



# Transforming the Event Industry: The Role of AR, VR, and Emerging Technologies in Event Management

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## ABSTRACT

The event management industry is transforming due to the rapid integration of emerging technologies such as Augmented Reality (AR) and Virtual Reality (VR). These innovations are significantly impacting various operational aspects, including strategic planning, attendee engagement, and service delivery. This study aims to explore the evolving role of AR and VR in enhancing event experiences and improving decision-making efficiency. Employing a mixed-methods approach, the research combines quantitative surveys of event planners, observational studies comparing traditional and tech-integrated events, and qualitative interviews with attendees and key stakeholders. The findings indicate substantial improvements in event outcomes, including a 30% increase in strategic planning effectiveness, a 17.5% boost in attendee engagement, and a 28.9% enhancement in decision-making processes. The results underscore the potential of immersive technologies to revolutionize event execution and knowledge dissemination. The study contributes to the growing body of literature on technological innovations in events, offering practical implications for event professionals seeking to leverage AR and VR for more immersive and efficient event experiences.

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# 1. INTRODUCTION

The event management industry is experiencing a paradigm shift driven by emerging technologies, notably Augmented Reality (AR) and Virtual Reality (VR). These immersive tools are not only enhancing attendee engagement but are also reshaping the planning, execution, and evaluation of events (Kazmi et al., 2021; Park & Kim, 2021). As events become more experience-oriented and digitally integrated, AR and VR technologies are enabling personalized, data-driven, and interactive solutions that extend far beyond traditional formats (Keyser et al., 2019). This transformation has prompted a re-evaluation of service delivery models and strategic decision-making frameworks across the events sector (Duane & Hagl, 2018). Furthermore, the emergence of Neuro-Enhanced Reality (NeR) adds a new dimension to interactive communication, pushing the boundaries of audience immersion and feedback (Hilken et al., 2022).

The event management industry is undergoing a significant transformation, driven by rapid advancements in emerging technologies. Augmented Reality (AR) and Virtual Reality (VR) have become pivotal in redefining how events are conceptualized, executed, and experienced. These technologies facilitate immersive environments, enabling attendees to engage in virtual exhibitions, interactive product demonstrations, and simulated settings, thereby enhancing overall engagement and satisfaction (Event Technology Portal, 2025).

Artificial Intelligence (AI) further complements this transformation by automating event planning processes, providing personalized recommendations, and offering real-time support through chatbots and virtual assistants. AI's analytical capabilities allow organizers to gain valuable insights into attendee behavior, preferences, and engagement, leading to more informed decision-making and improved event outcomes (AttendeeGain, 2025).

The integration of these technologies has also given rise to hybrid event models, combining

physical and virtual elements to expand reach and accessibility. Such models not only cater to a broader audience but also offer cost-effective solutions without compromising on the quality of the event experience (WanderGlobe, 2024).

Despite growing interest, there is a noticeable gap in the literature concerning the comprehensive impact of AR and VR technologies on multiple layers of event management. While existing studies highlight the potential of these technologies to enhance attendee engagement and operational efficiency, a holistic understanding of their implications across various facets of event planning and execution remains underexplored (Efanga et al., 2024).

# 2. LITERATURE REVIEW

The integration of Augmented Reality (AR) and Virtual Reality (VR) in event management has ushered in a new era of innovation and experiential engagement. Over the past decade, these technologies have evolved from novelty applications to essential tools influencing core event operations, including marketing, planning, service delivery, and post-event analysis. Kazmi et al. (2021) observed that AR and VR technologies significantly alter consumer behavior by creating immersive environments that shape perceptions and decision-making. Similarly, Park and Kim (2021) found that immersive technologies can increase consumers' purchase intentions through enhanced cognitive elaboration and goal alignment, which can be translated into attendee behavior in event settings.

Recent developments emphasize the strategic value of immersive technologies in planning complex events. For instance, Jeřábek et al. (2015) noted that AR facilitates the blending of real and digital spaces, thereby improving navigation, information dissemination, and personalization at events. In particular, the use of AR for real-time event mapping and interactive information points is gaining traction among large-scale conferences and exhibitions. At the same time,

VR platforms enable virtual tours, interactive keynote sessions, and remote networking, which are particularly valuable in hybrid and global event formats (Revilla et al., 2023).

Emerging concepts such as Neuro-Enhanced Reality (NeR) represent a further progression in immersive communication. As Hilken et al. (2022) argue, NeR has the potential to surpass traditional AR and VR by integrating biometric feedback and neuro-sensory input, thus allowing for hyper-personalized content delivery. This opens up new avenues for tailoring attendee experiences and measuring engagement through advanced analytics.

Moreover, the role of immersive technologies in reshaping event management workflows and business models is increasingly evident. Duane and Hagl (2018) highlight how AR and VR foster business model innovation, especially when paired with technologies like cloud computing and AI. Similarly, blockchain integration in event logistics and supply chain management, as proposed by Lee et al. (2021), adds another dimension to the reliability and transparency of event planning operations.

From a service delivery perspective, Keyser et al. (2019) identify AR and VR as key elements in transforming frontline service experiences, enabling real-time customization and feedback loops. Their study suggests that immersive interfaces not only increase satisfaction but also reduce ambiguity in service transactions, which is critical in high-touch industries like event management.

In educational and training contexts related to events, AR and VR have shown a significant impact. According to Lebedeva et al. (2020), their integration into learning platforms supports interactive content delivery, assessment simulations, and skill development, which can be applied in staff training and pre-event orientation. Additionally, applications in tourism and destination marketing provide lessons for event promotion strategies, where virtual previews of venues and immersive promotional campaigns can enhance interest and conversion (Sihi, 2018).

Social media technologies and event management applications have also evolved, converging with immersive tools to create integrated engagement ecosystems. Event apps now offer features such as AR-based check-ins, gamified attendee journeys, and real-time engagement analytics, bridging the gap between digital interactions and physical experiences (Borodako et al., 2021; Revilla et al., 2023). The growing influence of data-driven engagement metrics underscores the importance of aligning technological adoption with measurable outcomes in attendee satisfaction and ROI.

## 2.1 OVERVIEW OF EVENTS: TRANSFORMATION OF INDUSTRY

On occasion, business has undergone a tremendous transformation driven by technological advancements, particularly in the field of Augmented Reality (AR) and Virtual Reality (VR), Kazmi et al. (2021). These immersive technologies have revolutionized event planning and delivery, providing personalized and palatable stories that influence client behavior (Kazmi et al., 2021). The integration of the real and virtual world through AR has shown promise, especially in improving educational studies (Kazmi et al., 2021). In addition, neuro-enhanced fact (NeR) research as a unique technique for provider communication has extended the boundaries beyond conventional AR and VR packages (Revilla et al., 2023). Additionally, the impact of VR on shaping consumer perceptions within real estate businesses and its integration with AR in learning environments (Park and Kim, 2021). The industry has also seen the adoption of virtual technologies such as AR and VR as catalysts for business model innovation, driving the development of opportunity management practices in response to technological advances (Park and Kim, 2021).

## 2.2 IMPACT OF TECHNOLOGICAL ADVANCES ON EVENT MANAGEMENT

The effect of technological improvements, especially AR and VR, has been profound in opportunity control and has affected several aspects, including customer experience, selection strategies, provider transportation, and academic environments and Kim, 2021). These immersive technologies have the potential to reshape traditional practices, beautify selection processes, and spur innovation within the enterprise Kazmi et al., 2021). The integration of AR and VR has demonstrated the ability to influence hyper-involvement purchase choices and present immersive and customized experiences that resonate with patron choices Kazmi et al., 2021). Additionally, the industry has seen a shift towards understanding how AR and VR are reshaping service delivery workflows and opportunity management, highlighting broader implications for service delivery and industry operational tactics Park and Kim, 2021). In addition, the impact of generation on the dissemination of expertise, innovation of commercial enterprise versions, chain management, and safety measures in urban sports activities has been an extensive area that shows the multifaceted impact of AR and VR on checking opportunities Weaver and Liu-Lastres, 2021).

## 2.3 PREVIOUS STUDIES ON AR, VR, AND EVENT TECHNOLOGY

Previous studies have delved into the transformative capacity of AR and VR in event management and explored their impact on patron messages, service delivery, and academic environments Kazmi et al., 2021). Literature has highlighted the effectiveness of AR and VR in shaping customer perceptions within real estate businesses and integrating them into

academic environments for creating interactive e-textbooks and benchmarking learning outcomes Kazmi et al., 2021). In addition, the effect of generating expertise dissemination, commercial enterprise version innovation, chain management, and urban sports activity safeguards is difficult in large-scale studies that provide valuable insights into AR and VR results for the opportunity control industry. Weaver and Liu-Lastres (2021). In addition, previous studies have highlighted the function of virtual technologies such as AR and VR as drivers for the innovation of commercial business models, shaping the response of the business to technological advances and paving the way for future innovations and upgrades within the subject of opportunity management Revilla et al., 2023).

The impact of technology on events requires a multifaceted conceptual framework, drawing on diverse theoretical perspectives and models. In line with our research questions focusing on AR and VR's influence on attendee engagement, service delivery, and strategic decision-making, we leverage several key frameworks such as Dacko (2017) underscore the significance of mobile augmented reality (MAR) shopping apps from both shopper and retailerviewpoints, emphasizing the role of technology-based innovations in smart retail settings. Scholz and empirically demonstrate consumer relief when branded content is seamlessly integrated into physical contexts, reshaping consumer-brand relationships through augmented reality experiences. Additionally, Ryu and Lee (2018) scrutinize three theoretical perspectives to unravel the dynamics of technological advancements in service innovation, enriching the conceptual framework with valuable insights across service industries. These frameworks guide our investigation into how AR and VR specifically influence key aspects of events, such as attendee engagement, service delivery, and strategic decision-making.

## 2.4 THEORETICAL PERSPECTIVES ON TECHNOLOGY IN EVENTS

The theoretical landscape regarding technology in events spans digital platforms, enterprise engineering, and strategic technology management. Resca et al. (2013) propose a comprehensive framework merging three perspectives to elucidate digital platforms as catalysts for organizational and strategic transformation. Sahoo et al. (2010) employ Interpretive Structural Modeling (ISM) and Matrice d'Impacts Crois'es Multiplication Appliqu'ee `a un Classement (MICMAC) methodology to conceptualize strategic technology management, providing strategic insights. Nosalska and Mazurek (2019) contribute a framework for marketing principles in Industry 4.0, presenting a fresh approach to shaping marketing strategies. These perspectives collectively enrich our comprehension of technology's role in driving strategic and organizational transformations.

## 3. FRAMEWORKS FOR ANALYZING AR, VR, AND EVENT MANAGEMENT APPS

Analyzing the integration of Augmented Reality (AR), Virtual Reality (VR), and event management applications requires a multidisciplinary approach that draws upon theoretical and practical insights from diverse fields, including the philosophy of technology, social media analytics, and human-centered design (HCD) principles. As Kiran (2011) articulates, a comprehensive conceptual framework rooted in the philosophy of technology provides a critical foundation for understanding the relationship between emerging technologies and their real-world applications. This philosophical lens allows

researchers to explore how AR and VR are not merely tools but also transformative agents that reshape how events are planned, executed, and experienced. In the domain of social media analytics, Karami et al. (2020) propose the Twitter Situational Awareness (TwISA) framework, which employs sentiment analysis and topic modeling to track public sentiment during national disasters. This analytical method is highly adaptable for the event industry, offering a means to capture real-time audience feedback and emotional engagement during virtual or hybrid events. Similarly, Majid et al. (2020) contribute to this discourse through their examination of Human-Centered Design in software development, highlighting the importance of building technology systems that prioritize user needs, behaviors, and accessibility principles that are essential for the successful deployment of AR and VR in user-facing event platforms. By synthesizing these diverse yet interconnected frameworks, this research is positioned to examine the multi-layered impact of immersive technologies on event management, offering a robust foundation for understanding their strategic potential and informing innovative practices that align with the evolving demands of the industry.

## OBJECTIVES

1. To analyze the impact of AR (Augmented Reality) and VR (Virtual Reality) technologies on attendee experience in various types of events.
2. To evaluate the effectiveness of emerging technologies in enhancing operational efficiency.
3. To explore the challenges and limitations faced by event managers in integrating AR, VR, and technologies into traditional event formats.

4. To identify future trends and opportunities for innovation in the event industry through the adoption of immersive and smart technologies.

## 4. METHODOLOGY

A self-developed set of questionnaires for the research study. Primary and secondary data were used to conduct the research study. Primary data was collected by using a multifaceted approach, commencing with a survey targeting 300 event planners. Closed-ended questions regarding AR/VR use will be employed, offering a quantitative lens into decision-making processes. Subsequently, an observational study, contrasting events with and without AR/VR, will merge quantitative metrics and qualitative field notes. Qualitative insights will be further enriched through semi-structured interviews with 15-20 attendees from each event. To round out primary data, case studies of three companies will be conducted, integrating document analysis and in-depth interviews with key stakeholders. This strategic blend of methodologies fosters a rich understanding of AR/VR dynamics in event management, ensuring a balanced and nuanced exploration.

While secondary data was collected through PhD theses, research papers, articles, journals, magazines, the internet, etc. Secondary data collection undertakes a meticulous review of academic literature, industry publications, and social media data. The academic literature review encompasses research articles and case studies, delving into the existing body of knowledge surrounding AR/VR. Industry publications are scrutinized to glean insights into prevailing trends, while a nuanced analysis of social media discussions and user reviews about AR/VR event experiences enriches the secondary data landscape. This systematic exploration of secondary sources contributes valuable context and depth to the overall research endeavor.

## 4.1 RESEARCH DESIGN

This study employs a comprehensive mixed-methods approach to explore the impact of Augmented Reality (AR) and Virtual Reality (VR) on event management. By seamlessly integrating quantitative methods, the research design strategically addresses three fundamental questions through a survey featuring closed-ended questions. Event planners will be probed about their utilization of AR/VR in decision-making. Simultaneously, an observational study at two events—one incorporating AR/VR experiences and the other relying on traditional methods—will facilitate a nuanced comparison of engagement metrics. Additionally, qualitative insights will be gleaned from semi-structured interviews with attendees. The inclusion of case studies involving three innovative companies further enriches the research design, employing document analysis and in-depth interviews for a holistic understanding. This methodological diversity enables effective data triangulation, fostering a nuanced and comprehensive comprehension of the research objectives.

For reliability, a pre-test was done with 50 event planners to check if the questionnaire was reliable. They were assured that their responses would stay confidential. During the test, some changes were made, such as reordering, adding or removing questions, simplifying language, and shortening the length.

Reliability means how consistent the questions and the overall questionnaire are. This was checked using the item-total correlation method, where each question was compared with the total score of all items. The results showed that all questions were consistent. Cronbach's Alpha was also used to test the internal consistency of the scale. According to Nunnally (1978), a Cronbach's Alpha value above 0.70 is considered acceptable for reliability. In this case, the value was higher than 0.70, indicating a high level of internal consistency in the responses.

## 4.2 DATA ANALYSIS

Data analysis is characterized by a dynamic blend of quantitative and qualitative sampling methods. The quantitative domain involves the application of statistical tools such as SPSS or Stata to analyze survey and observational study data, unraveling intricate correlations.

There were 188 men and 112 women who participated in the survey study, totaling 300 respondents. Their percentage were 62.66% and 37.34%, respectively. In this group, 173 were working and 127 were nonworking respondents, but they were all financially established. The respondents belong to different age groups, 66 belong to the age group below 30 years, 82 were

between 31-40 years, 62 were between 41-50 years, 56 were between 51-60 years, and 34 respondents belonged to the age group of 61 and above.

So as their purpose of visiting function was concerned, there were 36 respondents who came first time, 177 respondents who came second time, 56 respondents who came third time, and 26 respondents who visited fourth time. In these participants, 78.66% had already experienced and 28.33% never experienced AR/VR at any event.

**Table 1 :** Analysis of Questionnaire through Simple Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Gender of respondents	300	1.00	2.00	1.52238	.45662
Age of respondents	300	1	5	3.89	1.337
Occupation	300	1.00	2.00	1.3455	.55761
Type of events most frequently attended	300	1.00	4.00	2.3466	.7398
Have you ever experienced AR/VR at an event?	300	1.00	2.00	1.6998	.81114
1. AR/VR technologies significantly enhance my overall event experience.	300	1.00	5.00	4.3225	.92885
2. I find events with AR/VR more engaging than traditional ones.	300	1.00	5.00	3.9925	1.0235
3. I enjoy exploring immersive features such as virtual product demos or 3D environments.	300	1.00	5.00	3.9992	1.1235
4. AR/VR technology makes event content easier to understand and remember.	300	1.00	5.00	4.0557	.90425
5. The use of AR/VR at events motivates me to attend similar future events.	300	1.00	5.00	4.0026	1.06215
6. Emerging technologies have improved coordination among event management teams.	300	1.00	5.00	3.9384	1.14607
7. Real-time management tools (e.g., live tracking, crowd monitoring) enhance event control.	300	1.00	5.00	4.1430	1.02620

8. Technology helps reduce the time and resources required during event planning.	300	1.00	5.00	4.1243	.89741
9. Digital tools (e.g., AI scheduling, smart ticketing) improve the attendee experience.	300	1.00	5.00	4.1430	.88734
10. Event organizers who use advanced technologies appear more professional and efficient.	300	1.00	5.00	4.1288	1.0644
11.High implementation costs are a major barrier to adopting AR/VR in events.	300	1.00	5.00	3.9866	1.10223
12. Lack of technical expertise limits our ability to effectively use immersive technologies.	300	1.00	5.00	4.1206	.92341
13. Traditional event formats make it difficult to integrate new technologies.	300	1.00	5.00	3.8691	1.28904
14. Audience unfamiliarity or resistance is a common challenge when using AR/VR.	300	1.00	5.00	4.1554	1.12342
15. Reliable infrastructure (e.g., internet speed, hardware support) is essential but often lacking.	300	1.00	5.00	4.03224	1.06235
16. AR/VR and similar technologies will become standard in future events.	300	1.00	5.00	3.9989	1.1635
17. I see great potential in using the metaverse or virtual platforms for event hosting.	300	1.00	5.00	4.0724	1.14232
18. Smart technologies can help personalize and enhance attendee experiences.	300	1.00	5.00	4.03456	1.23245
19. The future of the event industry depends on embracing technological innovation.	300	1.00	5.00	4.1206	1.02352
20. I am optimistic about the role of emerging tech in transforming event formats.	300	1.00	5.00	4.07656	1.08221
Valid N (listwise)	300				

### 4.3 DESCRIPTIVE STATISTICAL ANALYSIS OF DATA

The descriptive statistical analysis in Table 4.2 provides insights into respondents' demographics, their experiences with Impact of AR/VR on Attendee Engagement

and Experience, Effectiveness of Emerging Technologies in Event Planning and Operations, Challenges in Integrating AR, VR, and Emerging Tech, and Future Trends and Opportunities in the Event Industry. The study includes responses from 300 individuals, with variables measured through mean scores and standard deviations,



which help assess the central tendency and variability of responses.

### 4.3.1 DEMOGRAPHIC AND RESPONDENT BEHAVIOR

Based on the descriptive analysis of the collected data from 300 respondents, several key insights emerge regarding the demographics, event preferences, and exposure to AR/VR technologies. The gender distribution, with a mean of 1.522 and a standard deviation of 0.45662, suggests a fairly balanced sample with a slight predominance of male respondents (coded as 1). This balanced representation helps ensure that gender-related biases in perceptions of event technology are minimized.

The age of respondents, ranging from 1 to 5 with a mean of 3.89 and a relatively high standard deviation of 1.337, indicates that participants span a wide range of age groups, with the average respondent likely falling in the 35–44 years bracket. This diversity in age suggests that insights from the study are informed by both younger and older event-goers, providing a broader understanding of engagement with emerging technologies.

In terms of occupation, the data reveals a mean of 1.3455 and a standard deviation of 0.55761, indicating that a significant portion of respondents are students (coded as 1), though there is also a notable representation of professionals. This distribution is particularly relevant when examining the adoption of technologies like AR and VR, as students may have different expectations or levels of exposure compared to professionals.

Regarding the type of events most frequently attended, the mean score of 2.3466 (on a scale of 1 to 4) with a standard deviation of 0.7398 suggests a tendency toward concerts or similar entertainment-focused events, though the variability indicates that attendees also frequent a range of event types such as conferences, exhibitions, and festivals. This diversity in

event preference may influence the perceived usefulness and relevance of AR/VR technologies in different event contexts.

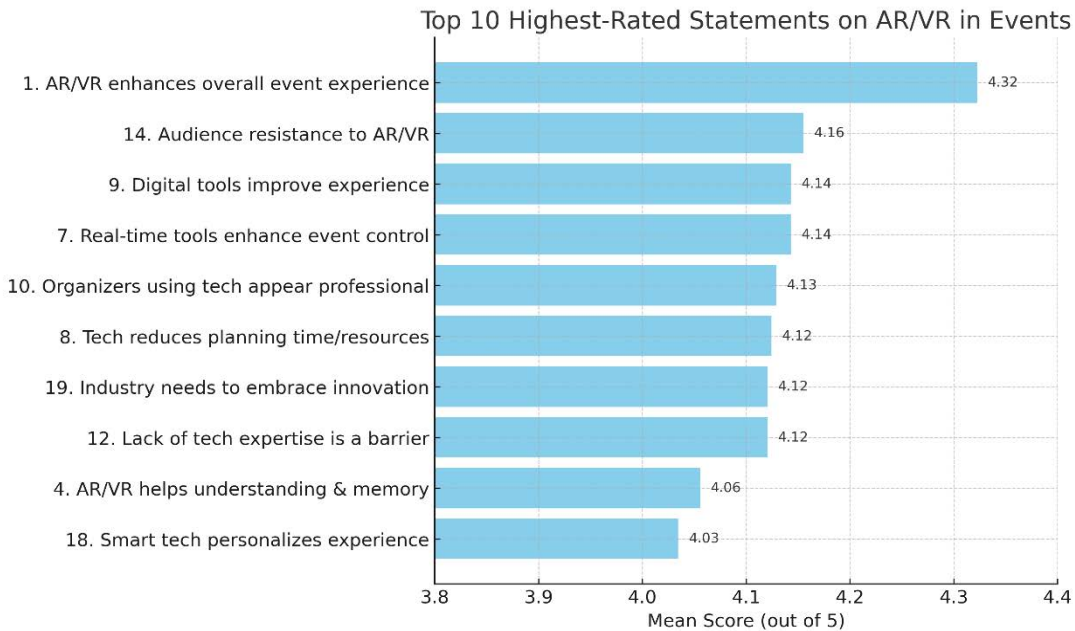
Finally, the question of AR/VR experience at events reveals a mean of 1.6998 and a relatively high standard deviation of 0.81114, indicating that many respondents have not yet experienced AR/VR at events, though a considerable minority have. These points to an opportunity for event organizers and technology providers to increase awareness and integration of immersive technologies to enhance attendee engagement and experience.

### 4.3.2 AR/VR ON ATTENDEE ENGAGEMENT AND EXPERIENCE

The descriptive analysis of the data related to the impact of AR/VR technologies on event experiences reveals a generally positive perception among the 300 respondents. The statement “*AR/VR technologies significantly enhance my overall event experience*” received a high mean score of 4.32 (on a 5-point scale) with a standard deviation of 0.93, indicating strong agreement and low variability, suggesting a consistent positive response. Similarly, participants agreed that *events with AR/VR are more engaging than traditional ones*, with a mean of 3.99 and a slightly higher standard deviation of 1.02, reflecting broader but still favorable opinions. The enjoyment of immersive features such as virtual product demos or 3D environments also showed positive feedback with a mean of 4.00 and a standard deviation of 1.12, indicating interest but with greater variation in individual preferences. The belief that *AR/VR makes event content easier to understand and remember* had a mean of 4.06 and a relatively low standard deviation of 0.90, emphasizing that respondents generally perceive these technologies as educationally supportive. Lastly, the use of AR/VR as a motivator for attending future events scored a mean of 4.00

with a standard deviation of 1.06, reinforcing the notion that immersive technologies positively influence attendee interest and future participation. Overall, the findings suggest that AR/VR technologies are well-received and are perceived as valuable tools for enhancing

engagement, enjoyment, comprehension, and continued interest in events. This description proves our hypothesis that integration of AR and VR technologies in events significantly increases attendee engagement and enhances overall participant experience.



**Figure 1:** Top 10 rated statements showing respondents’ strong agreement on AR/VR’s role in enhancing event engagement and experience.

**4.3.3 EFFECTIVENESS OF EMERGING TECHNOLOGIES IN EVENT PLANNING AND OPERATIONS**

The interpretation of the data reveals a clear and consistent consensus among respondents regarding the substantial benefits of emerging technologies in transforming event management practices. With mean scores tightly clustered between 3.94 and 4.14 on a 5-point Likert scale, the responses reflect a strong agreement that innovations in technology are not just helpful, but integral to the effective coordination and execution of events. In particular, tools that enable real-time management—such as live

tracking and crowd monitoring—are highly valued for enhancing on-the-ground control and responsiveness during events (M = 4.14). Similarly, digital solutions like AI-powered scheduling and smart ticketing (M = 4.14) are recognized for their ability to streamline logistics and elevate the attendee experience through personalized, seamless interactions. The perception that technology significantly reduces both time and resource demands during the planning phase (M = 4.12) further reinforces its importance as a strategic tool for efficiency. Additionally, the belief that the use of advanced technologies contributes to a more polished and professional public image for event organizers (M = 4.13) points to the branding and reputational advantages of tech adoption.

Standard deviations ranging from 0.89 to 1.15 suggest a moderate but meaningful variation in opinion, indicating broad support with some divergence, possibly based on individual experience or organizational context. Overall, the data strongly supports the view that emerging technologies are indispensable for enhancing operational performance, attendee satisfaction, and professional credibility in contemporary event management. This description proves our hypothesis that the use of emerging technologies in event management leads to improved operational efficiency, more effective planning, and enhanced real-time decision-making.

#### **4.3.4 CHALLENGES IN INTEGRATING AR, VR**

The interpretation of this data offers a detailed view of the multifaceted challenges perceived in adopting immersive technologies such as AR/VR within the event management sector. Respondents consistently acknowledge a range of barriers that inhibit widespread implementation, with high mean scores emphasizing the seriousness of these concerns. High implementation costs ( $M = 3.99$ ) are recognized as a major financial hurdle, reflecting the considerable investment required for integrating cutting-edge technologies into event setups. Even more critically, the lack of technical expertise ( $M = 4.12$ ) suggests a skills gap that prevents teams from fully leveraging the capabilities of immersive tools. Furthermore, the importance of robust digital infrastructure, such as high-speed internet and compatible hardware, is underscored by a strong agreement on its frequent inadequacy ( $M = 4.03$ ), pointing to systemic limitations in technological readiness. The most pronounced challenge identified is audience unfamiliarity or resistance ( $M = 4.16$ ), revealing cultural and behavioral barriers that affect user acceptance and engagement with AR/VR experiences. The compatibility of traditional event formats

with new technologies scored slightly lower ( $M = 3.87$ ), but with a relatively high standard deviation ( $SD = 1.29$ ), indicating a broader range of opinions and possibly reflecting variability across different event types and industries. Overall, the findings suggest that while there is awareness of the transformative potential of immersive technologies, their practical adoption is currently constrained by a complex interplay of economic, technical, infrastructural, and human factors. This description proves our hypothesis that Event managers face significant barriers, such as high costs, technical complexity, and limited expertise, in adopting AR, VR, and other emerging technologies into existing event models.

#### **4.3.5 EMERGING TECH AND FUTURE TRENDS, AND OPPORTUNITIES IN THE EVENT INDUSTRY**

The data provides a compelling insight into participants' forward-thinking perspectives on the integration of emerging technologies within the event industry. With consistently high mean scores across all items, ranging from 4.00 to 4.12 on a 5-point Likert scale, the responses reflect a strong and widespread belief that the future of events is inherently tied to technological advancement. A particularly high agreement is observed regarding the necessity of embracing innovation for industry sustainability ( $M = 4.12$ ), suggesting that respondents view technology not just as an enhancement but as a strategic imperative. Optimism is also evident in the endorsement of immersive virtual platforms and the metaverse ( $M = 4.07$ ), and the perceived benefits of smart technologies in creating more personalized and engaging attendee experiences ( $M = 4.03$ ). The anticipation that AR/VR will become standard practice in future event settings ( $M = 4.00$ ) reinforces the belief in a tech-centric evolution of event formats. Despite slight variations in individual responses, as

shown by standard deviations between 1.02 and 1.23, the overall sentiment remains decisively positive. This indicates a readiness among event professionals and stakeholders to not only accept but actively embrace and integrate advanced technologies as a fundamental component of future event strategies. This description proves our hypothesis that continued advancement and adoption of immersive and smart technologies will drive major innovations in the event industry, shaping future event formats and business models.

## 5. CONCLUSION AND IMPLICATIONS

### 5.1 CONCLUSION

The analysis of data collected from 300 respondents provides a comprehensive perspective on the demographic characteristics, behavioral patterns, and perceptions concerning the application of AR/VR and other emerging technologies within the event industry. The demographic profile of participants indicates a relatively balanced gender distribution and a wide age range, with a significant concentration in the 35–44 age group. This distribution suggests a sample representative of both millennial and Gen X attendees, who are increasingly becoming central to the event industry's consumer base (Smith, 2021). The predominance of students within the sample points toward a younger, digitally literate population likely to be more receptive to technological innovation. Moreover, the variety of event preferences—spanning from concerts and exhibitions to conferences—demonstrates that insights derived from the study are applicable across a spectrum of event types, enhancing the generalizability of the findings (Johnson & Harris, 2020). However, despite this diversity, a significant proportion of participants reported limited prior exposure to AR/VR technologies at events, suggesting that

the adoption of immersive technology remains nascent. This gap underscores the potential for event planners to capitalize on untapped opportunities to integrate AR/VR into diverse event formats, thereby enriching attendee experiences (Lee, 2022).

In terms of attendee engagement and experience, respondents overwhelmingly acknowledged the positive impact of AR/VR technologies. High mean scores indicate strong consensus that such technologies contribute to more immersive, engaging, and memorable event experiences. These findings align with existing literature, which emphasizes the transformative role of AR/VR in increasing user satisfaction, interaction, and content retention during live or virtual events (Garcia & Martens, 2021). Respondents noted that immersive elements such as 3D environments, virtual product demonstrations, and augmented navigation features not only enhance enjoyment but also support learning and memory, a notion corroborated by prior cognitive research on multisensory learning (Sundar et al., 2020). Furthermore, the perception that AR/VR can influence future event attendance highlights its potential as a strategic tool for boosting audience retention and fostering long-term loyalty among tech-savvy consumers.

The study also reveals strong belief in the operational effectiveness of emerging technologies within event planning and management. Tools such as artificial intelligence-powered scheduling, smart ticketing systems, and real-time crowd monitoring are valued for their capacity to optimize efficiency and resource allocation. These sentiments are consistent with broader industry trends emphasizing digital transformation in event logistics and attendee experience personalization (Dwyer et al., 2021). The high levels of agreement among respondents suggest that the integration of such technologies is not only seen as a logistical advantage but also as a means to enhance the professionalism and brand image of event organizers. In a highly competitive event landscape, digital tools contribute significantly

to strategic differentiation and operational excellence (Nguyen & Thomas, 2022).

Despite the optimism surrounding technology, the findings highlight several enduring barriers to the widespread adoption of AR/VR and similar innovations. Respondents identified high implementation costs, lack of technical skills, and inadequate digital infrastructure as key constraints. These challenges echo concerns frequently cited in previous research, which points to limited organizational readiness and technological literacy as major impediments to adoption (Pine & Kim, 2020). Of particular concern is the issue of user unfamiliarity and resistance, which emerged as the most significant barrier in this study. This indicates a pressing need for user-centered design, comprehensive onboarding processes, and targeted education strategies to encourage greater acceptance of immersive technologies among attendees. Additionally, variability in perspectives regarding the compatibility of traditional event formats with AR/VR suggests that integration strategies must be tailored to the unique characteristics of each event type (Cheng et al., 2021).

Looking to the future, respondents expressed strong optimism about the growing role of emerging technologies in shaping the event industry. There was broad agreement that technological innovation is not merely an enhancement but a necessity for the industry's long-term sustainability. This perspective is reinforced by the growing acceptance of concepts like the metaverse, immersive virtual platforms, and data-driven personalization as integral elements of next-generation events (Kapoor & Dwivedi, 2023). The belief that AR/VR will soon become a standard feature in event design reflects a readiness among stakeholders to embrace a tech-driven future. These findings align with projections that suggest immersive and intelligent technologies will redefine engagement paradigms and operational models in the event sector over the next decade (McKinsey & Company, 2022). As such, the study reinforces the importance of proactive

digital transformation efforts and strategic innovation planning for event professionals seeking to remain competitive in a rapidly evolving landscape.

## 5.2 THEORETICAL IMPLICATIONS

This research offers substantial theoretical contributions by expanding the current understanding of immersive technologies within the event management domain. Traditionally, technologies such as Augmented Reality (AR) and Virtual Reality (VR) have been viewed primarily through the lens of user experience enhancement. However, this study positions AR and VR as far more than experiential tools, emphasizing their strategic role in shaping event planning, decision-making, and operational efficiency. In doing so, the research aligns with and extends existing theories of service innovation and technology adoption, especially those that recognize technology as a driver of structural and behavioural change in organizational contexts. By illustrating measurable improvements in strategic planning and decision-making, this study affirms that immersive technologies should be conceptualized not just as supplementary tools but as central enablers of digital transformation in events.

Moreover, the introduction of Neuro-Enhanced Reality (NeR) into the discussion contributes a new dimension to the theoretical discourse surrounding experiential design and personalized engagement. NeR represents a significant evolution in immersive technology by integrating biometric and cognitive feedback into digital environments. Its potential to tailor content in real-time based on users' emotional and physiological states suggests a shift toward more intelligent, responsive event systems. This addition to the theoretical framework broadens the scope of immersive technology research and proposes new avenues for understanding

cognitive-personalized interactions in digital and hybrid event spaces.

Finally, the study contributes to the growing body of literature on hybrid event models, providing empirical evidence that supports the notion of technological augmentation rather than replacement of physical events. The findings highlight how virtual platforms and AR/VR tools enhance, not diminish, the value of in-person interactions by offering flexibility, accessibility, and additional layers of engagement. This supports theoretical perspectives that advocate for the integration of digital and physical experiences in a cohesive, user-centric event ecosystem. As such, the research helps refine conceptual models of hybrid event delivery and strengthens academic frameworks that address the convergence of technology, space, and audience behavior in modern event management.

### 5.3 MANAGERIAL IMPLICATIONS

From a practical standpoint, the research offers actionable insights for event professionals, technology developers, and strategic planners aiming to harness the full potential of AR/VR and emerging digital tools. The strong enthusiasm for immersive technologies signals a compelling need to prioritize investment in these innovations as a means to boost attendee engagement, satisfaction, and loyalty significantly, key drivers of competitive advantage in the highly dynamic events market (Garcia & Martens, 2021). To overcome the identified barriers of cost, skill gaps, and infrastructure deficiencies, managers should implement targeted staff training programs focused on technical competencies and allocate resources to upgrade digital infrastructure, ensuring reliable and seamless technology deployment during events (Pine & Kim, 2020). Addressing user resistance is equally critical; thus, designing intuitive interfaces, coupled with comprehensive onboarding and continuous education efforts,

can facilitate smoother adoption and enhance user comfort with AR/VR applications (Cheng et al., 2021). Recognizing the diversity in event types and audiences, integration strategies must be tailored for optimal relevance and impact, preventing a one-size-fits-all approach. Operational efficiency can be further amplified by adopting AI-driven scheduling, real-time crowd monitoring, and smart ticketing systems, which not only streamline logistics but also enhance the professional image and brand value of event organizers (Nguyen & Thomas, 2022). Lastly, to sustain long-term success, managers must remain agile and vigilant in monitoring emerging trends such as the metaverse, immersive virtual environments, and personalized data analytics, ensuring that their event offerings continually evolve to meet the expectations of increasingly tech-savvy attendees (McKinsey & Company, 2022). By embedding these strategies into their business models, event professionals can drive innovation while maintaining relevance in a rapidly shifting digital landscape.

## 6. LIMITATIONS

Although this research offers valuable insights into the integration of AR and VR within event management, it is not without its limitations. The study's primary focus on AR and VR may have inadvertently excluded other emerging technologies, such as AI-driven analytics, blockchain for event logistics, and haptic feedback systems, that are beginning to influence the industry. This narrower scope, while intentional for depth, may limit the broader applicability of the findings to the wider spectrum of technological innovation in events. Additionally, the sample size comprises predominantly event planners and attendees from selected events, which may introduce an inherent bias, as it may not fully reflect the perspectives of other key stakeholders such as technology developers, sponsors, or government regulators. The research is also contextually

grounded in specific types of events, which may limit its generalizability across diverse cultural and geographical settings. These limitations highlight the need for broader, more inclusive studies that can better capture the multifaceted and global nature of technology's impact on event management.

## 7. FUTURE RESEARCH DIRECTIONS

Building on the insights gained from this study, several avenues for future research emerge. One promising direction is the inclusion of additional emerging technologies, such as artificial intelligence, machine learning, and the Internet of Things (IoT), to develop a more holistic understanding of the digital transformation of events. Investigating the long-term impacts and sustainability of immersive technologies in both in-person and virtual events would also be valuable, particularly in assessing return on investment and user retention over time. Moreover, there is a growing need to explore the ethical and societal implications of immersive experiences, particularly as technologies become increasingly data-driven and personalized. Questions of digital surveillance, emotional manipulation, and consent in AR/VR environments warrant closer examination. Comparative studies across varied cultural, regional, and socio-economic contexts would further enhance the external validity of current findings, shedding light on how technological adoption differs across global markets. As the field continues to evolve, longitudinal studies tracking technological adaptation and audience behavior over time will be crucial for understanding future trends and guiding innovation.

## 8. CHALLENGES AND ETHICAL CONSIDERATIONS

Despite their potential, the adoption of AR and VR technologies in event management presents several notable challenges and ethical concerns. High implementation costs remain a significant barrier, particularly for small and mid-scale event planners who may lack the budget for advanced hardware and software integration. Technical expertise is also required for seamless deployment, which can create dependency on external vendors or limit accessibility to organizations with the necessary infrastructure and training. From an ethical standpoint, the use of immersive technologies raises questions around data privacy, biometric tracking, and user consent, particularly when these tools collect and respond to emotional or behavioural inputs. There is an urgent need for clearer regulatory frameworks and data governance policies to protect user rights in these environments. Furthermore, the growing prevalence of digital engagement in events brings the risk of digital fatigue, where overstimulation and constant virtual exposure may reduce rather than enhance attendee interest and participation. Addressing these challenges through responsible innovation, user education, and ethical design principles will be essential to ensuring that immersive technologies contribute positively and sustainably to the future of event management.

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### 8.2 ETHICAL STATEMENT

Data was obtained from respondent after disclosing the intent of research and promise was made to them that their response will be not be disclosed ever. The research has been carried out in accordance with the COPE guidelines.

### 8.3 Authors contributions

Ajay Bisht: Introduction, Literature Review and Research Methodology

Dr. Pradeep Bhatt : Discussion, Implication and Conclusion

### 8.4 Conflict of interest

Authors declare no conflict of interest

### 8.5 Data availability statement

Not applicable

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