

**PSG COLLEGE OF TECHNOLOGY**  
**(AUTONOMOUS INSTITUTION)**

**COIMBATORE-641 004**



**TOPIC: IMPLEMENTATION OF VIRTUAL  
TOURISM IN VR**

**BRANCH: ELECTRONICS AND  
COMMUNICATION ENGINEERING**

**SUBJECT: VIRTUAL REALITY**

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# Abstract

Virtual tourism presents viewers with an immersive experience of an activity, location, or destination through the use of technology. There are tons of different types of virtual tourism offerings, but there's usually a combination of virtual reality, still images, video, audio, narration, interactivity, and other multimedia formats to provide an experience of a destination that a user cannot get through images or websites alone. Viewers can access virtual tourism content using a virtual reality headset for the most immersive experience, but they can also usually view the content on a normal computer or even a mobile device.

Virtual reality is used mostly in advertising of tourist products as well as in guided tours, for education and recreational purposes and the development of social tourism. The future of virtual tourism depends on the improvement of technical capacity for designing virtual tours, creating content for them etc. Humanizing the tourism experience with virtual and augmented reality has gained traction, but fragmented literature delimits the holistic view. Present study bridges this knowledge gap through a comprehensive review of 1652 articles published between 2000-2021. The present study is an integrative review that encapsulates quantitative (science mapping) and qualitative (intellectual structure mapping) methodologies. Findings suggest interaction among elements of virtual tourism like smartphones, augmented reality, virtual reality, big data, and AI/ML are recasting the virtual tourism experience.

## Introduction

No matter why and where you travel. There is always something wonderful new to be found.” Humans are natural voyagers and inquisitive to explore new places. The word “tourism” was included in the Oxford English Dictionary in 1811. Tourism involves a globular journey where tourists return to their point of origin. Global trends indicate long-haul travel, adjoining country tourism, wellness and health holidays, medical tourism, bucolic and cultural tourism, ecotourism, spiritual tourism, sports & escapade tourism, and beach tourism as emerging areas of tourist interest. In 2020, the spread of coronavirus led to widespread panic, anxiety, public health crisis, economic and social disruptions. Pandemic transverse changes in consumer behavior lead to enormous losses in the tourism and hospitality sectors.

Pandemic created a sense of fear and uncertainty reflected in the equity markets . Researchers explored public sentiments using social-mediated crisis communication models . The world witnessed a steep jump in work from home activity and widespread unemployment. Past researchers pointed to technology as the key element for future trends in tourism . Traction for virtual tourism gets accelerated due to the pandemic. Researchers also predicted strong growth of virtual tourism with cross-collaboration among international operators for a wider presence in developing nations using technology

Virtual and augmented reality also create pull in shaping future trends . Although past researchers had mentioned technology as the key driver for future tourism, including virtual tours, the comprehensive review entailing science performance mapping and intellectual structure analysis remains unaddressed. Comprehensive reviews set the tone for future research with an understanding of the past and present of the research domain . The scant review delimits

the research potential on virtual tourism. The present study aims to bridge this gap to discern the past, present and future of the virtual tourism to unfold the future research avenues.

## Literature Survey

Technologies like AR/VR create an immersion where tourists lose the sense between real and virtual worlds . AR/VR offers interactivity, imagery, and immersion in the tourism experience. Augmented reality uses synthetic images over real images to project virtual objects as part of the real world . Virtual reality engages multiple senses like vision, sound, and touch for an immersive experience in virtual tourism . Embodiment equipment like VR head gear and helmet-mounted displays induces a psychological immersion. 3D presentation and creation of virtual spaces engage tourist senses for a virtual tourism experience. AR technologies are spatial, while VR technologies are three-dimensional. VR discern real illusion in the virtual world, while AR unfolds virtual image in the real world.

Human senses get so engrossed in the interactivity and vividness of the virtual environment that it leads to a psychological immersion of telepresence. Interactivity, vividness, and immersion amalgamate for an amazing virtual tourism experience. Virtual reality induces mental imagery for real-world like tourism experiences. Technological stimulations in AR/VR manipulate the real-world dimensions to engage tourist imagery (affective/cognitive), and interactivity engulfs tourist attention for an unparalleled tourism experience

Tourists are happy to escape into known simulated experiences like Disneyland, totally absorbed into staged alternate realities . It can be argued that the application of VR/AR into the tourism experiences merely pushes this alternate reality one step further. Research has shown that VR's greatest strength is its ability to visualise spatial environments . This is especially crucial in tourism where products are intangible and are confidence goods which consumers are not able to test in advance. Putting on a VR headset and being able to compare different destinations could help consumers make informed decisions . Wan, Tsaur, Chiu, and Chiou found that for theme parks, virtual experiences provided more effective advertising compared to brochures due to the richness and interactivity of the information. This is supported by studies that show the ultimate goal for webbased destination marketing is to provide travel information to tourists via a vicarious experience of the destination to persuade them to visit . VR can cater specifically to the vicarious experience by allowing the user to experience selected visual, audio, and most importantly, spatial aspects of the destination without actually being there. Therefore, there is a need for research on adaptation of these attributes for the optimal application of VR as a tourism tool. Facets of VR and AR have already been adopted by the tourism industry.

## VR Application

### ➤ Mobile devices and smart tourism

Mobile devices like smartphones have become vital for tourists, tourism marketers, and network partners as a source of real time information exchange . Real time information exchange unfolds tourist mind map. It would be worth exploring whether economic, demographic, cognitive, and behavioral characteristics affect tourist behavior with mobile devices. Additionally, owing to the intensive use of technology in daily life, some tourists opt for 'detox' of 'tech-free' vacations for personal therapy . Studying how physical tourism will

co-exist with virtual tourism will be interesting. Yet another appealing concept is parallel media interface - that is, to assess how the interface of entertainment, information, and communication affects tourist behavior and planning. Examination of contrasting personality of active vs passive tourist may yield beneficial outcomes for strategic tourism initiatives.

➤ **Internet-based interactions and destination management**

Spurt in online communication on social media and social networking sites influences the future travelers. Research gaps also appear in exploring kids as tourists. The increasing influence of kids on travel behavior is worth assessing from a virtual tourism perspective. Future studies may observe intercommunity tourist dynamics to raise pertinent questions: Are there archetypical roles within online communities - For instance, critics/ naysayers, ardent fans, negotiators, influencers, etc.? Network analytics may help decipher information diffusion patterns within and between communities .It is also important to decipher the dark side of smart technology on tourism due to extravagant choices, which may lead to behavioral fickleness and tourist defection. Further, as virtual tourism proliferates and blurs the lines between related sectors like hospitality, it would be interesting to explore the strategic choices. Transformation of technological, structural, and organizational changes requires exploration of emerging opportunities and challenges.

➤ **EWOM and virtual tourism**

The past literature acknowledges the cognitive, behavioral, and emotional effects of eWOM on tourists . It would be interesting to understand the coping mechanism with negative reviews and how does tourists counter balance negative reviews against their natural choices. The relevance of eWOM valence and eWOM volume in propelling virtual tourism, especially for VR/telepresence-based tourism, is yet another explorable line of research . The role of trust and perceived risk remains unexplored for VR-based travel services.

➤ **VR and AR-based tourism**

The potential for substituting traditional tourism with telepresence using VR wearables gadgets and immersive technology triggers sensory experiences . Future research may investigate collaborative destination marketing using VR-based technologies. VR-based tourism is an important medium to address inabilities such as physical, old-age related, and financial limitations . Future research may observe how VR may be a conduit to bridge such divides by making affordable, innovative virtual travel technologies. Another line of inquiry may study tourist behavior to inherently dangerous or inaccessible places. Additionally, considering the recent onset of COVID19, it shall be interesting to probe the future of VR in a crisis-prone world. Both AR and VR-based tourism unfolds a plethora of academic and practice-based research . There is also ample scope to decipher how VR and AR-based tech may shape sports tourism or event-based tourism.

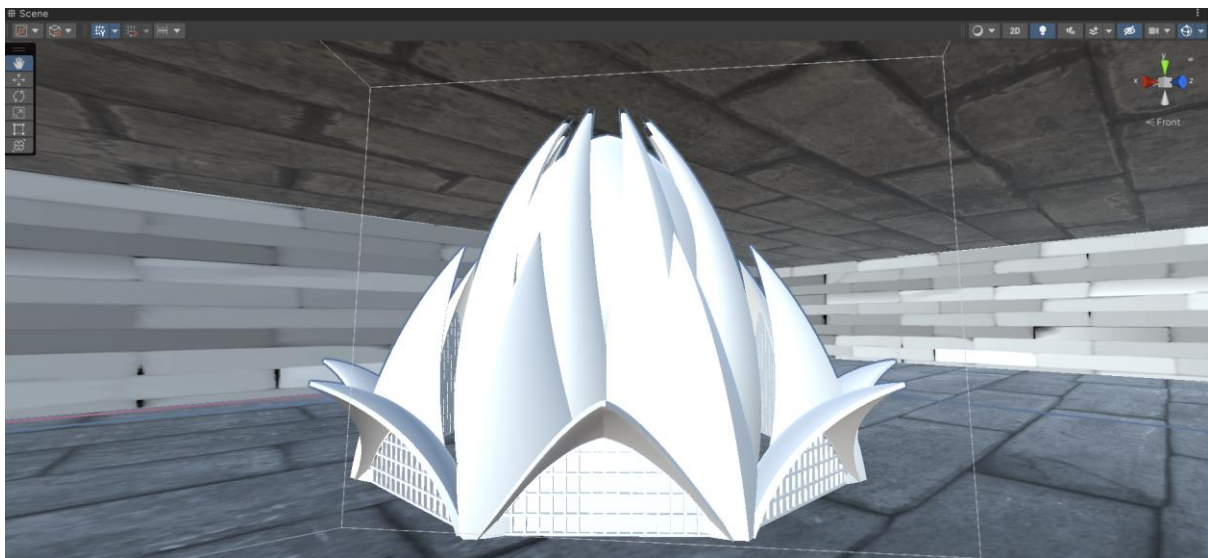
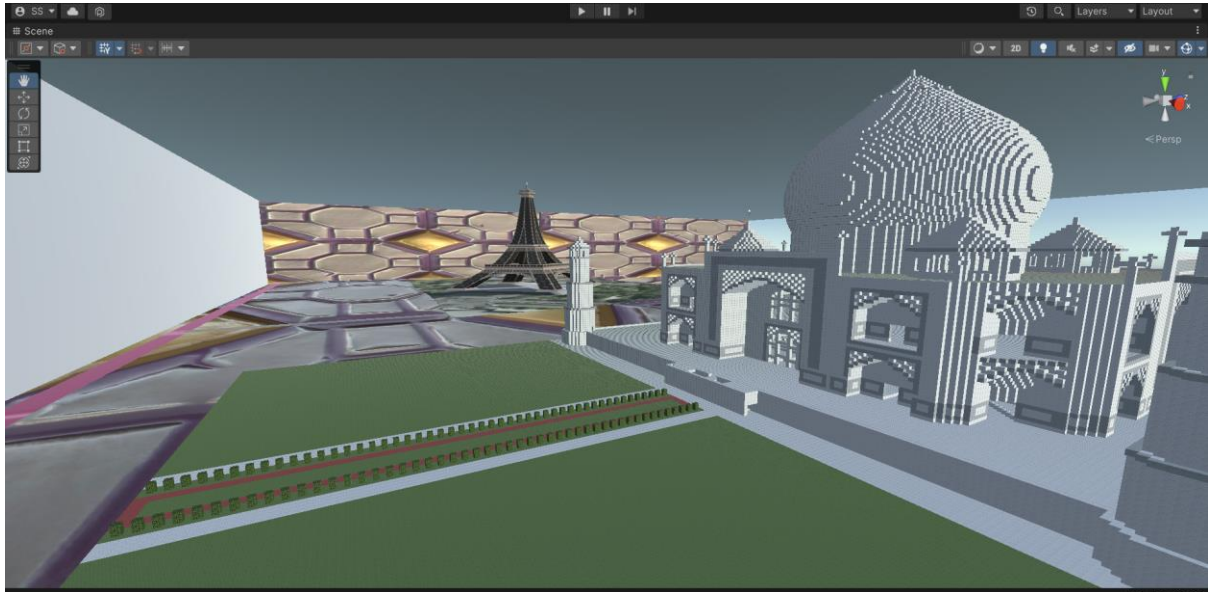
➤ **Big data trends and demand forecasting**

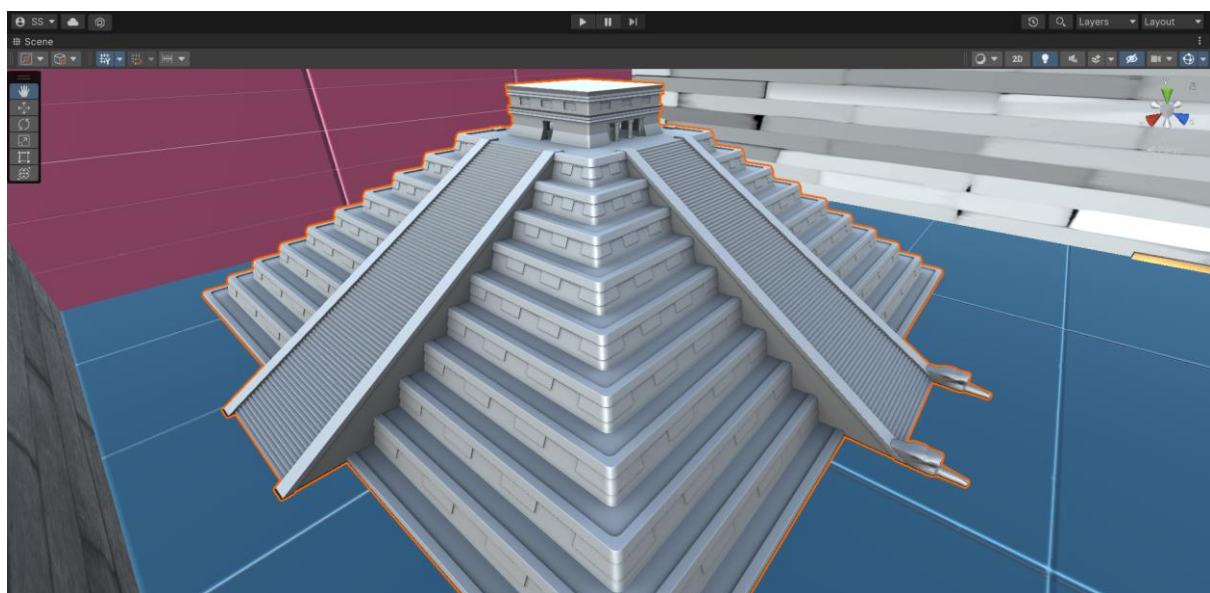
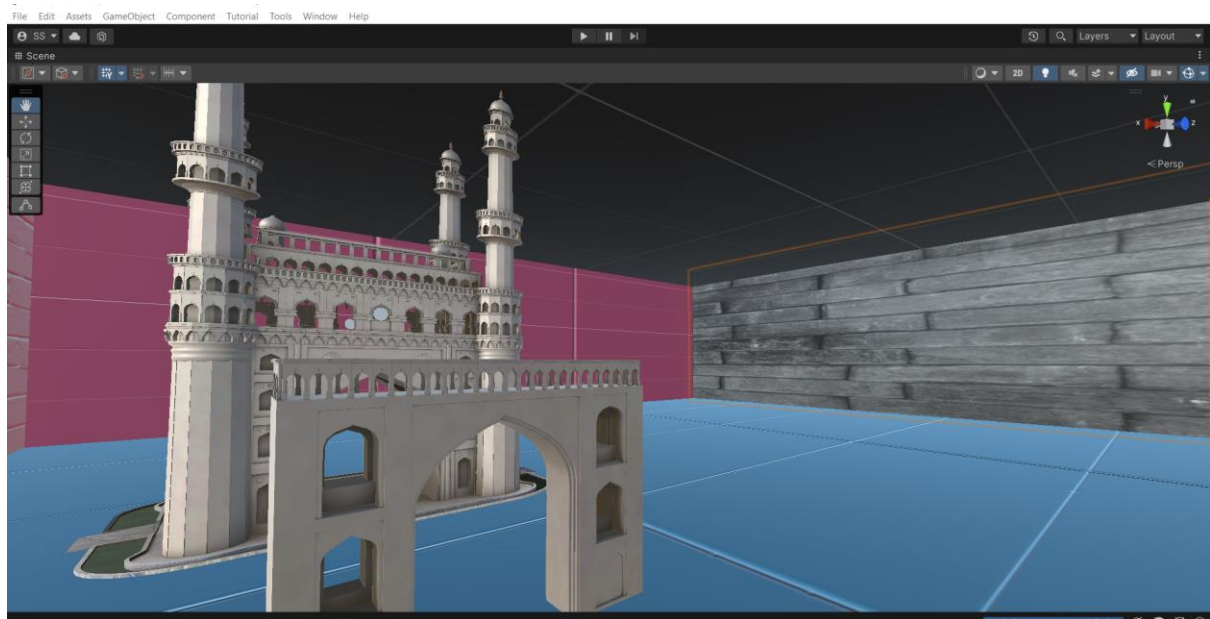
With increasing consumer awareness and business protocols on governance and ethics, the need for transparency using tourist data in tourism is gaining momentum. Further, the ubiquity

of data augments the importance of innovation in methodology and analysis tools to glean insights into virtual tourism. Data is vital not only to understanding the process of tourism but also in assessing its impact. For instance, tourism metrics may discern tourist footprint on climate, biodiversity, and indigenous communities.

## Implementation:

Inorder to implement tourism using virtual reality ,we have used unity software to create a virtual gallery.by placing various models of monuments ,the gallery has been created.





## Conclusion

Present study endeavours to coalesce and analyze literature related to virtual tourism and strives to elevate its perception from a technologically disruptive intervention to a transformative conceptualization. This study emerges as vital owing to changing tourism needs in lieu of exposure and access to technology. COVID19 has exacerbated the need to solve human problems through technology, and tourism is no exception. Systematic and scientific review protocols discern the past, present and future of virtual tourism. Review methodology entail both quantitative science mapping and qualitative intellectual structure mapping. Science mapping covered scientific actors like source, author, and document analysis culminating into an exhaustive bibliographic coupling-cluster analysis. Cluster analysis guided the transformative conceptualization of virtual tourism through key drivers, stakeholders, and activating levers that triggered interactional dynamics. The antecedent, intermediary, and outcome factors elucidate the intricacies of interactional dynamics within and between primary stakeholders.