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Virtual reality tourism experiences: Addiction and isolation

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ABSTRACT

This qualitative research note reports two neglected themes in research on virtual reality tourism experiences, i.e. its potentially addictive nature and temporary sense of isolation. Existing work on virtual reality tourism experiences has applied existing knowledge and theories and has solely tested how VR applications can positively mediate or moderate the tourist experience. This study adopted an inductive approach, analyzing contents of reviews and blogs, and consequently uncovered a temporary sense of isolation and the addictive nature of virtual reality as hidden themes within virtual reality tourism experiences. We stress the importance of further work on addiction and a sense of isolation in terms of their nature, role, and effects.

1. Introduction

Virtual Reality (VR) experiences in tourism can have multiple purposes and benefits. Tourists can experience VR applications designed for marketing purposes, entertainment, education, accessibility, and heritage preservation. Existing work on VR tourism experiences generally regards VR tourism experiences exclusively as a way to positively mediate or moderate the tourist experience (e.g., Bogicevic, Seo, Kandampully, Liu, & Rudd, 2019; Kim, Lee, & Jung, 2018; Wei, Qi, & Zhang, 2019). Unlike earlier work on VR tourism, we took an inductive approach, allowing us to uncover potentially neglected aspects in the literature on VR tourism experiences.

The concept of the tourist experience is interpreted in multiple ways (Knobloch, Robertson, & Aitken, 2014). Researchers generally distinguish between hedonic and eudaimonic experiences (Knobloch, Robertson, & Aitken, 2017). Hedonic experiences are about creating as much positive emotions as possible, within a certain time frame. This also means avoiding negative emotions, unless these are coupled with positive ones, such as in the case of thrill-seeking activities, where fear is combined with excitement (e.g., Mura, 2010). Eudaimonic experiences are regarded as more engaging in a meaningful way (Knobloch et al., 2017) and typically involve a more personal connection to places, activities, and events, such as in roots travel (Higginbotham, 2012) or volunteer tourism (Zahra & Mcintosh, 2007).

The existing body of work on VR and tourism experiences takes two approaches to the subject: either a conceptual model based on a range of concepts is constructed (Bogicevic et al., 2019; Tussyadiah, Jung, & Dieck, 2018; Wei et al., 2019) or specific theories are used to test VR applications (Huang, Backman, Backman, & Chang, 2015; Kim et al., 2018). In general, these studies find that VR applications in tourism can mediate the tourist experience positively, regardless of the type of tourist experience at hand, and that VR can thus be used as a successful marketing tool for tourism destinations and companies.

The existing work on VR tourism experiences addresses solely potentially positive effects of VR, mostly in terms of marketing applications (e.g., Huang et al., 2015). Whereas the more general tourism literature on tourist experiences has recently called for more study of negative emotional responses of tourist experiences (Nawijn & Biran, 2019; Oren, Shani, & Poria, 2021), the VR literature has ignored this call up to now. Yet negative emotional states are important to consider as these may negatively affect the experience in hedonic contexts or could be considered positively in certain eudaimonic contexts, especially when experiences are viewed as meaningful by tourists (Nawijn & Biran, 2019).

2. Methodology

This qualitative study analyzed the contents of online reviews and blogs of tourists about their VR tourism experiences. These VR tourism experiences, or simulations, all concerned tourism activities (e.g. a trip to Mars, a VR hotel kiosk experience, a theme park ride). This study adopted an approach that is more inductive than deductive in nature. In doing so, we derived concepts from the data (Braun & Clarke, 2006).

In our study we followed the VR characterisation of Guttentag (2010,

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p. 638), who defined VR as "the use of a computer-generated 3D environment […] that one can navigate and possibly interact with, resulting in real-time simulation of or more of the user's five senses." This definition thus excludes augmented reality applications, in which a real image of reality is enhanced via a computer-generated tool. Another important criterium for our sampling was that VR experiences were included when these required the use of a head-mounted display covering the user's eyes, thus excluding VR applications on computers such as Second Life tourism experiences.

In line with a qualitative approach (Braun & Clarke, 2006), we purposely sampled VR tourism experiences that captured a wide range of types of activities and holiday trips. We limited our sample to experiences that included a fully immersive VR, meaning that the VR experience had to include a head-mounted display covering at least the user's eyes and sometimes also their ears. The blogs and reviews were found by using a wide range of keywords/sentences in search engines. Some examples include "virtual reality experience tourism" and "I tried virtual reality on vacation." Most virtual reality simulations included sight and sound. Touch was incorporated when controllers were used. Taste and smell were usually not included. The languages used were English and Dutch, as these are the languages spoken by the authors at the level of native speaker.

Texts were only used when they provided enough content and when it could be established that the VR tourism experience was taken completely voluntarily and there were no indications that the blogs or reviews were paid for. A total of 32 blogs and 39 reviews were included, totalling approximately 37,500 words. This represents a unit large enough to be considered as a whole, but at the same time small enough to be kept in mind as a context for meaning during the analysis process (Braun & Clarke, 2006). The texts of the online reviews and blogs were anonymised by removing any names of individuals. Individuals are referred to as a "user," "blogger," or "reviewer" in the results section.

The data were analyzed via open coding, focused coding, and thematic coding, in line with guidelines proposed by Braun and Clarke (2006). The codes represent a feature of the data, either semantic content or latent. By studying the focused codes, themes were developed. This thematic analysis included looking for similarities, removing repetition, and establishing commonalities. Consequently, the data were organized into meaningful themes.

The themes derived from the data often matched earlier established concepts in VR research and research on tourism experiences, such as flow (Wei et al., 2019), storytelling (Petkova & Ehrsson, 2008), interaction (Wu, 2007), design elements (Kim et al., 2018), and novelty (Mitas & Bastiaansen, 2018). However, two new themes emerged, i.e., addiction and isolation, which we will discuss in detail next.

3. Results and discussion

Addiction. A recurring theme in the data was that VR tourism experiences seem to contain an addictive component. Many users expressed that they were reluctant to leave the simulation. Some users were even willing to sell belongings to finance their own VR setup: "I stared out the window at the famous Strip as I considered selling furniture to finance and make room for my own VR setup … This is what addiction feels like, I was sure of it." Others expressed feelings of not wanting to end the experience: "My VR rollercoaster experience is over, but I don't want it to be." Some users are hooked after their first experience: "Frankly, I wasn't all that excited to try it. But after my first experience, I was hooked." This addictive component makes users curious about the future. A blogger articulated this as follows: "What worlds unexplored, what experiences unexperienced are simply waiting for us, just there, around the corner?" Tourists are reluctant to end the VR tourism experience and they are eager to repeat the VR tourism experience. Although tourists generally appreciate their holiday trips, consequently shaping a preference for more trips (cf. Van Boven & Ashworth, 2007), this addictive behavioural component observed here seems to be stronger. The addictive element of "real" vacations is generally less strong, with the exception of hypermobile tourists (Cohen & Gössling, 2015). A proper discussion of addiction is mostly absent from the tourism literature. When addiction is addressed, it often concerns addiction in the traditional sense of substance dependency, for instance when assessing the risk of an increase in drug-addicted locals through incoming tourism (Tosun, 2002). While current understanding of addiction is also related to behaviours such as gaming, exercising, shopping, sex, or eating, addiction in tourism is only discussed in relation to the addictive use of air transport by tourists (Cohen & Gössling, 2015).

Isolation. Temporary feelings of isolation were mentioned often when putting on the goggles. Users had fun, but they felt on their own in the VR environment and not connecting in the way they wanted. "Does wearing bulky goggles that preclude face-to-face contact really bring you closer to friends and family? Or does it create distance and isolation?" Unpleasant, claustrophobic feelings were regularly reported. A blogger referred to this feeling as follows: "It certainly didn't leave me with a warm fuzzy feeling as I took off the VR headset. The whole thing only lasted about 7 min, but at the end of it I was glad to get back to my own reality. Finally, a blogger concluded: "In this world, you're alone. Like a visit to the moon, it's impossible to describe VR to someone who's never been there. The technology isn't just physically isolating – in some ways it divides us emotionally, too."

We found that tourists feel a sense of isolation during VR tourism experiences. Isolation in relation to VR has not been studied in tourism contexts yet. In domains other than tourism, VR and its relation to isolation has been studied. For instance, in the medical world, VR applications have been used with the intention to reduce isolation, for instance in patients with aphasia, although it did not affect their social isolation (Marshall et al., 2016). A sense of isolation was observed earlier in the domain of collaborate e-learning (Monahan, Mcardle, & Bertolotto, 2008). Users are unable to receive instant feedback or interact naturally with others, which results in feelings of isolation (cf. Boulos, Taylor, & Breton, 2005). This temporary sense of isolation in VR tourism experiences also has a positive side. It potentially explains the strong willingness to recommend the use of such a VR experience to others.

Temporary isolation is an important theme in the VR tourism experience. Users are unable to receive instant feedback and VR applications lack opportunities to interact naturally, which may result in feelings of isolation (cf. Boulos et al., 2005). The extent to which someone feels socially isolated is known as subjective isolation (Cacioppo & Cacioppo, 2014). According to Cacioppo and Cacioppo (2014), feelings of isolation can lead to stress in the short run and to detrimental effects on health and well-being in the long run. It is unlikely, however, that this is the case for VR tourism experiences. The sense of isolation is mainly due to being closed off from the real world and it disappears mostly right after the VR tourism experience. Regardless, we know very little of tourists and isolation in general. Early work by Crompton (1981) on social group roles suggested that holiday trips can reduce loneliness. Our study suggests the opposite is the case for VR tourism experiences, albeit likely only temporarily.

Future research. Although there is currently limited awareness among tourists of VR tourism experiences, there seems to be an increased supply and demand of VR tourism experiences (Bogicevic et al., 2019), which underscores the necessity to study potentially harmful addictive effects. (Cohen, Higham, & Cavaliere, 2011).

Future academic work should study this isolation of tourists in more detail, especially in relation to possible stressors and health effects. Applied research needs to consider ways of preventing this sense of isolation, possibly by adding more options for interaction during the VR tourism experience. An important research question to be addressed here is: how is isolation related to loneliness and other (potential) effects of temporary isolation in VR tourism experiences?

The role of addiction in VR tourism experiences requires further

attention. Although addiction is a common issue and topic of research in areas such as gaming, (e.g., Chou & Ting, 2004), it is relatively new in tourism. This novelty aspect could be a reason for the addictive tendency, as the addiction seemed to concern the VR experience rather than the exact context of a specific VR tourism experience. However, we did not observe any indications in the data that repeat users expressed less excitement in their reviews. Furthermore, we know from the field of (traditional) computer games that extreme immersion and flow can be seen as causes of, or indicators of, addiction (e.g., Chou & Ting, 2004). The most important question for future research appears to be: how addictive are VR tourism experiences and what is the role of novelty?

Cohen et al. (2011) concluded that there is a growing negative discourse surrounding "binge" flying. The discourse surrounding VR tourism experience is generally hopeful and positive. VR tourism experiences are seen as useful for entertainment, education, accessibility, and heritage preservation (Guttentag, 2010). Our study suggests that a wider discussion in tourism academia is needed, and that perhaps a different discourse, of tourism behaviour and behavioural addiction is required. In terms of practice, health professionals have included a wider contextual scope in relation to addictions in recent years. However, VR experiences form a neglected context herein. Further research by health professionals is needed to determine the exact causes and prevalence of addiction to VR experiences in general.

Limitations. This study has some limitations. First, this study analyzed blogs and online reviews. Likely, tourists who had a very positive or negative experience are more eager to blog or post reviews (Park & Nicolau, 2015). There is also a risk that certain blogs or reviews were paid for by the experiences or sites involved.

4. Conclusion

Existing work on virtual reality tourism experiences has solely tested how VR applications can positively mediate or moderate the tourist experience and has exclusively used deductive approaches. Our study added to this existing literature by adopting an inductive approach, which allowed us to uncover two important new themes that possibly drive the VR tourism experience. These are its addictive ability and a temporary sense of isolation, which both require further study in terms of their nature, role, and effects.

Impact statement

This study contributes to the design and use of VR for tourism experiences. In terms of design, it is crucial to take measures to prevent temporary sense of isolation through, for instance, allowing interaction between users. Regarding its use by tourism industry professionals, VR tourism experiences should be designed in such a way that these are enjoyable to experience. However, measures should be taken to prevent addictive effects. Health professionals currently use VR mostly as an alternative method in treatment but need to consider VR as a possible source of addiction also.

Credit author statement

Celine Merkx: Writing – Original Draft, Investigation, Formal Analysis, Conceptualization, Methodology. **Jeroen Nawijn:** Supervision, Methodology, Writing – Review & Editing.

Declaration of competing interest

None.

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