of the places I visit as a means of infection prevention (e.g. Bluezone)	6.32 (1.15)	0.755		
SE5_Prepare sufficient PPE and sanitising gel for travelling	6.52 (0.99)	0.773		
Self-efficacy's dimension 2 – Avoidant self-efficacy (ASE)			0.913	0.790
I am confident to…				
SE7_Avoid visiting places where social distancing is difficult to adhere to	6.04 (1.27)	0.822		
SE8_Avoid entering enclosed spaces	6.03 (1.30)	0.887		
SE9_Avoid using public transport	5.89 (1.34)	0.827		
SE10_Avoid entering crowded places (events, festivals, bars,…)	6.14 (1.24)	0.862		
Response efficacy's dimension 1 – Proactive response efficacy (PRE)			0.936	0.793
It could be efficient to reduce risk if I…				
RE1_Seek travel advice regarding COVID-19 before and during travelling	6.33 (1.08)	0.872		
RE2_Check the local COVID-19 news frequently/daily during travelling	6.39 (1.03)	0.875		
RE3_Follow the local guidelines to prevent infection with COVID-19	6.43 (0.95)	0.843		
RE4_Use mobile phone apps to keep track of the places I visit as a means of infection prevention (e.g. Bluezone)	6.24 (1.18)	0.761		
RE5_Prepare sufficient PPE and sanitising gel for travelling	6.51 (0.92)	0.838		
Response efficacy's dimension 2 – Avoidant response efficacy (ARE)			0.925	0.813
It could be efficient to reduce risk if I…				
RE7_Avoid visiting places where social distancing is difficult to adhere to	6.22 (1.12)	0.806		
RE8_Avoid entering enclosed spaces	6.22 (1.13)	0.859		
RE9_Avoid using public transport	6.17 (1.15)	0.875		
RE10_Avoid entering crowded places (events, festivals, bars,…)	6.31 (1.09)	0.845		
Resilience			0.914	0.687
R1_I am making my best effort to travel, despite of the COVID-19 impacts	2.57 (1.97)	0.812		
R2_I believe I will achieve my travel goals despite of the COVID-19 impacts	2.84 (1.91)	0.853		
R3_I can deal with whatever comes in travel during the COVID-19 pandemic	2.84 (1.93)	0.876		
R4_I can cope with stress in travel during the COVID-19 pandemic	3.22 (1.95)	0.862		
R7_I am able to adapt to changes in travel due to COVID-19	4.57 (1.91)	0.750		
R9_I am confident in my ability to travel safely during the COVID-19 pandemic	3.66 (1.94)	0.812		
Risk perception's dimension 1 – Perceived severity (PS)			0.804	0.717
PS1_COVID-19 is a serious threat	6.74 (0.76)	0.871		
PS2_COVID-19 is a serious disease	6.72 (0.81)	0.891		
PS3_Contracting COVID-19 can lead to significant health consequences	6.37 (1.09)	0.775		
Risk perception's dimension 2 – Perceived vulnerability (PV)			0.909	0.845
PV1_ My risk of infection with COVID-19 while travelling is high	5.45 (1.55)	0.922		
PV2_ I am probably to become infected with COVID-19 while travelling	5.53 (1.56)	0.919		
PV3_ I am probably to become infected with COVID-19 while participating in tourism activities or using tourism products	5.46 (1.49)	0.916		
Descriptive norm (DN)			0.908	0.838
DN1_My family will practice self-protection against COVID-19 while travelling	6.75 (0.82)	0.893		
DN2_My friends will practice self-protection against COVID-19 while travelling	6.51 (0.98)	0.924		
DN3_My travel companions will practice self-protection behaviour against COVID-19 while travelling	6.65 (0.80)	0.929		
Self-protective behaviours (ISB)			0.850	0.524
ISB2_Before and during travelling, I will seek travel advice to minimise COVID-19 infection	6.36 (1.17)	0.632		
ISB3_I will follow the local guidelines to prevent infection with COVID-19	6.56 (0.94)	0.685		
ISB5_I will prepare sufficient PPE and sanitising gel for travelling	6.65 (0.90)	0.707		
ISB7_I will try to avoid visiting places where social distancing is difficult to adhere to	6.25 (1.20)	0.755		
ISB8_Where possible, I will try not to enter enclosed spaces	6.19 (1.18)	0.778		
ISB9_Where possible, I will try not to use public transport	5.92 (1.35)	0.747		
ISB10_Where possible, I will try not to enter crowded places (events, festivals, bars,…)	6.25 (1.16)	0.71		
Travel intention (TI)			0.968	0.909
TI1_I intend to travel in the next few months	4.42 (2.09)	0.951		
TI2_I will likely to travel in the next few months	4.34 (2.06)	0.959		
TI3_I plan to travel in the next few months	4.21 (2.07)	0.950		

Table 3. Discriminant Validity (HTMT Method).

Construst	ARE	ASE	DN	ISB	PRE	PS	PSE	PV	RESI	TI
ARE										
ASE	0.765									
DN	0.216	0.238								
ISB	0.662	0.761	0.330							
PRE	0.687	0.538	0.209	0.574						
PS	0.279	0.252	0.286	0.378	0.317					
PSE	0.527	0.618	0.231	0.651	0.800	0.339				
PV	0.129	0.150	0.128	0.153	0.042	0.364	0.063			
RESI	0.052	0.044	0.132	0.112	0.119	0.106	0.128	0.098		
TI	0.039	0.040	0.063	0.171	0.186	0.084	0.227	0.131	0.423	

Table 4. Discriminant Validity (Fornell-Larcker Criterion, Second Order).

Construst	DN	ISB	RE	RESI	RP	SE	TI
DN	**0.915**						
ISB	0.290	**0.724**					
RE	0.216	0.602	**0.812**				
RESI	−0.096	0.043	0.094	**0.829**			
RP	0.213	0.264	0.208	−0.090	**0.717**		
SE	0.242	0.700	0.755	0.085	0.230	**0.769**	
TI	−0.059	0.147	0.125	0.403	−0.124	0.137	**0.954**

Note. The diagonal elements highlighted in bold are derived from the square root of the AVEs, whereas the non-bold off-diagonal elements represent correlations between latent variables.

Table 5. The Formative Second-Order Measurement Model Analysis.

Path relationship (Hypothesis)	Weights	*T* statistic	*p*-Values	VIF
Proactive self-efficacy → Self-efficacy	0.593	41.543	.000	1.468
Avoidant self-efficacy → Self-efficacy	0.537	27.352	.000	1.468
Proactive response efficacy → Response efficacy	0.602	51.472	.000	1.694
Avoidant response efficacy → Response efficacy	0.501	48.227	.000	1.694
Perceived severity → Risk perception	0.545	33.206	.000	1.107
Perceived vulnerability → Risk perception	0.686	16.122	.000	1.107

Bookstein, 1982). All the VIF values are well below 3.33, suggesting that there is no evidence of multicollinearity in the results (Kock, 2015).

Assessment of the Structural Model

Assessment of Direct and Indirect Effects. To estimate the structural model, this study employed a bootstrapping method (10,000 times), and the path coefficients was performed using the PLS-SEM algorithm. With the exceptions of hypothesis H1 (RP → ISB) and H6 (RESI → ISB), all path coefficients exhibited statistical significance. SE and RE directly affect ISB ($\beta = .533$, $t = 7.382$, $p < .001$; $\beta = .186$, $t = 2.422$, $p < .05$, respectively), providing support for H2 and H3. Additionally, TI is negatively impacted by RP ($\beta = -.133$, $t = 3.435$, $p < .01$), and positively affected by ISB ($\beta = .165$, $t = 4.208$, $p < .001$), and RESI ($\beta = .384$, $t = 11.737$, $p < .001$), thereby confirming H4, H5, and H7.

The proposed model comprises four indirect path relationships. As indicated in Table 6, the indirect influence of SE on TI through ISB ($\beta = .088$, $t = 3.519$, $p < .001$)

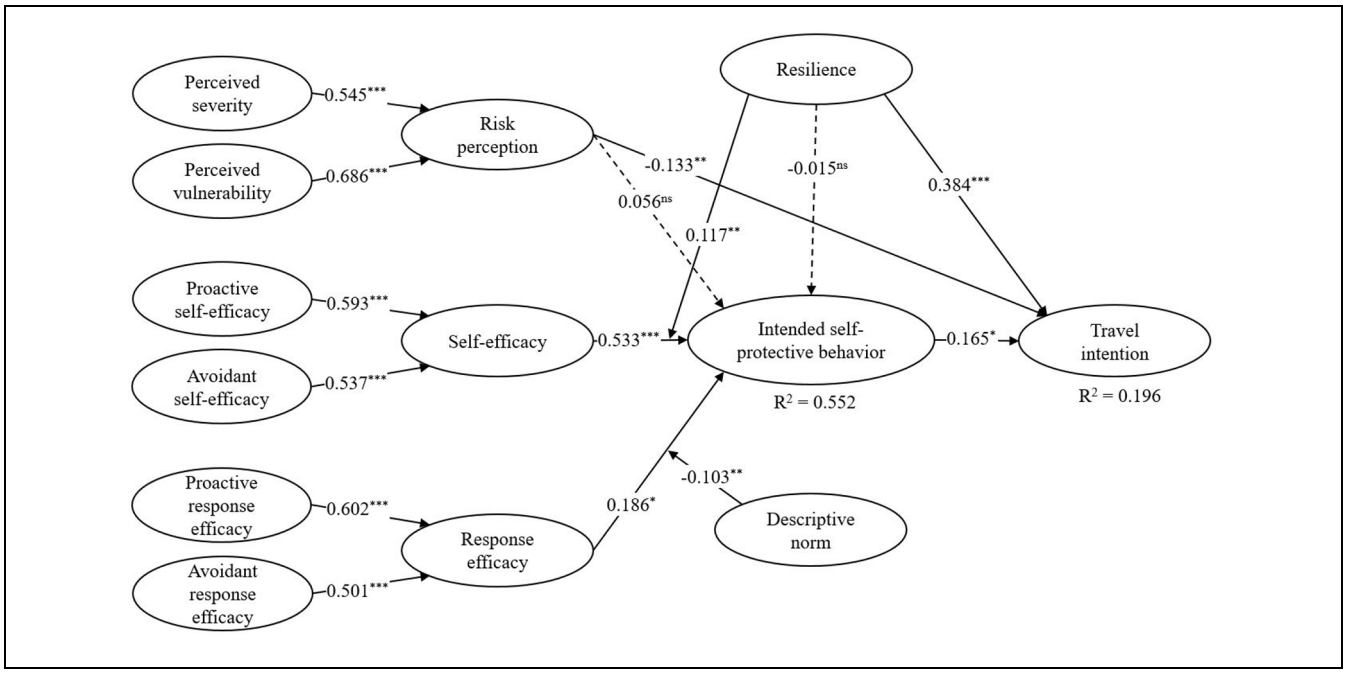

Figure 2. Results of the structural model.
Note: nsnon-significant, ***$p < 0.001$, **$p < 0.01$, *$p < 0.05$.

Table 6. Indirect Effects.

Indirect paths	Path coefficient	*T*-value	*p*-Value	Result
SE → ISB → TI	0.088	3.519***	.000	Supported
RE → ISB → TI	0.031	2.136*	.033	Supported
RP → ISB → TI	0.009	1.307ns	.191	Not supported
RESI → ISB → TI	−0.002	0.424ns	.671	Not supported

Note: nsnon-significant, ***$p < 0.001$, *$p < 0.05$.

is significant, higher than the significant indirect effect of RE on TI via ISB (β = .031, $t = 2.136$, $p < .05$). The other mediation effects are insignificant.

Assessment of Moderation Effects. To evaluate the role of moderators, we employed a two-stage approach to generate interaction terms between predictor variables. Our analysis explored significant interactions between both self-efficacy* resilience and response efficacy* descriptive norm on intended self-protective behaviours (β = .117, $t = 2.984$, $p < .01$; β = −.103, $t = 3.206$, $p < .01$, respectively; Table 7). Thus, H8 and H9 are supported. To further elaborate on the significant findings of H8 and H9, a simple slope analysis method was employed to draw the moderating effect diagrams of resilience and descriptive norm. The result shows that the line with high resilience (RESI at + 1SD) has a steeper gradient compared to the line with low resilience (RESI at −1 SD; see Figure 3). This suggests that the positive association between self-efficacy and intended self-protective behaviours is stronger when resilience is high, compared to when resilience is low. In contrast, Figure 4 illustrates that the line with low descriptive norm (DN at −1 SD) is steeper than that for high descriptive norm (DN at + 1 SD), suggesting a greater influence of response efficacy when descriptive norm is low.

Assessment of Predictive Capability. Predictive accuracy and relevance were used to measure model quality in this study. The model explained 55.2% of self-protective behaviour variation and 19.6% of travel intention variation, showing its predictive accuracy (Hair et al., 2013). Additionally, the blindfolding procedure was utilised to assess predictive relevance, with a criterion of $Q^2 > 0$ for the endogenous variable (Chin, 1998). The Q^2 values were higher than 0.35 for all constructs in the model, except for risk perception ($Q^2 = 0.322$). According to

Table 7. Assessment of Structural Model.

Path relationship (Hypothesis)	Path coefficient	*T*-value	*p*-Value	Result
H1: Risk perception → Intended self-protective behaviours	0.056	1.422^{ns}	.155	Not supported
H2: Self-efficacy → Intended self-protective behaviours	0.533	7.382***	.000	Supported
H3: Response efficacy → Intended self-protective behaviours	0.186	2.422*	.015	Supported
H4: Risk perception → Travel intention	−0.133	3.435**	.001	Supported
H5: Intended self-protective behaviours → Travel intention	0.165	4.208*	.000	Supported
H6: Resilience → Intended self-protective behaviours	−0.015	0.434^{ns}	.664	Not supported
H7: Resilience → Travel intention	0.384	11.737***	.000	Supported
H8: Self-efficacy*Resilience → Intended self-protective behaviours	0.117	2.984**	.003	Supported
H9: Response efficacy*Descriptive norm → Intended self-protective behaviours	−0.103	3.206**	.001	Supported

^{ns}non-significant. ***$p < .001$. **$p < .01$. *$p < .05$.

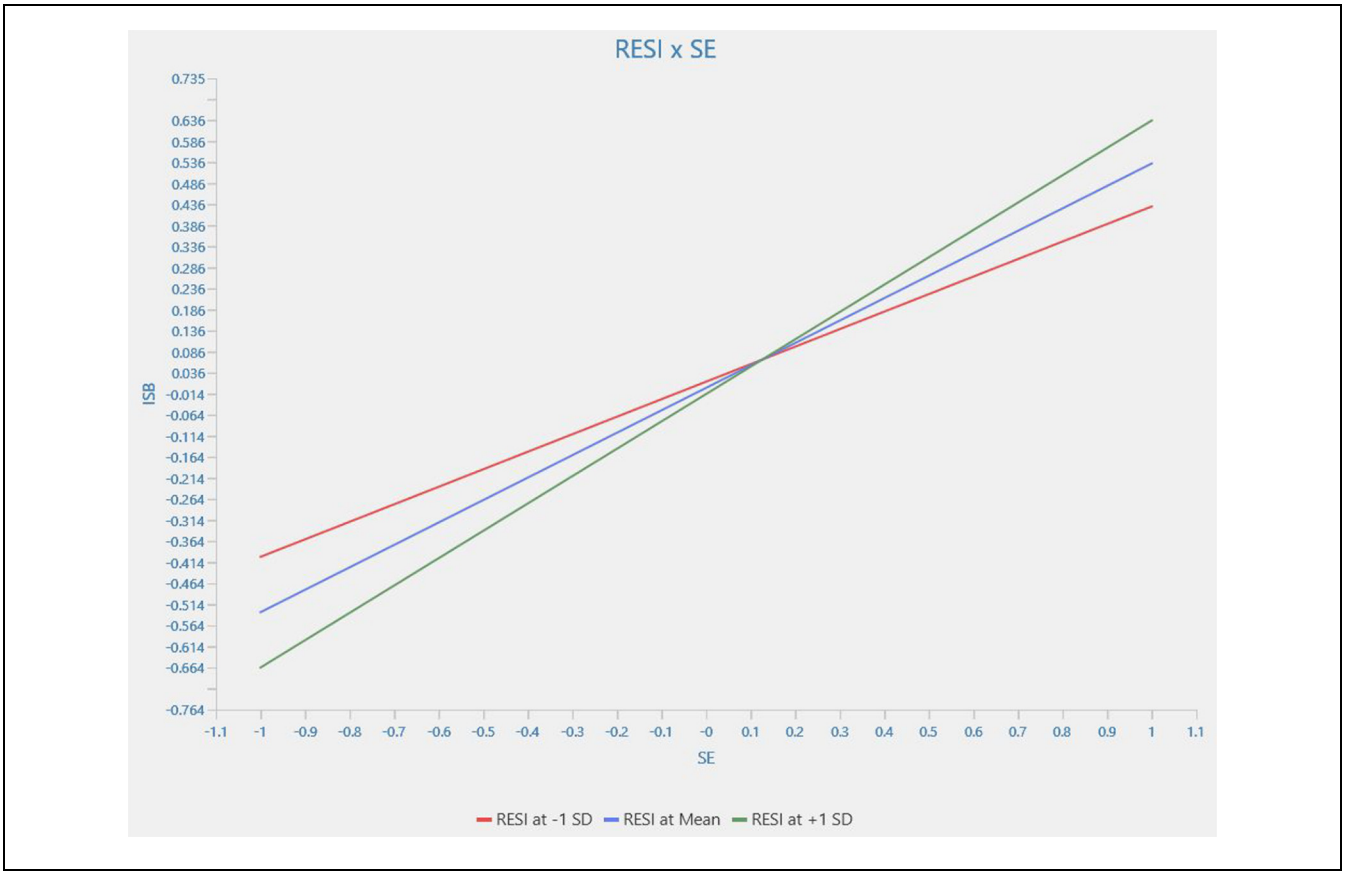

Figure 3. The moderation effect of resilience.

Hair et al. (2017), this signifies the large level of predictive relevance in this study.

Discussions

In the critical times of a health crisis such as COVID-19, balancing public health protection with the economic sustainability of the tourism industry becomes imperative. While regulatory safety measures are crucial, tourists' active participation in self-protective behaviours during travel emerges as a key solution for ensuring the safe operation of the tourism sector. By complementing official guidelines with individual responsibility, tourists not only safeguard public health, minimising the transmission of infectious diseases, but also contribute to the resilience and viability of the tourism industry. This

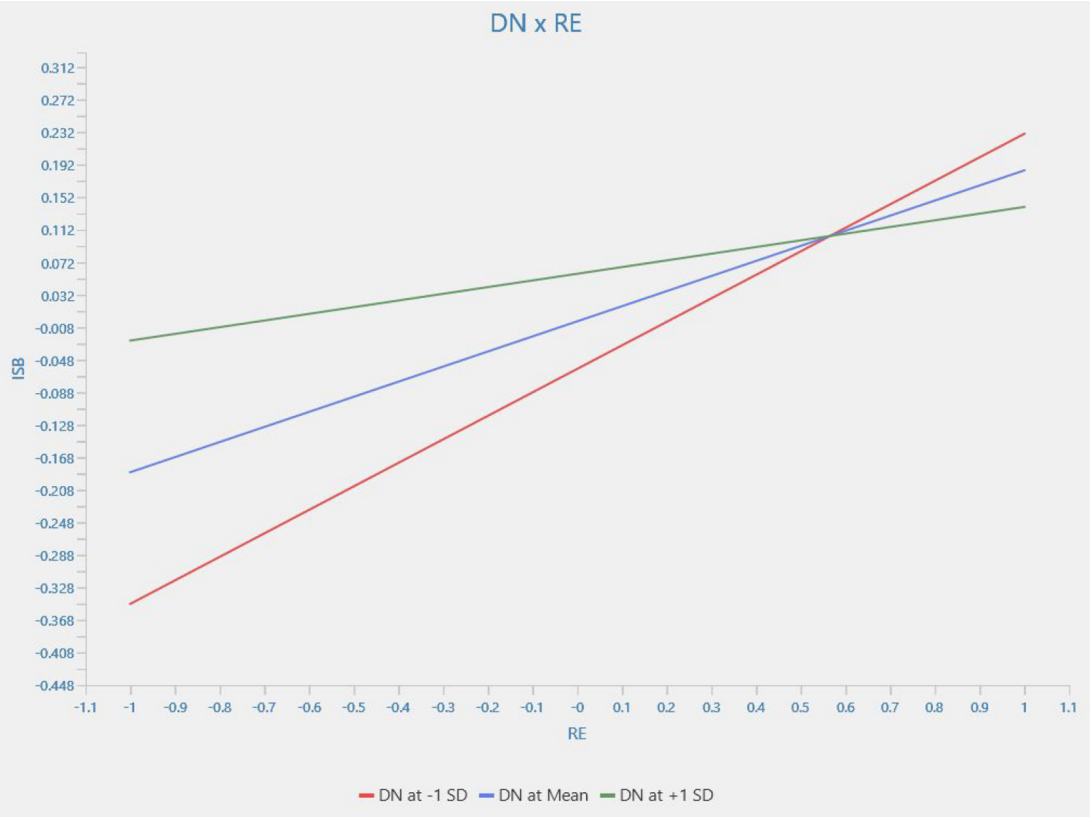

Figure 4. The moderation effect of descriptive norm.

study, thus, centred around the concept and practices of self-protective behaviours. Through examining the theoretical framework that clarify the possible contribution of psychological constructs on tourists' intended self-protective behaviours during travel in the health crisis context and ultimately, influencing travel intention, this study contributes to the literature and tourism practices in the following aspects.

A key contribution of this study is the validation of reflective-formative HCMs to measure complex constructs, including risk perception and efficacy beliefs. Social cognitive theory posits that efficacy beliefs are not only multifaceted in nature, but also co-vary even across distinct domains of functioning under various conditions (Bandura, 2006). In this paper, we introduce and validate the two formative dimensions of proactive efficacy and avoidant efficacy for both constructs of self-efficacy and response efficacy, providing a more nuanced understanding of individual's belief in their ability to effectively engage in protective behaviour. These are considered as formative, but not reflective, components due to the distinction between proactive and avoidant efficacy, and both of them comprehensively form efficacy (Bacon & Corr, 2020). Fontes et al. (2022) highlight two distinct protective practices: proactive behaviours and avoidant behaviours, suggesting future research should account for both when examining protective responses. However, in the context of COVID-19 pandemic, existing research only treated self-efficacy and response efficacy as separate constructs without capturing the interplay between their dimensions (Cheng et al., 2024; Girish et al., 2023; Kojan et al., 2022; Zheng et al., 2021). This study therefore further extends PMT by showing how proactive efficacy, which refers to the belief in taking confident and action-oriented protective measures, slightly outweighs avoidant efficacy, which relates to avoiding risky situations. This can be explained by the action-oriented nature of proactive behaviours, which might be perceived as more immediate and directly impactful compared to avoidant behaviours (Wallace, 2023), which are more about avoiding certain situations rather than changing them. Moreover, proactive actions often give individuals a sense of greater control over the outcomes (Bandura, 1999), which can be a strong contributor to efficacy beliefs. Similarly, risk perception is comprised of two formative components of perceived severity and perceived

vulnerability. The findings suggest that perceived vulnerability exerted a stronger influence on risk perception compared to perceived severity. This can be explained by the immediacy and relevance of perceived vulnerability, which is directly related to their own likelihood of getting infected during the crisis (Zheng et al., 2021). The revealed negative influence of risk perception on travel intention is consistent with prior research (Abraham et al., 2020; Park & Reisinger, 2010). To our knowledge, this is the first study that offer a reflective-formative HCM of risk perception, and efficacy beliefs (i.e., response efficacy and self-efficacy) towards protection motivation in the context of COVID-19 tourism.

Secondly, the present research develops a theoretically driven framework, primarily drawing on PMT to explore intended self-protective behaviours and travel intention among individuals during a health crisis, tested in the case of COVID-19 pandemic. This study specifically regards intended self-protective behaviours as a form of protection motivation. The results confirm the PMT's principles that the likelihood of adopting self-protective behaviours is impacted by the effectiveness perception of coping strategies, including self-efficacy and response efficacy. This supports prior research on protective behaviours employing PMT in COVID-19 tourism (Girish et al., 2023; Qiao et al., 2022; Ruan et al., 2020; Shah Alam et al., 2023; Zheng et al., 2021) and other health-related settings, such as restaurants (Byrd et al., 2023; Ryu et al., 2023), and ride-sharing services (Cheng et al., 2024). Specifically in the tourism context, Qiao et al. (2022) explored how South Korean tourists perceived protective behaviours when considering travel to China after the COVID-19 pandemic. Their study revealed that both self-efficacy and response efficacy served as significant predictors of protective motivation. Similarly, Girish et al. (2023) found that in the context of travel bubble destinations, coping appraisal, measured through self-efficacy, response efficacy, and quarantine protocols, played a crucial role in enhancing protection motivation. These findings underscore the role of self-efficacy and response efficacy in shaping protection motivation, offering insights for promoting safe travel during health crises.

Additionally, compared to response efficacy, self-efficacy was identified in the present study as a crucial determinant of the intention to undertake self-protective actions, with a stronger influence compared to response efficacy. This reinforces earlier studies highlighting self-efficacy's important role in shaping behavioural intention (Girish et al., 2023; Milne et al., 2000; Quy Nguyen-Phuoc et al., 2023). This study extends these insights to the specific context of tourism during the COVID-19 crisis. Furthermore, it confirms and extends the existing literature by highlighting the explanatory power of the PMT in the COVID-19 pandemic travel context.

In this study's context, we utilise the PMT to explain the relationship between intended self-protective behaviours and travel intention, based on the underlying mechanism of the theory. Particularly, the PMT posits that protective motive can operate as an intermediary factor, stimulating and guiding the intention to take actual actions (Rogers, 1975), in this case, individuals' travel intention. Furthermore, the results of the mediation analysis reveal that self-efficacy and response efficacy indirectly influence travel intention through their impact on the likelihood of adopting self-protective behaviours. These findings contribute to the growing body of literature on how PMT operates in crisis scenarios by validating the dual pathways through which efficacy beliefs shape behaviour: directly, by fostering the intention to engage in protective measures, and indirectly, by reinforcing broader intentions such as travel decisions. For those considering engaging in protective behaviours, if they believe they can effectively protect themselves through self-protective behaviours, they may be more inclined to actually travel. Drawing on the PMT, Ryu et al. (2023) points out that individuals with higher levels of self-protective intentions tend to be more confident about visiting restaurants and dine out more frequently during the pandemic. Therefore, this study provides a theoretical explanation for this relationship in the COVID-19 tourism context using the core tenets of the PMT. The implications could be extended to the general health crisis context, calling for attention to promote self-protective behaviour as a key solution for safeguarding public health while maintaining the safe operation and, ultimately, resilience and viability of the tourism industry.

Thirdly, the current study reveals interesting role of tourist's resilience. Psychological resilience was found to be positively associated with travel intention but not associated with self-protective behaviours among Vietnamese tourists during the COVID-19 pandemic. Highly resilient individuals might be overconfident in their ability to handle stress and adversity (Luthar & Cicchetti, 2000), leading them to underestimate the need for self-protective behaviours. Moving past the focus on the resilience of socioecological systems predominantly featured in tourism research (Orchiston et al., 2016), our investigation broadens the scope of resilience understanding. We emphasise the connections between resilience and travel behavioural intentions on an individual level. While Zheng et al. (2021) showed that psychological resilience impacts cautious travel behaviours, our study goes beyond to unveil that psychological resilience also significantly shapes overall travel intentions.

Moreover, the moderating effect of resilience on the association between self-efficacy and intended self-protective behaviours is revealed in this study. At higher levels of resilience, the impact of self-efficacy on intended self-protective behaviour is stronger. Bandura's self-efficacy theory primarily focuses on how confidence in one's abilities (self-efficacy) affects motivation and subsequent action (Bandura, 1999). The finding in the current study adds a layer to the PMT and Bandura's self-efficacy theory by suggesting that an individual's resilience can alter the strength of the relationship between self-efficacy and protection motivation by provoking a more adaptive approach towards health and safety, specifically in the COVID-19 scenario. Besides, while the results indicated that resilient individuals may not intend to engage in self-protective behaviours, the interaction between resilience and self-efficacy suggests that if resilient individuals are confident in their ability to adopt protective behaviours, they are more likely to engage in those behaviours. Raising individuals' self-efficacy can help align resilient ones with self-protective behaviours to mitigate the spread of COVID-19 within the community. This is the first study, to our knowledge, that identifies the moderating role of resilience on the relationship between self-efficacy and intended self-protective behaviour.

Fourthly, our findings underscore the role of descriptive norms in in moderating the relationship between response efficacy and intended self-protective behaviours in the COVID-19 tourism context. Descriptive norms, reflecting individuals' observations of behaviours within their social circles, serve as powerful social cues that shape personal behaviour (Parsons et al., 2010). In the context of Vietnam, both the government and society actively promoted the adoption of self-protective behaviours during the COVID-19 pandemic, resulting in widespread public compliance. Citizens demonstrated strong collective responsibility by adhering to measures such as wearing masks, practicing social distancing, and restricting gatherings (Van Nguyen et al., 2021), which provided individuals with consistent cues about the prevailing norms within their communities. In this case, observing widespread compliance with safety measures likely signalled to individuals that the overall risk was low, influencing them to adapt their behaviour accordingly. Specifically, the study found that when individuals perceive their close social circles are already engaging in protective measures (higher descriptive norms), they may feel a reduced intention to undertake self-protective actions themselves, even when they personally believe in the effectiveness of those measures (response efficacy). Specifically, our findings reveal that descriptive norms can weaken the positive association between response efficacy and intention to engage in self-protective behaviours. Supporting this, Jiang et al. (2022) found that if people have a strong social norm to social distancing within their social circle, they may feel less likely to practice it themselves, despite believing in its effectiveness. This current study was the first to examine the moderating effect of descriptive norm on the association between response efficacy and intended self-protective behaviour. Future research can build on these results by exploring similar mechanisms in other health-related contexts, further expanding our understanding of how descriptive norms shape individual behaviour.

Practical Implications

This study provides practical implications for tourism authorities and travel firms to help potential travellers in ensuring the safety of their trips amidst the pandemic. Our research presents a clear insight into the factors that drive individuals' intended self-protective, identifying self-efficacy as the most influential determinant in this regard. In addition, the findings also reveal the importance of self-efficacy and its interaction with resilience to enhance the likelihood of adopting self-protective behaviours. Therefore, individual's perception of self-efficacy regarding protective behaviours should be taken into account when authorities or travel companies would like to communicate the risks associated with tourism during the pandemic or other health-related scenario. In this case, social marketing can be a powerful tool for promoting self-protective behaviour while travelling during a health crisis. Specifically, tourism stakeholders should provide informative materials and resources in an easily understandable and actionable manner, enhancing individuals' confidence. This approach can help them to feel more control about their travel plans in times of uncertainty. This aligns with recommendations from the World Health Organization (WHO), advocating for tourism stakeholders to regulate and promote visible safety measures (WHO, 2020). Furthermore, understanding about the effectiveness of protective measures, referred to as response efficacy, is also critical. Individuals can be educated about how self-protective behaviours can effectively minimise the health risk while travel during a health crisis. Finally, authorities and tourism operations should be mindful of the influence of descriptive norms on protective behaviours. By promoting visible adherence to safety measures across communities, stakeholders can help travellers view these behaviours as standard practice, which in turn may encourage them to adopt self-protective actions themselves, rather than assuming they are unnecessary.

Limitations and Future Research

While the study provides significant contributions, it acknowledges certain limitations. First, this study only collected data from tourists in Vietnam during the ongoing COVID-19 epidemic. Therefore, there needs to be more comparison and in-depth analysis of tourist behaviour in different countries and the pandemic stages. We should conduct longitudinal studies track changes in tourist behaviour over time and expand the research to different cultural and geographical contexts. Further studies can launch investigations in other countries (e.g., Western countries), other cultures (e.g., Western culture vs. East culture or collectivism vs. individualism), or different stages of the COVID-19 outbreak (e.g., after the removal of national or international travel restrictions and after the COVID-19 outbreak has ended internationally). Second, the effects of demographic characteristics (e.g., age, gender, and education level) were not carefully considered in this study. Hence, future research needs to understand the difference in behavioural intention among different groups of tourists. Third, this study applied quantitative analysis to explore the causal relationships among the constructs, including resilience, risk perception, efficacy belief, and travel intention. Due to the complexity of the theoretical model, future studies may apply a mixed-methods approach or qualitative analysis to explain this framework further. Finally, while PMT is a robust framework for understanding the motivations behind protective behaviours, it is needed explore various factors, such as situational variables, personal experiences, or external barriers, to provide a more comprehensive analysis.

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Data Availability Statement

Research data are available upon request.

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