

## Intentions to Adopt Contactless Travel in the Post-Pandemic Era: Adapting to a New Normal

Ninh Van Nguyen<sup>1,\*</sup>, Thu Anh Nguyen<sup>2</sup>

<sup>1</sup>*Faculty of Commerce and Tourism, Industrial University of Ho Chi Minh City, Vietnam*

<sup>2</sup>*Faculty of Finance and Banking, Thuongmai University, Vietnam*

\*Corresponding author: [nguyenvanninh@iuh.edu.vn](mailto:nguyenvanninh@iuh.edu.vn)

### ABSTRACT.

**Purpose** – This research explores the relationship between individual perceptions and attitudes towards contactless travel adoption, considering moderating variables such as trust in technology.

**Methodology**– Adopting an extended theory of planned behaviour lens, the study investigates how trust in technology moderates the relationship between various factors and traveller attitudes and adoption.

**Findings** – Findings highlight the impact of individual perception factors, especially within the highest tourist interest. The study identifies a moderated direct relationship between attitudes and intentions to adopt, influenced by trust in technology, and emphasizes the mediating role of attitudes in shaping adoption intentions.

**Originality of the research** – Successful implementation of the findings could catalyze positive innovations in the adoption of contactless travel. The study makes a distinct contribution by shedding light on crucial factors influencing contactless travel adoption, emphasizing the importance of a nuanced understanding of demographics, individual perceptions, and the role of trust in technology.

## 1. INTRODUCTION

In the aftermath of the global upheaval caused by the COVID-19 pandemic, the travel industry experienced a profound metamorphosis that prompted stakeholders to meticulously reconsider and redefine the foundational elements of travel experiences [1]. As the world navigates the

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intricacies of transitioning into the post-pandemic era, the significance of contactless travel has surfaced as a pivotal dimension in reshaping the industry [2]. The concept of contactless travel extends beyond a mere technological shift; it encompasses a comprehensive set of practices and cutting-edge technologies designed to minimize physical interactions between travelers and service providers across the entire spectrum of the travel journey [3]. This encompasses not only booking and check-in processes but also extends to security procedures and beyond [4]. The impetus for embracing contactless travel is rooted in the necessity to prioritize hygiene, mitigate the risk of disease transmission, and elevate the overall safety standards for both travelers and industry personnel [5].

Despite the evident traction gained by contactless solutions, a substantial gap persists in our understanding of the intricate challenges and opportunities associated with their implementation [6]. The research is based on a framework that extends the theory of planned behaviour to the current landscape of contactless travel initiatives. Beyond perceived aspects, the study will delve into the factors that influence the attitude acceptance and adoption of contactless travel measures among travelers, taking into account the nuanced interplay of moderating role demographic characteristics [7]. As understanding attitude contactless travel continues to advance, the success of these innovations critically depends on the willingness of travelers [8]. Consequently, the research aims to scrutinize the role played by individual preferences, subjective norms, perceived behavioral control and attitude in shaping the adoption of contactless travel measures.

Furthermore, through addressing these multifaceted gaps, the research aspires to contribute nuanced insights that can guide the development of comprehensive and sustainable contactless travel practices [9], thereby fortifying the tourism industry's resilience and adaptability in the face of future challenges [10].

## **2. LITERATURE REVIEW**

Theory of Planned Behavior elucidates the link between attitudes, subjective norms, perceived behavioural control, and intentions for specific behaviours [11]. In the realm of contactless travel, this theory can be applied to investigate how attitudes towards contactless travel, perceptions of others' opinions, and beliefs in one's ability to use relevant technologies shape intentions to adopt contactless practices [12]. Research expanding on the theory has identified variations in demographic characteristics, moderation effects with such attributes playing a

moderating role in attitudes and intentions [13]. Specifically, younger individuals, characterized by their greater openness to technology, exhibit a direct correlation between positive attitudes and intentions to adopt [14]. This relationship is further strengthened by trust in technology, indicating that individuals with greater educational attainment are more adept at comprehending the advantages associated with contactless technologies [15], [16]. Gender differences also act as moderators in this connection, highlighting distinct concerns and preferences between males and females [17]. Overall, these moderating variables are of growing importance considering measurement constructs the relationship between attitudes and intentions toward the adoption of contactless technologies.

### **2.1. The relationship between perceived health and safety with attitudes towards contactless travel**

The worldwide COVID-19 pandemic has significantly transformed perspectives on health and safety, particularly within the realm of travel [18]. Individuals evaluate the perceived health risks associated with adopting certain behaviors, such as using contactless travel methods. This includes considerations of exposure to potential contagions, health hazards, and the overall impact on personal well being [19]. In response to heightened perception risk, contactless travel methods have surged in popularity, offering a means to minimize physical contact and mitigate virus transmission risks [20]. Individuals' attitudes towards various aspects of daily life, including travel behavior, are significantly shaped by perceived health and safety concerns. Existing research underscores the profound impact of heightened concerns about contagious diseases, like COVID-19, on travel safety perceptions [21]. Studies relate, further affirm a robust relationship between perceived health risks and favorable attitudes towards contactless travel [22]. Notably, individuals perceiving a higher infection risk during traditional travel methods are more inclined to embrace contactless alternatives [3].

H1. Perceived health and safety positive influence on attitudes towards contactless travel

### **2.2. The relationship between subjective norms with attitudes towards contactless travel**

Subjective norms, representing perceived social pressures and influences, wield significant influence over individuals' attitudes and behaviours. In the domain of travel, the relevance of subjective norms is heightened, as societal expectations impact individuals' inclinations, especially regarding the adoption of contactless travel methods. Established in the Theory of Planned Behavior [11], subjective norms encompass societal attitudes, familial influences, and the opinions of friends and colleagues, shaping decision-making processes [23].

Recent research accentuates the pivotal role of subjective norms in the context of travel. Their findings reveal a positive correlation between subjective norms and favourable attitudes towards travel [24]. Notably, individuals perceiving social support and approval for adopting contactless travel are more prone to developing positive attitudes [25]. This underscores the substantial influence of societal expectations on shaping individual attitudes, emphasizing the role of collective approval in fostering positive perceptions and the adoption of innovative travel technologies [26].

H2. Subjective norms positive influence on attitudes towards contactless travel

### **2.3. The correlation between perceived behavioral control and attitudes toward contactless travel**

Perceived behavioural control, a foundational element within the Theory of Planned Behavior, mirrors an individual's belief in their capability to successfully carry out a specific behaviour. This critical concept holds significant influence in shaping intentions and subsequent behaviours, encompassing the perceived level of ease or difficulty associated with the behaviour [27], [28]. Additionally, research has revealed that a positive correlation exists between people's perceived ability to navigate contactless travel technology and their favourable attitudes toward it [29]. This suggests that people who feel confident using a contactless application ecosystem are more likely to embrace these innovations [30].

External factors, including information availability and user-friendly interfaces, significantly influence perceived behavioral control. The research suggests that interventions enhancing users' understanding positively impact perceived behavioral control, shaping favorable attitudes [31]. Moreover, research highlights the impact of perceived behavioural control on attitudes, significantly influencing travel intentions [8]. Increased control over contactless technologies enhances individuals' intentions to adopt these innovations, creating a favourable disposition.

The affirmative connection between perceived behavioural control and the intention to embrace contactless travel is strengthened by various factors, including technological familiarity, user-friendly interfaces, and external support [32]. Confidence in navigating these technologies fosters a positive attitude, contributing to a comfortable and empowered stance toward adopting contactless travel practices [32].

H3. Perceived behavioral control exerts a positive impact on attitudes regarding contactless travel.

H4. Perceived behavioral control has a positive impact on the intentions to adopt contactless methods.

#### **2.4. Attitudes towards intentions contactless travel**

Attitudes toward contactless travel encompass various facets, including the acceptance of digital payment methods, touchless check-ins, and contactless interfaces [3]. This research indicates that positive attitudes toward contactless technologies often stem from a desire for enhanced hygiene and reduced physical interaction [33]. These attitudes are multifaceted, shaped by factors such as perceived convenience, security, and alignment with individual preferences, as underscored [34].

In the context of contactless travel, attitudes are pivotal precursors to intentions, representing an individual's plan or readiness to adopt contactless travel methods. Hwang's (2022) findings reveal a robust correlation between favorable attitudes toward contactless travel and intentions to adopt these technologies [34]. The positivity in attitudes, influenced by factors like perceived efficiency and safety, plays a significant role in shaping individuals' intentions, highlighting the intricate connection between attitudes and subsequent behavioral plans.

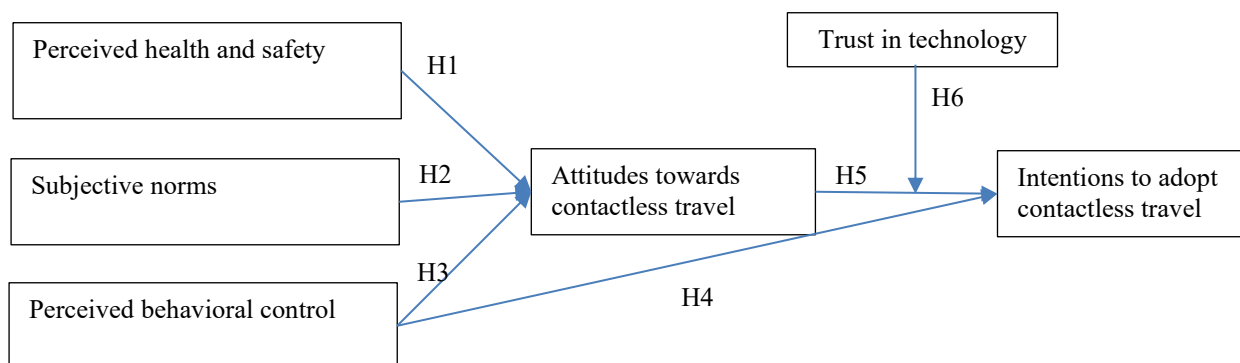
H5. Attitudes towards contactless travel positive influence on intentions to adopt contactless  
Intentions to adopt contactless travel represent individuals' plans and readiness to embrace innovative technologies that minimize physical contact during travel experiences [35], [36]. In the wake of the global COVID-19 pandemic, the concept gained prominence as individuals sought ways to mitigate health risks and enhance safety in travel practices [23]. Grounded in the Theory of Planned Behavior, intentions are markedly shaped by attitudes, subjective norms, and perceived behavioral control. Positive attitudes toward contactless travel, shaped by factors like convenience, security, and alignment with personal preferences, play a pivotal role in fostering intentions [37]. Additionally, societal expectations and influences, encapsulated in subjective norms, contribute to the formation of these intentions. Perceived behavioural control, reflecting individuals' confidence in navigating contactless technologies, further solidifies the link between attitudes and intentions [38].

Research consistently shows a positive correlation between favourable attitudes toward contactless travel and the likelihood of adopting these technologies. The desire for increased hygiene and reduced physical interaction, particularly highlighted in the context of the pandemic, serves as a driving force behind these intentions [39]. As individuals perceive a

higher degree of control over the use of contactless options, their intentions to incorporate these innovations into their travel practices become more favourable [40]. Overall, understanding and influencing intentions to adopt contactless travel is crucial in navigating the evolving landscape of travel preferences and behaviours in a post-pandemic era.

## 2.5. The moderating effect of trust in technology

The Theory of Planned Behavior, proposed by Ajzen in 1985, asserts that behavioral intentions are shaped by attitudes, subjective norms, and perceived behavioral control. Contemporary studies have expanded upon this framework by introducing moderating variables to gain a more comprehensive understanding of the intricate interplay between attitudes and intentions within particular contexts [41]. In the context of research on contactless travel attitudes, trust in technology plays a crucial role in shaping individuals' willingness to adopt innovative practices. Previous studies have emphasized the importance of trust as a moderator in the context of technology adoption [16]. These works suggest that trust can either enhance or impede the link between positive attitudes and behavioral intentions. Research indicates that higher levels of trust in technology may strengthen the relationship between positive attitudes and intentions. Individuals who trust the technology behind contactless travel systems are more likely to convert favorable attitudes into concrete intentions to adopt [25]. This positive moderation effect underscores the significance of trust as a facilitating factor in the adoption process. Conversely, trust can also act as a barrier. If individuals harbor doubts about the reliability or security of contactless travel technology [42], their positive attitudes may not effectively translate into intentions to adopt [43]. Negative moderation effects highlight the need to address trust-related concerns to facilitate the acceptance of contactless travel.



**Figure 1. The theoretical framework analysis intentions to adopt contactless travel**

Source: author's systematization, 2024

### 3. METHODOLOGY

#### 3.1. Measurements

The independent variables encompass attitudes towards contactless travel, reflecting travelers' evaluations of the benefits and drawbacks associated with contactless travel practices. This includes their overall perception and assessment of the advantages and disadvantages inherent in adopting contactless technologies during travel. Additionally, subjective norms capture travelers' perceptions of social pressure to either embrace or avoid contactless travel practices, which are notably influenced by the opinions of significant others in their social circles. Perceived behavioral control constitutes travelers' beliefs regarding their proficiency in utilizing contactless technologies and effectively executing contactless travel procedures.

In the research moderating variables, trust in technology influences the relationship between attitudes towards contactless travel and with intention to adopt contactless travel practices. As for the dependent variable, intentions to adopt contactless travel represent travelers' willingness to actively engage in contactless travel practices in the future. This encompasses their predisposition and readiness to incorporate contactless technologies into their travel behaviors, indicating a forward-looking perspective on the adoption of these practices.

The questionnaire was formulated in English using Likert scales. To ensure linguistic accuracy, two bilingual academics proficient in both English and Vietnamese performed independent translations of the questionnaire back into English. Any remaining concerns or discrepancies were resolved through subsequent discussions, following the methodology outlined [44]. Participants were provided with a 5-point Likert scale for each presented item, allowing them to express their responses on a continuum ranging from 1 (strongly disagree) to 5 (strongly agree). This detailed translation and rating procedure were implemented to evaluate the suitability and efficacy of the questionnaire items. The goal was to ensure linguistic coherence and preserve the survey's integrity across diverse language versions. Before the actual survey, all content was tested in groups of 60 visitors to test the comprehension of each item's content of the measurement concepts. Test results are presented in Table 1 below.

**Table 1. The display test outcomes for the scale, indicate the level of convergence and differentiation**

Items	Measurement concepts	Cronbach's Alpha	Outer loadings	CR	AVE
PH	Perceived health and safety	0.856	0.78 – 0.86	0.901	0.695
SN	Subjective norms	0.882	0.81 – 0.91	0.918	0.737
BC	Perceived behavioral control	0.868	0.72 – 0.90	0.908	0.713
AC	Attitudes towards contactless travel	0.875	0.82 – 0.87	0.914	0.725
IC	Intentions to adopt contactless travel	0.821	0.72 – 0.84	0.881	0.650
TT	Trust in technology	0.845	0.76 – 0.90	0.890	0.670

Source: author's analysis from datatest, 2023

Note: Composite reliability (CR), average variance extracted (AVE)

The outcomes depicted in Table 1 illustrate the reliability tests conducted on established measurement concepts, aligning with the methodologies supported by prior studies within the same domain. The criteria considered for assessment include Cronbach's Alpha exceeding 0.7, outer loadings surpassing 0.5, composite reliability exceeding 0.7, and extraction average variance above 0.5. Within the tabulated findings, the concepts exhibit favorable performance, with Cronbach's Alpha values ranging between 0.821 and 0.882, outer loadings spanning from 0.72 to 0.91, composite reliability ranging from 0.88 to 0.91, and average variance extracted ranging from 0.65 to 0.73.

Upon scrutinizing the results from both the scale reliability tests and confirmatory factor analysis (CFA), a substantial proportion demonstrates a commendable level of reliability for the research [45]. The overall test outcomes align closely with the established standards recommended for the measurement of constructs [46].

### 3.2. Collection data and sample size

A convenient, non-probability sampling method was employed for data collection, involving random samples solicited from tourists at various destinations [47]. The data collection tool utilized was a designed questionnaire, which consists of two sections: the first gathers general demographic information, while the second focuses on the main content, aligning with the measurement structure. The survey content was strategically designed to link to the research



objectives. The author, with the proper permissions and consent, approached each visitor at tourist destinations, introducing the research and measurement concepts. Those visitors expressing consent were then provided with a link from [drive.google.com](https://drive.google.com) for feedback [48].

For formal quantitative studies, sample sizes are typically determined based on principles proposed in previous research. While recent publications, suggest sample sizes above 350 responses, the study also considers reliability tests [49], structural analysis models, and recommended sample sizes to ensure a robust dataset, as highlighted [50]. The present study aimed for a representative sample size of 400 responses, achieving a success rate of 362 responses, equivalent to 90.5%. This approach adheres to established principles in sample size determination, enhancing the reliability and validity of the collected data.

### **3.3. Data analysis methods**

The formal research conducted in this study focuses on reinforcing the elements, values, and scale reliability of research concepts, and assessing theoretical models as proposed [51]. To achieve these objectives, various analytical methods were employed, including Cronbach's Alpha reliability analysis, Confirmatory Factor Analysis, and the Partial Least Squares-Structural Equation Modeling (PLS-SEM) technique, executed using Smart-PLS 4.0 software [45].

PLS-SEM served as the principal method for estimating path coefficients, t-statistics, standard errors, and squared multiple correlations to rigorously examine the relationships posited in the research. Path coefficients elucidated the strength and direction of these relationships, while t-statistics and standard errors gauged their significance. The squared multiple correlations value provided insights into the proportion of variance explained by the proposed models.

The study adopted a robust approach by implementing the PLS standard bootstrapping procedure with a bootstrap sample number of 5000, following the methodology outlined [52]. This procedure determined the significance of path coefficients, yielding t-statistics and standard errors, thereby enhancing the reliability and validity of the research findings.

## 4. FINDINGS RESEARCH AND DISCUSSIONS

### 4.1. Demographics characteristics

**Table 2. Characteristics of sample respondents**

Demographics	Items	Frequency	Percent
Gender	Male	117	32.3
	Female	245	67.7
Age	18-28	94	26.0
	29-39	217	59.9
	40-50	21	5.8
	Up 50	30	8.3
Job position	Management	54	14.9
	Employees	263	72.7
	Other	45	12.4

Source: author's analysis from datatest, 2024

The statistical examination of the participant, as summarized in Table 2, furnishes valuable insights into the distinctive characteristics of the 362 respondents. One noteworthy observation pertains to the gender distribution, revealing that 67.7% of the participants identify as female, while 32.3% identify as male. Delving into age demographics, a significant 59.9% of respondents fall within the 29 to 39 years age bracket, underscoring the substantial representation of this age group in the study. An insightful facet of the analysis relates to employment status, where an overwhelming 72.7% of participants are actively engaged in employment, presenting a considerable contingent with notable implications for the research. Conversely, categories such as managers and others constitute smaller proportions, indicating their relatively diminished presence in the dataset. These demographic characteristics contribute contextually to a comprehensive understanding of the composition of the study's participant.

#### 4.2. Testing the scale's reliability

**Table 3. Results of scale reliability testing**

Items	Construct	Conbach's Alpha	Outer loading	Outer VIF
<b>PH</b>	<b>Perceived health and safety</b>	<b>0.853</b>		
PH1	I feel confident that contactless travel methods provide a safer option compared to traditional travel		0.847	2.046
PH2	I believe that using traditional travel methods poses a higher risk of infection compared to contactless alternatives		0.850	2.006
PH3	I trust that the safety measures implemented in contactless travel methods effectively reduce the risk of contagion.		0.836	2.052
PH4	I perceive contactless travel methods as a safer way to travel in the current health environment		0.796	1.876
<b>SN</b>	<b>Subjective norms</b>	<b>0.825</b>		
SN1	I believe that my friends and family would approve of my decision to adopt contactless travel methods		0.745	1.631
SN2	Society in general encourages the use of contactless travel, and I feel influenced by these expectations		0.793	1.748
SN3	The opinions of my friends and colleagues significantly impact my willingness to embrace contactless travel options		0.850	2.246
SN4	I perceive a supportive environment from those around me for using contactless travel		0.846	2.294
<b>BC</b>	<b>Perceived behavioral control</b>	<b>0.898</b>		
BC1	I feel confident in my ability to effectively use contactless travel technologies		0.881	2.568
BC2	I find it easy to navigate through the features of contactless travel options		0.893	2.794
BC3	I believe I have a high level of control over using contactless travel technologies		0.896	2.974

BC4	I feel comfortable incorporating contactless travel practices into my routine		0.829	2.042
<b>AC</b>	<b>Attitudes towards contactless travel</b>	<b>0.866</b>		
AC1	I believe that adopting contactless travel methods would make my travel experience more convenient		0.824	1.936
AC2	I feel that contactless travel methods would enhance the security of my travel transactions		0.844	2.058
AC3	Contactless travel methods align with my personal preferences for how I want to travel		0.846	2.093
AC4	I have positive feelings toward the adoption of contactless features in travel, such as digital payment and touchless check-ins		0.864	2.271
<b>IC</b>	<b>Intentions to adopt contactless travel</b>	<b>0.912</b>		
IC1	I am willing to adopt contactless travel methods in my future travel plans		0.887	2.725
IC2	I feel ready to implement contactless travel technologies in my upcoming travel experiences		0.897	2.886
IC3	I am open to changing my travel habits to include more contactless options		0.887	2.736
IC4	I have intentions to actively incorporate contactless travel methods into my regular travel practices		0.887	2.813
<b>TT</b>	<b>Trust in technology</b>	<b>0.816</b>		
TT1	I trust that the technology used in contactless travel is reliable		0.789	1.983
TT2	I feel confident in the security of the technology used for contactless travel		0.858	2.377
TT3	I believe that the technology used in contactless travel adequately protects my privacy.		0.786	1.693
TT4	The technology used in contactless travel is easy for me to understand and use		0.776	1.609

Source: author's analysis from datatest, 2024

Note: Variance Inflation Factor (VIF)

Table 3 furnishes a comprehensive overview of the methodologies implemented to ensure the reliability of the measurement scale and validate the structural integrity of the model in this study. The reliability assessment incorporated various dimensions, including Cronbach's Alpha, Outer loadings, and Outer variance inflation factor (VIF).

Adhering to established standards, we rigorously evaluated the reliability and validity of the model. To ensure the reliability of indicators, we verified that each item's outer loading on its respective construct exceeded the recommended threshold of 0.7, bolstering our confidence in the accuracy of the measurement scale [51].

The study addressed potential multicollinearity by examining the Variance Inflation Factor (VIF). All VIF values were below 3, indicating no multicollinearity concerns. This diligence strengthened the robustness and validity of the findings, instilling confidence in the model and measurements [45].

#### 4.3. Assessing validity with the Heterotrait-Monotrait ratio

**Table 4 The model validity measures through the Heterotrait-Monotrait Ratio (HTMT)**

	CR	AEV	AC	BC	IC	PH	SN	TT
AC	0.909	0.713	0.845					
BC	0.929	0.766	0.399	0.875				
IC	0.938	0.791	0.445	0.642	0.889			
PH	0.900	0.693	0.370	0.091	0.126	0.832		
SN	0.884	0.656	0.321	0.039	0.048	0.350	0.810	
TT	0.879	0.645	0.295	0.708	0.524	0.012	0.010	0.803

Source: Author's data analysis, 2024

Note: Composite reliability (CR), Average variance extracted (AVE), Perceived health and safety (PH), Subjective norms (SN), Perceived behavioral control (BC), Attitudes towards contactless travel (AC), Intentions to adopt contactless travel (IC), Trust in technology (TT)

To ensure the reliability and validity of our measurement constructs, The results adhered to established guidelines. Construct reliability was assessed through Composite Reliability (CR) and Cronbach's Alpha, with both values surpassing the 0.7 threshold, as indicated in Table 4. This affirms the internal consistency and reliability of our measurement models. Additionally, the Average Variance Extracted (AVE) for each construct, exceeding the recommended threshold of 0.5, demonstrated satisfactory levels of convergent validity [53], [54].

The evaluation of discriminant validity employed the Heterotrait-Monotrait Ratio of Correlations (HTMT) methodology, adhering to the guidelines proposed by Fornell and Larcker (1981). The criterion set ensured that values remained below one, typically around 0.85 or 0.9. Through these meticulous assessments, the study reinforces the reliability, convergent validity, and discriminant validity of the measurement constructs, thereby enhancing the robustness and quality of the report [53], [55].

#### 4.4. The outcomes of the hypothesis testing

**Table 5. Presents the observed results from hypothesis testing.**

Hypothesis	Relationship	Estimate	T- Statistics	P - value	Result
H1	PH -> AC	0.261	4.365	0.000	Supported
H2	SN -> AC	0.215	3.836	0.000	Supported
H3	BC -> AC	0.367	5.955	0.000	Supported
H4	BC -> IC	0.459	6.441	0.000	Supported
H5	AC -> IC	0.194	4.207	0.000	Supported
H6	TT x AC -> IC	-0.075	2.256	0.024	Supported

Source: Author's data analysis, 2024

Note: Perceived health and safety (PH), Subjective norms (SN), Perceived behavioral control (BC), Attitudes towards contactless travel (AC), Intentions to adopt contactless travel (IC), Trust in technology (TT)

From the results of the analysis of Table 5, the relationships in the 6 hypotheses were found to be statistically significant. The principles in this study were determined from the planned behavior theory framework to expand the investigation of individual perceptions to contactless travel attitudes and the mediating role of attitudes affecting intentions to adopt contactless travel, while considering the role of the moderating variable trust in technology affecting intentions to adopt contactless travel.

For individual perceptions including perceived health and safety, subjective norm, perceived behavioral control, there is a relationship with attitudes towards contactless travel. In which, the role of perceived behavioral control has the highest impact on intentions to adopt contactless travel (beta = 0.459), and perceived behavioral control affects attitudes towards contactless travel (0.367). The factors of perceived health and safety, subjective norms also show a statistically significant relationship with intentions to adopt contactless travel (beta = 0.261) and (0.215).

On the other hand, the moderating role of trust in technology has a negative impact between the relationship of attitudes towards contactless travel to intentions to adopt contactless travel (-0.075), which may be due to a cluster of tourists who harbor doubts about the reliability or security of contactless travel technology, their positive attitudes may not effectively translate into intentions to adopt.

In addition, the overall relationships in the measurement structure of the study are presented in more detail in Table 6 below.

**Table 6. Total directly and indirectly affects intentions to adopt contactless travel**

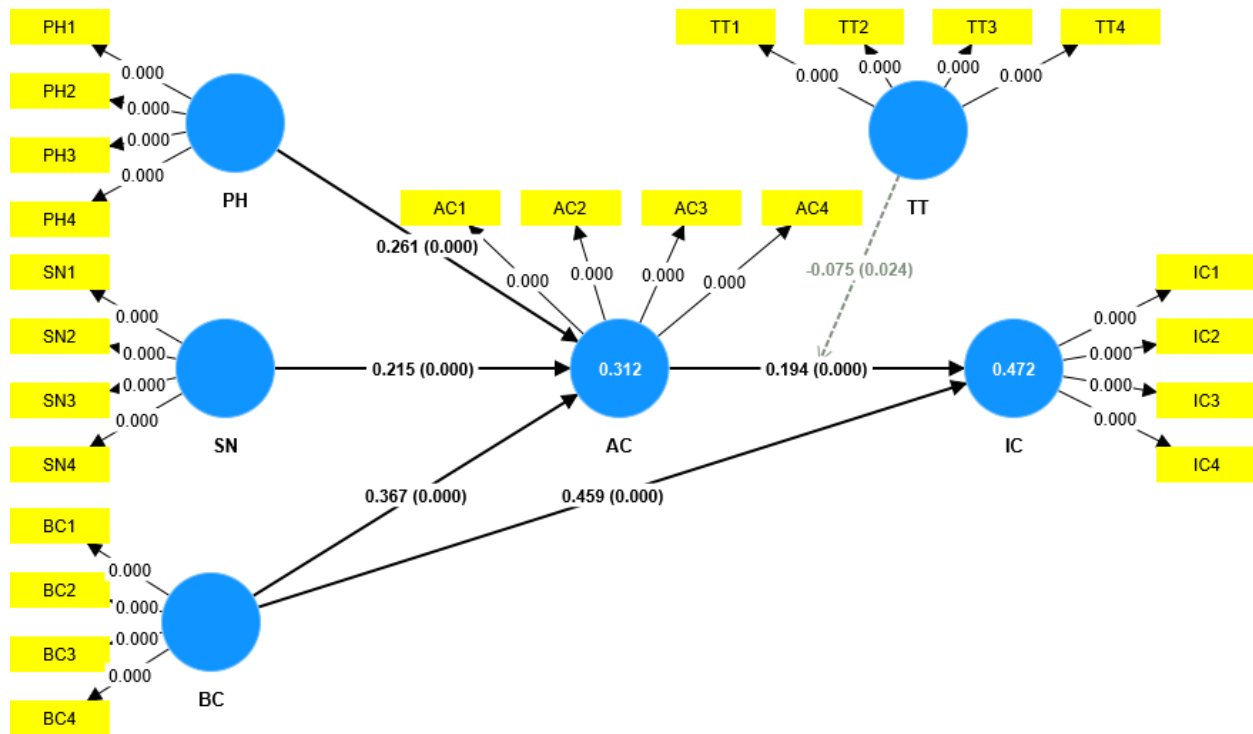
Paths indirect effect	Estimate	Standard deviation	T statistics	P values
PH -> AC -> IC	0.051	0.018	2.864	0.004
SN -> AC -> IC	0.042	0.015	2.765	0.006
BC -> AC -> IC	0.071	0.022	3.308	0.001

Source: Author's data analysis, 2024

Note: Perceived health and safety (PH), Subjective norms (SN), Perceived behavioral control (BC), Attitudes towards contactless travel (AC), Intentions to adopt contactless travel (IC), Trust in technology (TT)

From the results of the analysis in Table 5 and the results of the analysis of the indirect relationship of the measurement structure in Table 6, the research findings and the expected results can be summarized. (1) The individual perception factors of perceived health and safety, subjective norms, and perceived behavioural control affect attitudes towards contactless travel, of which perceived behavioural control has been highlighted in the context of the highest tourist interest. (2) The analysis of the direct relationship between attitudes towards contactless travel to intentions to adopt contactless travel is influenced by the moderating variable of trust in technology. (3) In the context of this study, the mediating role of attitudes towards contactless travel in affecting intentions to adopt contactless travel has been of significant interest to tourists.

To achieve the desired outcomes of innovative technology marketing in practice, the results of the research recommend the following diagram, Figure 2, paths diagram for analysis of intentions to adopt contactless travel.



**Figure 2: Structural paths diagram for analysis intentions to adopt contactless travel**

Source: Author's data analysis, 2024

Note: Perceived health and safety (PH), Subjective norms (SN), Perceived behavioral control (BC), Attitudes towards contactless travel (AC), Intentions to adopt contactless travel (IC), Trust in technology (TT)

## 5. DISCUSSION

In the aftermath of the global pandemic, the landscape of the travel industry has experienced a profound metamorphosis, sparking heightened interest in contactless travel solutions. The research design aimed to unravel the complexities of this shift by delving into both the demographic characteristics and individual perception factors that play instrumental roles in shaping attitudes towards contactless travel. The study revealed a distinctive demographic composition, with a substantial 67.7% of participants identifying as female and a notable 59.9% falling within the 29 to 39 years age bracket. Further accentuating the relevance of the research, a substantial 72.7% of participants were actively engaged in employment. The results are also relatively consistent with previous studies in the field of tourism [56] offering valuable insights into the perspectives of the working demographic in the post-pandemic era.

The identification of perceived health and safety, subjective norms, and perceived behavioral control as pivotal determinants influencing attitudes towards contactless travel is rooted in a profound understanding of the psychological and behavioral factors guiding decision-making,



especially in the context of travel amid and post the pandemic [57]. The global awareness of health and safety concerns during the pandemic has induced individuals to prioritize measures that amplify their perceived well-being during travel. The adoption of contactless travel methods is seen as a safety-enhancing option, minimizing physical contact and potential exposure to pathogens, aligning seamlessly with individuals' heightened concerns for their health and safety [20], [36]. When subjective norms, encompassing the perceived social pressure to adopt a specific behaviour, exert a significant influence on attitudes towards contactless travel. Social influences, recommendations from social circles, and societal norms established during the pandemic significantly shape individuals' attitudes and, consequently, their likelihood to adopt contactless travel practices [21]. Furthermore, perceived behavioural control, reflecting an individual's belief in their ability to successfully perform a behaviour, is critical in the context of contactless travel [38]. Factors such as ease of use, accessibility, and the individual's sense of control over the technology involved become pivotal, influencing positive attitudes and intentions towards the adoption of contactless travel.

This identification of determinants aligns seamlessly with established psychological and behavioral theories like the Theory of Planned Behavior (TPB), which posits that attitudes, subjective norms, and perceived behavioral control collectively shape individuals' intentions and behaviors. In the specific context of contactless travel, these factors provide a comprehensive framework for understanding why individuals are inclined to embrace these methods as part of the evolving travel norms [58].

Moreover, the study underscores the nuanced interplay between attitudes towards contactless travel and intentions to adopt, introducing a moderating variable - trust in technology. The emergence of trust as a significant moderator implies that the level of confidence individuals place in technology intricately influences the link between their attitudes and intentions to adopt contactless travel [59]. This nuanced understanding is imperative for industry stakeholders aiming to tailor their strategies to cater to the diverse levels of technological trust among potential adopters.

Additionally, the research reveals a mediating role played by attitudes towards contactless travel in shaping intentions to adopt. This implies that individuals' overall attitudes act as a bridge between their perceptions and their actual inclination to embrace contactless travel practices [3]. As the travel industry navigates the uncertainties of the post-pandemic era, this

research not only offers valuable insights into the factors influencing the adoption of contactless travel but also emphasizes the necessity for a nuanced comprehension of demographics, individual perceptions, and the pivotal role of trust in technology in shaping the emerging new normal for travel [60].

## 6. CONCLUSIONS AND IMPLICATIONS

The research findings demonstrate that individual perception factors, encompassing health and safety, subjective norms, and perceived behavioral control, significantly influence attitudes toward contactless travel, with have a lot of influence across practical, social, and future research domains.

Demographic characteristics further reveal a majority of female participants (67.7%), aged 29-39 (59.9%), and actively employed (72.7%). Stakeholders are advised to customize contactless travel solutions for this demographic, focusing on user-friendly interfaces and safety measures [61]. Socially, recognizing diverse roles within this age and gender group is crucial, and public awareness campaigns should engage them by addressing unique concerns. For future research, exploring the intersectionality of demographics with cultural nuances and technological literacy within this age group is essential.

The research on perception factors influencing attitudes toward contactless travel underscores practical implications for the tourism industry. Prioritizing perceived behavioral control, particularly within the highest tourist interest, is crucial for practical user-friendly designs [62]. Leveraging subjective norms in public awareness campaigns fosters collective acceptance, and future research should delve into elements contributing to perceived behavioral control, exploring cultural variations. Examining the long-term effects of attitudes on actual adoption behaviors is crucial for understanding evolving travel preferences [63].

Additionally, the research reveals the moderating influence of trust in technology on the relationship between attitudes toward contactless travel and intentions to adopt. Stakeholders are urged to prioritize transparent, reliable, and user-friendly solutions, ensuring users' confidence in technology for a seamless transition from positive attitudes to adoption [31]. Socially, fostering trust requires collective educational initiatives, and future research should explore factors contributing to or eroding trust within travel contexts, considering cultural and socio-economic factors [64]. Ongoing studies should track trust dynamics over time, influencing the adoption of contactless travel practices in an evolving technological landscape.

In summary, the results of research on individual perception factors (health and safety, subjective norms, perceived behavioural control) shaping attitudes towards contactless travel have significant implications for the tourism industry. Recognize diverse roles in this demographic and emphasize public perception campaigns. Future research should explore demographic intersectionality and cultural nuances. Prioritize perceived behavioral control for user-friendly designs and leverage subjective norms for collective acceptance. Examine long-term effects on behavior intentions to adopt contactless travel. Trust in technology moderates attitudes and adoption intentions, urging stakeholders to prioritize transparency. Foster trust through collective educational efforts, and explore factors contributing to trust dynamics over time in future research.

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