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COVID-19 and The Emergence of Virtual Tourism in Indonesia: A Technology Readiness Index Perspective

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Abstract: For a nation, tourism is a significant source of revenue. However, due to travel bans across the nation and abroad, the pandemic Covid-19 outbreak has had a substantial impact on the tourism business. This study aims to analyze the intention of virtual tourism during the post-pandemic using the technology readiness index and the TPB model (theory of planned behavior). Data was collected from 465 tourist users in Indonesia. The data analysis technique used is structure equational model-partial least square (SEM-PLS). The results proved that all TPB constructs, namely attitudes, subjective norms, and perceived behavior control have a significant effect on the intention to use virtual tourism. The results of this study will help virtual tourism service providers and policymakers in planning services and increasing intention to use virtual tourism in the post-pandemic. The results of the study will add to existing knowledge about the literature on virtual tourism during the pandemic and post-pandemic.

Keywords: Intention of Use; Post Pandemic; Technology Adoption; Technology Readiness; Virtual Tourism.

Introduction

Many aspects of daily life have changed since the Covid-19 Pandemic, including the tourism sector. With the implementation of physical distancing and large-scale social restrictions, especially in Indonesia, many industry players are looking for options to survive by trying to integrate their businesses with technology (Rafdinal & Senalasari, 2021), including the tourism industry (Messori & Escobar, 2021; Wibisono et al., 2023). This is mainly due to the high impact the tourism sector has on the nation. Tourism sector contributes to the state revenue in the form of foreign exchange, and the development of

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this sector could encourage Indonesian economic growth and increase employment opportunity (Yang et al., 2022a). In 2019 before the Covid-19 pandemic occurred in Indonesia, the tourism sector contributed to 4.8% of Indonesian GDP, increased by 0.3% from 2018. Showing a great concern in this sector, the government allocated a significant amount of budget in 2021 to help this sector recover. In 2020, a total of IDR 10.7 trillion was allocated, and increased by 36% in 2021 with a total budget for tourism sector amounted to 14.6 trillion (Wulandari, 2021). The emergence of innovations in the field of technology has forced tourism marketers to choose strategic steps in dealing with this unfavorable situation. One of the changes is the marketing trend in utilizing the internet and e-commerce. Now tourism industry promotion activities are shifting to using social media because social media has revolutionized this field worldwide (Chu et al., 2020; Hasan, 2015).

Apart from promotion through social media, another use of the internet that the tourism industry has implemented lately is by developing a virtual tour concept for tourists who still want to travel even though they are staying at home (Subawa et al., 2021). The virtual tour is a travel concept where tourists can enjoy tourist objects without the need to be physically present (Yang et al., 2022a). This virtual tour concept is a starting point as an alternative tour during the pandemic until later post-pandemic conditions have been enforced (Guttentag, 2010; Wibisono et al., 2023). Besides being an alternative tour, virtual tours are also an innovative and communicative tourism marketing tool with a broader reach (Berne et al., 2012; Huang et al., 2017; Lu et al., 2022; Sigala, 2018). The concept of the virtual tour is the result of virtual reality, where this development is carried out by the computing industry, which has the goal of creating a virtual world, making someone immersed in it, and giving someone the ability to interact with this world while using specific devices to simulate the authentic environment (Boas, 2012; Guttentag, 2010; Subawa et al., 2021). The COVID-19 pandemic has significantly impacted the tourism sector, with restrictions on travel and social distancing measures forcing many travelers to reconsider their plans (El-Said & Aziz, 2022). Virtual tourism provides an alternative way for individuals to experience the culture and beauty of a destination without physically traveling to the location. As such, virtual tourism has the potential to transform the tourism industry, offering new opportunities for businesses and consumers alike (Yang et al., 2022a). Many people believe that virtual tourism will not only recover the tourism sector but also let them survive in the long term as well as become more resilient to face other unfavorable circumstances in the future (Schiopu et al., 2021).

Although virtual tourism has been developed for a long time, this technology is still relatively new in developing countries, Indonesia is no exception (Subawa et al., 2021; Wibisono et al., 2023). Potentially, this is the cause that limited research on virtual tourism in Indonesia has been conducted currently, despite its potential as a tourist destination and attraction in the post-covid19 time. Bramantyo & Ismail (2021) conducted qualitative research in one specific museum in Jakarta, Indonesia, where they found that the use of virtual tourism technology during covid-19 successfully help the museum to reach and provide services to the public. Subawa et al. (2021) also done qualitative research with the goal to analyze the practices of virtual reality marketing in Bali, Indonesia. Idris et al. (2021) conducted a research where they developed a tourism information system using virtual reality technology. Kinseng et al. (2022) done qualitative research to understand how covid-19 pandemic has stimulated the development of virtual tourism and how they are performing. Other studies has been conducted to understand the adoption of virtual

tourism during the covid-19 pandemic, but their object was not Indonesia (El-Said & Aziz, 2022; Schiopu et al., 2021). Different countries could show different results. Morevover, other studies also implemented TAM to understand about the adoption of virtual reality (Schiopu et al., 2021; Yang et al., 2022b). Differ from previous studies, current study will integrate the Theory of Planned Behavior (TPB) and technology readiness index (TRI) to analyse the adoption of virtual tourism in Indonesia.

The TPB and TRI are two theoretical frameworks that could be used to understand consumer behavior and adoption of virtual tourism in Indonesia. The TPB can help identify the key factors that influence individuals' intention to engage in virtual tourism, such as their attitudes towards the technology, perceived behavioral control, and subjective norms (Ajzen, 1991; Fishbein & Ajzen, 1975). Lu et al. (2022) who had done their research in China found that the adoption of virtual tourism could be partially explained by TPB. Additionally, the use of TPB in tourism sector is growing (Ulker-Demirel & Ciftci, 2020). Meanwhile, the TRI can provide insight into the readiness of individuals to adopt and use technology (Parasuraman, 2000). As stated earlier, the virtual reality is a relatively new technology for Indonesian, or in other words, the readiness level of Indonesian people might differ from people in other countries. By combining these two theoretical frameworks, researchers can gain a comprehensive understanding of the factors that influence consumers' behavior towards virtual tourism in Indonesia, and how technology readiness can facilitate or hinder their adoption of this new form of tourism.

The purpose of this study is to analyse the adoption of virtual tourism in Indonesia by employing the TPB and TRI. Therefore, studying virtual tourism in Indonesia can help identify the benefits, limitations, and challenges of this emerging industry. This knowledge can help businesses and policymakers make informed decisions about the potential for virtual tourism in Indonesia and its role in the tourism industry. Additionally, understanding virtual tourism can help provide new insights into the changing behaviors and preferences of travelers, which can help shape future tourism strategies and policies.

Literature Review

Virtual Tourism

Virtual Reality (VR) technology has continued to develop since its emergence. It has been applied in many fields in the tourism industry, such as marketing, entertainment, education, accessibility, and preservation of tourist objects as heritage (Guttentag, 2010). Promotional activities using VR are proven to have a more significant marketing effect than using brochures or images (Wan et al., 2007). Aside from being a marketing tool, virtual reality can be used as a stand-alone entertainment tourism product, especially for theme parks. It has been implemented in various theme parks around the world. In addition, virtual tourism is a new way to travel in the form of virtual simulations, where location settings are done digitally by compiling images edited into videos, using technologies such as virtual reality, augmented reality, 350-degree videos, and holograms (El-Said & Aziz, 2022). Equally important, by using virtual tourism technology, people will have the privilege of feeling the sensation of the places they want without having to be physically there. This makes virtual tourism an exciting and critical topic for further study.

Technology Readiness Index (TRI)

The role of technology in tourism services has continued to grow since virtual technology emerged for various industries, one of which is the tourism industry. By combining needs and the era of connectivity, virtual tourism has emerged as an answer to alternate tourism activities amid a pandemic. Triggers changes in the behavior and habits of tourists. In adopting the role of technology, consumer behavior needs to be assessed regarding readiness in dealing with technology, which is measured through the Technology Readiness Index (TRI) or the technology readiness index (Parasuraman, 2000). TRI is used as a theoretical basis for consumers in technology adoption because it is closely related to individual tendencies to use new technologies and general sentiments about new technologies and is relevant to marketing contexts (Lin & Chang, 2011).

In line with this, the technology readiness index considers how individual differences in factors support and hinder technology adoption (Parasuraman, 2000), which follows this study to determine predictors of virtual tourism adoption. TRI is considered capable of providing an understanding of the continued use of virtual tourism as an alternative to tourism because it examines the critical factors that influence the adoption of new technologies (Humbani & Wiese, 2019). The development of Original TRI to TRI 2.0 includes a measure of overall technology readiness and four components of technology readiness: optimism, innovativeness, discomfort, and insecurity. The application of TRI 2.0 is broader and stronger for use in different contexts and industries. Moreover, TRI 2.0 can be used to assess technology readiness in certain demographic groups and helps understand the consumer dynamics behind technology adoption (Parasuraman & Colby, 2015).

In the context of TRI, optimism refers to a positive attitude towards certain technologies, where optimists think technology can increase flexibility and efficiency (Sinha et al., 2018). Previous studies have found that optimism positively impacts perceived ease of use and perceived benefits (Rafdinal & Senalasari, 2021). When one is more optimistic about a certain technology, their chances in perceive the technology as useful and easy to be used gets higher (Parasuraman & Colby, 2015). This is because the optimists will always face any obstacles they face, including when trying a new technology. They positively find a way to make a technology useful for them, therefore their attitudes will be more likely positive, increasing their intention to use the technology. This is in line with previous research which found that optimism has a positive impact on attitude and usage intention (Jarrar et al., 2020; Lai & Lee, 2020) On the other hand, innovation is a tendency to become a pioneer in technology, especially the discovery of new things (Parasuraman & Colby, 2015). When one is more innovative, they will find a way to use a new technology better than the others, therefore they are most likely to have a positive attitude towards the technology, and they usually have a high intention in using the technology (Hasheem et al., 2022; Jarrar et al., 2020). Therefore, the hypotheses developed in this study are as follows:

H1: Optimism has an effect on the intention to use virtual tourism
H2: Optimism has an effect on attitudes toward virtual tourism
H3: Innovation has an effect on the intention to use virtual tourism
H4: Innovation has an effect on attitudes toward virtual tourism

On the other hand, insecurity is a negative feeling when someone feels pressured by technology and thinks they have no control over it (Parasuraman, 2000; Parasuraman &

Colby, 2015). Inconsistent results were found regarding the impact of discomfort on perceived usability and perceived ease of use. While some found a negative effect of discomfort on perceived usefulness and perceived ease of use (Lin & Chang, 2011; Walczuch et al., 2007), others found no impact (Yang et al., 2022a). Similarly, insecurity is distrust of technology, stemming from skepticism about its ability to work correctly and concern about its potentially harmful consequences (Parasuraman & Colby, 2015). Both are technology barriers arising from personal feelings of lack of trust in using technology, perceived risks, costs, and concerns with security and privacy). However, when people feel more uncomfortable using technology, they will perceive it as useless and difficult to use. Therefore, the hypothesis is developed as follows:

H5: Discomfort has an effect on the intention to use virtual tourism
H6: Discomfort has an effect on attitudes toward virtual tourism
H7: Insecurity has an effect on the intention to use virtual tourism
H8: Insecurity has an effect on attitudes toward virtual tourism

Theory of Planned Behaviour (TPB)

TPB is one of the appropriate models used in predicting individual behavior (Verma et al., 2019). Although many theories can measure a person's behavior, TPB can be used as a reference in providing a solid foundation for assessing a person's behavior in accepting a technology (Kim & Kankanhalli, 2009). TPB is a fundamental concept that explains and predicts consumer behavior (Ajzen, 1991). In this model, intention is mentioned as the only psychological factor that will directly influence behavior (Seol et al., 2016). Thus, this study will focus on the person's intention to use virtual tourism. TPB consists of three elements: attitudes, subjective norms, and perceptual control over behavior (Ajzen, 1991). Attitudes towards a particular person are defined in terms of whether that person's work is positive or negative. By associating beliefs regarding each given behavior with different results or other relevant details, this is what a person refers to (Safeena et al., 2013). A significant factor in deciding is the influence of social networks, including friends, family, and co-workers (Kalini et al., 2019). Subjective norm can be defined as the extent to which a person views that most people who are essential to (their social environment) believe that they should or should not use a system (Venkatesh et al., 2003). Meanwhile, perceived behavioral control refers to an individual's perception of their ability to perform certain behaviors (Safeena et al., 2013), or briefly to a person's ability to control their behavior (Ajzen, 1991). Interest indicates a person's readiness to behave in this study using virtual tourism.

In this study, an attitude refers to a person's attitude towards virtual tourism in the post-Covid-19 pandemic, whether positive (profitable) or not (unfavorable) (Fishbein & Ajzen, 1975). (Seol et al., 2016). Attitude is a crucial factor in determining an individual's intention to use virtual tourism. A positive attitude towards can greatly enhance the intention to use a certain technology, as resulted in a study by Kasilingam (2020). When individuals have a favorable attitude towards virtual tourism, they tend to perceive it as a valuable and enjoyable experience. This perception can lead to an increased interest in using virtual tourism and a greater likelihood of actually using it. Additionally, a positive attitude towards virtual tourism can also influence an individual's beliefs about the effectiveness of virtual tourism in providing an immersive experience. Meanwhile, subjective norms refer to a person's perception based on the perceptions of most people around him about a certain

something (Hasheem et al., 2022). In the context of virtual tourism, if an individual perceives that their friends, family, or colleagues consider virtual tourism as a favorable activity, they are more likely to intend to use it themselves, this is in line with the result on different object which are location based service technology (Meng & Choi, 2019) and online learning technology (Teo & Beng Lee, 2010). Lastly, perceived behavioral control reveals the ability of tourists to use virtual tourism in the post-pandemic period. Previous studies have found that perceived behavioral control positively affects usage intention (Meng & Choi, 2019; Teo & Beng Lee, 2010). In the context of virtual tourism, if an individual believes that using virtual tourism platforms is easy and within their control, they are more likely to form the intention to use it. Therefore the hypotheses are developed as follow.

H9: Attitude has an effect on the intention to use virtual tourism
H10: Subjective norms have an effect on the intention to use virtual tourism
H11: Perceived behavioral control has an effect on the intention to use virtual tourism

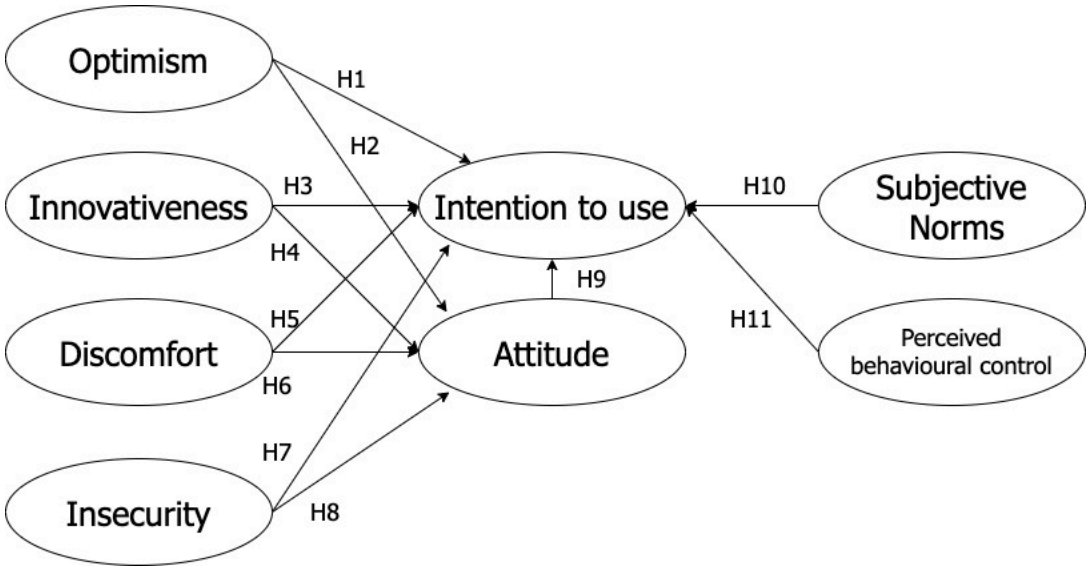

Figure 1. **Research Model**

Methods

Data collection was carried out by distributing questionnaires online. These questions were adapted and modified based on previous research (Rafdinal & Senalasari, 2021) by analyzing the same constructs in this study. The constructs measured in measuring the TAM variable are perceived ease of use and perceived usefulness. The first part of the questionnaire is the willingness of respondents to answer the survey. The second part covers the socio-demographic characteristics of the respondents. The following section includes statements regarding research variables. All statement items were measured on a Likert scale of 1 to 5, where 1 means strongly disagree, and 5 strongly agrees. The trial was carried out by testing 30 respondents to ensure that the questionnaire questions were unambiguous and that there were no technical errors that could hinder data collection. No significant changes were made to the questionnaire. Samples were taken from users of virtual tourism technology in Indonesia in the new average era. Based on this process, 456

respondents obtained a convenience sample of 400 responses. After obtaining survey data, the influence between variables was analyzed using the partial least squares-structural equation modelling (PLS-SEM) data analysis technique because the PLS-SEM as an analyzing tool is its ability to handle complex models with small sample sizes, its robustness to handle missing data and outliers, and its capability to analyze both reflective and formative constructs in the same model (Hair et al., 2017). The approach is carried out by testing the measurement and structural models. The measurement model was analyzed to test the construct validity and reliability of the model, while to test the hypotheses developed, structural model testing was carried out.

Findings

Characteristics Respondents

A survey of 465 respondents showed that users of virtual tourism technology in Indonesia still dominate the young and educated generation. The results obtained show the characteristics of the respondents in this study and can be seen in Table 1 below.

Table 1. **Characteristics of Research Respondents**

Variable	Frequency	Percentage
Gender:		
Male	185	41%
Female	271	59%
Age:		
17-24	215	47%
25-34	218	48%
35-44	19	4%
>44	4	1%
Education:		
Senior high school or below	201	44%
Diploma and Undergraduate	247	54%
Master and Doctor	8	2%
Income (IDR):		
<2.000.000	202	44%
2.000.000 – 3.999.999	155	34%
4.000.000 – 5.999.999	90	20%
6.000.000 – 7.999.999	2	0%
>8.000.000	7	2%
Area:		
Java	412	88
Outside Java	44	12

Measurement Model

The first test to be carried out is the measurement model test. This test is used to assess the reliability and validity of the conceptual model so that it is said to be feasible or not to continue with the following test phase. In the measurement model test, there is convergent validity and reliability, where the values seen are the loading factor values with a minimum criterion of 0.708; also Cronbach's Alpha (CA) with a minimum criterion of 0.7, Composite

Reliability (CR) with a minimum criterion of 0.7, and Average Variance Extracted (AVE)) with a minimum criterion of 0.5 (Hair et al., 2011). Table 2 shows that all criteria are met.

Table 1. **Measurement Model**

Construct/Item	Loading	CA	CR	AVE
Optimism		0.862	0.900	0.644
Virtual tourism technology gives freedom of movement (mobility)	0.808			
Virtual tourism technology gives more control over life	0.811			
Virtual tourism technology makes me more productive in my personal life	0.793			
Virtual tourism technology makes it more efficient to complete work	0.812			
Virtual tourism that uses the latest technology is more comfortable to use	0.787			
Innovativeness		0.808	0.867	0.566
Others asked for advice on new virtual tourism technologies	0.762			
In general, I was among the first in my circle of friends to own/use virtual tourism technology when it first appeared	0.780			
I follow the development of virtual tourism technology	0.786			
I usually can understand myself when there is a new virtual tour technology without the help of others.	0.740			
Discomfort		0.796	0.858	0.548
Call centers for virtual tourism are generally not helpful because they do not explain in language or terms that I understand.	0.738			
Sometimes, I think that virtual tourism technology is not designed for ordinary people to use	0.706			
There are no manuals/instructions for using high-tech virtual tourism technology written in simple language	0.746			
I feel embarrassed when I face obstacles in using virtual tourism technology and other people see	0.766			
My friends know more about the newer virtual tourism technology than I do	0.744			
Insecurity		0.831	0.888	0.667
I am concerned that the information I have authorized to be accessed online could be misused	0.876			
I do not feel safe providing personal information such as credit/debit cards over the internet.	0.836			
When my data is automated using the website for the Virtual Tourism Application, I need to double-check that the system doesn't make any mistakes	0.873			
Attitude		0.912	0.938	0.791
Using virtual tourism technology is a good idea	0.885			
Overall, my opinion of virtual tourism technology is positive	0.894			
Virtual tourism technology is helpful for to use	0.912			
Virtual tourism technology is enjoyable to use	0.866			

Construct/Item	Loading	CA	CR	AVE
Subjective Norm		0.910	0.957	0.917
Colleagues/family recommend me to use virtual tourism technology in the new average era	0.954			
My colleagues/family encouraged me to use virtual tourism technology in the new normal era	0.961			
Perceived Behavior Control		0.888	0.922	0.748
I find it easy to carry out the necessary steps to use virtual tourism technology.	0.876			
It is straightforward to become skilled in using virtual tourism technology	0.885			
I believe that virtual tourism technology gives me the flexibility to use it at any time	0.842			
I feel that traveling through virtual tourism technology is easy	0.856			
Intention to use		0.779	0.873	0.696
If it is assumed that I have access to use virtual tourism technology, then I will use it instead of visiting in person.	0.823			
I will use/continue to use virtual tourism technology	0.901			
I intend to use virtual tourism technology services when there are opportunities/opportunities	0.775			

Furthermore, discriminant validity also needs to be assessed by looking at the heterotrait-monotrait (HTMT) evaluation results. The HTMT value must be below 0.9 to say that the construct used is valid (Hair et al., 2011). Based on the test results, Table 3 shows that the criteria are met. The results of testing the measurement model show that all the constructs used in the conceptual model in this study are valid and reliable so that the following test to test the hypotheses that are built can be carried out.

Table 2. **HTMT Evaluation Results**

Ratio HTMT	OPT	INV	DIS	INS	SKP	NOR	KPD	MNT
OPT								
INV	0.695							
DIS	0.263	0.303						
INS	0.295	0.319	0.342					
SKP	0.631	0.603	0.190	0.384				
NOR	0.554	0.561	0.142	0.294	0.667			
KPD	0.637	0.522	0.192	0.430	0.777	0.755		
MNT	0.534	0.477	0.320	0.139	0.431	0.474	0.524	

Notes: OPT=Optimism; INV=Innovativeness; DIS=Discomfort; INS=Insecurity; SKP=Attitude; NOR=Subjective Norms; KPD=Perceived behavioural control; MNT=Intention to use

Structural Model

To test the hypotheses developed in this study, as well as achieve the objectives of this study, a structural model test was conducted. Previously, to prevent bias in the regression results, collinearity testing was carried out using the variance inflation factor (VIF) value. The VIF value must be less than 3 to indicate the absence of multicollinearity (Hair et al., 2019). Table 4 shows no problems related to collinearity in this study. Testing the quality of

the model is also carried out by evaluating the value of the coefficient of determination (R2), Adjusted R2, and cross-validation redundancy (Q2). An R2 value of 0.75 is considered substantial, a value of 0.50 is considered moderate, and a value of 0.25 is considered weak (Hair et al., 2011, 2019). Table 4 shows that the R2 value for the variable intention to use is 0.417 and for attitude is 0.391, both of which are in the medium category. This can be interpreted that the variables of intention to use were influenced by exogenous variables in this study by as much as 41.7%, and the rest were influenced by other variables not used in this study.

Furthermore, the exogenous variable influencing attitudes in this study is 39.1%. Finally, before testing the hypothesis, the value of Q2 needs to be evaluated. QQ, which shows a positive value or above 0, indicates that all variables have good relevance predictions (Hair et al., 2011, 2019). Table 4 shows that all Q2 values are positive, which means that all the variables used in this study have acceptable and relevant predictive abilities.

Table 3. **Structural Model Testing Results**

Correlation	VIF	R^2	R^2 Adjusted	Q^2
OPT -> MNT	1.843	0.417	0.408	0.266
OPT -> SKP	1.502	0.391	0.385	0.287
INV -> MNT	1.680			
INV -> SKP	1.568			
DIS -> MNT	1.292			
DIS -> SKP	1.223			
INS -> MNT	1.424			
INS -> SKP	1.229			
SKP -> MNT	2.379			
NOR -> MNT	1.427			
KPD -> MNT	2.157			

Table 4. **Hypothesis Testing Results**

Hypothesis	β	*T* value	Result
H1: OPT -> MNT	0.147	2.723**	Accepted
H2: OPT -> SKP	0.414	7.669***	Accepted
H3: INV -> MNT	0.029	0.534ts	Rejected
H4: INV -> SKP	0.157	3.194***	Accepted
H5: DIS -> MNT	0.134	2.943**	Accepted
H6: DIS -> SKP	-0.078	1.908*	Accepted
H7: INS -> MNT	-0.158	2.881**	Accepted
H8: INS -> SKP	0.264	5.547***	Accepted
H9: SKP -> MNT	0.121	1.883*	Accepted
H10: NOR -> MNT	0.303	5.914***	Accepted
H11: KPD -> MNT	0.224	3.434***	Accepted

Notes: ***significance level (ρ <0.001); ** significance level (ρ <0.01); * significance level (ρ <0.05); ts=not significance.

Hypothesis testing is done using the bootstrap method. In table 5, almost all the hypotheses compiled in this study are accepted, except for H3. Optimism has a positive and significant effect on the intention to use (β: 0.147, ρ <0.01) and attitude (□ : 0.414,

ρ <0.001). In other words, H1 and H2 are accepted. This is in line with previous studies conducted by Jarrar et al. (2020) and Lai & Lee (2020). The more optimistic one person is, the more they would have a positive attitude towards the virtual tourism. They would always look at the bright side of everything, therefore it will increase their intention of using any new kind of technology, including virtual tourism. Innovation does not affect intention to use (β: 0.029, ρ >0.05) but has a positive effect on attitude (β: 0.157, ρ <0.001). Therefore H3 is rejected, contradicts to the result of the study by (Hasheem et al., 2022; Jarrar et al., 2020), while H4 is accepted, in line with previous study (Hasheem et al., 2022; Jarrar et al., 2020). Innovative person will tend to be the pioneer in everything and will want to understand something quicker than the others. This is primarily supported the reason why the more innovative one is, the more they will have an intention to use virtual tourism. However, that does not mean that they will have positive attitudes towards the technology. They will find a way to understand a technology, but once they think it does not meet their expectation, they might have a negative attitude towards the technology.

Discomfort has a positive effect on the intention to use (β: 0.134, ρ <0.01) and a negative effect on attitude (β: -0.078, ρ <0.05), or in other words, H5 and H6 are accepted, in line with previous study by (Lin & Chang, 2011; Parasuraman & Colby, 2015). When someone is not comfortable in using a certain technology, in this case virtual tourism, since most of the respondent of this study are in the range of tech-savvy people, they would likely try to find a way to eliminate their feelings of discomfort. Therefore, increasing their intention to use in order to understand better about virtual tourism and feeling comfortable about it. However, when they found that the virtual tourism technology is somehow uncomfortable to use, they attitudes will be likely negative. They would think something is wrong about the technology that makes them feels discomfortable.

Insecurity harms the intention to use (β: -0.158, ρ <0.01) and has a positive effect on attitude (β: 0.264, ρ <0.001). This is align with the study by (Yang et al., 2022b). Noting that most respondent came from a tech-savvy ages, it is only logical that when a person is insecure towards the use of virtual tourism, they will want to face their insecurity as soon as possible. Most people understand that the first-time use of a new technology will cause insecurity but that will only arise their attitude towards it, stimulate them to learn more. However, after some kind of effort to eliminate their insecurity, if it can not be eliminated, their intention to use will decrease.

Lastly, attitude (β: 0.121, ρ <0.05), behavioral norms (β: 0.303, ρ <0.001), and perceived behavioral control (β: 0.224, ρ <0.001) each has a positive and significant effect on the intention to use. The same result are found on research conducted by Kasilingam (2020), Meng & Choi (2019) and Teo & Beng Lee (2010). The more positive the attitude of tourists toward virtual tourism, where the existing subjective norms also form good perceptions, and the person has control over virtual tourism, the greater the intention to use virtual tourism.

Conclusion

Even though travel restrictions have been relaxed in the new normal era, people are used to the situation during a pandemic, so the choice to travel virtually is an option for some people. Virtual and conventional tourism complement each other because virtual tourism provides feedback on in-person visits.

Theoretically, this research contributes as the first research that elaborates both TPB and TRI to explore virtual tourism. The integration of the two models has been done in other sectors, but it works well in virtual tourism sector, as in to understand the adoption of virtual tourism by considering at people's readiness and their motivation behind using a technology. The results proved that all TPB constructs, namely attitudes, subjective norms, and perceived behavior control, significantly affect the intention to use virtual tourism. Almost all of the TRI constructs also significantly affect the intention to use virtual tourism.

Practically, the result of this research can help businesses and policymakers make informed decisions about the potential for virtual tourism in Indonesia and its role in the tourism industry. Tourism technology developers should pay more attention to user attitudes so that it will stimulate the use of their products. More marketing efforts should also be put into eliminating the inconvenience of using virtual tourism. The thought of the unknown makes people uncomfortable, so the more they know, the more comfortable they are with virtual tourism technologies. Social media can be an option for promoting this technology because of its high impact, comprehensive coverage, and fast process. One of the tools that can be made in promoting tourist attractions is the development of 360-degree videos which are useful tools in attracting consumers and shaping their attitudes and intentions.

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