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Gaining Loyalty Intention in Virtual Reality Tourism: A Lesson from US Tourists

Faezeh Mohaghegh[a], Aditya Sobarna[b*], and Alfia Zahra Puteri[c]

[a] Lecturer, Department of Urban Planning Engineering, Islamic Azad University, Iran
[b] Marketing Research Analyst, Consultant Firm, Bandung, Indonesia
[c] Consultant, Multinational Infrastructure Firm, Bandung, Indonesia

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ABSTRACT

This study (1) evaluates the loyalty intention model in virtual reality (VR) tourism, covering VR content quality, VR system quality, and VR satisfaction as its determinants, and (2) assesses the moderating role of demographic factors in the formation of the loyalty intention model. Data was collected using an online survey from 288 US tourists that have experienced visiting tourist destinations via VR. The data analysis, using partial least square, notes that VR content quality was the strongest predictor of tourist satisfaction and loyalty intention. Next, the multi-group analysis reveals that the demographic factors tend to insignificantly moderate the relationships between tested constructs in the loyalty intention model.

KEYWORDS

Virtual reality tourism
Loyalty intention
Quality of VR tourism
VR satisfaction

INTRODUCTION

Virtual reality (VR) is a 3D simulated environment that allows users to be present in a real-life environment virtually (Kim & Hall, 2019; Loureiro, Guerreiro, & Ali, 2020). It is able to provide a full diving experience and present physically by taking advantage of audiovisual and 3D images (Hudson, Matson-Barkat, Pallamin, & Jegou, 2019; Tussyadiah, Wang, Jung, & Tom Dieck, 2018). Therefore, this extended reality technology is currently popular due to its benefit of providing a free-health risk tourist trip, especially during the COVID-19 pandemic (Kwok & Koh, 2020; Subawa, Widhiasthini, Astawa, Dwiatmadja, & Permatasari, 2021). Further, UNWTO (2020) suggests VR as a technology that can bring back tourism conditions in the post- COVID-19 pandemic. Observing the benefits offered by VR, it is important to understand how visitors' experience affects their loyalty intention towards VR tourist destinations (Hudson et al., 2019; Wu, Ai, & Cheng, 2019).

The research on loyalty intention towards tourist destinations has been vigorously observed. Nevertheless, among many factors, the impact of tourist experience towards loyalty intention is still underrated (Wu et al., 2019). Wei, Qi, and Zhang (2019) explain that tourist experience is the main influence in building satisfaction which in turn, creates loyalty intention. In VR, however, the displayed tourist destination is not real. The quality of VR tourism depends on its system and content (Wei et al., 2019). Errichiello, Micera, Atzeni, and Del Chiappa (2019) explain that a good

*Corresponding Author: aditiasobarna281098@gmail.com; doi: 10.35313/ijabr.v4i1.216

combination of VR content and system could create users' satisfaction. In the technological context, user experience with displayed content plays an important role in creating a positive response (Alzahrani, Mahmud, Ramayah, Alfarraj, & Alalwan, 2019; Chen & Tsai, 2019; Cui, Mou, Cohen, & Liu, 2019). It can be concluded that system and content are two important components in VR tourism or any other information technology (Lee, Lee, Jeong, & Oh, 2020; Wei et al., 2019); thus, they become the focus of this research.

A literature review on tourism also shows that tourists' characteristics affect their perception of VR tourism (Guttentag, 2010). Earlier research points out that loyalty intention is not solely affected by content and system quality but also by the characteristics of the tourists (Choi, Hickerson, & Lee, 2018; Pleyers & Poncin, 2020). In research of augmented reality (AR) games, continuous usage is affected by the frequency of playing and the age of the users (Jang & Liu, 2019). In the tourism context, also, understanding tourists' characteristics is important to develop a strategy for attracting new [younger] or old [older]visitors (Kim, Lee, & Preis, 2020; Pleyers & Poncin, 2020; Tussyadiah et al., 2018). Studies on tourist characteristics have been conducted by many reserachers (Kim, Lee, & Preis, 2020; Tussyadiah et al., 2018), but few have integrated content and system quality as a measurement that influences tourist loyalty intention. Additionally, they do not include tourist characteristics such as VR experience level, age, and educational background. For that reason, this research analyses demographic influences (age, experience level, education) on the formation of this particular type of loyalty intention.

Based on the research gaps, this research aims to evaluate tourist loyalty intention by considering the tourists' age, educational background, and VR experience level. This research is explicitly designed to (1) evaluate loyalty intention by integrating VR content quality, VR system quality, and VR satisfaction as the drivers, and (2) assess the moderating role of demographic factors in the formation of loyalty intention towards tourist destinations. The theoretical perspective of this research is to deliver additional knowledge about the effect of tourist demographic characteristics on the formation of loyalty intention towards VR destinations. From the practical perspective, it aims to help VR tourism service providers develop a fitting strategy to obtain and retain tourist loyalty.

LITERATURE REVIEW

Virtual Reality Tourism

VR is a digital instrument that delivers the feeling of being present in a simulated environment using VR equipment such as a head-mounted VR display (Flavián, Ibáñez-Sánchez, & Orús, 2021; Kim, Lee, & Jung, 2020). VR supporting devices such as smartphones, google cardboard, and several web and mobile-based applications enable users to feel like they are in a real environment (Flavián, Ibáñez-Sánchez, & Orús, 2019; Tussyadiah et al., 2018). Digitalized information displayed in VR is a combination of audio, visual, and 3D images which provide a multi-sensory experience to its users (Tussyadiah et al., 2018) that allows them to enter and get involved in a realistically designed environment (Pleyer & Poncin, 2020). Therefore, VR is often utilized in various business sectors such as online retail, online food delivery, and the hospitality and tourism industry (Kim & Hall, 2019; Kim, Lee, & Jung, 2020).

Tourism industries use VR due to its ability to provide several benefits for tourists. First, VR users can freely control the direction and interaction. Second, VR can stimulate the feeling of being present in the real world; this is called "telepresence". This ''telepresence" can later create emotional attachment towards all elements in the tourist destination (Lee et al., 2020). Next, VR eases the

worry and raises tourists' awareness of a destination (Lee et al., 2020; Tussyadiah et al., 2018). Especially during the ongoing COVID-19 pandemic, VR surely helps visitors to be aware of the health risks that they are going to face when visiting tourist destinations directly (Kwok & Koh, 2020). In addition, the presence of VR is important in creating a valuable experience from before, during, and after the visit (Flavián et al., 2021; Kim, Lee, & Jung, 2020). Lastly, compared to other promotion methods, VR is a better promotion medium due to its high interactivity and attractive information (Yung, Khoo-Lattimore, Prayag, & Surovaya, 2021).

Loyalty Intention in VR Tourism

Having loyal tourists is a sign of the success of the tourism industry (Hudson et al., 2019; Suhartanto, 2017). Research regarding tourist loyalty explains two perspectives to measure loyalty: the behavioral approach and the attitudinal approach. The behavioral approach sees loyalty as behavior. It is generally measured by the frequency of a tourist visiting a tourist destination. This approach is seen as fitting to measure the performance quality of a tourist destination; however, it is difficult to distinguish a truly loyal visitor from those who are simply comfortable with a destination (Suhartanto, Brien, Primiana, Wibisono, & Triyuni, 2020). The attitudinal approach (sometimes called behavioral intention), on the other hand, treats loyalty as a commitment of tourists in consuming tourism products (Wu & Cheng, 2018). The other form of this attitude is the intention to behave consumptively in the future, including the intention to visit, to continuously use, and to spread positive news (Kim, Lee, & Jung, 2020; Lee et al., 2020; Wu et al., 2019). This approach helps researchers measure the level of loyalty of each individual customer; thus, it has recently gained popularity to predict future tourist behavior (Dean & Suhartanto, 2019). For this reason, this study focusses on loyalty intention to predict future tourist behavior in the VR tourism context.

There are several models to measure the rationality of loyalty behavior, one of them is the quality-satisfaction-loyalty model. It is amongst the most acceptable models to explain loyalty intention (Liu, Hultman, Eisingerich, & Wei, 2020; Suhartanto, Dean, Chen, & Kusdibyo, 2020). This model explains that tourists' perception of VR quality leads them to satisfaction and loyalty. Therefore, in this research, tourist experience with VR tourism quality is considered the main factor to influence satisfaction and loyalty intention.

Quality in VR Tourism

Earlier studies (Kim, Lee, & Jung, 2020; Lee et al., 2020; Tussyadiah et al., 2018) have shown that tourist experience regarding VR tourism quality is complex. The complexity of VR tourism makes the experience of the system and content inseparable in the testing process. However, Diemer, Alpers, Peperkorn, Shiban, and Mühlberger (2015) state that system and content are two different aspects; thus, it is difficult to interpret them as a combination. Therefore, this research will separate the measurement of both qualities.

VR content quality refers to a quality value gained by tourists after visiting tourist destinations via VR (Wu et al., 2019). Tourists' needs and motivations vary, which is why VR tourism service providers should give good quality content to cater to those needs and motivations. However, such a goal is difficult to obtain due to the costly development of reimagining tourist destinations in virtual reality (Kwok & Koh, 2020). Another issue is that some attractions are quite difficult to be reimagined in the VR concept due to limited resources (Guttentag, 2010; Tussyadiah et al., 2018). If the destination manager could adapt quickly to the development of tourism 4.0, it is possible to provide

VR tourism with unique and attractive features despite not being the same as the actual condition (Guttentag, 2010; Wei, 2019; Yung et al., 2021). A finding of Kim, Lee, and Jung (2020) states that VR content quality can, directly and indirectly, affect the intention to visit cognitively and affectively. Further, research by Wu et al. (2019) finds that content quality can affect loyalty intention with the mediating role of tourist satisfaction. Therefore, it can be hypothesized that:

H_1: VR content quality has a direct and positive impact on VR satisfaction
H_2: VR content quality has a direct and positive impact on loyalty intention

System quality, on the other hand, refers to integrated parts of VR tourism that work simultaneously to create a good VR service quality (Lee et al., 2020). A system can be deemed as having a good quality if it is reliable, accessible, responsive, and flexible (Lee et al., 2020). Jung, Lee, Chung, and Tom Dieck (2018) explain that system is an important component in extended reality technology, especially in business. In line with the said concept, the VR system also holds a key factor because it eases tourists in interpreting information given in VR tourism. Previous studies of Lee et al. (2020) and Wu et al. (2019) say that a good system quality can be a determining factor that attracts tourists to revisit.

Past studies regarding system quality in VR tourism generally focus on influencing factors and their impacts on tourist behavior (Wei, 2019; Wu, Ai, & Cheng, 2019a). A study by Jung et al. (2015) identifies that the system quality of VR museums makes visitors feel satisfied and be loyal to the museum. A report from Wu et al. (2019) states that system quality can affect intention, with satisfaction as its mediator. Therefore, it can be hypothesized that:

H_3: VR system quality has a direct and positive impact on VR satisfaction
H_4: VR system quality has a direct and positive impact on loyalty intention

VR Satisfaction

The quality-satisfaction-loyalty model explains that aside from quality, there is another important factor that determines visitor loyalty, namely satisfaction. Visitor satisfaction is the result of a complex structure that is built upon cognitive and affective aspects (David Dean & Suhartanto, 2019). In the context of VR tourism, satisfaction occurs when visitor expectations or needs are fulfilled (Wu et al., 2019). Earlier studies (Ali, Ryu, & Hussain, 2016; D Dean, Suhartanto, & Kusdibyo, 2019; Suhartanto, Dean, et al., 2020) show that visitor experiences with an attraction during their visit can significantly affect their satisfaction and loyalty. Wu et al. (2019) explain further that VR satisfaction affects tourist loyalty intention towards VR destinations. In other words, VR satisfaction acts as a mediating variable of the relationship between content-system quality and loyalty intention. Therefore, it can be hypothesized that:

H_5: VR satisfaction has a direct and positive impact on loyalty intention

The Role of Demographic Factors

Previous literature review explains that VR visitors have different attitudes and behaviors according to their demographic characteristics (Guttentag, 2010; Loureiro et al., 2020). Age can be an important determinant of consumer attitude and behavior towards a product or service (Thaicon, Lobo, & Quach, 2016). Homburg and Giering (2001) explain that older consumer groups have a

limitation in processing information than the younger ones. This difference affects the variety of responses towards certain products or services which eventually will affect customer attitude towards loyalty. Jang and Liu (2019) state that in the context of an augmented reality game, younger users tend to have extensive knowledge regarding the technology they are using compared to those older groups. Therefore, younger users tend to have a stronger loyalty intention than older ones.

H_{4a}: The relationship between loyalty intention and its determinants is moderated by age, in such a way that it will be stronger for younger people than older people

Customer educational background also affects their buying behavior including decision-making process and purchasing (Mittal & Kamakura, 2001). A study by Evanschitzky and Wunderlich (2006) indicates that personality and characteristics can moderate four stages of loyalty, the findings show that a low education level has a stronger influence than a higher-level education. Other studies by Mittal and Kamakura (2001) and Thaicon et al. (2016) suggest that education serves as a moderating factor for satisfaction and loyalty. The integration of education as a moderating factor in the quality-satisfaction-loyalty model is still uncommon, especially in the context of VR tourism. Therefore, it can be hypothesized that:

H_{4b}: The relationship between loyalty intention and its determinants is moderated by education, in such a way that it will be stronger for less educated people than more educated people

The frequency of visitors visiting a place or doing repeated purchases affects their responses towards a certain product or service (Cho, Lee, Kim, Kee, & Choi, 2004). In the context of hospitals, Cho et al. (2004) explain that during the first visit, patients tend to be passive and do not criticize the service they receive. As they more frequently receive the service and information, they will gradually criticize it. The same goes with tourism, first-time visitors get the feeling of a strong bond since they want to directly feel what has been informed to them (Correria, Zins, & Silva, 2015). Similarly, in the context of an augmented reality game, users with less experience tend to use the game solely for entertainment. However, studies that involve the frequency of visiting or using technology are still lacking, especially in the context of VR tourism. Thus, following the suggestion from Guttentag (2010), the researcher decided to integrate the experience with VR tourism as a moderating factor in this research.

H_{4c}: The relationship between loyalty intention and its determinants is moderated by the experience of VR tourism users, in such a way that it will be stronger for inexperienced users than experienced users

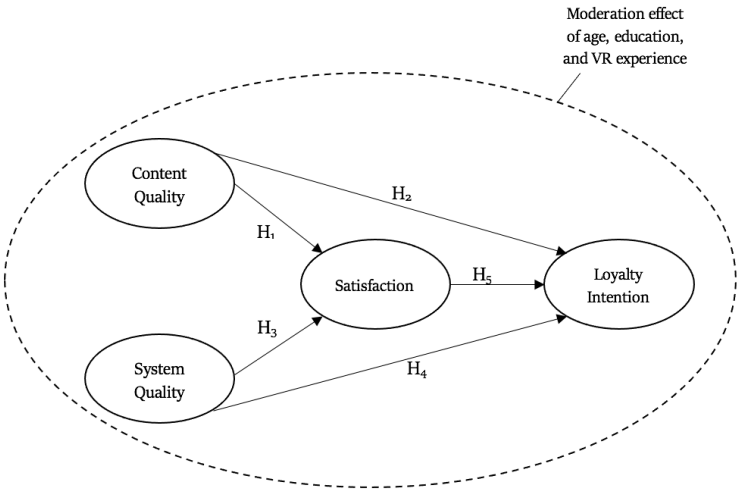

Figure 1. The quality-satisfaction-loyalty model in VR tourism

RESEARCH METHOD

This research observes the factors of VR content quality, VR system quality, VR satisfaction, and loyalty intention towards VR tourist destinations. Variables used in this research were adapted from past studies. The system quality was measured using four items adapted from (Lee et al., 2020; Wei et al., 2019). The content quality was measured using eight items (Lee et al., 2020; Wu et al., 2019). Satisfaction was measured using three items (Hudson et al., 2019; Wu et al., 2019). The loyalty intention was measured using three items (Kim & Hall, 2019; Kim, Lee, & Jung, 2020). All construct variables were tested using a Likert scale of 5-point (1: strongly disagree to 5: strongly agree). The questionnaire was evaluated beforehand by two tourism academics and pre-tested. This process provided some updates for the words used in the questionnaire.

This research focuses on tourists from the US who use VR tourism as a medium for their trips. Therefore, the samples are US tourists who have experienced visiting VR tourist destinations. The data was collected during December 2020 using the M-Turk website to avoid any health risks that might occur due to direct contact. This website was chosen due to its effectiveness and efficiency, especially regarding the health risk that could arise during the data collection (Buhrmester, Talaifar, & Gosling, 2018; Kees, Berry, Burton, & Sheehan, 2017). The process resulted in 288 responses that were further analyzed using the partial least square (PLS) method (Hair Jr, Hult, Ringle, & Sarstedt, 2016).

The analysis employed SPSS v.26 software to analyze respondents' characteristics. Next, the PLS method was conducted using SmartPLS v.3 and WarpPLS 7.0 to explain the hypotheses and evaluate the model fitness. PLS was chosen because it has the least amount of sample size criteria and uses repeating samples in measuring data distribution (Hair Jr et al., 2016). Additionally, it can measure the model theoretically (Hair Jr et al., 2016).

RESULTS

Table 1 explains the characteristics of the respondents' demographic.

Table 1. Characteristics of respondents

Variable	Description	Frequency	Percentage
Age	<25	26	9.03%
	25-35	166	57.64%
	>35	96	33.33%
Education	High School/GED	19	6.60%
	College Degree	105	36.46%
	University Degree	164	56.94%
Occupation	Government Employee	35	12.15%
	Private Employee	235	81.60%
	Entrepreneur	12	4.17%
	Student	2	0.69%
	Others	4	1.39%
VR visiting experience	First Time	94	32.64%
	2-5 Times	177	61.46%
	> 5 Times	17	5.90%

Measurement Model

There are two steps in measuring the proposed model. First, the reliability and validity of the tested construct were measured using outer loading, composite reliability (CR), Cronbach's Alpha, and average variance extracted (AVE). The result for the first step (see Table 2) shows that the data are valid and reliable since all criteria are fulfilled; outer loading > 0.6, CR value > 0.7, and AVE > 0.5 (Hair Jr et al., 2016).

Next, the discriminant validity test is needed to strengthen the data validity. This research used cross-loading. Data are said to have discriminant validity when their reflective loading value is larger than the other constructs (Hair Jr et al., 2016). The test indicates that the discriminant validity data in this research have fulfilled the determining criteria.

Table 2. Loading, composite reliability (CR), and AVE

Construct/Item	Loading**	CA/CR	AVE
VR Content Quality		0.872/0.899	0.528
Made me feel totally captivated	0.778		
It was enjoyable	0.742		
It was pleasurable	0.706		
It was fun	0.685		
I was completely involved in the destination	0.77		
I was deeply impressed with the destination	0.722		
My visiting experience VR was rewarding	0.696		
Visiting the destination was beneficial	0.711		
VR System Quality		0.723/0.828	0.546
The structure of the VR was easy to understand	0.734		
The screen was highly vivid	0.732		
The screen was highly rich	0.754		
The screen was highly detailed	0.735		
VR Satisfaction		0.671/0.820	0.604
It was a worthwhile experience	0.836		

Construct/Item	Loading**	CA/CR	AVE
It was a satisfying experience	0.778		
It was beyond my expectations	0.713		
Loyalty Intention		0.721/0.827	0.545
I will inform positive thing about using VR to visit	0.759		
I intend to revisit the destination through VR	0.773		
I intend to visit the destination	0.694		
I would recommend others to visit the destination	0.723		

Note: ** p<0.01

Structural Model

The next step is to test the structural model. Following the recommendation from Chin, Peterson, and Brown (2008), to use bootstrapping method, it needs 5.000 iterations to test the path value and significance of the indicators. Additionally, the average value and R^2 value are used to measure the fitness of the model. The R^2 value shows that 59.5% of satisfaction is affected by the content quality and system quality. Meanwhile, 61.4% show that loyalty intention is affected by content quality, system quality, and satisfaction. These findings indicate that the R^2 value of this fit is accepted (Tenenhaus, Esposito, Chatelin, & Laura, 2005).

Next, to measure the predictability of the tested indicators, this research used the Q^2 value test. The result shows the Q^2 values of 0.323 and 0.352 for content quality, system quality, satisfaction, and loyalty intention. According to Hair Jr. et al. (2016), this model's predictability value is acceptable. The goodness of fit model value is over 0.585, indicating that the effect size is large (Tenenhaus et al., 2005). Next, the approximate fit model with the average block VIF value (AVIF) is less than 0.5 and Sympson's paradox ratio (SPR) value is 1.0. The result of the said analysis shows the AVIF value is 2.342 and the SPR value is 1.0. Due to the fulfillment of each predetermined criteria, the model of this research can be said as fit.

The direct effect results shown in Table 3 indicate that content quality directly affects satisfaction ($\beta = 0.633$) and loyalty intention ($\beta = 0.404$) with the significance of $p<0.01$, indicating that H1 and H2 are accepted. Further, the observation also found the direct effect of system quality towards satisfaction ($\beta = 0.199$) and loyalty intention ($\beta = 0.218$) with the significance level of $p<0.05$, indicating that H3 and H4 are accepted. Satisfaction directly affects loyalty intention ($\beta = 0.261$) with the significance level of $p<0.01$, indicating that H5 is accepted. Lastly, the overall result shows that content quality holds the biggest effect on the satisfaction of VR users.

Table 3. Hypotheses and variable effect test

Relationship	Direct effect		Indirect effect		Total effect	
	β	t-value	β	t-value	β	t-value
Content Quality => Satisfaction (H1)	0.633**	10.744			0.633**	10.744
Content Quality => Loyalty Intention(H2)	0.404**	4.752	0.165*	3.358	0.570**	7.398
System Quality => Satisfaction (H3)	0.199*	3.059			0.199*	3.059
System Quality => Loyalty Intention (H4)	0.218*	2.821	0.052*	0.027	0.270*	3.238
Satisfaction => Loyalty Intention (H5)	0.261**	3.522			0.261**	3.522

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

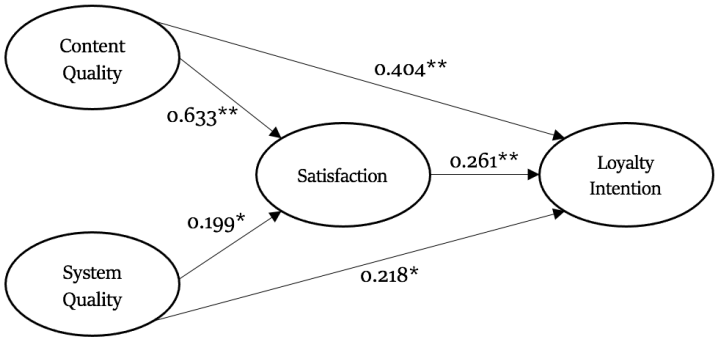

Figure 2. Direct relationships between tested variables

Multi-Group Analysis

A multi-group analysis is used to compare the path value or effect from each group of the analysis. There are three categories of groups in this analysis: tourists' age, education, and experience in using VR tourism. The multi-group analysis was conducted towards all three respondent's demographics using SmartPLS. Table 4 further presents the results.

From Table 4, it can be seen that all paths between loyalty intention and other factors affecting it are considered significant in the younger people group while the effect of system quality on satisfaction and loyalty intention is not significant in the older people group. Despite all the significant paths on younger people, they are not necessarily stronger than those on older people. Therefore, H4a is partially supported. Additionally, there are some significant differences between the two groups regarding the effect of content quality on satisfaction and system quality on loyalty intention. Table 4 further shows that older people possess a strong content quality effect on loyalty intention (ß = 0.572) and satisfaction (ß = 0.755). Young people possess a strong system quality effect on loyalty intention (ß = 0.391) and satisfaction (ß = 0.277).

In the education level category, the results of respondents with lower educational backgrounds tend to show a significant effect towards all path correlations of all tested hypotheses. This finding shows a contrast with the higher educational background category, which shows that only the effects of content quality on satisfaction (ß = 0.564) and loyalty intention (ß = 0.679) have a significant effect. The path value shown in Table 4 indicates that respondents with higher educational backgrounds showed a stronger effect of content quality on satisfaction and loyalty intention compared to those with lower educational backgrounds. Therefore, H4b is partially accepted.

In the VR experience category, it shows that respondents with minimum VR experience show a strong system quality effect on loyalty intention (ß= 0.272) and satisfaction (ß= 0.263), and satisfaction on loyalty intention (ß= 0.315). Therefore, H4c is partially accepted. Additionally, the result shows that there are no significant differences found between the two groups.

Table 4. Multi-group analysis

Path	ß		ß-diff	*p-Value*
Age	Older (n=152)	Younger (n=136)		
Content Quality -> Satisfaction	0.755**	0.502**	0.254	0.022*
Content Quality -> Loyalty Intention	0.572**	0.273*	0.299	0.069
System Quality -> Satisfaction	0.130	0.277*	-0.147	0.191
System Quality -> Loyalty Intention	0.051	0.391**	-0.340	0.007**
Satisfaction -> Loyalty Intention	0.253*	0.224*	0.029	0.852
Education	Lower (n=124)	Higher (n=164)		
Content Quality -> Satisfaction	0.553**	0.679**	0.126	0.211
Content Quality -> Loyalty Intention	0.261*	0.564**	0.303	0.049*
System Quality -> Satisfaction	0.331**	0.094	-0.237	0.058
System Quality -> Loyalty Intention	0.326*	0.117	-0.209	0.165
Satisfaction -> Loyalty Intention	0.327*	0.146	-0.181	0.197
VR experience	Inexperienced (n=108)	Experienced (n=180)		
Content Quality -> Satisfaction	0.571**	0.709**	-0.139	0.230
Content Quality -> Loyalty Intention	0.283*	0.547**	-0.264	0.105
System Quality -> Satisfaction	0.263*	0.119	0.144	0.286
System Quality -> Loyalty Intention	0.272*	0.141	0.132	0.456
Satisfaction -> Loyalty Intention	0.315*	0.195*	0.119	0.426

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

DISCUSSION

First, this research explains the relationship between VR system quality, content quality, satisfaction, and tourist loyalty intention in the context of VR tourism. The findings of this research are important, especially those regarding the experience of enjoying a trip using the VR concept. The results show that VR system quality, content quality, and satisfaction are important factors in creating tourist loyalty intention. The findings also explain that content quality and system quality have a great effect on tourist satisfaction in using VR tourism which further leads to loyalty intention. Some of the findings show a significant contribution of the extended satisfaction-loyalty model theory in the premise of VR tourism. The said contribution is when content quality and system quality can create satisfaction for the users which will make them loyal towards VR tourism. This provides an extended understanding of which factors should be further investigated by the owners or managers of tourist destinations to promote tourist attractions using VR tourism method to gain tourist loyalty intention.

Second, this research discovers three essential factors that affect VR tourist loyalty: VR content quality, system quality, and satisfaction. These findings are in line with the previous studies (Lee et

al., 2020; Wu et al., 2019) which explain that content quality and system quality are determining factors in affecting users to have loyalty intention towards VR destinations. This research then highlights that content quality has the strongest effect on satisfaction and loyalty intention. This finding is in line with Lee et al. (2020) who discover that compared to system quality, content quality has a larger influence on users' attitudes to use VR tourism. VR users will show various attitudes in experiencing something that exceeds their expectations. They will surely have the intention to behave loyally. The findings of this research provide an extended understanding of VR tourism user loyalty. Conceptually, this study gives additional information regarding the formation of loyalty intention using the experience-loyalty model in VR tourism.

Third, demographic factors have significant importance. For the older people group, it is shown that their loyalty intention is influenced by content quality and satisfaction. On the other hand, younger people value content quality and system quality. Additionally, compared to the younger one, older people perceive that content quality has a bigger influence on loyalty intention. This finding is in line with Jang and Liu's (2019) research in the AR context which shows that older people are affected by content quality in continuous usage. In the context of retail stores also, older people tend to have stronger cognitive loyalty than younger people (Evanschitzky & Wunderlich, 2006). Besides, older people tend to focus on the content they need, hence making it a significant factor in influencing their satisfaction and loyalty (Homburg & Giering, 2001). On the other hand, younger people tend to pay attention to the system since they are used to seeing and using various digital technology (Cohen, Prayag, & Moital, 2014). From this, it can be said that older people tend to be more loyal than younger people in the context of VR tourism.

Evanschitzky and Wunderlich (2006) explain that people with higher education have a special bond regarding integrated information between content and system that determines buying decisions. However, this view is not in line with the findings of this research that loyalty intention and satisfaction of higher educated people are only influenced by content quality. The explanation for this is that higher education people focus on the displayed pictures (Chi, Gursoy, & Qu, 2009). Their loyalty intention is significantly influenced by satisfaction (Schirmer, Ringle, Gudergan, & Feistel, 2018). On the other hand, people with lower education backgrounds have their loyalty intention to visit tourist destinations affected by the quality of VR content and system. This provides additional information regarding the educational background of tourists that can affect their interpretation of information provided in VR tourism.

The loyalty intention of an experienced VR user is affected by VR content quality and satisfaction. Meanwhile, in the case of an inexperienced user, it is affected by both content and system quality. Experienced AR gamers tend to continue playing by considering the content and the knowledge of the game (Jang & Liu, 2019). In the context of VR tourism, experienced VR users are dependent on content quality, which makes them seek out content that can provide cultural values of the tourist destination in the display (Errichiello et al., 2019). Additionally, they already possess various references regarding VR content quality, so it provides them with more critical thinking of the topic. On the other hand, inexperienced VR tourism users tend to try various displays and systems, which makes them more easily impressed by VR tourism displays.

CONCLUSION

This research provides extensive knowledge about the structure to build tourist loyalty intention towards VR tourist destinations. There are several constructs measured to get to know things such as content quality, system quality, satisfaction, demographic, and loyalty intention. Three main findings were discovered. First, content quality has an important role in building tourist loyalty

intention. Content should make users feel involved in the virtual tour. Second, tourist satisfaction with VR content and system makes users continuously use VR tourism. Third, there are no significant differences between demographic groups of respondents. The findings of this research expand our knowledge regarding VR tourism in the US and hopefully be able to provide a positive impact on the recovery of the tourism sector amidst the COVID-19 pandemic.

MANAGERIAL IMPLICATION

The results of this research provide a clear and essential guide for tourism practitioners. First, they give a detailed explanation that content quality and system quality are some of the determining factors in creating tourist loyalty intention towards a VR destination. Especially in the post- COVID-19 pandemic, VR tourism can serve as a solution to promote tourist destinations. It can be easily accessed from laptops and smartphones like google street view and every other application that allows tourists to experience the feeling of visiting and experiencing a different feel of a realistic environment. Thus, the owners and managers of tourist destinations should consider using VR tourism as a substitute product or a promotion media.

Second, this research notes that content quality is a determining factor in attracting tourists to continuously use or visit VR tourism. When the managers can provide captivating, enjoyable, and comfortable content to enjoy, it will surely create satisfaction which leads to the intention of loyal behavior. Service providers should focus on developing content that attracts users with an immersive experience and have them completely involved with the help of a system that is highly vivid, rich, and detailed. This suggestion will help attract users to visit the tourist destination and spread positive news to other potential VR tourism users.

Third, this research shows some significant differences in the roles of users' characteristics in formating satisfaction-loyalty. This study recommends VR tourism providers explicitly develop a segment-based strategy that has been determined beforehand. This research shows that there are different values of the path between the age and education categories regarding the influence of content quality on satisfaction and system quality on loyalty intention. It is recommended to provide the best content quality with the selection of supported applications for older people and higher educational background people. For younger users, it is recommended for providers to use specialized VR tourism equipment such as VR Head Mounted Display and augmented reality. Experienced VR tourism users give a bigger path value. Thus, providers should have a special program that invites experienced users to give their opinions regarding a strategy for developing VR tourism for beginners.

LIMITATION AND FUTURE RESEARCH

Due to some limitations, this research still requires further development. First, the sample used in this research is US visitors of VR tourist destinations. VR tourism forces visitors to have access to VR technology to be able to participate; thus, it is possible that the US virtual tourists are different from those from other countries. Therefore, the performance of VR tourism will be varied, and the results of this research may probably only represent the United States tourist destinations. To generalize the result, future research is recommended to test the loyalty intention model of VR tourism from other countries or cultures. Also, they can focus on VR tourism destinations explicitly such as cities, parks, or natural environments. It will provide in-depth knowledge so that VR tourism service

providers can develop a specific strategy for each case. Next, the analysis shows that destination loyalty intention can possibly be affected by other factors which are not included in this research, such as destination image, tourist motivation, and cost. Lastly, variables that are related to health risks due to COVID-19 also need to be included in the destination loyalty intention model to make it relevant to the current situation.

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