

# Towards a post-pandemic tourism recovery: An empirical study on the behavioural intention of using contactless payment and Covid-19 vaccination in Vietnam

Man The Nguyen<sup>1,2\*</sup>, Giang Thuy Nguyen<sup>3</sup>, Tho Huu Hoang Nguyen<sup>3</sup>

<sup>1</sup>International University, Ho Chi Minh City, Vietnam

<sup>2</sup>Vietnam National University, Ho Chi Minh City, Vietnam

<sup>3</sup>Tomas Bata University in Zlín, Czech Republic

\*Corresponding author: ntman@hcmiu.edu.vn

---

## ARTICLE INFO

**DOI:**10.46223/HCMCOUJS.  
econ.en.14.2.2636.2024

Received: February 01<sup>st</sup>, 2023

Revised: May 05<sup>th</sup>, 2023

Accepted: May 08<sup>th</sup>, 2023

JEL classification code:

G40; Z33; I12; E42

*Keywords:*

contactless payment; theory of  
planned behaviour; tourism  
recovery; protection motivation  
theory; vaccination; Vietnam

## ABSTRACT

This study highlights the applicability of the joint framework of the Theory of Planned Behaviour (TPB) and Protection Motivation Theory (PMT) to the utilization of contactless payment and Covid-19 vaccination in the context of post-pandemic tourism recovery in Vietnam. The conclusion of this study evidenced that the behavioural intention of using the contactless payment mode was positively driven by subjective norms, attitude, perceived behavioural control, risk perception, and perceived benefit. Moreover, tourists would feel safer when combining two protective measures, including contactless payment and vaccination. This study contributes to the field of contactless payment literature by applying a new different theoretical lens to explain the behaviour and intentions towards employing it generally and the field of tourism literature particularly.

---

## 1. Introduction

The Covid-19 pandemic has caused an unprecedented devastating aftermath to the world's socio-economic areas. Even after some waves of disease outbreaks and life has returned to the "new normal" state, the fear of Covid-19 infection remains in people's minds. One of the most vulnerable industries to Covid-19 is tourism, with the decreasing number of tourists to travel sites (Fotiadis, Polyzos, & Huan, 2021). Hence, the implementation of mass vaccination has a survival meaning on the tourism recovery (Gursoy, Can, Williams, & Ekinici, 2021). However, Balasubramanian and Hanafiah (2022) recommended that contactless rules almost remain appropriate in the context of reopening travel destinations to welcome back tourists. This is because vaccination only helps to reduce the severe symptoms of the disease and is unable to deter tourists from infection risk when they visit a lot of travel areas (Lockyer et al., 2021).

The boom of FinTech Industry in recent years is conducive to a potential market for the simple, safe, and high-quality online mobile payment services (Hasan, Ashfaq, & Shao, 2021). Mobile payment or contactless payment is a revolution in the field of Fintech payment services, directly linked to financial institutions and banks (Kang, 2018). Contactless payment has indeed reshaped the way in which people make a transaction. Direct contact and cash are no longer essential to make transactions or exchange value. Especially the Covid-19-post-pandemic rebound of the tourism industry has been closely tied to the broad use of contactless mobile payment

technologies because there is a much-needed push for non-cash transactions via contactless payment to reduce Covid-19 contamination (Suyunchaliyeva, Nautiyal, Shaikh, & Sharma, 2021).

In short, vaccination as a pharmaceutical approach and contactless payment as a non-pharmaceutical approach can be deemed to be health-protective behaviours against Covid-19. This is especially important for the rebound of tourism during the period of post-pandemic. To the best of my knowledge, this study is among the first to investigate the impact of the Covid-19 health threats on the behavioural intention to use contactless payment and vaccination in the context of tourism rebound during the post-pandemic period. To form this relationship, this study depends on the joint framework of Protection Motivation Theory (PMT) and Theory of Planned Behaviour (TPB) to emphasize the use of contactless payment and Covid-19 vaccination as health-protective behaviours to deal with tourists' risk perception of Covid-19 while they go traveling.

In summary, this study seeks to tackle the research questions as follows: "What determinants drive the behavioural intention of using contactless payment in the context of tourism recovery after the epidemic?". The objective of this study is as follows: 1) analysing the impacts of Covid-19 risk perception and perceived benefit on behavioural intention of using contactless payment; 2) determining whether such relationships might be transferred via Covid-19 vaccination and TPB variables.

## **2. Theoretical framework**

### ***2.1. Contactless payment***

According to Chen and Lee (2008), two kinds of mobile payment include remote payments and proximity payments. Whilst remote payments enable users to make a transaction from anywhere and anytime via SMS-based and WAP/internet-based payment technology, proximity mobile payment or contactless mobile payment is via near-field communication technology, which enables users to make a transaction by just tapping or waving the mobile devices or scanning QR-codes in front of the point-of-sale terminal in the allowed distance (Karjaluoto, Shaikh, Leppäniemi, & Luomala, 2020). As such, the latter payment method would help tourists to reduce contact-based transactions and, in turn, decrease the disease spreading (Önder & Gunter, 2020; Rahimizhian & Irani, 2021).

### ***2.2. Theoretical background***

With respect to Rogers (1975), the Protection Motivation Theory (PMT) elucidates the effect of existing health issues on individuals' attitudinal and behavioural fluctuations. Hence, the choice of an individual's behaviours could arise from the in-community transfer of feelings of fear (Rogers, 1975). In the framework of PMT, two processes through which individuals make their decisions are the threat appraisal process and the coping appraisal process. Whilst the threat appraisal process is focused on how individuals evaluate the risk, the response-appraisal process illustrates the extent of individuals' belief to which a suggested behaviour or protective measures bring the efficiency to them (Floyd, Prentice-Dunn, & Rogers, 2000; Wen & Liu-Lastres, 2022). And then, the result of PMT framework would lead to individuals' behavioural intention of adopting a selected protective measure (Floyd et al., 2000). The threat appraisal process encompasses perceived susceptibility and perceived severity (Wang, Wong, & Yuen, 2021).

In the context of tourism, Bae and Chang (2021) used two aspects, including cognitive and affective risk perceptions, to characterize the perceived risk from Covid-19. In line with Sjöberg (1998), whilst cognitive risk perception covers an individual's perceived susceptibility and severity of risks, affective risk perception relates to one's concerns about their infection risk. Under

the premise of PMT, this study assumes that affective and cognitive risk perceptions by tourists from Covid-19 are their feelings of fear and the possibility of infecting Covid-19 during their travel, respectively, and considered the Covid-19 vaccination and contactless payment as the protective measures against disease infection (Byrd et al., 2021; Eberhardt & Ling, 2021). In this vein, this study tends to expand the PMT into the field of tourism on how tourists responded to the disease threat by accepting the protective measures, namely vaccination and contactless payment, in their travel after the epidemic.

In the standpoint of TPB, people's behaviours are determined by consumers' faith in their response to a particular circumstance (Ajzen, 1991). The theory of planned behaviour includes the main elements of attitude, perceived behavioural control, and subjective norms (Ajzen, 1991). Attitude is relevant to how people assess the conduct of a specific behaviour (Huang, Dai, & Xu, 2020). In this study, the latent variable of attitude focuses on how tourists positively react to the use of contactless payment methods.

Conforming to Fishbein and Ajzen (1977), subjective norms demonstrate an individual's perception of inquiries into his/her peers' way of thinking about a specific behavior, while perceived behavioural control is defined as the competence of individuals to perform a given behaviour (Hsu & Huang, 2012). In this respect, subjective norms would be related to the way in which family members, relatives, friends, or colleagues of a tourist would think about using contactless payment, whilst perceived behavioural control would illustrate the abilities of tourists to utilise contactless payment.

### ***2.3. Empirical studies on the impact of contactless payment on post-covid-19 economic recovery***

There are a few recent studies that draw attention to investigating the use of mobile payment services in the post-Covid-19 pandemic recovery. Suyunchaliyeva et al. (2021) analysed the continuous intention to use mobile payment and the intention to recommend using mobile payment during the post-Covid-19 period in the theoretical lens of Bandura's self-efficacy or social cognitive theory, which exhibits that personal innovativeness and perceived trust affect users' intention to continue using mobile payment services, and that perceived trust, personal innovativeness, and outcome expectancy drive users' intention to recommend using that kind of payment to others. Similarly, in the context of consumers' online purchasing intentions during the post-Covid-19 period, M El Khoury, Choudhary, and Al Alam (2023) found the positive influence of contactless payment modes on the intention to go online shopping in both countries of Lebanon and Bahrain. Unlike such past studies, this study thus employs a joint framework of the theory of planned behaviour and protection motivation theory to examine what influences the behavioural intention to use contactless payment towards a tourism recovery during the post-pandemic period.

### **3. Research model and hypotheses**

Some past studies have incorporated risk perception into TPB in the field of tourism, for instance, in the articles by Bae and Chang (2021), Sánchez-Cañizares, Cabeza-Ramírez, Muñoz-Fernández, and Fuentes-García (2021), among others. Therefore, it is assumed that the health danger from Covid-19 remains visible, even in the times of the post-pandemic rebound of the tourism sector (Chan, 2021). Furthermore, perceived risk plays a critical role in driving individuals to pursue their coping behaviour, which triggers their positive attitude towards it (Palau-Saumell, Matute, Derqui, & Meyer, 2021). Taken together, this study posits that if tourists' belief in contactless payment as a safe payment tool to avoid Covid-19 transmission risk is high, they would

have a positive attitude towards it. On the other hand, Park and Oh (2022) evidenced that risk perception is also found to be key driver of subjective norms and perceived behavioural control. In this study, if one tourist's family members, relatives, or friends tend to adopt contactless payment for their travel to evade the exposure risk to Covid-19, he/she would intend to follow that trend. In parallel, this study refers to perceived behaviour control as how the individuals perceive their competence to control determinants preventing their preventive actions. Consequently, perceived risk from Covid-19 could be a catalyst for any individual to overcome their difficulties in taking a specific protective behaviour (Husain, Shahnawaz, Khan, Parveen, & Savani, 2021). In this regard, this study argues that Covid-19 risk perception may promote their self-learning behaviour of using contactless payment as a safe approach for their travel. From the above arguments, this study develops the following:

*H1a: Affective risk perception has a significant positive impact on attitude*

*H1b: Cognitive risk perception has a significant positive impact on attitude*

*H2a: Affective risk perception has a significant positive impact on subjective norms*

*H2b: Cognitive risk perception has a significant positive impact on subjective norms*

*H3a: Affective risk perception has a significant positive influence on perceived behavioural control*

*H3b: Cognitive risk perception has a significant positive influence on perceived behavioural control*

According to the Protection Motivation Theory (PMT), Covid-19 vaccination is an effective measure to improve social safety and individual health. In this regard, the continuous vaccination of the vaccine plays an important role in protecting people from the mass infection of Sar-CoV-2 (Zhu, Zou, Song, Ren, & Xu, 2021). In the context of tourism, it is increasingly obvious that Covid-19 vaccination will play an important role in the recovery of the tourism industry (Mladenović, Rrustemi, & Mogaji, 2022). This is because the vaccine will help to eliminate tourists' health-related issues caused by Covid-19 when they travel or enjoy hospitality-related activities. As such, this study uses Covid-19 vaccination as health-promoting behaviour to reduce health hazards in the context of post-pandemic tourism; this study hypothesized that the more health risk people perceive, the more chances they accept to be Covid-19 vaccinated.

*H4a: Affective risk perception has a significant positive influence on Covid-19 vaccination*

*H4b: Cognitive risk perception has a significant positive influence on Covid-19 vaccination*

Callow and Callow (2021) have suggested that the perceived risk of Covid-19 acts as a catalyst for individuals' coping behaviour in minimizing the disease hazards. Huang et al. (2020) also explained that an individual's fear of infection risk could make his/her select a specific health protective behaviour. In accordance with the protection motivation theory, contactless payment suits the no-contact guidelines and is deemed to be an effective instrument to perform the joint goals of avoiding disease infection and making transactions (Wang, Nguyen, Jiang, Nguyen, & Saleem, 2022). Considering the contactless payment context, this study hypothesized that a high degree of Covid-19 risk perception during tourists' travel would positively influence their behavioural intention to employ contactless payment:

*H5a: Affective risk perception has a significant positive influence on behavioural intention*

*H5b: Cognitive risk perception has a significant positive influence on behavioural intention*

Perceived benefit is translated into the perceived efficiency of the availability of protective measures against the potential risks (Janz & Becker, 1984). Further, the perceived benefit of the protective behaviour is also the main motivating force of the adoption of a health-protective behaviour (Chen & Lin, 2010), which demonstrates a positive relationship between such behaviour and its perceived benefits (Huang et al., 2020; Li et al., 2015). Additionally, perceived benefits are termed as people's expectation derived from protective behaviours (Ajzen, 1991). Consequently, people's belief on the safety and effectiveness of a specific behaviour will determine their positive attitude on that behaviour (Huang et al., 2020; Rogers, 2010). In this regard, the use of contactless payment is an appropriate health-protective behaviour against Covid-19 risk. Thus, this study suggests the following hypothesis:

*H6: Perceived benefits have a positive influence on behavioural intention*

*H7: Perceived benefits have a positive influence on attitude*

According to TPB, attitude is viewed to be a significant predictor of behavioural intention (Ajzen, 1991). A high level of an individual's positive attitude results in a high level of possibility of performing his/her behavioural intention (McMillan & Conner, 2003). Therefore, this study hypothesized as follows:

*H8: Attitude has a positive influence on behavioural intention*

Perceived behavioural control is perceived as a paramount antecedent of new technologies adoption (Bae & Chang, 2021; Beiginia, Besheli, Soluklu, & Ahmadi, 2011). In line with the theory of planned behaviour (Ajzen, 1991), perceived behavioural control exerts a positive influence into innovation adoption intention. Consequently, we hypothesized the following:

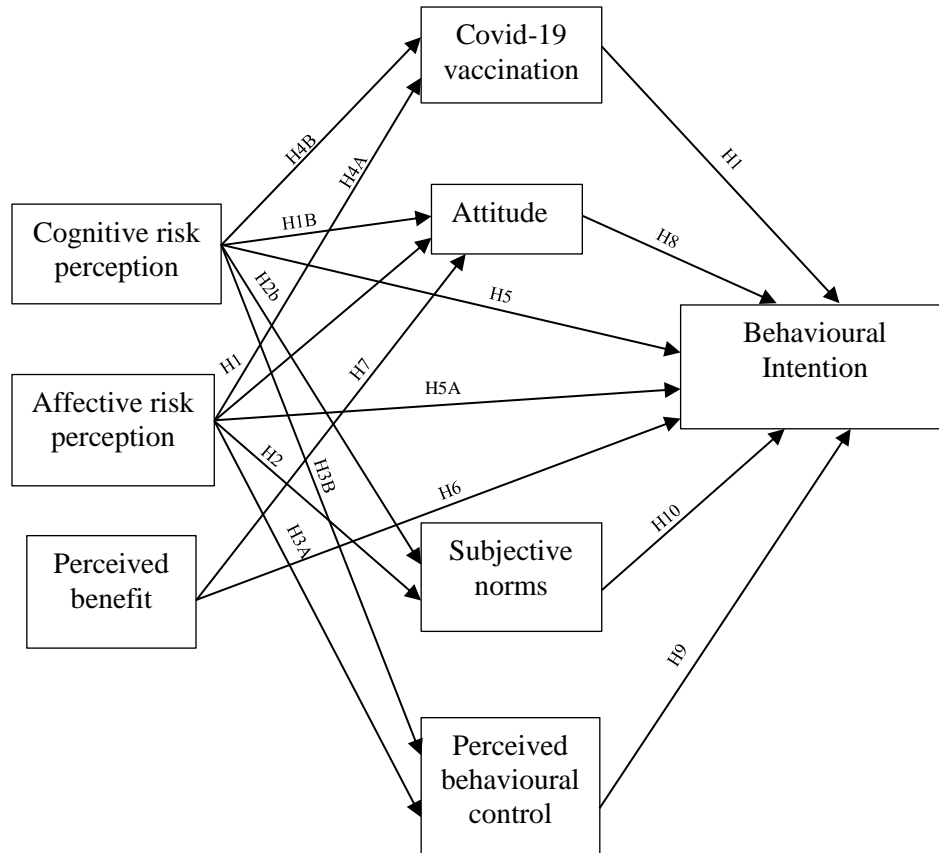
*H9: Perceived behavioural control has a positive influence on the behavioural intention*

An individual's peers' opinions may act as a trustworthy source of information influencing his/her new technology-based services adoption intention (Venkatesh, Thong, & Xu, 2012). For example, Liébana-Cabanillas, García-Maroto, Muñoz-Leiva, and Ramos-de-Luna (2020) found out the effect of subjective norms on Spanish users' continued intention of using mobile payment. Owing to the rising application of contactless payment in tourism on its functionality and convenience (Law, Chan, & Wang, 2018), this study hypothesized the following:

*H10: Subjective norm has a significant positive influence on the behavioural intention*

In the tourism industry, the vaccine does not guarantee that people can be protected from the contamination of Covid-19. It is understood that despite getting vaccinated, people still suffer from a high health risk of infection if they do not have any non-pharmaceutical protective measures (Yang et al., 2021). Thus, once the tourism industry has reopened, the danger from Covid-19 still induces an anxiety mentality for any individual who would like to travel (Gupta, Cahyanto, Sajjani, & Shah, 2021). Yet, Rahimzhan and Irani (2021) highlighted the importance of the trend for contactless technologies (e.g., contactless payment) as a key factor for hospitality and tourism industry to attract Covid-19-susceptible individuals when the pandemic is over. This is because the pandemic has pushed a tendency for individuals to gradually adopt the no-contact technology applicability into their daily lives (e.g., mobile payment, online meeting on laptop, tablet, or smartphones) (Wang et al., 2021). Besides, contactless technology satisfies the no-contact requirements in preventing people from face-to-face interaction (Aji, Berakon, & Md Husin, 2020). Thus, the integration of pharmaceutical and non-pharmaceutical interventions (e.g., Covid-19 vaccination and contactless payment) can be the dual measures to diminish health safety-related concerns during people's travel (Betti, Bragazzi, Heffernan, Kong, & Raad, 2021). From the above argumentation, this study predicted that:

*H11: Covid-19 vaccination has a significant influence on behavioural intention to use contactless payment*



**Figure 1.** Research model

Source: The author’s recommendation

**4. Research method**

**4.1. Context of research**

Vietnam deserves a research case for the following reasons. First, it is one of the tourism hubs for international and national tourists, fuelled by a high number of 16.3 million international visitors in 2019 and its contribution of over 6 percent to Vietnam’s year-on-year GDP (Nguyen, 2019). Like other tourism hubs around the world, the tourism industry in Vietnam has been destroyed by the pandemic with the closed travel sites, the limited entry procedures, visa requirements and following all pandemic prevention protocols, such as wearing mask and mass-testing (Samuel, 2022). Second, Vietnam witnessed a speedy growth in digital payments. The tools of contactless payment are varied in Vietnam, including E-wallets, mobile banking payment, bank transfers, and QR codes-based payment (Nguyen & Nguyen, 2022; Nguyen, 2021). According to Statista forecast, the value of transactions via the digital payment methods in Vietnam is predicted to be roughly over 19 billion U.S. dollars, which positions itself the fourth highest in Southeast Asia N. M. Nguyen (2022). Furthermore, the pandemic has accelerated Vietnamese consumers’ adoption of digital payment methods, which has shaped new payment habits when the pandemic eases (O. Nguyen, 2022). According to a survey conducted by Visa, 85 percent of consumers have started to use new payment methods as contactless payment, and will continue this habit in the future, and the use of non-cash payments has partly contributed to the post-pandemic tourism promotion in Vietnam (Hoang Mai, 2020).

#### 4.2. Survey development and data collection

Before conducting the survey, this study took a step to select the target study population. The sample included tourists who started their travel journeys and already had some travel experiences. The number of foreign tourists in Vietnam who employ contactless payment services (e.g., mobile payment, e-wallets, and bank transfers) is relatively small. In this fashion, the target population in this study is domestic Vietnamese tourists. Data collection is centered on major tourism hubs in Vietnam, such as Ho Chi Minh City and the capital of Hanoi. Two reasons are given to explain why we selected to conduct sampling in these places: 1) They are the main destination for several tourists when they go traveling in Vietnam; 2) many restaurants, shopping malls, and leisure venues in these destinations certainly adopt the varying types of contactless payment. We followed a self-administered survey method, which has been adopted in some past studies (Huang et al., 2020; Sánchez-Cañizares et al., 2021). The link to the survey was distributed on travel forums on social networks to Ho Chi Minh City and Hanoi Capital. To guarantee the transparency of the survey, a pre-test was performed in a control group (N = 90) to make tourists comprehend the items and amend any misleading wording.

The development of a questionnaire is entirely suitable for the construct measurements. The items were adapted from the literature sources as suggested in Table 2. All items have been modified to suit this research and were rated on a 5-point Likert-type scale. Data collection was carried out from March 26 to June 16, 2022. For the main survey, a total of 500 questionnaires were sent out to the targeted members on travel forums, and 490 were received with a response rate of 98%. After excluding the incomplete and very short-term responses, a total of 484 questionnaires were accepted.

**Table 1**

Demographic distribution of participants

Measure	Item	N	%
<b>Gender</b>	Female	252	52.1%
	Male	232	47.9%
<b>Age</b>	Under 25	90	18.6%
	From 25 to Under 30	111	22.9%
	From 30 to Under 35	118	24.4%
	35 or above	165	34.1%
<b>Marital Status</b>	Single	250	51.7%
	Married	234	48.3%
<b>Education</b>	Under Bachelor	82	16.9%
	Bachelor	152	31.4%
	Master	198	40.9%
	Above Master	52	10.7%
<b>Income</b>	Less than 10 million	103	21.3%
	From 10 million to under 15 million	155	32%

Measure	Item	N	%
	From 15 million to under 20 million	106	21.9%
	20 million or above	120	24.8%
<b>Travel frequency</b>	From 01 to 05 times	443	91.5%
	From 06 to 10 times	41	8.5%
<b>Travel place</b>	Foreign travel	23	4.8%
	Domestic travel	461	95.2%

Source: Data synthesis from the survey

## 5. Results

### 5.1. Demographic information

Regarding the sample characteristics, the sample is roughly balanced between male and female, unmarried and married. For educational features, the sample is dominated by people holding master's degrees. The sample spreads approximately equally across income. For travel frequency and travel place, almost respondents travel only from 1 to 5 yearly, whilst they only travel domestically.

### 5.2. Validity and reliability

Following Hair, Black, Babin, and Anderson (2010), this study used the following indicators: factor loadings, average variance extracted, Cronbach's Alpha, and Composite Reliability to check the convergent validity of the constructs. In Table 2, whilst the values of Cronbach's Alpha range from 0.745 to 0.909; the values of composite reliability also range from 0.787 to 0.902. All these values are greater than 0.7, which confirms internal consistency. Also, a good criterion of average variance extracted is defined as a latent construct that can interpret at least 50% of the average variance of its measurement items (Ifinedo, 2012). The AVE values of all latent variables are above the acceptable threshold of 0.5 in Table 2, which confirms a good convergent validity. Besides, the convergent validity is also verified by the values of factor loadings greater than 0.5. Discriminant validity is checked via the following requirements: (a) the AVE values of each item surpass the Maximum Shared Value (MSV); (b) the square root of the AVEs is beyond the inter-correlations of all constructs (below diagonal values) (Fornell & Larcker, 1981; Hair, Black, Babin, & Anderson, 2009). Table 4 exhibits no cases in which the square root of AVEs is smaller than the cross-correlations between any constructs, and the values of AVE of each item surpass the Maximum Shared Value (MSV). Accordingly, discriminant validity has been achieved.

### 5.3. Assessment of measurement model and structural model

Confirmatory Factor Analysis (CFA) is used to test the measurement model fit, which clarifies composed measurement items. The results of model fit in Table 3 satisfy a good fit with all the indices exceeding the recommended cut-off values. Consequently, convergent validity has also been verified. Bagozzi and Yi (1988) stated that the structural model is subject to the overall model fit in the analysis of CFA, which indicates a good fit, as shown in Table 3.

### 5.4. Testing for potential common bias

The potential common method bias will be examined via two following tests: Harman's one-factor test by implementing EFA analysis (Podsakoff, Mackenzie, Lee, & Podsakoff, 2003) and a CFA analysis performed to check the fitness of a single-factor model (all items converged

as the indicators of one factor) (Malhotra, Kim, & Patil, 2006). For the former, the results indicate that the largest variance explained by one single factor is 30.493% (< 50%). Thus, none of the single factors can describe a large proportion of variance. For the latter, the results indicate a poor model fit ( $\chi^2 = 5607.211$ ,  $df = 253$ ,  $\chi^2 / df = 22.163 > 3$ ; AGFI = 0.253 < 0.8; CFI = 0.068 < 0.9; TLI = -0.017 < 0.9; RMSEA = 0.209 < 0.08). As a result, this study does not have the issue of common bias. The model fit for the structural model also achieves a good fit in Table 4, which suggests a good fit.

**Table 2**

The Cronbach’s Alpha (CA), Composite Reliability (CR), and Average Variance Extract (AVE)

Variables	Items	CA	CR	AVE
<b>Affective Risk Perception</b>	3	0.782	0.836	0.629
<b>Cognitive Risk Perception</b>	3	0.836	0.856	0.666
<b>Attitude</b>	3	0.769	0.814	0.594
<b>Perceived Behavioural Control</b>	3	0.896	0.893	0.735
<b>Vaccination</b>	3	0.909	0.902	0.755
<b>Subjective Norms</b>	3	0.837	0.857	0.667
<b>Perceived Benefit</b>	3	0.788	0.826	0.614
<b>Behavioural Intention</b>	3	0.745	0.787	0.553

Source: Results of data analysis

**Table 3**

Goodness-of-fit Indicators

Model fit indices	Measurement Model	Structural Model	The Acceptable Threshold	Sources
<b>Chi-square/df</b>	2.117 ( $\chi^2 = 474.252$ , $df = 224$ )	2.846 ( $\chi^2 = 663.218$ , $df = 233$ )	< 5	Tabachnick and Fidell (2007)
<b>AGFI</b>	0.897	0.860	> 0.8	Hu and Bentler (1999)
<b>TLI</b>	0.946	0.911	> 0.9	Hooper et al. (2008)
<b>CFI</b>	0.956	0.925	> 0.9	Bentler and Dudgeon (1996)
<b>RMSEA</b>	0.048	0.062	< 0.08	Hu and Bentler (1999)

Source: Results of data analysis

**Table 4**

Descriptive statistics and correlation among constructs

	MSV	AP	CP	ATT	PBC	VAC	SN	PB	BI
AP	0.192	0.793							
CP	0.147	0.438	0.816						
ATT	0.202	0.229	0.243	0.770					
PBC	0.141	0.165	0.280	0.311	0.857				
VAC	0.142	0.284	0.281	0.310	0.375	0.868			
SN	0.133	0.347	0.327	0.365	0.356	0.252	0.816		
PB	0.158	0.267	0.232	0.394	0.372	0.345	0.322	0.783	
BI	0.202	0.268	0.383	0.450	0.376	0.377	0.334	0.398	0.743

Notes: Diagonal values are the square root of AVE; correlations of the constructs are below the diagonals

Source: Results of data analysis

### 5.5. Assessment and discussion of the hypothesized relationships

Structural equation modeling is used to test research hypotheses. This study used three levels of p-values (0.1, 0.05, 0.01) to determine the statistically significant effect of one latent variable.

Affective risk perception does not affect behavioural intention ( $p = 0.995$ ), and cognitive risk perception exerts a positive effect on behavioural intention ( $\beta = 0.177$ ,  $p = 0.023$ ), and thus H5a is not supported, and H5b is supported. Affective risk perception also does not have any influence on attitude ( $p = 0.356$ ), whilst the path from cognitive risk perception to attitude is significant ( $\beta = 0.178$ ,  $p = 0.068$ ). This does not endorse H1a and endorses H1b. Both risk perceptions (affective and cognitive) influenced subjective norms ( $\beta = 0.321$ ,  $p = 0.057$  and  $\beta = 0.304$ ,  $p = 0.006$  respectively), which supports H2a and H2b. Cognitive risk perception is positively associated with perceived behavioural control ( $\beta = 0.321$ ,  $p = 0.022$ ), confirming H3b; but there is no relationship between affective risk perception and perceived behavioural control ( $p = 0.530$ ), rejecting H3b. Cognitive risk perception exerted a positive influence on vaccination ( $\beta = 0.225$  and  $p = 0.03$ ), and H4b is then supported. Meanwhile, affective risk perception does not have any impact on vaccination ( $p = 0.127$ ). Hence, H4a is bolstered.

Perceived benefit has a positive relationship with attitude towards contactless payment ( $\beta = 0.442$  and  $p = 0.005$ ), supporting H7. This study also informs the positive impact of perceived benefit on behavioural intention ( $\beta = 0.120$ ,  $p = 0.067$ ), and H6 is backed.

Out of three TPB variables, only subjective norms have no effect on behavioural intention ( $p = 0.343$ ), whereas attitude and perceived behavioural control are all positively related to behavioural intention ( $\beta = 0.238$ ,  $p = 0.019$  and  $\beta = 0.101$ ,  $p = 0.035$  respectively). Consequently, H10 is not supported, and H8 and H9 are all supported.

Vaccination acted as a positive driver of behavioural intention towards contactless payment ( $\beta = 0.107$  and  $p = 0.052$ ).

## 6. Conclusion and discussions

The focus of this study is to analyse the behavioural intention to utilize contactless payment and Covid-19 vaccination in Vietnam when the tourism industry in Vietnam has recovered in the

time of post-pandemic. The objective of this study has been fulfilled as follows: 1) having clarified the positive impacts of Covid-19 risk perception and perceived benefit on behavioural intention to use contactless payment; 2) such relationship might be transferred through Covid-19 vaccination, attitude, Covid-19 vaccination, perceived behavioural control. Entrenched in theory of planned behaviour and protection motivation theory, this study hence revealed a support for the tools of disease transmission hinderance, such as contactless payment and vaccination. Thus, it is evidenced that the utilization of contactless payment is an inevitable trend for the tourism future, following vaccination measures. The following sections will focus on the theoretical contributions and managerial implications:

### **6.1. Theoretical contributions**

This study has some theoretical contributions. First, although several previous studies have employed the models of TAM and UTAUT to understand the consumer acceptance and use of mobile payment (Alalwan, Dwivedi, & Rana, 2017; To & Trinh, 2021; Wei, Luh, Huang, & Chang, 2021), little is known about the effect of psychological motives on individual's behavioural intention of using contactless payment. To tackle this gap, this study tested the applicability of the Theory of Planned Behaviour (TPB) to the field of contactless payment in the context of tourism recovery in the post-pandemic period in Vietnam. Second, this study supplements the literature on extending the antecedents of the TPB model in the context of Covid-19 post-pandemic tourism (Hou, Liang, Meng, & Choi, 2021; Seong, Choi, & Kim, 2021; Seong & Hong, 2021). This study encompassed new constructs of perceived benefits and risk perception as new antecedents of the TPB model toward the behaviour of using contactless payment by tourists.

Third, this study contributes to Liu et al. (2021); Nguyen, Tran, and Ghafoor (2022); Youn, Lee, and Ha-Brookshire (2021) in establishing a joint framework of PMT and TPB to interpret tourists' behaviour of using contactless payment after the epidemic. On the other hand, although TPB and PMT frameworks have been used in previous studies for the protective measures which CDC suggests, such as social distancing; no study has considered other acceptable PMT measures as vaccination and contactless payment to cope with tourists' worries of infection risk during their trip. Hence, this study aims to fill this research gap.

Fourth, this study enriches the literature on using contactless payment in the post-pandemic period (M El Khoury et al., 2023; Suyunchaliyeva et al., 2021). Although previous research indicated that risk perception and perceived benefits play a major role in influencing the usage intention of individuals, whether such effects are transferred via attitude, vaccination, or perceived behavioural control is little explored within the context of using the contactless payment for post-pandemic travels. Hence, this study tends to fill this research void.

### **6.2. Managerial implications**

This study has some managerial implications. First, the suppliers of contactless mobile payment services should focus on advancing the good experience of tourists when they use contactless payment. This can be done via the convenience of making a contactless payment anywhere or hotel and restaurant reservations at travel sites. Second, the Customer Relationship Management (CRM) mechanism should be developed to listen to customers' voices of feedback and complaints about service quality. By doing so, their response would be resolved in a satisfactory way, which increases the good experience of users. Additionally, the managers should simplify the manuals to help tourists use the service as easily as possible.

Although the reference from social community could not lead to the behavioural intention towards contactless payment, managers should take advantage of companion's pressure to increase

another potential user. Next, the vaccination strategy should be increasingly promoted to increase the vaccine coverage to deter the disease spreading, which helps the development of tourism industry to be sustainable. Furthermore, there should be a supervision and legal mechanism from governmental agencies to guarantee the transparency of the operational way of the contactless payment service providers and to extend the application of this tool into the hospitality and tourism-related services.

### **6.3. Limitations and future research**

The limitations of this study are unavoidable. First, the unobserved heterogeneity or casual inference could not be controlled in this cross-sectional study, and hence, future research should examine the theoretical framework in the experimental and/or longitudinal studies to uncover these possible effects. Second, this study employed the sampling method of convenience (a non-random sampling method); hence this study should use probability sampling approach to better represent the targeted population. Third, the study focused on behavioural intentions rather than actual behaviour, which may limit its generalizability to other contexts. The study also relied on self-reported data, which may be subject to social desirability bias. Additionally, the sample size of the study was relatively small, which may limit its statistical power and generalizability. Future research could address these limitations by using larger and more diverse samples and by collecting data on actual behaviour rather than just behavioural intentions.

---

### **References**

- Aji, H. M., Berakon, I., & Md Husin, M. (2020). Covid-19 and e-wallet usage intention: A multigroup analysis between Indonesia and Malaysia. *Cogent Business and Management*, 7(1). doi:10.1080/23311975.2020.1804181
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211. doi:10.1016/0749-5978(91)90020-T
- Alalwan, A. A., Dwivedi, Y. K., & Rana, N. P. (2017). Factors influencing adoption of mobile banking by Jordanian bank customers: Extending UTAUT2 with trust. *International Journal of Information Management*, 37(3), 99-110. doi:10.1016/j.ijinfomgt.2017.01.002
- Bae, S. Y., & Chang, P.-J. (2021). 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*, 24(7), 1017-1035. doi:10.1080/13683500.2020.1798895
- Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, 16(1), 74-94. doi:10.1007/BF02723327
- Balasubramanian, K., & Hanafiah, M. H. (2022). What innovations would enable the tourism and hospitality industry in Malaysia to rebuild? *Worldwide Hospitality and Tourism Themes*, 14(6), 596-603. doi:0.1108/WHATT-05-2022-0057
- Beiginia, A. R., Besheli, A. S., Soluklu, M. E., & Ahmadi, M. (2011). Assessing the mobile banking adoption based on the decomposed theory of planned behaviour. *European Journal of Economics, Finance and Administrative Sciences*, 28(1), 7-15.
- Bentler, P. M., & Dudgeon, P. (1996). Covariance structure analysis: Statistical practice, theory, and directions. *Annual Review of Psychology*, 47, 563-592. doi:10.1146/annurev.psych.47.1.563

- Betti, M., Bragazzi, N. L., Heffernan, J. M., Kong, J., & Raad, A. (2021). Integrated vaccination and non-pharmaceutical interventions based strategies in Ontario, Canada, as a case study: A mathematical modelling study. *Journal of The Royal Society Interface*, 18(180), Article 20210009.
- Byrd, K., Fan, A., Her, E., Liu, Y., Leitch, S., & Almanza, B. (2021). Restaurant patronage during the Covid-19 pandemic and the protection motivation theory: Influence of consumers' socio-demographic, situational, and psychographic factors. *Journal of Foodservice Business Research*, 1-29. doi:10.1080/15378020.2021.2006036
- Callow, M. A., & Callow, D. D. (2021). Older adults' behavior intentions once a Covid-19 vaccine becomes available. *Journal of Applied Gerontology*, 40(9), 943-952. doi:10.1177/07334648211019205
- Chan, C.-S. (2021). Developing a conceptual model for the post-Covid-19 pandemic changing tourism risk perception. *International Journal of Environmental Research and Public Health*, 18(18), Article 9824.
- Chen, A. N. K., & Lee, Y. G. (2008). *Healthcare information technology adoption and protection motivation: A study of computerized physical order entry systems*. Retrieved October 10, 2022, from <https://aisel.aisnet.org/amcis2008/369/>
- Chen, S.-F., & Lin, C.-C. (2010). The predictors of adopting a health-promoting lifestyle among work site adults with prediabetes. *Journal of Clinical Nursing*, 19(19/20), 2713-2719. doi:10.1111/j.1365-2702.2010.03320.x
- Eberhardt, J., & Ling, J. (2021). Predicting Covid-19 vaccination intention using protection motivation theory and conspiracy beliefs. *Vaccine*, 39(42), 6269-6275. doi:10.1016/j.vaccine.2021.09.010
- Fishbein, M., & Ajzen, I. (1977). Belief, attitude, intention, and behavior: An introduction to theory and research. *Philosophy and Rhetoric*, 10(2), 130-132.
- Floyd, D. L., Prentice-Dunn, S., & Rogers, R. W. (2000). A meta-analysis of research on protection motivation theory. *Journal of Applied Social Psychology*, 30(2), 407-429.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and.pdf. *Journal of Marketing Research*, XVIII(February), 39-50.
- Fotiadis, A., Polyzos, S., & Huan, T.-C. T. C. (2021). The good, the bad and the ugly on Covid-19 tourism recovery. *Annals of Tourism Research*, 87, Article 103117. doi:10.1016/j.annals.2020.103117
- Gupta, V., Cahyanto, I., Sajnani, M., & Shah, C. (2021). Changing dynamics and travel evading: A case of Indian tourists amidst the Covid-19 pandemic. *Journal of Tourism Futures*, 9(1), 84-100. doi:10.1108/JTF-04-2020-0061
- Gursoy, D., Can, A. S., Williams, N., & Ekinci, Y. (2021). Evolving impacts of Covid-19 vaccination intentions on travel intentions. *The Service Industries Journal*, 41(11/12), 719-733. doi:10.1080/02642069.2021.1938555
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2009). *Multivariate data analysis* (7th Ed.). Upper Saddle River, NJ: Prentice Hall.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th Ed.). New York, NY: Pearson.

- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th ed.). New York, NY: Pearson.
- Hasan, R., Ashfaq, M., & Shao, L. (2021). Evaluating drivers of Fintech adoption in the Netherlands. *Global Business Review*. doi:10.1177/09721509211027402
- Hoang Mai (2020). *Non-cash payments bring new hope to tourism in Vietnam*. Retrieved October 10, 2022, from Vietnam Investment Review website: <https://vir.com.vn/non-cash-payments-bring-new-hope-to-tourism-in-vietnam-77571.html>
- Hooper, D., Coughlan, J., Mullen, M. R., Mullen, J., Hooper, D., Coughlan, J., & Mullen, M. R. (2008). Structural equation modelling: Guidelines for determining model fit. *Dublin Institute of Technology ARROW@ DIT*, 6(1), 53-60.
- Hou, Z., Liang, L. J., Meng, B., & Choi, H. C. (2021). The role of perceived quality on high-speed railway tourists' behavioral intention: An application of the extended theory of planned behavior. *Sustainability*, 13(22), Article 12386. doi:10.3390/su132212386
- Hsu, C. H. C., & Huang, S. (2012). An extension of the theory of planned behavior model for tourists. *Journal of Hospitality & Tourism Research*, 36(3), 390-417. doi:10.1177/1096348010390817
- Hu L.-T., & Bentler P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives. *Structural Equation Modeling*, 6(July 2012), 1-55.
- Huang, X., Dai, S., & 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*, 33(February 2019), Article 100589. doi:10.1016/j.tmp.2019.100589
- Husain, F., Shahnawaz, M. G., Khan, N. H., Parveen, H., & Savani, K. (2021). Intention to get Covid-19 vaccines: Exploring the role of attitudes, subjective norms, perceived behavioral control, belief in Covid-19 misinformation, and vaccine confidence in Northern India. *Human Vaccines & Immunotherapeutics*, 17(11), 3941-3953. doi:10.1080/21645515.2021.1967039
- Ifinedo, P. (2012). Understanding information systems security policy compliance: An integration of the theory of planned behavior and the protection motivation theory. *Computers & Security*, 31(1), 83-95. doi:10.1016/j.cose.2011.10.007
- Janz, N. K., & Becker, M. H. (1984). The health belief model: A decade later. *Health Education & Behavior*, 11(1), 1-47. doi:10.1177/109019818401100101
- Kang, J. (2018). Mobile payment in Fintech environment: Trends, security challenges, and services. *Human-Centric Computing and Information Sciences*, 8(1), 1-16.
- Karjaluoto, H., Shaikh, A. A., Leppäniemi, M., & Luomala, R. (2020). Examining consumers' usage intention of contactless payment systems. *International Journal of Bank Marketing*, 38(2), 332-351. doi:10.1108/IJBM-04-2019-0155
- Law, R., Chan, I. C. C., & Wang, L. (2018). A comprehensive review of mobile technology use in hospitality and tourism. *Journal of Hospitality Marketing & Management*, 27(6), 626-648. doi:10.1080/19368623.2018.1423251

- Li, Z. T., Yang, S. S., Zhang, X. X., Fisher, E. B., Tian, B. C., & Sun, X. Y. (2015). Complex relation among health belief model components in TB prevention and care. *Public Health*, 129(7), 907-915. doi:10.1016/j.puhe.2015.04.008
- Liébana-Cabanillas, F., García-Maroto, I., Muñoz-Leiva, F., & Ramos-de-Luna, I. (2020). Mobile payment adoption in the age of digital transformation: The case of apple pay. *Sustainability (Switzerland)*, 12(13), Article 5443. doi:10.3390/su12135443
- Liu, C., Sun, C.-K., Chang, Y.-C., Yang, S.-Y., Liu, T., & Yang, C.-C. (2021). The impact of the fear of Covid-19 on purchase behavior of dietary supplements: Integration of the theory of planned behavior and the protection motivation theory. *Sustainability*, 13(22), Article 12900.
- Lockyer, B., Islam, S., Rahman, A., Dickerson, J., Pickett, K., Sheldon, T., ... Bradford Institute for Health Research Covid-19 Scientific Advisory Group. (2021). Understanding Covid-19 misinformation and vaccine hesitancy in context: Findings from a qualitative study involving citizens in Bradford, UK. *Health Expectations*, 24(4), 1158-1167. doi:10.1111/hex.13240
- M El Khoury, C., Choudhary, M., & Al Alam, A. F. (2023). Consumers' online purchasing intentions post Covid-19: Evidence from Lebanon and the Kingdom of Bahrain. *Administrative Sciences*, 13(1), Article 17. doi:10.3390/admsci13010017
- Malhotra, N. K., Kim, S. S., & Patil, A. (2006). Common method variance in IS research: A comparison of alternative approaches and a reanalysis of past research. *Management Science*, 52(12), 1865-1883. doi:10.1287/mnsc.1060.0597
- Mcmillan, B., & Conner, M. (2003). Using the theory of planned behaviour to understand alcohol and tobacco use in students. *Psychology, Health & Medicine*, 8(3), 317-328. doi:10.1080/1354850031000135759
- Mladenović, D., Rrustemi, V., & Mogaji, E. (2022). Using Covid-19 vaccination as a resilience strategy for the tourism sector - Evidence from Serbia. *Current Issues in Tourism*, 25(7), 1021-1025. doi:10.1080/13683500.2021.2018407
- Nguyen, D. B. P., & Nguyen, G. T. P. (2022). Contactless payments through E-wallets on mobile devices in the context of Covid-19 at Vietnam. *2022 IEEE 12th Annual Computing and Communication Workshop and Conference (CCWC)*, 385-392. doi:10.1109/CCWC54503.2022.9720868
- Nguyen, H. (2019). *Vietnam's tourism sector: Opportunities for investors in 2020*. Retrieved October 10, 2022, from Vietnam Briefing website: <https://www.vietnam-briefing.com/news/vietnams-tourism-sector-opportunities-investors-2020.html/>
- Nguyen, M. T. (2021). The adoption of using mobile payment during Covid-19 pandemic: An empirical study in Vietnam. *Journal of Asian Finance, Economics and Business*, 8(11), 253-264. doi:10.13106/jafeb.2021.vol8.no11.0253
- Nguyen, N. M. (2022). *Digital payments in Vietnam - statistics & facts*. New York, NY: Statista.
- Nguyen, O. (2022). *Vietnam witnessing speedy growth in digital payments*. Retrieved October 10, 2022, from Vietnam Investment Review website: <https://vir.com.vn/vietnam-witnessing-speedy-growth-in-digital-payments-93996.html>

- Nguyen, T. D., Tran, D. V., & Ghafour, A. (2022). The impact of Covid-19 lockdown on intention to follow preventive measures in Vietnam: Integrated protection motivation theory and theory planed behavior. *Cogent Business & Management*, 9(1), Article 2054502. doi:10.1080/23311975.2022.2054502
- Önder, I., & Gunter, U. (2020). Blockchain: Is it the future for the tourism and hospitality industry? *Tourism Economics*, 28(2), 291-299. doi:10.1177/1354816620961707
- Palau-Saumell, R., Matute, J., Derqui, B., & Meyer, J.-H. (2021). The impact of the perceived risk of Covid-19 on consumers' attitude and behavior toward locally produced food. *British Food Journal*, 123(13), 281-301. doi:10.1108/BFJ-04-2021-0380
- Park, S., & Oh, S. (2022). Factors associated with preventive behaviors for Covid-19 among adolescents in South Korea. *Journal of Pediatric Nursing*, 62, e69-e76. doi:10.1016/j.pedn.2021.07.006
- Podsakoff, P. M., Mackenzie, S. B., Lee, J., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879-903. doi:10.1037/0021-9010.88.5.879
- Rahimzhan, S., & Irani, F. (2021). Contactless hospitality in a post-Covid-19 world. *International Hospitality Review*, 35(2), 293-304. doi:10.1108/ihr-08-2020-0041
- Rogers, A. T. (2010). Exploring health beliefs and care-seeking behaviors of older USA-dwelling Mexicans and Mexican-Americans. *Ethnicity & Health*, 15(6), 581-599. doi:10.1080/13557858.2010.500018
- Rogers, R. W. (1975). A protection motivation theory of fear appeals and attitude change. *The Journal of Psychology*, 91(1), 93-114. doi:10.1080/00223980.1975.9915803
- Samuel, P. (2022). *Vietnam reopens for international tourism*. Retrieved October 10, 2022, from Vietnam Briefing website: <https://www.vietnam-briefing.com/news/vietnam-reopens-for-international-tourism.html/#:~:text=When%20will%20Vietnam%20open%20its,Southeast%20Asian%20nation%20ever%20since>
- Sánchez-Cañizares, S. M., Cabeza-Ramírez, L. J., Muñoz-Fernández, G., & Fuentes-García, F. J. (2021). Impact of the perceived risk from Covid-19 on intention to travel. *Current Issues in Tourism*, 24(7), 970-984. doi:10.1080/13683500.2020.1829571
- Seong, B.-H., & Hong, C.-Y. (2021). Does risk awareness of Covid-19 affect visits to national parks? Analyzing the tourist decision-making process using the theory of planned behavior. *International Journal of Environmental Research and Public Health*, 18(10), Article 5081. doi:10.3390%2Fijerph18105081
- Seong, B.-H., Choi, Y., & Kim, H. (2021). Influential factors for sustainable intention to visit a national park during Covid-19: The extended theory of planned behavior with perception of risk and coping behavior. *International Journal of Environmental Research and Public Health*, 18(24), Article 12968. doi:10.3390/ijerph182412968
- Sjöberg, L. (1998). Worry and risk perception. *Risk Analysis*, 18(1), 85-93. doi:10.1111/j.1539-6924.1998.tb00918.x
- Sun, S., Law, R., & Schuckert, M. (2020). Mediating effects of attitude, subjective norms and perceived behavioural control for mobile payment-based hotel reservations. *International Journal of Hospitality Management*, 84, Article 102331. doi:10.1016/j.ijhm.2019.102331

- Suyunchaliyeva, M. M., Nautiyal, R., Shaikh, A. A., & Sharma, R. (2021). The use of mobile payment systems in post-Covid-19 economic recovery: Primary research on an emerging market for experience goods. *Sustainability*, 13(24), Article 13511. doi:10.3390/su132413511
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). London, UK: Pearson.
- To, T. A., & Trinh, M. T. H. (2021). Understanding behavioral intention to use mobile wallets in vietnam: Extending the tam model with trust and enjoyment. *Cogent Business and Management*, 8(1), Article 1891661. doi:10.1080/23311975.2021.1891661
- Venkatesh, V., Thong, J. Y. L., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *MIS Quarterly*, 36(1), 157-178. doi:10.2307/41410412
- Wang, J., Nguyen, N., Jiang, X. (Angie), Nguyen, V. H., & Saleem, M. A. (2022). Consumers' perceived value and use intention of cashless payment in the physical distancing context: Evidence from an Asian emerging market. *Asia Pacific Journal of Marketing and Logistics*, 35(6), 1513-1531. doi:10.1108/APJML-05-2022-0408
- Wang, X., Wong, Y. D., Qi, G., & Yuen, K. F. (2021). Contactless channel for shopping and delivery in the context of social distancing in response to Covid-19 pandemic. *Electronic Commerce Research and Applications*, 48, Article 101075. doi:10.1016/j.elerap.2021.101075
- Wei, M.-F., Luh, Y.-H., Huang, Y.-H., & Chang, Y.-C. (2021). Young generation's mobile payment adoption behavior: Analysis based on an extended UTAUT model. *Journal of Theoretical and Applied Electronic Commerce Research*, 16(4). doi:10.3390/jtaer16040037
- Wen, H., & Liu-Lastres, B. (2022). Consumers' dining behaviors during the Covid-19 pandemic: An application of the protection motivation theory and the safety signal framework. *Journal of Hospitality and Tourism Management*, 51, 187-195. doi:10.1016/j.jhtm.2022.03.009
- Yang, J., Marziano, V., Deng, X., Guzzetta, G., Zhang, J., Trentini, F., ... Yu, H. (2021). Despite vaccination, China needs non-pharmaceutical interventions to prevent widespread outbreaks of Covid-19 in 2021. *Nature Human Behaviour*, 5(8), 1009-1020. doi:10.1038/s41562-021-01155-z
- Youn, S., Lee, J. E., & Ha-Brookshire, J. (2021). Fashion consumers' channel switching behavior during the Covid-19: Protection motivation theory in the extended planned behavior framework. *Clothing and Textiles Research Journal*, 39(2), 139-156. doi:10.1177/0887302X20986521
- Zhu, W., Zou, H., Song, Y., Ren, L., & Xu, Y. (2021). Understanding the continuous vaccination of the Covid-19 vaccine: An empirical study from China. *Human Vaccines and Immunotherapeutics*, 17(12), 4954-4963. doi:10.1080/21645515.2021.2013080

