

The Role of Generative Pre-trained Transformers (GPT) in Recreational Tourism: An Interview with ChatGPT

Okan OLAK^{1*} 

¹Harran University, School of Tourism and Hotel Management

Research Article

Received: 28.08.2023

Accepted: 06.10.2023

DOI: 10.25307/jssr.1341967

Online Published: 31.10.2023

Abstract

This study explores the potential benefits of employing generative pre-trained transformers (GPTs) in recreational tourism, the difficulties that arise when implementing such technology, the impact it has on tourist behaviour, and the ways it can be utilised in recreational tourism management. The original aspect of the study is that it is the first to give detailed information about the use of GPT in recreational tourism. ChatGPT was used as an interviewer in the study. ChatGPT is a software application that utilizes the high-powered machine learning software called Generative Pre-trained Transformer (GPT-3), developed by the OpenAI organization. Six questions were posed on the ChatGPT query screen (<https://chat.openai.com/chat>). The interview queries were prepared with reference to the study by Fusté-Forné and Orea-Giner (2023). The question statements in this study on the use of GPT in gastronomy tourism were changed to recreational tourism. ChatGPT's replies were tabulated and presented descriptively. Inferences and suggestions were made in line with the answers given by ChatGPT. The study showed that using GPT technology in recreational-based tourism can offer better customer interaction, decision-making, and a personalized travel experience. ChatGPT underlined that new technologies continue to evolve, and recreational-based tourism will become more personalized, informative, and immersive, ultimately enhancing the overall travel experience, and contributing to the growth and sustainability of the tourism industry. ChatGPT also noted GPT models have the potential to shape and enhance the entire travel experience for tourists, from the initial planning stages to the actual trip itself. Although GPT makes significant contributions to recreational tourism management and recreational tourists, there are deficiencies in ethical, privacy, and authenticity concerns.

Keywords: Generative pre-trained transformers (GPT), ChatGPT, Recreational tourism

* Corresponding Author: Okan OLAK, Email: okancolak@harran.edu.tr

INTRODUCTION

The tourism sector is encountering significant transformations in its services because of the rapid developments in digital and intelligent technology applications (Başer, 2020). Especially with technology integration, tourism has undergone significant transformations from production to presentation and after-sales evaluations, and technology has started to play an essential role in the tourism experience (Dilek and Dinçer, 2020). The digital travel market is expected to grow from USD 400 billion in 2022 to USD 1,618 billion by 2032 (Future Marketing Insights, 2023). Tourists use technology before, during and after visits. Online leisure and business travel accounts for 47% of all travel in the US. Consumers use their smartphones to discover destinations and products. 37% of travellers use mobile devices to shop for flight tickets, and 43% purchase accommodations (Sorrells, 2018). According to Carter (2017), 55% of tourists like social media pages related to their planned trips, 48% check a location while on holiday, 70% update their Facebook status, and 72% share holiday photos on social networks. Finally, 85% of leisure travellers use their smartphones whilst abroad.

Technological developments affect the forms of leisure (Metin et al., 2013) and transform individuals' leisure behaviours and experiences (McCommon, 2023). With the development of technology, limited leisure time has become easier to perform more valuable activities (Eryilmaz and Bal, 2019). In addition, some recreational activities in physical areas have started to be carried out in virtual or digital environments with the technological changes experienced (Aylan and Aylan, 2020). For example, virtual tours to natural environments such as caves, waterfalls, canyons, mountains, and cultural places such as ancient cities, churches, mosques, and various digital entertainment activities such as cycling, hiking, and yoga are recreational activities performed virtually (Baran and Karaca, 2023).

McCommon (2023) states that digital transformation is no longer a luxury but a necessity for companies to keep up with the latest trends and customer demands. He also states that businesses need to adapt to technological developments, especially due to the competition in the recreation sector and the increasing expectations of consumers. For instance, tourism businesses have become part of the digital world as numerous tourists use the internet to gather information about their trips. In this way, tourism businesses have gained significant advantages in offering customers different experiences, saving time in the execution of work, increasing service quality, and reducing operating costs. Additionally, 360-degree panoramic trips are used in promotional activities to attract more tourists in destination marketing (Aylan and Aylan, 2020). Furthermore, special software applications for recreation businesses have also been developed. Sport-scheduling software (creation of leagues, preparation of program flows, match schedules, game schedules, etc.), facility-scheduling software (facility availability, event registration, reservation creation, staff planning, management reports, etc.), recreation registration software (coordinators, trainers, etc.), booking for managers, fitness & wellness software (fitness assessment profiles, health risk assessment, personal fitness programs, weight management, etc.) are some of these applications (Ross and Sharpless, 1999).

Decision-making processes related to using recreational resources and tourism and recreation planning and management involve complex situations requiring extensive evaluation and analysis. It is inevitable to use technology to prevent this complexity in decision-making processes in tourism and recreation. Some of those are tour planning problems (many factors

such as the tourist's time and money resources, facilities, transportation, and attraction centres in the tour planning process make the tour plan difficult), tour route design and optimization problems (route/cost related to the transportation network, tour and stop waiting times, stopover points are open) /closure situations), overbooking and revenue management (reservation cancellation measure, target market selection, market segmentation, etc.), planning of recreation facilities (appropriate land selection for the facility, initial construction cost for each facility, land budget constraints) (Shcherbina and Shembeleva, 2014). The decision to purchase a holiday, which has an essential place in the purchasing behaviour of tourists, is affected by many factors such as destination, transportation, food and dining activities, attractions, shopping, and leisure activities (Liu et al., 2020) This situation complicates the purchasing decision (Özyıldırım and Koçoğlu, 2019). Tourists also try to eliminate this confusion by using technology. There are many studies on the effect of social media on tourist purchase decisions (Akyol and Öztürk, 2023; Liu et al., 2020; Pop et al., 2022; Xiang and Gretzel, 2010; Yuan et al., 2022).

Technology is used to plan and experience a more effective holiday for consumers and to plan and offer more effective services for producers. In recent years, information and communication technologies have revolutionized the tourism industry. One of the latest innovations shaping new dynamics and fostering a remarkable behavioural change in the interaction between service providers and tourists is increasingly sophisticated chatbots (Calvaresi et al., 2021). Chatbots are one of the most prominent examples of emerging artificial intelligence (AI) technologies (Orden-Mejía and Huertas, 2022). As with other businesses, tourism businesses also benefit from modern technologies. Chatbots are a new technology adopted by hotels, travel agencies and airlines (Melián-González et al., 2021). Chat Generative Pre-Trained Transformer (ChatGPT) is the most famous artificial intelligence (AI) chatbot developed by OpenAI, an artificial intelligence research and deployment company in California (Zhang et al., 2023). ChatGPT has the potential to contribute to increasing the consumer experience in the field of tourism, improving service quality, increasing efficiency, providing information, making data analysis, making suggestions, and finding solutions to the problems experienced (Erul and Işın, 2023). ChatGPT also can play a role in new product development and benchmarking. For example, ChatGPT can create surprise meal recipes in restaurants based on customers' preferences or on-premises ingredients. In addition, it can analyze customer feedback (e.g., online reviews, surveys, social media posts) on different themes such as "room quality", "service", or "food" (Carvalho and Ivanov, 2023). Tourists can also use ChatGPT to create an itinerary or identify the best hotels (Sorrells, 2023). Thanks to ChatGPT, tourists can plan their trips in real-time and according to their personalized preferences, thus experiencing an improved travel experience (Grundner and Neuhofer, 2021).

In the tourism literature, there are studies about the contributions of ChatGPT's role in tourism (Carvalho and Ivanov, 2023; Erul and Işın, 2023; Mich and Garigliano, 2023), with these contributions, potential difficulties and threats (Dwivedi et al., 2023; Gursoy et al., 2023; Ukpabi et al., 2019), the evolution of chatbots in tourism (Calvaresi et al., 2021) and GPT's contributions within the scope of gastronomy tourism, the opportunities it offers, the challenges in implementation (Fusté-Forné and Orea-Giner, 2023). Also, there are studies about the role of ChatGPT in improving tourists' information-seeking and decision-making processes (Sudirjo et al., 2023), the tourists' intention to use chatbots for travel and tourism (Melián-González et al., 2021), and the relationship with informativeness, empathy, accessibility,

interaction and tourists' chatbot user satisfaction (Orden-Mejía and Huertas, 2022). In addition, there are also studies about ChatGPT's accuracy in its answers to the exams to be held in the field of tourism (Göktaş, 2023), how ChatGPT will disrupt tourism education and research (Ivanov and Soliman, 2023), the potential impact and limitations of ChatGPT in tourism education applications (Skavronskaya et al., 2023), the benefits and constraints of using ChatGPT by students and faculty members in hospitality and tourism schools (Ali and ChatGPT OpenAI, 2023), and the potentially disruptive effects of ChatGPT on higher education and academic publishing (Iskender, 2023).

There are two studies on the relationship between ChatGPT and recreation. Erul and Işın (2023) focused on the contributions that ChatGPT can provide in the general tourism field. In the same study, the ChatGPT's contributions that can be made in the recreation field are briefly presented as a sub-title. Keiper's (2023) study provides faculty members with information on how and where to use ChatGPT to support event planning in an event management classroom. This study explores the potential benefits of employing generative pre-trained transformers (GPTs) in recreational tourism, the difficulties that arise when implementing such technology, the impact it has on tourist behaviour, and the ways it can be utilised in recreational tourism management. Many advantages of Chat Generative Pre-Trained Transformer (ChatGPT) such as new product development, analysing customer feedback (Carvalho and Ivanov, 2023), creating itineraries, determining the best hotels (Sorrells, 2023), personalised travel experience (Grundner and Neuhofer, 2021) have been revealed in previous studies. This study contributes to the literature in theory and to public and private sector operators in practice by demonstrating the opportunities that the use of Generative Pre-Trained Transformers in recreational tourism will provide with its limitations, present and future. The original aspect of the study is that it is the first to give detailed information about the use of GPT in recreational tourism.

METHOD

Research Model

In this study, the researcher used the qualitative research method, an approach that gives priority to studying and comprehending social phenomena in a realistic and comprehensive framework. In accordance with the research aim, ChatGPT was utilised as an interviewer to gather insights on the impact of GPT on recreational tourism, challenges surrounding its implementation, its implications for recreational tourists, its role in managing recreational tourism, and its future in recreation-based tourism.

Data Collection Procedures and Ethical Considerations

ChatGPT was used as an interviewer in the study. ChatGPT is an application that uses powerful machine learning software called Generative Pre-trained Transformer (GPT-3), developed by the OpenAI organization. ChatGPT aims to interact via conversation, which includes a series of questions from users and responses from the application (Rospigliosi, 2023). The same methodology was applied in investigations on similar subjects in the field of tourism (Carvalho and Ivanov, 2023; Dwivedi et al., 2023; Erul and Işın, 2023; Fusté-Forné and Orea-Giner, 2023). In this research, where the articles were reviewed through document analysis, no ethics committee approval or legal/special permission was required.

Instruments

Six questions were posed on the ChatGPT query screen (<https://chat.openai.com/chat>). The interview queries were prepared with reference to the study by Fusté-Forné and Orea-Giner (2023). The question statements in this study on the use of GPT in gastronomy tourism were changed to recreational tourism. ChatGPT's replies were tabulated and presented descriptively. Inferences and suggestions were made in line with the answers given by ChatGPT. Interview questions are:

Q1. What are the opportunities of using Generative pre-trained transformers (GPT) in recreational tourism?

Q2: What are the challenges of using Generative pre-trained transformers (GPT) in recreational tourism?

Q3: Can Generative pre-trained transformers (GPT) influence recreational tourists?

Q4: How can Generative pre-trained transformers (GPT) contribute to recreational tourism management?

Q5: What is the future in recreational-based tourism focused on Generative pre-trained transformers (GPT) and new technologies?

Q6. How can research contribute to the potential of Generative pre-trained transformers (GPT) in recreational tourism?

Data Analysis

Responses from ChatGPT were presented descriptively by tabulating. And inferences and suggestions were made in line with the answers given by ChatGPT.

FINDINGS

Under this heading, there are responses to the inquiries posed to ChatGPT regarding the prospects that GPT can provide in the recreation sector, complications in implementation, the influence of the application on recreational tourists, its supportive role in the administration of recreational tourism, and the future of recreation-based tourism.

Table 1 shows the responses received from ChatGPT regarding the opportunities that GPT will provide in recreational tourism. According to the ChatGPT response, there are twelve different opportunities for the use of GPT in recreational tourism (content generation, chatbots and virtual assistants, language translation, personalized recommendations, virtual tours and experiences, content curation and social media, local insights and culture, sustainability and responsible tourism, historical and educational experiences, predictive analytics, real-time updates and alerts, storytelling, and marketing campaigns). Also, ChatGPT underlines that incorporating GPT technology into recreational tourism can enhance customer engagement, improve decision-making, and create a more immersive and personalized travel experience, ultimately benefiting tourists and the tourism industry.

Table 1. The opportunities of using generative pre-trained transformers (GPT) in recreational tourism

GPT's opportunities	ChatGPT's answers about opportunities
Content generation	- GPT models can generate high-quality and contextually relevant content for travel websites, blogs, and social media platforms. This can include personalized travel itineraries, destination descriptions, activity recommendations, and local insights, providing valuable information to potential tourists.
Chatbots and virtual assistants	- GPT-powered chatbots and virtual assistants can interact with travellers in real-time, answering their questions, assisting with booking inquiries, and providing guidance on travel plans. This offers a seamless and personalized customer service experience, enhancing customer satisfaction.
Language translation	- GPT models can be used to develop more accurate and contextually sensitive language translation tools for tourists. This would help break down language barriers and enable more meaningful interactions between travellers and locals.
Personalized recommendations	- By analysing user preferences and past behaviours, GPT models can provide personalized travel recommendations for accommodations, activities, restaurants, and attractions. This tailored approach enhances the overall travel experience and increases the likelihood of positive reviews and repeat visits.
Virtual tours and experiences	- GPT-powered virtual reality (VR) or augmented reality (AR) applications can offer immersive virtual tours of destinations, landmarks, and attractions. This allows potential tourists to explore and experience a destination before actually travelling, potentially influencing their decision to visit.
Content curation and social media	- GPT can assist in curating user-generated content from social media platforms, aggregating photos, reviews, and stories to create compelling narratives about a destination. This content can be used for marketing and promotion purposes.
Local insights and culture	- GPT models can provide travellers with in-depth insights into local culture, customs, and traditions, helping them to have a more authentic and meaningful experience during their trips.
Sustainability and responsible tourism	- GPT-powered tools can educate tourists about sustainable practices, eco-friendly activities, and responsible tourism. This promotes environmentally conscious behaviour and helps reduce the negative impact of tourism on local ecosystems.
Historical and educational experiences	- GPT can be used to create interactive historical narratives or educational content related to tourist attractions, museums, and cultural sites, enriching visitors' understanding of the places they visit.
Predictive analytics	- GPT models can analyse travel trends and data to predict upcoming tourist preferences and behaviours. This insight can assist tourism businesses in adapting their offerings and marketing strategies accordingly.
Real-time updates and alerts	- GPT-powered applications can provide tourists real-time updates about weather conditions, traffic congestion, and event cancellations, helping them make informed decisions and adjust their plans.
Storytelling and marketing campaigns	- GPT models can aid in creating captivating and engaging storytelling for tourism marketing campaigns, captivating potential tourists with compelling narratives about destinations and experiences.

Source(s): Table created by author/s.

Table 2 illustrates the responses from ChatGPT regarding the challenges that may be experienced in using GPT in recreational tourism. According to ChatGPT response, there are twelve different difficulties (quality and accuracy of generated content, bias and cultural sensitivity, language nuances and localization, data privacy and security, lack of contextual understanding, inconsistent and unreliable information, over-reliance on technology, user interaction and experience, model size and resource intensiveness, maintenance and updates, legal and ethical considerations, user trust and transparency) the use of GPT in recreational tourism. ChatGPT also highlights addressing these challenges requires a combination of technological advancements, ethical considerations, user-centred design, and continuous monitoring. And it states while GPT models offer exciting possibilities in the tourism industry, a thoughtful and comprehensive approach is essential to mitigate potential drawbacks and ensure a positive impact on the travel experience.

Table 2. The challenges of using generative pre-trained transformers (GPT) in recreational tourism

The challenges of using GPT	ChatGPT's answers about challenges
Quality and accuracy of generated content	- GPT models generate text based on patterns learned from large datasets. However, the generated content may sometimes be inaccurate, misleading, or lack the necessary depth of information required for accurate travel recommendations or descriptions.
Bias and cultural sensitivity	- GPT models can inadvertently generate biased or culturally insensitive content, which can be particularly problematic when providing information about diverse destinations and cultures. - Ensuring that the generated content is culturally appropriate and free from bias is a significant challenge.
Language nuances and localization	- Travel involves diverse languages and dialects. GPT models may struggle with translating complex language nuances accurately, leading to potential misunderstandings or misinterpretations.
Data privacy and security	- Tourism involves sensitive personal and financial information. Implementing GPT-powered solutions requires careful consideration of data privacy and security to protect user information from potential breaches.
Lack of contextual understanding	- GPT models lack true comprehension and understanding of context, which can lead to generating content that seems coherent but lacks accurate context or relevance, impacting the quality of generated recommendations or information.
Inconsistent and unreliable information	- GPT models can sometimes generate inconsistent or unreliable information, potentially leading travellers to make incorrect decisions or receive inaccurate guidance.
Over-reliance on technology	- An over-reliance on GPT-powered solutions could reduce human interactions and the personal touch that is often a key aspect of the travel experience. - Travelers may miss out on authentic cultural interactions and personalized recommendations.
User interaction and experience	- Designing user interfaces and interactions that effectively leverage GPT models for travel-related tasks can be challenging. - Ensuring a seamless and intuitive user experience requires careful design and testing.
Model size and resource intensiveness	- Large GPT models require significant computational resources for deployment, which can be a barrier for smaller businesses or organizations with limited technical infrastructure.
Maintenance and updates	- GPT models need to be continuously updated and fine-tuned to remain relevant and accurate. This requires ongoing effort and expertise to ensure the information provided to travellers is up to date and reliable.
Legal and ethical considerations	- The use of GPT models in tourism must adhere to legal and ethical guidelines. Plagiarism concerns, copyright issues, and potential misinformation need to be carefully managed.
User trust and transparency	- Travelers may be sceptical or cautious about relying on AI-generated content. Ensuring transparency about the use of GPT and building user trust are important challenges.

Source(s): Table created by author/s.

Table 3 exhibits the responses from ChatGPT regarding the possible effects of GPT on recreational tourists. ChatGPT's response shows GPT has twelve different effects (information and inspiration, personalized recommendations, virtual exploration, language assistance, travel planning efficiency, engaging content, accessibility to information, user reviews and feedback, education and enrichment, influence on social media, sustainability and responsible tourism, memorable experiences) on recreational tourists. ChatGPT also emphasizes GPT models have the potential to shape and enhance the entire travel experience for tourists, from the initial planning stages to the actual trip itself. And it specifies that while GPT can influence tourists, the accuracy, quality, and ethical considerations surrounding AI-generated content should be carefully managed to ensure a positive and authentic travel experience for all travellers.

Table 3. GPT’s influences on recreational tourists

GPT’s influences on recreational tourists	ChatGPT’s answers about influences
Information and Inspiration	- GPT-powered content can provide tourists with detailed and engaging information about destinations, attractions, activities, and local culture. This information can inspire and influence travellers’ decisions on where to go and what to do.
Personalized recommendations	- GPT models can generate personalized travel recommendations based on individual preferences and interests. These recommendations can guide tourists towards experiences that align with their tastes, making their trips more enjoyable and fulfilling.
Virtual exploration	- GPT-powered virtual tours and experiences can allow potential tourists to virtually explore destinations before making travel decisions. This immersive preview can influence their perceptions and encourage them to visit in person.
Language assistance	- GPT-powered language translation tools can break down language barriers, making it easier for tourists to communicate with locals and navigate unfamiliar environments. This can enhance cultural interactions and overall travel satisfaction.
Travel planning efficiency	- GPT models can help streamline the travel planning process by assisting with itinerary creation, suggesting activities, and providing real-time information about weather and local events. This efficiency can positively influence tourists' overall experience.
Engaging content	- GPT-generated content can captivate tourists through engaging storytelling, enticing them to explore and discover new destinations and experiences.
Accessibility to information	- GPT-powered chatbots and virtual assistants can provide quick and accessible information to tourists, helping them make informed decisions and address their queries in real time.
User reviews and feedback	- GPT models can analyse and generate insights from user-generated reviews and feedback, helping tourists make well-informed decisions based on the experiences of others.
Education and enrichment	- GPT-generated historical and cultural insights can enhance tourists' understanding of the places they visit, making their trips more educational and enriching.
Influence on social media	- GPT-generated content can contribute to tourists' social media presence, shaping the way they share their experiences and influencing their followers to consider similar travel experiences.
Sustainability and responsible tourism	- GPT-powered tools can promote responsible tourism practices, influencing tourists to make eco-friendly choices and reduce their impact on local environments.
Memorable experiences	- GPT-generated personalized itineraries and recommendations can help tourists create memorable and unique travel experiences tailored to their interests and preferences.

Source(s): Table created by author/s.

Table 4 demonstrates the possible contributions of GPT in recreational tourism management. According to ChatGPT's responses, GPT has contributed to sixteen different (content generation and marketing, personalized customer interaction, real-time information and updates, itinerary planning and recommendations, language translation and communication, data analysis and insights, sustainability and responsible tourism, crisis management and safety, local culture and experience enhancement, accessibility enhancement, social media engagement, data-driven decision making, innovation and new experiences, efficient customer feedback processing, historical and cultural preservation, local business support) recreational tourism management subjects. And ChatGPT remarks while GPT models offer promising contributions to recreational tourism management, it's crucial to ensure that the technology is used ethically, responsibly, and in a way that enhances the overall travel experience while respecting the authenticity and cultural integrity of destinations.

Table 4. GPT’s contributions to recreational tourism management

GPT’s contributions to recreational tourism management	ChatGPT’s answers about contributions
Content generation and marketing	- GPT models can generate compelling and engaging content for tourism marketing campaigns, websites, and promotional materials. This content can attract and inform potential tourists, showcasing destinations and experiences in a captivating way.
Personalized customer interaction	- GPT-powered chatbots and virtual assistants can handle customer inquiries, provide real-time assistance, and offer personalized recommendations for tourists. This improves customer satisfaction and reduces the workload on human staff.
Real-time information and updates	- GPT-powered tools can deliver real-time information to tourists, such as weather updates, event schedules, and local news. This ensures tourists stay informed and can adapt their plans accordingly.
Itinerary planning and recommendations	- GPT models can assist in creating tailored travel itineraries based on tourists' preferences, optimizing their time and ensuring they have a well-rounded experience.
Language translation and communication	- GPT-powered language translation can facilitate communication between tourists and locals, fostering positive interactions and cultural exchange.
Data analysis and insights	- GPT models can analyse large volumes of data, including user reviews and feedback, to provide insights into tourist preferences, trends, and areas for improvement in tourism offerings.
Sustainability and responsible tourism	- GPT can promote sustainable tourism practices by generating content that educates tourists about eco-friendly activities, conservation efforts, and responsible behaviour.
Crisis management and safety	- GPT-powered tools can provide timely alerts, safety tips, and emergency information to tourists during natural disasters, accidents, or other emergencies.
Local culture and experience enhancement	- GPT-generated content can offer tourists insights into local culture, traditions, and history, enhancing their understanding and appreciation of the destinations they visit.
Accessibility enhancement	- GPT-powered applications can improve accessibility for tourists with disabilities by providing relevant information and recommendations that cater to their needs.
Social media engagement	- GPT can assist in generating social media content that encourages engagement and user-generated content sharing, amplifying the reach of tourism campaigns.
Data-driven decision making	- By analysing data from various sources, GPT-powered systems can help tourism managers make informed decisions regarding resource allocation, marketing strategies, and infrastructure development.
Innovation and new experiences	- GPT models can contribute to the creation of innovative and immersive experiences, such as AR/VR tours or interactive exhibits, that attract and engage tourists.
Efficient customer feedback processing	- GPT can assist in processing and analysing customer feedback and reviews, helping tourism businesses address concerns and improve their offerings.
Historical and cultural preservation	- GPT-generated content can aid in documenting and preserving historical and cultural information, contributing to the conservation of heritage sites.
Local business support	- GPT-generated recommendations can promote local businesses, encouraging tourists to explore lesser-known attractions and support the local economy.

Source(s): Table created by author/s.

Table 5 shows findings about the future of recreational-based tourism focused on GPT and new technologies. According to ChatGPT's responses, there are sixteen different projections (hyper-personalization, enhanced user interfaces, AR and VR experiences, seamless language translation, AI-generated creativity, predictive analytics, sustainable tourism promotion, instant virtual tours, cultural immersion, tourism data insights, content collaboration, crisis management and safety, digital souvenirs, innovative accommodations, ethical and cultural considerations, eco-friendly travel planning) regarding the future of recreational tourism.

ChatGPT also highlights as GPT and new technologies continue to evolve, recreational-based tourism will become more personalized, informative, and immersive, ultimately enhancing the overall travel experience and contributing to the growth and sustainability of the tourism industry. However, it also emphasizes that addressing ethical, privacy, and authenticity concerns will be essential to ensure that technology serves as a positive enabler for both tourists and the destinations they visit.

Table 5. The future of recreational-based tourism focused on GPT and new technologies

The future of recreational-based tourism focused on GPT and new technologies	ChatGPT's answers about projections
Hyper-personalization	- GPT-powered systems will become even more adept at generating highly personalized travel recommendations, itineraries, and experiences based on individual preferences, behaviour, and interests.
Enhanced user interfaces	- User interfaces that leverage GPT technology will become more intuitive and conversational, allowing tourists to interact seamlessly with AI-powered virtual assistants and chatbots for real-time travel guidance.
AR and VR experiences	- GPT-powered AR and VR applications will provide tourists with immersive and interactive experiences, allowing them to virtually explore destinations and attractions before making travel decisions.
Seamless language translation	- Language translation tools powered by GPT will become more accurate and contextually sensitive, facilitating communication between tourists and locals.
AI-generated creativity	- GPT-generated content will contribute to more creative and captivating travel marketing campaigns, inspiring tourists through compelling storytelling and engaging visuals.
Predictive analytics	- GPT-powered predictive models will analyse travel data to anticipate upcoming travel trends, enabling tourism businesses to proactively adjust their offerings and marketing strategies.
Sustainable tourism promotion	- GPT will aid in promoting sustainable and responsible tourism practices, educating tourists about eco-friendly activities and conservation efforts.
Instant virtual tours	- Tourists will be able to take instant virtual tours of attractions or historical sites through their mobile devices, offering on-the-spot insights and enriching their in-person experiences.
Cultural immersion	- GPT-generated content will provide tourists with deeper insights into local culture, traditions, and history, facilitating more authentic and immersive travel experiences.
Tourism data insights	- AI-powered analysis of tourism data will help governments and organizations make informed decisions about tourism management, infrastructure development, and resource allocation.
Content collaboration	- GPT-powered tools will facilitate collaboration between tourists and content creators, enabling them to co-create personalized travel guides and recommendations.
Crisis management and safety	- GPT-powered systems will provide tourists with real-time safety alerts and emergency assistance during natural disasters or unexpected events.
Digital souvenirs	- GPT-generated digital souvenirs and immersive mementos will offer tourists unique ways to capture and remember their travel experiences.
Innovative accommodations	- GPT-powered virtual room tours and interactive hotel experiences will help tourists choose accommodations that best suit their preferences.
Ethical and cultural considerations	- GPT will be used to ensure that generated content respects ethical, cultural, and sensitive issues, offering a more responsible and inclusive approach to travel promotion.
Eco-friendly travel planning	- GPT will aid tourists in planning environmentally friendly trips, suggesting low-impact transportation options, sustainable accommodations, and eco-conscious activities.

Source(s): Table created by author/s.

DISCUSSION AND CONCLUSION

Decision-making processes in recreational tourism planning and management are complex, requiring thorough evaluation and analysis of both tourists and service providers (Liu et al., 2020; Özyıldırım and Koçoğlu, 2019; Shcherbina and Shembeleva, 2014). Thus, using technology to simplify decision-making processes in tourism and recreation management and for tourists is essential. Chatbots, which are considered one of the most prominent forms of artificial intelligence (AI) technology (Orden-Mejía and Huertas, 2022), have been recently adopted by hotels, travel agencies, and airlines (Melián-González et al., 2021). ChatGPT offers several benefits to the tourism industry, including enhancing the tourist experience, enhancing service quality, providing personalized service, analyzing feedback, and solving problems in real-time (Carvalho and Ivanov, 2023; Erul and Isin, 2023; Grundner and Neuhofer, 2021; Sorrells, 2023).

This study explores the potential benefits of employing generative pre-trained transformers (GPTs) in recreational tourism, the difficulties that arise when implementing such technology, the impact it has on tourist behaviour, and the ways it can be utilised in recreational tourism management. Although there are studies about the role of ChatGPT in the tourism sector (Calvaresi et al., 2021; Carvalho and Ivanov, 2023; Dwivedi et al., 2023; Erul and Işın, 2023; Fusté-Forné and Orea-Giner, 2023; Gursoy et al., 2023; Mich and Garigliano, 2023; Ukpabi et al., 2019), tourists (Melián-González et al., 2021; Orden-Mejía and Huertas, 2022; Sudirjo et al., 2023), and tourism education (Ali and ChatGPT OpenAI, 2023; Göktaş, 2023; Iskender, 2023; Ivanov and Soliman, 2023; Skavronskaya et al., 2023), two studies have been reached on the recreation relationship with ChatGPT (Erul and Işın, 2023; Keiper, 2023). This study contributes to the literature in theory and to public and private sector operators in practice by demonstrating the opportunities that the use of Generative Pre-Trained Transformers in recreational tourism will provide with its limitations, present and future.

Applying GPT in recreational tourism provides several opportunities to augment the authentic experience. Personalized itineraries, real-time interaction guidance, and better-translated communication with locals mean that tourists can enjoy a more meaningful interaction with the places they visit. Moreover, virtual tours, the generation of more compelling social media content, and improved insight into local culture can help visitors appreciate their destination better, behave more responsibly, and gain more knowledge about the relevant sites and locations. Tourist trends can be analyzed more effectively to optimize service content, and real-time updates and warnings (relating to weather, traffic, and events) can be promptly communicated. Finally, GPT can contribute to creating engaging marketing campaigns.

Specific difficulties must be addressed when using GPT for recreational tourism. Issues that need to be addressed are potential user distrust towards provided content, the accuracy and in-depth quality of travel tips and explanations, creating unintentionally insensitive content towards destination-specific and cultural aspects, identifying and correcting language errors, ensuring data confidentiality and safety, maintaining a comprehensive viewpoint, avoiding incorrect content, and preventing misinformation that could lead tourists to make erroneous decisions. Furthermore, potential shortcomings comprise an excessive dependence on automated systems, decreased levels of human involvement, challenges in delivering a seamless and user-friendly interface, customization options that may not cater to all user

preferences, the ongoing commitment and expertise required to ensure information remains current, as well as questions regarding the ethical and legal standing of the presented content.

GPT impacts recreational tourists in multiple ways, including offering extensive information and inspiration on destinations, providing tailored travel advice and experiences, promoting physical travel through virtual tours, simplifying communication with locals by overcoming language barriers and simplifying navigation in unfamiliar territories, planning journeys more effectively by taking into account factors such as weather, events and routes holistically, encouraging tourists to explore new locations, providing real-time information and analyzing feedback to make more informed travel decisions, enhancing travel experiences through informative content, fostering social media sharing and promoting responsible tourism. Additionally, GPT enables personalized travel experiences, resulting in unforgettable trips.

GPT has the potential to have a substantial impact on the management of recreational tourism by improving the effectiveness of marketing tools and campaigns. It can also create engaging content and enhance client satisfaction through real-time interaction with chatbots and assistants. Additionally, GPT provides real-time warnings and information on weather, event schedules, and local news. It offers personalised and optimised (cost/time) services, translations, and encourages increased interaction between tourists and locals. GPT helps to keep service and offer contents up-to-date through analysis of tourist feedback and promotes responsible tourism practices by sharing content on sustainability. Furthermore, it can immediately provide warnings in crisis or emergency situations such as natural disasters or accidents. GPT also offer advantages for recreation management such as obtaining a more meaningful experience from the destination/local culture with informative content, providing accessible services for everyone, guiding managers in areas such as producer/consumer social media sharing integration, improving marketing strategies and infrastructure, creating AR/VR tours/exhibitions, helping to document and preserve historical/cultural information, and supporting the local economy by encouraging tourists to go to lesser-known places.

GPT and new technologies are anticipated to make sizeable strides in recreational tourism. These include hyper-personalised services, intuitive and conversational real-time guidance through advanced interfaces, sustainable tourism promotion and education, innovative lodging (virtual room tours, interactive hotel experiences, personalised trips), digital souvenirs, prompt virtual tours with mobile applications, engaging AR/VR experiences, coordinated language translation, and responsible tourism, observing ethical and cultural sensitivities. Additionally, GPT and new technologies will enable proactive prediction of travel trends, offer content and services for customers, develop effective marketing strategies, provide in-depth information on culture and history, aid public institutions in developing infrastructure through efficient analysis of tourism data, issue real-time crisis warnings, plan eco-friendly travel, and create travel marketing campaigns with artificial intelligence.

The study is limited to the queries addressed to ChatGPT concerning recreational tourism. According to the responses obtained from ChatGPT, it is evident that forthcoming research is necessary, particularly for addressing issues related to ethics, privacy, and authenticity. Furthermore, ChatGPT was requested to suggest research topics that contribute to the potential of GPT in recreational tourism. Further research is required to investigate the impact of GPT-generated content on tourists' decision-making processes, as well as the accuracy and quality

of the content. It is also essential to examine the content's conformity with ethical and cultural values, user experiences, and the effectiveness of personalized travel suggestions. There is a necessity for further research on the economic benefits of promoting the local economy, the impact of language translations, the effectiveness of security warnings and emergency aids during times of crisis, and the influence of content on holiday decision-making. The integration with other innovative technology applications (e.g., AR and VR) and trustworthiness should also be considered for future research.

Conflicts of Interest: The author/s declare that they have no conflict of interest in relation to this manuscript.

Authors' Contribution: Research design, Data collection, Statistical analysis, Preparation of the article, OÇ.

Research Publication Ethic: In this research, where the articles were reviewed through document analysis, no ethics committee approval or legal/special permission was required.

REFERENCES

- Akyol, B., and Öztürk, Y. (2023). Turistlerin tatil seçimi karar verme aşamalarında sosyal medyanın rolü: tripadvisor örneği. *Journal of Tourism and Gastronomy Studies*, 11(2), 1581-1599. <https://doi.org/10.21325/jotags.2023.1257>
- Ali, F., and Chatgpt Openai, I. (2023). Let the devil speak for itself: Should ChatGPT be allowed or banned in hospitality and tourism schools? *Journal of Global Hospitality and Tourism*, 2(1), 1-6. <https://www.doi.org/10.5038/2771-5957.2.1.1016>
- Aylan, F. K. and Aylan, S. (2020). Sanal gerçeklik ve artırılmış gerçeklik uygulamalarının rekreatif faaliyetlere yansımaları: Dijital rekreasyon. *Türk Turizm Araştırmaları Dergisi*, 4(3), 2746-2760. <https://doi.org/10.26677/TR1010.2020.507>
- Baran, Z., and Karaca, Ş. (2023). Virtual recreation applications analyzing digital tourism from the perspective of smart cities. *Turkish Studies*, 18(2), 413-424. <https://dx.doi.org/10.7827/TurkishStudies.69089>
- Başer, G. (2020). Digital marketing practices: Trends and challenges for the tourism industry. *International Journal of Global Tourism Research*, 4(1), 1-12.
- Calvaresi, D., İbrahim, A., Calbimonte, J.-P., Schegg, R., Fragniere, E., and Schumacher, M. (2021). The evolution of chatbots in tourism: A systematic literature review. W. Wörndl, C. Koo, & J. L. Stienmetz (Ed.), *Information and communication technologies in tourism 2021* (S. 3-16). Springer Nature.
- Carter, E. (2017). *Social media, mobile, and travel: Like, tweet, and share your way across the globe*. Retrieved from: <https://www.webfx.com/blog/social-media/social-media-mobile-travel/>
- Carvalho, I., and Ivanov, S. (2023). Chatgpt for tourism: Applications, benefits and risks. *Tourism Review*, <https://doi.org/10.1108/TR-02-2023-0088>
- Dilek, N. K., and Dinçer, F. İ. (2020). Sanal gerçeklik uygulamalarının engelli bireylerin rekreasyonel faaliyetlere katılımında destekleyici rolü. *Journal of Current Debates in Social Sciences*, 3(1), 1-9. <https://doi.org/10.37154/ijopec.2020.14>
- Dwivedi, Y. K., Pandey, N., Currie, W., and Micu, A. (2023). Leveraging chatgpt and other generative artificial intelligence (AI)-based applications in the hospitality and tourism industry: Practices, challenges and research agenda. *International Journal of Contemporary Hospitality Management*, <https://doi.org/10.1108/ijchm-05-2023-0686>.
- Erul, E., and Işın, A. (2023). Chatgpt ile sohbetler: Turizmde Chatgpt'nin önemi. *Journal of Tourism and Gastronomy Studies*, 11(1), 780-793. <https://doi.org/10.21325/jotags.2023.1217>
- Eryılmaz, S. and Bal, H. T. (2019). Teknoloji bağımlılığı ile rekreasyonel eğilimler arasındaki ilişki: Üniversite öğrencileri üzerinde bir inceleme. *Türk Turizm Araştırmaları Dergisi*, 3(4), 902-919. <https://doi.org/10.26677/TR1010.2019.218>
- Future Marketing Insights. (2023). *Digital Travel Market Outlook (2022-2032)*. Retrieved from: <https://www.futuremarketinsights.com/reports/digital-travel-sector-outlook>
- Fusté-Forné, F., and Orea-Giner, A. (2023). Gastronomy in tourism management and marketing: An interview with chatgpt. *Robonomics: The Journal of The Automated Economy*, (4), 1-13. Retrieved from <https://www.journal.robonomics.science/index.php/rj/article/view/42>
- Göktaş, L. S. (2023). Chatgpt uzaktan eğitim sınavlarında başarılı olabilir mi? turizm alanında doğruluk ve doğrulama üzerine bir araştırma. *Journal of Tourism and Gastronomy Studies*, 11(2), 892-905. <https://doi.org/10.21325/jotags.2023.1224>
- Grundner, L., and Neuhofer, B. (2021). The bright and dark sides of artificial intelligence: A futures perspective on tourist destination experiences. *Journal of Destination Marketing & Management*, (100511), 1-12. <https://doi.org/10.1016/j.jdmm.2020.100511>

- Gursoy, D., Li, Y., and Song, H. (2023). Chatgpt and the hospitality and tourism industry: An overview of current trends and future research directions. *Journal of Hospitality Marketing & Management*, 32(5), 579-592. <https://doi.org/10.1080/19368623.2023.2211993>
- Iskender, A. (2023). Holy or unholy? Interview with Open AI's chatgpt. *European Journal of Tourism Research*, (34), 1-11. <https://doi.org/10.54055/ejtr.v34i.3169>
- Ivanov, S., and Soliman, M. (2023). Game of algorithms: Chatgpt implications for the future of tourism education and research. *Journal of Tourism Futures*, 9(2), 214-221. <https://doi.org/10.1108/JTF-02-2023-0038>
- Keiper, M. C. (2023). ChatGPT in practice: Increasing event planning efficiency through artificial intelligence. *Journal of Hospitality, Leisure, Sport & Tourism Education*, 33, 100454. <https://doi.org/10.1016/j.jhlste.2023.100454>
- Liu, X., Mehraliyev, F., Liu, C., and Schuckert, M. (2020). The roles of social media in tourists' choices of travel components. *Tourist Studies*, 20(1), 27-48. <https://doi.org/10.1177/1468797619873107>
- McCommon, S. (2023). *Digital transformation in the leisure industry: 10 Ways to innovate the customer experience*. Retrieved from: <https://smartdev.com/digital-transformation-in-the-leisure-industry-10-ways-to-innovate-the-customer-experience/>
- Melián-González, S., Gutiérrez-Taño, D., and Bulchand-Gidumal, J. (2021). Predicting the intentions to use chatbots for travel and tourism. *Current Issues in Tourism*, 24(2), 192-210. <https://doi.org/10.1080/13683500.2019.1706457>
- Metin, T. C., Kesici, M., and Kodaş, D. (2013). Rekreasyon olgusuna akademisyenlerin yaklaşımları. *Journal of Yaşar University*, 30(8), 5021-5048.
- Mich, L., and Garigliano, R. (2023). Chatgpt for e-tourism: A technological perspective. *Information Technology & Tourism*, (25), 1-12. <https://doi.org/10.1007/s40558-023-00248-x>
- Nimrod, G., and Adoni, H. (2012). Conceptualizing e-leisure. *Loisir et Société/Society and Leisure*, 35(1), 31-56. <https://doi.org/10.1080/07053436.2012.10707834>
- Orden-Mejía, M., and Huertas, A. (2022). Analysis of the attributes of smart tourism technologies indestination chatbots that influence tourist satisfaction. *Current Issues in Tourism*, 25(17), 2854-2869. <https://doi.org/10.1080/13683500.2021.1997942>
- Özyıldırım, A., and Koçoğlu, C. M. (2019). Tatil satın alma kararını etkileyen faktörler: Kocaeli'ndeki çağrı merkezi operatörleri üzerine bir araştırma. *Karabük Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 9(1), 189-209.
- Pop, R.-A., Săplăcan, Z., Dabija, D.-C., and Alt, M.-A. (2022). The impact of social media influencers on travel decisions: The role of trust in consumer decision journey. *Current Issues in Tourism*, 25(5), 823-843. <https://doi.org/10.1080/13683500.2021.1895729>
- Rospigliosi, P.A. (2023). Artificial intelligence in teaching and learning: What questions should we ask of Chatgpt? *Interactive Learning Environments*, 31(1), 1-3. <https://doi.org/10.1080/10494820.2023.2180191>
- Ross, C. M., and Sharpless, D. R. (1999). Innovative information technology and its impact on recreation and sport programming. *Journal of Physical Education, Recreation & Dance*, 70(9), 26-30.
- Shcherbina, O., & Shembeleva, E. (2014). Modeling recreational systems using optimization techniques and information technologies. *Annals of Operations Research* (221), 309-329. <https://doi.org/10.1080/07303084.1999.10605965>
- Skavronskaya, L., Hadinejad, A. H., and Cotterell, D. (2023). Reversing the threat of artificial intelligence to opportunity: a discussion of chatgpt in tourism education. *Journal of Teaching in Travel & Tourism*, 23(2), 253-258. <https://doi.org/10.1080/15313220.2023.2196658>

- Sorrells, M. (2018). *What travel marketers need to know for digital engagement*. Retrieved from <https://www.phocuswire.com/Bing-Phocuswright-digital-travel-marketing-study> adresinden
- Sorrells, M. (2023). What will chatgpt mean for the travel industry?. Retrieved from <https://www.travelweekly.com/travel-news/travel-technology/what-will-chatgpt-mean-for-the-travel-industry>
- Sudirjo, F., Diawati, P., Riady, Y., Ausat, A. M., and Suherlan, S. (2023). The role of chatgpt in enhancing the information search and decision-making process of travellers. *Jurnal Minfo Polganvolume*, 12(2), 500-507. <https://doi.org/10.33395/jmp.v12i2.12443>
- Ukpabi, D. C., Aslam, B., and Karjaluoto, H. (2019). Chatbot adoption in tourism services: A conceptual exploration. S. Ivanov, & C. Webster (Ed.), *Robots, artificial intelligence, and service automation in travel, tourism and hospitality* (S. 105-121). Emerald Publishing Limited. <https://doi.org/10.1108/978-1-78756-687-320191006>
- Xiang, Z., and Gretzel, U. (2010). Role of social media in online travel information search. *Tourism Management*, 31(2), 179-188. <https://doi.org/10.1016/j.tourman.2009.02.016>
- Yuan, Y., Chan, C.-S., Eichelberger, S., Ma, H., and Pikkemaat, B. (2022). The effect of social media on travel planning process by chinese tourists: THE way forward to tourism futures. *Journal of Tourism Futures*, 1-20. <https://doi.org/10.1108/JTF-04-2021-0094>
- Zhang, Y., Pei, H., Zhen, S., Li, Q. and Liang, F. (2023). Chat generative pre-trained transformer (ChatGPT) usage in healthcare. *Gastroenterology & Endoscopy* (1), 139-143. <https://doi.org/10.1016/j.gande.2023.07.002>

