

## Impacts of COVID-19 on the post-pandemic behaviour: The role of mortality threats and religiosity

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### ABSTRACT

This study explores the influence of intra-pandemic perceptions on travellers' post-pandemic hotel booking behaviour among crisis-resistant travellers and crisis-sensitive groups. It also examines the moderating role of mortality threats and religiosity on these behaviours. We collected quantitative data utilising survey method via questionnaires to address various levels of the research. We used PLS-SEM to evaluate our proposed model. We collected data from 1580 who had booked hotels in Egypt. Our study indicated that intra-pandemic perception has a stronger effect on travellers' post-pandemic hotel booking behaviours if the travellers are less religious and feel deeply threatened by the idea of their own level of mortality. Moreover, it revealed that intra-pandemic perceptions had a stronger association with post-pandemic planned behaviour for travellers who chose to cancel their hotel booking plans. Our study also indicated that emergency public information plays a critical role in influencing post-pandemic planned behaviour. Our study offers effective strategies to aid hospitality and tourism practitioners when risky and threatening situations such as COVID-19 arise, specifically in the period of response and recovery.

### 1. Introduction

The rapid spread of COVID-19 and large-scale travel restrictions are projected to have negative outcomes on the hospitality and tourism industries (Agag, 2019; Aigbedo, 2021). Airlines estimate a loss of 20–30% (=US\$ 300–450 billion) in international tourism receipts in 2020 (IATA, 2020). In response to the disease, on February 27, 2020 Egypt suspended entry to the country for tourism purposes. A market survey in March 2020, however, revealed that as many as 69% of individuals were not willing to cancel their hotel booking in Egypt (Abdelmoety et al., 2022; Ebrahim and Memish, 2020), although it had the greatest number of cases in the Middle East. The scale and significance of the pandemic propose that this phenomenon cannot be

explained by ignorance or gullibility. Deliberately seeking risks is one of the main characteristics of thrill-seeking travellers, but a pandemic appears improbable as a source of adrenaline. Previous studies cannot explain the impact of intra-pandemic perceptions on travellers' post-pandemic hotels booking behaviours, thus disclosing a research gap (Aboul-Dahab et al., 2021; Eroglu et al., 2022; Nguyen and Coca-Stefaniak, 2020).

As of May 15, 2021, the COVID-19 pandemic has caused over 244,520 confirmed cases and more than 14,307 associated deaths in Egypt (World Health Organization International health regulations, 2021). In terms of the current study's context, after suffering significant losses, the Middle East's hotel industry began to show signs of improvement by July 2020, with occupancy recovering to 35.3%. The

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recovery was so promising that, when compared to the European hotel industry, the economic shocks appeared much less potent. In July 2019, occupancy rates, average daily rates, and revenue per available room all decreased by 41.8%, 9.6%, and 47.4%, respectively (STR, 2020). Despite the fact that the region was rapidly improving month after month in the aftermath of the pandemic, the Middle East had experienced its lowest levels of absolute occupancy and revenue per available room ever recorded (STR, 2020). With a greater emphasis on the Egyptian context, hotels cancelled bookings (Salem et al., 2021), implemented layoff and closure practises, and focused on safety and hygiene practises (Salem et al., 2021).

Prior research reveals that public information from the government in emergencies is a critical factor that can persuade the public to follow prescribed protective behaviour (i.e., travel avoidance during the COVID-19 pandemic) in order to stop the virus from spreading (Dai et al., 2020). Some governments (e.g., those of UK and China) introduced successful emergency public information initiatives via rumour refutation and effective risk communication (Cambra-Fierro et al., 2021; Dai et al., 2020; Dawson and Golijani-Moghaddam, 2020; Kim et al., 2021; Park et al., 2021; Wang et al., 2021; Zhang et al., 2020). Effective pandemic information publicises reported cases, dynamic suspected cases, recovered cases, and deaths, both in cumulative totals and regular updates, as well as monitored data, such as numbers of flights taken and the travel history of particular confirmed or suspected patients. This breadth of expertise and awareness has been the bedrock of the government's current policy initiatives to combat the COVID-19 pandemic (Agag et al., 2020; Burhan et al., 2021; Sharma et al., 2017; Yan et al., 2021).

Becker (1973) indicated that mortality threats have a critical influence on individuals' behaviours. Furthermore, individuals can form positive attitudes to specific products or brands that seem to reduce the threat of mortality (Agag and Colmekcioglu, 2020; Omar et al., 2021; Ulqinaku et al., 2020). Our study extends these results in the context of hospitality and tourism, because mortality threats can play a critical role in preventing individuals from booking hotels (Nilashi et al., 2022; Ritchie and Jiang, 2019). This research seeks to examine the perceptions of travellers who booked hotels in Egypt during the early days of the pandemic (i.e., intra-pandemic) and the behaviour that they planned following the pandemic. It also examines the role of mortality threats and religiosity in influencing their post-pandemic behaviour.

The TPB has been commonly used in various disciplines, such as psychology, medicine, marketing, and tourism (Ferdous, 2010). However, researchers have attempted to include additional variables in the TPB to increase its explanatory power for more accurate prediction of behaviours. In tourism, variables such as authenticity, destination image, and tourists' characteristics were added to enhance the understanding of tourist behaviours (Agag and Eid, 2019; Girish and Lee, 2019). Recently, risk-related variables were added to expand the TPB. For example, Nanni and Ulqinaku (2020) discussed the impact of mortality threats on the intention of US tourists to travel. We adopted The Theory of Planned Behaviour (Ajzen, 1991) to examine planned changes to hotels booking behaviours after the pandemic. The intra-pandemic perceptions towards tourism destinations are added to examine their association with post-pandemic planned hotels booking behaviours, particularly with regard to attitude and post-pandemic hotels booking intention. Thus, our study explores the impact of intra-pandemic perceptions on post-pandemic hotels booking planned behaviours between crisis-resistant travellers (e.g., travellers not expecting to cancel their hotels booking plans) and crisis-sensitive ones (e.g., travellers expecting to cancel their hotels booking plans).

When travellers facing some risky situations (e.g., terrorism, disasters), some of them decide to delay their hotels booking, some cancel them, and some do not change them (Agag and Eid, 2020; Byrd et al., 2021; Hajibaba et al., 2015; Neise et al., 2021; Sembada and Kalantari, 2020). Prior research indicated that "Crisis-resistant travellers do not cancel their hotels booking plans to a crisis-stricken destination and

book despite crisis at the destination" (Hajibaba et al., 2015, P.53). Since Fennell (2017) indicated that mortality threats play a critical role in preventing individuals from travelling, we propose that religiosity plays a crucial role in influencing individuals' post-pandemic hotels booking behaviour.

On the basis of the foregoing analysis, our paper expanded the TPB model to explore the variables influencing travellers' hotels booking planned behaviours following the pandemic, with a particular emphasis on the mechanism by which travellers' intra-pandemic perceptions influence their planned behaviours. The expanded TPB model was constructed by adding a number of factors to the original TPB model, including intra-pandemic perceptions (e.g., hospitality, impressions, effective pandemic information, effective risk communication, supplies, and rumour refutation), religion, and mortality threats. Thus, the model can more accurately account for the decision-making processes associated with post-pandemic hotels booking behaviour.

The following contributions are made by this research. First, it elucidates the process through which intra-pandemic perceptions of travellers (e.g., hospitality, impressions, effective pandemic information, effective risk communication, supplies, and rumour refutation), impact their hotels booking planned behaviour. Second, this research establishes the TPB model's relevance to the analysis of hotels booking behaviours in the severe public health crises environment, hence broadening the model's field of use. Third, this research extends the TPB model by including new structures discovered outside of the main TPB conceptual framework, hence increasing the main TPB framework predictive ability for hotels booking behaviour. This study establishes a solid platform for future research on travellers' post-pandemic behaviours. Fourth, this work advances the field by including religiosity and mortality threats as moderator factors in the model from an individual psychology viewpoint.

## 2. Research model and hypotheses development

### 2.1. Theory of planned behaviour (TPB)

The TPB is a psychological theory that investigates the interactions between attitudes, intentions, and behaviours (Wang et al., 2021). The Theory of Reasoned Action (TRA) is where it all started (Fishbein and Ajzen, 1977). Individuals' behavioural intentions, based on the TRA, are governed by volitional elements, such as attitudes and subjective standards. The word "attitude" can be defined as an actor's assessment of a certain conduct, while "subjective norms" refers to the societal influences that favour or dissuade an actor from engaging in a certain activity (Li et al., 2020). Due to the reality that a consumer purpose or action cannot be entirely dictated by oneself, the TPB was enlarged to encompass non-volitional elements, namely perceived behavioural control, into the TRA (Bae and Chang, 2021a,b). By including non-volitional elements into the TPB framework, the model's predictive value for behavioural intention is greatly increased (Agag and El-Masry, 2016; Wang and Wong, 2020). Perceived behavioural control is a word that refers to an individual's self-assessment of his or her capacity to conduct specified behaviours in light of criteria like skill and resources (Liu et al., 2021). Positive attitudes and subjective norms drive people to participate in a particular behaviour in the TPB; however, the precise intent to engage in the behaviour is established only when the person perceives adequate control over the behaviour (Sánchez-Caizares et al., 2020).

Along with the TRA and TPB, the model of goal-directed behaviour (MGB) is a critical theory in the social psychology research of human behaviour (Meng and Choi, 2016). TPB is, nonetheless, the framework for our investigation for different reasons: first, in comparison to TRA and MGB, the TPB model is more commonly utilised in tourist behaviours studies and is well acknowledged by the academic community (Huang et al., 2020). Second, as previously mentioned, the TPB's ability to anticipate human intents has been much enhanced when compared to

TRA (Sánchez-Cañizares et al., 2020). Thirdly, the MGB is an enhanced version of the TPB. The MGB model, on the other hand, is predicated on the strong premise that an individual's behaviour is directly and significantly reliant on their willingness to engage in the behaviour (Rather, 2021). Thus, the MGB model places a premium on the significance of desire in an individual's decision-making process (Goh et al., 2017). Due to the study's emphasis on behavioural intention, the TPB was selected as a theoretical base for our study model.

In the tourism and hospitality industry, numerous studies have utilised the TPB to explain consumers behaviours, including visitors behavioural intentions to visit location (Agag and El-Masry, 2017; Meng and Choi, 2019), intentions to visit green hotels (Yeh et al., 2021), sustainable behaviour (Holdsworth et al., 2019), medical tourism (Boguszewicz-Kreft et al., 2020), and behavioural intentions to support tourism development (Agag et al., 2016; Erul et al., 2020). Nevertheless, little is known about the adoption of this theory in explaining travellers post-pandemic behaviours. Thus, our study bridges this gap by extending and applying the TPB in explaining travellers post-pandemic behaviours. This paper seeks to explore the impact of COVID-19 on the travellers' post-pandemic hotels booking behaviours. With an additional constructs of intra-pandemic perceptions (e.g., hospitality, impressions, effective pandemic information, effective risk communication, supplies, and rumour refutation), our study extends the TPB to examine the effect of intra-pandemic behaviour on post-pandemic hotels booking behaviour (Fig. 1).

## 2.2. The main constructs of TPB

Subjective norms, attitude, and perceived behavioural control, according to Ajzen (1991), determine behaviour intention. The relationship between these three variables and behaviour intention has been extensively researched in the travel and tourism industry, demonstrating the TPB's validity (e.g., Agag and Colmekcioglu, 2020; Goh et al., 2017; Huang et al., 2020; Japutra et al., 2019). The literature abounds with data demonstrating substantial correlations between the research variables that are based in the TPB. The studies aimed at comprehending consumer behaviour validated the critical role of attitude, the strong effect of subjective norm, and the substantial influence of perceived behavioural control on behavioural intentions (Agag et al., 2019; Bae and Chang, 2021a,b; Kim, 2021; Li et al., 2020). Liu et al. (2021) demonstrated a substantial link between attitude, perceived behavioural control, and behavioural intentions in the context of hospitality and tourism during severe public health crises. The research demonstrates that the TPB is capable of effectively explaining consumer behaviour, and hence the present research hypothesised that travellers'

attitudes, perceived behavioural control, and subjective norms are the primary drivers of their post-pandemic hotels booking behaviour. Thus, the following hypotheses are suggested:

**H1.** Attitude is positively related to post-pandemic hotels booking behaviour.

**H2.** Perceived behavioural control is positively related to post-pandemic hotels booking behaviour.

**H3.** Subjective norm is positively related to post-pandemic hotels booking behaviour.

## 2.3. Intra-pandemic and post-pandemic hotels booking behaviour

The frequency of linked previous behaviour, according to human behaviour theories, is the greatest predictor of behavioural intentions and future behaviour (Sonmez and Graefe, 1998). Past behaviour is a reflection of personal habits, and individuals generally want to retain consistency in their behaviour and ideals (Fredricks and Dossett, 1983). Numerous studies have discovered that when prior behaviour is incorporated, the TPB model's explanatory value is enhanced. Prior research revealed that intra-pandemic perception is related to post-pandemic behaviours (Dedeoğlu and Boğan, 2021; Kim and Kwon, 2018; Li et al., 2021; Liu et al., 2021; Radic et al., 2021; Xie et al., 2021). We propose that the perceptions of travellers about the hospitality of the destination during COVID-19 and their impression about the destination depend on the pandemic cognitive knowledge at the destination will influence on their post-pandemic hotels booking behaviours. Moreover, effective governmental communication plays a critical role in raising citizens' awareness of travel risks and promotes protective behaviours during and after a pandemic (Xu et al., 2020). The aim of government emergency public information is to boost people's courage and resolve, increase their risk perception and encourage them to take successful pandemic security measures (Eid et al., 2019; Guthrie et al., 2021; Paek et al., 2008; Tu et al., 2021). Some governments around the world took successful emergency public information measures to control the pandemic and promote citizens' protective behaviours by refuting rumours and providing effective information on the pandemic and its risks (Li et al., 2020; Selim et al., 2022; Yan et al., 2021). Effective pandemic information, such as dynamic suspected cases, reported cases, recovered cases, and deaths, in both cumulative numbers and regular updates, as well as monitored data, such as the travel history of specific confirmed or suspected patients and the trains or flights that they took, played a critical role in promoting protective behaviours during the COVID-19 pandemic and has become the cornerstone of current governments'

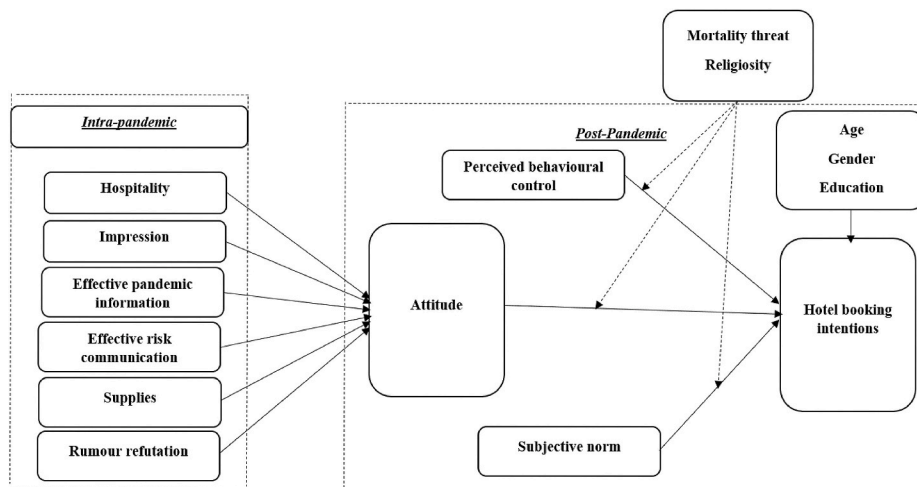


Fig. 1. The conceptual framework.

policy efforts to tack the disease (Dai et al., 2020; Zheng et al., 2021).

Qazi et al. (2020) have pointed out that effective information can play a crucial role in the increase of citizens' risk perception and the promotion of protective behaviours. Fewtrell and Bartram (2001) find that effective risk communication, consisting of constructive, effective informative material may help people to act in more acceptable ways. Success in the fight against the virus, as well as reporting from frontline medical personnel and volunteers in the news, can motivate people to participate in pandemic-control initiatives (China Daily, 2020). Rumours exacerbate the unpredictability of public information, triggering pseudoscientific statements and conspiracy theories (Huang et al., 2020; Kim, 2022). The many rumours were a significant obstacle in monitoring the "Ebola hemorrhagic outbreak" (Fung et al., 2016). Governments can reduce public uncertainty and perceived danger and fear; they can create public trust and stimulate protective behaviours by refuting rumours promptly (Paek and Hove, 2019). In addition, medical supplies are critical in a pandemic (Xu et al., 2020). For example, evidence indicates that early supplies decreased the mortality rate in the 2014 West African Ebola epidemic (Blair et al., 2017). Efforts to build public interest and inspire people to access health services, including the prompt provision of equipment such as trained physicians and life-saving medications (Eichengreen et al., 2021; Naeem and Ozuem, 2021). Thus, the following hypotheses are suggested:

**H4.** Travellers' perceptions of the destination's hospitality during the pandemic is positively related to their attitude.

**H5.** Travellers' impression of the destination during the pandemic is positively related to their attitude.

**H6.** Effective pandemic information is positively related to travellers' attitude.

**H7.** Effective risk communication is positively related to travellers' attitude.

**H8.** Supplies are positively related to travellers' attitude.

**H9.** Rumour refutation is positively related to travellers' attitude.

#### 2.4. The moderating role of mortality threats and religiosity

Psychological threats are unsettling and unpleasant psychological experiences that occur when the present condition differs from the intended end state (Eger et al., 2021; Han et al., 2015; Kumar and Shah, 2021; Ulqinaku et al., 2020). Death threats are among the most profound psychological challenges that someone may endure, disrupting life's meaning (Becker, 1973; Routledge et al., 2011). The fear of dying, the fear of losing a loved one, and even watching a movie or reading news or a storey that reminds people of their mortality and how death is an impending reality can all trigger mortality threats (Rosenblatt et al., 1989).

From a psychological standpoint, mortality risks may reduce life satisfaction and job performance, impair psychological well-being, and reduce prosocial intentions (De Clercq et al., 2017). (Jonas et al., 2002), and promote stigmatisation (Jonas et al., 2002). (Yousaf and Xiucheng, 2018). Consumer behaviour is significantly influenced by death-related psychological worries. When people believe they are being observed (vs. not being observed) by others, these threats can (a) influence people's preferences for luxury goods versus non-luxury goods (Mandel and Heine, 1999), and (b) From a psychological standpoint, mortality risks may reduce life satisfaction and job performance, impair psychological well-being, and reduce prosocial intentions (De Clercq et al., 2017). These findings reveal that mortality risks have a considerable impact on an individual's psychological state and daily consumption behaviour when taken together. Previous study has found that the prospect of death has a major impact on behaviour in a variety of ways, including lowering wellbeing (Burke et al., 2010) and changing customers' behavioural intentions (Nanni and Ulqinaku, 2020). Consumers develop

a good view toward products and brands that provide them with protection from death threats (e.g., Sarial-Abi et al., 2017). According to Fennell (2017), mortality fears play a significant impact in stopping travellers from travelling. Additionally, previous study has shown that religiosity has a major impact on consumer behaviour (e.g., Agag and El-Masry, 2016; Egresi et al., 2012; Ranganathan and Henley, 2007; Shaalan et al., 2022).

Religion has long been recognised as a powerful cultural force that influences human behaviour. Religion has been demonstrated to play a substantial effect in affecting consumer behaviour in previous studies (Abror et al., 2019; Agag and El-Masry, 2016; Aji et al., 2020; Wu and Mursid, 2019). Kirillovaa et al. (2014) proposed that religious differences between hosts and tourists have an impact on not just interactions but also the presence of hospitality in a place. Tourism, according to Joseph and Kavoori (2001), puts religious practises and local cultures at jeopardy. According to Terzidou et al. (2008), religion has a substantial impact in host-guest interactions, even when both visitors and locals share the same religious tradition. Religion, according to Ranganathan and Henley (2007), is positively related to behaviour intention, which is related to attitude. As a result, our findings imply that mortality risks and religion influence the links between perceived behavioural control, attitude, subjective norm, and post-pandemic hotel booking behaviour.

**H10.** Mortality threats moderate the link between perceived behaviour control, attitude, subjective norm, and post-pandemic hotels booking behaviour.

**H11.** Religiosity moderates the link between perceived behaviour control, attitude, subjective norm, and post-pandemic hotels booking behaviour.

### 3. Methodology

#### 3.1. Measurement

To collect data from the target respondents, Google Forms was used to develop an online survey. Two sections were included in our questionnaire. Respondents' demographic variables were covered in the first section, The study variables were discussed in the second section on a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5). Our study constructs measurement items were adapted from prior research in the hospitality and tourism context. Three university professors and three tourism experts reviewed our questionnaire to assess the content validity. Moreover, we performed a pilot study using 50 travellers as we considered their feedback to enhance the questionnaire. The traditional variables of TPB – i.e., perceived behavioural control, attitude, subjective norm, and post-pandemic hotels booking intentions– were measured using valid and reliable scales adapted from prior studies (e.g., Chen and Tung, 2014; Nguyen and Coca-Stefaniak, 2020; Sembada and Kalantari, 2020). Religiosity and mortality threats were adopted from Eid and El-Gohary (2015) and Nanni and Ulqinaku (2020). Finally, intra-pandemic (e.g., hospitality, impressions, effective pandemic information, effective risk communication, supplies, and rumour refutation), was adopted from Li et al. (2020) and Dai et al. (2020). Specifically, post-pandemic hotels booking intentions were measured using three items (e.g., "After this pandemic, I still intend to book hotels"). Three items are utilised to assess perceived behavioural control (e.g., "Once this pandemic is over, I will continue to have availability in my schedule to book hotels"). We utilised four items to measure attitude (e.g., "Once this pandemic is over, I believe it is still a good idea to book hotels"). Three items were utilised to assess subjective norms (e.g., "Most people who are important to me think that I should to book hotels when the pandemic is over"). Hospitality was evaluated using two items (e.g., "the country I intended on visiting showed a great deal of resilience in ensuring the health and safety of visitors"). Three items were used to measure impression (e.g., "My impression of the country will be affected by the number of coronavirus cases reported").



Effective pandemic information were measured using four items (e.g., “Suspected numbers, infected numbers, critically ill numbers, and death toll in different regions are officially announced every day”). Effective risk communication was measured using three items (e.g., “A lot of information about medical staff and supplies brought from other areas to the front line is officially announced”). Supplies were evaluated utilising four items (e.g., “Medical staff are sufficient in the country or region I am planning to visit”). Rumour refutation were assessed utilising four items (e.g., “Fake news is officially refuted in time”). Mortality threats were measured using two items (e.g., “I’m feeling my life is threatened”). Finally, religiosity was measured using four items (e.g., “In my daily life: Religion is very important”). All the study measurements are indicated in the appendix 1.

### 3.2. Sampling and data collection

We collected the data for our study in mid-May 2021, with the help of four research assistants. To minimize self-selection bias, the survey was set up to have a screener page at the start. This was programmed so that only those who were aware of COVID-19, and had booked hotels in Egypt could proceed to the main survey. The respondents were randomly generated by a reputable and well-known Egyptian market company that has access to a representative panel of more than 1.9 million travellers who had booked hotels in Egypt. This gives it a major advantage over most of the online surveys implemented to evaluate the impact of the corona crisis, as the latter are based primarily on online convenience samples and therefore lack generalizability due to selection bias (see Schaurer and Weiß, 2020). We sent a hyperlink to 4000 travellers chosen at random from this panel. The main purpose of the study and the time needed to fill out the survey were included in the e-mail invitation. We had obtained in total 1601 responses and a further 13 with missing values, which we eliminated. We also identified 8 outliers with z-scores higher than 3.42. Thus, 1580 responses were found valid for the final analysis. Among the 1580 respondents, male represents the majority of the respondents (55.1%), while female represents (48.5%). The participants average age is 36.5 years old. The majority of the participants demonstrated their household income as between £15,000 - £25,000 (32%). Most of the participants were well educated, with 42.5% having received a college or university degree. A majority of the respondents indicated that they live in rural area (55%) and urban area or village (45%). Furthermore, respondents’ average frequency of international travel per year was 2.6 times (see Table 1).

### 3.3. Common method bias

To control for potential common method bias, Harman’s single-factor test (Podsakoff et al., 2003) and the marker variable statistical test were used (Lindell and Whitney, 2001). The results showed that common method bias is not a significant issue. Furthermore, the latent factor technique was used to combine the items from the study into a single latent factor (CLF). The LFC was added to the measurement model, and the standardised regression weights of the two models with and without the CLF were compared. The analysis revealed that the values were comparable (the difference was less than 0.2) (Gaskin et al., 2017). The fit indices of the two models are comparable (model with CLF:  $\chi^2/df = 1.6904$ ; model without CLF:  $\chi^2/df = 1.7032$ ).

## 4. Analysis and results

SPSS 24.0 was used to code the data in our study, and SmartPLS3 was used to analyse the data and test the study hypotheses. Previous research suggested that modelling constructs as composites are a more realistic method of measurement (Sarstedt et al., 2016; Yeh et al., 2021). To evaluate the study model, two steps were used (for example, a measurement model and a structural model) (Hair et al., 2021). The Kaiser-Meyer-Olkin estimate of sampling adequacy is 0.859, and the

**Table 1**

Profile of respondents (N = 1580).

Characteristics	Frequency	Percentage
<b>Gender</b>		
Female	766	48.5
Male	814	51.5
<b>Age</b>		
18-34	791	50
35-49	587	37
50 or above	202	13
<b>Income</b>		
Below £15,000	286	18
£15,000- less than 25,000	509	32
£25,000- less than 30,000	472	30
£30,000 or above	313	20
<b>Education</b>		
Bachelor’s degree	674	42.5
Diploma	510	32
Master’s or doctorate	379	24
Other	17	1.5
<b>Place of residence</b>		
Urban	706	45
Rural	874	55
<b>Frequency of international travel (Vacation/leisure)</b>		
One time	489	31
2-4 times	603	36
5-6 times	367	23
More than 6 times	121	10
<b>Marital status</b>		
Single	689	44
Married	406	26
Divorced	317	20
Widowed	168	10
<b>Willingness to cancel your hotels booking?</b>		
Yes	608	38.5
No	972	61.5

chi-square test yields a statistically significant chi-square value of 1417 (p-value = 0.001), indicating that the overall variables were valid.

### 4.1. Measurement model

Table 2 shows the psychometric features of the study variables. The item loadings on their respective variables ranged from 0.863 to 0.961, with all of them being significant at 0.01. These loadings can be regarded satisfactory, according to Hair et al. (2021). The results in Table 2 indicate that composite reliability and Cronbach’s alpha scores ranged from 0.862 to 0.963. For instance, composite reliability and Cronbach’s alpha scores for post-pandemic hotel booking intentions are (0.94 and 0.92), respectively. The results indicate that these values were both greater than the threshold values of 0.70, indicating that the variables in this investigation were trustworthy. The average variance extracted (AVE) values ranged from 0.540 to 0.783. The results indicated that all the average variance extracted of the study variables were higher than the threshold value of 0.50 when testing convergent validity (Fornell and Larcker, 1981). This conclusion supports the research constructs’ convergent validity. The appropriate squared between-construct correlations were compared to the AVE values. The values of AVEs were larger than the relevant squared between-construct correlations, as shown in Table 3. As a result, the discriminant validity of the study is supported by these findings. The heterotrait-monotrait ratio (HTMT) was employed to test discriminant validity, as proposed by Henseler et al. (2016). Table 3 shows that the HTMT values among the study variables were less than 0.85, indicating that the study constructs were discriminately valid. Due to the rather significant correlations among some of the study variables, multicollinearity tests were performed. For all research constructs, the variance inflation factor (VIF) was less than 2.6, which is less than the 3.0 threshold value (Hair et al., 2021).

**Table 2**  
Measurement statistics of construct scales.

Construct/Indicators	Standard Loading	CR	VIF	Cronbach's $\alpha$	AVE	Mean	SD	t-statistic	Skewness	Kurtosis
<b>Post-pandemic hotel booking intentions (INT)</b>		0.94	1.038	0.92	0.605					
INT1	0.93					3.92	0.73	29.43	-1.50	2.30
INT2	0.91					4.21	0.80	22.39	-2.34	3.95
INT3	0.89					4.00	0.79	24.10	-0.89	3.06
<b>Perceived behavioural control (PBC)</b>		0.93	1.803	0.91	0.783					
PBC1	0.90					3.09	0.85	27.40	-3.39	1.65
PBC2	0.94					4.51	0.78	25.12	-4.54	2.41
PBC3	0.95					3.12	0.87	23.90	-2.10	1.20
<b>Attitude (ATT)</b>		0.96	1.04	0.94	0.601					
ATT1	0.95					4.49	0.82	25.40	-2.45	2.49
ATT2	0.94					4.08	0.86	23.06	-0.98	1.82
ATT3	0.90					3.20	0.80	21.20	-1.29	1.25
ATT4	0.92					3.19	0.79	19.56	-2.10	1.06
<b>Subjective norm (SNO)</b>		0.90	2.078	0.86	0.569					
SNO1	0.91					4.56	0.80	25.40	-1.50	1.39
SNO2	0.89					4.08	0.84	22.39	-0.85	2.18
SNO3	0.93					3.25	0.82	21.20	-1.29	1.56
<b>Hospitality (HOS)</b>		0.92	1.903	0.87	0.602					
HOS1	0.90					3.84	0.79	21.29	-1.45	2.05
HOS2	0.93					3.12	0.82	24.65	-1.06	2.17
HOS3	0.89					3.12	0.85	21.96	-1.28	1.05
<b>Impression (IMP)</b>		0.94	1.439	0.89	0.584					
IMP1	0.94					4.05	0.83	26.30	-2.03	1.92
IMP2	0.96					3.16	0.85	21.49	-1.95	2.46
IMP3	0.93					4.10	0.79	8.56	-1.28	1.35
<b>Effective pandemic information (EPI)</b>		0.93	1.290	0.88	0.604					
EPI1	0.89					2.90	0.86	23.20	-1.20	1.06
EPI2	0.94					3.27	0.81	21.28	-1.56	1.54
EPI3	0.87					3.56	0.79	17.65	-2.19	2.08
EPI4	0.90					3.28	0.85	24.39	-2.05	1.61
<b>Effective risk communication (ERC)</b>		0.95	1.283	0.92	0.580					
ERC1	0.90					3.20	0.86	21.20	-1.27	1.89
ERC2	0.94					3.17	0.84	25.37	-1.45	1.06
ERC3	0.89					2.89	0.89	19.46	-1.78	1.78
<b>Supplies</b>		0.96	1.890	0.94	0.619					
EUP1	0.94					3.20	0.87	23.18	-1.25	1.45
SUP2	0.92					3.18	0.84	21.89	-1.16	1.17
SUP3	0.90					3.26	0.80	18.45	-2.89	1.37
SUP4	0.96					2.78	0.83	22.65	-1.67	2.06
<b>Rumour refutation (RUM)</b>		0.94	1.843	0.92	0.689					
RUM1	0.96					2.89	0.86	21.28	-1.29	1.19
RUM2	0.90					3.27	0.84	32.09	-2.06	1.08
RUM3	0.89					3.54	0.80	14.58	-1.27	2.05
<b>Mortality threats (MOT)</b>		0.92	1.205	0.88	0.540					
MOT1	0.93					3.84	0.84	23.20	-1.29	1.04
MOT2	0.90					3.12	0.87	28.31	-2.05	1.57
MOT3	0.89					2.90	0.87	24.30	-1.67	2.06
<b>Religiosity (REL)</b>		0.94	1.379	0.86	0.617					
REL1	0.89					3.89	0.86	25.39	-1.28	1.48
REL2	0.93					3.74	0.83	23.19	-2.36	2.10
REL3	0.87					3.19	0.83	22.48	-3.19	2.19
REL4	0.88					4.00	0.87	25.30	-2.10	1.57
REL5	0.89					3.20	0.89	21.89	-1.27	1.90
REL6	0.93					3.12	0.85	17.56	-1.06	1.45
REL7										

#### 4.2. Structural model

Following the measurement model validation, we evaluated the structural model. The analysis indicated that the study model assigns 27% to attitude and 73% to post-pandemic hotels booking intention. The findings of hypotheses testing from H1 to H9 are demonstrated in Table 4. The analysis demonstrated that the paths between the TPB model constructs (i.e., attitude, perceived behavioural control, subjective norm, and hotels booking intentions) were significant ( $\beta = 0.480, 0.719, 0.203, p < 0.001$ ). Therefore, H1, H2, and H3 were supported.

The results in Table 4 revealed that intra-pandemic perceptions (e.g., hospitality, impressions, effective pandemic information, effective risk communication, supplies, and rumour refutation) have a significant positive influence on travellers' attitudes. As hypothesised, travellers' perceptions of the destination's hospitality during the pandemic has a

positive effect on their attitude ( $\beta = 0.693, p < 0.000$ ). In addition, travellers' impression of the destination during the pandemic has a positive effect on their attitude ( $\beta = 0.407, p < 0.000$ ). Effective pandemic information, effective risk communication, supplies, and rumour refutation have significant effect on attitude ( $\beta = 0.496, 0.329, 0.603, 0.236, p < 0.001$ ). Therefore, H4, H5, H6, H7, H8, and H9 were supported.

We performed a multiple group analysis utilising PLS/SEM to examine the moderating role of mortality threats and religiosity on the relationship among perceived behavioural control, subjective norms, attitudes, and post-pandemic hotels booking intentions. For the mortality threat test, a multiple group analysis was performed between two groups of respondents (e.g., respondents with a high perception of the threat of mortality (N = 782) vs. those with a low perception of this (N = 798)). The respondents were divided into two groups based on their

**Table 3**  
Discriminant validity.

	INT	PBC	ATT	SNO	HOS	IMP	EPI	ERC	SUP	RUM	MOT	REL
INT	<b>0.778</b>	0.407	0.387	0.601	0.446	0.329	0.320	0.297	0.208	0.430	0.326	0.510
PBC	0.318	<b>0.885</b>	0.518	0.327	0.239	0.605	0.478	0.384	0.548	0.320	0.304	0.437
ATT	0.405	0.389	<b>0.775</b>	0.618	0.572	0.557	0.375	0.403	0.237	0.458	0.618	0.662
SNO	0.376	0.403	0.330	<b>0.753</b>	0.321	0.238	0.430	0.612	0.437	0.326	0.347	0.418
HOS	0.410	0.278	0.253	0.337	<b>0.776</b>	0.445	0.669	0.438	0.590	0.517	0.462	0.439
IMP	0.390	0.519	0.519	0.208	0.238	<b>0.764</b>	0.364	0.551	0.349	0.320	0.331	0.512
EPI	0.461	0.390	0.337	0.217	0.562	0.308	<b>0.778</b>	0.439	0.244	0.516	0.510	0.438
ERC	0.580	0.429	0.418	0.510	0.376	0.610	0.347	<b>0.762</b>	0.480	0.664	0.346	0.663
SUP	0.376	0.610	0.320	0.439	0.660	0.327	0.209	0.302	<b>0.787</b>	0.510	0.412	0.417
RUM	0.330	0.416	0.119	0.332	0.431	0.384	0.438	0.438	0.330	<b>0.830</b>	0.497	0.508
MOT	-0.307	0.328	0.327	0.390	0.390	0.308	0.207	0.616	0.547	0.348	<b>0.735</b>	0.394
REL	0.477	0.441	0.320	0.446	0.517	0.426	0.512	0.463	0.310	0.556	0.450	<b>0.785</b>

\* The diagonal are the square root of the AVE of the latent variables and indicates the highest in any column or row.

\*Elements above the diagonal represent the constructs' HTMT ratios.

**Table 4**  
Path analysis and effect size.

Hypothesised Paths		Path coefficient	T statistics	F2
ATT	INT	0.719***	26.307	0.620
PBC	INT	0.480***	23.194	0.497
SNO	INT	0.203***	13.802	0.372
HOS	ATT	0.693***	24.954	0.540
IMP	ATT	0.407***	19.217	0.398
EPI	ATT	0.496***	21.235	0.442
ERC	ATT	0.329***	21.290	0.583
SUP	ATT	0.603***	25.303	0.617
RUM	ATT	0.236***	14.392	0.310
		<b>R<sup>2</sup></b>	<b>Q<sup>2</sup></b>	
Attitude		0.270	0.235	
Post-pandemic Travel Intention		0.731	0.702	

**Table 5**  
Comparison of the path coefficients between the high- and low- groups.

Paths	High-group	Low - group	T value	P value
(A) Mortality threats				
PBC INT	0.471	0.238	8.531	0.102
SON INT	0.209	0.034	8.490	0.088
ATT INT	0.785	0.573	11.203	0.061
(B) Religiosity				
PBC INT	0.440	0.527	5.058	0.150
SON INT	0.267	0.306	-9.748	0.076
ATT INT	0.340	0.698	7.859	0.094

mortality risk: high and low. The median split of mortality threats construct scores was used to make this distinction (Kim et al., 2014; Yi and La, 2004). Table 5 indicates the findings of the multiple group analysis for the moderating role of mortality threats and religiosity. The analysis indicated that attitude, subjective norm, and perceived behaviour control have stronger effect on post-pandemic hotels booking intentions for respondents with a high perception of the threat of mortality. The results indicated that there was no statistical variances among the two groups. For the religiosity test, a multiple group analysis was performed between two groups of respondents (e.g., respondents with a high level of religiosity (N = 694) vs. those with a low level of religiosity (N = 886)). The analysis indicated that attitude, subjective norm, and perceived behaviour control have stronger influence on the post-pandemic hotels booking intentions of respondents with a low level of religiosity. The results also demonstrated that there was no statistical difference between the two groups.

To assess for the mediating indirect influence of the intra-pandemic perceptions (e.g., hospitality, impressions, effective pandemic information, effective risk communication, supplies, and rumour refutation) on post-pandemic hotels booking intentions through attitude, we

conducted a separate analysis using Baron and Kenny's (1986) procedures. Our analysis revealed that the influence of hospitality, impressions, effective pandemic information, effective risk communication, supplies, and rumour refutation on post-pandemic hotels booking intentions is fully mediated by attitude. According to Hayes (2009), we also estimated the indirect effects and 95% bias-corrected confidence intervals. The results indicated that attitude mediated the link between hospitality, impressions, effective pandemic information, effective risk communication, supplies, rumour refutation and hotel booking intentions. The direct path between these variables and hotel booking intentions was not significant after including the mediator, indicating partial mediation.

We also conducted *t*-test to examine how age, gender, and education impact post-pandemic hotels booking intentions. Our results indicate that gender plays a role in influencing travellers' post-pandemic hotels booking intentions,  $t(1380) = 8.410, p < 0.001$ . Males demonstrated more post-pandemic intention behaviour than females. Our analysis also revealed that travellers from 18 to 24 years indicated higher hotels booking intentions than travellers from 45 to 60 years. We conducted one-way ANOVA test and the results indicated that education was significantly related to post-pandemic hotels booking intentions. The results indicate that travellers with university degree had more intentions to book hotels than travellers with high school.

#### 4.3. Further analysis

The second objective of our study is to explore the impact of intra-pandemic perceptions on post-pandemic planned behaviours between crisis-resistant travellers and crisis-sensitive ones (e.g., travellers expecting to cancel their hotels booking). Crisis-sensitive travellers are more likely to be affected by the external environment and travel with a more conservative attitude. However, crisis-resistant travellers are almost the same as the early phase before the COVID-19 outbreak. To distinguish between crisis-sensitive travellers and crisis-resistant travellers, all participants were asked question about their willingness to cancel their hotels booking. Our sample indicated that there is 972 crisis-resistant travellers (e.g., travellers not expecting to cancel their hotels booking), while, there is 608 crisis-sensitive ones (e.g., travellers expecting to cancel their hotels booking). A multiple group analysis using PLS/SEM was performed to examine these associations among crisis-resistant travellers and crisis-sensitive tourists. The analysis revealed that intra-pandemic perceptions had a stronger association with post-pandemic planned behaviour for travellers who chose to cancel their hotels booking ( $\beta = 0.284, p < 0.000$ ). Furthermore, the influence of attitude on travellers post-pandemic planned behaviours was stronger for those who chose to cancel their hotels booking. The analysis indicated that there is no significant difference between the two groups.

Based on these results, we performed a CHAID modelling method to

examine the associations between these two groups and their demographic factors (e.g., level of education, age, household income, caring for dependents, ethnicity, expected recovery duration, and gender). We performed Pearson's Chi-Square test in the conceptual framework because of the large sample size. The criterion factor utilised in the CHAID model is: "I expect to cancel my hotels booking".

The results revealed that level of education was the most critical driver ( $p < 0.000$ ) as travellers who had senior high school qualifications or lower were more likely to cancel their hotels booking. The results also indicated that travellers who live with grandparents, children, or older parents were more likely to cancel their hotels booking ( $p = 0.024$ ). Likewise, older travellers (<30 years old) with a low income (10,000–20,000 \$ per annum) and from Africa (39%) were very likely to cancel their hotels booking ( $p = 0.026$ ). Furthermore, the proportion of travellers willing to use car and coach for domestic travel were dropped as a consequence of the COVID-19 outbreak.

## 5. Discussion and conclusions

### 5.1. Key findings

In this unprecedented pandemic, this study provides a timely and meaningful discussion of the impact of COVID-19 on the behavioural changes among travellers. Our paper marks a significant step forward in exploring the influence of intra-pandemic perceptions on travellers' post-pandemic planned behaviours in the hospitality and tourism context. It also examines the moderating role of religiosity and mortality threats on these perceptions. Even in a serious crisis, the Theory of Planned Behaviour remained valid in the hospitality and tourism context. The results demonstrated that intra-pandemic perception has a significant effect on travellers' post-pandemic hotels booking behaviour, which has not been explored in the hospitality and tourism context, but is in line with prior research (e.g., Kim and Kwon, 2018; Li et al., 2020).

Surprisingly, this research discovered that attitude had the greatest predictive effect for hotels booking intentions when compared to perceived behavioural control and subjective norms. These findings contradict Meng and Cui (2020), who found that attitude had a little effect on intentions to travel. This conclusion, however, is consistent with Wang and Wong's (2020) results. This demonstrates that attitudes may play a contentious role in a variety of study scenarios (Juschten et al., 2019; Sánchez-Cañizares et al., 2020).

Prior studies propose that in times of crisis and disaster (e.g., terrorism, pandemics) countries become uncertain and less safe (Backer and Ritchie, 2017; Cró and Martins, 2017; Li et al., 2021; Ritchie and Jiang, 2019). The findings of the present research contribute to these prior studies by considering the impact of intra-pandemic perceptions on travellers' post-pandemic behaviour in the travel and tourism context. Our study also adds to studies on religiosity and mortality threats in the travel and tourism context (Nguyen and Coca-Stefaniak, 2020; Oren et al., 2019), by exploring the moderating role of religiosity and mortality threats on the relationship among intra-pandemic perceptions and travellers' post-pandemic behaviour. Our study also opens the door for further studies on what should tourism and travel companies do to aid individuals when they are encountered mortality threats because of a series of events (i.e., natural disasters, terrorist attacks, or pandemics). Though we hope these incidents do not arise in the future, in many cases, Individuals may be reminded of their dread of death by reading the newspaper, watching television, or simply by reading or watching a book or film in which the protagonist dies. While travellers with a higher level of effective pandemic information and rumour refutation have high levels of attitudes. These results are consistent with those of Dai et al. (2020), who revealed that effective pandemic information and rumour refutation are key drivers of protective behaviours during the pandemic.

Attitudes also play an important role in intention, with a greater direct effect than PBC. Other studies, such as Al Ziadat (2015), report

similar findings, but other studies did not find this type of relationship (Sparks and Pan, 2009). Yuzhanin and Fisher (2016) evaluated 15 studies in which the TPB was used in various settings to determine whether or not people intended to travel to specific locations. Although the findings were not entirely consistent, three of these studies discovered that the three antecedent variables were significantly related to intention (Han et al., 2010; Li et al., 2020). Nonetheless, as Yuzhanin and Fisher (2016) note, "there is nothing in the TPB suggesting that all the constructs of the model must contribute equally, significantly, and simultaneously to behavioural intentions." Indeed, while the effects of attitudes are greater than the effects of PBC in the proposed model, the positive and significant influence of the subjective norm on intention is much less important. This finding is consistent with the findings of Shen et al. (2009), who discovered that the subjective norm had the least effect on travel intention. Other authors, on the other hand, point to the opinion of relatives or friends, and even, to a lesser extent, travel agents or co-workers, as having a strong association with individuals' intention to travel (Bae and Chang, 2021a,b).

Specifically, there was a significant moderating effect of mortality threats and religiosity in the paths between subjective norms, attitude, perceived behavioural control and behavioural intentions. These results are in line with the findings of Nanni and Ulqinaku (2020), who revealed that mortality threats can prevent people from travelling.

The results of a multiple group analysis indicated the significance of intra-pandemic perceptions to travellers' post-pandemic behaviour if these travellers are less religious and have a high perception of the threat of mortality. Thus, our study provides empirical evidence of the impact of mortality threats and religiosity on the link between intra-pandemic perceptions and travellers' post-pandemic behaviour in the hospitality and tourism context. We found a difference between the two groups (e.g., crisis-resistant travellers, crisis-sensitive ones) which suggests the significance of intra-pandemic perceptions to post-pandemic planned behaviours among travellers who expecting to cancel their hotels booking, and thus are classified as crisis-sensitive travellers. In contrast, crisis-resistant travellers who had a higher educational level, older, and less likely to live with dependents. These findings are in line with Gokovali et al. (2007) study, which suggested that tourists with a higher educational level were less likely to decrease the length of their planned trip. These findings are in line with the findings of Hajibaba et al. (2015), who discovered that younger and lower-income people are more resilient to the crisis. Younger and lower-income people are less easily affected by external conditions, most likely because they are captive and have limited capacity to change their circumstances, forcing them to remain in their current situation. However, this is a social phenomenon and population characteristic that deserves to be addressed.

### 5.2. Theoretical implications

Our paper provides several theoretical contributions to literature on consumer behaviour, mortality threats, and religiosity. First, this research established the TPB model's usefulness for examining travellers post-pandemic behaviour intentions. While the TPB model was utilised several times in earlier research on travellers' intentions or behaviours, the TPB in the context of significant public health crisis has received little attention. Our paper expanded the scope of the TPB's applicability in the hospitality studies during COVID-19 pandemic.

Second, this research established a more solid foundation for understanding travellers' intentions after infectious disease outbreaks, since the expanded TPB model had a greater predictive power than the original TPB model for explaining larger variation in post-pandemic hotels booking intentions. This study lays the groundwork for future researchers to examine travellers behaviours after the outbreak.

Third, this research elucidated the mechanism through which travellers' perceptions of intra-pandemic conditions (e.g., hospitality, impressions, effective pandemic information, effective risk communication, supplies, and rumour refutation) influence their post-



pandemic hotels booking intentions. The findings represent significant theoretical expansions of previous studies, providing subtle insights on visitor behavioural intentions during future pandemics. Given that the role of government emergency public information in promoting protective conduct in the hospitality and tourism context has received little attention, this paper also adds to our understanding of the vital role of effective pandemic information, effective risk information, rumour refutation and supplies in stimulating travel avoidance during the COVID-19 pandemic (Dai et al., 2020). This study suggests that government emergency public information should improve people’s courage and resolve, increase their awareness of risk, and enable them to take more effective precautions to fight the pandemic.

Finally, this study pioneered the use of government emergency public information as a predictor of travellers’ attitude. It also utilised mortality threats and religiosity as moderator factors, in accordance to Nanni and Ulqinaku’s (2020) recommendation to “conceptualise mortality threats in risk research.” Researchers studying tourism risk have seldom examined the effect of mortality risks on visitors’ risk-taking behaviour (Zaky et al., 2021), particularly in the setting of perceived illness risk. As a result, this study generates fresh research ideas for tourist risk research.

5.3. Managerial implications

According to the results of this research, the most important factor affecting travellers’ post-pandemic hotels booking intentions is attitude. Hotels and tourism companies could attempt to influence travellers opinions by offering distinctive and appealing aspects of the local area, so that they may connect with the sentiment that visiting overseas will be enjoyable and beneficial after this outbreak. To raise subjective standards, tourism management should make every effort to provide travellers with happy and safe experiences, which will improve the possibility of positive word of mouth. Hotels could also consider additional incentives to encourage travellers to endorse and share their experiences on social networking sites, such as providing travellers gifts and discounts in exchange for sharing their experiences.

Health authorities have emphasised the importance of preparing for the second wave of the COVID-19 crisis. They also stated that due to environmental changes, serious diseases such as COVID-19 will reoccur every four to five years (Kim, 2020). Tourism practitioners may need to consider post-pandemic behaviours as a new paradigm that accommodates people’s desire to minimize perceived risks while still travelling.

Our study can also offer effective strategies to aid hospitality and tourism practitioners when risky and threatening situations such as COVID-19 arise, specifically in the period of response and recovery (Backer and Ritchie, 2017; Nguyen and Coca-Stefaniak, 2020). We advise policy makers to reduce the likely repercussions by paying close attention to the intra-pandemic perceptions of travellers and to their post-pandemic behaviours. Furthermore, travel companies can provide travellers with travel insurance, surveillance systems, information updates, price reductions, and personal safety devices as effective strategies for encouraging them to travel and to book hotels after the

Appendix

Appendix 1

Study measurements

Variables	Items	Source
Post-pandemic Travel intention (INT)	<ul style="list-style-type: none"> <li>After this pandemic, I still intend to book hotels I intended on booking originally (INT1).</li> <li>After this pandemic, I am confident of going ahead with my booking plan (INT2).</li> <li>After this pandemic, I will book hotels (INT3).</li> </ul>	(Chen and Tung, 2014; Nguyen and Coca-Stefaniak, 2020; Sembada and Kalantari, 2020).
Perceived behavioural control (PBC)	<ul style="list-style-type: none"> <li>Once this pandemic is over, I will remain financially able to book hotels I intended on booking (PBC1).</li> </ul>	(Chen and Tung, 2014; Nguyen and Coca-Stefaniak, 2020; Sembada and Kalantari, 2020).

(continued on next page)

COVID-19 pandemic. In contrast, governments can use a range of strategies to reduce the amount of travel overall by demonstrating in the social media and advertising the negative consequences and risks of travel during a pandemic.

The results of this study will in a variety of ways be beneficial to policy makers and practitioners for coping with the pandemic crisis. First, our results revealed that effective pandemic information, effective risk communication, supplies, and rumour refutation were key predictors of travellers attitudes, and have been identified as sufficient and necessary ingredients for stimulating post-pandemic hotels booking intentions. These results indicate that travellers are more likely to obey the government’s advice because they are more educated about the pandemic’s effects and what the government is doing about them. Effective pandemic information plays a critical role in enhancing travellers’ trust in governments and helping them to carry out governmental recommendations. Travellers distrust the government if information about COVID-19 is misrepresented or withheld, leading to negative or hostile responses. Travellers attitudes are affected by effective risk communication. Information on the transportation of medical personnel and supplies can reduce public anxiety and improve community cohesion, encouraging people to take an active role in preventing the spread of the coronavirus. Rumour refutation was found to be positively related to travellers’ attitudes during the COVID-19 pandemic. Rumour refutation is helpful and important for the government; it preserves an aura of honesty, undermines conspiracy theories and excessive public fear and encourages trust and protective behaviours in response to the pandemic.

6. Limitations and future research

In spite of its valuable implications for practitioners and researchers this study still has some limitations. Our study focused on data of travellers’ hotels booking intentions, as opposed to their actual behaviour. Further studies could include actual behavioural data. Moreover, conducting cross-national comparative studies between Egypt and other countries can be worth consideration to extend and verify the results of this study. As time passes and the alert level reduces, the impact of travellers’ pandemic beliefs on their post-pandemic hotels booking behaviours may shift. As a result, future research may investigate collecting numerous sets of data over a longer time period in order to do longitudinal comparison analysis. Finally, since this study was limited to customer’ perspective, future research can consider perspectives from hotels managers and suppliers to acquire additional insights and extend the results of this study.

Declaration of competing interest

The author declares that there is no conflict of interest.

Acknowledgements

None.

## Appendix 1 (continued)

Variables	Items	Source
<b>Attitude (ATT)</b>	<ul style="list-style-type: none"> <li>Once this pandemic is over, I will continue to have availability in my schedule to book hotels I intended on booking originally (PBC2).</li> <li>Once this pandemic is over, I do not have any problems in booking my hotels (PBC3).</li> <li>Once this pandemic is over, I believe it is still a good idea to book hotels I intended on booking (ATT1).</li> <li>Once this pandemic is over, I would be excited about booking hotels I intended on booking (ATT2).</li> <li>Once this pandemic is over, booking hotels is a wise idea (ATT3).</li> <li>Once this pandemic is over, booking hotels would be pleasant (ATT4).</li> </ul>	(Chen and Tung, 2014; Nguyen and Coca-Stefaniak, 2020; Sembada and Kalantari, 2020).
<b>Subjective norm (SNO)</b>	<ul style="list-style-type: none"> <li>Once this pandemic is over, I intend on booking hotels I had chosen to book originally (SNO1).</li> <li>Once this pandemic is over, my friends and colleagues intend on booking hotels they had chosen to book originally (SNO2).</li> <li>Most people who are important to me think that I should to book hotels when the pandemic is over (SNO3).</li> </ul>	(Chen and Tung, 2014; Nguyen and Coca-Stefaniak, 2020; Sembada and Kalantari, 2020).
<b>Hospitality (HOS)</b>	<ul style="list-style-type: none"> <li>During the travel ban, the country I intended on visiting remained welcoming to visitors from parts of the country hardest hit by the pandemic (HSO1).</li> <li>The country I intended on visiting showed a great deal of resilience in ensuring the health and safety of visitors (HOS2).</li> </ul>	Nguyen & Coca-Stefaniak (2020).
<b>Impression (IMP)</b>	<ul style="list-style-type: none"> <li>My impression of the country will be affected by the number of coronavirus cases reported (IMP1).</li> <li>My impression of the country will be affected by its reported coronavirus recovery rate (IMP2).</li> </ul>	Nguyen & Coca-Stefaniak (2020).
<b>Effective pandemic information (EPI)</b>	<ul style="list-style-type: none"> <li>Suspected numbers, infected numbers, critically ill numbers, and death toll in different regions are officially announced every day (EPI1)</li> <li>Confirmed patient's recent movements are officially published as soon as possible (EPI2)</li> <li>Citizens frequently received notifications from the government on where a new infected case was found and where the patient had been (EPI3)</li> <li>Apps were developed by the government as well as citizens that allowed citizens to track where the infected patients visited (EPI4)</li> </ul>	(Dai et al., 2020; Sharma et al., 2017; Zhang et al., 2020)
<b>Effective risk communication (ERC)</b>	<ul style="list-style-type: none"> <li>A lot of information about medical staff and supplies brought from other areas to the front line is officially announced (ERC1)</li> <li>Honest communication is accessible and open as well, which means that the public can receive messages by various channels (ERC2)</li> <li>What to do if a family member has COVID-19 (ERC3)</li> </ul>	(Dai et al., 2020; Sharma et al., 2017; Zhang et al., 2020)
<b>Rumour about COVID-19 (RUM)</b>	<ul style="list-style-type: none"> <li>Fake news about COVID-19 is officially refuted in time (RUM1)</li> <li>Fake news about COVID-19 is officially denied in time (RUM2)</li> <li>The news media and the Internet often publish inaccurate or misleading stories about COVID-19 that are not necessarily the most scientifically significant ones (RUM3)</li> </ul>	(Dai et al., 2020; Sharma et al., 2017; Zhang et al., 2020)
<b>Supplies (SUP)</b>	<ul style="list-style-type: none"> <li>Medical staff are sufficient in your current country or region (SUP1)</li> <li>Medical supplies are sufficient in your current country or region (SUP2)</li> <li>Living supplies are sufficient in your current country or region (SUP3)</li> <li>Mental health support is sufficient in your current country or region (SUP4)</li> </ul>	(Dai et al., 2020; Sharma et al., 2017; Zhang et al., 2020)
<b>Mortality threats (MOT)</b>	<ul style="list-style-type: none"> <li>I'm feeling my life is threatened (MOT1).</li> <li>I'm thinking about death (MOT2).</li> </ul>	Nanni & Ulqinaku (2020).
<b>Religiosity (REL)</b>	<p>In my daily life:</p> <ul style="list-style-type: none"> <li>Religion is very important (REL1).</li> <li>Islam helps me to have a better life (REL2)</li> <li>Praying supports me (REL3).</li> <li>I believe that God watches over me (REL4).</li> </ul>	Eid & El-Gohary (2015).

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