

PUBLIC PERCEPTION OF THE TOURISM AND HOSPITALITY SECTOR DURING COVID-19 IN KERALA, INDIA

Ajesh Antony * & Paul Jose P.***

Abstract

This study aims to evaluate the impact of COVID-19 on the tourism industry, focusing on public attitudes and travellers' decision-making in emerging economies, with particular attention to travellers' risk perceptions and behaviours, as influenced by the Protection Motivation Theory (PMT). The core of our analytical framework is based on the interaction between perceived threats (such as the severity and vulnerability of contracting COVID-19) and coping mechanisms (including self-efficacy and response efficacy), drawing insights from existing health behaviour theories. The literature suggests that observation of societal behaviour, threat appraisal, and coping appraisal play significant roles in travel constraint negotiation and intentions. Using structured questionnaires, data were gathered from 150 respondents in Kerala, an attractive tourism destination in India, and analyzed in SPSS, accounting for demographic factors such as age, gender, and occupation. The results show that while demographic variables have a limited influence on travel attitudes, occupational differences meaningfully shape responses, highlighting the importance of PMT in understanding travel behaviours during pandemics. The study also indicates potential correlations among threat appraisal, coping appraisal, and travel behaviour, emphasizing the need to build travellers' confidence to mitigate risks and promote tourism. In conclusion, a deeper understanding of travellers' decision-making processes and PMT not only aids in understanding changes in tourist behaviour during health crises but also helps tourism stakeholders develop targeted strategies to strengthen industry resilience and recovery.

Keywords: Human Behaviour; Traveller Health; Health and Hygiene; COVID-19 pandemic.

PERCEPÇÃO PÚBLICA DO SETOR DE TURISMO E HOSPITALIDADE DURANTE A COVID-19 EM KERALA, ÍNDIA

Resumo

Este estudo visa avaliar o impacto da COVID-19 na indústria do turismo, na atitude pública e na tomada de decisão dos viajantes em economias emergentes, com foco nas percepções e comportamentos de risco dos viajantes, com base na Teoria da Motivação de Proteção (PMT). A interação entre ameaças percebidas (gravidade e vulnerabilidade de contrair COVID-19) e mecanismos de enfrentamento (autoeficácia e eficácia da resposta) constitui o núcleo da nossa estrutura analítica, a partir da qual extraímos insights da literatura existente sobre teorias do comportamento em saúde. Os resultados da literatura indicam que a observação do comportamento social, a avaliação de ameaças e a avaliação de enfrentamento influenciam significativamente a negociação e as intenções de restrição de viagem. Utilizando questionários estruturados, os dados foram coletados com 150 entrevistados em Kerala, um destino turístico exótico na Índia, e analisados no SPSS, com atenção específica a fatores demográficos, como idade, gênero e ocupação. Os resultados indicaram que, embora as variáveis demográficas tenham impacto limitado nas atitudes de viagem, as diferenças ocupacionais moldaram significativamente as respostas, destacando o papel da PMT na compreensão dos comportamentos de viagem durante pandemias. O estudo também aponta correlações significativas entre a avaliação de ameaças, a avaliação de enfrentamento e o comportamento de viagem, ressaltando a importância de fortalecer a confiança dos viajantes na mitigação de riscos para incentivar a atividade turística. O estudo conclui que uma melhor compreensão da tomada de decisão dos viajantes e da PMT não só auxilia na compreensão das mudanças no comportamento dos turistas após crises sanitárias, como também auxilia as partes interessadas do turismo a elaborar estratégias direcionadas para impulsionar a resiliência e a recuperação do setor.

Palavras-chave: Controle Sanitário; Saúde e Higiene; Saúde do Viajante; Comportamento Humano; Covid-19 Pandemia

PERCEPTION PUBLIQUE DU SECTEUR DU TOURISME ET DE L'HÔTELLERIE PENDANT LA COVID-19 AU KERALA, EN INDE

Resumé

Cette étude vise à évaluer l'impact du COVID-19 sur l'attitude du public et la prise de décision des voyageurs dans les économies émergentes, en se concentrant sur les perceptions et les comportements de prise de risque des voyageurs, éclairés par la théorie de la motivation de protection (PMT). L'interaction entre les menaces perçues (gravité et vulnérabilité à contracter la COVID-19) et les mécanismes d'adaptation (auto-efficacité et efficacité de la réponse) constitue le cœur de notre cadre analytique, en s'appuyant sur les enseignements de la littérature sur les théories du comportement en santé. Les résultats de la littérature indiquent que l'observation du comportement sociétal, l'évaluation des menaces et des stratégies d'adaptation influencent de manière significative la négociation et les intentions relatives aux contraintes de déplacement. À l'aide de questionnaires structurés, des données ont été recueillies auprès de 150 répondants au Kerala, une destination touristique exotique en Inde, puis analysées à l'aide de SPSS, en mettant l'accent sur des facteurs démographiques tels que l'âge, le sexe et la profession. Les résultats ont indiqué que si les variables démographiques avaient un impact limité sur les attitudes en matière de voyage, les différences professionnelles façonnaient de manière significative les réponses, ce qui souligne le rôle du PMT dans la compréhension des comportements de voyage pendant les pandémies. L'étude souligne également qu'il peut exister des corrélations significatives entre l'évaluation des menaces, l'évaluation des moyens d'adaptation et le comportement de voyage, ce qui met en évidence l'importance de renforcer la confiance des voyageurs dans l'atténuation des risques afin d'encourager l'activité touristique. L'étude conclut qu'une meilleure compréhension de la prise de décision des voyageurs et de la PMT non seulement permet de saisir les changements de comportement des touristes à la suite de crises sanitaires, mais aide également les acteurs du tourisme à élaborer des stratégies ciblées pour stimuler la résilience et la reprise de l'industrie.

Mots-clés: Comportement humain ; Santé du voyageur ; Santé et hygiène; Pandémie de covid-19.

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* (Corresponding Author) Currently pursuing a PhD in Tourism from the University of Calicut, Kerala, Author has a good track record in education and leadership. He has an experience of more than 10 years as an assistant professor in commerce and management studies at Sacred Heart College, Chalakudy, Kerala, Sahridaya College of Advanced Studies, Kodakara, Kerala and St Thomas College (Autonomous) Thrissur, Kerala. His research interests include Tourism, Disruptive business models, entrepreneurship, and Marketing. ORCID: <https://orcid.org/0009-0008-7566-7076> Email: ajesh.antony1987@gmail.com Contact: +91 99951 34839.

** He is presently Professor and Principal at Tharananellur Arts and Science College, Tharissery, Irinjilakuda, and Professor in the Department of Commerce affiliated to the University of Calicut, Kerala. He is a Doctoral advisor for Doctoral degree and faculty for Bachelor' and Master' in Business Management at UNICAF, Cyprus. He is also a recognized Research Guide of the University of Calicut attached to the Research Department of Commerce of St. Thomas' College (Autonomous), Thrissur, Kerala, India where he served as an Associate Professor for 27 years. He also served as a lecturer in the Department of Commerce of SH College, Thevara, Kerala, and in Jawaharlal Nehru College, Pasighat, Arunachal Pradesh, India. Published Books, edited Conference Proceedings, presented several papers, chaired various sessions, and delivered keynote addresses at International Conferences in India and abroad. He is a visiting professor at FONTIS Nederland, Khon Kaen University, Khon Kaen, Thailand, and Stamford International University, Bangkok, Thailand. He served as a chairman and member of the board of studies at various autonomous institutions and universities in Kerala. His research interests include Microfinance, Poverty, Entrepreneurship, and Tourism. Email: Jose_Paul07@yahoo.com Contact: +91 9496347172

1 INTRODUCTION

Tourism is a key driver of the economy, promoting growth and generating numerous job opportunities. During the pandemic surge, the country's tourism sector declined, particularly in aviation, hotels and restaurants, and international arrivals.

UNWTO reports indicated that 96% of the world's tourist destinations had restricted entry for tourists, either fully or partially, due to the pandemic. India is a developing nation known for its unique traditions, culture, and unparalleled hospitality. It is a significant destination for many international tourists, creating numerous employment opportunities and generating substantial tax revenue (Ahmed & Krohn, 1992).

Unforeseen by the pandemic's ramifications, the industry experienced job losses and a decline in capital inflows—consequences of the strict regulations governments implemented to curb the spread of COVID-19.

Tourism is a significant source of revenue and employment in many countries, driving income, tax collections, and foreign exchange earnings. The tourism industry is highly competitive, requiring accurate forecasting of tourism demand to make informed strategic and operational decisions.

Nevertheless, the industry is undergoing investigations to return to its pre-pandemic pace, as it is important to assess pandemic-related losses to inform effective policy redesign. The Government's austerity in decisions regarding COVID-19 testing and quarantine has had a significant impact on the free movement of travellers. The case of Kerala tourism was similar during the recent epidemic; small- and medium-sized tourism operators faced severe domestic losses and are now relying on Government tourism-promotion policies to revive. The study aims to understand the attitudinal factors and levels of trust among travellers that influence their travel decisions and behaviour before and after the COVID-19 pandemic.

The study also uses the protection motivation theory (PMT) (R.W., 1983) to explore the relationships among threat appraisal, coping appraisal, and decision-making. Additionally, it aims to examine factors such as travel choices, health risks (hygiene and safety), and past travel experiences in the Thrissur district. The research will also offer insights into various factors that encourage tourism in the wake of the COVID-19 pandemic.

Tourism remains a vital economic sector worldwide, significantly contributing to employment, national income, and foreign exchange reserves. However, the COVID-19 pandemic has severely disrupted this sector, revealing vulnerabilities in demand, operations, and consumer confidence. The uncertainty caused by the pandemic has made understanding traveller behaviour more crucial than ever, especially in destinations that heavily depend on tourism.

The tourism and hospitality sector faced unprecedented disruptions due to COVID-19, leading to sharp declines in international arrivals, hotel bookings, and aviation revenue. Despite Government relief efforts, a significant gap remains in understanding how travellers assess risks and decide to resume travel. Existing studies often overlook the psychological factors driving travel

decisions during health crises. This research addresses that gap by using Protection Motivation Theory (PMT) to explore how perceived threats and coping abilities influence travel behaviour.

In this context, our objective is to explore how threat appraisal and coping appraisal influence travel behaviour in Kerala post-COVID-19 using PMT. More specifically, we aim to identify emerging trends in tourism in India, understand the public's attitude towards tourism post-COVID-19 pandemic in Thrissur district, and determine the factors travellers consider when making purchase decisions.

The study was conducted in Thrissur district, Kerala, India, during the post-COVID-19 recovery period (2022–2023). It advances tourism research by applying PMT constructs to a real-world travel crisis, offering insights into behavioural responses that can improve predictive models of tourism behaviour.

The findings will help tourism stakeholders design targeted safety communications and infrastructure improvements to restore travellers' confidence in health and safety measures, institutional preparedness, and their personal ability to manage travel risks.

The study is based on Protection Motivation Theory, which suggests that individual behaviour in response to threats is influenced by two primary cognitive processes: threat assessment (perceived severity and vulnerability) and coping assessment (response efficacy, self-efficacy, and response cost). The relationships among these constructs are examined through travellers' attitudes and decisions in the post-pandemic period.

Our study is based on the following assumptions:

- Travellers make decisions based on their risk assessments and coping beliefs.
- The PMT framework applies across different cultural and demographic contexts.
- Health crises have a quantifiable impact on tourism behaviour.

Additionally, our hypotheses are:

H1: Variables related to travel attitudes are not normally distributed.

H2: There is a significant difference in attitudes based on gender.

H3: There is a significant difference in attitudes based on age.

H4: There is a significant difference in attitudes based on occupation.

A descriptive research design was used with a structured questionnaire aligned with PMT constructs. Data were collected from 150 participants through convenience sampling in central Kerala. Variables such as threat appraisal, coping appraisal, and travel behaviour were measured using Likert scale items. Data analysis was performed using SPSS, employing non-parametric tests due to the non-normal distribution of data.

Results showed strong links between PMT constructs and travel behaviour, with threat appraisal ($r = .825$) and coping appraisal ($r = .578$) positively affecting travel decisions. Travellers demonstrated increased awareness of hygiene and transportation risks, with notable differences across occupational groups. These results support PMT's relevance in predicting post-pandemic tourism behaviour.

2 REVIEW OF LITERATURE

2.1 Impact of COVID-19 on Tourism

The pandemic led to unprecedented declines across the tourism sector worldwide. As noted by Suman and Kumar (2021), the Indian tourism sector faced significant job losses and revenue drops due to nationwide lockdowns and international travel restrictions. Similarly, Kaur and Mittal (2021) highlighted the adverse effects on Punjab's tourism industry, including prolonged declines in tourist arrivals and substantial economic impacts.

State-supported measures are vital to the recovery of domestic tourism in the aftermath of COVID-19 (Baranova et al., 2023). (Mitra Abhijith, Chaudhuri Tanmay Ray, Mitra Ankita, Pramanick Prosenjith, & Zaman Sulfia, 2020) indicated in their studies that the impact of COVID-19 persists, particularly regarding the complete closure of industries, transport, markets, and so on.

The study suggests that recovery in domestic travel might be quicker than in other industries, such as aerospace, oil, and gas. It highlights the improvement in air quality resulting from reduced CO₂ emissions during the pandemic, which led to a higher Air Quality Index and, after COVID-19 restrictions were eased, attracted more tourists.

Yuen, Cai, and Wang (2022) examine the factors influencing cruise travel intentions in the post-COVID-19 era, accounting for the lasting changes in regulatory and societal norms brought about by the pandemic. Their research combines theories of health protection motivation, social learning, and travel constraints into a comprehensive model to understand cruise travel behaviour.

Analyzing data from 400 survey participants in Singapore, the study reveals that observing societal behaviour, threat appraisal, coping appraisal, and travel constraint negotiation directly influence travel intentions. Interestingly, they find that observing the COVID-19 situation does not significantly affect threat assessment, which they attribute to pandemic fatigue among respondents.

Yuen et al. (2022) offer valuable insights for cruise companies and policymakers, emphasizing the importance of addressing societal behaviour and constraints to support industry recovery. However, their focus on respondents from Singapore limits the generalizability of their findings, underscoring the need for future research across more diverse cultural and regulatory contexts.

2.1.1 Attitudinal Factors and Trust Levels

Travellers' willingness to resume tourism depends heavily on trust and perceived safety. UNWTO protocols and safety measures, as discussed by Suman and Kumar (2021), aim to restore traveller confidence through consistent health and safety guidelines. In Punjab, the "Mission Fateh" initiative emphasized public discipline and cooperation, demonstrating how trust-building efforts can influence traveller behaviour after COVID-19 (Kumar Patel, Sharma, Kharoliwal, & Khemariya, n.d.).

Their studies find that potential tourists often reschedule or cancel their travel plans due to the pandemic and avoid suspicious locations. As a result, the tourism

industry and related sectors have been significantly disrupted, with a considerable slowdown in tourist arrivals. The sector is therefore facing numerous hurdles and threats amid the pandemic.

2.1.2 Health Risks and Hygiene

The pandemic has increased travellers' awareness of health risks and hygiene standards. Kaur and Mittal (2021) identified sanitation and hygiene as essential factors for post-pandemic tourism recovery. This aligns with findings from Abdin and Kumar (2020), who suggested that health and safety protocols are now indispensable for tourism businesses aiming to attract travellers. Lang et al. (2021) conducted studies on social distancing simulations during the health crisis.

According to a study, social distancing is effective at reducing infection rates, and the pandemic may lead to new practices and approaches in the travel and tourism industry. Xu and Nazneen (2021) examine how perceived COVID-19 impact influences travel avoidance by applying the Protection Motivation Theory (PMT) framework.

Their study highlights both direct and indirect relationships, showing that travel risk perception and health and safety perceptions play crucial mediating roles. Specifically, they found that individuals' perceptions of the severity and personal relevance of COVID-19 risks strongly influence their decisions to avoid travel. Xu and Nazneen's (2021) findings offer valuable insights into how health concerns affect tourist behaviour, providing a theoretical foundation for developing strategies to rebuild traveller confidence in a post-pandemic context.

2.1.3 Recovery and Promotion Strategies

To stimulate tourism, innovative promotional strategies targeting domestic markets have become increasingly important. For example, domestic tourism has been positioned as a crucial factor in recovery, as highlighted by Kaur and Mittal (2021), who stressed the significance of local tourism initiatives. Additionally, Suman and Kumar (2021) discussed policy measures like financial support for tourism stakeholders and promotional campaigns to rebuild the industry.

Hernández Calderón (2021) explores how the COVID-19 pandemic has affected hotel booking intentions through the lens of Protection Motivation Theory (PMT). This thesis centres on two main aspects of PMT: perceived threats, such as fear of catching the virus while travelling, and coping appraisals, including the perceived effectiveness of protective measures and consumers' confidence in applying them.

Calderón underscores the vital role of these factors in shaping consumer behaviour, showing that travellers are more inclined to book hotels when they believe sufficient safety measures, such as enhanced sanitation and contactless services, are in place. The study offers valuable insights into the hospitality industry's recovery, highlighting the importance of hotels focusing on health and safety protocols to restore consumer trust and boost bookings in a post-pandemic world.

2.2 Protection Motivation Theory

Protection Motivation Theory (PMT), first introduced by Rogers (1975) and later expanded by Maddux and Rogers (1983), provides a strong psychological framework for understanding how individuals respond to health threats. Developed initially to examine reactions to fear appeals in health communication, PMT has since grown into a prominent theoretical model for explaining preventive health behaviours. The theory describes two key cognitive processes—threat appraisal and coping appraisal—that influence an individual's motivation to take protective actions.

Threat appraisal involves how individuals assess the seriousness of a threat and their perceived vulnerability to it, weighed against any perceived intrinsic rewards from not acting. Conversely, coping appraisal evaluates the individual's belief in the effectiveness of the recommended protective behaviour (response efficacy), their confidence in their ability to carry out the behaviour (self-efficacy), and the perceived costs of taking action (response cost). When individuals perceive a high level of threat and believe they can cope effectively, protection motivation—and consequently protective behaviour—is more likely to occur.

PMT is especially useful for understanding travel behaviour during a public health crisis like COVID-19. Travel naturally involves exposure to unfamiliar settings, shared public spaces, and diverse health systems, which heighten perceived health risks. As travellers evaluate both the threat of infection and their ability to handle those risks, PMT provides a theoretically grounded perspective for interpreting travel decisions during pandemics (Floyd et al., 2000; Cahyanto et al., 2016; Bae & Chang, 2021).

2.2.1 Threat Appraisal Components

a. Perceived Vulnerability

Perceived vulnerability refers to an individual's subjective assessment of their personal susceptibility to a threat (Rogers, 1975). In tourism contexts, this concept reflects how much travellers believe they are at risk of contracting an illness like COVID-19 while travelling. High perceived vulnerability has been associated with decreased travel intentions and avoidance of high-risk locations (Wang et al., 2019; Neuburger & Egger, 2021).

In this study, perceived vulnerability is measured using items PV1, PV2, and PV3, which evaluate travellers' perceived susceptibility to infection, financial stress, and changes in travel duration. Increased perceptions of vulnerability are likely to prompt protective behaviours such as avoiding crowded transportation hubs or delaying travel altogether.

b. Perceived Severity

Perceived severity refers to beliefs about the seriousness of the consequences associated with a threat (Maddux & Rogers, 1983). In the context of COVID-19, this includes beliefs about hospitalization, long-term health effects, and even mortality. High perceptions of severity have been shown to strengthen the impact of fear appeals and

increase the likelihood of adopting protective behaviours (Chua et al., 2021).

This study uses items PS1-PS3 (Appendix A) to assess perceived severity, focusing on respondents' beliefs about safety during travel and their avoidance of group settings. Higher perceived severity is expected to be associated with a stronger tendency toward protective travel choices, such as selecting remote or open-air destinations.

c. Intrinsic Rewards

Intrinsic rewards refer to the perceived emotional or psychological benefits of not engaging in protective behaviour. These might include feelings of normalcy, spontaneity, or personal freedom that travellers associate with unrestricted travel (Milne et al., 2020). While these rewards can act as barriers to protection motivation, they offer important insights into the motivational trade-offs travellers make. Items IR1 and IR2 (Appendix A) are used to measure intrinsic rewards, reflecting desires to resume leisure activities and travel "as usual." These items are vital in identifying those who may resist health protocols in favour of comfort or pleasure, potentially undermining the impact of perceived threat.

3.2.2 Coping Appraisal Components

a. Response Efficacy

Response efficacy refers to an individual's belief in the effectiveness of a protective behaviour in reducing a threat (Rogers, 1983). In the context of COVID-19, this might include beliefs in the usefulness of hand sanitizers, masks, or digital platforms for minimizing exposure. Items RE1 to RE3 (Appendix A) assess response efficacy by asking respondents whether they believe safety practices—such as using packaged and sanitized food, digital booking platforms, and contactless restaurant services—can lower their risk. High response efficacy boosts motivation to travel while adhering to safety norms (Cahyanto et al., 2016; Onat et al., 2021; Bae & Chang, 2021).

b. Self-Efficacy

Self-efficacy relates to an individual's confidence in their ability to perform protective behaviours (Bandura, 1997). It has consistently been identified as one of the strongest predictors of health-protective actions across different areas (Plotnikoff & Trinh, 2010). SE1, SE2, and SE3 (Appendix A) evaluate how much travellers believe they can maintain hygiene, practise social distancing, and use personal protective equipment while travelling. A higher sense of self-efficacy encourages the intention to travel safely without excessive anxiety.

c. Response Cost

Response cost involves the perceived physical, psychological, or financial burden linked to engaging in a protective behaviour. In tourism, this could include the inconvenience of avoiding public transport or the perceived

loss of enjoyment from following safety guidelines (Li et al., 2021). This study employs RC1 to RC3 (Appendix A) to evaluate response cost, with items assessing avoidance of public transport, preference for personal vehicles, and reliance on delivery services. Higher response costs may decrease motivation to adopt protective behaviours or even to travel at all.

2.2.3 Integration and Behavioural Outcomes

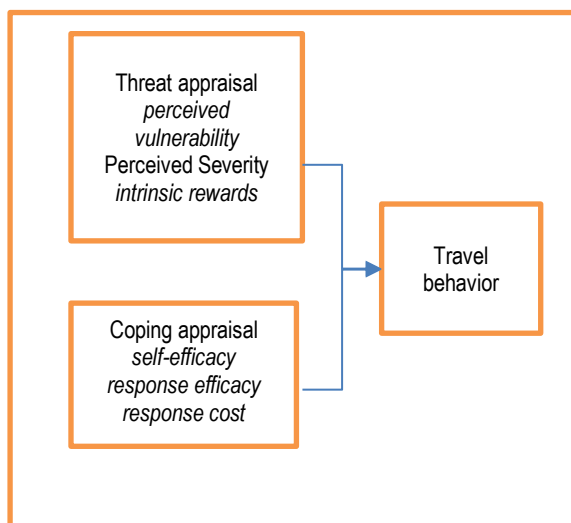
PMT posits that when individuals perceive both a high threat and a high capacity to cope, they are more likely to develop a protection motivation, which in turn drives adaptive behaviour (Rogers, 1975; Maddux & Rogers, 1983). In this model, threat appraisal (comprising perceived vulnerability, severity, and intrinsic rewards) and coping appraisal (response efficacy, self-efficacy, and response cost) function as antecedents to travel behaviour. Travel behaviour is captured through TB1 to TB3, which reflect behavioural changes such as reduced travel frequency, avoidance of group settings, and perceived travel safety.

2.3 PMT in Tourism Context

Recent research has increasingly validated PMT in tourism. Studies such as Bae and Chang (2021) demonstrated that perceived threat and self-efficacy significantly predict post-pandemic travel intentions. Hernández Calderón (2021) found that hotel booking behaviour could be accurately modelled using PMT constructs. Similarly, Xu and Nazneen (2021) applied PMT to analyze tourist risk perception and its effect on avoidance behaviour during the pandemic.

However, gaps remain in understanding how intrinsic rewards and response costs interact with travel behaviour in tourism. Moreover, few studies have explored these dynamics in emerging destinations such as Kerala, India. This study contributes to the growing body of literature by applying a PMT framework in a regional context, thus offering insights for both theory and practice.

Figure 1 – Conceptual framework



Source: own elaboration.

4 RESEARCH METHODOLOGY

This study adopts an applied behavioural research approach to explore the psychological and perceptual factors shaping travel behaviour during a public health crisis. The research is grounded in Protection Motivation Theory (PMT), which provides a theoretical lens for understanding how individuals assess threats and evaluate coping mechanisms in travel-related decision-making.

The research is descriptive and correlational. It seeks to describe existing conditions regarding traveller perceptions in Kerala post-COVID-19 and to analyze relationships between key theoretical constructs, namely threat appraisal, coping appraisal, and behavioural intention.

A quantitative research strategy was employed, utilizing structured instruments to collect standardized responses. The unit of analysis is the individual traveller, specifically those residing in or visiting Central Kerala, an established tourism zone within a developing economy.

The study examines how perceived vulnerability, perceived severity, response efficacy, self-efficacy, and response cost – core constructs of PMT – shape travel attitudes and decisions in the post-pandemic context.

The sample comprised 150 participants, selected using convenience sampling. This group included domestic travellers, local residents, and potential tourists within the Central Kerala region. The sample size is deemed appropriate for exploratory research based on PMT, especially under constraints like limited mobility, time, and geographic specificity. Previous literature supports the adequacy of such sample sizes in behavioral studies in tourism (Hair et al., 2019; Veal, 2017; Nunnally & Bernstein, 1994).

Primary data were collected directly from participants through self-administered questionnaires.

Secondary data were drawn from a range of academic sources, including peer-reviewed journal articles, books, official reports, tourism statistics, and online resources relevant to COVID-19 and travel behaviour.

A structured questionnaire was designed specifically for this study and distributed digitally via Google Forms. This method ensured accessibility during a period of limited physical interaction and allowed for broad participation. The questionnaire aimed to capture perceptions of health risks, safety measures, and travel intentions in the context of Kerala.

The instrument was developed based on Protection Motivation Theory, with each section corresponding to a key theoretical construct: perceived vulnerability, perceived severity, response cost, self-efficacy, and response efficacy. Items were measured on a five-point Likert scale to quantify levels of agreement and behavioural tendencies. A detailed construct-to-question mapping is provided in Appendix A.

The collected data were exported from Google Forms to Microsoft Excel for preliminary organization and then analyzed using IBM SPSS Statistics 20. Descriptive statistics (means, standard deviations, percentages) were computed for demographic and attitudinal variables. Normality tests, including the Kolmogorov–Smirnov and Shapiro–Wilk tests, were applied to determine the distribution of the data. Given the non-normal distribution, nonparametric tests, such as the

chi-square test, were used to evaluate associations between categorical variables.

The analysis also included correlation testing between PMT constructs and travel behaviour, enabling an empirical assessment of the theoretical model. Each variable category–threat appraisal, coping appraisal, and travel intention–was derived from aggregated survey items. These constructs were statistically examined to identify the strength and direction of associations, supporting hypothesis testing within the PMT framework.

The study employed convenience sampling, which limits generalizability beyond the selected region. Additionally, the online format may have excluded participants with limited digital literacy or internet access. Despite these limitations, the research offers valuable insights into a contextually rich and timely issue. Future studies are encouraged to apply stratified or random sampling methods and expand the scope to include cross-cultural comparisons for broader applicability.

5 RESULTS ANALYSIS

5.1 Data Presentation

This study investigates how traveller perceptions influence post-COVID-19 tourism behaviour using Protection Motivation Theory (PMT) as the analytical framework. Conducted in Central Kerala, with individual travellers as the unit of analysis, the study aimed to achieve three core objectives: identifying emerging tourism trends in India, examining public attitudes toward tourism in Thrissur post-pandemic, and understanding key factors affecting travel-related purchase decisions. Data were collected using a structured questionnaire aligned with PMT constructs–perceived vulnerability, severity, response efficacy, self-efficacy, response cost, and travel behaviour, allowing for an in-depth analysis of cognitive and behavioural dimensions shaping tourism recovery.

Table 1: Foreign Tourist Arrivals (FTA), Arrivals of Non-Resident Indians (NRI) and International Tourist Arrivals (ITA) 2010-2021.

Year	FTA in India	%change over previous year	NRI arrivals in India	%change over previous year	International Tourists arrivals in India	%change over previous year
2010	5.78	11.8	NA	NA	NA	NA
2011	6.31	9.2	NA	NA	NA	NA
2012	6.58	4.3	NA	NA	NA	NA
2013	6.97	5.9	NA	NA	NA	NA
2014	7.68	10.2	5.43	13.11	NA	NA
2015	8.03	4.5	5.74	5.7	13.76	5.0
2016	8.80	9.7	6.22	8.5	15.03	9.2
2017	10.04	14.0	6.77	8.8	16.81	11.8
2018	10.56	5.2	6.87	1.4	17.42	3.7
2019	10.93	3.5	6.98	1.7	17.91	2.8
2020	2.74	-74.9	3.59	-48.6	6.33	-64.7
2021	1.52	-44.5	5.48	52.6	7.00	10.6

Source: "Market Research And Statistics" | Ministry Of Tourism | Government of India. Retrieved March 16, 2023. Own Interpretation.

Table 2: Foreign Exchange Earnings (FEEs) in Rs Crore from Tourism in India, 2010- 2021.

Year	FEE from Tourism In India (Rs in crore)	% change over the previous year
2010	66172	23.1
2011	83036	25.5
2012	95607	15.1
2013	107563	12.5
2014	120367	11.9
2015	134844	12
2016	154146	14.3
2017	177874	15.4
2018	194881	9.6
2019	211661	8.6
2020	50136	-76.3
2021	65070	29.8

Source: Ministry of Tourism, Govt. of India Retrieved March 16, 2023.

The number of foreign tourists arriving in India has increased consistently and significantly from 2010 to 2019. However, during the year 2020, when the pandemic hit, there was a significant drop, as the number of foreign tourist arrivals in India declined by 2.74. The percentage change in the number of FTAs turned negative in 2020. NRI arrivals

grew by 52.6% in 2021 over 2020. 10.6% remarkable positive change over 2020.

Foreign exchange earnings have gradually increased over the years, from 66172 crore in 2010, and have consistently risen for 10 years. The FEE reached 211661 crores in 2019. However, during the next year, i.e., 2020, the earnings witnessed a deep decline and reached 50136. The lowest in the decade. The percentage changes over the previous year have also decreased substantially and turned negative. In 2021, the figures have climbed to 65,070 crores.

Table 3: Total contribution of travel and tourism to GDP in India from 2013 to 2020 (in billion U.S. dollars).

Year	Total contribution in billion U.S. dollars
2020	121.9
2019	191.3
2018	247.37
2017	232.01
2016	219.72
2015	201.43
2014	185.63
2013	172.91

Source: State/Union Territory Tourism Departments, Retrieved March 16, 2023.

The total contribution of travel and tourism to India's GDP in 2013 is 172.91 billion US dollars. It increased to \$185.63 billion in 2014 and reached \$201 billion in 2015. Later on, it steadily increased from \$219.72 billion in 2006 to \$232.01 billion in 2017, then reached a peak of \$247.37 billion in 2018, before dropping significantly to \$191.3 billion in 2019. The value reached its lowest point in the year 2020 at 121.9 billion US Dollars. The compound annual growth rate (CAGR) value from 2013 to 2020 is 0.04.

Table 4: descriptive statistics

Descriptive statistics	No.of respondents	Percentage	
Gender	Male	74	49.3
	Female	76	50.7
	Total	150	100
Age	Below 20	17	11.3
	20-30	84	56.0
	30-40	28	18.7
	40-50	15	10.0
	Above 50	6	4.0
	Total	150	100
Occupation	Business	13	8.7
	Employed	52	34.7
	Professional	17	11.3
	Homemaker	3	2.0
	Private employee	65	43.3
	Total	150	100.0
Family Monthly Income	Below 50000	111	74.0
	50000-100000	35	23.3
	100000-150000	3	2.0
	Above 200000	1	0.7
	Total	150	100.0

Source: own elaboration based on the data from primary survey.

The gender-wise distribution of the data shows that female participation exceeds male participation in the study. 74 of the respondents are male, and 76 of them are female. Age-wise classification of the data shows that most respondents fall into the 20-30 age group. Occupation-wise classification of the respondents shows that most are private-sector employees. Family Monthly income-wise classification shows that the majority of respondents earned below rupees 50000.

Table 5: Travellers' Attitude Towards Tourism Post-COVID-19 Lockdown.

Attitude of public covid19	Mean	Std. Deviation
COVID-19 pandemic [COVID-19 pandemic affects my travel]	4.17	0.97
COVID-19 pandemic [I feel financial stress due to COVID-19 pandemic]	4.08	1.08
COVID-19 pandemic [I will reduce the length of travel and tourism]	4.02	1.11
COVID-19 pandemic [I feel bored due to lockdown and I should go trip for refreshment]	3.9	1.10

Source: own elaboration based on the data from primary survey.

The table above describes travellers' attitudes towards tourism. The analysis shows a positive response and attitude, as the mean values are close to 4 on a five-point scale. Hence, it can be inferred that there is a positive attitude towards tourism.

Hypothesis Testing: Attitude of the Public towards Tourism during the COVID-19 Pandemic

Hypothesis 1:

H0 = The variables related to various aspects of attitude are normal

H1 = The variables related to various aspects of attitude is not normal

Table 6: Test of normality.

Attitude Of Public	Kolmogorov-Smirnov Z(Normality)	P Value
Covid 19 pandemic affect my travel	0.307	0.00
I feel financial stress due to covid 19 pandemic	0.281	0.00
I will reduce the length of travel and tourism	0.307	0.00
I feel bored due to lockdown and I should go trip for refreshment	0.257	0.00

Source: own elaboration based on the data from primary survey.

The table above indicates the normal distribution of public attitudes towards tourism post-COVID-19 pandemic. The p-values for all statements are less than 0.05. Thus, the null hypothesis (H0) will be rejected, indicating that the data are not normally distributed. Hence, a non-parametric test is used to assess statistically significant differences in the data above. So, use the Kruskal-Wallis H Test to check for differences in the mean values of the variables gender, age, and family monthly income.

Hypothesis 2

H0: There is no significant difference between public attitudes towards tourism with respect to gender.

H1: There is a significant difference between public attitudes towards tourism with respect to gender.

Table 7: Public Attitude Towards Tourism Post-COVID-19 Lockdown with respect to gender.

Attitude Of Public	Gender And Attitude	
	Mann Whitney U	P Value
Covid 19 pandemic affect my travel	2581	0.33
I feel financial stress due to covid 19 pandemic	2567	0.323
I will reduce the length of travel and tourism	2571.5	0.32
I feel bored due to lockdown and I should go trip for refreshment	2384.5	0.094

Source: own elaboration based on the data from primary survey.

Since gender has only two categories, the Mann-Whitney U Test is used. The test statistic values indicate that the p-values for both statements are above 0.05. Hence, retain the null hypothesis. Hence, it is concluded that there is

no significant difference between public attitudes towards tourism with respect to gender.

Hypothesis 3:

H0: There is no significant difference between the public attitude with respect to age. H1: There is a significant difference between the public attitude with respect to age.

The study attempts to test the significance of differences in travellers' attitudes towards tourism post-COVID-19 pandemic across age groups. The Kruskal-Wallis H test was conducted at the 5% significance level, and the results are presented in the table below.

Table 8: Public Attitudes Towards Tourism Post-COVID-19 Lockdown with respect to age.

Attitude of public	Chi-square	Df	P value
Covid19 pandemic affect my travel	4.07	3	0.25
I feel financial stress due to covid19 pandemic	2.55	3	0.46
I will reduce the length of travel and tourism	3.66	3	0.30
I feel bored due to lockdown and I should go trip for refreshment	3.50	3	0.32

Source: Own elaboration based on the data from the primary survey.

With a p-value greater than 0.05 for all elements, the researcher fails to reject the null hypothesis. Hence, it is concluded that there is no significant difference between the public attitude with respect to age.

Hypothesis 4

H0: There is no significant difference between public attitudes with respect to occupation.

H1= There is a significant difference between public attitudes with respect to occupation.

Table 9: Attitude of the public and the occupation.

Attitude of Public	Chi square	DF	P value
Covid19 pandemic affect my travel	4.60	3	0.2
I feel financial stress due to covid19 pandemic	9.1	3	0.02
I will reduce the length of travel and tourism	9.9	3	0.019
I feel bored due to lockdown and I should go trip for refreshment	14.9	3	0.002

Source: Own elaboration based on the data from primary survey.

The chi-square analysis indicates that there is no significant difference in public attitudes regarding the impact of the COVID-19 pandemic on travel across occupations, $\chi^2(3, N = X) = 4.60, p = .20$. However, significant differences were observed for attitudes related to financial stress due to the pandemic, $\chi^2(3, N = X) = 9.10, p = .02$; the intention to reduce the length of travel, $\chi^2(3, N = X) = 9.90, p = .019$; and feelings of boredom leading to the desire for trips as refreshment, $\chi^2(3, N = X) = 14.90, p = .002$. These findings suggest that, while the perceived impact of the pandemic on travel is uniform across occupations, occupational differences significantly influence attitudes related to financial

stress, travel behaviour modifications, and emotional responses to lockdowns.

Table 10: Transportation mode

Transportation	Mean	Std deviation	Co efficient variation
I avoid crowd public transits	1.87	0.745	39.8
I prefer to use my transportation	1.80	0.794	44.11
I prefer to use public transportation while travelling	2.94	1.227	41.73

Source: Own elaboration based on the data from the primary survey.

The table shows the transportation factors that affect travellers. The coefficient of variation is a measure of relative variability; the lower the value, the more consistent the data. In this table, the least value is 39.8, so travellers avoid crowded public transit.

Table 11 : Service Delivery& Purchase Factor.

Service delivery&purchase	Mean	Std deviation	Co efficient variation
During this pandemic, I ordered delivery of necessary things to minimize direct interactions	1.99	0.855	42.9
I prefer the provision of packed & sanitize food for travel	1.79	0.774	41.56
I prefer online platform while purchasing tickets, booking hotels & buying tour packages	1.83	0.784	42.8
While traveling I prefer to order food in restaurant to avoid unnecessary contacts.	2.01	0.905	45.02

Source: Own elaboration based on the data from primary survey.

The table above depicts the service purchase factors affecting travellers. It can be inferred from the analysis that travellers give more importance to packaged and sanitized food for travel.

Table 12: Deciding Factor Related To Travel

Decision	Mean	Std deviation	Co efficient variation
While traveling I decide to avoid unnecessary contacts with crowds	1.79	0.72	40.7
Because of covid19, I decide to avoid the possibility of travelling with groups	2.21	1.005	45.4
I go for trip as usual after pandemic also	2.45	1.15	46.9
Because of covid19 I believe travelling to any place will be unsafe	2.21	1.016	46.1

Source: own elaboration based on the data from own elaboration based on the data from primary survey.

With a mean value of 2.45, travellers were very positive towards going on a trip after the pandemic. However, with a correlation of 40.7, the lowest among all factors, travellers are more consistent in avoiding unnecessary contact with crowds on this variable.

Table 13: Hygiene & Safety Factor Related To Travellers.

Hygiene & safety	Mean	Std Deviation	Co efficient Variation
When you going for the trip did you keep social distancing in restaurant	2.09	0.905	45.4
Are you keeping sanitizer for while travelling	2.69	1.04	62.07
After covid19, I care more about the hygiene& safety of public transportation	1.47	0.80	54.0

Source: own elaboration based on the data from the primary survey.

In the above table, the hygiene & safety factor related to travellers' tourism is depicted. In this table, 45.4 is the lowest value, indicating that travellers are more consistent in maintaining social distancing for this variable.

Table 14: Consistent Indicators Related To Travellers

Indicators	Mean	Std Deviation	Co Efficient Variation
I avoid crowd public transits (Transportation factor)	1.87	0.745	39.8
I prefer the provisions of packed & sanitize food for travel (service& purchase)	1.79	0.774	41.56
While travelling I decide avoid unnecessary contacts with crowds(decision factor)	1.79	0.279	40.7
When you are going for trip did you keep social distancing in restaurant (hygiene factor)	1.99	0.905	45.4

Source: own elaboration based on the data from the primary survey.

Mainly, four factors are used in this study: transportation, service & purchase, decision, and hygiene & safety. The coefficient of variation is used to check the relative variability. Thus, the table reveals the variables with the lowest coefficient of variation. That means these statements are the most significant variables among the four factors mentioned above. Among these factors, "I avoid crowded public transit" is the most consistent, with a mean of 1.87 and a coefficient of 39.8 (the lowest value).

Table 15: Pearson's Correlations between Threat Appraisal, Coping Appraisal and Travelling behaviour.

Variable		Threat Appraisal	Coping Appraisal
Coping Appraisal	Pearson's r	0.693	–
	p-value	9.132×10^{-23}	–
Travel Behavior	Pearson's r	0.825	0.578
	p-value	1.715×10^{-38}	9.899×10^{-15}

Source: own elaboration based on the data from the primary survey.

Pearson's correlation analysis demonstrates significant relationships between threat appraisal, coping appraisal, and travel behaviour. Threat appraisal is strongly and positively correlated with coping appraisal ($r = 0.693$, $p < .001$) and travel behaviour ($r = 0.825$, $p < .001$). Additionally, coping appraisal is positively correlated with travel behaviour ($r = 0.578$, $p < .001$). These results indicate that as individuals' threat and coping appraisals increase, their travel behaviour is also likely to change accordingly. All correlations are statistically significant, highlighting the interconnected nature of these constructs in influencing travel-related attitudes and behaviours.

Table 16: The PMT Summery Table

PMT Component	Variable	Survey Item Example	Finding
Threat Appraisal	Perceived Severity	Travel is unsafe	Strong impact
Threat Appraisal	Vulnerability	Financial stress	Moderate
Coping Appraisal	Self-efficacy	Carry sanitizer	High
Coping Appraisal	Response efficacy	Online booking	High

Source: Author's own elaboration

Table 16 demonstrates how both threat appraisal and coping appraisal operate simultaneously in shaping post-pandemic travel decisions. The elements associated with perceived severity and vulnerability indicate that concerns about health risks and financial uncertainty continue to influence cautious travel patterns. At the same time, variables linked to response efficacy and self-efficacy indicate that individuals are not entirely deterred from travel; rather, they adapt by relying on protective measures such as digital platforms, sanitized services, and personal precautionary practices.

Overall, the table highlights that while perceived risk remains a dominant driver, the willingness to travel is sustained through confidence in safety mechanisms. This balance between fear and adaptive capability reflects a transition toward more controlled and risk-aware tourism behaviour, reinforcing the explanatory strength of Protection Motivation Theory in the post-COVID-19 context.

5.2 Discussion

This study explored traveller behaviour during the post-COVID-19 period through the lens of Protection Motivation Theory (PMT), which suggests that individuals make protective decisions based on how they appraise threats and their ability to cope with them (Rogers, 1975). PMT's two main components—threat appraisal and coping appraisal—provide the theoretical structure for interpreting the findings. These include sub-constructs such as perceived vulnerability, perceived severity, response efficacy, self-efficacy, and response cost, all of which were operationalized in the questionnaire and tested against travel behaviour patterns.

From the empirical data, strong correlations emerged. Threat appraisal showed a strong positive correlation with travel behaviour ($r = .825, p < .001$), indicating that travellers who perceive greater risk are more likely to adopt protective behaviours, such as avoiding crowded transport or using sanitization measures. Similarly, coping appraisal ($r = .578, p < .001$) also showed a significant relationship with travel behaviour, implying that individuals who believe in the effectiveness of protective actions and their personal ability to perform them are more inclined to resume travel. These findings are consistent with Hernández Calderón (2021) and Oliveira et al. (2022), who noted that threat perceptions and self-efficacy significantly shaped hotel booking intentions post-pandemic. The consistent attitudes across gender and age categories further indicate a widespread sensitivity to health risks, while the occupational disparities highlight structural influences, such as differential access to private transportation or flexible work conditions, which may modulate response costs.

Each category under PMT reflects a different layer of decision-making. Perceived vulnerability, for example, was evident in participants' expressed financial stress and shortened travel plans. Perceived severity was revealed in concerns about exposure and the avoidance of group travel. These threat elements clearly shape decision-making, as shown by high levels of avoidance behaviour. In contrast, coping mechanisms such as a preference for packed food, the use of digital booking platforms, and self-initiated hygiene practices (e.g., carrying sanitizer) demonstrated high response efficacy and self-efficacy.

When comparing the constructs, threat appraisal had a stronger influence on behaviour than coping appraisal, suggesting that fear and perceived danger continue to dominate post-pandemic decision-making. However, the significant role of coping appraisal shows that confidence in safety measures still enables travel, albeit cautiously. These patterns are consistent with previous PMT-based studies, such as those by Hernández Calderón (2021) and Xu and Nazneen (2021), who similarly observed that perceived threat and personal capability shaped travellers' choices under uncertainty.

Demographic analysis showed a relatively even gender distribution, with a slight predominance of female participants, and a concentration of respondents in the 20–30 age group, who were largely employed in the private sector and earned below ₹50,000 per month. While no significant differences in attitudes toward tourism emerged across gender and age groups—as confirmed by the Mann-Whitney U and Kruskal-Wallis H tests—the findings did reveal significant occupational differences, particularly in transportation preferences. Notably, individuals in certain professions expressed a stronger aversion to crowded public transport, likely reflecting greater perceived vulnerability and higher response costs associated with their daily exposure risks. This pattern resonates with prior research by Xu and Nazneen (2021), who found that environmental and occupational exposure influenced travel avoidance during health crises.

Overall attitudes toward tourism were moderately positive, with mean item scores nearing 4 on a five-point scale, suggesting cautious optimism contingent upon

adequate safety measures. This aligns with the PMT construct of response efficacy, wherein individuals' belief in the effectiveness of protective interventions—such as sanitization, digital booking tools, and contactless food services—enhances their willingness to engage in travel (Bae & Chang, 2021).

6 FINAL CONSIDERATIONS AND RECOMMENDATIONS

This study set out to understand how people's travel choices after the COVID-19 pandemic are influenced by their fears about health risks and their confidence in staying safe, using Protection Motivation Theory (PMT) to guide the research. The key ideas we focused on were how seriously people perceive the threat (threat appraisal) and how capable they feel of managing the risk (coping appraisal). The results showed that people who felt more at risk were more careful about travel, while those who believed in safety measures like sanitization and distancing were more willing to travel again.

The strongest influence was how much risk people felt, followed by their confidence in protective actions. These findings support what PMT suggests. However, the study was limited to a small group in Central Kerala, so applying it to other places or larger populations is a future scope of this study.

Future studies could also compare results across different cultures or track how travel behaviour changes over time. Overall, this research provides helpful guidance for the tourism industry to create safer, more reassuring travel experiences that align with what today's travellers care about most.

The researcher would like to give the following suggestion based on the findings and interpretation of this research: Enhance Communication of Safety Protocols: Tourism operators should implement clear, transparent, and frequent communication about the safety measures in place. This includes detailed information on sanitation practices, social distancing measures, and health checks. Communications should be delivered through multiple channels, including digital platforms, on-site signage, and direct outreach, to ensure they reach all potential travellers.

Promote Local Travel: Encourage local tourism by highlighting attractions within driving distance or accessible by short flights within the country. Local travel reduces the perceived threat associated with long-distance travel and crowded international airports, aligning with travellers' coping appraisals that favour safer, more controlled environments.

Leverage Technology to Enhance Safety: Utilize technology to reduce human contact and manage hygiene effectively. Implementing mobile check-ins, virtual tours, and contactless payments can significantly enhance the perceived efficacy of safety measures. Additionally, use technology to track health conditions and ensure that safety protocols are rigorously maintained, thereby boosting travellers' confidence in health and safety measures, institutional preparedness, and their ability to manage travel risks.

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Appendix A

PMT Construct	Sub-Construct	Question Code	Questionnaire Item
Threat Appraisal	Perceived Vulnerability	PV1	COVID-19 pandemic will affect my travel
		PV2	I feel financial stress due to COVID-19 pandemic
		PV3	I will reduce the length of travel and tourism
	Perceived Severity	PS1	Because of COVID-19, I believe travelling to any place will be unsafe
		PS2	While travelling I decide to avoid unnecessary contacts with crowds
		PS3*	Because of COVID-19, I decide to avoid the possibility of travelling with groups
	Intrinsic Rewards	IR1	I feel bored due to lockdown and I should go on a trip for refreshment
		IR2	I go for trips as usual after pandemic also
	Coping Appraisal	Response Efficacy	RE1
RE2			I prefer online platforms for purchasing tickets, booking hotels, and tour packages
RE3			While travelling I prefer to order food in restaurants to avoid unnecessary contacts
Self-Efficacy		SE1	Are you keeping sanitizer while travelling?
		SE2	After COVID-19, I care more about the hygiene & safety of public transportation
		SE3	When going for a trip, do you maintain social distancing in restaurants?
Response Cost		RC1	I avoid crowded public transits
		RC2	I prefer to use my own transportation to avoid the risk
		RC3	During this pandemic, I order delivery of necessary things to minimize contact
Behavioral Outcome	Travel Behavior	TB1*	I will reduce the length of travel and tourism
		TB2	I go for trips as usual after pandemic also
		TB3	Because of COVID-19, I believe travelling to any place will be unsafe

Source: Authors' own elaboration based on protection motivation theory. * Items TB1 and PV3 ("I will reduce the length of travel and tourism") have been intentionally mapped to both the Threat Appraisal and Travel Behavior constructs. When coded as PV3, the item reflects perceived vulnerability—capturing the respondent's threat perception in response to COVID-19. When coded as TB1, it reflects actual or intended behavioral response—indicating a self-regulated travel adjustment. This dual categorization is theoretically consistent with Protection Motivation Theory (Rogers, 1975; Maddux & Rogers, 1983), which allows for certain cognitive appraisals to serve as predictors and indicators of protective behavior. To maintain analytic integrity, the item was used selectively in construct-level calculations depending on the analytical purpose.

CRediT author statement

Term	Definition	Author 1	A2
Conceptualization	Ideas; formulation or evolution of overarching research goals and aims.	x	x
Methodology	Development or design of methodology; creation of models.	x	x
Software	Programming, software development; designing computer programs; implementation of the computer code and supporting algorithms; testing of existing code components.	x	
Validation	Verification, whether as a part of the activity or separate, of the overall replication/ reproducibility of results/experiments and other research outputs.	x	x
Formal analysis	Application of statistical, mathematical, computational, or other formal techniques to analyze or synthesize study data.	x	
Investigation	Conducting a research and investigation process, specifically performing the experiments, or data/evidence collection	x	
Resources	Provision of study materials, reagents, materials, patients, laboratory samples, animals, instrumentation, computing resources, or other analysis tools.	x	x
Data Curation	Management activities to annotate (produce metadata), scrub data and maintain research data (including software code, where it is necessary for interpreting the data itself) for initial use and later reuse.	x	
Writing - Original Draft	Preparation, creation and/or presentation of the published work, specifically writing the initial draft (including substantive translation).	x	
Writing - Review & Editing	Preparation, creation and/or presentation of the published work by those from the original research group, specifically critical review, commentary or revision – including pre- or post-publication stages.		x
Visualization	Preparation, creation and/or presentation of the published work, specifically visualization/ data presentation.	x	
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