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TRYING BEFORE BUYING: A STUDY ON THE ADOPTION OF VR-GLASSES FOR TOURISTIC PURPOSES AND TRAVEL JOURNALISM

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VR is a new technology that contains many possibilities in different domains, such as promoting touristic destinations. Due to the increasing competition in the tourism sector, there is a need for innovative technologies to keep attracting customers. The purpose of this article is to examine which factors influence the intention to use VR glasses for touristic purposes, including travel journalism. Within this research The Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) has been used. Spatial presence was added as additional factor to the model to measure the presence within the virtual environment. An online questionnaire was set up to question and measure the intentions of respondents between 18 and 24 years old.

Analyses revealed positive impact of different variables on the intentions to use VR glasses for touristic purposes. Hedonic motivation had a positive influence on the intention to wear VR-glasses. In addition, price value and spatial presence appear to have a positive influence on the intention to purchase VR-glasses for touristic purposes. Finally, there were three factors that had a positive influence on the intention to keep using VR-glasses for touristic purposes: social influence, facilitating conditions and spatial presence. Theoretical and managerial implications are presented.

Keywords: virtual reality, destination marketing, tourism, virtual reality glasses, technology adoption, travel journalism.

Introduction

Virtual reality (VR), the generation of three-dimensional images in a computer environment [1], is a rapidly developing technology with a wide range of applications [2, 3]. The tourism sector can benefit greatly from the potential that VR offers [4, 3]. The destination market is becoming increasingly competitive [5, 6]. This forces professionals from the tourism sector to look for innovative techniques to continue to attract visitors. The use of modern technologies is therefore crucial [6]. The challenge is to convince potential tourists to visit a destination [7]. Like technologies, travelers' expectations for a great deal of immediate information are growing [8]. The emergence of modern information and communication techniques such as VR offers opportunities to attract and retain visitors. From a marketing perspective, VR has the potential to stimulate the promotion and sales of tourism services [6]. First, VR can be used in the tourism industry to provide information to consumers about destinations [1], and it can encourage potential tourists to visit their sites and attractions [6]. Tour operators can offer a simulated experience of a destination to potential travelers, allowing virtual exploration and assessment of a destination before actually visiting the location [6]. Secondly, The use of VR provides an interactive experience, unlike passive tools such as brochures and videos [9].

In recent years, the tourism industry has often faced transformation processes caused by the development and adoption of new information technologies like VR [10]. However, VR can only be successful if it is accepted and used by consumers [11]. VR changes the way potential tourists search for inspiration and travel experiences [3]. Although the market forecasts are promising, recent figures indicate that consumer acceptance for the use of VR is still limited [12]. Moreover, the acceptance of VR within the domain of tourism has hardly been studied [7]. Several studies have already studied the acceptance and use of augmented reality (AR). In VR, consumers are completely immersed in the virtual world, while when using augmented reality consumers still see the real world in front of them, with additional digital animation. This gives the consumer access to both real and virtual information [13]. Because of these differences, a separate approach is needed for VR.

Literature

VR applications were developed as early as the 1970s. However, it was only with the emergence of head-mounted displays (HMDs), such as VR glasses, that this technology became cost-effective and was introduced to the mass market [14]. VR is now more accessible to consumers, because headsets have been designed that are also suitable for smartphones [15] and affordable for consumers. Often VR headsets require a different computer device such as a smartphone [16]. Companies such as Google, Samsung and Oculus, a company owned by Facebook, have introduced affordable VR glasses in recent years and promoted this among consumers. As a result, VR has experienced a rapid diffusion [15]. VR glasses are a portable device that allows individuals to experience simulated environments [12].

Today's VR glasses are designed for personal use, this could mean a potential for mass consumption of VR experiences [17]. Modern HMDs can make viewers feel like they are in a spherical field of view [18]. The strength of the device lies in its intensity and constructed realism [19].

Technological innovations ensure that the tourism sector can meet the increasing need for experience of potential tourists [20]. The emergence and spread of the internet has helped to ensure that potential tourists perceive and consume destinations differently. The virtual world has the potential to offer a rich environment, allowing potential travelers to explore the destinations [21]. By developing communication channels with customers, tourism organizations can promote their destinations. In this way, they can try to raise awareness of potential travelers and convince them to visit the destination [5]. Travelers already develop an image and expectations about their destination before they have visited the destination. This image is based on various factors such as previous expectations, word of mouth, press releases, etc. This allows tourists to develop an image of their destination [5]. It can be interesting for the destination market to integrate VR into their marketing strategy, because it allows them to have a greater influence on the search process for information about a destination. A choice of destination is influenced by all kinds of extrinsic factors such as costs, landscape, weather, sun, climate, accommodations, etc. In contrast, intrinsic factors contribute to the decision to travel [22]. According to Sarbu et al. (2018) [22], VR has the potential to combine both, which increases the likelihood that they can influence potential travelers' decisions. According to Hirakawa, Sato, Hisazumi, and Shibata (2015) [23], besides visiting famous tour destinations, tourists also want to experience the associated environment. VR allows tourists to explore their destination before departure, thereby experiencing and evaluating the associated atmosphere and emotions [22]. In this way, VR applications can help create more realistic expectations about the destination [3]. Rainoldi et al. (2018) [3] also note that tourists can access accurate and reliable destination information through VR.

Yeh et al. (2017) [1] investigated how emotions moderated the different AIDA effects of information displays in the context of online tourism.

Only tourists with a high sense of excitement had stronger responses in VR mode than in 2D mode picture mode. VR can be an important promotional tool, but it is important to implement elements that can generate the feeling of arousal [1].

VR leads to a higher level of vibrancy and interaction compared to a 2D mode, with videos and images lacking interaction options [24, 15]. This results in an increased sense of telepresence [25, 26], which means that individuals feel present in a different destination than their actual location [27]. An increased sense of telepresence can positively influence attitudes to the brand and positively stimulate consumer purchasing intentions [24, 28, 15]. Not only vibrancy and interaction, but also user control plays a role [29]. Their research found that user control had a positive impact on evaluating a website. Because 3D-ads grant users control to evaluate a destination, consumers can experience their destination as more realistic [29, 1]. Tussyadiah et al. (2018) [28] noted an additional consequence of telepresence. Their study found that the feeling of presence led to an increased sense of pleasure.

Yeh et al. (2017) [1] state that this may be due to VR technologies that have the potential to evoke feelings of imagination and fantasy among consumers. Because consumers experience the visual experience as attractive, there can be an emotional involvement that results in a desire to visit the real destination [6]. For example, a study by Huang, Backman, Backman, and Moore (2013) [30] found that when consumers were able to navigate a virtual 3D tourist place, they experienced this as a hedonistic experience. The emotional involvement that resulted from this had a positive influence on the behavioral intention.

Hartl and Berger (2017) [14] found in their study that the feeling of being in a different environment was the key characteristic influencing the acceptance of this technology. Another finding of their study was that escapism, the opportunity to escape from everyday life, also played a role in the adoption of VR glasses.

Musil and Pigel (1994) [31], on the other hand, found that tourism is difficult to replace with VR, because they believe it is not able to completely replace seeing and feeling an experience. According to Cheong (1995) [2], the social and cultural aspect of a VR destination is also missing. Although VR can help to better tailor the destination to the traveler, Formica and Kothari (2008) [8] argue that this technology cannot replace personal service. Berger et al. (2006) [32] note that despite the increasing online sales of tourist products, people still attach importance to social interaction with a travel agent.

Due to the continuous evolution of VR, it will also be possible to allow consumers to experience full travel experiences through VR [9]. Guttentag (2010) [4] states that in the future VR has the potential to create virtual experiences as a replacement for real visits to certain destinations. VR travel documentaries can provide access to certain places that traditional tourism cannot provide. Examples of these are endangered and remote locations [4, 33]. While it is unlikely that VR will replace physical travel in the future, according to Leotta and Ross (2018) [33], Cheong (1995) [2] argues that this could make people no longer find it necessary to visit the real destination. This may result in a decrease in real world travel, as travelers choose the comfort of their own homes [8]. In addition, destinations can be protected against destruction [34]. It is important to ask the critical question here whether VR is actually able to replace real travel [4]. While Slater and Sanchez-Vives (2016) [34] emphasize that replacing travel with VR has several benefits, Vergara, Rubio, and Lorenzo (2017) [35] argue that VR experiences are often not of the same quality as effective destination visits. From a technology perspective, there are some limitations that can hinder VR travel replacement, such as short battery life, limited number of applications, and lack of con-

tinuous high-speed Internet connection [36]. In addition, VR glasses can be uncomfortable with long-term use, for example, an HMD can in some cases cause cyber disease [35].

The different generations have a different perspective on innovation and technology. The ultrasound boomers grew up with technology, in contrast to the baby boomers who can sometimes struggle to keep up with the technology because it only had a limited role in their youth [8]. I-Generation is the generation born from 1995 to the present. Rosen (2011) [37] emphasizes that people from this generation are immersed in technology from birth. This generation often finds it much easier to understand and use new technologies [38, 8]. In order to reach young consumers, companies need to be increasingly creative about communication [39]. It is important to understand the needs, perceptions and behavior of this generation, based on their knowledge and use of technology.

The emergence of new information and communication technologies has changed the way companies communicate with consumers [40]. Venkatesh, Morris, Davis, and Davis (2003) [41] noted that there were many similarities in the different models, and synthesized these 8 theories: Theory of reasoned actions (TRA), Technology Acceptance Model (TAM), Motivational Model (MM), Theory of Planned Behavior (TPB), Combined TAM and TPB (C-TAM-TPB), Model of Pc Utilization (MPCU), Innovation Difussion Theory (IDT), and Social Cognitive Theory (SCT).

Venkatesh et al. (2003) [41] formulated the Unified Theory of Acceptance and Use of Technology (UTAUT). This theory mainly predicted the behavioral intention to use a new technology in an organizational context. Nowadays, more and more technologies are used in an individual setting of use [42].

The UTAUT2 model has following variables:

Performance expectancy (PE). This concept is the degree to which an individual believes that using the technology could improve performance in his / her daily life [40, 41]. According to Kalantari (2017) [43], wireless devices, such as VR glasses, can better inform users and make better decisions. Venkatesh et al. (2003) [41] made a synthesis of 8 different models, which showed that the construct referring to performance expectancy in each model turned out to be the strongest predictor of behavioral intention. The following hypothesis has been formulated to investigate the influence of performancy expectancy on the intention to use VR glasses:

H1: Performance expectancy has a positive influence on the behavioral intention to use VR glasses.

Effort expectancy (EE). This concept is defined as the degree to which the person must make an effort to get started with the technology. It concerns the degree to which an individual feels that a technology is easy to use [41]. Factors that influence the acceptance of the AR-smartphone game Pokémon Go were investigated [44]. It was found that technologies will be used and accepted more quickly when they are easy to use [44]. If users perceive the interaction experience as simple, it can increase the acceptance of the technology. The following hypothesis has been formulated to investigate the influence of effort expectancy on the intention to use VR glasses:

H2: Effort expectancy has a positive influence on the behavioral intention to use VR glasses.

Social influence (SI). This is the degree to which an individual thinks others think he / she should use the technology. How an individual thinks others will perceive him / her can influence the individual's behavior [41]. These others are people who are important and relevant to the user [44]. It was found that «social influence» has less of an impact when use is voluntary than in an involuntary setting [41]. In a voluntary context, social influence is more commonly used to influence perceptions about the technology [41]. Since VR glasses are a new technology, we expected social influence to play a role in the intention to use VR glasses. The following hypothesis was formulated:

H3: Social influence has a positive influence on the behavioral intention to use VR glasses.

Facilitating conditions (FC). When users feel that many facilitating conditions are available, this can have a positive effect on the intention to use the technology more [41]. AR and VR have become more accessible to the mass market as a result of recent developments in wireless connectivity, smartphone sensor technologies and high-speed networks [45]. The following hypothesis follows:

H4: Facilitating conditions have a positive influence on the behavioral intention to use VR glasses.

Hedonic motivation (HM) is the degree to which the individual enjoys using the technology. Hedonistically related variables are increasingly recurring, as they become more important with new technologies that have an interactive and social character [46]. It was found that users may have an increased intention to visit the real destination if they experience the virtual environment as attractive [6]. According to a study by van der Heijden (2004) [47], hedonistic value can also play a crucial role in increasing the acceptance of information systems. Perceived pleasure and ease of use can be more decisive for the intention to use a technology [47]. Hedonic motivation is the strongest predictor of behavioral intention [44]. The hypothesis below has been formulated to determine the influence to investigate hedonic motivation on the intention to use VR glasses for tourist purposes:

H5: Hedonic motivation has a positive influence on the behavioral intention to use VR glasses.

Price value (PV). The degree to which consumers balance the perceived benefits of the technology on the one hand, and the costs associated with its use on the. When the benefits outweigh the costs, it can have a positive influence on the intention to use the new technology [47]. VR is becoming more and more accessible to the consumer [16]. Consumers will have to

put on VR glasses to use VR, but there are also several applications that are free to use [44]. The following hypothesis has been formulated in relation to price value:

H6: Price value has a positive influence on the behavioral intention to use VR glasses.

Habit (HA). This is the degree to which someone already has experience with a technology.

The following hypothesis has been formulated about habit:

H7: Habit has a positive influence on the behavioral intention to use VR glasses.

Spatial presence. A study [14] also showed that VR glasses have the ability to ensure a high level of presence compared to other technologies. The more users felt present in the virtual world, the more useful and pleasant they found the VR glasses [14]. Users' sense of presence can be influenced by a sense of control, participation, vibrancy, and enjoyment of VR [48].

That is why we include the variable spatial presence (SP) in the UTAUT2 model. The following hypothesis has been formulated about the influence of presence on the intention on the use of VR glasses:

H8: A sense of presence positively influences the behavioral intention to use *VR* glasses.

In the UTAUT-model, 4 main constructs can be discerned within the model: performance expectancy, effort expectancy, social influence and facilitating conditions. Performance expectancy, effort expectancy and social influence are direct determinants of the behavioral intention. In the UTAUT2 model, Venkatesh et al. (2012) added 3 constructs to the original UTAUT model: hedonic motivation, price value and habit. These additions increased the explained variance of the behavioral intention (Venkatesh et al., 2012).

In this study, we try to investigate the factors that explain why VR glasses are adopted or not for tourist purposes, such as exploring a future destination. The following section explains how the study was conducted.

Methods

This study uses the UTAUT2 model to study the factors that determine why consumers should or should not use VR glasses.

This research focuses on I-Generation because of the higher demands and their need for innovative marketing techniques. Moreover, this target group is also easier to reach the survey was conducted among 18 to 24 year olds. The main way to reach this target audience was through social media. A non-random sample was used. Snowball sampling was used, first with the own network was addressed via a call on the various social network sites Facebook, Instagram and LinkedIn. Afterwards, calls were also posted in school groups on Facebook. As many respondents as possible were recruited to complete the online survey on the basis of an occasional sample. The survey was completed by 386 people. After removing individuals who had not given permission, had prematurely ended the survey, or completed it in an impossible time, 351 responses remained. When we only work with answers without missing values on the variables used, the sample ultimately consisted of 334 respondents who fully completed the questionnaire. Of the 334 respondents, 248 were women (74.3 %) and 86 were men (25.7 %). The majority of respondents indicated that they were students (n = 253, 75.7 %), followed by the working status of white-collar workers (n = 50; 15.0 %). 17 respondents were work students (5.1 %), 6 respondents indicated that they were self-employed (1.8 %) and 2 respondents were unemployed (0.6 %). Finally, 6 respondents (1.8 %) indicated that they fell under the category «other». Just over half of the respondents (n = 190, 56.7 %) indicated that they were highly educated. Which means that they have at least a higher education diploma. On the other hand, the majority of respondents also state that they have a net income of less than 750 euros (n = 230, 68.9 %). Only 3 respondents indicated that they have a net income that exceeds 3,500 euros (0.9 %). This can be explained by the fact that a large number of the respondents are students. 98 respondents reported traveling less than 2 times in 2018 (28.7 %). The majority of respondents had traveled 2-4 times in 2018 (n = 177; 53.0 %), and 61 respondents reported traveling more than 4 times in 2018 (18.3 %). Only 4 % indicated that they have already used VR glasses for tourist purposes (n = 12). The other 322 respondents (96.4 %) had no experience with this.

The study used an online survey with a standardized questionnaire. In this study, only fully completed survey answers were used for the analysis. The answers to the survey were collected via Qualtrics and afterwards the results were analyzed with SPSS.

Results and Discussion

The descriptive statistics of the scores on the questionnaire are presented in Table 2. The average score on the variable social influence is lowest (M = 2.75) compared to the other variables. The variable habit has the highest average score (M = 5.08).

At the end of the survey, various intentions were examined. First, the intention to put on the VR glasses of the fair from the scenario was examined. 304 respondents (91.0 %) indicated that they would put on the VR glasses of the fair from the scenario. Only 30 respondents (9.0 %) did not intend to wear the VR glasses (M = 0.91; SD = 0.29). Subsequently, the intention to purchase VR glasses for tourist purposes was examined. Here, only 19 respondents (5.7 %) indicated that they would purchase VR glasses for tourist purposes. The other 315 respondents (94.3 %) had no intention (M = 0.06; SD = 0.23). Finally, the intention to continue using VR glasses for tourist purposes was examined. 83 respondents (24.9 %) intended to continue using the technology to explore destinations. The other 251 respondents (75.1 %) had no intention (M = 0.25, SD = 0.32).

The Pearson correlation was examined for the in-

dependent variables. The highest significant mean correlation is between the variable hedonic motivation and performancy expectancy (.698 **). All other correlations were lower. Most independent variables positively correlated with a significance level of 0.01. Habit and social influence correlated significantly positively, but only at a significance level of 0.05. Habit and facilitating conditions did not correlate significantly positively with each other. Finally, spatial presence did not correlate significantly negatively with habit. Table 2 thus shows that most independent variables are interrelated. Although we can deduce from the table that the correlations between the variables are no higher than 0.9, we check for multicollinearity using VIF and Tolerance. Multicollinearity is a problem that can occur with independent variables. It is therefore possible to investigate multicollinearity via a linear regression (Field, 2009). From this we could deduce that the independent variables did not return values for VIF greater than 10, and no values for Tolerance were less than 0.1. From this we can conclude that there is no multicollinearity between the independent variables.

H1: Performance expectancy has a positive influence on the behavioral intention to use VR glasses.

Performance expectancy does not significantly affect the intention to wear the VR glasses (B =, 307; p =, 254), the intention to purchase the VR glasses (B =, 353; p =, 423), or the intention to continue using VR glasses for tourist purposes (B =, 266; p =, 192). Hypothesis 1 is not confirmed.

H2: Effort expectancy has a positive influence on the behavioral intention to use VR glasses.

Effort expectancy does not significantly affect the intention to put on the VR glasses (B =, 278; p =, 260), purchase (B = -, 236; p, 478) or continue to use them for tourist purposes (B = -. 217; p =. 220). Hypothesis 2 is not confirmed.

H3: Social influence has a positive influence on the behavioral intention to use VR glasses.

Social influence did not significantly influence the intention to put on the VR glasses from the scenario (B = -, 176; p =, 403) and there was no significant influence on the intention to wear VR glasses. to buy (B = .187; p = .411). Social influence does have a positive significant influence on the intention to continue using VR glasses for tourist purposes (B = .278; p = .026). When more social influence is observed, the chance of continuing to use VR glasses increases. With a higher perception of social influence, the logit to continue to use VR glasses for tourism purposes versus not increases by 0.278. As social influence increases, the odds of continuing to use VR glasses for tourist purposes will increase by 0.321 (32.1 %). Hypothesis 3 is partially confirmed.

H4: Facilitating conditions has a positive influence on the behavioral intention to use VR glasses.

Facilitating conditions does not significantly affect the intention to wear the VR glasses from the scenario (B = - ,208; p = ,298) and does not affect the intention to purchase VR glasses (B = - ,029; p = ,910). Facilitating conditions does have a positive significant influence on the intention to continue to use VR glasses for tourist purposes (B =, 340; p = .010). With a higher perception of facilitating conditions, the chance of continuing to use VR glasses will increase. With a higher perception of facilitating conditions, the logit to continue to use VR glasses versus no VR glasses will increase by .340. The odds of continuing to use VR glasses for tourist purposes increase by .406 (40.6 %).

Hypothesis 4 is partially confirmed.

H5: Hedonic motivation has a positive influence on the behavioral intention to use VR glasses.

Hedonic motivation has a positive significant impact on the intention to put on the VR glasses from the scenario (B =, 563; p =, 021). A higher perception of hedonic motivation will increase the chance of wearing the VR glasses from the scenario. With a higher perception of hedonic motivation, the logit for putting on the VR glasses from the scenario versus versus not increases by 0.563. When hedonic motivation increases by 1 point, the odds of wearing the VR glasses will increase by 0.757 (75.7 %). Furthermore, hedonic motivation has no significant influence on the intention to purchase VR glasses (B =, 265; p =, 447) or to continue to use them for tourist purposes (B =, 248; p =, 155). Hypothesis 5 is partially confirmed.

H6: Price value positively affects the behavioral intention to use VR glasses.

Price value has a positive influence on the behavioral intention to use VR glasses. Price value has no significant influence on the intention to put on the VR glasses from the scenario (B = .055; p = .829). Price value does have a positive significant influence on the intention to purchase VR glasses (B = .978; p = .007). When price value is rated higher, the chance of purchasing VR glasses increases. With a higher perception of price value, the logit to buy VR glasses versus not increases by 0.978. As respondents rated price value 1 point higher, the odds of purchasing VR glasses increased by 1,660 (166 %). Finally, price value has no significant impact on the intention to continue using VR glasses (B = ,276; p = ,130). Hypothesis 6 is partially confirmed.

H7: Habit has a positive influence on the behavioral intention to use VR glasses. Habit does not have a positive significant influence on the intention to put on the VR glasses (B = ,247; p = ,190), purchase VR glasses (B = -,150; p = ,575) or continue to use for tourism purposes (B = .151; p = .273). Hypothesis 7 is not confirmed.

H8: Spatial presence has a positive influence on the behavioral intention to use VR glasses.

Spatial presence does not significantly affect the intention to put on the VR glasses from the scenario (B = -,101; p =,274). There is a significant positive influence on the intention to purchase VR glasses

(B = .796; p = .041). When spatial presence is rated higher, the chance of purchasing VR glasses increases. With a higher perception of spatial presence, the logit to purchase VR glasses increases by 0.796. With an increase in spatial presence by 1 point, the odds of purchasing VR glasses increase by 1,216 (121.6 %). In addition, there is also a positive significant influence of spatial presence on the intention to continue using VR glasses (B = .478; p = .013). Which means that the chances of continuing to use VR glasses increase as spatial presence increases. With a higher perception of spatial presence, the logit to continue to use VR glasses increases by 0.478. When spatial presence increases by 1 point, the odds of continuing to use VR glasses increase by 0.612 (61.2 %). Hypothesis 8 is partially confirmed.

This study may provide tourism professionals with a better understanding of how to build destinations in the virtual world in an informative and interactive way, with the potential to attract online and real tourists [21].

From this research we can conclude that hedonic motivation is a positive significant predictor of the intention to put on the VR glasses of the stock exchange from the scenario. Huang et al. (2013) [30] already established in their research that a hedonic experience could generate emotional involvement, which resulted in a positive influence on behavioral intention. Van der Heijden (2004) [47] also stated that it is not only important that a technology is easy to use, but that it must also be fun to use the technology. When professionals from the tourism sector want to increase the travel intentions of potential travelers, it is also important to focus on the hedonistic aspect [30]. Another conclusion that follows from this research is that price value has a positive significant effect on whether or not you intend to purchase VR glasses for tourist purposes. High prices can often be a barrier to the adoption and adoption of technologies [36]. When users feel that the benefits outweigh this, it can positively influence the intention to use the new technology [47]. Spatial presence also has a positive significant effect on the intention to purchase VR glasses for tourist purposes. Both social influence, facilitating conditions and spatial presence had a significant influence on the intention to continue using VR glasses for tourist purposes. Although Venkatesh et al. (2003) [41] stated that social influence has a lesser influence when the use is voluntary, we still see a significant positive connection here.

Venkatesh et al. (2003) [41] have already established that when users feel that many facilitation conditions are available for the technology, this may have a positive effect on the intention to use this technology more.

It was also checked for some variables. The first logistic regression shows that people who had only traveled twice or less in 2018 are more likely to wear the VR glasses from the scenario compared to people who traveled four or more times in 2018. The other category does not differ significant of the reference category. Gender and income have a significant effect on the intention to purchase VR glasses.

Finally, the study shows that people who already have experience with VR glasses within tourism are more likely to continue using VR glasses for tourist purposes.

The majority of previous studies focused primarily on AR, while only a few related to VR applications [48]. This research contributes to the literature by examining the determinants of the intention to use VR glasses for tourist purposes. This study specifically focused on using VR glasses to explore destinations. Most of the factors examined in this study have already been used in previous studies of technology adoption. However, in this study the UTAUT2 model was extended with an element that takes into account the sense of presence at the virtual destination. In this way, earlier research is expanded. This study provides insight into the factors that can influence the intention to use VR glasses for tourist purposes.

This study provides marketers with more insights to reach potential tourists in an innovative way, which is important given the contemporary competitive nature of the tourism sector [5, 6].

There are also some limitations associated with the research. As already mentioned, Herz and Rauschnabel (2019) [12] found that despite promising market predictions, consumer acceptance for the use of VR is still limited. This may mean that not all respondents were familiar with this technology. The analysis showed that only 12 respondents reported having experience with VR glasses for tourist purposes. This can make it difficult for many respondents to imagine the situation in the scenario and to answer the statements.

Another limitation of the study is that more women than men participated in the survey. In addition, the study focused only on the 18 to 24 age group. Within the age category 18–24 years surveyed, the ages were not equally distributed. This may also have had an impact on the results.

Conclusion

This study investigated the factors that influence the intention to use VR glasses for tourist purposes. The UTAUT2 model has been extended with a factor that measures the sense of presence at a virtual destination. On the basis of an online survey, we investigated the influence of the different constructs on the behavioral intention.

There was a positive significant effect of price value and spatial presence on the purchase intention of VR glasses. And finally, social influence, facilitating conditions and spatial presence had a positive significant effect on the intention to continue using VR glasses for tourist purposes. The findings of this study provide several important insights for the marketing of online tourism and travel journalism.

References

1. Yeh C.-H., Wang Y.-S., Li, H.-T., & Lin, S.-Y. The Effect of Information Presentation Modes on Tourists' Responses in Internet Marketing: the Moderating

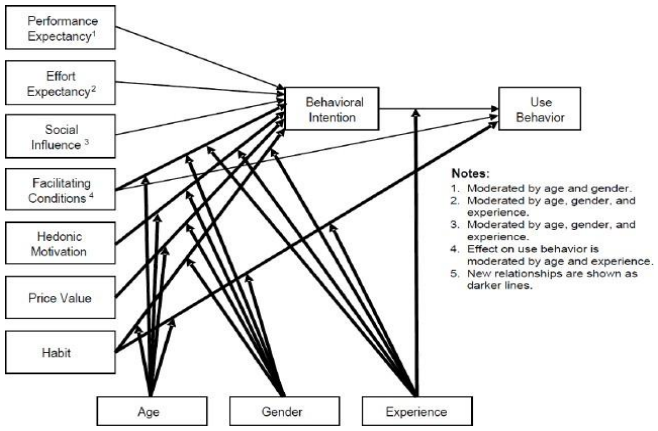

Fig. 1. UTAUT2 model (Venkatesh et al.(2012) [41])

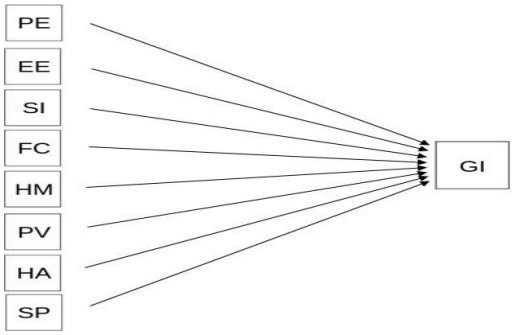

Fig. 2. Extended UTAUT2 model

Role of Emotions // Journal of Travel & Tourism Marketing, 2017. P. 1–15. doi:10.1080/10548408.2.

2. Cheong R. The Virtual Threat to Travel and Tourism // Tourism Management. 1995. № 16 (6). P. 417–422. doi:10.1016/0261-5177(95)00049-t.

3. Rainoldi M., Driescher V., Lisnevska A., Zvereva D., Stavinska A., Relota J. & Egger R. Virtual Reality: An Innovative Tool in Destinations' Marketing // The Gaze: Journal of Tourism and Hospitality. 2018. № 9. doi:10.3126/gaze.v9i0.19721.

4. Guttentag D.A. Virtual reality: Applications and Implications for Tourism. Tourism Management. 2010. № 31 (5). P. 637.

5. Buhalis D. Marketing the Competitive Destination of the Future // Tourism Management. 2000. № 21 (1). P. 97–116. doi: 10.1016/s0261-5177(99)00095-3.

6. Marasco A., Buonincontri P., van Niekerk M., Orlowski M. & Okumus F. Exploring the Role of Next-Generation Virtual Technologies in Destination Marketing // Journal of Destination Marketing & Management. 2018. № 9. P. 138–148. doi: 10.1016/j.jdmm.2017.12.002.

7. Disztinger P., Schlögl S. & Groth A. Technology Acceptance of Virtual Reality for Travel Planning // Information and Communication Technologies in Tourism 2017; R. Schegg & B. Stangl (Eds.). 2017. P. 255–268. Cham: Springer International Publishing.

8. Formica S. & Kothari T. H. Strategic Destination Planning: Analyzing the Future of Tourism // Journal of Travel Research. 2008. № 46 (4). P. 355–367. doi: 10.1177/0047287507312410.

9. Williams P. & Hobson J.S. Virtual Reality and Tourism: Fact or Fantasy? // Tourism Management. 1995. № 16(6). P. 423–427. doi: 10.1016/0261-5177(95)00050-x.

10. Sanchez-Franco M.J. & Rondan-Cataluña F.J. Virtual Travel Communities and Customer Loyalty: Customer Purchase Involvement and Web Site Design // Electronic Commerce Research and Applications. 2010. 9 (2). P. 171–182. doi: 10.1016/j.elerap. 2009.05.004.

11. Disztinger P., Schlögl S. & Groth A. Technology Acceptance of Virtual Reality for Travel Planning // Information and Communication Technologies in Tourism 2017; R. Schegg & B. Stangl (Eds.). 2017. P. 255–268. Cham: Springer International Publishing.

12. Herz M. & Rauschnabel P. A. Understanding the Diffusion of Virtual Reality Glasses: The Role of Media, Fashion and Technology // Technological Forecasting and Social Change. 2019. № 138. P. 228–242. doi: 10.1016/j.techfore.2018.09.008.

13. Billinghurst M. Augmented Reality in Education // New horizons for learning. 2002. № 12(5). P. 1–5.

14. Hartl E. & Berger B. Escaping Reality: Examining the Role of Presence and Escapism in User Adoption of Virtual Reality Glasses. Paper presented at the 25th European Conference on Information Systems (ECIS). Guimaraes. Portugal, 2017

15. Van Kerrebroeck H., Brengman M. & Willems K. When Brands Come to Life: Experimental Research on the Vividness Effect of Virtual Reality in Transformational Marketing Communications // Virtual Reality. 2017. № 21(4). P. 177–191. doi: 10.1007/s10055-017-0306-3.

16. Barnes S. Understanding Virtual Reality in Marketing: Nature, Implications and Potential. 2016. P. 1–50.

17. Tussyadiah I., Wang D. & Jia C. H. Exploring the Persuasive Power of Virtual Reality Imagery for Destination Marketing // Tourism and Travel Research Association International Conference: Advancing Tourism Research Globally. Vail Valley: CO, 2016.

18. Leotta A. & Ross M. Touring the 'World Picture': Virtual Reality and the Tourist Gaze // Studies in Documentary Film. 2018. № 12(2). P. 150–162. doi: 10.1080/17503280.2018.1503859.

19. Disztinger P., Schlögl S. & Groth A. Technology Acceptance of Virtual Reality for Travel Planning // Information and Communication Technologies in Tourism 2017; R. Schegg & B. Stangl (Eds.). 2017. P. 255–268. Cham: Springer International Publishing.

20. Chiao H.M., Chen Y.L. & Huang W.H. Examining the Usability of an Online Virtual Tour-Guiding Platform for Cultural Tourism Education // Journal of Hospitality Leisure Sport & Tourism Education. 2018. № 23. P. 29–38. doi: 10.1016/j.jhlste. 2018.05.002.

21. Huang Y.C., Backman K.F., Backman S.J. & Chang L.L. Exploring the Implications of Virtual Reality Technology in Tourism Marketing: An Integrated Research Framework // International Journal of Tourism Research. 2016. № 18 (2). P. 116–128. doi: 10.1002/jtr.2038.

22. Sarbu R., Alecu F. & Dina R. Social Media Advertising Trends in Tourism // Amfiteatru Economic. 2018. № 20. P. 1016–1028. doi: 10.24818/ea/2018/s12/1016.

23. Hirakawa G., Sato G., Hisazumi K. & Shibata Y. Data Gathering System for Recommender System in Tourism // Proceedings 2015 18th International Conference on Network-Based Information Systems; L. Barolli, M. Takizawa, H. H. Hsu, T. Enokido & F. Xhafa (Eds.). 2015.P. 521–525.

24. Li H., Daugherty T. & Biocca F. Impact of 3-D Advertising on Product Knowledge, Brand Attitude, and Purchase Intention: The Mediating Role of Presence // Journal of Advertising. 2013. № 31(3). P. 43–57. doi: 10.1080/00913367.2002.10673675.

25. Coyle J.R. & Thorson E. The Effects of Progressive Levels of Interactivity and Vividness in Web Marketing Sites // Journal of Advertising. 2001. № 30(3). P. 65–77. doi: 10.1080/00913367.2001.10673646.

26. Hyun M.Y. & O'Keefe R.M. Virtual Destination Image: Testing a Telepresence Model // Journal of Business Research. 2012. № 65(1). P. 29–35. doi: 10.1016/j.jbusres.2011.07.011.

27. Boas Y. Overview of Virtual Reality Technologies. Paper Presented at the Interactive Multimedia Conference. Southhampton, 2013.

28. Tussyadiah I., Wang D., Jung T.H. & tom Dieck M.C. Virtual Reality, Presence, and Attitude Change: Empirical Evidence from Tourism // Tourism Management. 2018. № 66. P. 140–154. doi: 10.1016/j.tourman.2017.12.003.

29. Jacob C., Guéguen N. & Petr C. Media Richness and Internet Exploration // International Journal of Tourism Research. 2010. № 12 (3). P. 303–305. doi: 10.1002/jtr.773.

30. Huang Y.-C., Backman S.J., Backman K.F. & Moore D. Exploring User Acceptance of 3D Virtual Worlds in Travel and Tourism Marketing // Tourism Management. 2013. № 36. P. 490–501. doi: 10.1016/j.tourman.2012.09.009.

31. Musil S. & Pigel G. Can Tourism be Replaced by Virtual Reality Technology? Paper presented at the Information and Communications Technologies in Tourism. Vienna, 1994.

32. Berger H., Dittenbach M., Merkl D., Bogdanovych A., Simoff S. & Sierra C. Opening New Dimensions for e-Tourism // Virtual Reality. 2006. № 11(2-3). P. 75–87. doi: 10.1007/s10055-006-0057-z.

33. Leotta A., & Ross M. (2018). Touring the 'World Picture': virtual reality and the tourist gaze. Studies in Documentary Film. 12(2). 150–162. doi:10.1080/17503280.2018.1503859.

34. Slater M. & Sanchez-Vives M.V. Enhancing Our Lives with Immersive Virtual Reality // Frontiers in Robotics and Ai. 2016. № 3. doi: 10.3389/frobt.2016.00074.

35. Vergara D., Rubio M. & Lorenzo M. On the Design of Virtual Reality Learning Environments in Engineering // Multimodal technologies interaction. 2017. № 1(2). P. 11.

36. Rauschnabel P.A., Brem A. & Ro Y. Augmented Reality Smart Glasses: Definition, Conceptual Insights, and Managerial Importance. Working Paper. The University of Michigan-Dearborn, College of Business, 2015.

37. Rosen L.D. Teaching the iGeneration // Educational Leadership. 2011. № 68 (5). P. 10–15.

38. Fenich G.G., Scott-Halsell S. & Hashimoto K. An Investigation of Technological Uses by Different Generations As It Relates to Meetings and Events: A Pilot Study // Journal of Convention & Event Tourism. 2011. № 12(1). P. 53–63. doi: 10.1080/15470148.2010.550839.

39. Williams K. & Page R. Marketing to the Generations // Journal of Behavioral Studies in Business. 2011. № 3(1). P. 37–53.

40. Rauschnabel P.A. & Ro Y.K. Augmented Reality Smart Glasses: An Investigation of Technology Acceptance Drivers // International Journal of Technology Marketing. 2016. № 11 (2). P. 123–148.

41. Venkatesh V., Morris M.G., Davis G.B. & Davis F.D. User Acceptance of Information Technology: Toward a Unified View // Mis Quarterly. 2003. № 27 (3). P. 425–478.

42. Yang S. Understanding Undergraduate Students' Adoption of Mobile Learning Model: A Perspective of the Extended UTAUT2 // Journal of Convergence Information Technology. 2013. № 8 (10). P. 969.

43. Kalantari M. Consumers' Adoption of Wearable Technologies: Literature Review, Synthesis, and Future Research Agenda // International Journal of Technology Marketing. 2017. № 12 (3). P. 274–307.

44. Harborth D. & Pape S. Exploring the Hype: Investigating Technology Acceptance Factors of Pokemon Go // Proceedings of the 2017 Ieee International Symposium on Mixed and Augmented Reality; W. Broll, H. Regenbrecht & J.E. Swan (Eds.). P. 155–168, 2017.

45. Hannam K., Butler G. & Paris C.M. Developments and Key Issues in Tourism Mobilities // Annals of Tourism Research. 2014. № 44. P. 171–185. doi: 10.1016/j.annals.2013.09.010.

46. Tom Dieck D., Tom Dieck M.C., Jung T. & Moorhouse N. Tourists' Virtual Reality Adoption: an Exploratory Study from Lake District National Park // Leisure Studies. 2018. № 37(4). P. 371–383. doi: 10.1080/02614367.2018.1466905.

47. Van der Heijden H. User Acceptance of Hedonic Information Systems. Mis Quarterly. 2004. № 28(4). P. 695–704.

48. Wei W., Qi R. X. & Zhang L. Effects of Virtual Reality on Theme Park Visitors' Experience and Behaviors: A Presence Perspective // Tourism Management. 2019. № 71. P. 282–293. doi: 10.1016/j.tourman.2018.10.024

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ПРИМЕРКА ПЕРЕД ПОКУПКОЙ: ИССЛЕДОВАНИЕ ПО ВНЕДРЕНИЮ VR-ОЧКОВ В ТУРИСТИЧЕСКИХ ЦЕЛЯХ И ДЛЯ ТРЭВЕЛ-ЖУРНАЛИСТИКИ

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Виртуальная реальность – новая технология, содержащая множество возможностей в различных областях, таких как продвижение туристических направлений, в том числе для трэвел-журналистики. В связи с растущей конкуренцией в секторе туризма существует потребность в инновационных технологиях для дальнейшего привлечения клиентов. Цель статьи – изучить, какие факторы влияют на намерение использовать очки виртуальной реальности в туристических целях. В рамках исследования была использована Единая теория принятия и использования Технологии 2 (UTAUT2). Пространственное присутствие было добавлено в качестве дополнительного фактора к модели для измерения присутствия в виртуальной среде. Для опроса и оценки намерений респондентов (18–24 года) создана онлайн-анкета.

Анализ выявил положительное влияние различных переменных на намерения использовать очки виртуальной реальности в туристических целях. Гедоническая мотивация оказала положительное влияние на намерение носить VR-очки. Кроме того, ценовая ценность и пространственное присутствие, по-видимому, оказывают положительное влияние на намерение приобрести VR-очки для туристических целей. Выявлено три фактора, положительно повлиявших на намерение продолжать использовать VR-очки в туристических целях: социальное влияние, благоприятные условия и пространственное присутствие. Представлены теоретические и управленческие выводы.

Ключевые слова: виртуальная реальность, целевой маркетинг, туризм, очки виртуальной реальности, внедрение технологии, трэвел-журналистика.

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