11 Extended reality and gamification in destination marketing organizations: Current perspectives and future opportunities

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Introduction

Technology plays an increasingly important role in enhancing destination marketing organizations' competitiveness (Trunfio & Della Lucia, 2019; Castro *et al.*, 2017; Li *et al.*, 2017). The technology-driven marketing tools that can promote tourism services, address customers' real-time needs, and co-create value at destinations are expanding (Samara *et al.*, 2020; Buhalis, 2019). In particular, extended reality and gamification demonstrate the potential for transforming destination marketing organizations' business models and strategies. They are becoming widely recognized as effective tools for stimulating tourists' interactions with destinations (Cranmer *et al.*, 2020; Lacka, 2020). While existing studies have broadly discussed the potential of extended reality in hospitality and tourism (e.g., Beck *et al.*, 2019; Wei, 2019) and gamification in management (e.g., Wanick & Bui, 2019), literature related to how extended reality and gamification technologies should be adopted and applied by destination marketing organizations remains limited. There is a need to guide destination marketing organizations' digital marketing strategies and operational adaptations from a theoretical perspective (Lacka, 2020; Aebli, 2019; Xu *et al.*, 2017). This research aims to fill this gap by systematically reviewing literature about

extended reality and gamification in destination marketing to uncover how such technologies are being applied and evaluated.

Literature review

DMOs serve the dual purpose of marketing and managing destinations to attract and satisfy visitors worldwide; however, DMOs face significant challenges regarding how their value is perceived (Reinhold *et al.*, 2019). Criticism regarding destination marketers' struggles to adapt to the continually transforming tourism market is not a new phenomenon (Sheehan *et al.*, 2016); their utility is approaching an inflection point where they must evolve to survive (Pike, 2016; Reinhold *et al.*, 2015). Since their inception, the responsibilities of DMOs have expanded (Pike & Page, 2014). DMOs must adapt to satisfy visitors, strive toward sustainable methods, and ensure destinations' long-term competitiveness (Pearce, 2016). As the technological tools and tourists change, so too must the strategies of destination marketers.

Marketers must understand the fundamental differences between the behaviors, attitudes, and demographic characteristics of different groups (Reisenwitz & Fowler, 2019) to successfully reach each cohort by utilizing the most effective methods (Hamed, 2017). For DMOs, it is suitable to define groups or cohorts by using generational parameters (Reisenwitz & Fowler, 2019). Previously, people belonging to the Baby Boomer generation (born 1946-1964) (Patterson & Pegg, 2009) and Generation X (born 1965-1979) (Goh & Lee, 2018) served as the primary targets for marketing efforts within the tourism industry (Reisenwitz & Fowler, 2019; Patterson & Pegg, 2009). However, the focus must now shift from the Baby Boomers and Generation X to Generation Y, known as the Millennials (born 1980-1994). Millennials are more technologically savvy than their predecessors, and they rely on digital information and technology for travel planning significantly more than Generation X (Reisenwitz & Fowler, 2019). Given that Generation Z or iGen (born 1995-2009) will succeed the Millennials, DMOs must attempt to remain on the cutting edge and apply state-of-the-art technologies now more than ever (Goh & Lee, 2018). DMOs must evolve by revamping their products, services, and models to meet the needs of the more technologically literate and dependent generations (Hamed, 2017). Innovative technologies present DMOs with numerous opportunities to engage with their target markets in unique ways (Li *et al.*, 2017). Destination marketers need to embrace the advancements in technology-

based visualization techniques to succeed in the digital era (An *et al.*, 2021). Extended reality technologies particularly demonstrate significant promise for destination marketing (Lee *et al.*, 2020; Marasco *et al.*, 2018).

Extended Reality (XR) and Gamification

Extended reality (XR) refers to various types of immersive technologies that rely on virtual and physical environments, including mixed reality (MR), augmented reality (AR), augmented virtuality (AV), and virtual reality (VR) (Kwok & Koh, 2020; Ludlow, 2015). MR focuses on bridging the gap between reality and virtuality, where AR and AV are categorized (González *et al.*, 2021). AR projects computer-generated (virtual) content onto the real-world environment (Cranmer *et al.*, 2020; Yung & Khoo-Lattimore, 2019). For example, the AR game Pokémon Go projects Pokémon into users' real-world environments by using phones' cameras to capture the real-world environment and presents the digital augmentation via the phones' screen displays. AV is essentially the inverse of AR. AV projects real-world objects into virtual worlds (González *et al.*, 2021; Guo *et al.*, 2020), which can help train individuals while safely simulating stressful conditions, such as performing emergency maintenance tasks (Neges *et al.*, 2018). VR fully immerses users in virtual worlds that may simulate real-world environments or produce novel fantasy worlds (Araiza-Alba *et al.*, 2021; Makransky *et al.*, 2019). For instance, VR video games may involve users wearing head-mounted devices that fully cover their eyes. Their only view is that of a screen that presents them with an entirely virtual environment. Sound is supplied via headphones, which immerses users in experiences more fully. Additionally, users may interact with the virtual world via handheld controllers or stationary treadmills designed explicitly for user-controlled movements in virtual environments (e.g., Omni by Virtuix). XR technology has become more ubiquitous and viable (El-Jarn & Southern, 2020). It can be applied for various purposes, including training, safety, maintenance (Doolani *et al.*, 2020), education, and entertainment (Lalos *et al.*, 2020).

While XR can be utilized for practical purposes, XR experiences can also be gamified. Moreover, tourists' experiences can be gamified (Abou-Shouk & Soliman, 2021), even without any XR technology. Gamification is commonly defined as the inclusion of gaming elements in non-gaming contexts (Jahn *et al.*, 2021; Schöbel *et al.*, 2020). Deterding *et al.* (2011) propose the following five game design elements: interface (levels, leaderboards, badges); patterns/mechanics (limited time and resources, taking turns); principles/

heuristics (game styles, goals); models (curiosity, challenge, fantasy); and methods (playtesting, play-oriented). Gamification is not creating a full-fledged game; it only implies the inclusion of some game elements (Garcia *et al.*, 2019). The non-gaming context is essentially boundaryless; there is only one express exclusion, the utilization of game elements when creating a game (Deterding *et al.*, 2011); this allows almost any experience to be subject to some degree of gamification. Marketers are already using gamification techniques to manipulate consumers' behaviors and attitudes (Whittaker *et al.*, 2021). With smartphone penetration increasing globally, marketers have numerous opportunities to gamify experiences (Högberg *et al.*, 2019). In hospitality and tourism, research has found that gamifying destination experiences through smartphones generates positive outcomes for tourists and DMOs (Garcia *et al.*, 2019).

The literature has studied XR across various industries, such as healthcare (Sugimoto, 2021), architecture, engineering, construction (Alizadehsalehi *et al.*, 2020), design (El-Jarn & Southern, 2020), and hospitality and tourism (Kwok & Koh, 2020). The effects of gamification have also been investigated in education (Legaki *et al.*, 2020), psychology (Zainuddin *et al.*, 2020), healthcare (Floryan *et al.*, 2020), e-commerce (Xi & Hamari, 2020), and hospitality and tourism (Worimegbe *et al.*, 2020). While there is an increasing consensus on XR and gamification's potential for industry-specific applications, DMOs require new knowledge to effectively employ XR (Marasco *et al.*, 2018; Tussyadiah, 2015) gamification (Garcia *et al.*, 2019) strategies. DMOs are in a critical era of development. They must modify and reinvent their products, services, and business models to reach the more technologically literate and dependent generations (Hamed, 2017). There is a need for research-based intervention to help DMOs identify pathways to adopt new strategies and enhance operations (Lacka, 2020; Aebli, 2019), and the effects of XR and gamification on marketing practices require further examination (Abou-Shouk & Soliman, 2021; Lin *et al.*, 2020). A comprehensive review that identifies theories and methods for DMOs will support them in integrating XR and gamification technologies into business strategies. Against the established background, this study aims to support and further the goals of DMO practitioners and theorists by exploring the following research objectives:

1. iIdentify how XR and gamification are evaluated in the destination marketing context, and
2. Identify XR and gamification research opportunities for destination marketing scholars and practitioners.