Virtual Reality Tourism: Linkage Tourist Intention, Satisfaction, and Quality

Moderating Role of Gender and Visiting Experience

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ABSTRACT:

The phenomenon of Covid-19 as the pandemic era changes many factors in our social life, especially in tourist intention, satisfaction, and quality. It is important to be discussed because that phenomenon affects the development of visitor behavioral intention. Based on those backgrounds, this study aims to determine visitor behavioral intention in virtual reality (VR), including the experience with both content and system quality of satisfaction as the determinant factors. The data was obtained from 350 visitors visiting tourist destinations in the greater Bandung region, Indonesia via VR. A self-administered questionnaire was employed using an online survey. The analysis was carried out by using Partial Least Square (PLS) modeling. Results of the analysis show that the experience with content quality has an important role in shaping the behavioral intention of visiting a tourism destination via VR. Next, there is no significant difference in the moderating role of gender and VR experience on the relationships between variables in the behavioral intention model. This study broadens our understanding of the use of the information success model to assess visitor intention in VR tourism and assists practitioners in developing strategies to build and maintain visitor intention to visit and recommend VR tourism.

1. INTRODUCTION

The COVID-19 pandemic has put pressure on the tourism sector due to the changes in tourist behavior and a decrease in tourist destination visitors (LPEM-FEUI, 2020). Based on a report from GlobalWebIndex (2020), the behavior of tourists changed into choosing to travel domestically and staycation. The report from BPS (2020) states that tourist visits have decreased significantly compared to 2018 and 2019. This problem needs to be resolved because the tourism sector has an important role in state income, especially in developing countries (WTTC, 2021).

To rectify these conditions, innovation from academics and tourism practitioners is needed to create solutions that can recover tourist perceptions, the welfare of tourism actors, and the image of tourist destinations (UNWTO, 2020). One of the innovations recommended by the world tourism organization is tourism digitization (UNWTO, 2020). Therefore, tourist owners need to use technology that can transform tourist destinations into digital forms such as virtual reality (Kwok & Koh, 2020; Subawa, Widhiasthini, Astawa, Dwiatmadja, & Permatasari, 2021). Virtual reality can be described as a three-dimensional virtual environment created by integrating computers and other equipment (M. J. Kim & Hall, 2019; Kwok & Koh, 2020). In the context of tourism, this technology virtually displays tourist destinations intending to attract visiting interest from tourists using VR tourism (Kim, Lee, & Jung, 2020; Tussyadiah, Wang, Jung, & Tom Dieck, 2018). During the COVID-19 pandemic, VR tourism can reduce tourists' risk perceptions of tourist destinations by making users feel the real environment and making tourism familiar (Kim et al., 2020; Yung, Khoo-Lattimore, Prayag, & Surovaya, 2021). Based on the new normal conditions due to COVID-19 and the need for implementing virtual reality technology in the tourism sector, acknowledging and understanding the role of visitor experience on behavioral intention in the context of VR tourism are important to be considered (Javaid et al., 2020; Subawa et al., 2021).

In tourism, visitor behavioral intention and the factors that influence it are important matters to understand and acknowledge. Suhartanto, Brien, Primiana, Wibisono, and Triyuni's (2020) research on creative tourism loyalty explained that experience in tourist destinations is an important factor in influencing visitor satisfaction which in turn can lead to visitor behavioral intention. However, the experience of tourist visitors in VR tourism is different from the tourist experience in general because it is affected by two factors: the quality of the content and the system (Lee, Lee, Jeong, & Oh, 2020). Therefore, to produce a VR tourism experience that leads to behavioral intention, a good quality system and content are needed (An, Choi, & Lee, 2020; Lee, Lee, & Jeong, 2021). Thus, it can be concluded that the quality of content and systems is critical in VR tourism (Pankaj Vishwakarma, Srabanti Mukherjee, & Biplab Datta, 2020a; Yung et al., 2021) and the research tends to focus on these two things simultaneously. The lack of special attention to measuring the experience of VR tourism by using content quality and systems separately makes the literature on the influence of these two things scanty, especially concerning satisfaction and behavioral intention.

The tourism literature explains that involving the characteristics of individual visitors in the behavioral intention of VR tourism can provide important information about the

behavior of potential tourists (Kim et al., 2020; Wei, Qi, & Zhang, 2019). Previous research found that the experience of last use will affect their behavioral intention (Kim & Malhotra, 2005). Other literature explains that VR tourism's effectiveness will be felt more by VR tourism users that are familiar with the technology (Wei et al., 2019).). In addition, gender has a significant influence on the acceptance of new technology as a source of information (Vishwakarma et al., 2020a). The previous discussion can be concluded that the level of use and gender has an important influence in forming the behavioral intention of a system; in this context, it is VR tourism. However, previous research has examined the effect of gender and experience level on the formation of behavioral intention from VR tourism visitors (Pankaj Vishwakarma, Srabanti Mukherjee, & Biplab Datta, 2020b; Wei et al., 2019). However, none of the previous studies measured the level of experience using VR tourism and gender simultaneously in one study. Examining these kinds of issues is important to develop appropriate and specific strategies for creating satisfying experiences and behavioral intention through VR tourism.

Based on that research gap, this study aims to examine the behavioral intention of VR tourism visitors by measuring their experiences with VR tourism. This research was conducted with the specific objectives of (1) assessing the experience of VR tourism visitors based on the quality of the content and system; (2) evaluating visitor behavioral intention through VR tourism with variables of content quality, system quality, and satisfaction; and (3) examining the moderating role of experience level using VR tourism and gender. This study will provide a deeper understanding of the role of experience in the formation of behavioral intention in the context of VR tourism. In addition, from a practitioner's point of view, it will help VR tourism service providers develop appropriate strategies to increase and create visitor behavioral intention.

2. LITERATURE REVIEW

2.1 Virtual Reality (VR) Tourism

Virtual reality VR is a digital instrument with the purpose to help its users feel the real environment in the form of 3D image simulation (Guttentag, 2010). Several tools support VR services, namely special applications on smartphones such as Google Maps, Google Street View, and several other tools (web and mobile-based) that can help users experience a simulated environment such as virtual tours from where they live (Tussyadiah et al., 2018). The combination of sound, image, and 3D visualization makes the information conveyed in VR has more value (Tussyadiah et al., 2018). The user experience is very immersive because VR service providers can simulate realistic and complex real environments (Lee et al., 2020). With these capabilities, VR is used in various business sectors including the online retail industry, museums, and most recently tourism (M. J. Kim & Hall, 2019; M. J. Kim, Lee, & Preis, 2020).

In the tourism industry, VR is adopted for several reasons. First, VR allows visitors to interact and manage the direction of the tour in a virtual tourist destination environment. This can give users a feeling of being in a real environment so that visitors can form a strong bond with the attractions available in tourist destinations (Lee et al., 2020). Second, potential tourists can have the opportunity to visit tourist destinations without having to

travel physically so that they can attract interest to visit (Kim et al., 2020; M. J. Kim & Hall, 2019; Vishwakarma et al., 2020a). Finally, VR can reduce potential tourists' worries about tourist destinations they have never visited before, thus helping them to plan their trips comfortably (Vishwakarma et al., 2020a).

2.2 Information System Success Model Theory

DeLone and McLean (2004) propose the Information System (IS) Success model and six factors that indicate a successful information system among them. They are (1) information quality, (2) system quality, (3) service quality, (4) intention to use, (5) user satisfaction, and (6) net benefits. In the proposed model, there are three main dimensions to measure the quality of information systems, namely information quality, system quality, and service quality (DeLone & McLean, 2004). These three factors cannot be measured into one factor because it will be difficult to interpret the results. Information quality and system quality are the frequently used factors to measure the quality of information systems (Lee et al., 2020).

The IS success model has been used in various contexts to describe user acceptance of an information system. The IS model claimed that it can be useful for some activities, such as online learning (Aldholay, Isaac, Abdullah, & Ramayah, 2018), Indonesian government information systems (Mardiana, Tjakraatmadja, & Aprianingsih, 2015), homestay lodging (Rizal, Yussof, Amin, & Chen-Jung, 2018), and mobile tourism applications (Chen & Tsai, 2019). In the tourism industry, Lee et al. (2020) used the IS success model to examine the quality of information systems in virtual reality tourism. They identify the quality of the content and system as the main factors that influence the perception of VR tourism users about attitude and behavioral intention.

The IS success model has proven successful in exploring the adoption behavior of information system users and has recently been used in VR tourism (Lee et al., 2020). The study of Lee et al. (2020) proved that extended information success models such as content quality, system quality, vividness, telepresence, and attitudes affect behavioral intention. The study did not involve satisfaction which is the primary indicator in measuring the quality of a system based on DeLone and McLean (2004). Therefore, it was adopted in this study to examine and determine the factors that influence the behavioral intention of VR tourism users in Bandung.

2.3 Behavioral Intention to Visit Destination

Behavioral intention to visit a destination can be defined as a tourist motivation that can influence their behavior in the future, which means that the stronger the tourist motivation factor, the stronger the behavior that will occur towards tourist destinations (Lee et al., 2020). Based on the previous statement, Lee et al. (2020) propose behavioral intentions toward VR tourism as a motivation for VR tourism users to visit tourist destinations directly, either as a consideration, the main goal, or a future tourism plan. Previous research has confirmed that behavioral intention toward VR tourism is closely related to unique and authentic experiences (Kim et al., 2020; M. J. Kim & Hall, 2019). Based on the discussion previously explained, behavioral intention toward VR tourism can be defined as the motivation of VR tourism users towards tourist destinations for intention to visit, revisit intention during VR tourism, recommend intention, and inform positive thing.

Behavioral intention is a factor that is frequently used to measure the effectiveness of the information displayed on VR tourism as a tourism information system (Jung, Lee, Chung, & tom Dieck, 2018; Lee et al., 2020; Tussyadiah et al., 2018). From several previous studies, only Lee et al. (2020) use factors from the IS model as factors that influence behavioral intentions. The model shows that content and system quality are the main factors that influence users' positive attitudes and behavioral intentions toward VR tourism. This statement is in line with previous research (Jung et al., 2018; Kim et al., 2020; M. J. Kim & Hall, 2019) that the combination of content and systems can produce positive attitudes so that they can make users interested in visiting or using VR as a source of information. Source of tourism information. The conclusion from the previous discussion resulted in the basic influence on behavioral intention to VR tourism, namely content quality, system quality, and user satisfaction of VR tourism.

2.4 Quality of Virtual Reality: Content and System Quality

The quality of virtual reality depends on the ability of the technology to support feelings of physical displacement and the presence of psychological responses (Guttentag, 2010). Both responses are highly dependent on the quality of the content and systems displayed in VR tourism (Lee et al., 2020). The feeling of physical displacement can be a feeling of being in a tourist destination, a realistic experience, and a feeling of being on a real tour (Lee et al., 2020; Vishwakarma et al., 2020a). The presence of perceived psychological responses is feelings of flow state, emotional involvement, and attachment (Kim et al., 2020). Each response generated is influenced by different factors. For example, the sense of physical displacement is very dependent on the VR system whereas the presence of a psychological response depends on the flow and format of the VR tourism event (Guttentag, 2010).

Previous research has examined the response of VR users to the quality of VR tourism by using two main influencing factors, namely content and system (Lee et al., 2020; Wei et al., 2019). The results of previous studies show that content and system have different effects based on the statements in the last paragraph. The different roles of each factor make those factors unable to be measured into a single factor (Guttentag, 2010). Therefore, this study will use two distinct variables to measure the quality of VR tourism, namely the quality of the content and the quality of the system.

2.5 Content Quality

Content quality can be defined as the quality of information delivered in a VR information system. The criteria for quality information include the level of content accuracy, content duration, and completeness of the output (Lee et al., 2020). These criteria are in line with previous research in the context of augmented reality (Jung, Chung, & Leue, 2015). A prior study by Lee et al. (2021) measured the quality of the content displayed in VR tourism based on the visualization methods used such as images, sound, 3D visualization, video, animation, and expressions. Based on the previous discussion, it was concluded that quality content consists of a combination of various information visualizations and information accuracy.

The literature in the context of VR tourism (Lee et al., 2020) states that when VR tourism users feel the quality of the content they enjoy is high quality, it will create a positive attitude towards VR that will make them interested in visiting tourist destinations directly.

Therefore, content quality has a positive influence on the attitudes and motivation of VR tourism users (tom Dieck, tom Dieck, Jung, & Moorhouse, 2018). In the context of augmented reality, content quality has a positive influence on AR user satisfaction (Jung et al., 2015). In addition, content quality has a positive effect on behavioral intention with satisfaction as a mediation between the two variables (An et al., 2020). The opinion for the indirect influence between content quality and behavioral intention is that the quality of content will make VR tourism users interested in visiting tourist destinations if their needs and expectations are met through the quality of the content provided. Therefore, this study formulates the hypothesis that is related to the previous discussion from the perspective of VR tourism as follows:

H_1: Content Quality positively influences satisfaction toward VR tourism

H_2: Content Quality positively influences behavioral intention to visit destination towards VR tourism

2.6 System Quality

System quality is an integration between parts of the system that are interconnected to produce the best service with indications of easy access, responsive time, and a flexible system (Lee et al., 2020). In the context of augmented reality, a quality system has responsive capabilities, effective and fast performance, as well as reliable and precise services (Kowalczuk, Siepmann, & Adler, 2021). In other words, the quality of the system in VR tourism is very dependent on the perception of ease of use (Vishwakarma et al., 2020b). A proper system can help tourists interpret the information displayed in VR tourism (Jung et al., 2018). VR tourism users will enjoy VR tourism activities if the system is used without significant obstacles. Thus, it can be concluded that System quality has an integral role in VR tourism (Lee et al., 2020; Wei et al., 2019).

The VR tourism literature shows that system quality has a significant effect on satisfaction and behavioral intention (Vishwakarma et al., 2020a). With the fulfillment of the quality of the system used by VR tourism users, users will judge that the technology used is a very beneficial medium (Kowalczuk et al., 2021). In addition, previous research shows that users will be satisfied and interested in visiting tourist destinations if the system used is easy to use and can make users and service providers interact (Lee et al., 2020). Not only interested in visiting, but visitors who are satisfied with the system will use VR tourism as a medium to find information on tourist destinations (M. J. Kim & Hall, 2019) and spread good information about VR tourism to others (Beck, Rainoldi, & Egger, 2019). This discussion explains when VR tourism users feel that the system quality according to their needs will increase satisfaction and behavioral intention towards VR tourism. The following are hypotheses about system quality, satisfaction, and behavioral intention in the context of VR tourism:

H_3: System Quality positively influences satisfaction toward VR tourism

H_4: System Quality positively influences behavioral intention to visit destination towards VR tourism

2.7 Satisfaction

Satisfaction with technology is the condition of the user after using the technology. In the context of augmented reality, users will be satisfied when AR information and functions

can exceed their expectations or needs (Chung, Lee, Kim, & Koo, 2018; Jung et al., 2015). It is in line with satisfaction with VR tourism technology (Kim et al., 2020; Vishwakarma et al., 2020a). Perceived satisfaction is indicated by users having the perception that VR tourism activities are unique, authentic, and enjoyable activities. The existence of user interaction with content and systems in profitable VR tourism will increase their satisfaction with VR tourism (Wu, Ai, & Cheng, 2019). Therefore, service providers should consider fulfilling the information needs of VR tourism users to satisfy them (Huang, Backman, Backman, & Chang, 2016).

The literature shows that satisfaction has a significant role in behavioral intention (Wu et al., 2019). In addition, if users already feel that the experience of using VR tourism is satisfying, they will have the motivation to visit tourist destinations and recommend VR tourism to others (Wei et al., 2019). Other research in augmented reality (Chung et al., 2018) shows that satisfaction has a positive influence on behavioral intention. In the context of homestay research (Rizal et al., 2018), it is proven that satisfaction affects behavioral intention. Lee et al. (2020) explain that a positive attitude can create behavioral intention toward VR tourism. Therefore, this study involves satisfaction as a variable that can affect behavioral intention. The following are hypotheses related to satisfaction and behavioral intention:

H_5: Satisfaction towards VR tourism positively influences behavioral intention to visit destination towards VR tourism

2.8 Moderating role of gender and VR experience

Previous research in the context of VR tourism has carried out different research approaches to demographic characteristics such as gender (Vishwakarma et al., 2020a) and the level of experience of VR tourism users (Wei et al., 2019). Knowing the differences between each of these demographics is pivotal for developing strategies based on the two segments (M. J. Kim et al., 2020; Wei et al., 2019). Previous research that focuses on the level of familiarity of the end of VR tourism technology shows that the level of familiarity is directly proportional to the effectiveness of VR tourism (Vishwakarma et al., 2020a). Research on the adoption of VR tourism shows that females will be more interested and easily have a positive behavioral intention to VR tourism because they tend to learn and have high curiosity (Sanchez-Cabrero et al., 2019). The discussion leads to the conclusion that gender and level of experience with VR tourism will moderate the relationship between behavioral intention and the things that affect it.

H_6: The relationship between behavioral intention and its determinants is moderated by gender

H_7: The relationship between behavioral intention and its determinants is moderated by VR experience
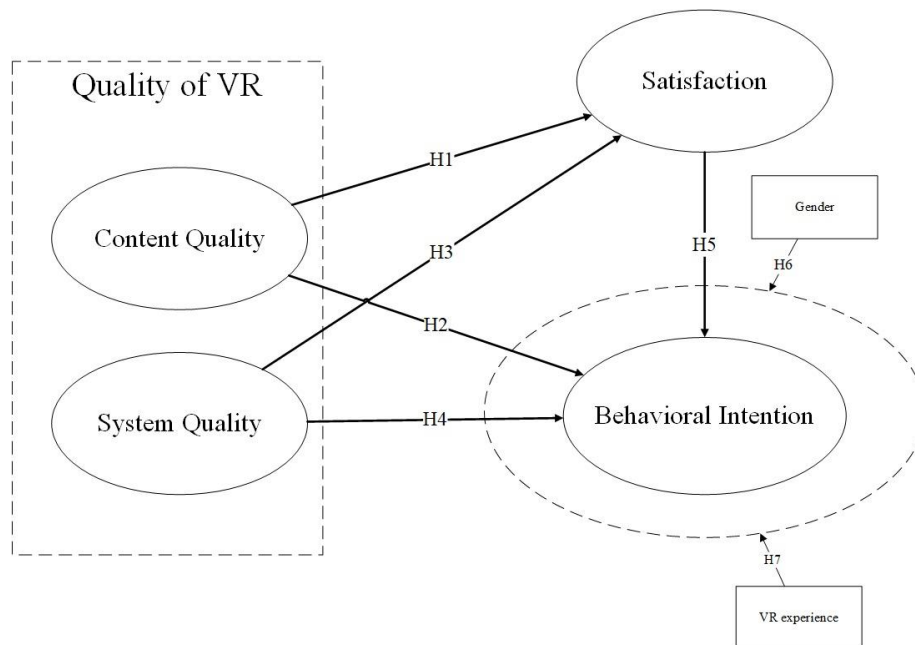
Figure 1. Model of VR tourism

3. METHODS

Online self-administered questionnaires were employed as a method to obtain data from VR tourism users in Indonesia. The questionnaire used is the result of the adoption of previous studies discussing VR tourism, such as the quality of content from Kim et al. (2020), Lee et al. (2020), and Wu et al. (2019). The quality system was adapted from Lee et al. (2020) and Wu et al. (2019). VR tourism user satisfaction researchers adopted from An et al. (2020). Meanwhile, the behavioral intention was adopted by An et al. (2020), Kim et al. (2020), and Lee et al. (2020). All constructs were tested using a Likert scale (1 means strongly disagree and 5 means strongly agree). Pre-test and data evaluation were carried out to ensure that the questionnaire used was focused on the topic of VR tourism. The results of the pre-test showed a minor improvement used in the questionnaire.

Data collection was carried out from October to December 2022. The data obtained were 350 respondents using the non-probability sampling method. This data was obtained by distributing online questionnaires via e-mail and personal messages due to the ongoing pandemic conditions. Each validated respondent has experience using VR tourism during the pandemic. Before filling out the questionnaire, respondents were asked the question, "Have you ever used VR Tourism during a pandemic?". After the participants answer the filter questions, the online questionnaire questions will be divided into several parts, namely the first statement is about the participant's experiences with the quality of content and systems in VR tourism; the second statement is about their satisfaction with VR tourism; the third statement is about behavioral intentions after using VR tourism as a medium for visiting tourist destinations; Finally, participants will be directed to fill out their profile.

The data obtained were analyzed using SPSS v.26 and smart-PLS v.3. Calculation of demographic characteristics using SPSS v.26. Meanwhile, to test the hypothesis using smart-PLS v.26. In smart-PLS v.26, there is a structural equation model (SEM) method that was

chosen to analyze the structural model and measurement model. Meanwhile, multi-group analysis was conducted to examine the role of demography on the relationship between variables in this study. PLS-SEM was chosen because it has a minimum sample size and size scale for construct validation (Nunan, Birks, & Malhotra, 2017). Also, a multi-group analysis was chosen to measure moderation because it would provide detailed results about the responses of each gender and VR experience and the differences between these demographic characteristics.

4. DATA ANALYSIS

Table 1 shows the profile of the demographic characteristics of the respondents.

Table 1. The characteristics of respondent

Variable	Description	Frequency	Percentage
Gender	Male	122	34.86%
	Female	228	65.14%
Age	<25	245	70.00%
	25-35	55	15.71%
	>35	50	14.29%
Educational	<High School	4	1.14%
	High School	116	33.14%
	Diploma	66	18.86%
	Undergraduate	150	42.86%
	Postgraduate	14	4.00%
Occupational	Government employee	20	5.71%
	Private employee	79	22.57%
	Entrepreneur	45	12.86%
	Student	188	53.71%
	Others	18	5.14%
Income	< IDR 3.000.000	246	70.29%
	IDR 3.000.000 - IDR 5.000.000	72	20.57%
	IDR 6.000.000 - IDR 10.000.000	11	3.14%
	> IDR 10.000.000	21	6.00%
VR experience	First times	202	57.71%
	2-5 times	81	23.14%
	> 5 times	67	19.14%

4.1 Measurement Model

The measurement model test is carried out to test the validity and reliability of data being tested using a conceptual model (Hair Jr, Hult, Ringle, & Sarstedt, 2016). In determining the validity, Hair Jr et al. (2016) recommend the minimum limit, namely outer loading above 0.4 and AVE 0.7. In addition, to measure discriminant validity using the Fornell-Lacker method. Data is declared to have discriminant validity if the reflective AVE value is greater than the correlation value with other variables (see Table 3) (Fornell &

Lacker, 1981). Composite Reliability (CR) was used to test the reliability with a minimum value of 0.7 (Hair Jr et al., 2016). Based on Table 2, it can be stated that the data tested is valid and reliable.

Table 2. The measurement test result

Construct/Item	Outer Loading **	CR	AVE
Content Quality		**0.912**	**0.513**
Enjoyable	0.790		
Pleasurable	0.502		
Fun	0.782		
Makes users happy	0.770		
Completely Involved	0.794		
Deeply Impressed	0.742		
Very Attached	0.792		
Provide Knowledge	0.690		
A good idea during the pandemic	0.619		
Helped the user prepare	0.617		
System Quality		**0.867**	**0.566**
Easy to maneuver or navigate	0.767		
Friendly to use	0.732		
Provide interactively	0.770		
Highly Vivid	0.711		
Highly Rich	0.778		
Satisfaction		**0.872**	**0.695**
Worthwhile experience	0.828		
Satisfying experience	0.855		
Beyond expectations experience	0.818		
Behavioral Intention		**0.879**	**0.645**
inform positive thing	0.812		
Revisit intention through VR	0.806		
Visit intention	0.760		
Recommended Intention	0.833		

Note: **All of them are significant on $p<0.01$

Table 3. Fornell-Lacker test

Variable	1	2	3	4
(1) Behavioral Intention	0.803			
(2) Content Quality	0.669	0.716		
(3) Satisfaction	0.763	0.695	0.834	
(4) System Quality	0.570	0.707	0.573	0.752

4.2 Structural Model

The next step is to conduct a structural test of the model to determine the relationship between the variables tested and to measure the quality of the relationship between variables using the coefficient path and the level of significance using the bootstrapping

method (5000 iterations) (Chin, Peterson, & Brown, 2008). The coefficient of Determination (R^2) is a subservient method for measuring the suitability of the model tested (Hair Jr et al., 2016). The value of R^2 shows that 49.7% of visitor satisfaction with VR tourism can be described by the quality of the content and the quality of the system. Meanwhile, 62.4% of behavioral intention can be explained by content quality, system quality, and satisfaction. Besides $R^2 2$, Q^2 is another important indicator in measuring the suitability of the model used. The Q^2 value of satisfaction and behavioral intention was found to be positive (0.338 and 0.394), these results indicate the model used is appropriate (Hair Jr et al., 2016).

Tenenhaus, Vinzi, Chatelin, and Lauro (2005) recommend using Goodness-of-Fit to confirm the model used. The Goodness-of-Fit value is 0.578, indicating that the model used is grouped into a large category (Hair Jr et al., 2016). Furthermore, the criteria for measuring the approximate model use several methods, namely the average block VIF (AVIF) with a limit value below 0.5 and Sysmpson's Paradox Ratio (SPR) with an accepted value of 1. The results of the analysis obtained an AVIF value of 2.178 and an SPR of 1.0. Since all conditions are met, the model used is appropriate and the analysis can be continued.

Table 4. Hypothesis testing

Path	Direct effect		Indirect effect		Total effect	
	ß	t-value	ß	t-value	ß	t-value
Content Quality -> Satisfaction (H_1)	0.580	9.238**	-	-	0.580	9.238**
Content Quality -> Behavioral Intention (H_2)	0.207	3.738**	0.325	7.352**	0.532	8.463**
System Quality-> Satisfaction (H_3)	0.163	2.4701*	-	-	0.163	2.471*
System Quality -> Behavioral Intention (H_4)	0.103	1.955	0.091	2.406*	0.194	3.026*
Satisfaction -> Behavioral Intention (H_5)	0.560	11.919**	-	-	0.560	11.919**

Note: ** $p < 0.01$; * $p < 0.05$

Table 4 illustrates the results of the analysis of the relationship between direct, indirect, and overall effects. The direct effect shows that content quality has a significant effect on satisfaction (ß = 0.580, $p < 0.01$) and behavioral intention (ß = 0.207, $p < 0.01$). Therefore, hypotheses H_1 and H_2 are accepted. The relationship between system quality and satisfaction (ß = 0.163, $p < 0.05$) was significant, while the behavioral intention was not (ß = 0.103, $p > 0.05$). It indicates that hypothesis H_3 is accepted and H_4 is rejected. Furthermore, satisfaction has a significant effect on behavioral intention (ß = 0.560, $p < 0.01$) therefore hypothesis H_5 is accepted.
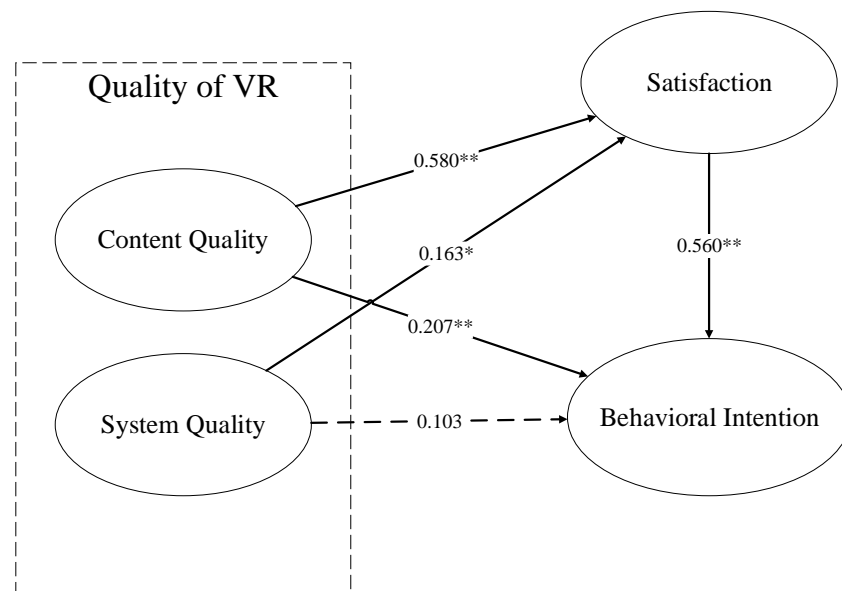
**Significant at p<0.01, *Significant at p<0.05, ------▶ not significant

Figure 1. The direct relationships between the variables examined.

4.3 Multi-Group Analysis

To test hypotheses H_6 and H_7, this study uses multi-group analysis to compare demographic characteristics based on recommendations from Matthews (2017). Gender variables were checked for cross-validity and grouped into two variables (male=1 and female=2). Meanwhile, the VR experience is grouped into three variables (first time=1, 2-5 times=2, and >5 times=3). The results of the multi-group analysis in the gender demographic group did not find a significant difference between males and females (see **Table** 5). In other words, H_6 is not accepted. **Table** 6 shows the results of the multi-group analysis that there are significant differences between first-time users and >5 times users regarding the effect of system quality on behavioral intention (ß= -0.348, p>0.95). Therefore, hypothesis H_7 is accepted partially.

Table 5. Gender Analysis

Relationship	Male	Female	Path coefficients difference (PLS-MGA)
Content Quality -> Satisfaction	0.169	0.242**	-0.074
Content Quality -> Behavioral Intention	0.635**	0.533**	0.102
System Quality-> Satisfaction	0.623**	0.518**	0.105
System Quality -> Behavioral Intention	0.130	0.086	0.044
Satisfaction -> Behavioral Intention	0.111	0.206*	-0.095

Note: ** p<0.01; *p<0.05 and PLS-MGA **p<0.01; *p>0.95

Table 6. VR experience analysis

Relationship	2-5 times	>5 times	First time	Path coefficients difference (PLS-MGA)		
				2-5 times vs >5 times	2-5 times vs First times	>5 times vs First times
Content Quality -> Behavioral Intention	0.201	0.147	0.187*	0.053	0.014	-0.040
Content Quality -> Satisfaction	0.612**	0.444*	0.632**	0.168	-0.020	-0.188
Satisfaction -> Behavioral Intention	0.450**	0.696**	0.522**	-0.246	-0.072	0.174
System Quality -> Behavioral Intention	0.219	-0.127	0.220*	0.345	-0.002	-0.348*
System Quality-> Satisfaction	0.225	0.141	0.159*	0.084	0.066	-0.018

Note: ** $p<0.01$; *$p<0.05$ and PLS-MGA **$p<0.01$; *$p>0.95$

5. DISCUSSION AND THEORETICAL IMPLICATIONS

First, this study examines the relationship between behavioral intention, content quality, system quality, and satisfaction with tourist destinations displayed in VR tourism. In addition, this study involved demographic variables such as gender and VR experience to examine the influence of demographics on the relationship between variables in this study. The results of the analysis show that content quality, system quality, and satisfaction are important factors in the formation of behavioral intentions towards tourist destinations through VR tourism. The findings in this study explain that gender roles and VR experience strengthen the relationship that occurs, especially between content quality and behavioral intention and system quality and satisfaction. Therefore, it concluded that if demography is included in the behavioral intention research model, it can act as something that strengthens the relationship that occurs but does not cause significant differences in the demographic characteristics of gender and VR experience.

Second, this study concludes that the information success model can be used in researching VR tourism, especially closely related to behavioral intention to tourist destinations. The findings from this study support previous findings (Lee et al., 2020; Wei et al., 2019; Wu et al., 2019) which state that factors that influence behavioral intention such as content quality, system quality, and satisfaction are integral factors in shaping behavioral intention. behavioral intention through VR tourism. This study explains that two notable factors in VR tourism, namely the quality of the content and the system quality have an important role in behavioral intention, although only the quality of the content has a direct influence on the formation of behavioral intention. This is evidenced by the overall effect of content quality on behavioral intention being stronger than the effect of system quality on behavioral intention. This finding is in line with previous research from Lee et al. (2020) which explains the role of content quality is more important than system quality, especially concerning behavioral intention. VR tourism visitors who have a good perception of the quality of the content displayed will have a good tendency to behavioral intention. Conceptually, the findings of this study provide a collateral understanding of the proper formation to measure the behavioral intention of VR tourism users.

Finally, the results of the analysis of the moderating role of gender and VR experience show there is no significant difference between the variables tested. It indicates that gender does not have a notable role in moderating the relationship between variables. This finding is in line with previous research from Vishwakarma et al. (2020a) which explains that there is no significant difference between males and females regarding the intention to adopt VR tourism. Similar findings in research on the effect of virtual try-on on online purchasing decisions show that gender does not have a significant difference between males and females (Zhang, Wang, Cao, & Wang, 2019). This study provides input that gender does not moderate the relationship in the behavioral intention model of VR tourism.

The moderating role of VR experience is relatively new and it is rarely discussed about its effect on one's experience in VR tourism technology. This study shows that the more experienced a person is with VR tourism technology, the less effect on behavioral intention will be smaller and will not have a significant role. It can happen because first-time users tend to satisfy their curiosity and are greatly influenced by their surroundings. Meanwhile, users more than two times will choose to use VR tourism as information to make them familiar with the tourist destinations they are going to. Theoretically, a significant difference in the influence of system quality on behavioral intention between first-time users and more than five times indicates that the more familiar VR tourism visitors are to the system used, the less behavioral intention is formed and can even make the system not have a significant influence on behavioral intention.

6. MANAGERIAL IMPLICATION

The results of this study provide direction to managerial practitioners. First, consider the obstacles that occur due to COVID-19 such as concerns about traveling and health threats that have depressed the tourism sector. This research provides the right direction to solve the problems that develop by utilizing technology for the tourism sector. Tourist destination service providers need to consider using VR tourism as a way to attract tourists to travel. This study reinforces the importance of the role of visitor experience on their behavioral intention to tourist destinations. Taking into account the important role of visitor experience, it can be useful in formulating the right marketing strategy in the context of VR tourism. The findings from this study provide an important direction on how tourist destination owners and travel service providers utilize VR tourism as an additional medium to conduct tourism marketing to restore tourism. By developing the right VR tourism, service providers will receive benefits in the form of satisfaction and positive behavioral intention towards tourist destinations.

Second, a prominent note in this study that service providers need to pay attention to is creating and increasing behavioral intention to tourist destinations through VR tourism by paying attention to the role of the quality of content and the system used. Creating a VR system that is easy to use and has the best picture and video quality requires sophisticated equipment and requires high costs as well. However, creating quality VR tourism content is both important and challenging. Travel service providers need to focus on creating quality content that can allow visitors to have a truly engaging experience and feel they are in factual tourism activity. This experience can be achieved by designing fun content. The

author recommends developing VR tourism content programs such as tourist destination quizzes, question, and answer sessions, and choosing public figures who have experience with tourist destinations to make VR tourism activities more interesting.

Third, this study found no significant difference in the behavioral intention model when using gender as a moderator. This finding recommends service providers not design gender-specific VR tourism activities to reach potential visitors. Meanwhile, for the role of VR experience, there are significant differences regarding the effect of system quality on behavioral intention. Related to this, service providers need to evaluate the first user to continue to improve the quality of the system used so that users more than once will not experience a decrease in their perception of the quality of the system used. Finally, to reach a wider market, VR tourism service providers need to carry out marketing promotion methods by utilizing Youtuber travelers by emphasizing the message that VR tourism activities are useful, educational, and fun activities for tourists. Given the popularity of the Instagram and Tiktok platforms, service providers can take advantage of these two platforms to market VR tourism activities such as Instagram stories, reels, and Tiktok 15-second videos.

7. LIMITATION AND FUTURE RESEARCH

This research has several shortcomings and limitations in expressing the experience of VR tourism visitors, especially regarding the behavioral intention of tourist destinations. The samples used in this study were collected from visitors to VR tourism destinations in the Greater Bandung area, Indonesia. Unlike tourism activities in general, visitors need to access VR tourism first to be able to become respondents in research on VR tourism. Therefore, this research cannot be generalized to all VR tourism visitors in Indonesia. The author suggests testing the model used for various virtual reality tourism activities based on tourist destinations. It is necessary to determine the perspective of VR tourism users correctly because this study only measures VR tourism in general. In addition, this study focuses on the quality of content and systems on satisfaction and behavioral intentions. Additional variables are needed for further research, especially those closely related to the pandemic, such as the level of authenticity of the content displayed, on-site user experience, and stress reduction experienced during the pandemic. To gain knowledge about the complete response of VR tourism visitors, it is necessary to conduct in-depth interviews to find out personally and in detail related to the behavior of VR tourism users. If this addition is applied, it will provide in-depth knowledge regarding VR tourism.

8. CONCLUSION

This study reveals tourist behavioral intention to tourist destinations during the COVID-19 pandemic by involving tourists' experience of VR tourism as a key influence and gender and VR experience as a moderating factor in the model tested. First, the tourist experience of VR tourism is very complex, so this study separates the quality of VR tourism into two factors, namely content, and system. The second, behavioral intention in this study was measured by behavioral intention and the results obtained that the quality of content had a superior influence than the quality of the system, either directly or indirectly. Finally,

demographic characteristics such as gender and VR experience do not moderate the overall experience of VR tourism, satisfaction, and behavioral intention. This study resulted in a supplementary understanding of how the quality of VR tourism can affect satisfaction and behavioral intention during the COVID-19 pandemic. The results of this study provide input for service providers on how to develop marketing strategies through VR. The development of literature and research on VR tourism will continue to grow and provide benefits to the tourism industry, so research on tourist behavioral intention during and after COVID-19 will be very important to do.

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