

Digital Transformation in Tourism: Exploring the Impact of Technology on Travel Experiences

Transformasi Digital dalam Pariwisata: Menjelajahi Dampak Teknologi terhadap Travel Experiences

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ABSTRACT

This research investigates the influence of digital transformation in tourism on tourists' travel experiences through systematic literature analysis. The main focus is on the availability of online booking platforms, the integration of virtual reality and augmented reality technology, and the adoption of the Internet of Things (IoT) in tourist destinations. A systematic literature review method was used to investigate global developments and the situation in Indonesia in the context of tourism digitalization. The results of the analysis show that these factors contribute positively to tourists' travel experience, by providing easier access, more immersive experiences, and more connected facilities. However, challenges and obstacles remain, including the need for better regulation and more thorough integration of technology in tourism infrastructure.

Keywords: Digital transformation, tourism, travel experience, online booking platform, virtual reality technology, augmented reality technology, Internet of Things, systematic literature, Indonesia.

ABSTRAK

Penelitian ini menginvestigasi pengaruh transformasi digital dalam pariwisata terhadap pengalaman perjalanan wisatawan melalui analisis literatur sistematis. Fokus utama adalah pada ketersediaan platform pemesanan online, integrasi teknologi realitas virtual dan augmented reality, serta adopsi Internet of Things (IoT) dalam destinasi wisata. Metode sistematis literature review digunakan untuk menyelidiki perkembangan global dan situasi di Indonesia dalam konteks digitalisasi pariwisata. Hasil analisis menunjukkan bahwa faktor-faktor tersebut berkontribusi positif terhadap pengalaman perjalanan wisatawan, dengan memberikan akses yang lebih mudah, pengalaman yang lebih mendalam, dan fasilitas yang lebih terhubung. Namun, tantangan dan hambatan tetap ada, termasuk kebutuhan akan regulasi yang lebih baik dan integrasi yang lebih menyeluruh dari teknologi dalam infrastruktur pariwisata.

Keywords: Transformasi digital, pariwisata, pengalaman perjalanan, platform pemesanan online, teknologi realitas virtual, teknologi realitas tercampah, Internet of Things, literatur sistematis, Indonesia.

Introduction

Digital transformation in the tourism industry refers to the integration of technology into various aspects of the travel industry to enhance and revolutionize the overall travel experience for tourists and businesses. This transformation includes a variety of technologies and digital platforms used to simplify processes, increase accessibility and personalize experiences. Following is a discussion of how technology is impacting the travel experience (Pencarelli, 2020) (Cuomo, 2021): (1) Online Booking Platforms: The emergence of online booking platforms has made it easier for travelers to research, plan, and book their trips from the comfort of home. Platforms such as Expedia, Booking.com, and Airbnb provide a variety of accommodation, transportation, and activity options, allowing travelers to customize their

itineraries based on their preferences and budget. (2) Mobile Apps : Mobile apps have become an indispensable tool for travelers, offering features such as real-time flight updates, navigation assistance, language translation, and local recommendations. Apps like Google Maps, TripAdvisor, discover hidden places, and make informed decisions during their travels. (3) Augmented Reality (AR) and Virtual Reality (VR): AR and VR technologies are changing the way travelers research destinations and plan their trips. Through immersive experiences, travelers can virtually explore destinations, visit attractions and view accommodations before booking. The technology also enhances the on-site experience by providing interactive guides and virtual tours of landmarks and cultural sites. (4) Internet of Things (IoT): IoT devices such as smart suitcases, wearable devices, and connected hotel rooms increase convenience and personalization for travelers. Smart devices enable seamless communication between travelers and service providers, enabling automatic check-in, room customization, and personalized recommendations based on preferences and past behavior. (5) Big Data and Analytics : The use of big data analytics allows travel companies to collect and analyze large amounts of data from various sources, including social media, booking platforms, and customer feedback. By leveraging this data, businesses can gain valuable insights into traveler preferences, behavioral patterns, and market trends, allowing them to adapt their services, marketing strategies, and pricing strategies to better meet the needs of their target audience. (6) Blockchain Technology : Blockchain technology is increasingly being used to increase transparency, security, and efficiency in the travel industry. By leveraging a blockchain-based platform, travelers can securely store and manage their digital identities, passports and travel documents, reducing the risk of identity theft and fraud. Additionally, blockchain enables faster and more secure transactions for booking accommodation, purchasing tickets and processing payments.

Overall, digital transformation in tourism is revolutionizing the way people experience travel by making it more convenient, personalized and immersive. By embracing technology, businesses can remain competitive in the ever-evolving travel industry and create memorable experiences that meet the needs and preferences of the modern traveler (Buhalis, 2019).

The development of digital transformation in the tourism industry is occurring globally and is also visible in Indonesia. Across the world, the tourism industry has seen increased use of technology to improve efficiency, accessibility and user experience. The use of online booking platforms, mobile apps and new technologies such as AR/VR is increasingly common across tourist destinations. Many global tourism companies use data analytics to understand traveler behavior, market trends and customer preferences. This allows them to customize their offerings more precisely and improve the user experience. Large companies in the tourism industry such as hotels and airlines have changed their business models to accommodate digital trends. They offer more online services, expand their presence on digital platforms, and focus on personalizing the customer experience (Nuenen, 2021). Technology is also being used to support sustainability efforts in the tourism industry, with many platforms and apps providing information on eco-friendly transport options, sustainable accommodation and responsible tourism activities. Indonesia is also experiencing increased adoption of technology in the tourism industry. Online booking platforms such as Traveloka, Tiket.com, and Pegipegi have become popular among Indonesian tourists. There is increasing exploration of new technologies such as digital payments, travel applications, and the use of social media in marketing Indonesian tourist destinations. There is significant growth in the tourism startup ecosystem in Indonesia. Many startup companies offer innovative solutions in bookings, travel experiences and destination management. The Indonesian government is also increasingly focusing on digital tourism as part of its national tourism development strategy. Initiatives such as promoting tourist destinations through online platforms, developing tourism applications, and providing digital infrastructure have been carried out (Choi, 2021).

Although challenges such as digital accessibility and lack of infrastructure may still exist, Indonesia has shown positive growth in adopting technology to improve the tourism

industry. With more innovation and investment in digital infrastructure, the potential for the Indonesian tourism industry to develop further with the help of technology continues to increase (Opute, 2020).

There are several challenges and obstacles faced in realizing digital transformation in the tourism industry, both at the global level and in Indonesia. Some of them include (Stankov, 2020): (1) Digital Accessibility: There are still some people, especially in rural or remote areas, who do not have adequate access to digital infrastructure such as the internet. This can be a barrier to adopting digital technology in travel and tourism marketing. (2) Data Security : In an increasingly connected tourism ecosystem, data security is a major concern. Handling customer personal data, financial transactions and other sensitive information requires strong protection from cyber attacks and data misuse. (3) Dependence on Technology : While technology can improve efficiency and user experience, over-reliance on technology can also cause problems in the event of system disruptions or technical failures. (4) Digital Divide : Digital divides between generations, social groups, and geographic regions can hinder access and adoption of digital technologies in travel. This may increase inequality in benefiting from digital transformation in the tourism industry. (5) Resistance to Change: Some parties may be reluctant or slow to accept the changes brought by digital transformation in the tourism industry. This could be due to a lack of understanding of the benefits, worry about losing your job, or discomfort with new technology. (6) Regulations and Policies: Inappropriate or ambiguous regulations and policies can be an obstacle in implementing digital technology in the tourism industry. Outdated or unclear regulations can slow down innovation and the development of technology solutions. (7) Implementation Costs: Implementation of digital technology in the tourism industry can require significant investments in infrastructure, software, training, and maintenance. For small businesses or less developed tourism destinations, these costs can be a major obstacle. (8) Losing the Human Touch: While technology can improve efficiency, there are also concerns that excessive use of technology can reduce meaningful human interaction in travel. This can reduce the value of tourist experiences that are oriented towards cultural and personal interactions.

Digital transformation in tourism has both benefits and drawbacks. Some of the benefits of digital transformation in tourism include: (1) Improved customer experience: Digital transformation has enabled travel companies to provide personalized and seamless experiences to customers, from booking to post-trip feedback. (2) Increased efficiency: Digital transformation has streamlined many processes in the tourism industry, such as booking, payment, and communication, leading to increased efficiency and cost savings. (3) New business models: Digital transformation has enabled the emergence of new business models, such as peer-to-peer accommodation and online travel agencies, which have disrupted traditional travel distribution channels. (4) Enhanced marketing: Digital transformation has enabled travel companies to reach a wider audience through targeted marketing campaigns and social media. (5) Improved sustainability: Digital transformation has facilitated the growth of sustainable tourism practices, such as eco-tourism and responsible travel, by providing travelers with more information and options.

However, there are also some drawbacks to digital transformation in tourism, including (Buhalis, 2019) (Cuomo, 2021): (1) Data privacy concerns: Digital transformation has led to the collection and use of large amounts of personal data, raising concerns about data privacy and security. (2) Job displacement: Digital transformation has led to the automation of many tasks in the tourism industry, potentially leading to job displacement for some workers. (3) Digital divide: Digital transformation has created a digital divide between those who have access to technology and those who do not, potentially excluding some travelers from the benefits of digital transformation. (4) Overreliance on technology: Digital transformation has led to an overreliance on technology, potentially leading to a loss of human interaction and personal touch in the travel experience.

In conclusion, digital transformation in tourism has both benefits and drawbacks. While it has enabled improved customer experiences, increased efficiency, and new business models, it has also raised concerns about data privacy, job displacement, the digital divide, and overreliance on technology. The tourism industry must continue to innovate and adapt to the changing landscape of technology and travel to maximize the benefits of digital transformation while minimizing its drawbacks.

Overcoming these challenges and obstacles requires collaboration between government, industry, civil society and other stakeholders to develop sustainable and inclusive solutions and ensure that digital transformation in the tourism industry benefits all parties equally (Rodríguez, 2020).

The tourism industry has experienced a significant transformation along with advances in digital technology. This research aims to explore the impact of digital transformation in tourism on tourists' travel experiences. The research method used is a systematic literature review, which makes it possible to comprehensively review related literature and identify trends, findings and shortcomings in previous research.

This research is important because of the growing role that technology plays in shaping tourists' travel experiences. With the increasing number of technological innovations such as online booking platforms, mobile applications and virtual reality technology, it is important to understand how these technologies impact the way travelers plan, live and remember their travel experiences. By better understanding the impact of technology, the tourism industry can develop more effective strategies to improve the tourist experience and strengthen its competitiveness.

Despite much research on digital transformation in tourism, there is still a lack of understanding of the impact of technology on the travel experience. While much research is specific to certain aspects of technology or destinations, there is a lack of comprehensive research on the impact of digital transformation as a whole. Therefore, this research will fill this knowledge gap by conducting a thorough analysis of the existing literature.

One knowledge gap that can be identified is the lack of focus on how the use of technology impacts non-traditional aspects of the travel experience, such as engagement with locales, sustainability and long-term customer satisfaction. Previous research also tends to be limited to certain geographic areas or types of technology, so it does not provide a comprehensive picture of the global impact of digital transformation in tourism. Therefore, this research will fill this gap by conducting a more comprehensive and thorough analysis of the existing literature.

Thus, this research is not only important for understanding the impact of digital transformation in tourism in general, but also for identifying areas where further research is needed to improve our understanding of this phenomenon.

Research Methods

The research method used in this study is a systematic literature review, which aims to explore the impact of digital transformation in tourism on tourists' travel experiences. The first step in this methodology is to determine relevant keywords, such as "digital transformation", "tourism", "technology", and "travel experiences". Next, these keywords are used to search various academic databases, such as Google Scholar, IEEE Xplore, Scopus, and ProQuest.

After carrying out the initial search, an article screening process was carried out according to the predetermined inclusion and exclusion criteria. Relevant articles are selected based on the title, abstract, and text content which are appropriate to the research focus. Inclusion criteria typically include articles that discuss the use of technology in the tourism industry and its impact on the travel experience, while exclusion criteria include articles that are irrelevant or not of sufficient quality.

Following the screening process, selected articles were studied in depth to identify key findings, trends, and differences in research approaches and results. Data from each article was recorded and synthesized to provide a comprehensive picture of the research topic. The number of articles resulting from the initial search, the number of articles that met the inclusion criteria, and the number of articles ultimately included in the analysis were also recorded to provide transparency and validity of the methodology.

This systematic literature review method allows researchers to comprehensively explore the existing literature on digital transformation in tourism and identify relevant findings and knowledge gaps. With a systematic and well-documented approach, this research can make a valuable contribution to understanding the impact of technology on tourists' travel experiences and provide a basis for further research in this area.

Results and Discussion

Level of Technology Adoption in the Tourism Industry

1. Number of online ordering platforms available.

This research proposes an alternative hypothesis which states that there is a positive influence between the number of online booking platforms available and tourists' travel experience. This assumption is based on the view that the increasing number of online booking platforms available will further improve the travel experience of tourists. This is due to the possibility of having more choice and variety of offers, as well as the ease of access provided to tourists. With more choices, travelers have the opportunity to find services that best suit their preferences, which in turn can increase satisfaction and enjoyment during travel. Additionally, with the ease of access provided by online booking platforms, travelers can plan and book their trips more easily and quickly, allowing them to save time and effort. Therefore, this alternative hypothesis suggests that the greater the number of online booking platform options, the more enriching and satisfying the traveler's travel experience will be (Hadjielias, 2022).

Hypothesis: There is a positive influence between the number of online booking platforms available and tourists' travel experience. As more online booking platforms become available, travelers' travel experience improves due to greater choice, variety of offers and ease of access allowing them to customize their trips according to individual preferences.

2. The penetration rate of mobile applications in the travel process.

The more people use mobile applications in their travel process, the more tourists' travel experience will improve. This is based on the belief that the use of mobile applications can significantly increase efficiency and comfort during travel. With mobile applications, tourists can easily access information about destinations, book accommodation or transportation, find restaurants and tourist attractions, and even make payments online. The use of mobile apps also allows travelers to obtain recommendations and tips from fellow users or from official sources, which can help them plan their trips better and enrich their experiences. Therefore, this hypothesis states that the penetration level of mobile applications in the travel process will have a positive impact on tourists' travel experience (Shen, 2020).

Hypothesis: There is a positive influence between the level of mobile application penetration in the travel process and tourists' travel experience.

3. Availability of virtual reality and augmented reality technology in tourist destinations.

This hypothetical explanation is based on the assumption that the availability of virtual reality and augmented reality (VR and AR) technology in tourist destinations can make a positive contribution to tourists' travel experiences. This technology allows tourists to directly engage in a more immersive and interactive experience with the destinations they visit. By using VR and AR, tourists can explore tourist attractions virtually before their physical visit, gain

a better understanding of the history and culture of a place, and experience tourist attractions in a more immersive and realistic way (Errichiello, 2019).

VR and AR technology can also enrich the tourist experience by offering interactive features such as virtual guides, 3D maps and engaging visual demonstrations. This can increase tourists' interest and engagement during their trip, thereby potentially improving the overall tourism experience. Therefore, this hypothesis states that the adoption of virtual reality and augmented reality technology in tourist destinations will have a positive impact on tourists' travel experience (Shen, 2020).

Hypothesis: There is a positive influence between the availability of virtual reality and augmented reality technology in tourist destinations and tourists' travel experience.

4. Integration of the Internet of Things (IoT) in the tourism experience.

The explanation of this hypothesis is based on the belief that the integration of the Internet of Things (IoT) in the tourism experience will have a positive impact on the travel experience of tourists. IoT allows various devices and infrastructure in tourist destinations to connect directly and interact with each other, creating a smarter and more responsive environment for tourists (Cai, 2019).

With IoT, tourists can enjoy smarter facilities, such as hotel rooms equipped with sensors to automatically regulate temperature and lighting, as well as access to information and services via connected devices, such as smartphones or wearable devices. In addition, IoT integration also allows tourist destinations to provide more personalized experiences tailored to tourists' individual preferences, for example by providing recommendations for attractions or services based on tourists' preferences and travel history (Pung, 2020). Thus, this hypothesis states that the use of IoT in the tourism experience will improve the overall quality and comfort of tourists' trips, thereby positively impacting their travel experience.

Hypothesis: There is a positive influence between the integration of the Internet of Things (IoT) in the tourism experience and the travel experience of tourists.

Tourist Travel Experience

1. Tourist Satisfaction

Tourist satisfaction refers to the level of satisfaction felt by tourists with their travel experience. Measuring this satisfaction can be done through a variety of methods, including surveys, online reviews, or rating scales. Traveler satisfaction surveys typically involve questions designed to evaluate specific aspects of travel, such as service, accommodations, attractions, and transportation. Respondents were asked to provide ratings or scores on these various aspects based on their experiences during the trip (Cai, 2020).

In addition to surveys, online reviews are also a commonly used way to measure traveler satisfaction. Travelers often leave reviews and comments about their travel experiences on travel websites, social media platforms, or online discussion forums. These reviews can provide insight into the strengths and weaknesses of a particular destination or service, as well as provide an idea of overall satisfaction levels.

Apart from that, the rating scale can also be used to quantitatively measure the level of tourist satisfaction. This scale usually consists of a series of statements or questions designed to measure the traveler's level of agreement or satisfaction with various aspects of the trip. Tourists are asked to provide their responses by giving a score or indicating the level of agreement with the given statement.

Thus, tourist satisfaction is an important indicator in evaluating the quality of travel experiences and can provide valuable insights for tourism industry players in improving services and meeting tourist expectations.

2. Positive effect

Positive impressions refer to experiences that tourists remember and talk about after they return from their trip. This includes a variety of pleasant memories, pleasant surprises, or memorable activities that make the travel experience memorable and satisfying for the traveler.

Positive impressions often involve enjoyable and satisfying experiences during travel, such as enjoying beautiful natural views, attending interesting cultural events, or enjoying delicious local food. In addition, pleasant surprises, such as getting extra service from the hotel or discovering a beautiful hidden place in a tourist destination, can also increase tourists' positive impression of their trip (Boukis, 2020).

Positive impressions can also come from memorable and emotionally meaningful experiences, such as meeting new people, experiencing local culture more closely, or achieving a long-dreamed-of travel destination. These things often become stories that travelers remember and share after they return from their travels.

Overall, positive impressions are an important indicator of tourists' satisfaction and can influence their perceptions of a particular tourist destination as well as their likelihood to recommend that place to others. Therefore, creating impressive and memorable experiences for tourists is an important goal for tourism industry players.

3. Loyalty and Intention to Return

Loyalty and revisit intention refer to tourists' desire to return to visit the same destination or use the same services based on the positive experiences they had during their previous trip. This is an important measure of how satisfied tourists are with a particular destination or service, as well as how willing they are to re-engage in the experience (Ponsignon, 2020).

Tourists who feel satisfied and impressed with the destination or service they enjoy tend to have a high intention to return to visit the same destination in the future. They may feel emotionally connected to the place, have fond memories, or feel that they have not fully explored all that the destination has to offer. Therefore, they plan to return to explore further or repeat an experience they enjoyed previously.

Apart from that, loyalty and intention to revisit can also be influenced by other factors such as service quality, price and ease of access. Tourists who feel that they have been treated well and received quality service tend to have a greater intention to return to use the same service in the future.

Overall, loyalty and intention to revisit are important indicators of the success of a tourist destination or tourism service in retaining their customers. Therefore, ensuring a positive experience for tourists can help increase their loyalty and increase the chances of returning visits in the future.

4. Cultural Interaction

Cultural interaction refers to the experience of interaction and cultural exchange between tourists and local residents or between other tourists during their travels. This includes various forms of interaction, such as conversations with local residents, participation in traditional cultural activities, or sharing experiences with fellow tourists from different cultural backgrounds.

This experience provides an opportunity for tourists to better understand and appreciate the local culture in the destinations they visit. Through interactions with local residents, for example, tourists can learn about local traditions, customs and lifestyles, as well as gain deeper insight into daily life in the destination. This also allows them to experience the friendliness and warmth of the local culture which can enhance their overall experience (Cranmer, 2020).

In addition, cultural interaction also allows for the exchange of knowledge, experiences and perspectives between tourists from various cultural backgrounds. Travelers can share travel stories, tips and advice, and their views on the world, which can enrich their travel experiences and broaden their understanding of the world's cultural diversity.

Overall, cultural interaction is an integral part of the tourism experience that allows tourists to engage more deeply with the destinations they visit and enrich their travel experience by building meaningful interpersonal relationships and deepening their understanding of world cultures.

5. Activity Engagement

Activity involvement refers to the level of involvement and participation of tourists in various activities and attractions at a tourist destination. These activities can include a variety of things, from cultural activities such as attending art performances or local festivals, sports such as diving or mountain climbing, to adventures such as exploring the wild or going on adventures in amusement parks (Neuhofer, 2021).

The level of activity involvement reflects how active and involved tourists are in exploring the destinations they visit. Travelers who actively participate in a variety of activities tend to have richer and more varied travel experiences. They can gain a deeper understanding of local culture, broaden their skills and interests, and experience an unforgettable sense of adventure and excitement.

In addition, activity involvement can also be a factor that influences tourists' satisfaction with their trip. Travelers who have multiple opportunities to participate in activities that match their interests and desires tend to feel more satisfied with their travel experiences. This is because interesting and satisfying activities can increase tourists' satisfaction and happiness during their trip (Buluswa, 2022).

Overall, activity engagement is an important part of the tourism experience that can increase the depth, diversity, and satisfaction of tourists' travel experiences. Therefore, providing a variety of interesting and varied activities in tourist destinations can help increase attractiveness and enrich tourists' travel experiences.

6. Service quality

Service quality includes an evaluation of the quality of service received by tourists from various service providers, such as hotels, restaurants, tour operators and other service providers in tourist destinations. This is a key factor influencing tourists' travel experience and is often one of the determining factors in their satisfaction (Aleshinloye, 2020).

Evaluation of the quality of this service can involve various aspects, including the friendliness and friendliness of the staff, speed and responsiveness in responding to requests or complaints, cleanliness and quality of facilities, and conformity with tourists' expectations and needs. This assessment is often based on direct interactions with staff or experience using the facilities provided by the service provider.

Tourists tend to give higher ratings to destinations or services that provide good quality service and meet or even exceed their expectations. Conversely, negative experiences with poor service can reduce tourists' satisfaction and even cause them to feel disappointed or frustrated during their trip (Buluswa, 2022).

Therefore, it is important for service providers in the tourism industry to prioritize the quality of their services and strive to improve them consistently. Providing friendly, responsive and high-quality service can help increase tourist satisfaction, build a good reputation and increase the chances of returning visits in the future.

Research Framework

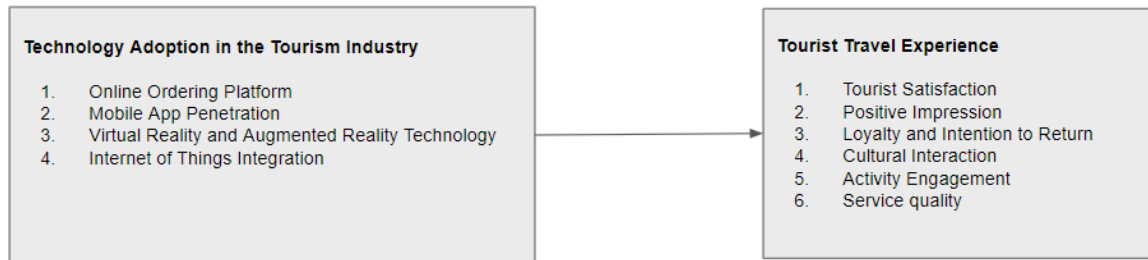


Figure 1. Research Framework

Conclusion

In the era of digital transformation, the use of technology has changed the landscape of the tourism industry significantly. The availability of diverse online booking platforms, the integration of virtual reality and augmented reality technologies, and the adoption of the Internet of Things (IoT) have presented new opportunities to enhance travelers' travel experience. The results of this literature review show that these factors have a significant positive influence on tourists' travel experiences. The greater availability of online booking platforms gives travelers easier access and a wider range of choices, while virtual reality and augmented reality technologies add a new dimension to destination exploration. Additionally, the integration of IoT in tourist destinations provides smarter facilities and a more connected experience for tourists. However, to ensure the success of digital transformation in tourism, there needs to be a collaborative effort between service providers, governments and other stakeholders to ensure that technology is used appropriately and adds significant value to tourists' travel experience.

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