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UNDERSTANDING THE TRAVELERS' INTENTION TOWARDS VIRTUAL TOURISM ADOPTION USING VALUE-BASED ADOPTION MODEL

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Abstract:

Virtual Tourism (VT) is defined as a novel concept that enables potential tourists to enjoy tourist sites without visiting them physically. Nonetheless, VT remains a novelty for Malaysian tourists. Therefore, this study intends to ascertain travellers' adoption intentions in Virtual Tourism via the use of a Value-based Adoption Model (VAM). Travellers in Malaysia aged 21 to 39 were the analytic unit in this study. A total of 302 usable responses were obtained from an online self-administered questionnaire and analysed using Partial Least Squares-SEM in conjunction with the SmartPLS programme. Prior to proceeding to the next questions, respondents were shown a film to gauge their level of acceptance of virtual tourism. The research findings indicate that perceived benefits are more influential to perceived value than perceived sacrifices. Results showed that the components of perceived benefits, namely perceived usefulness (β = 0.341, t = 6.552) and perceived enjoyment (β = 0.341, t = 6.552), had a considerable beneficial influence on perceived value. Perceived complexity is the only component of perceived sacrifices that has a substantial negative influence on perceived value (β = -0.142, t = 2.758). In contrast, felt immersion (β = 0.059, t = 0.913), perceived expense (β = -0.020, t = 0.318), and perceived physical risk (β = -0.021, t = 0.350) were discovered to have no discernible impact on perceived value. Although the current study focused on a specific age group of clients, similar studies could be expanded in the future to include other groups with a variety

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of travel interests. The study's results may aid tourism providers and marketers by indicating a direction in which they should concentrate their efforts and emphasise growing perceived benefits while minimising perceived sacrifices, because this would progressively but consistently boost profits.

Keywords:

Adoption Intention, Virtual Tourism, Value-Based Adoption Model, Covid-19, Online Travellers

Introduction

Due to the fast progress of ICT (Information and Communications Technology), novel technologies have been developed that provide fresh occasions for marketers of tourism sites and prospective visitors alike. By means of information and communication technology (ICT)-based technologies, tourist products and tourism experiences may be extended into the sphere of Virtual Tourism (VT), which is defined as an information and communication technology (ICT)-based instrument that enables potential tourists to experience tourist sites without actually visiting them (Jingen & Elliot, 2020). The growth of technology has had multiple effects on tourism and has been instrumental in transforming the overall sector (Cheong, 1995; Buhalis & Law, 2008; Guttentag, 2010; Wang et al., 2015; Ali, 2016; Wei, 2019), and as a consequence, tourism research has placed a premium on information and communication technology (ICT). Several studies have been conducted in the tourism context, particularly in the emergent segments of virtual reality (VR) (e.g., Guttentag, 2010; Kim, Lee & Jung, 2018; Wagler & Hanus, 2018; Kim & Hall, 2019) and augmented reality (AR) (e.g., Kounavis et al., 2012; Han et al., 2013; Tussyadiah et al., 2017). Nevertheless, Virtual Tourism has garnered less attention since it does not involve VR or AR technology in the experience but rather focuses on simulated practises that combine details from the real world with interactions with actual people. However, it has yet to be demonstrated that the use of such technology is a viable substitute for actual travel (Law et al., 2014). In 2020, the Malaysian broadband penetration showed 127.4 Malaysians do have easy access to the internet, signifying that the majority of Malaysian citizens are capable of using the Virtual Tourism product (Malaysia Communication and Multimedia Commission, 2020). Given that Virtual Tourism is still a relatively new concept for Malaysians, this research uses the Value-based Adoption Model to analyse the adoption intentions of Malaysian travellers.

Literature Review

Tourism and travel have seen considerable changes and challenges in recent years as a consequence of the COVID-19 pandemic, and at the time of writing, several global travel restrictions have prohibited travels (OECD, 2020). COVID-19 has substantially affected the tourism industry, with international visitor numbers expected to decrease by 74% by 2020, threatening between 100 and 120 million tourism-related jobs (UNWTO, 2021). Swift recovery outlook remains extremely bleak. While domestic tourism has aided in the preservation of employment in some countries, true recovery will occur only when international travel resumes (OECD, 2020, pp. 2-3.) The majority of tourism experts believe that international tourism will not reach the levels before COVID-19 at least until 2023 (UNWTO, 2021). Global travel restrictions and lockdowns have pushed tourist businesses to develop novel strategies for survival both during and after the COVID-19 crisis (Kwok & Koh, 2020). Experts believe that Virtual Tourism may prompt businesses to find ways to mitigate the effects of the pandemic (Blundell, 2020).

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The COVID-19 outbreak has emphasised a critical threat to the Visit Malaysia 2020 (VM2020) initiative, since Singapore and China account for 50% of Malaysia's tourists. With the rising instances of COVID-19 in both countries, many tours have been terminated, and the number of visitors in Malaysia has already decreased significantly. To completely control the virus outbreak, the Malaysian Prime Minister issued four stages of Movement Control Orders (MCO) in anticipation of the infection's further spread (Prime Minister's Office, 2020). MCO restrictions will continue to shrink Malaysia's tourist sector, and thus it is necessary to have appropriate regulations to help the stakeholders in this industry. As a result of the pandemic, tourism companies have developed new kinds of services and experiences in Virtual Tourism. The majority of these novel encounters seem to take place through live connection. All of these experiences have one shared similarity: the tours are guided and documented in real time, while some segments may be shot in preparation. Moreover, clients pay for these experiences, which distinguishes Virtual Tourism as a novel mode of operation.

Recent research has also shown the usage and impact of virtual reality in a variety of settings, including marketing (Loureiro et al., 2019) and e-commerce (Martínez-Navarro et al., 2019). Additionally, research from the last three decades demonstrates the importance of virtual reality in tourist and hospitality marketing (Guttentag, 2010; Huang et al., 2015). Although the existing research has consensus on the significance of utilising virtual reality in destination management (Jung & Tom Dieck, 2017; Xu et al., 2015), it has mainly focused on the advantages of using VR in tourism (conti, Tom Dieck & Jung, 2017). The way visitors experience tourism and related goods and services is being revolutionised by Virtual Tourism and associated technology. This study allows stakeholders in the tourism industry to further understand the possibilities of Virtual Tourism as well as provide related information on the perceived value of Virtual Tourism, which tourism suppliers can refer to in their development of new tourism products. Acknowledging Virtual Tourism is critical because it can offer alternative solutions for businesses and consumers by increasing the viability of regular trips (e.g., travel to conservation territories with limited carrying capacity), enabling tourism experiences for anyone with border controls, and portraying the location and its promotions to aid tourists' decision-making.

Covid-19 and Tourism

Towards the conclusion of 2019, the World Health Organization (WHO) received notification of a disease outbreak of unknown origin in Wuhan, Hubei Province, China, which was subsequently termed Coronavirus 2019 or COVID-19 (WHO, 2020). A global economic catastrophe was predicted for this outbreak, which was predicted to throw half a billion people into poverty (McCarthy, 2020). Isolation, lockdown, and social distancing (Conti, 2017; Wilder-Smith & Freedman, 2020), as well as community containment (Wilder-Smith & Freedman, 2020), are all measures used to prevent disease transmission during a pandemic. COVID-19 has precipitated a worldwide economic collapse far worse than the 2008 global financial crisis and maybe even worse than the Great Depression (Roubini, 2020). As a result of the COVID-19 outbreak, tourism is one of the industries that has been hit the hardest by travel restrictions. According to estimates, global tourist traffic could drop by 20–30%, resulting in losses of 30–50 billion USD in foreign tourism receipts (UNWTO, 2020).

Faced with this reality, the tourism industry is adapting by considering travel alternatives. Technological developments like virtual reality (VR) and augmented reality (AR) possess the capacity to bolster the tourism industry and provide a new realm of opportunities, as well as to

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capitalise on new technologies and the emergence of Virtual Tourism. Virtual Tourism (also known as "cloud tourism" in certain contexts) is defined broadly in this research to include not just virtual reality (VR) and augmented reality (AR), but also live broadcasting and streaming of tourist sites (Huang et al., 2015). Sherman and Craig (2003) describe VR as a platform comprising of interactive simulations via computers that track the user's whereabouts and activity prior to substituting or augmenting input to multiple perceptions, producing the impression of being materially or cognitively involved in the simulated experience (a virtual environment).

Value-based Adoption Model Versus Technology Adoption Model

The VAM was proposed by Kim et al. (2007) during their research on consumer adoption of the mobile internet. The VAM is established on the concept of perceived value, which is described as a user's overall assessment of a service or product's usability in accordance with perceptions of reception and availability (Zeithaml, 1988). According to Kim et al. (2007), the Technology Adoption Model (TAM) is restricted in its capacity to describe the acceptance of new information and communication technologies (ICT). Consumers are not only technology users, but also early adopters of ICT. The consumer is not the same as the user in terms of bearing the expense and risk. Besides that, the TAM has been criticised for its minimal benefit outside of the workplace and its inconsistency in a variety of situations (Kleijnen et al., 2007).

The VAM has been successfully used to examine individual behaviour in a variety of contexts, including hotel reservations (Wang & Wang, 2010), tourism (Chung & Koo, 2015), and hospitality (Kim et al., 2019). Lau, Chui, and Au (2019) used the VAM to assess the adoption of augmented reality (AR) technology in the hotel and tourism industries. The authors define perceived benefits as usefulness and enjoyment when using AR, and perceived sacrifices as technicality and captivating inputs. These components were realised to be significant predictors of the intention to adopt. Additionally, Hsiao and Chen (2017) used an extended VAM to study customer behaviour in the adoption of e-book subscription services. Likewise, the VAM has been utilised to examine human behaviour in the context of wearable devices (Yang et al., 2016), as well as smart homes (Kim et al., 2017). Sohn and Kwon (2020) also conducted a comparison of the TAM, the unified theory of technology acceptance and usage, and the VAM in the context of artificial intelligence-enabled goods, concluding that the VAM is the most suitable model for evaluating customer adoption.

When Kim et al. (2007) investigated the adoption of the mobile Internet, they classified perceived usefulness as an intrinsic factor and perceived enjoyment as an extrinsic factor. According to their research, these motivations may be perceived as "perceived benefits," which leads to a perceived value and, ultimately, to the desire to use mobile Internet services. Many previous scholars have highlighted the impact of both motives and intentions on consumers' perceived value and intention to pay for a service or buy a product (Chen & Yao, 2018; Roostika, 2012). Perceived immersion in VR is a feature that allows users to sense genuine realism throughout the experience (activity), resulting in a more in-depth understanding of the destination as compared to other conventional sources of information (e.g., two-dimensional video and pictures). Therefore, the current study proposes that perceived immersion is associated with a perceived benefit.

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Hypothesis Development

Perceived Value

Zeithaml (1988) defines perceived value as a consumer's general evaluation of a product's usability based on perceptions of reception and availability. The VAM is the perceived value that arises from an evaluation of the offering's perceived benefits and trade-offs (Kim et al., 2007). From a consumer-value perspective, many studies have shown the effects of perceived value on online travel purchases (Bonsón Ponte et al., 2015), the IoT (Hsu & Lin, 2016), and social commerce (Chen et al., 2018). Yu et al. (2019) highlighted the important role of perceived value in self-customisation service adoption, identifying it as a positive predictor of behavioural intention. Given that Virtual Tourism is a high-tech product, the current research hypothesises that consumers' positive perceptions of its usefulness will result in its adoption. Thus, consumers' perceptions of the value of Virtual Tourism may be influenced by their assessment of the perceived benefits and sacrifices associated with the adoption of Virtual Tourism.

Relationship between Perceived Usefulness and Perceived Value

The term "usefulness" denotes the users' overall perception of value from a new technology (Roger, 1995). Perceived usefulness is seen through the motivational lens of TAM as a proxy for result expectation and a measure of extrinsic motivation (Venkatesh, 1999). People evaluate the consequences of their actions based on their perceived usefulness and ground their preferences on their attractiveness. Performance expectations, such as perceived usefulness, which is oriented around task completion (Venkatesh et al., 2003), clearly show an individual's willingness to partake in an activity for the sake of external benefits. The construct of usefulness is analogous to the marketing notion of product quality, which is defined as a customer's cognitive assessment of a product's exceptionalism (Zeithaml, 1988). Pedersen et al. (2002) mentioned that the usefulness of M-Internet services influences their acceptance, highlighting the element as a critical component in the adoption of M-Internet. For example, Hsu and Lin (2016) identified the perceived usefulness of Internet of things (IoT) services as a predictor of perceived value in the context of adopting IoT services. There is also a positive connection between the perceived usefulness of technology and perceived value in many settings, such as wearable devices (Yang et al., 2016), user adoption of media tablets (Yu et al., 2017), and social businesses (Chen et al., 2018). This is supported by the recent study by Lu, et al (2022), that concluded the use of virtual tourism is beneficial to be used as an educational tools, to avoid the spread of diseases and the risk of contracting the coronavirus especially in a crowd spaces. The use of VR may thus enable consumers of VR technology to experience (work-related needs) a destination that helps them better comprehend and makes their decision-making easier without having to concern to be in public spaces. Because Virtual Tourism is a technical intervention, the perceived usefulness of using it for the experience of the location influences perceived value positively. As a result, it is hypothesised that:

H1: Perceived usefulness has a positive effect on perceived value.

Relationship between Perceived Enjoyment and Perceived Value

The term "perceived enjoyment" denotes the degree to which the activities of utilising technology are seen to be pleasurable in and of themselves, regardless of any anticipated performance consequences (Davis, 1989). According to past literature in marketing, the purchase and quality of an item may influence the emotional response or joy of the consumer (Petrick, 2002). Additionally, previous studies (Kim et al., 2007; Roostika, 2012) discovered a

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favourable correlation between perceived enjoyment of the mobile Internet and technological adoption. Previous research has also shown a significant positive link between perceived enjoyment and perceived value (Chen et al., 2018; Hsu & Lin, 2016; Liu et al., 2015). Research by Wang et al. (2018) showed that perceived enjoyment with the use of the GPS navigation app may be a key indicator of perceived value, leading to the desire to buy navigation applications. AR research in the areas of hospitality and tourism similarly identified enjoyment as an important factor in the creation of perceived value (Lau et al., 2019). As a result, consumers who find the Virtual Tourism experience enjoyable while experiencing a location may place a greater perceived value on Virtual Tourism than those who do not. Thus, this study proposes the following hypothesis:

H2: Perceived enjoyment has a positive effect on perceived value.

Relationship between Perceived Immersion and Perceived Value

According to Disztinger et al. (2017), VR technology provides a vivid sense of realism in virtual environments, increasing perceived value. Users forget their real surroundings, environment, and life in a VR world and get immersed in the action of visiting the locations. Perceived immersion may assist consumers in identifying the values and benefits of an activity (Fang et al., 2018). Customers are more likely to buy when they sense more value and advantages (Sun et al., 2016). Furthermore, when consumers are immersed in a virtual shopping environment, they may more readily experience a state of pleasure (Yim et al., 2017), and this enjoyment will directly affect their purchasing behaviour (Chen et al., 2017). Thus, if consumers were able to immerse themselves in experiencing a destination using Virtual Tourism it would have positively influenced their perceived value of Virtual Tourism. Therefore, the resultant hypothesis is advanced:

H3: Perceived immersion has a positive effect on perceived value.

Relationship between Perceived Cost and Perceived Value

The term "perceived cost" denotes the assessment of a service by comparing its values to the price of adopting the product or service. Based on previous research, perceived cost has an impact on perceived value (Kim et al., 2007; Lu & Hsiao, 2010; Roostika, 2012). Another study conducted by Niknejad et al. (2019) discovered that the perceived cost of adopting smart wearable wellness devices reduces the Malaysian population's perceived value. According to a previous study (Kim et al., 2007), perceived cost is defined as the degree to which a consumer feels that using an online content service is costly. Perceived cost is defined in this research as the economic cost that customers bear while using Virtual Tourism (e.g., head-mounted devices, the Internet). The visitor bears costs associated with the purchase of Virtual Tourism equipment and subscription fees for Internet services while using Virtual Tourism to explore tourist sites. The perceived cost of a technology's use has an inverse relationship with its perceived value. Hence, the subsequent hypothesis is propositioned:

H4: Perceived cost has a negative effect on perceived value.

Relationship between Perceived Complexity and Perceived Value

Perceived complexity refers to the extent to which a technology is perceived as being comparatively complex for humans to comprehend and utilise. Thus, perceived complexity reflects the extent to which people believe it is difficult to use a specific technology or system (Venkatesh et al., 2003; Shaik & Karjaluoto, 2015). Customers are less likely to adopt an invention if they believe it is complicated or difficult to use (Rogers, 1995; Shambare, 2013).

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Shambare (2013) discovered that complexity had a negative impact on mobile phone banking adoption among South African students in a study to identify variables influencing cell phone banking adoption. Similarly, Virtual Tourism is still in its infancy in Malaysia. Notably, its application to the experience of tourist sites is a relatively recent development. Thus, if users of Virtual Tourism believe that using it to experience a location takes an excessive amount of mental effort, their perceived value of Virtual Tourism is likely to be reduced. Consequently, consumers who view Virtual Tourism usage as a complicated process (difficult to understand or use) may have a low perceived value, resulting in a decreased desire to adopt Virtual Tourism. Accordingly, the next research hypothesis has been developed:

H5: Perceived complexity has a negative effect on perceived value.

Relationship between Perceived Physical Risk and Perceived Value

Perceived physical risk has been considered as a subtype of perceived risk in previous research. Furthermore, research has revealed that perceived physical risk has a negative influence on the perceived value of any technology (Stollery & Jun, 2017; Wu et al., 2015), highlighting the significance of perceived physical risk and its consequence on perceived value in the Airbnb context. Similar to the realm of augmented reality, consumers in the context of this research may fear that participating in Virtual Tourism will harm their physical health. Because customers may be required to wear a VR head-mounted device, they may be concerned that using the technology will cause damage to their eyes or brain. Thus, the succeeding hypothesis is put forth:

H6: Perceived physical risk has a negative effect on perceived value.

Relationship between Perceived Value and Adoption Intention

The term "adoption intention" refers to a person's expected propensity to participate in a certain behaviour (Hill et al., 1977). Perceived value is a major influencer of consumers' decisions to assist (or obstruct) accomplishing their objectives with their perceived choice for and assessment of a particular product (Woodruff, 1997). In other words, the various values perceived by the consumers affect their behaviour. As previously stated, the VAM model is predicated on a sacrifice-benefit analysis of technology usage. Travellers' overall assessments of the perceived value of a technology are formed by weighing the benefits and sacrifices associated with its use, which in turn determines their desire to embrace it. In a study on digital music services, Turel et al. (2010) discovered that greater perceived value had a favourable impact on the intention to use. This connection has significant empirical support in the literature on general marketing and information systems (Kim et al., 2007; Venkatesh et al., 2003). Thus, this research presumes the following:

H7: Perceived value has a positive effect on adoption intention.

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Proposed Conceptual Model of the Study

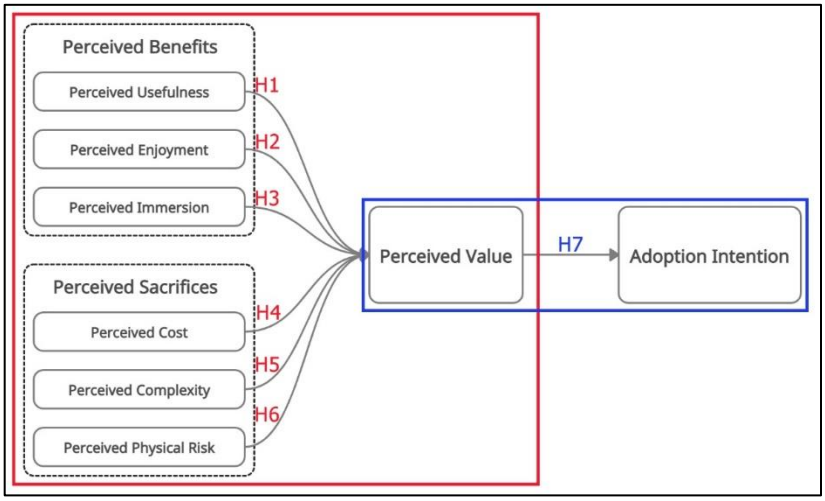

Figure 1: Proposed Conceptual Model (Value-based Adoption Model)

Source: Adopted from Kim et al. (2017)

Research Design and Sampling Technique

The current study employed a quantitative approach, collecting data via online questionnaire distribution. The sample was drawn from a group of participants selected for this study. Sekaran and Bougie (2013) used the term "population" to denote the collective people, events, or items of interest about whom a researcher plans to formulate extrapolations. This study's target population consisted of Malaysian travellers aged between 21 and 39 years old. According to the Department of Statistics Malaysia (2020), in 2019, the age group of 25 to 39 years contributed 37.8% of the total domestic tourism recipients (largest contribution), followed by the age group of 15 to 24 years old, which contributed 26.4%. With the domestic tourism survey, it was shown that the age group 25–39 years old has a high interest in travel, which means they were the suitable population for this research. According to Tobbin and Adjei (2012), the age group of 18–40 years old is considered the early adopters of mobile money services. The study by Kim and Park (2013) selected the age group of 25–34 as their target population for early adopters. Besides, the reason for including travellers between the ages of 21 and 24 in this research is that they will be included in the age group of 25–34 in the near future, in which their response to this research will be supportive as well.

Data Collection Procedure

In order to collect data from Malaysian travellers, this current study distributed a series of questionnaires via an online platform that is familiar to the consumers. The questionnaire was distributed online, primarily to Instagram and Facebook group members who are passionate about and active in travel. This implies that using purposive sampling necessitates classifying and choosing respondents or groups of participants who are knowledgeable and well-informed about the phenomenon under investigation. Apart from the respondents' knowledge and experience, their voluntary participation, their communication ability, and their opinions are also required (Wu Suen et al., 2014). The respondents should know about the product and provide a piece of good information (Sekaran & Bougie, 2010). Online distribution of questionnaires enables the researcher to collect a greater amount of data in less time and at a lower cost. Besides, it is regarded as an excellent tool for collecting standardised data (Bryman & Bell, 2011). Furthermore, the questionnaire used in this study is comprised of closed-ended

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questions that facilitate the completion of the survey, aid in statistical analysis and data summary, and are easily replicated (Bryman & Bell, 2011).

Findings on Descriptive Statistics of Respondents

The empirical data for this study was gathered through the distribution of online questionnaires. A Google form was used to create the questionnaire, which was then distributed via Facebook, Instagram, and WhatsApp. For data analysis, a total of 302 usable responses were collected. Gender distribution was almost evenly distributed among the 302 respondents, with 45.7% male and 54.3% female. The age groups 21–25 and 26–30 accounted for 81.8% of all respondents. The majority of respondents have obtained at least a Bachelor's degree (76.2%). Most respondents were Chinese (39.4%), followed by Malay (37.1%). With regard to employment status, 40.7% of the respondents were private-sector employees, and 31.1% of them were unemployed or students.

Interestingly, 45.7% of the respondents had travelled 1–2 times per year before the COVID-19 pandemic. Three videos were used to assist in illustrating the experience of Virtual Tourism to the respondents before they started answering the questionnaire. Remarkably, the Underwater Virtual Tour was the most selected video to watch (33.1%), followed by the Antarctica Virtual Tour (29.1%). About 12.9% of the respondents stated that they already understood the meaning of Virtual Tourism and chose not to watch the videos. Lastly, out of 302 respondents, 110 watched both videos in their entirety (36.4%), followed by 91 who watched more than 2 minutes of each video (30.2%).

Full Collinearity Test

Following Kock and Lynn's (2012) recommendations, one technique to test common method bias is by analysing the data's full collinearity. This method regressed all the variables to one common variable. As long as the VIF value is less than or equal to 3.3, there should be no single-source data bias. Table 1 shows that all VIF values were below 3.3, indicating that the collected data has no serious issue with single-source bias.

Table 1: Full Collinearity Testing

INT	PC	PCOM	PENJ	PIM	PPR	PU	PV
2.356	1.050	1.213	1.617	1.030	1.108	1.493	2.762

Assessment of Measurement Model

This study applied a two-step method to test the developed model, as recommended by Anderson and Gerbing (1988). This is the first phase of testing the model, in which the validity and reliability of all instruments were determined using the criteria of Hair et al. (2019) and Ramayah et al. (2018). Convergent validity was determined for the measurement model using factor loadings, average variance extracted (AVE), and composite reliability (CR). The loadings and AVE values must be no less than 0.50, while the CR should be more than or equal to 0.70. Table 2 shows the loadings of each item that surpassed Hair et al.'s (2019) recommended threshold of 0.708. Despite their low factor loadings, three items were retained: PCOM1 (0.664); PIM3 (0.631); and PU1 (0.698). According to Hair et al. (2019), loadings can also be accepted if only one or two loadings are less than 0.708. Due to low factor loadings, six items were eliminated, namely PC2, PC3, PCOM5, PENJ3, PIM4, and PPR4. All variables had AVE values between 0.585 and 0.817, exceeding the prescribed threshold of 0.50, and CR values between 0.859 and 0.947, above the prescribed threshold of 0.70. The

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factor's loadings and path coefficients obtained from PLS-Algorithm are presented in Figure 2.

Table 2: Measurement Model

CONSTRUCT	ITEM	LOADINGS	CR	AVE
Adoption Intention	INT1	0.928	0.940	0.797
	INT2	0.889		
	INT3	0.910		
	INT4	0.842		
Perceived Cost	PC1	0.877	0.887	0.724
	PC2	0.898		
	PC5	0.771		
Perceived Complexity	PCOM1	0.664	0.848	0.585
	PCOM2	0.738		
	PCOM3	0.767		
	PCOM4	0.877		
Perceived Enjoyment	PENJ1	0.908	0.947	0.817
	PENJ2	0.931		
	PENJ4	0.877		
	PENJ5	0.897		
Perceived Immersion	PIM1	0.821	0.869	0.627
	PIM2	0.910		
	PIM3	0.631		
	PIM5	0.779		
Perceived Physical Risk	PPR1	0.778	0.859	0.605
	PPR2	0.804		
	PPR3	0.813		
	PPR5	0.711		
Perceived Usefulness	PU1	0.698	0.879	0.593
	PU2	0.764		
	PU3	0.708		
	PU4	0.789		
	PU5	0.879		
Perceived Value	PV1	0.777	0.933	0.737
	PV2	0.842		
	PV3	0.904		
	PV4	0.893		
	PV5	0.871		

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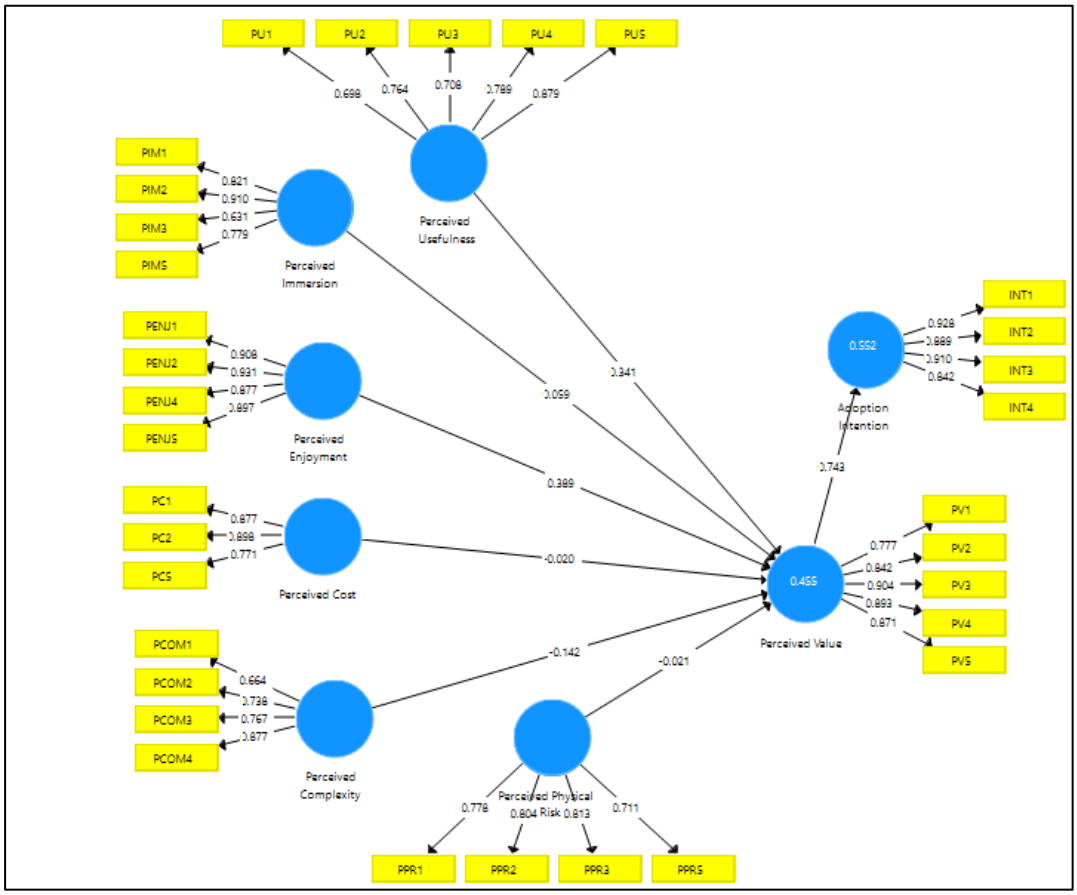

Figure 2: Evaluation of Measurement Model Through PLS Algorithm

The second approach for determining discriminant validity is the Fornell-Larcker criterion, which stipulates that each latent variable's square root of AVE should be higher than its correlation with other latent variables. Table 3 shows that all of the HTMT values were less than the strict threshold of 0.85, indicating that respondents recognised the eight constructs as being distinctive. All measuring items are demonstrated to be both valid and reliable when all validity tests are combined.

Table 3: Discriminant Validity (HTMT)

	INT	PC	PCOM	PENJ	PIM	PPR	PU	PV
INT								
PC	0.084							
PCOM	0.309	0.065						
PENJ	0.552	0.081	0.266					
PIM	0.065	0.144	0.059	0.041				
PPR	0.076	0.124	0.349	0.054	0.134			
PU	0.536	0.093	0.202	0.483	0.054	0.073		
PV	0.809	0.056	0.335	0.607	0.057	0.084	0.605	

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Assessment of Structural Model

The current research used PLS-SEM, a nonparametric statistical technique that does not require a normal distribution of data (Hair et al., 2019). The multivariate skewness and kurtosis were determined in accordance with the recommendations of Hair et al. (2017) and Cain et al. (2016). The data were not multivariate normal, as Mardia's multivariate skewness ($\beta = 5.470$, $p < 0.01$) and Mardia's multivariate kurtosis ($\beta = 85.183$, $p < 0.01$) indicate. Hair et al. (2019) proposed that path coefficients, standard errors, t-values, and p-values be provided; these values were extracted using a 5,000-sample resample bootstrapping approach (Ramayah et al., 2018). Cohen (1988) advises that R^2 be between 0.02 and 0.12 for weak, 0.03 and 0.25 for moderate, and 0.26 and above for significant. The R^2 value for perceived value is 0.455, indicating that perceived usefulness, perceived immersion, perceived enjoyment, perceived cost, perceived complexity, and perceived physical risk explain 45.5% of the variation in perceived value. The R^2 value for adoption intention (0.552) suggests that 55.2% of the variance can be explained by perceived value.

Perceived usefulness ($\beta = 0.341$, $t = 6.552$) and perceived enjoyment ($\beta = 0.389$, $t = 6.736$) positively affect perceived value, so H1 and H2 are supported. Perceived complexity ($\beta = -0.142$, $t = 2.758$) negatively affects perceived value, so H5 is supported. The effects of perceived immersion ($\beta = 0.059$, $t = 0.913$), perceived cost ($\beta = -0.020$, $t = 0.318$), and perceived physical risk ($\beta = -0.021$, $t = 0.350$) on perceived value are found to be insignificant, thereby rejecting H3, H4, and H6. Finally, H7 is accepted as perceived value ($\beta = 0.743$, $t = 24.651$) positively affects adoption intention. Table 4 summarises the criteria used to evaluate the established hypotheses.

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Table 4: Hypothesis Testing

Hypothesis	Relationship	Std. Beta	Std. Error	t-values	p-Values	Results	R^2	f^2	BCI LL	BCI UL	VIF
H1	PU → PV	0.341	0.052	6.552	<0.001	Supported	0.455	0.168	0.253	0.427	1.264
H2	PENJ → PV	0.389	0.058	6.736	<0.001	Supported		0.212	0.293	0.485	1.311
H3	PIM → PV	0.059	0.064	0.913	0.181	Not Supported		0.006	-0.083	0.128	1.018
H4	PC → PV	-0.020	0.062	0.318	0.375	Not Supported		0.001	-0.096	0.115	1.044
H5	PCOM → PV	-0.142	0.051	2.758	0.003	Supported		0.031	-0.230	-0.059	1.172
H6	PPR → PV	-0.021	0.061	0.350	0.363	Not Supported		0.001	-0.227	-0.059	1.107
H7	PV → INT	0.743	0.030	24.651	<0.001	Supported	0.552	1.232	0.685	0.787	1.000

Note: 95% confidence interval with a bootstrapping of 5,000

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Discussion

In this study, the value-based adoption model was used to inspect the factors shaping consumers' perceptions of the perceived value of Virtual Tourism. Although four of the seven hypotheses were supported, certain findings were extremely intriguing and surprising. Based on the results, perceived value has a beneficial effect on adoption intention, indicating that perceived value is a noteworthy factor in determining the intention to adopt Virtual Tourism. This finding is consistent with the Value-based Adoption Model, which asserts that perceived value is a strong predictor of new innovation adoption in the aspect of information and communication technology (Chen et al., 2018; Hsu & Lin, 2016; Kim et al., 2007). Perceived benefit elements were found to be significant predictors of perceived value. Perceived benefits seem to exhibit a stronger influence on perceived value than perceived sacrifices. Consumers' perceived value will have a positive impact if they discover that a new technology or innovation is useful to them. As a result, this study's findings specify that Malaysian travellers believe Virtual Tourism is a useful innovation for performing tourism activities and that it could serve as a substitute for physical travel. On the other hand, perceived immersion appears to be insignificant compared to perceived value. The possible reason for this is that respondents may only have had a brief and simple virtual tour experience using pricier VR devices, and thus were unable to fully immerse themselves in the virtual tour, leading them to believe that using VT to conduct tourism activities would be insufficiently immersive.

Notably, the findings of this study indicate that perceived cost and perceived physical risk have no effect on the perceived value of using Virtual Tourism. This result contradicts previous research on mobile internet services (Kim et al., 2007), which indicated that perceived cost negatively affects perceived value. According to Gong (2020), mobile broadband in Malaysia is extremely affordable, as the cost of mobile data is well below the 2% affordability threshold set by the Alliance for Affordable Internet (A4AI). As evidenced by the emergence of low-cost VR gadgets (such as Google Cardboard), perceived cost has little effect on perceived value. Inexpensive internet connections may be one possible explanation for this situation.

The current study's findings indicate that perceived complexity is the only factor of perceived sacrifices that has a negative effect on perceived value in terms of Virtual Tourism adoption. This is consistent with previous research by Kim et al. (2007) and Chung & Koo (2015). When consumers discover that a new innovation or technology is difficult for them to use or learn, they hold a negative about the innovation or technology. Consequently, perceived complexity is a critical factor that can reduce consumers' perceived value. This study's result suggests that consumers perceive the use of Virtual Tourism to be complicated and tedious.

In terms of the relationship between perceived physical risk and perceived value, this finding contradicts previous studies by Stollery and Jun (2017) and Wu et al. (2015), which discovered that perceived physical risk has a detrimental impact on perceived value. Even though the result was not statistically significant, the hypothesis was directionally supported. Nonetheless, the result is consistent with that of Kassim and Ramayah (2015) and Quintal et al. (2010). A study by Kassim and Ramayah (2015) showed that physical risk has no discernible effect on an individual's willingness to use online banking. The rationale for this result might be that Malaysian travellers are well aware of the risks associated with Virtual Tourism, and once they believe Virtual Tourism to be physically safe, they will place a high perceived value on its use. Malaysian travellers discovered that participating in Virtual Tourism has no negative effect on

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their physical health. Thus, physical risk has no bearing on the perceived value of Virtual Tourism among Malaysian travellers.

Future Research Directions and Conclusion

Theoretical Implications

As the COVID-19 outbreak led to the lockdown of the entire world, the tourism industry experienced its hardest hit ever. Virtual Tourism, which allows travellers to experience a destination without having to travel there physically, is seen as a potential solution to the situation. However, there has been a lack of theory-based studies in the aspect of Virtual Tourism adoption. The aim of this research is to explore what factors, from a consumer value perspective, may affect the adoption of Virtual Tourism. Using the Value-based Adoption Model, perceived benefits (perceived usefulness, perceived immersion, and perceived enjoyment) and perceived sacrifices (perceived cost, perceived complexity, and perceived physical risk) were identified as aspects that may influence perceived value, which in turn may influence Virtual Tourism adoption. Perceived enjoyment was the most influential variable on perceived value, followed by perceived usefulness. According to the results, perceived benefits have a higher influence on perceived value than perceived sacrifices. Consequently, tourism providers and advertisers need to emphasise ways to increase perceived benefits while reducing perceived sacrifices in order for travellers to deem Virtual Tourism as having greater value, which will result in its acceptance.

Practical and Social Implications

Malaysia's internet connection is considered relatively cheap and can be accessed easily. For this reason, this study's finding indicated that perceived cost and perceived value have no significant relationship with each other. Additionally, perceived physical risk and perceived value were found to have no significant correlation with each other. The reason may be that people are well aware of the kind of risk that they will be exposed to when using Virtual Tourism, since they understand that engaging in a virtual tour will not cause significant physical harm to them. However, perceived complexity and perceived value were found to be significantly correlated. The result indicated that the complexity of using Virtual Tourism to experience tourist sites is a barrier to adoption. Therefore, marketers should offer a comprehensive demonstration on the steps to setting up relevant devices, instruction on how to better utilise the applications, and a channel to allow consumers to communicate. There are currently several travel agencies in Malaysia that offer virtual tours. However, available virtual tour options are still insufficient due to the limited exposure to Malaysians. Hence, collaboration and support from the Ministry of Tourism, Arts, and Culture are vital in facilitating the exposure and promotion of Virtual Tourism. With that, travel agencies or marketers will be more motivated to create more options for virtual tours with better quality. In the present scenario with COVID-19, should tourism providers and marketers enhance travellers' impressions of Virtual Tourism and promote the adoption of this new form of travel, the tourism sector will be more resilient.

Limitations and Suggestions for Future Research

Even though the current study's results offer significant academic and practical contributions to the field, the study has several shortcomings that can be overcome in future research endeavours. Given that the current research model was validated using Malaysian travellers, future research can test this model to other nations or cultures to increase its generalisability or

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to determine if there are any cultural differences. Furthermore, the majority of those who took part in the survey were under the age of 30. As such, more studies on the elderly and middle-aged populations are required to determine if age has a moderating effect on the predicted model. Since Virtual Tourism is still relatively new in Malaysia, it is difficult to find respondents with ample experience. However, future researchers may replicate this study on respondents who have experienced Virtual Tourism and compare the results with those who have not. This study employed a quantitative approach to examine the adoption of Virtual Tourism. Alternatively, future research may employ a qualitative approach to ascertain why people use Virtual Tourism and what additional function or value they expect in the future should Virtual Tourism become more mainstream. Finally, this study was conducted during COVID-19 outbreak lockdown period. This restriction may indirectly affect the intent to adopt Virtual Tourism. Thus, more study is necessary when the lockdown has ended to evaluate if perceptions have shifted and whether consumers are less inclined to adopt Virtual Tourism upon the transition into endemic status after herd immunity has been obtained. It can help to encourage stay home and to limit unnecessary movement to crowded spaces in order to reduce the transmission of the virus. In conclusion, the research questions have been answered using statistical evidence, resulting in the achievement of the research objectives. This study not only provided better insight for tourism providers and marketers to better improve their products and services, but also suggested Virtual Tourism as a solution for the current COVID-19 pandemic in terms of sustaining tourism activities in the midst of a lockdown period. With regard to the global decline in the tourism industry, Virtual Tourism may substitute for conventional travel especially to the disadvantage group such as the elderly and the disable. For this reason, understanding the factors that can contribute to the adoption of Virtual Tourism is definitely a valuable research field to be pursued in forthcoming investigations.

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