Original Research Article

Technology, destination marketing and tourism: What, why and way forward
Punit Moris Ekka¹, Rosy Dhall²

¹ Indian Institute of Management Sambalpur, Sambalpur 768025, India
² Gandhinagar University, Gujarat 382422, India

* Corresponding author: Punit Moris Ekka, punitekka2016@gmail.com

ABSTRACT

This study thoroughly examines the dynamic relationship between technology and destination marketing in the tourist sector. It offers a detailed analysis of articles sourced from the Scopus database. The research seeks to both strengthen the current understanding of the topic and shed light on potential opportunities for future investigation and advancement in tourist practices. Following the COVID-19 epidemic, there has been a significant increase in interest and investment in technology and destination marketing within the tourism industry. The analysis of 32 meticulously chosen articles unveils a fascinating storyline of how technology has emerged as a major aspect of improving services and communication across all domains of the tourism sector. Every article received rigorous examination, taking into account important factors such as the study’s goals, methods of data collection, processes of synthesis, and indications of quality. The findings of this systematic review highlight the increasing importance of technological breakthroughs in transforming the tourist industry, especially in addressing the difficulties brought about by the global health crisis. The numbers obtained from this study not only provide insight into the present situation but also serve as a significant asset for predicting the future technology impact on the tourism industry. Outside of academic circles, these findings have practical consequences for politicians and professionals in the sector. The study indicates the necessity of creating proactive rules that promote the development of technological capabilities and guarantee the long-term viability of the tourism sector. This research adds to the continuing discussion on the influential impact of technology in destination marketing. It offers valuable insights that enable stakeholders to adapt and innovate in the changing context. This study serves as a call to action for all stakeholders involved in the tourist sector to embrace and utilize technology for its improvement as we move forward into a future influenced by technological breakthroughs.

Keywords: tourism; technology; destination marketing; literature review

1. Introduction

As the tourism business becomes increasingly competitive and globalized, places are forced to come up with inventive ways to lure travelers to their sites and attractions[1]. Destinations must use modern technology in this regard. Thanks to unprecedented opportunities and resources made possible by developments in information and communication technology over the last two decades, destination marketing organizations’ (DMOs’) marketing strategies have been significantly influenced by these developments. Some best practices...
for destination marketing experiences that make use of technological advancements were uncovered by the researchers. These examples demonstrate how tourist spots are increasingly leveraging technology to attract and engage tourists. To give potential visitors a feel for a destination before they go, DMOs around the world are increasingly turning to online platforms, VR apps, and social media[2]. Destination marketers are increasingly utilizing mobile apps due to the growing importance of portable electronics in the travel and tourism industry[3].

With the tourism industry becoming increasingly interdependent and competitive, destination marketing is often considered crucial to the growth and sustainability of popular tourist spots[4]. There is a growing and important subfield within the tourism industry known as destination marketing research. It is now a separate paradigm that rests on a few key assumptions about international travel. Destinations are the primary focus of tourism[5]. Furthermore, vacation places have become powerful brands in their own right. Last but not least, DMOs are becoming an important tool for many countries, states, and towns to compete for tourists. There is a strong correlation between the strategic actions taken in the cutthroat business of luring people to specific locations and the rise of destination marketing as an important subfield within tourism studies.

While initially gaining traction in the gaming and entertainment sectors, these devices are now being implemented extensively in numerous industries, such as destination marketing, education, training, and travel. Numerous new wearable technologies are emerging, including head-mounted displays (HMD)[6]. These state-of-the-art technologies are expected to significantly transform the tourism experience[7], beginning with the pre-visit phase. During pre-visit time, the visitor’s curiosity, anticipation, and awareness can be stimulated. Despite being a nascent field of study, there has been a dearth of comprehensive investigation regarding the potential ramifications of HMD virtual experiences on travelers’ inclination to visit particular sites and attractions while at their destinations. The application of theories and practices of experiential marketing to the travel industry is the subject of an expanding corpus of literature.

The rise in online marketing channels at different tourist destinations is closely linked to the growing population of tourists who possess personal computers[8]. The popularity of web technology has increased as a result of online ads and communications. The functionalities of smartphones, laptops, and desktop computers enable users to conveniently retrieve and share information, as well as make travel-related purchases from various locations[9]. These qualities have an impact on the communication patterns within the tourism business. Through the internet, clients can access websites that enable them to engage in communication, peruse reviews, and make purchases of tourist-related items[8]. Websites that possess an aesthetically pleasing appearance incorporate visually appealing images, interactive forms, dynamic animations, attractive typefaces, and a well-organized layout to enhance client engagement and encourage them to stay on the site for longer periods. This impacts how tourists interact with and utilize high-quality technologies.

A user-friendly website will have an easy-to-understand navigation system. According to prior empirical research, customers’ propensity to shop online for vacation-related items is influenced by their perceptions of the ease of use of websites[10]. To attract visitors, websites should have appealing features. Users are more likely to return and purchase travel-related products when they experience passion, emotional fulfillment, and positive engagement[11]. Website visitors value intuitive layouts, easy navigation, and logical drop-down menus when choosing which places to visit. Commitment and official guarantees are necessary while doing business and making travel-related purchases online. Among these, one can find a variety of tourist goods and services tailored to their specific needs, as well as top-notch products that meet tourists’ evaluation criteria, order priority, transportation, and payment preferences. To compete successfully with other destination markets around the world, tourists need technologies that are both functional and interesting and that ensure strong security measures are in place to prevent vulnerabilities and give a risk-free experience[12]. This helps
to bring in more customers and make them refer to others as well. The current study tried to understand how technological innovation and destination marketing in the tourism industry are being conceptualized in the literature. Also, what are the future research avenues arising in this area of research?

2. Objectives of the study

The study aims to conduct a comprehensive review and analysis of articles from the Scopus database related to technology and destination marketing in the tourism industry to consolidate the existing knowledge on this subject. Also, the purpose of the study is to investigate the impact of the COVID-19 pandemic on the tourism industry, specifically focusing on the surge in interest and investment in technology and destination marketing as a response to the challenges posed by the global health crisis.

3. Methodology

To gain a deeper understanding of the how and why of technology use in the tourism industry, the current study has utilized a systematic literature review approach. To minimize any form of existing subjective bias, systematic approaches are essential. These methods also provide academic rigor, transparency, and reproducibility. According to Figueroa et al.\[13\], a systematic review is an attempt to provide a solution to specific research questions employing supporting empirical data that is produced after using a pre-defined criterion. This is done to fulfill the standards that have been set forth. For this investigation, the primary methodology that was utilized was a systematic literature review (SLR). This systematic review was carried out following the PRISMA framework\[14\].

The current research endeavor is centered on doing an extensive analysis of the existing literature on the topics of “technology”, “destination marketing”, and “tourism”.

It is well acknowledged in management literature that the SLR approach is widely recognized since it can generate research that is evidence-based and can be replicated\[15\]. Additionally, the SLR establishes an inquiry process of decision-making and produces an outcome that is explicit, objective, and transparent\[16\]. This is in addition to reducing the amount of bias that might be present in particular research.

Following the selection criteria, 157 articles emerged in the most prominent online database resource namely, Scopus. The data obtained from Scopus did not contain any instances of duplicate articles. A comprehensive analysis and synthesis of the found literature was accomplished by reading all of the titles and abstracts. None of the papers that were determined to be unimportant were included in the final review. The process yielded 32 articles (see Figure 1), all of which were included in the final synthesis. Durach et al.\[17\] outlined a six-step process that starts with developing a research question. Then, they move on to creating inclusion and exclusion criteria, choosing databases to search, applying the criteria, synthesizing relevant material, and finally, presenting the findings. This study used English-language literature published in respectable journals as the inclusion and exclusion criteria. The primary goal of content analysis is to classify, arrange, and synthesize material to glean useful information from the available data.
4. Results and discussion

In the tourism industry, destinations are the basic unit of analysis\(^\text{[18]}\). The integration of innovative technology has significantly impacted the advancement of novel products, services, procedures, and management practices within the tourism sector. New technology has significantly impacted how travel businesses create and provide experiences, as well as how travelers view and interact with destinations\(^\text{[19]}\). The utilization of emerging technologies holds the capacity to enhance the collaborative production of value among all participants in the sector, expand the experiential process across several dimensions, and streamline interactions between visitors and locations. The emergence of contemporary technology, namely mobile technology, enables travelers to simultaneously participate in virtual and real-world events\(^\text{[20]}\). The travel process comprises three distinct stages: pre-visit, during the trip, and post-visit\(^\text{[21]}\). This phenomenon takes place before the visit, during the journey, and after the visit. The pre-visit phase is a pivotal stage in the whole experience process as it allows travelers to shape their expectations for the visit and initiate the decision-making process\(^\text{[22]}\). During this period of waiting, the incorporation of innovative technologies is crucial as they enable travel firms and destination associations to promote their offerings in creative and efficient manners. Websites and social media are the most widely used technical platforms for promoting holiday destinations and items\(^\text{[23]}\). By employing these technologies, people can participate in a greater number of social interactions and obtain information about tourist attractions.

Tourism businesses can employ augmented reality (AR) to attract more visitors and provide them with a better experience while they’re there\(^\text{[24]}\). Several studies have looked at the possibilities of AR to make tourist experiences more engaging and enjoyable by enhancing the transmission of location information\(^\text{[24,25]}\).

Figure 2 illustrates that during the last several years, there has been an increase in the total number of publications. Since the year 2016, there has been a general upward trend in the total number of publications that are associated with the subject of this particular topic. The year 2023 was the one that saw the greatest number of works published.
Prominent holiday spots may now effectively promote themselves with the help of virtual reality (VR). In one of the first studies on the potential effects of VR on the travel industry, scientists predicted that the technology would fundamentally change how travel-related items are marketed and sold\textsuperscript{[26]}. Much research over the past few years has shown that VR is a useful tool for marketing tourism locations, services, and attractions. VR technology can help destination marketers create interactive experiences that they can employ in their communication campaigns\textsuperscript{[26]}\textsuperscript{[26]}. This also helps visitors with their decision-making and information search processes.

One way to describe virtual worlds is as ever-present online communities where users can interact with one another and even make it seem like other users are physically there. Virtual worlds facilitate social interaction by providing a platform for people to join massive, long-lasting online communities with many members\textsuperscript{[27]}. People pass them on to one another over time. A lot of places have put money into virtual worlds as a new way to advertise, communicate, and attract visitors so they may reap these benefits\textsuperscript{[28]}.

As depicted in Figure 3, the United States has exerted significant influence over the empirical studies. China ranks second in terms of writing articles on current topics. An examination based on individual countries reveals the want for additional research to originate from developing nations (as opposed to wealthy nations) to enhance the credibility of the notion that the findings may be universally applied.
Studies on VR have also demonstrated how tourism may be used to promote the arts and cultural heritage\[29\]. VR experiences are distinct from augmented reality (AR) experiences in that the former allows users to fully immerse themselves in a virtual environment, both physically and mentally, whereas the latter just allows users to superimpose digital content over their real-world surroundings\[30\]. VR is the technique of simulating one or more of the five senses in real time using computer-generated three-dimensional environments that users may explore and even interact with\[31\]. With a variety of HMDs, users can see virtual imagery directly in front of their eyes. HMDs can be as basic as a computer or TV screen or as sophisticated as goggles, glasses, or a helmet. Therefore, high-quality 3D images are necessary for immersive virtual reality environments and compelling virtual experiences in general\[32\]. Accurate 3D renderings of the site’s textures, lighting, transparencies, and shadows could improve the impression that potential guests have of the place even before they arrive.

The creation of more sophisticated and effective VR wearable devices is expected to positively impact the use of this technology to enhance tourists’ overall experiences\[33\]. The pre-visit stage is a part of this process since it is linked to making tourists aware, curious, and excited. Travelers can immerse themselves in a virtual world using HMDs, exploring and perhaps interacting with virtual rooms and locales at their leisure.

5. Dominating theoretical approach

Currently, the theory of reasoned action\[34\], the technological acceptance model\[35\], and the theory of planned behavior\[36\] are the most significant concepts in this field of research. The underlying concept of the theory of reasoned action was to investigate the interconnection between beliefs and intentions regarding behavior. The purchasing decisions of tourists are influenced by their behavioral objectives\[37\]. People’s perceptions of marketing for tourist places might be influenced by the social repercussions and online dissemination of information. Depending on their thoughts and beliefs, this might either decrease or increase the likelihood of tourists purchasing the goods\[38\]. In the present era, the availability of the internet and the study of semiotics have led to the influence of travel destination photographs on individuals’ choices to visit those specific locations. According to certain researchers in the field of tourism, there is a belief that signs, photographs, and symbols include fetishistic characteristics that elicit emotional responses from travelers when it comes to online location marketing\[39\]. Tourism experts assert that electronic word of mouth is a form of communication that significantly influences internet marketing for places\[38\].

Due to its perceived impartiality, tourists view online word-of-mouth as more trustworthy than traditional word-of-mouth\[40\]. The internet’s widespread use has greatly speeded up the exchange of information and electronic recommendations among prospective clients. Travelers use social media, blogs, discussion forums, websites, and weblogs among other digital channels to communicate electronically and through word-of-mouth with a large number of customers\[40\]. The majority of the literature that is now available on electronic word-of-mouth is communication-related. This indicates that academic research on e-word-of-mouth has been published in some academic disciplines without a conclusive conclusion. Communicators can influence the attitudes and decisions of message recipients about their chances of visiting the advertised site by using marketing strategies like electronic word-of-mouth. When word spreads electronically, information is exchanged, and independent analysis is done by both the sender and the recipient. In an attempt to persuade the receivers to make purchases or travel, the sender uses the internet as a channel to spread messages about goods and services by drawing on personal experience\[41\].
6. Theoretical implications

VR experiences made possible by wearable electronics have the potential to be effective tools for destination marketing. There is still a lack of empirical research on how visitors’ and tourists’ behavioral intentions are affected by realistic and immersive virtual encounters utilizing HMDs, even though these state-of-the-art devices are expected to have a revolutionary impact on travel experiences. In addition, studies examining how visitors to cultural sites use wearable technology are less in number. Research on the use of VR in marketing and tourism has shown that the visual and emotional aspects of a destination’s virtual experience will be significantly affected by the next generation of VR technology, which in turn will affect users’ propensity to visit.

The tourism sector has primarily focused its VR research on simulated virtual environments that have no intentional similarity to real places, such as virtual conference rooms and 3D tourism attractions. From a theoretical perspective, they highlighted the need to examine VR experiences alongside real tourist destinations. This involves using virtual representations of actual surroundings where the actions closely mimic real-life experiences. By doing so, researchers may gain a deeper understanding of how VR impacts people’s attitudes about visiting these places. The current study revealed that the aesthetic appeal of VR encounters employing HMDs had a beneficial influence on users’ emotional attachment to the virtual experience and their likelihood to visit the highlighted website. This study highlights the significance of considering the combined influence of VR technology and destination marketing when discussing the impact on tourists’ and visitors’ behavioral intentions. This study contributes to the current knowledge of VR in the tourist industry by integrating findings from the domains of experiential marketing and destination image development.

7. Managerial implications

From a management standpoint, DMOs will find great value in this research as they formulate their marketing strategy, with a particular emphasis on the pre-visit phase of the experience process. To reach a wider audience and direct resources towards specialized smart devices, DMOs must strategically leverage the potential of emerging technologies. Since these innovative technologies are still in their infancy and have only recently been introduced to the tourism sector, destination managers must predict whether using HMDs to enable VR experiences for communication and promotion will encourage potential visitors to visit the actual locations. The study’s findings provide evidence that this specific type of encounter can be an effective marketing tactic in influencing consumers’ travel inclinations. The study suggests that destination managers should give the visual aspect of the virtual experience top priority because it positively affects users’ emotional engagement, intentions to visit the actual location, and willingness to recommend it to others.

Online destination marketing is affected by the purpose of information searches carried out through search engines. The rising significance of electronic word of mouth and electronic quality of service in the search for tourist information is the main emphasis. Potential customers can connect, engage, and get all the information they need through a variety of marketing channels and tools that should be available on websites. Due to technological improvements, simple websites are no longer relevant in online destination marketing. Commercial services such as films, information distributed throughout, booking, transactions, and general hotel promotion should be integrated into hotel websites. For destination markets to comprehend the efficacy of hotel websites, managers need to look at the present state of online marketing institutions’ websites and make predictions about their future usage.
8. Conclusion and future avenues

The tourism industry has greatly benefited from the proliferation of information technologies and modern communication, which have provided destination organizations with additional resources for attracting and retaining tourists. Particularly, state-of-the-art wearable technology has great promise for expanding the utility of VR systems to increase visibility, interest, and engagement on the featured site. Experiences with virtual tours are beneficial for destination marketing because they enable potential visitors to assess the worth of the real experience they are about to have with more accuracy. The effectiveness with which visual information is searched, the location’s image, the capacity to look for experiential elements, the confidence of expectations, and the level of satisfaction with the actual travel experience are all areas in which the study’s conclusions are relevant to the impact that these tools have on tourism marketing.

The research findings provide a great collection of material for scholars interested in studying the technological improvements toward destination marketing in the tourism business. For this study, only the Scopus database was utilized as the sole literature source. However, future research endeavors may also consider using additional academic databases. Generalizing the results to different situations might be a challenge. Hence, it is necessary to conduct further research from other viewpoints to enhance the findings. To summarize, the findings of this study can be enhanced by further research using bibliography and/or meta-analysis. Future research may investigate the obstacles that hinder the widespread implementation of technological innovations for destination marketing in the tourism industry.

Author contributions

Conceptualization, PME and RD; methodology, PME; software, PME; validation, PME and RD; formal analysis, PME; investigation, PME; resources, RD; data curation, RD; writing—original draft preparation, PME; writing—review and editing, RD; visualization, PME; supervision, RD; project administration, PME. All authors have read and agreed to the published version of the manuscript.

Conflict of interest

The authors declare no conflict of interest.

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