ChatGPT for tourism: applications, benefits and risks

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Abstract
Purpose — The rapid growth of artificial intelligence is disrupting various industries, including the tourism sector. This paper aims to outline the applications, benefits and risks of ChatGPT and large language models in general on tourism. It also aims to establish a research agenda for investigating the implications of these models in tourism.

Design/methodology/approach — Drawing on the available literature on ChatGPT, large language models and artificial intelligence, the paper identifies areas of application of ChatGPT for several tourism stakeholders. Potential benefits and risks are then considered.

Findings — ChatGPT and other similar models are likely to have a profound impact on several tourism processes. They will contribute to further streamline customer service in front-of-house operations and increase productivity and efficiency in back-of-house operations. Although negative consequences for human resources are expected, this technology mostly enhances tourism employees.

Originality/value — To the best of the authors’ knowledge, this is one of the first studies that explore the potential implications of ChatGPT in tourism and hospitality.

Keywords ChatGPT, Generative language models, LLMs, Tourism, Chatbots, AI in tourism, Intelligent automation

Paper type Conceptual paper

ChatGPT para turismo: Aplicaciones, beneficios y riesgos

Diseño/metodología/enfoque: A partir de la bibliografía disponible sobre ChatGPT, grandes modelos lingüísticos e inteligencia artificial, este artículo identifica las posibles áreas de aplicación de ChatGPT y actores que se pueden beneficiar. De igual forma, se examinan los posibles beneficios y riesgos.

Propósito: El rápido crecimiento de la inteligencia artificial está afectando diversas industrias, incluyendo la del turismo. Este artículo pretende esbozar las aplicaciones, ventajas y riesgos de ChatGPT, así como los grandes modelos lingüísticos, en turismo. También pretende establecer una agenda de investigación para estudiar las implicaciones de estos modelos en el turismo.

Hallazgos: Es probable que ChatGPT y otros modelos similares tengan un profundo impacto en varios procesos turísticos, contribuyendo a racionalizar, aún más, el servicio al cliente en las operaciones de front-of-the-house y aumentando la productividad y eficiencia en el back-of-the-house. Aunque se prevén consecuencias negativas para los recursos humanos, esta tecnología servirá sobre todo para potenciarlos.

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Originalidad: Éste es uno de los primeros estudios que exploran las implicaciones potenciales de ChatGPT en el turismo y la hostelería.

Palabras clave ChatGPT, modelos de lenguaje generativo, LLMs, turismo, chatbots, IA en el turismo, automatización inteligente

Tipo de papel Artículo conceptual

1. Introduction

One of the major recent breakthroughs in machine learning has been in the field of natural language processing due to large language models (LLMs). An LLM is a deep learning algorithm that can understand and generate natural language in tasks such as automatic summarization, machine translation, answering questions and translation (Min et al., 2021; Shen et al., 2023). As generative artificial intelligence (AI) models, LLMs have the ability to create new content, as opposed to only processing and using existing data (Gozalo-Brizuela and Garrido-Merchan, 2023).

ChatGPT is a chatbot based on the GPT-3.5 (Generative Pretrained Transformer 3) state-of-the-art LLM (Hughes, 2023). It has garnered widespread attention because of its ability to understand the nuances of human language and interact in a conversational and human-like way. ChatGPT can answer “follow-up questions, admit its mistakes, challenge incorrect premises, and reject inappropriate requests” (OpenAI, 2022), and even understand code (Hughes, 2023). Although it is not capable of ethical reasoning, it was designed not to disseminate harmful or illegal information (OpenAI, 2022). It can also keep track of the ongoing conversation, remember rules set by the user or information provided earlier (Hughes, 2023). Hence, as an example of intelligent automation (Bornet et al., 2021), it is a versatile tool that can be used for a wide range of tasks involving natural language processing (OpenAI, 2022). When prompted by the authors of this article to explain its capabilities, ChatGPT responded as presented in Figure 1.

Despite its strengths, ChatGPT also has considerable limitations. ChatGPT lacks reliability about factual knowledge (Zhuo et al., 2023). Due to “hallucination,” a phenomenon where LLMs generate false or misleading information, the model can spread misinformation and disinformation (Zhuo et al., 2023). This risk is exacerbated by the absence of a built-in mechanism to signal the lack of truthfulness of an answer (Chui et al., 2022) and by its inability to ask clarifying questions when given ambiguous prompts (OpenAI, 2022). In addition, the high fluency of the model may create a misleading impression that ChatGPT is

Figure 1 ChatGPT's capabilities

ChatGPT is a powerful language processing model developed by OpenAI that can be utilized in a variety of industries. It has the ability to perform natural language processing tasks such as text generation, summarization, and classification. Additionally, it can extract information and data from text, categorize information, and assist with data management. ChatGPT can also be integrated into chatbots to provide personalized customer service and support. With its advanced language processing capabilities, ChatGPT can help automate and streamline various business processes, including financial management, marketing efforts, and even employee training. By leveraging the capabilities of ChatGPT, businesses can improve their efficiency and better serve their customers.

Source: Authors’ conversation with ChatGPT
delivering an adequate answer, as the model seems to focus more on plausibility rather than truthfulness (Delouya, 2022). This has led to ChatGPT answers being banned in some websites (Stack Overflow, 2023); hence, ChatGPT users should fact-check its output (van Dis et al., 2023).

Despite ChatGPT’s human-like fluency, it does not have the reasoning capabilities of a human; hence, it may struggle with generating responses to complex or abstract questions and comprehending the context and implications of the text input (OpenAI, 2022). Studies have also reported its limited mathematical capabilities (Frieder et al., 2023). Moreover, there is a lack of clarity concerning where ChatGPT’s information is drawn from (van Dis et al., 2023). Furthermore, although ChatGPT was designed to detect inappropriate content, it still lacks effectiveness (Chui et al., 2022; Zhuo et al., 2023). Additionally, it has knowledge of the world until 2021 (Zielinski et al., 2023), and its responses may be biased due to the presence of systemic bias in the training data (Krügel et al., 2023; OpenAI, 2022).

Another concern is that confidential data shared with ChatGPT may be used as training data, and thus lead to the output delivered mimicking such sensitive data (Kim, 2023). On the other hand, it remains to be seen who will claim intellectual property rights over ChatGPT-generated output (Chui et al., 2022) and whether this content will be penalized in search engine optimization (Sorrells, 2023). Finally, ChatGPT may pose a significant threat to cybersecurity, as it has the potential to greatly amplify the creation and distribution of malicious content, such as spam, false information, phishing emails and malware (Karanjai, 2022).

In a context of disruptive innovation, it is important to outline the positive and negative impacts of ChatGPT for the tourism industry (Ali and OpenAI, 2023; Iskender, 2023; Ivanov and Soliman, 2023). In this paper, we provide a list of possible ways in which this technology can change the tourism industry, pointing out not only benefits, but also risks, limitations and implications for practitioners.

2. ChatGPT implications for tourism

Figure 2 presents the ChatGPT implications for tourism discussed in the paper. ChatGPT has some strengths and weaknesses outlined in the previous section that determine its capabilities. Tourism stakeholders [tourist companies, DMOs, tourists] use it for the implementation of various tasks in different functional areas of the organizations (marketing, operations, finance, human resource management) or at different stages of the tourist trip – before, during and after the trip. The application of ChatGPT and its characteristics (strengths and weaknesses) influence the benefits and risks perceived by the tourism stakeholders. The characteristics of ChatGPT were discussed in the Introduction; that is why, this section focuses on the areas of application, benefits and risks.

2.1 ChatGPT for tourism – applications

2.1.1 ChatGPT for tourist companies. ChatGPT has the potential to revolutionize business processes in the tourism industry. As an LLM, ChatGPT is able to summarize texts. Hence, it can condense long emails, meeting notes and minutes into summaries, which makes it valuable across practically all business processes. The user can predetermine the desired length of the summarized text in the prompt. Additionally, ChatGPT can extract keywords from a text, classify items into categories and assist in email composition by improving grammar and word choice, as well as adapting the tone and level of formality. As suggested by ChatGPT itself when prompted by the authors, its capabilities of extracting information from a block of text can be useful to “extract relevant information such as dates, venues, and attendees from event-related emails and documents, helping event planners to
keep track of details and ensure a successful event” and to “extract contact information from emails, websites, and social media profiles to create a database of potential customers, suppliers and partners.”

Once integrated with a chatbot in front office operations, ChatGPT can deal with customer service: e.g. provide information, take orders, assist in booking, handle customer queries, confirm reservations and manage complaints. Hotels using LLM-based chatbots would be able to automate concierge services, offering guests quick and easy access to directions and travel information (Sorrells, 2023). ChatGPT can assist in the generation of instructions for customers – e.g. check-in and check-out procedures, opening hours of hotel facilities, room amenities and how to operate them, emergency procedures, pet policies, smoking policies or in the generation of procedures for encouraging sustainable behavior of guests. In the same line, ChatGPT can be used to outline business presentations and other documents (e.g. company policy, privacy policy, letters, forms, procedures, etc.) (Chui et al., 2022).

In what concerns HR departments specifically, ChatGPT might generate attractive job descriptions and interview questions tailored to the function, company policy and industry. Company chatbots that integrate ChatGPT or similar LLMs could automate interactions during and after employee onboarding by providing information about conditions, regulations, laws and other questions, and facilitate access to intranet content by enabling search and question answering (Chui et al., 2022). They could also facilitate employee engagement by encouraging the sharing of ideas with management.

ChatGPT can be applied in a wide range of marketing processes. Not only can it provide ideas for the preparation of customer surveys, but ChatGPT or similar models could analyze customer feedback (e.g. online reviews, comments, surveys, social media posts) by extracting themes, emotions, tone or sentiment, and identifying trends and patterns. They could also be used to assign feedback into different categories, such as “room quality,” “service” or “food,” or generate reports based on customer feedback. Authors’ practical
experience with ChatGPT shows that it correctly extracts the positive and negative points in customer online reviews (see Figure 3). According to Chui et al. (2022), ChatGPT can also be used to generate synthetic data to train and improve machine learning algorithms for automatically classifying customer reviews.

ChatGPT can be applied in the generation of high-quality text for various marketing materials (e.g. social media posts, websites, email campaigns, advertising copy and blogs) (Chui et al., 2022; Sorrells, 2023). Furthermore, it can create compelling titles, optimize text for search engine optimization and suggest keywords to use. ChatGPT could not only contribute to the preparation of compelling content; it could also assist in the “hyperpersonalization” of marketing efforts (Sorrells, 2023) if provided with personalized

**Figure 3** ChatGPT summary of a tourist’s review

Can you evaluate this review of a hotel, please?: “I booked two rooms for our party for five nights. The rooms are large by NYC standards, very clean and the beds are very comfortable. However, the service was cold and indifferent, especially when we had a problem.

The heater in one room was so loud that you had to pause your conversation when it came on and it would wake us up multiple times each night. We asked to get it looked at, with no effect. After a second request it was looked at, resulting in a loud heater and a very strong gas smell. We had to insist being moved to another room, but that was only for a night. Still sounds like an elevated train at the window, I guess that is what they mean by the city that never sleeps.”

Based on the review of the hotel, the guest seemed to have had a mixed experience. Here is an evaluation of the review:

**Positive points:**
- The guest appreciated the size of the rooms, mentioning that they were large by NYC standards.
- The guest found the rooms to be very clean.
- The guest also appreciated the comfortable beds.

**Negative points:**
- The guest mentioned that the service was cold and indifferent, especially when they had a problem. This could be a significant concern for guests who expect a high level of customer service.
- The guest experienced a problem with the heater in one of the rooms, which was so loud that it would wake them up multiple times each night. Despite requesting a repair, the issue was not resolved until a second request. Moreover, the repair resulted in a loud heater and a strong gas smell, which is a serious safety concern.
- The guest was moved to another room for a night, but the noise level was still high due to the location of the hotel, which is not something that can be controlled by the hotel.

Overall, the review suggests that the guest had a mixed experience at the hotel. While the rooms were clean and comfortable, the service was not up to the guest’s expectations and there were issues with the heater and noise level in the room. These concerns could be important factors for future guests to consider when deciding whether to stay at the hotel.

**Source:** Authors’ conversation with ChatGPT
information and recommendations based on customer’s past behavior, needs, preferences and spending patterns. ChatGPT could also be a tool to tailor loyalty programs according to guests’ preferences and priorities. ChatGPT itself explains how it could do that: “based on the insights gleaned from guest data, ChatGPT can help tailor loyalty program rewards to better match guests’ preferences and priorities, such as offering upgrades, free nights, or discounts on activities or dining experiences.”

ChatGPT may play a role in new product development and benchmarking. It can assist in the generation of new product ideas and the identification of new opportunities. It can suggest product names from example words, recipes from a list of ingredients or turn a text description into a color. ChatGPT can be used to create surprise dishes in restaurants according to customers’ preferences and food restrictions, and the ingredients available in the premises. It can help revise the menu items with more imaginative titles, e.g. inspired by the world of Harry Potter, ChatGPT proposed the authors the menu items and titles in Figure 4.

ChatGPT and other LLMs could be integrated into AI applications that assist business and finance management in legal matters by drafting and reviewing legal documents (e.g. contracts), summarizing and highlighting changes in legislation or providing answers to questions about legal documents (Chui et al., 2022).

ChatGPT and other LLMs can enhance AI systems that support decision-making of tourism managers and policy makers by improving their usability, human–computer interaction, decision presentation and justification. Such AI systems could give suggestions about possible decisions, but the ultimate decisions would be made by the human managers (“human-in-the-loop” approach), or they could make and implement a decision but give the managers the opportunity to override it (“human-on-the-loop’ approach) (Ivanov, 2022a).

In the future, it is likely that property management systems and revenue management systems will be integrated with a ChatGPT API. This improvement would enable the extraction of relevant information through verbal communication with the system. According to ChatGPT itself, it could “summarize data from various operational systems such as front desk, housekeeping and food and beverage to provide a concise snapshot of the hotel’s daily performance.”

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**Figure 4** ChatGPT-generated Harry Potter-themed menu

- **Can you make the title of these menus more creative and more related to the Harry Potter theme?**

  **Certainly! Here are revised menu items with more imaginative and fitting titles inspired by the world of Harry Potter:**
  
  **Appetizer:** Hogwarts-style Pumpkin Pasties  
  **Main Course:** The Sorcerer’s Secret Butterbeer-Braised Pork Loin  
  **Dessert:** The Sweet Magic of Treacle Tart

  I hope these new titles bring a touch of enchantment to your Harry Potter-themed feast!

**Source:** Authors’ conversation with ChatGPT
2.1.2 ChatGPT for tourists. Tourists could use ChatGPT in all stages of the trip – from inspiration through booking and the trip itself, to the post-trip stage. In most cases, it would be tourism companies’ initiative to use AI in their services/operations. Therefore, the tourists might interact with ChatGPT or another LLM not because they want it but because the companies did not provide them with another choice (e.g. an LLM-based chatbot on the website of an online travel agency that facilitates hotel bookings, and answers customers’ queries and complaints). Moreover, tourists may not even understand that they interact with an AI due to the relevance of its responses to their queries and the smoothness of their interaction in free text format, although this does not necessarily mean that ChatGPT would have passed the Turing test.

When tourists intentionally decide to use ChatGPT/LLM-based chatbot, they can do it in various ways. Before the trip, if ChatGPT is integrated in travel websites and has access to real-time data, tourists would be able to obtain personalized information and suggestions of tourism products in the destination (e.g. hotels, restaurants, transportation, local attractions, activities), and to design personalized itineraries. Travel planning could be simplified through the possibility of verbally communicating needs, preferences and requirements (e.g. time and budget constraints; special needs; dietary restrictions) to ChatGPT. The establishment of self-sovereign identity (SSI), where individuals have control over how their personal data is shared and used, in combination with generative AI, could dramatically improve personalization (Sorrells, 2023), including in tourism and hospitality context. During the trip, ChatGPT/LLM-based chatbots could generate inspirational texts for social media posts, provide advice about changes in the itineraries, etc., while after the trip, it could be used by tourists to draft reviews for the hotels and restaurants whose services they used.

The future evolution of ChatGPT and other similar technologies has the potential to bring about virtual companions who would learn about each individual, and simulate emotional responses. They could provide support and guidance during travels if they are integrated with travel websites to receive real-time data. Large companies could even integrate ChatGPT in their own supply chain IT systems and use it to search for tourism products for the business travels of their employees. If tourism companies integrate ChatGPT to communicate with their customers and perform sales, we may experience a situation when the artificial autonomous agents of tourism companies communicate with and sell to the artificial autonomous agents of their business customers, a situation defined as “AI2AI marketing” (Ivanov, 2022b).

2.1.3 ChatGPT for DMOs. The directions of application of ChatGPT for DMOs are identical to those of tourist companies – processing of information, customer service, generation of advertising texts, decision-making, etc. In addition, ChatGPT reports it can “extract keywords from travel blogs, guides and online reviews to get an overview of popular tourist destinations, attractions and activities.” To do so, it does not need to have access to real-time data, unlike booking facilitation where it is a must, but to maximize its efficiency, access to real-time data is required. ChatGPT/LLM-based chatbots could be used to manage tourist flows and suggest itineraries to attractions with a lower flux of tourists based on real-time data (if available) or suggest overlooked destinations as an alternative to crowded ones. Hence, it could contribute to sustainable tourism.

2.2 ChatGPT for tourism – benefits

According to ChatGPT itself, it can bring about many benefits for the tourism sector: “[It can] improve customer experience, reduce response times, and increase efficiency, leading to better business outcomes. However, it is important for businesses to properly implement and integrate ChatGPT into their operations, and to continuously evaluate and improve its performance.”
ChatGPT has great potential to increase efficiency in tourism business. First, ChatGPT-powered chatbots facilitate the implementation of self-service in a wide range of processes, which could previously not be delegated to less powerful chatbots. Hence, it can provide streamlined and timely 24/7 communication in various languages, possibly with reduced need for human interference to handle customer queries due to ChatGPT’s ability to keep track of the conversation and understand context. In addition, ChatGPT will likely guarantee smoother communication with customers than previous chatbots. It will enable more versatile, convenient, flexible, capable, friendly, fun and human-like chatbots for various functions. This can lead to greater efficiency in cross-selling, up-selling and generation of leads (Chui et al., 2022). Moreover, it will increase chatbots' consistency with brand’s tone and language through integration of ChatGPT API with brand’s applications. ChatGPT-powered chatbots might be designed to add value to the customer experience by having a predetermined “personality” and level of creativity – e.g. a chatbot could always end an answer with a quote from a movie or author, or instead interact with customers using Shakespeare’s language style. This could lead to greater customer satisfaction as compared to more robotic and limited chatbots. This is in line with some of the desirable features of chatbots underlined in previous studies: human-like characteristics (Pillai and Sivathanu, 2020), anthropomorphic emotional messages (Cai et al., 2022) and enjoyment/hedonism (Melián-González et al., 2021). The addition of a voice interface to ChatGPT could further improve human–computer interactions, in line with Buhalis and Moldavska’s (2022) study on voice assistants in hospitality. These chatbots will be capable of learning continuously and improving functionalities over time, thus leading to increasingly personalized customer interactions with detailed, naturalistic and creative responses. Ultimately, the level of satisfaction of tourists with their tourist experience may increase.

ChatGPT/LLM-based chatbots are not only useful for customer service. They could also lead to improved internal communications, both horizontally and vertically. They could be used for providing quick and convenient access to information or for gathering feedback, helping companies identify areas for improvement.

As analyzed in the previous section, ChatGPT can be used as more than a mere chatbot – in fact, in its own words, its “advanced language understanding and ability to generate and process large amounts of data make it a valuable tool for businesses to enhance decision-making and improve overall efficiency.” Hence, from an economic perspective, ChatGPT is a valuable tool when combined with human expertise. It has the potential to significantly augment employees in a variety of tasks and allow them to be more productive and work more efficiently, i.e. it will have an enhancement effect on them (see also Ivanov and Webster, 2019). This can not only increase the capability for producing content and handling requests, but also liberate human resources for a wide range of tasks – for example in the domains of strategy, creativity, market research or new product development. For example, managers will have more time to focus on the strategic aspects of the tourist companies they manage and the quality of their decisions might be higher, which would result in improved companies’ competitiveness. Additionally, the extraction of valuable insights from customer feedback provides a deeper understanding of customer needs and preferences, and enables better forecasts of travel behavior, and hence, better strategic decisions. At the same time, ChatGPT may have a substitution effect on human employees because some of their tasks will be automated. The optimization of the workforce might enable a tourist company to rely on a smaller pool of employees to perform the same tasks. This way, it can contribute to save costs in both in-house and freelance human resources. However, tourism companies would probably observe the situation when employees equipped with AI replace employees without AI. Therefore, ChatGPT will also have a transformational effect on human employees because it will change the nature of the work they do. They will need to collaborate with AI to perform their tasks.
The user-friendly interface of ChatGPT and its affordability may ultimately lead to the democratization of AI and its application not only by large companies but by SMEs as well. Until recently, the implementation of AI tools in a tourist company required significant technical expertise and financial resources – two barriers that would be decreased when ChatGPT and similar applications are offered to tourism companies in AI-as-a-service (AIaaS) business model (see also Cobbe and Singh, 2021; Lins et al., 2021). AIaaS decreases the costs of the tourist company that wants to use AI because it transforms the high initial costs for hardware and software development, maintenance costs, salaries for highly paid software engineers, etc., into an affordable monthly access fee. Therefore, more tourism companies will be able to enjoy the benefits AI offers.

2.3 ChatGPT for tourism – risks

Despite the great capabilities of ChatGPT, its use poses risks and has limitations. First, ChatGPT/LLM-based chatbots/conversational agents may have negative impacts on customer experience. Previous studies cautioned that overreliance on AI could decrease the social value of travel experiences, and lead to tourists becoming isolated as they are steered down individualized paths (Grundner and Neuhofer, 2021). The lack of human contact and social support in a destination could also induce loneliness and anxiety (Tussyadiah, 2020). Hence, value co-destruction may occur in these scenarios (Grundner and Neuhofer, 2021). Moreover, tourists may possess insufficient technical proficiency to effectively interact with ChatGPT; as ChatGPT does not ask clarifying questions (as a travel agent would do), tourists may not be able to fully seize the benefits of personalization.

Moreover, ChatGPT does not presently incorporate individual company norms and values or destination branding strategies; therefore, companies will need programmers to train and integrate language models like these in their chatbots, which might pose obstacles to companies with fewer resources because this will add on their costs (Chui et al., 2022). Additionally, the performance of the model may vary depending on the language.

Overreliance on ChatGPT without human verification will likely result in significant inaccuracies or lack of content originality. Hence, ChatGPT would not replace human expertise. However, it will likely have an impact on tourism jobs. According to Huang and Rust’s (2018) theory of job replacement, AI initially replaces tasks in areas requiring mechanical and then analytical intelligence, while tasks requiring intuitive and empathetic intelligence become more valued until they are replaced as well in the future. During a transition phase, AI first enhances employee skills before eventually replacing jobs. With the current advances in LLMs, employees’ skills are enhanced in back-office operations and to some extent replaced in customer service, but as LLMs progress, LLM-based agents might take increasingly more jobs that require intuitive and even empathetic intelligence. The enhancement (augmentation) effect may reduce the number of workers required to perform certain tasks (e.g. content creation) as fewer workers would be needed to supervise and improve LLMs content production than to produce written content from scratch. Hence, there is a real risk of employee replacement due to automation spreading to new types of jobs (e.g. content creators). While employees might perceive ChatGPT as a threat, employees’ resistance to its implementation might not be immediate as it would initially be perceived as augmentation.

The cybersecurity risks posed by ChatGPT may damage the reputation of a tourism company or destination and compromise the security and privacy of sensitive information. The creation of fake news about a destination or a tourist company, or the impersonation of brands are likely to become increasingly sophisticated
Additionally, companies should also consider the risks of sharing customers’ personal data and other sensitive information with ChatGPT, which could be further used to retrain its model (Kim, 2023).

Finally, while using ChatGPT poses risks, not using it may also “result in missed opportunities for automating and streamlining certain processes, such as data analysis and decision making, leading to a less efficient and potentially less competitive organization,” according to ChatGPT when prompted by the authors.

3. ChatGPT for tourism – a research agenda

The authors asked ChatGPT about potential future research in tourism and hospitality and its answer is presented in Figure 5.

Obviously, all research questions generated by ChatGPT are relevant. We could add:

![Figure 5](image)

Source: Authors’ conversation with ChatGPT
RQ11. How does ChatGPT influence the economic efficiency and performance of tourism and hospitality companies?

RQ12. How does the implementation of ChatGPT impact the competitiveness of tourism and hospitality companies?

RQ13. Will tourists trust ChatGPT-powered chatbots?

RQ14. Will tourism and hospitality employees fear ChatGPT-induced automation? How will it influence their well-being? Could it be used to create a decent work environment? Which skills will become more relevant? How will LLMs be integrated in the curriculum of tourism and hospitality degrees?

RQ15. How could policy makers manage potentially adverse effects of ChatGPT on tourism, particularly on tourism labor?

RQ16. What will be the exact enhancement, substitution and transformational effects of ChatGPT in tourism and hospitality companies? What will be the differences in the effects in the various tourism sectors (accommodation, F&B, travel agencies, aviation, etc.)?

RQ17. What risks does ChatGPT pose to tourism and hospitality companies? How can these risks be mitigated?

4. Concluding remarks

This is one of the first studies on ChatGPT in the tourism field (Ali and OpenAI, 2023; Iskender, 2023; Ivanov and Soliman, 2023). It adds to the literature on AI in tourism by identifying the key areas in which ChatGPT in particular and LLMs in general can have the greatest impact in tourism. It highlights the limitations and risks of implementing this technology; develops a framework of the directions of ChatGPT’s and LLMs’ areas of application, benefits and risks; and provides a future research agenda that is partly generated by ChatGPT itself.

This study offers insights to tourism industry stakeholders on how ChatGPT can affect the sector. It promotes informed decision-making and highlights not only the benefits but also the limitations of these technologies and the risks that they imply. The use of ChatGPT in the tourism industry has the potential to greatly increase efficiency in several business processes and contribute to the technology-enabled service evolution of tourism (Buhalis, 2020; Leung, 2020). Its integration in chatbots could streamline front-of-house operations and improve customer satisfaction in all stages of the trip. In the back-of-house operations, ChatGPT could augment employee skills and assist with tasks involving writing, analysis of reviews and creative processes. This opens further possibilities of human–machine hybrid work, where humans complement AI’s capabilities (van der Aalst, 2021). The improvement of ChatGPT’s and similar AI solutions’ characteristics will increase their benefits for the users (tourists, tourism managers and employees) and their wider adoption (Ling et al., 2021).

However, there are also risks associated with the use of this technology such as overreliance on its output, the potential replacement of human workers, cybersecurity and loss of human connection. Although ChatGPT cannot presently replace human expertise, its potential enhancement effect may lead to fewer employees being required to perform the same job. Hence, the replacement of a portion of white-collar workers is a risk that requires the attention of policy makers. Tasks involving empathetic skills are less likely to be affected (Huang and Rust, 2018). Further research is necessary to fully understand the potential and consequences of ChatGPT in tourism as well as how to mitigate its associated risks.

The paper also raises the awareness of tourism educators of the potential challenges that ChatGPT and LLMs could pose to the future of tourism jobs, highlighting the need for proactive measures to ensure that students are equipped with the skills to: engage in human–machine hybrid work (van der Aalst, 2021) and critically evaluate the limitations and
risks of AI and adapt to a changing labor market where soft skills might become more valued (Huang and Rust, 2018).

This study is limited by the lack of empirical data, which may hinder the ability to fully assess the impact of ChatGPT on tourism. Additionally, as AI is rapidly evolving, the limitations and capabilities of LLMs may change in the future.

References


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