Behavioral intention of traveling in the period of COVID-19: an application of the theory of planned behavior (TPB) and perceived risk

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Abstract

Purpose – *This paper aims to examine travelers' behavioral intention of traveling in the period of coronavirus by using the theory of planned behavior. The framework incorporates attitude, subjective norms, perceived behavioral control and a very crucial construct, i.e. perceived risk, as per the current critical scenario of COVID-19.*

Design/methodology/approach – *Data was collected using a survey instrument on the internet by posting the questionnaire link over social network web pages of online traveling websites. The data was analyzed using structural equations modeling with AMOS 22.0 and SPSS software and the proposed hypotheses were statistically tested. The sample under consideration constitutes 417 responses.*

Findings – *Empirical findings suggest that attitude, perceived behavioral control and perceived risk are significant for predicting behavioral intention while subjective norms do not. Then, these variables explained about 35% of the variance in the behavioral intention of traveling in the period of coronavirus.*

Research limitations/implications – *This study can benefit travelers, the tourism and hospitality industry, governments, the aviation industry and other relevant organizations as this paper offers the latest updates and essential information regarding traveler's intention of traveling in the period of coronavirus. The study mainly focuses on India, so the generalizations of results to other countries are unwanted.*

Originality/value – *The primary value of this paper is that it tested the theory of planned behavior by incorporating perceived risk in the context of COVID-19. To the best of the authors' knowledge, in the Indian context, there is no study, which has tested the TPB by adding perceived risk in explaining the Indian citizens' behavioral intention of traveling in the period of Coronavirus.*

Keywords Theory of Planned Behavior, Perceived Risk, Travel Intention, Covid-19

Paper type Research paper

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Introduction

The inception of coronavirus erupted in Wuhan, China, in December 2019 and spread all over the world (De Vos, 2020). The disease was novel to humans and caused the development of severe acute respiratory illness (Kim *et al.*, 2017). The number of confirmed cases of Coronavirus worldwide reached 17,36,09,772 and death count to 37,42,653 till June 09, 2021 (WHO Coronavirus Disease (COVID-19) Dashboard, 2020) while in India, as of June 07, 2021, the number of confirmed cases reached 2,89,95,457 while death count reached to 3,51,335 (Statista, 2021). As Coronavirus attacked the world, the scenario of the traveler's intention of traveling changed. Travelers are more concerned about their safety and security. Fear of being infected is widespread globally; people are abstaining from even regular everyday practices such as going out and the public's reaction to fear led to

changes in travel behavior. On March 25, 2020, India, the world's largest democracy, was placed under the world's biggest lockdown to control the spread of COVID-19 (Pittsburgh Post-Gazette, 2021). As per Statista (2020), this lockdown will have a substantial detrimental impact on India's domestic and foreign tourism, particularly in the hotel and service industries (Gupta *et al.*, 2021). As per industry chamber CII, "this is one of the worst crises ever to hit the Indian tourism industry impacting all of its geographical segments – inbound, outbound and domestic, almost all tourism verticals – leisure, adventure, heritage, MICE, cruise, corporate and niche segments (The Economic Times, 2021)." Many other nations enforced different travel regulations and restrictions such, as lockdowns and stringent social distancing measures (De Vos, 2020), which also influenced people's behavioral intention of traveling. Major changes in travel behavior have been seen like; a shrinkage in the intention to use public transport and a rise in the intention to travel by private vehicle (Nguyen and Coca-Stefaniak, 2020). To make decisions and to make policies based on people's travel needs during any pandemic, it is important to consider and predict travel behavior.

The theory of planned behavior (TPB) given by Ajzen (1991) is an extended version of the theory of reasoned action (Fishbein and Ajzen, 1975). The TPB was proposed to forecast people's intention to perform a behavior. The theory states that behavior is observed by intention and intention can be predicted by three constructs, i.e. attitude, subjective norms and perceived behavior control (PBC). There are three core proposals of TPB:

1. individuals possibly practice a specific kind of behavior if they assume that such behavior will give a specific and beneficial result.

2. their peers will respect and support the behavior.

3. they have the requisite skills, tools and chances to conduct such behavior (Ajzen, 1985; Conner *et al.*, 1999; Hsu and Huang, 2012).

There are many studies (Han *et al.*, 2020; Jordan *et al.*, 2018; Kaplan, 2015; Al Ziadat, 2015; Horng *et al.*, 2013; Teo and Lee, 2010; Cheng *et al.*, 2006) in which the application of TPB has been tested. The current study checks the application of TPB in the context of the traveling intention of travelers in the period of Coronavirus, it hypothesizes that travelers' traveling intention can be predicted by travelers attitude toward traveling, social influence to the travelers for traveling and perceived behavioral control over traveling (Liao *et al.*, 1999; Shim *et al.*, 2001; Athiyaman, 2002; Lin, 2006).

The conditional likelihood of people's engagement in behavior is behavioral intention; it refers to the motivational factors affecting a certain behavior in which, the greater the intention to conduct the behavior, the more likely it is to perform the behavior. A traveler's expected or intended future behavior may be characterized as behavioral intention (Swan, 1981; Lam and Hsu, 2006). In the context of this study, the meaning of the behavioral intention can be understood as an Indian traveler's intention of traveling in the period of Coronavirus. Prior studies have shown that behavioral intention is a product of attitude, subjective norm and PBC (Lam and Hsu, 2004, 2006; Lin, 2006; Hsu and Huang, 2010; Chen and Tung, 2014). In addition to TPB constructs, there is another important construct, which is applied in this study, i.e. perceived risk. Chew and Jahari (2014) described Perceived risk in traveler's perception as "the probability that an action may expose them to the danger that can influence travel decisions if the perceived danger is deemed to be beyond an acceptable level" (Bae and Chang, 2020). Travel is restricted during pandemics and travelers perceive a higher risk for all sorts of traveling, avoiding regions where they perceive a medium to high risk (Hotle *et al.*, 2020; Abdullah, 2020). Most travelers make travel-related decisions based on their risk perception, so the prediction of perceived risk is valuable for investigating tourist behavior (Zhan *et al.*, 2020). Global pandemics have made a significant contribution to increased levels of fear among travelers regarding travel-related risks (Gupta *et al.*, 2021). There are a number of studies related to severe diseases (MERS,

SARS, Ebola and Avian Flu), in which perceived risk and its influence on travel intention, travel decision-making and travel behavior have been examined (Huang *et al.*, 2020; Floyd *et al.*, 2004; Lee *et al.*, 2012; Bae and Chang, 2020). In this direction, this study is an effort to predict Indian citizen's behavioral intention of traveling in the period of Coronavirus by applying TPB and perceived risk.

The remainder of this study is structured as follows: a range of published literature on travelers' behavioral intention of traveling, TPB and perceived risk is reviewed. Afterward, in the next section, the methodology which comprises the details of the research instrument, data collection method and data analysis techniques are presented. Then the results obtained through statistical analyzes are discussed along with findings. At last, a discussion and conclusion are given with the implication and limitations of the study.

Review of literature and hypotheses formulation

Theory of planned behavior

When the entire world is struggling with Coronavirus, there is a problem in understanding and predicting traveler's behavioral intention of traveling, but the TPB is one of the most studied theories for the prediction of behavioral intention (Fielding *et al.*, 2008; Soliman, 2019). Hence, the behavioral intention of traveling during coronavirus can be predicted by applying TPB. Lam and Hsu (2004, 2006) showed that a rise in the components of TPB i.e. attitude, subjective norm and PBC would lead to an increase in the behavioral intention of traveling. The main area of TPB is that travelers possibly conduct a specific kind of behavior as traveling if they trust that such traveling will result in an outcome they value, their key referents will assess and favor the traveling and they possess the essential means, skills and chances to travel (Ajzen, 1985; Lam and Hsu, 2006). An individual's act is decided by intentions, that are successively impacted by attitude, subjective norms and PBC (Ajzen, 1991). The TPB suggested by Ajzen in 1985, forecast the individual's behavior (Hsu and Huang, 2012) which is not in the control of free will (Tsai, 2010) propounded that the human beings are coherent (Japutra *et al.*, 2019) and their performance is determined by the behavioral intentions which are based (Teo and Lee, 2010) on their attitude, subjective norms and PBC toward the travelers' decision-making process (Hsu and Huang, 2012). The main element of the theory is personal intention (Chen and Yang, 2018) to complete a particular action (Buess, 2012). The TPB has been practiced by analysts for the past 20 years (Teo and Lee, 2010) and recently to predict the post-pandemic traveling intention of US travelers, Han *et al.* (2020) developed a rigorous theoretical framework, which relates the perceived knowledge of coronavirus to the variables of TPB encompassing the moderating effect of psychological risk. The framework enhanced the predictability of the TPB and is widely applicable in different tourism areas, particularly when describing traveler's behavioral intention of traveling (Han *et al.*, 2020). In the tourism and travel context, there are several studies, which have acknowledged the relationships among the variables of TPB and travel intention (Lam and Hsu, 2006; Han, 2015; Han *et al.*, 2010; Hsu and Huang, 2012; Quintal *et al.*, 2010, 2015; Park *et al.*, 2017). Attitude, Subjective Norms and PBC have been shown a direct and positive impact on behavioral intention in previous studies (Hsu and Huang, 2012; Bae and Chang, 2020).

Behavioral intention

Behavioral Intention represents the people's expected and arranged upcoming actions (Lam and Hsu, 2004). It shows one's expectations related to a specific behavior in a certain mechanism and may be taken as the possibility of performing an action (Fishbein and Ajzen, 1975; Lam and Hsu, 2006). Behavioral Intention in the TPB works as the most powerful medium of an individual's action, also expresses how eagerly an individual wants to perform the actions (Chen and Yang, 2018). Attitude and PBC were associated with the

intention of traveling (Lam and Hsu, 2004). When there is a chance to perform an action, the intention leads to behavior and if the intention is estimated perfectly, it will give the strongest prediction of behavior (Fishbein and Ajzen, 1975). In this study, One's expectation of future traveling in the period of coronavirus is termed as the behavioral intention of traveling. As per the human behavior theories, the strongest forecaster of behavioral intention and upcoming behavior of a traveler is the occurrence rate of earlier behavior (Lam and Hsu, 2006; Quellette and Wood, 1998; Sönmez and Graefe, 1998). The intention is observed as a direct antecedent of traveling behavior. The behavioral intention is determined as the direct and the strongest determinant of behavior out of all other determinants of behavior. Behavioral intention is a sign of a traveler's readiness to travel, one's actions of a definite behavior are measured by his intent to execute that particular behavior (Al Ziadat, 2015). Behavioral intention plays a key role in developing actual behavior (Casaló et al., 2010).

Attitude

Attitude means "the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question" (Ajzen, 1991). A traveler's intention to execute a particular action or behavioral intention toward a product or service, in a certain condition is a mechanism of one's attitude toward the behavior (Fishbein, 1967a). Attitude toward intention leads to behavior and is explained as the traveler's response; this may be negative or positive. A traveler's attitude toward a travel product or travel service is decided by measuring one's beliefs of salient attributes that the product or service has and by the measurement of each attribute (Fishbein and Ajzen, 1975; Lam and Hsu, 2004). Attitude build by understanding and circumstances (Hsu and Huang, 2012) retaliates toward a definite purpose. Attitude is an important factor that predicts, explains and affects the behavioral intention of travelers (Bianchi et al., 2017; Han et al., 2010; Soliman, 2019) to perform a particular behavior such as traveling in the period of crisis or pandemic (Huang and Hsu, 2009; Soliman, 2019; Mainardes et al., 2020). In the midst of a coronavirus outbreak, fostering a positive attitude toward traveling is quite challenging. If a traveler has a favorable attitude toward traveling in the period of coronavirus then the intention of traveling will be intensified and this intensified intention results in actual traveling. The TPB claims that attitude toward a behavior empowers humans' intention to perform the behavior (Lee et al., 2012). Previous studies approve that attitude positively influences one's behavioral intention to perform the behavior (Baker et al., 2007; Cheng et al., 2006). Thus, based on the findings of previous studies, we postulate the hypothesis:

> H1. Attitude has a positive effect on the behavioral intention of traveling in the period of COVID-19.

Subjective norms

Subjective norms indicate social influence which encourages or discourages people to perform a particular behavior (Rivis et al., 2009; Bae and Chang, 2020). It is explained as traveler's perception of social normative pressures created by friends, family, peers and others' beliefs (Taylor and Todd, 1995; Koundinya, 2019) and social influence is the perception held by travelers of what others who are important to them, think their traveling behavior should be like (Fishbein and Ajzen, 1975; Koundinya, 2019). Subjective norm is a predictor of behavioral intention in the TPB, which influences behavior. It evaluates the significance of people associated with reference groups and others' willingness to follow these groups' collective choices, beliefs and attitudes, as travel choices (Quintal et al., 2010; Moutinho, 1987). It refers to the others' expectations regarding the travelers' traveling behavior. Subjective norm is measured by one's normative beliefs regarding what people, who are precious to him consider that he should or should not travel and level of inspiration to which one wishes to follow what one's referents consider (Ajzen and Fishbein, 1980). There is social pressure during the coronavirus to conform to preventive behavior such as

social isolation, wearing a mask while traveling and regular hand washing, so that social accountability cannot be prevented (Bae and Chang, 2020). Ajzen (1991) clarified that if family or peers have a favorable attitude about a certain behavior, the probability of a person performing that behavior would improve to meet their expectations and vice versa (Bae and Chang, 2020). In that case, if family or peers have a favorable attitude about traveling in the period of coronavirus, the probability of traveling by the traveler will increase to meet their expectations and vice versa. There is a number of studies, which have shown that subjective norms positively influence behavioral intention (Grandón *et al.*, 2011; Lam and Hsu, 2006; Hansen *et al.*, 2004). Hence, the hypothesis is indicated as follows:

H2. Subjective norms have a positive effect on the behavioral intention of traveling in the period of COVID-19.

Perceived behavioral control

PBC is a degree of one's perception of the difficulty or easiness to perform a behavior (Lam and Hsu, 2006; Armitage and Conner, 2001), like a traveler thinks how stress-free or hard it is to travel in the period of coronavirus. The link between PBC and behavioral intention of traveling depends upon the assumption that an increase in PBC will lead to an upsurge in intention and the possibility of traveling or vice-versa (Armitage and Conner, 2001). The more favorable the subjective norm, attitude, PBC in respect to travel behavior, the more would be the traveler's intention of traveling (Ajzen and Driver, 1992). PBC helps in forecasting the individualistic objectives that direct the influence of behavior (Ajzen and Madden, 1986). There are two segments of PBC, the first is the ease of accessibility of resources (Buess, 2012; Ajzen, 2002) and the other is the capability to execute the actions (Soliman, 2019). The Perceived Behavioral Control, which refers to an individual's trust to perform a behavior, is an essential element in the formulation of intention (Ajzen, 1991; Ajzen and Madden, 1986; Lee *et al.*, 2012) and influences decision-making in the TPB (Lee *et al.*, 2012; Ajzen, 1991; Conner and Abraham, 2001; Taylor and Todd, 1995). If we try to understand PBC in the current context of coronavirus, then it refers to the traveler's expectation of traveling that the traveler will be able to control the condition and handle the resources needed for successful travel. During the lockdown, travel is restricted and people are unable to travel. Hence, perceived behavioral control plays a crucial role in the development of behavioral intention of traveling during coronavirus. Behavioral Intention elucidates that the stronger the attitude and subjective norms in the context of behavior, the more appreciable PBC (Ajzen and Driver, 1992). Previous studies confirm that perceived behavioral control positively influences behavioral intention (Hsiao and Yang, 2010; Lam and Hsu, 2004; Mainardes *et al.*, 2020). Hence, the hypothesis is indicated as follows:

H3. Perceived behavioral control has a positive effect on the behavioral intention of traveling in the period of COVID-19.

Perceived risk

Perceived risk is measured by people in a particular situation (Haddock, 1993) which refers to people's belief that there is uncertainty and adverse effects in buying a product or performing a behavior (Dowling and Staelin, 1994; Reisinger and Mavondo, 2005). Perceived risk is an important determinant in travelers' behavioral intentions (Verhage *et al.*, 1990; Moutinho, 1987; Lepp and Gibson, 2003; Tavitiyaman and Qu, 2013). The inappropriate high-risk realization may conduct negative notions of safety (Brug *et al.*, 2009). Sönmez and Graefe (1998) defined the types of risk for international traveling in 10 categories, i.e. health risk-chances of being infected or feeling sick during traveling, psychological risk – the risk to people, physical risk – the threat of danger or damage, equipment risk – chances of an issue with equipment and company while traveling, financial risk – a risk of not providing value for the money spent, social risk- includes preferences

which a traveler makes that impact the other's opinions, time risk- the risk of traveler's spent time in traveling, terrorism risk- chances of being involved in a terrorist act, political instability- chances of political chaos in the visiting state, satisfaction risk- personal satisfaction may not be delivered while experiencing travel. In tourism, the idea of perceived risk was explored in several studies (Hales and Shams, 1991; Roehl and Fesenmaier, 1992; Reisinger and Mavondo, 2005; Moutinho, 1987; Yavas, 1987). Perceived risk in traveling has primary value in travel decision-making due to its potential to influence travel intention (Sönmez and Graefe, 1998; Khan et al., 2017). Previous studies indicate that incidents of violence, virus outbreaks, disasters affect tourist behavioral intention of traveling and increase risk perceptions (Carter, 1998; Fuchs and Reichel, 2006; Rittichainuwat and Chakraborty, 2009; Chew and Jahari, 2014; Khan et al., 2017). Perceived risk is characterized as a traveler's perceived vulnerability and adverse effects of traveling during any pandemic or chaos (Dowling and Staelin, 1994; Khan et al., 2017). The perceived health risk refers to the harm to the traveler's health while participating in travel activities (Olya and Al-ansi, 2018) and the risk of getting infected with coronavirus is very high in this period. Perceived risk is an important factor, which affects the traveling intention of travelers (Law, 2006; Sönmez and Graefe, 1998; Seow et al., 2017). Given the background of perceived risk in traveling during any pandemic/natural disaster, the hypothesis is indicated as:

H4. Perceived risk has a negative effect on the behavioral intention of traveling in the period of COVID-19.

Figure 1 shows the conceptual model and proposed hypotheses of the study. Table 1 represents a brief scenario of studies related to the TPB, perceived risk and travel intention published in previous years.

Research methodology

Research instrument

An online questionnaire was developed after a comprehensive review of traveler behavior in the period of pandemics and virus outbreaks which was based on the measurement scale of five-point Likert where strongly agree = 5 and strongly disagree = 1 and, designed using Google forms. There are two parts to the questionnaire; the first part consisted of questions
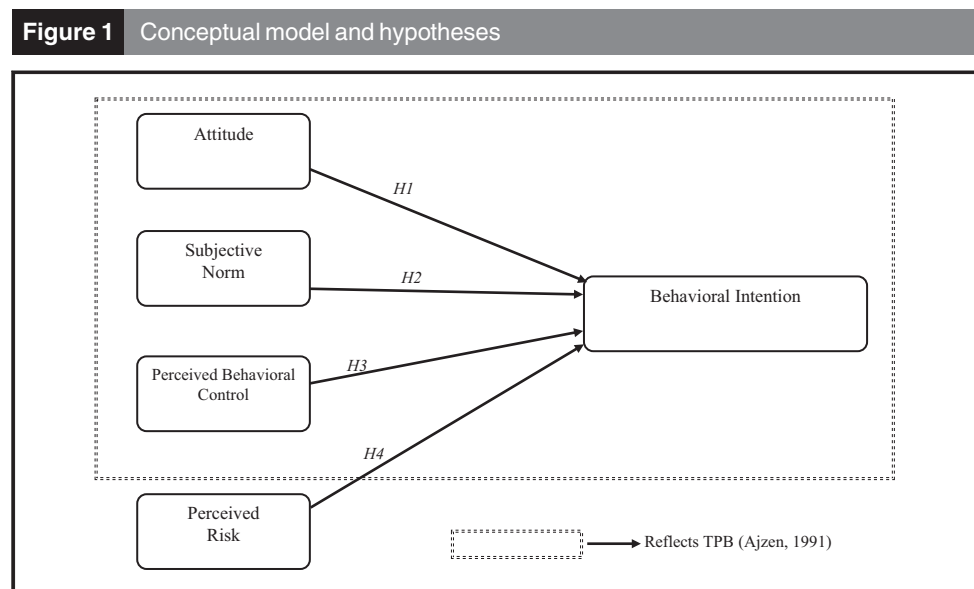
Figure 1 Conceptual model and hypotheses

Table 1 Studies related to TPB, perceived risk and travel intention

Author/s (year)	Purpose	Country	Data collection	Sample size	Data analysis	Variables/constructs	Theory/concepts	Results/finding
Han et al. (2020)	To construct a theoretical framework by applying the TPB which explains travelers' post-pandemic travel decision formations	USA	Online survey	$n = 305$	SEM	Attitude, subjective norm, PBC, perceived knowledge of COVID-19, psychological risk and behavioral intention	TPB	The theoretical framework enhanced the TPB's predictive ability and is generally applicable in a number of tourism sectors
Bae and Chang (2020)	To investigate the impact of risk perception of COVID-19 on behavioral intention toward untact tourism	South Korea	Online survey	$n = 877$	SEM	Attitude, subjective norm, PBC and cognitive and affective risk perception	TPB and HBM	The findings indicate that cognitive and affective risk perceptions have a significant effect, but there is a negative effect of affective risk perception on behavioral intention
Soliman (2019)	To build an extended model of TPB for the prediction of travelers' intention to revisit Egypt	Egypt	Survey	$n = 302$	PLS-SEM	Attitude, subjective norm, PBC, destination familiarity, destination image, travel motivation and eWOM	TPB	The results reveal that the extended model has a robust capability for the prediction of travelers' revisit intention
Japutra et al. (2019)	To explore the relationship between traveler's mindsets and TPB	Portugal	Survey	$n = 312$	PLS-SEM	Attitude, subjective norm, PBC, growth mindsets, intentions to recommend, travel desires and revisit intentions	TPB	The findings showed that attitudes, subjective norms and PBC could be predicted by travelers' mindsets
Park et al. (2017)	To explain the intention of Chinese students to travel to Japan by applying extended TPB	China	Survey	$n = 736$	SEM	Attitude, subjective norm, PBC, travel constraint, travel intention and destination image	TPB	The study's findings show that the prediction ability of the extended TPB model is robust for travel intention to Japan than the original one
Seow et al. (2017)	To investigate tourists' intention to seek medical tourism in Malaysia by applying the extended model of TPB	Asia, Europe, Oceania, Africa, The Americas and Middle East	Survey	380	PLS-SEM	Attitude, subjective norm, PBC, perceived risk, perceived benefit, resource availability and intention to visit	TPB	The analysis of TPB has been found to be overwhelmed and little attention has been paid to perceived risks, perceived benefits and resource availability in relation to the TPB
Lee et al. (2012)	To implement a novel concept of NPI for influenza and to assess the effect of NPI on the behavioral intentions of international travelers	Korea	Online survey	397	SEM	Attitude, subjective norm, PBC, positive and negative anticipated emotion, perception of influenza, desire, NPI and behavioral intention	TPB and MGB	The model showed that the intention of tourists was predicted by desire, PBC, frequency of past behavior and NPI, but perceptions of 2009 H1N1 had no impact on desire and intention

(continued)

Table 1

Author/s (year)	Purpose	Country	Data collection	Sample size	Data analysis	Variables/constructs	Theory/concepts	Results/finding
Hsiao and Yang (2010)	This research adds two constructs, novelty searching (NS) and trust (TR) to the TPB model to assess the intention of travelers to take Taiwan's High-Speed Rail (HSR) and its antecedents	Taiwan	Survey	300	SEM	Attitude, subjective norm, PBC and novelty seeking and trust	TPB	Results indicate that attitude, subjective norm, PBC have a positive impact on behavioral intention of taking HSR. NS positively influences attitude and TR positively influences three antecedents of the intention
Lam and Hsu (2006)	To assess the application of the TPB model including past behavior variables in predicting the behavioral intention of selecting a destination for travel	Taiwan	Survey	299	SEM	Attitude, subjective norm, PBC, past behavior and behavioral intention	TPB	The findings revealed that the data fitted fairly well with the TPB model. Attitude, subjective norm, PBC and past behavior were related to the behavioral intention of selecting a travel destination
Lam and Hsu (2004)	To assess the fit of the TPB model with travelers from China	China	Survey	328	SEM	Attitude, subjective norm, PBC, past behavior and behavioral intention	TPB	The results showed that the data fitted reasonably well into the TPB model and described the behavioral intention of travelers. Attitude, PBC and past behavior were linked to travel intention

Notes: MGB – Model of goal-directed behavior. HBM – Health belief model. NPI – Non-pharmaceutical intervention

regarding respondents' demographics, i.e. gender, education, age, marital status, monthly income, occupation and nationality. The second section of the questionnaire contained the questions measuring attitude, subjective norms, PBC, perceived risk and behavioral intention. The items to measure attitude were adapted from Lam and Hsu (2006), items to measure subjective norm were adapted from Ajzen (1991) and PBC was measured through the items adapted from Taylor and Todd (1995) and Ajzen (1991), the items used for measuring perceived risk-adapted from Sönmez and Graefe (1998) and the measurement of behavioral intention was done using items adapted from Venkatesh *et al*. (2003) and Taylor and Todd (1995). Measurement items are given in Appendix.

Data collection

Data was collected using survey instrument over the internet by posting the questionnaire link over social network web pages of online traveling websites from May 18, 2020, to June 29, 2020, during this period the number of coronavirus cases showed a rising trend as of May 18, 2020, there were 96,169 confirmed cases, 3,029 deaths and on June 29, 2020, there were 5, 49,035 confirmed cases, 16,492 deaths (India: COVID-19 cases timeline, 2020 | Statista, 2020). These websites were selected based on Alexa rank, which is a ranking agency worldwide, amazon.com' subsidiary organization which ranks a huge number of websites in order of popularity. The top five traveling websites in terms of booking as per the Alexa ranking website are booking.com, tripadvisor.com, xe.com, hotels.com and vrbo.com. The reason for posting the questionnaire on such social networking web pages was to maximize exposure in gathering larger samples (Alexa – Top Sites by Category: Top/Recreation/Travel, 2020).

Data analysis

Data was collected through the questionnaire and computed using SPSS and AMOS 22.0 software. SPSS was used to produce descriptive and inferential statistics. A pilot test of 30 respondents was conducted before posting the questionnaire link over social network web pages of online traveling websites for verifying that the questions were clearly understood. The reliability of the items was checked, alpha values (Cronbach's) for all the constructs were higher than the recommended value, indicating that reliability was attained. In total, 453 responses were received in total and 36 cases were excluded due to missing values. The final sample of 417 valid and usable responses was considered for the study.

Results

Profile of respondents

The population of this study was composed of Indian citizens and 417 responses were considered for the study (Table 2). The gender breakdown was 255 men (61.2%) versus 162 women (38.8%); most of the respondents (39.6%) were between 28 and 35 years of age. Respondents were well educated as 49.2% (205 respondents) had post-graduation degrees and 30.5% (127 respondents) had PhD degrees. Most of the survey respondents were employees 184 (44.1%) and students 135 (32.4%). In terms of marital status, 233 (55.9%) were single and 183 (43.9%) were married.

Descriptive statistics

Table 3 shows the mean scores of constructs and all the items.

Table 2 Respondents' profile (*n* = 417)

Variable	Classification	Freq	(%)
Gender			
	Male	255	61.2
	Female	162	38.8
Age			
	20–27	118	28.3
	28–35	165	39.6
	36–43	91	21.8
	44–51	34	8.2
	Above 51	4	1.0
	Below 20	4	1.0
Education			
	Intermediate	5	1.2
	Graduation	74	17.7
	Post-graduation	205	49.2
	PhD	127	30.5
	Others	6	1.4
Marital status			
	Single	233	55.9
	Married	183	43.9
	Others	1	0.2
Occupation			
	Business person	62	14.9
	Employee	184	44.1
	Others	31	7.4
	Retired	5	1.2
	Student	135	32.4
Monthly income (INR)			
	Upto 20,000	129	30.9
	20,001–40,000	82	19.7
	40,001–60,000	37	8.9
	60,001–80,000	63	15.1
	Above 80,000	106	25.4
Total		417	100

Measurement model

The very primary step in assessing a research model is to check the results of the measurement model to inspect the internal consistency reliability, discriminant and convergent validity (Hair *et al.*, 2010). To measure the internal consistency, evaluating the constructs' coefficient alpha is the best method. If the values of Cronbach's alpha exceed 0.70, then measures are stronger in terms of their internal consistency reliability (Nunnally and Bernstein, 1978). Table 4 shows that values of Cronbach's alpha are exceeding the recommended value.

Factor analysis with PCA and varimax rotation technique was implemented and to regulate the number of factors, a minimum eigenvalue of one was used. Table 4 showed that the cumulative % of factors variance was 71.703%, with a KMO of 0.871, which was above the minimum threshold of 0.60 (Garson, 2001). The Bartlett test was 4,676.036 with a significance of 0.000.

The correlation between two or more items is denoted by convergent validity, intended to assess the same variable. Fornell and Larcker (1981) have given 03 ways to check the items' convergent validity; first, reliability of every measure, second, composite reliability of every construct and third the average variance extracted. The reliability was calculated by factor loading into the underlying construct. Item reliability has already been tested and approved as Cronbach's alpha exceeds the cut-off value, as per Steenkamp and Geyskens (2006) acceptable benchmarks, standardized factor loadings should be statistically significant and greater than 0.6, our results confirm the same. As shown in Table 5, the CR values of all the constructs were above the minimum threshold of 0.70 (Bagozzi and Yi, 1988), representing that

Table 3 Detail of the results of descriptive analysis

Construct	Items	Mean	SD
ATT		1.8649	0.7763
	ATT1	1.7170	0.8941
	ATT2	1.8705	0.8784
	ATT3	2.0071	1.0011
SN		1.9137	0.8000
	SN1	1.8081	0.8213
	SN2	1.8992	0.9195
	SN3	1.9688	0.9590
	SN4	1.9784	0.9390
PBC		3.1775	0.9413
	PBC1	3.2517	1.1649
	PBC2	3.1151	1.1710
	PBC3	3.2110	1.2003
	PBC4	3.1414	1.1732
	PBC5	3.3573	1.1432
	PBC6	2.9880	1.2604
PR		2.1823	0.8516
	PR1	2.1007	1.0187
	PR2	2.0671	0.9758
	PR3	2.3788	1.1095
BI		3.4436	1.0056
	BI1	3.5131	1.1374
	BI2	3.5443	1.1217
	BI3	3.4412	1.1167
	BI4	3.2757	1.1901

Table 4 Measurement scale factor analysis

Items	loadings	Eigenvalue	% of variance	Cumulative (%)	Cronbach's alpha
Perceived Behavioral control		5.444	27.222	27.222	0.882
PBC3	0.823				
PBC4	0.815				
PBC5	0.788				
PBC2	0.783				
PBC1	0.765				
PBC6	0.700				
Subjective norm		4.554	22.769	49.990	0.901
SN4	0.875				
SN3	0.873				
SN2	0.826				
SN1	0.728				
Behavioral intention		2.037	10.184	60.175	0.904
BI3	0.890				
BI2	0.868				
BI1	0.868				
BI4	0.815				
Perceived risk		1.301	6.504	66.679	0.760
PR3	0.781				
PR2	0.781				
PR1	0.748				
Attitude		1.005	5.024	71.703	0.788
ATT1	0.829				
ATT3	0.740				
ATT2	0.725				

Table 5	Reliability and convergent validity test			
Items		Standardized Factor loading	CR	AVE
Attitude (ATT)			0.791	0.558
ATT1		0.72		
ATT2		0.80		
ATT3		0.72		
Subjective norm (SN)			0.903	0.699
SN1		0.77		
SN2		0.83		
SN3		0.87		
SN4		0.87		
Perceived behavior control (PBC)			0.884	0.560
PBC1		0.75		
PBC2		0.76		
PBC3		0.77		
PBC4		0.82		
PBC5		0.73		
PBC6		0.66		
Perceived risk (PR)			0.768	0.528
PR1		0.76		
PR2		0.80		
PR3		0.61		
Behavioral intention (BI)			0.905	0.706
BI1		0.85		
BI2		0.87		
BI3		0.88		
BI4		0.76		

the measurement items for each variable are internally reliable and consistent. The AVEs of all the constructs are greater than the cut-off value of 0.50, which confirms the convergent validity (Fornell and Larcker, 1981).

Discriminant validity refers to the degree to which factors differentiate between latent variables. It is checked on the basis of the guidelines of Fornell and Larcker (1981), as shown in Table 6 the square roots of the average variance extracted are larger than the off-diagonal values in the consistent columns and rows, greater than the correlations among a given construct and others in the model, it recommends that a construct is correlated with its items strongly and with the other constructs in the model (Teo and Lee, 2010).

Structural model

In the measurement model, there was no issue regarding the reliability and validity, it was considered to be valid and acceptable, so in the next step, the structural model was

Table 6	Discriminant validity test				
Construct	ATT	SN	PBC	PR	BI
ATT	0.747				
SN	0.659***	0.836			
PBC	0.244***	0.158***	0.749		
PR	0.620***	0.569***	0.127*	0.727	
BI	−0.002	−0.131*	0.382***	−0.178**	0.840

Notes: * $p < 0.050$, ** $p < 0.010$, *** $p < 0.001$; square root of AVE diagonally in italic; ATT = attitude, SN = subjective norm, PBC = perceived behavioral control, PR = perceived risk, BI = behavioral intention

checked. CFA using the maximum likelihood procedure was carried out in SEM. Several fit indices measured model fit adequacy recommended by Hair $et\ al.$ (2010). The measurements of fit indices recommend that the model is a good fit (χ^2/df = 2.366, GFI = 0.917, NFI = 0.921, CFI = 0.952, TLI = 0.943, RMSEA = 0.057) as the fit indices values were higher the model adaptability standard recommended by Hair $et\ al.$ (2010) (χ^2/df < 3, TLI > 0.90, CFI > 0.90, RMSEA < 0.07).

Figure 2 represents the SEM model path diagram, which showed the degree and direction of the impact with the signs, the path coefficients and the value of the standardized coefficients. The paths from Attitude, PBC and perceived risk are significant at $p < 0.001$. Attitude (H1) (β = 0.236, t-value= 5.940, $p < 0.001$) and perceived behavioral control (H3) (β = 0.406, t-value = 10.244, $p < 0.001$) have a positive effect on behavioral intention. subjective norms (H2) (β = −0.183, t-value = −4.625, $p < 0.001$) has a negative effect on behavioral intention, in contrast with H2 and perceived risk (H4) (β = −0.302, t-value = −7.606, $p < 0.001$) has a negative effect on behavioral intention. Hence, hypotheses H1, H3 and H4 are all supported but H2 is not (Table 7).

The above results represent that attitude, perceived behavioral control and perceived risk are significant for predicting behavioral intention while subjective norms do not. Then, these variables explained about 35% (R^2 = 0.345) of the variance in the behavioral intention of traveling in the period of coronavirus. This result is in line with Armitage and Conner's (2001) results in which they showed that in the variance of humans' behavioral intention, TPB accounted for 27% and 39%, respectively (Chien $et\ al.$, 2012).
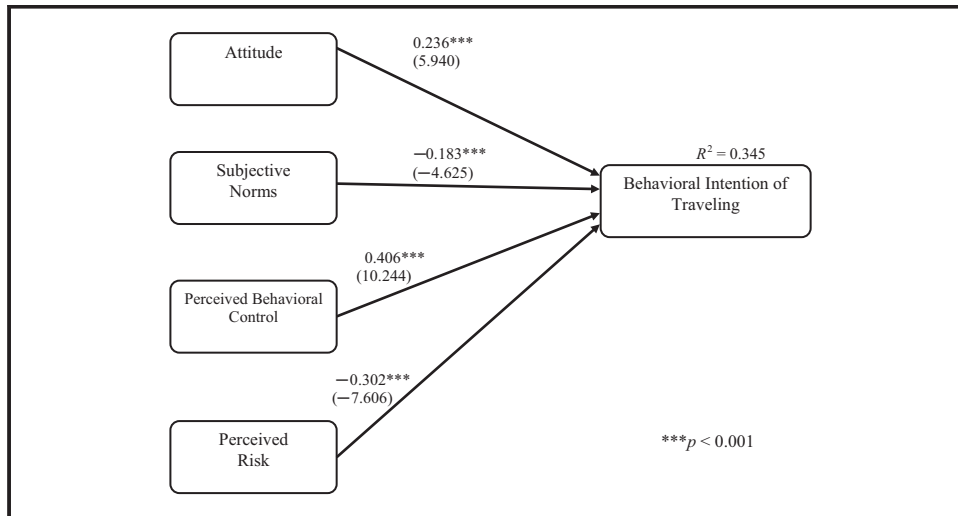
Figure 2 The estimated structural model and hypotheses

Table 7 Results of hypothesis testing

Relationship	Std β	t-value	Result
$H1$: ATT → BI	0.236	5.940	Supported
$H2$: SN → BI	−0.183	−4.625	Not supported
$H3$: PBC → BI	0.406	10.244	Supported
$H4$: PR → BI	−0.302	−7.606	Supported

Discussion and conclusion

The several fit indices, i.e. GFI, NFI, TLI, CFI and RMSEA, showed that the model is a moderately good fit. The descriptive statistics determine that Indian citizen's attitude toward the behavioral intention of traveling is lower than the medium value of 3 (mean = 1.86) which is the lowest among all the variables, subjective norms is also lower than the medium point (mean = 1.91) but perceived behavioral control over traveling (mean = 3.17) and behavioral intention of traveling (mean = 3.44) are higher than the medium value, at last, the perceived risk (mean = 2.18) is also lower than the medium point which indicates negative perception toward traveling in the period of coronavirus (Table 3).

An attitude is a predisposition generated by experience and learning (Lam and Hsu, 2006), which can be favorable or unfavorable such as traveling in the period of disaster or virus outbreak (Moutinho, 1987). The present study revealed that the connection between attitude and behavioral intention is direct. Travelers' attitude has positive effect (β = +0.236, $p < 0.001$) on behavioral intention. This finding is in line with past studies (Bae and Chang, 2020; Lam and Hsu, 2004; Hsu and Huang, 2010; Hsiao and Yang, 2010). This virus has changed the attitude of travelers and very few Indian people are interested in traveling, most of the travelers think that their travel would be unfavorable, unpleasant and negative. Hence, there is a need to encourage a favorable attitude toward traveling in the period of coronavirus. In this study, subjective norm means, a traveler's opinion that people who are close and precious to him, think he should not travel in the period of coronavirus. The results demonstrated that subjective norms have a negative effect (β = −0.183, $p < 0.001$) on the intention of traveling. However, in contrast with our expectations, the direction of subjective norms is not positive but had a significant negative effect on the behavioral intention of traveling. This result is consistent with the prior study (Casaló et al., 2010). The reason for this surprising finding may be that there is social influence on travelers regarding not to travel in the period of the current pandemic. The intention is associated with the social pressure of not traveling in the period of COVID-19. The relatives/friends of the traveler do not wish that he/she should travel during the pandemic and this may be for two reasons. First, they have the fear that if the person travels, he/she might be infected by a coronavirus. Second, if the traveler gets infected then there is a possibility that the relatives/friends of the traveler might be infected through him/her. PBC is about the difficulty or easiness that one feels during executing a certain behavior (Lam and Hsu, 2006), like how easy or difficult to travel in the period of a pandemic. The study revealed that PBC has a positive effect (β = +0.406, $p < 0.001$) on intention. This result is consistent with prior studies (Lee et al., 2012; Lam and Hsu, 2006; Hsu and Huang, 2010; Bae and Chang, 2020). The strongest direct influence on traveler's intention out of all the variables is noted among perceived behavioral control. This relationship is all about easiness or difficulty in traveling during the period of coronavirus. An important finding of this study is that it recognizes the relationship between perceived risk and behavioral intention. The finding illustrated that perceived risk has a negative effect (β = −0.302, $p < 0.001$) on traveling intention which is consistent with prior studies (Chew and Jahari, 2014; Kwun and Oh, 2004; Qi et al., 2009; Pelaez et al., 2019). This result suggests that Indian travelers will not intend to travel if he/she perceives a high risk of coronavirus so there is an urgent need to concentrate on the ways by which risk perception of travelers can be reduced. The investigation highlights that travelers are concerned about their travel plans as perceived risk is negatively influencing the traveling intention. The greater the perceived risk, the lesser the behavioral intention of traveling, travelers believe that if they travel during coronavirus, they may get infected by the virus, they may not get the value for money, they may not get the personal satisfaction or it may waste their time. The negative effect on behavioral intention shows travelers' fear toward traveling in the period of coronavirus. Perceptions of risk and travel behavior are likely to influence travel intentions. Perceived risk denotes travelers' perceptions of the insecurity and undesirable consequences of traveling in the period of a virus outbreak (Dowling and Staelin, 1994). These negative/undesirable outcomes may be disappointing travel

experiences or a serious threat to traveler's health as chances of being infected by the virus (Sönmez and Graefe, 1998). COVID-19 epidemic is being considered a serious and major global health issue (Zhang *et al.*, 2020). The results of this study are in line with prior studies (Hsu and Huang, 2012; Han and Kim, 2010; Han *et al.*, 2010; Lam and Hsu, 2004, 2006).

Theoretical and practical implications

At this point in time, information is limited about how the coronavirus has impacted traveler's behavioral intention of traveling; this study is an effort for measuring that intention. This study contributes to the academic literature on behavioral intention, travel behavior and risk perception during a pandemic or any other crisis. The results highlighted the usefulness of the TPB model to predict the behavioral intention of traveling in the context of India. These results show that Indian traveler's attitude, PBC and perceived risk became important factors in forming behavioral intention of traveling in the period of coronavirus. Although subjective norms are negatively related to the traveler's behavioral intention and it is crucial for concerned authorities. This finding is clearly indicating that in India, there is a social pressure of peers/families/friends who do not want that a person who is close to them should travel in the period of COVID-19. As per the findings, people are fearful and nervous, they do not want to travel during the coronavirus outbreak. In this situation, both the government and industry should devise a comprehensive plan by which few things could be done. First, travelers' attitudes may be favorable for traveling during the coronavirus. Second, their subjective norm (friends/relatives) may support their travel. Third, they may have all the necessary resources (such as transportation) for traveling as they are unable to travel due to strict restrictions during the lockdown. Fourth, their perceived risk may be the lowest, the lower the perceived risk, the higher the traveling intention. Further, the government should encourage people to travel by directing all travelers and tourism organizations to adopt preventative measures. Physical or social distancing, wearing a mask, following the basics of good hygiene and avoiding locations that are closed, congested or involve close contact is the prevention measures that must be followed while traveling and at the destination.

To the best of the authors' knowledge, in the Indian context, there is no study, which has tested the TPB by incorporating perceived risk in explaining the Indian citizens' behavioral intention of traveling in the period of Coronavirus. As per TIME "officially, India has the world's second-worst Covid-19 outbreak. Unofficially, it's almost certainly the worst" (Perrigo, 2021) so the results of this study can be useful for those countries which are worst affected by the coronavirus. This study acts as a valuable benchmark for future longitudinal studies examining tourists' short-term and long-term behavior changes. The findings of this study offer detailed insights into the travel behavior of Indian citizens during infectious disease outbreaks. This research summarizes the crucial function of travelers' behavior in the specific disease to elucidate their purpose generation mechanism for travel decisions. Thus, the findings of this study could be useful in tourism planning and policymaking during pandemics. This research provides timely and interesting information regarding the impact of coronavirus on the behavioral intention of traveling in this pandemic. This study can benefit travelers, the tourism and hospitality industry, governments, the aviation industry and other relevant organizations as this paper offers the latest updates and essential information regarding traveler's intention of traveling in the period of coronavirus. The research consists of variables, which influence Indian travelers' behavioral intention of traveling during Coronavirus. Tour companies in India need to focus on these constructs in their promotional and marketing plans as these constructs have a significant role in generating tour/travel demand and help potential travelers in finalizing their tours. The findings of this research will provide insights regarding the behavioral intention of traveling during the period of virus outbreaks in the future.

Limitations and future directions

The method of questionnaire administration was online. This mode is feasible and convenient in reaching out to the larger gatherings, but the sample composition shows that the respondents are friendly with the use of this technology, young and almost 80% with post-graduate qualification means the major chunk of the population is well qualified. As less qualified populations make up a large part of India's tourism market, future studies may include them (Gupta *et al.*, 2021). The survey was taken by the users who had internet access and who were able to understand and communicate in English. In this case, the generalizability of the results may be limited as the non-users of this technology have been overlooked; hence other respondents should be included in future studies. There are many countries which severely affected by a coronavirus, so data collection in India may present biasness in the sample because only Indian citizens are included. Sample size with a larger geographic representation of different countries may be included in future studies. In addition, future studies may also include additional variables, i.e. perceived security, perceived safety, perceived trust, etc. After the end of Coronavirus, the behavioral intention of traveling in the period of pandemic/crisis/virus outbreaks may not remain the same.

References

Abdullah, M., Dias, C., Muley, D. and Shahin, M. (2020), "Exploring the impacts of COVID-19 on travel behavior and mode preferences", *Transportation Research Interdisciplinary Perspectives*, Vol. 8, p. 100255.

Ajzen, I. (1985), "From intentions to actions: a theory of planned behavior", *In Action Control*, Springer, Berlin, Heidelberg, pp. 11-39.

Ajzen, I. (1991), "The theory of planned behavior", *Organizational Behavior and Human Decision Processes*, Vol. 50 No. 2, pp. 179-211.

Ajzen, I. (2002), "Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior", *Journal of Applied Social Psychology*, Vol. 32 No. 4, pp. 665-683, doi: 10.1111/j.1559-1816.2002.tb00236.x.

Ajzen, I. and Driver, B.L. (1992), "Application of the theory of planned behavior to leisure choice", *Journal of Leisure Research*, Vol. 24 No. 3, pp. 207-224, doi: 10.1080/00222216.1992.11969889.

Ajzen, I. and Fishbein, M. (1980), *Understanding Attitudes and Predicting Social Behaviour*, Prentice-Hall, Englewood Cliffs.

Ajzen, I. and Madden, T.J. (1986), "Prediction of goal-directed behavior: attitudes, intentions, and perceived behavioral control", *Journal of Experimental Social Psychology*, Vol. 22 No. 5, pp. 453-474, doi: 10.1016/0022-1031(86)90045-4.

Al Ziadat, M.T. (2015), "Applications of planned behavior theory (TPB) in jordanian tourism", *International Journal of Marketing Studies*, Vol. 7 No. 3, p. 95.

Alexa – Top Sites By Category: Top/Recreation/Travel (2020), available at: www.alexa.com/topsites/category/Top/Recreation/Travel, (accessed 15 September 2020).

Armitage, C.J. and Conner, M. (2001), "Efficacy of the theory of planned behavior: a meta-analytic review", *British Journal of Social Psychology*, Vol. 40 No. 4, pp. 471-499.

Athiyaman, A. (2002), "Internet users' intention to purchase air travel online: an empirical investigation", *Marketing Intelligence & Planning*, Vol. 20 No. 4, pp. 234-242.

Bae, S.Y. and Chang, P.J. (2020), "The effect of coronavirus disease-19 (COVID-19) risk perception on behavioural intention towards 'untact' tourism in South Korea during the first wave of the pandemic (march 2020)", *Current Issues in Tourism*, Vol. 24 No. 7, pp. 1-19, doi: 10.1080/13683500.2020.1798895.

Bagozzi, R.P. and Yi, Y. (1988), "On the evaluation of structural equation models", *Journal of the Academy of Marketing Science*, Vol. 16 No. 1, pp. 74-94.

Baker, E.W., Al-Gahtani, S.S. and Hubona, G.S. (2007), "The effects of gender and age on new technology implementation in a developing country: testing the theory of planned behavior (TPB)", *Information Technology & People*, Vol. 20 No. 4, pp. 352-e375.

Bianchi, C., Milberg, S. and Cúneo, A. (2017), "Understanding travelers' intentions to visit a short versus long-haul emerging vacation destination: the case of Chile", *Tourism Management*, Vol. 59, pp. 312-324, doi: 10.1016/j.tourman.2016.08.013.

Brug, J., Aro, A.R. and Richardus, J.H. (2009), "Risk perceptions and behaviour: towards pandemic control of emerging infectious diseases", doi: 10.1007/s12529-008-9000-x.

Buess, M. (2012), "Metastasiertes nierenzellkarzinom. Heutige therapeutische optionen", *Tagliche Praxis*, Vol. 53 No. 1, p. 51.

Carter, S. (1998), "Tourists' and travellers' social construction of africa and asia as risky locations", *Tourism Management*, Vol. 19 No. 4, pp. 349-358.

Casaló, L.V., Flavián, C. and Guinalíu, M. (2010), "Determinants of the intention to participate in firm-hosted online travel communities and effects on consumer behavioral intentions", *Tourism Management*, Vol. 31 No. 6, pp. 898-911.

Cheng, S., Lam, T. and Hsu, C. (2006), "Negative word-of-mouth communication intention: an application of the theory of planned behavior", *Journal of Hospitality & Tourism Research*, Vol. 30 No. 1, pp. 95-e116.

Chen, L. and Yang, X. (2018), "Using EPPM to evaluate the effectiveness of fear appeal messages across different media outlets to increase the intention of breast self-examination among chinese women", *Health Communication*, Vol. 34 No. 11, doi: 10.1080/10410236.2018.1493416.

Chen, M.F. and Tung, P.J. (2014), "Developing an extended theory of planned behavior model to predict consumers' intention to visit green hotels", *International Journal of Hospitality Management*, Vol. 36, pp. 221-230.

Chew, E.Y.T. and Jahari, S.A. (2014), "Destination image as a mediator between perceived risks and revisit intention: a case of post-disaster Japan", *Tourism Management*, Vol. 40, pp. 382-393.

Chien, G.C., Yen, I.Y. and Hoang, P.Q. (2012), "Combination of theory of planned behavior and motivation: an exploratory study of potential beach-based resorts in vietnam", *Asia Pacific Journal of Tourism Research*, Vol. 17 No. 5, pp. 489-508.

Conner, M. and Abraham, C. (2001), "Conscientiousness and the theory of planned behavior: towards a more complete model of the antecedents of intentions and behavior", *Personality and Social Psychology Bulletin*, Vol. 27 No. 11, pp. 1547e-1561.

Conner, M., Warren, R., Close, S. and Sparks, P. (1999), "Alcohol consumption and the theory of planned behavior: an examination of the cognitive mediation of past behaviorid", *Journal of Applied Social Psychology*, Vol. 29 No. 8, pp. 1676-1704.

De Vos, J. (2020), "The effect of COVID-19 and subsequent social distancing on travel behavior", *Transportation Research Interdisciplinary Perspectives*, Vol. 5, p. 100121, doi: 10.1016/j.trip.2020.100121.

Dowling, G.R. and Staelin, R. (1994), "A model of perceived risk and intended risk-handling activity", *Journal of Consumer Research*, Vol. 21 No. 1, pp. 119-134, doi: 10.1086/209386.

Fielding, K.S., McDonald, R. and Louis, W.R. (2008), "Theory of planned behaviour, identity and intentions to engage in environmental activism", *Journal of Environmental Psychology*, Vol. 28 No. 4, pp. 318-326.doi, doi: 10.1016/j.jenvp.2008.03.003.

Fishbein, M.A. (1967a), "Attitude and the prediction of behavior", in Fishbein, M.A. (Ed.), *Readings in Attitude Theory and Measurement*, Wiley, New York, NY, pp. 477-492.

Fishbein, M. and Ajzen, I. (1975), *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research*, Addison-Wesley, *Reading*, MA.

Floyd, M.F., Gibson, H., Pennington-Gray, L. and Thapa, B. (2004), "The effect of risk perceptions on intentions to travel in the aftermath of september 11, 2001", *Journal of Travel & Tourism Marketing*, Vol. 15 Nos 2/3, pp. 19-38, doi: 10.1300/ J073v15n02_02.

Fornell, C. and Larcker, D.F. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of Marketing Research*, Vol. 18 No. 1, pp. 39-50.

Fuchs, G. and Reichel, A. (2006), "Tourist destination risk perception: the case of Israel", *Journal of Hospitality & Leisure Marketing*, Vol. 14 No. 2, pp. 83-108, doi: 10.1300/J150v14n02.

Garson, G.D. (2001), "PA 765 statnotes: an online textbook (vol. 2001)", available at: edu/garson/pa765/statnote.htm

Grandón, E.E., Nasco, S.A. and Mykytyn, P.P. Jr, (2011), "Comparing theories to explain e-commerce adoption", *Journal of Business Research*, Vol. 64 No. 3, pp. 292-298.

Gupta, V., Cahyanto, I., Sajnani, M. and Shah, C. (2021), "Changing dynamics and travel evading: a case of indian tourists amidst the COVID 19 pandemic", *Journal of Tourism Futures*, Vol. ahead-of-print No. ahead-of-print.

Haddock, C. (1993), "Managing risks in outdoor activities", *New Zealand Mountain Safety Council*.

Hair, J.F., Anderson, R.E., Babin, B.J. and Black, W.C. (2010), "Multivariate data analysis: a global perspective", Vol. 7.

Hales, C. and Shams, H. (1991), "Cautious incremental consumption: a neglected consumer risk reduction strategy", *European Journal of Marketing*, Vol. 25 No. 7, pp. 7-21.

Han, H.S. (2015), "Travelers' pro-environmental behavior in a green lodging context: converging value-beliefnorm theory and the theory of planned behavior", *Tourism Management*, Vol. 47, pp. 164-177, doi: 10.1016/j.tourman.2014.09.014.

Han, H. and Kim, Y. (2010), "An investigation of green hotel customers' decision formation: developing an extended model of the theory of planned behavior", *International Journal of Hospitality Management*, Vol. 29 No. 4, pp. 659-668, doi: 10.1016/j.ijhm.2010.01.001.

Han, H., Hsu, L. and Sheu, C. (2010), "Application of the theory of planned behavior to green hotel choice: testing the effect of environmental friendly activities", *Tourism Management*, Vol. 31 No. 3, pp. 325-334, doi: 10.1016/j. tourman.2009.03.013.

Han, H., Al-Ansi, A., Chua, B.L., Tariq, B., Radic, A. and Park, S.H. (2020), "The post-coronavirus world in the international tourism industry: application of the theory of planned behavior to safer destination choices in the case of US outbound tourism", *International Journal of Environmental Research and Public Health*, Vol. 17 No. 18, pp. 6485.

Hansen, T., Jensen, J.M. and Solgaard, H.S. (2004), "Predicting online grocery buying intention: a comparison of the theory of reasoned action and the theory of planned behavior", *International Journal of Information Management*, Vol. 24 No. 6, pp. 539-550.

Horng, J.S., Su, C.S. and So, S.I.A. (2013), "Segmenting food festival visitors: applying the theory of planned behavior and lifestyle", In *Journal of Convention & Event Tourism*, Vol. 14 No. 3, pp. 193-216.

Hotle, S., Murray-Tuite, P. and Singh, K. (2020), "Influenza risk perception and travel-related health protection behavior in the US: insights for the aftermath of the COVID-19 outbreak", *Transportation Research Interdisciplinary Perspectives*, Vol. 5, p. 100127.

Hsiao, C.H. and Yang, C. (2010), "Predicting the travel intention to take high speed rail among college students", *Transportation Research Part F: traffic Psychology and Behaviour*, Vol. 13 No. 4, pp. 277-287.

Hsu, C.H. and Huang, S. (2012), "An extension of the theory of planned behavior model for tourists", *Journal of Hospitality & Tourism Research*, Vol. 36 No. 3, pp. 390-417, doi: 10.1177/1096348010390817.

Hsu, C.H. and Huang, S. (2010), "Formation of tourist behavioral intention and actual behavior", *In 2010 7th International Conference on Service Systems and Service Management*, IEEE, pp. 1-6.

Huang, X., Dai, S. and Xu, H. (2020), "Predicting tourists' health risk preventative behaviour and travelling satisfaction in tibet: combining the theory of planned behaviour and health belief model", *Tourism Management Perspectives*, Vol. 33, p. 100589, doi: 10.1016/j.tmp.2019.100589.

Huang, S. and Hsu, C.H. (2009), "Effects of travel motivation, past experience, perceived constraint, and attitude on revisit intention", *Journal of Travel Research*, Vol. 48 No. 1, pp. 29-44, doi: 10.1177/0047287508328793.

India: COVID-19 cases timeline 2020 | Statista (2020), available at: www.statista.com/statistics/1104054/india-coronavirus-covid-19-daily-confirmed-recovered-death-cases/ (accessed 27 December 2020)

Japutra, A., Loureiro, S.M.C., Molinillo, S. and Ekinci, Y. (2019), "Travellers' mindsets and theory of planned behaviour", *Tourism Management Perspectives*, Vol. 30, pp. 193-196, doi: 10.1016/j.tmp.2019.02.011.

Jordan, E.J., Bynum Boley, B., Knollenberg, W. and Kline, C. (2018), "Predictors of intention to travel to Cuba across three time horizons: an application of the theory of planned behavior", *Journal of Travel Research*, Vol. 57 No. 7, pp. 981-993.

Kaplan, S., Manca, F., Nielsen, T.A.S. and Prato, C.G. (2015), "Intentions to use bike-sharing for holiday cycling: an application of the theory of planned behavior", *Tourism Management*, Vol. 47, pp. 34-46.

Khan, M.J., Chelliah, S. and Ahmed, S. (2017), "Factors influencing destination image and visit intention among young women travellers: role of travel motivation, perceived risks, and travel constraints", *Asia Pacific Journal of Tourism Research*, Vol. 22 No. 11, pp. 1139-1155, doi: 10.1080/10941665.2017.1374985.

Kim, C., Cheon, S.H., Choi, K., Joh, C.H. and Lee, H.J. (2017), "Exposure to fear: changes in travel behavior during MERS outbreak in Seoul", *KSCE Journal of Civil Engineering*, Vol. 21 No. 7, pp. 2888-2895.

Koundinya, C. (2019), "Predicting online travel adoption intention of an Indian consumer: a SEM-Neural network approach", *Theoretical Economics Letters*, Vol. 9 No. 2, pp. 348-375.

Kwun, J.W. and Oh, H. (2004), "Effects of brand, price, and risk on customers' value perceptions and behavioral intentions in the restaurant industry", *Journal of Hospitality & Leisure Marketing*, Vol. 11 No. 1, pp. 31-49.

Lam, T. and Hsu, C.H. (2004), "Theory of planned behavior: potential travelers from China", *Journal of Hospitality & Tourism Research*, Vol. 28 No. 4, pp. 463-482, doi: 10.1177/1096348004267515.

Lam, T. and Hsu, C.H. (2006), "Predicting behavioral intention of choosing a travel destination", *Tourism Management*, Vol. 27 No. 4, pp. 589-599, doi: 10.1016/j.tourman.2005.02.003.

Law, R. (2006), "The perceived impact of risks on travel decisions", *International Journal of Tourism Research*, Vol. 8 No. 4, pp. 289-300.

Lee, C.K., Song, H.J., Bendle, L.J., Kim, M.J. and Han, H. (2012), "The impact of non-pharmaceutical interventions for 2009 H1N1 influenza on travel intentions: a model of goal-directed behavior", *Tourism Management*, Vol. 33 No. 1, pp. 89-99, doi: 10.1016/j.tourman.2011.02.006.

Lepp, A. and Gibson, H. (2003), "Tourist roles, perceived risk and international tourism", *Annals of Tourism Research*, Vol. 30 No. 3, pp. 606-624.

Liao, S., Shao, Y.P., Wang, H. and Chen, A. (1999), "The adoption of virtual banking: an empirical study", *International Journal of Information Management*, Vol. 19 No. 1, pp. 63-74.

Lin, H.F. (2006), "Understanding behavioral intention to participate in virtual communities", *Cyberpsychology & Behavior*, Vol. 9 No. 5, pp. 540-547, doi: 10.1089/cpb.2006.9.540.

Mainardes, E.W., de Souza, I.M. and Correia, R.D. (2020), "Antecedents and consequents of consumers not adopting e-commerce", *Journal of Retailing and Consumer Services*, Vol. 55, p. 102138.

Moutinho, L. (1987), "Consumer behaviour in tourism", *European Journal of Marketing*, Vol. 21 No. 10.

Nguyen, T.H.H. and Coca-Stefaniak, J.A. (2020), "Coronavirus impacts on post-pandemic planned travel behaviours", *Annals of Tourism Research*.

Nunnally, J.C. and Bernstein, I.H. (1978), "Psychometric theory McGraw-Hill New York", *The role of university in the development of entrepreneurial vocations: a Spanish study*.

Olya, H.G. and Al-Ansi, A. (2018), "Risk assessment of halal products and services: implication for tourism industry", *Tourism Management*, Vol. 65, pp. 279-291.

Park, S.H., Hsieh, C.M. and Lee, C.K. (2017), "Examining chinese college students' intention to travel to Japan using the extended theory of planned behavior: testing destination image and the mediating role of travel constraints", *Journal of Travel & Tourism Marketing*, Vol. 34 No. 1, pp. 113-131, doi: 10.1080/10548408.2016.1141154.

Pelaez, A., Chen, C.W. and Chen, Y.X. (2019), "Effects of perceived risk on intention to purchase: a meta-analysis", *Journal of Computer Information Systems*, Vol. 59 No. 1, pp. 73-84.

Perrigo, B. (2021), "TIME", [online] time, available at: https://time.com/5954416/india-covid-second-wave/ (accessed 5 June 2021).

Pittsburgh Post-Gazette (2021), "India's 1.3 billion people go under world's largest lockdown", [online], available at: www.post-gazette.com/news/world/2020/03/25/India-s-1-3-billion-largest-lockdown-coronavirus-COVID-19/stories/202003250071 (accessed 5 June 2021).

Qi, C.X., Gibson, H.J. and Zhang, J.J. (2009), "Perceptions of risk and travel intentions: the case of China and the Beijing Olympic games", *Journal of Sport & Tourism*, Vol. 14 No. 1, pp. 43-67.

Quellette, J.A. and Wood, W. (1998), "Habit and intention in everyday life: the multiple processes by which past behavior predicts future behavior", *Psychological Bulletin*, Vol. 124 No. 1, pp. 54-74.

Quintal, V.A., Lee, J.A. and Soutar, G.N. (2010), "Risk, uncertainty and the theory of planned behavior: a tourism example", *Tourism Management*, Vol. 31 No. 6, pp. 797-805, doi: 10.1016/j.tourman.2009.08.006.

Quintal, V.A., Thomas, B. and Phau, I. (2015), "Incorporating the winescape into the theory of planned behaviour: examining 'new world' wineries", *Tourism Management*, Vol. 46, pp. 596-609, doi: 10.1016/j.tourman.2014.08.013.

Reisinger, Y. and Mavondo, F. (2005), "Travel anxiety and intentions to travel internationally: implications of travel risk perception", *Journal of Travel Research*, Vol. 43 No. 3, pp. 212-225, doi: 10.1177/0047287504272017.

Rittichainuwat, B.N. and Chakraborty, G. (2009), "Perceived travel risks regarding terrorism and disease: the case of Thailand", *Tourism Management*, Vol. 30 No. 3, pp. 410-418.

Rivis, A., Sheeran, P. and Armitage, C.J. (2009), "Expanding the affective and normative components of the theory of planned behavior: a meta-analysis of anticipated affect and moral norms", *Journal of Applied Social Psychology*, Vol. 39 No. 12, pp. 2985-3019.

Roehl, W.S. and Fesenmaier, D.R. (1992), "Risk perceptions and pleasure travel: an exploratory analysis", *Journal of Travel Research*, Vol. 30 No. 4, pp. 17-26.

Seow, A.N., Choong, Y.O., Moorthy, K. and Chan, L.M. (2017), "Intention to visit Malaysia for medical tourism using the antecedents of theory of planned behaviour: a predictive model", *International Journal of Tourism Research*, Vol. 19 No. 3, pp. 383-393.

Shim, S., Eastlick, M.A., Lotz, S.L. and Warrington, P. (2001), "An online prepurchase intentions model: the role of intention to search", *Journal of Retailing*, Vol. 77 No. 3, pp. 397-416.

Soliman, M. (2019), "Extending the theory of planned behavior to predict tourism destination revisit intention", *International Journal of Hospitality & Tourism Administration*, pp. 1-26, doi: 10.1080/15256480.2019.1692755.

Sönmez, S.F. and Graefe, A.R. (1998), "Determining future travel behavior from past travel experience and perceptions of risk and safety", *Journal of Travel Research*, Vol. 37 No. 2, pp. 171-177.

Sönmez, S.F. and Graefe, A.R. (1998), "Influence of terrorism risk on foreign tourism decisions", *Annals of Tourism Research*, Vol. 25 No. 1, pp. 112-144.

Statista (2020), "Opinion on government-implemented travel restrictions on foreign travellers due to the coronavirus COVID-19 in India in March 2020", available at: www.statista.com/statistics/1103892/indiapublic-opinion-on-travel-restrictions-coronavirus/#statisticContainer (accessed 31 March 2020).

Statista (2021), "Statista", [online], available at: www.statista.com/statistics/1104054/india-coronavirus-covid-19-daily-confirmed-recovered-death-cases/ (accessed 9 June 2021).

Steenkamp, J.B.E. and Geyskens, I. (2006), "How country characteristics affect the perceived value of web sites", *Journal of Marketing*, Vol. 70 No. 3, pp. 136-150.

Swan, J. (1981), "Disconfirmation of expectations and satisfaction with a retail service", *Journal of Retailing*, Vol. 57 No. 3, pp. 49-66.

Tavitiyaman, P. and Qu, H. (2013), "Destination image and behavior intention of travelers to Thailand: the moderating effect of perceived risk", *Journal of Travel & Tourism Marketing*, Vol. 30 No. 3, pp. 169-185, doi: 10.1080/10548408.2013.774911.

Taylor, S. and Todd, P.A. (1995), "Understanding information technology usage: a test of competing models", *Information Systems Research*, Vol. 6 No. 2, pp. 144-176.

Teo, T. and Lee, C.B. (2010), "Explaining the intention to use technology among student teachers", *Campus-Wide Information Systems*, Vol. 27 No. 2, doi: 10.1108/10650741011033035.

The Economic Times (2021), "Impact of coronavirus on indian tourism could run into thousands of crores of rupees", available at: https://economictimes.indiatimes.com/industry/services/travel/impact-of-coronavirus-on-indian-tourism-could-run-into-thousands-of-crores-of-rupees/articleshow/74592482.cms?from=mdr (accessed 9 June 2021).

Tsai, C.Y. (2010), "Applying the theory of planned behavior to explore the independent travelers behavior", *African Journal of Business Management*, Vol. 4 No. 2, pp. 221-234.

Venkatesh, V., Morris, M.G., Davis, G.B. and Davis, F.D. (2003), "User acceptance of information technology: toward a unified view", *MIS Quarterly*, pp. 425-478.

Verhage, B.J., Yavas, U. and Green, R.T. (1990), "Perceived risk: a cross-cultural phenomenon?", *International Journal of Research in Marketing*, Vol. 7 No. 4, pp. 297-303.

WHO Coronavirus Disease (COVID-19) Dashboard (2020), available at: https://covid19.who.int/, (accessed 9 June 2021).

Yavas, U. (1987), "Foreign travel behaviour in a growing vacation market: implications for tourism marketers", *European Journal of Marketing*, Vol. 21 No. 5.

Zhan, L., Zeng, X., Morrison, A.M., Liang, H. and Coca-Stefaniak, J.A. (2020), "A risk perception scale for travel to a crisis epicentre: visiting wuhan after COVID-19", *Current Issues in Tourism*, pp. 1-18.

Zhang, J., Xie, C., Wang, J., Morrison, A.M. and Coca-Stefaniak, J.A. (2020), "Responding to a major global crisis: the effects of hotel safety leadership on employee safety behavior during COVID-19", *International Journal of Contemporary Hospitality Management*, Vol. 32 No. 11.

Further reading

Ajzen, I. (1988), *Attitudes, Personality and Behavior*, Open University Press, Milton Keynes.

Fishbein, M.A. (1967b), "Behaviour theory approach to the relation between beliefs about an object and the attitude toward the object", in Fishbein, M. (Ed.), *Readings in Attitude Theory and Measurement*, John Wiley, New York, NY, pp. 389-400.

Appendix

1. *Attitude (adapted from Lam and Hsu,2006):*

   - ATT1: I think traveling in the period of COVID-19 would be favorable.
   - ATT2: I think traveling in the period of COVID-19 would be pleasant.
   - ATT3: I think traveling in the period of COVID-19 would be positive.

2. *Subjective norms (adapted from Ajzen,1991):*

   - SN1: My relatives who are important to me think that I should travel in the period of COVID-19.
   - SN2: My friends who are important to me think that I should travel in the period of COVID-19.
   - SN3: My seniors who are important to me think that I should travel in the period of COVID-19.
   - SN4: My colleagues who are important to me think that I should travel in the period of COVID-19.

3. *Perceived behavioral control (adapted from Ajzen,1991; Taylor and Todd,1995):*

   - PBC1: I am confident that if I want to, I can travel in the period of COVID-19.
   - PBC2: I am able to travel in the period of COVID-19.
   - PBC3: I have the resources to travel in the period of COVID-19.
   - PBC4: I have the ability to travel in the period of COVID-19.
   - PBC5: I have the knowledge to travel in the period of COVID-19.
   - PBC6: Traveling in the period of COVID-19 is entirely within my control.

4. *Perceived risk (adapted from Sönmez and Graefe, 1998):*

   - PR1: I think traveling in the period of COVID-19 will provide value for money spent.
   - PR2: I think traveling in the period of COVID-19 will provide personal satisfaction.
   - PR3: I think traveling in the period of COVID-19 will waste time.

5. *Behavioral intention (adapted from Venkatesh et al., 2003 and Taylor and Todd, 1995):*

- BI1: I intend to travel in the near future.
- BI2: I predict I would travel in the near future.
- BI3: I plan to travel in the near future.
- BI4: I intend to travel frequently in the near future.

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