Chapter 13
Virtual Reality (VR) and Augmented Reality (AR) Technologies for Accessibility and Marketing in the Tourism Industry

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ABSTRACT

The study investigated the roles of virtual reality (VR) and augmented reality (AR) for accessibility and marketing in tourism. Literature is reviewed in this exploratory study and examples of VR and AR for accessibility and marketing in the tourism industry are presented. The review was conducted with two perspectives: accessibility role and marketing role of VR and AR technologies in the tourism industry. As a result of reviewing, these technologies have both strengths and weaknesses for accessibility in tourism. VR has both strengths such as a secure environment, alternative access, and weaknesses such as user neglect, high cost. Similarly, AR has both strengths such as knowledge enrichment, enhancement of experience, and weaknesses such as high cost, lack of security. The high cost of both technologies restricts accessibility and marketing. Also, VR and AR have benefits as reducing strategy costs, attracting tourists with gamification strategies, ease of brand promotion, building brand loyalty, collecting data, and customized product development in tourism marketing.

INTRODUCTION

Virtual reality (VR) and Augmented Reality (AR) technologies, pioneers of modern times, are now used in all fields and sectors, from communication to automotive, military to tourism, though previously entertainment-oriented, despite reaching out to previous years. Among emerging technologies such as

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VR and AR can be used for various purposes, such as knowledge enrichment, experience enhancement, learning, and training facilitation (Jung et al., 2016; Kounavis et al., 2012). However, it should be noted that VR and AR can be used as an impressive, open, and marketing tool when evaluated for service providers. Such technologies already have significant implications for many sectors, from services such as tourism, health (Nichol, 2017) to the military (Livingston et al., 2011). Also, these technologies are more important for people who need accessible information. Whether what are their needs, they may access such information from where they stay. With this in mind, it can be said that immersive technologies provide accessibility before marketing or other functions. As one of the possibilities for virtual reality technology, visitors with limited mobility can "experience the inaccessible" with VR (Tom Dieck et al., 2019). These tools, which create great potential for accessible tourism (Bec et al., 2019; Guttentag, 2010; Tecau et al., 2019; Tussyadiah, Jung, et al., 2018) play an important role in reducing barriers to access to tourism (Guttentag, 2010; Plimmer et al., 2006). In this case, studies (Bogicevic et al., 2019; Didehbani et al., 2016; Standen & Brown, 2005; Tecau et al., 2019) have shown that people with disabilities (PwD) use and benefit from virtual reality (VR) technology to detect and avoid physical obstacles in tourism activities. Furthermore, after VR experience, behaviors, preferences, or visiting intentions of PwD have changed positively (Gibson & O'Rawe, 2018; Tussyadiah, Wang, et al., 2018).

Tourism research shows that VR and AR applications often address: "*enhance the experience*" (Rancati et al., 2016; Tom Dieck & Jung, 2018); "*facilitating accessibility*" (Jung & Han, 2014; Mesároš et al., 2016; N.-J. Shih et al., 2019; Wang & Fesenmaier, 2013; Waruwu et al., 2015); and "*marketing*" (Dadwal & Hassan, 2016; Shabani et al., 2019; Tussyadiah et al., 2017). Tourists' experience in virtual environments of destinations and services (hotel room, tour, museum, restaurants, etc.) through smart hardware such as VR headsets, AR glasses can make it easier for the deciding process before purchasing. Tourists, who previously access information about a destination on the internet, now acquire this information in virtual environments in the modern era -even having pre-experience opportunities. With reality technology, PwD can have a secure and controlled environment where they can encounter real-life scenarios and implement skills and talents that can help them better integrate themselves into the real world (Didehbani et al., 2016; Lorenzo et al., 2016; Parsons & Cobb, 2011; Standen & Brown, 2005). They have a chance to decide before purchasing whether the holiday or destination in question is suitable for them. Therefore recently, tourists are interested in VR and AR tools to provide pre-experience with hotels, museums, destinations before making travel decisions (Loureiro et al., 2020; Nayyar et al., 2018). For destination organizations and tourism businesses, VR and AR help to increase the attractiveness of destinations and tourist products (accommodation businesses, food and beverage businesses, museums, ancient cities, festivals, activities, etc.), enable marketing and promotional costs to decrease.

These innovations, in particular, ensure accessible tourism and enable both tourists with and without disabilities to experience tourist products in the same way. Since they ensure accessible information, VR and AR provide promotion and marketing of nearly all products (Celtek, 2015; Mascho & Singh, 2014; Nayyar et al., 2018). Functionally, these tools give users the chance to enhance their experiences by providing accessible information. Besides, considering the consumption society of the modern age and the future with the widespread use of digital technologies, it can be said that the marketing approaches of young generations are guided by technology. Therefore, it may be an advantage in marketing activities that tourism organizations and service manufacturers appeal to young tourists as the target audience. The study focused on the roles of VR and AR technologies for accessibility and marketing in tourism. In an exploratory review article, literature is reviewed and examples of VR and AR for accessibility and marketing in the tourism industry are presented.