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Jijun (Jackie) Chen
Purdue University

Shinyong (Shawn) Jung
Purdue University

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Event Technology and Attendee Experience: A Systematic Review and Research Agenda

Jijun (Jackie) Chen¹ | Shinyong (Shawn) Jung¹

¹Purdue University

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Executive Summary: The events industry is experiencing growth, both as a sector of the tourism industry and in the technology that impacts the attendee experience during an event. While research into event-related technologies is robust, there is not much research on the specific roles that technology can play in facilitating attendees' experiences at an event. This study proposes to use the PRISMA approach to gain a comprehensive understanding of technology-enabled experiences within the context of events. Results will drive future research in this area of study.

Introduction

Over the past decades, the event industry has witnessed significant growth, establishing its position as a vibrant and influential component of the global tourism sector (Irshad, 2011). In the evolution of the events industry, technology has become integral, constantly shaping the paradigms of event planning, marketing, execution, and participant experience (Ryan et al., 2020). With the emergence of social media platforms like Facebook, Instagram, and TripAdvisor in the early 2000s, the industry swiftly embraced these digital channels for promotional and marketing endeavors, improving communication efficiency (Hudson & Hudson, 2013). The advent of artificial intelligence (AI) (e.g., service robots) and its application in the event

industry demonstrated the important supporting role of technology in customer service. It can not only offer practical functions and work as a powerful communication tool to improve conference and exhibition efficiency but also provide entertainment to create unique experiences (Fortis, 2023; Gafoor, 2023; Singh et al., 2021). More recently, the adoption of augmented reality (AR) and virtual reality (VR) has captured people's attention, creating an immersive experience for event participants (Yung & Khoo- Lattimore, 2019). For example, Decentraland hosts a virtual reality music festival that provides music lovers with a new immersive and engaging music experience (Decentraland, 2022). Technology has progressively integrated into events to facilitate attendees' experience.

Despite the rapid adoption of technology within the events industry, it has not been matched by the level of research dedicated to investigating it (Mair & Weber, 2019). Recently, a paradigm depicting the role of technological evolution from Event 1.0 to Event 4.0 was proposed (Ryan et al., 2020). In the early stages of Event 1.0 and 2.0, information and communication technologies (ICTs) primarily served to facilitate basic communication and assist attendees' engagement (Neuhofer et al., 2014). To date, more advanced technologies are integrated into meetings, events, and festivals to create immersive, personalized, and high-quality event experiences (Neuhofer et al., 2021; Robertson et al., 2015). By adopting the technology, participants can transform from passive recipients to proactive co-creators of their experiences in technology-enabled settings (Neuhofer et al., 2012). Other scholars have also identified various technologies (e.g., social media, VR/AR, AI) that enhance the attendee experience (Neuhofer et al., 2021; tom Dieck et al., 2018). For example, AI's behavior tracking, self-learning, and computing capabilities can co-create personalized individual experiences with participants at events (Neuhofer et al., 2021). While articles have explored technology-enhanced experience from diverse perspectives (Neuhofer et al., 2012), no study has synthesized previous findings to provide a comprehensive understanding of what types of technologies, with what core characteristics, and through what mechanisms, facilitate the engagement and experience of event attendees.

Therefore, the purpose of this study is to systematically review existing literature on the role of technology in enhancing event experiences. Specifically, this study aims to

- 1) conduct a bibliometric analysis to explore concepts, theories, methods, and variables within the context of technology-enabled event experience;
- 2) identify core characteristics of technology used in facilitating engagement in events;
- 3) understand the gaps and propose a research agenda for future research in this area of study.

Literature review

Attendee engagement

Attendee engagement is an important component of events. A high level of attendee engagement can significantly positively impact the achievement of event goals, including enhancing the value and meaningfulness of the event experience, influencing potential purchasing behavior, generating positive word-of-mouth, and encouraging future attendance (Brown, 2023). Engagement can be understood as the active participation, interaction, and emotional connection of attendees with the event content (Chen et al., 2021). It includes three categories of engagement, cognitive, affective, and behavior. Attendee engagement is a widely discussed moderator between event environment (both social and physical) and attendees experience (Geus et al., 2016). Previous studies have identified key factors influencing attendee engagement, such as the design of interactive sessions, the quality of content and services, and a more

frequently mentioned factor: the use of technology.

Identified in a systematic review of 89 articles on customer engagement, social media, emerged as the most diversified and meaningful context for promoting attendee participation and involvement (Chen et al., 2021). Social media such as Facebook or Twitter have a great impact on interpersonal communication during the event as well as the environment. Moreover, other technologies, such as VR/AR, created an extended world for participants to immerse themselves in the event, thereby stimulating their engagement level (Belenioti, 2022).

Event Technology

The advent of technology has transformed the events industry, from conferences and trade shows to music festivals and sporting events (Chersulich Tomino et al., 2020). Technologies such as event management software, mobile apps, and social media are deeply integrated into the event ecosystem (Talantis et al., 2020). These technologies streamline event logistics, enhance communication, and provide organizers with valuable data, contributing to improving services and experiences for event attendees (Xiang et al., 2017).

Due to the incorporation of technology, contemporary event marketing, communication, and coordination exhibit a greater degree of intelligence and efficiency to promote higher-quality experiences. Technology can not only provide customization features to deliver a tailored experience for participants (Law et al., 2018) but can also contribute to higher

levels of interaction and engagement by incorporating elements such as gamification (Van Winkle & Bueddefeld, 2020). Especially in the wake of the COVID-19 pandemic, virtual and hybrid formats have proliferated in conference and event settings, opening up new opportunities to deliver a flexible and immersive experience for global participants (Bossey, 2020).

Despite the growing body of research on technology-enhanced experiences in events, there is a lack of research that synthesizes existing findings, identifies gaps, and points to a future research agenda.

Methodology

This study will employ the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) approach to gain a comprehensive understanding of technology-enabled experience within the context of events. More specifically, a mixed review approach by integrating bibliometric analysis and synthesis analysis will be adopted (Paul & Criado, 2020). Bibliometric analysis offers an overview of research progress through multidimensional statistical descriptions (Chen et al., 2021), whereas synthesis analysis integrates and analyzes collected data to identify the event technology characteristics that influence attendee experiences and the underlying mechanisms involved.

To develop a comprehensive technology-enabled event experience research database, three commonly used online databases, namely Google Scholar, Science Direct, and EBSCOhost, are used for retrieving articles related to technology and event attendee experience. After the

articles are retrieved from the databases, the screening and content coding processes are completed sequentially. NVivo, a powerful text search and visualization tool, will be adopted to explore and synthesize data about these articles (AlYahmady & Al Abri, 2013), as well as to organize the dataset. The coding and results identified will be conducted manually by two researchers to reduce bias. By combining these two research methods, a systematic statistical summary of past research and a synthesis summary of its content can be carried out.

Expected Implications

This systematic analysis of technology-enabled experience in the event domain can help identify existing research gaps and provide directions for potential future research. Therefore, this study serves as an initial phase, and its findings will guide the design of a follow-up empirical study to address the underexplored areas in the event technology literature. Recent discussions have shifted towards viewing technology as an enhancer of attendees' experiences, rather than a substitute for human labor (Bossey, 2020; Wei et al., 2017). This study can help event industry practitioners leverage technology to better meet customer needs and expectations.

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