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# **EXPERT EVALUATION OF ARTIFICIAL INTELLIGENCE OPPORTUNITIES IN THE TRAVEL AND TOURISM SECTOR**

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## ***Abstract***

*The paper focuses on the role of artificial intelligence in tourism, with a particular focus on travel itineraries generated by artificial intelligence and their potential to transform how travelers plan their travels. Through expert analysis and qualitative interviews, the paper analyzes the acceptability of these itineraries, the factors determining their use, how they compare to traditional itineraries in terms of design and quality, and the changing role of travel agents. The results suggest the ability of travel itineraries generated by artificial intelligence to simplify planning while noting their limits when compared to products and services provided by human agents. In addition to offering helpful suggestions for improving tourism products and services, the research provides suggestions for tourism professionals who wish to include the latest technological innovations in their offerings. It also suggests additional research into the long-term effects of these innovations on the tourism industry.*

***Keywords: travel, tourism, expert analysis, chatbot, artificial intelligence***

## 1. INTRODUCTION

The introduction of innovative services and products, along with the broad acceptance of modern technologies, have led to significant changes in the tourism sector in recent years (Štilić et al., 2022). Virtual tourist experiences, online travel agents, and robotics integration are just a few of the numerous examples that technological innovation has been recognized as a useful tool for improving tourism and hospitality (Sujood et al., 2023). According to Güngör et al. (2023), this dynamic change in the industry affects various research areas, such as the technological aspects of artificial intelligence (AI), customer perceptions, acceptance of AI technology, and future trends. Research in this area has gradually shifted from studying AI technology in its early phases to investigating customer perceptions (Hicham et al., 2023) and the adoption of AI (Kong et al., 2022). At the same time, the tourism sector is undergoing a major transformation due to technological breakthroughs like automation and AI-powered chatbots (Pillai & Sivathanu, 2020; Tussyadiah, 2020; Rafiq et al., 2022).

The tourism industry has witnessed several significant innovations, one of which is the rising popularity of AI-generated Travel Itineraries (AITIs). These itineraries are designed to be useful resources for assisting busy travel agents and offering the foundation for custom itinerary building. Through the simplification of the itinerary planning process for agents, these AITIs have the potential to provide individualized, successful, and affordable travel experiences.

Up until very recently, tourism studies have primarily focused on terms such as retail, culture, hospitality, satisfaction, indicators, etc. (Sajter, 2024), while AI applications in this field have remained underexplored and received limited research attention. With the growing acceptance of AI-powered tourism products and the growing popularity of AITIs, there is a significant research gap regarding the expert evaluation of AITIs and their possible improvements. Even though customer experience management leads to improved sales (Rafajac, 2022), in the knowledge-driven process of implementing AI in the tourism sector, expert assessment takes priority over user (tourist) evaluation and practical applications (Von Soest, 2022), providing a foundation to support future industry innovations.

To address the research gap, it was necessary to conduct expert evaluation of AITIs and understand the various elements that influence their opinion and improvements they might suggest. With the understanding that knowledge and expertise are essential for successful real-world applications, this research aims to address this important gap in current understanding of AI applications in the tourism sector. The knowledge produced by this research is expected to have an influential effect on tourism industry professionals and policymakers. Through an in-depth evaluation of the aspects that impact the expert evaluation along with potential enhancements of AITIs, the tourism industry could produce better products and services that better meet industry standards and the expectations of tourists. Additionally, this research aims to provide insights into improvement of tourists' travel experiences. The purpose of this research is to contribute to the

tourism industry's development of new and enhanced products and services by better understanding the acceptability of AITI.

The primary objective of this study is to present the expert evaluation of AITIs and explore aspects influencing their evaluation. The research is guided by several research questions:

- Do experts find AITIs acceptable?
- Which aspects influence AITIs usability?
- How do experts rate the AITIs' design and quality?
- What will be the future role of travel agents?

These questions guide the research in exploring the acceptability and aspects that influence the use and satisfaction of AITIs among experts in the tourism field. The results aim to provide insights into how AI can improve the travel experience and inspire the creation of better tourist products and services.

With the Introduction section having presented the background, purpose, and research questions (1), this research paper is further divided into a Literature Review section that covers previous research on the use of AI in tourism (2), a Research methodology section that outlines the research design, participants, data collection, and analysis (3), a Results section that presents the study's findings (4), a Discussion (5), and a Conclusion section that summarizes the results, outlining implications, limitations, and future research guidelines (6).

## 2. LITERATURE REVIEW

AI has advanced significantly in recent years and it is widely applied across numerous industries. As AI evolves, it is expected to have a great effect on many of different industries and be used to solve complex problems and provide innovative solutions. Nowadays, AI is already making significant contributions to higher productivity in many different industries, including healthcare (Ostherr, 2022), education (Ahmad et al., 2022), finance (Musleh Al-Sartawi et al., 2022), and marketing (Kopalle et al., 2022). In response to the growing interest in AI and service robotics in tourism and hospitality research, Saydam et al. (2022) carried out a detailed analysis of 123 research papers to define AI and identify related themes. Technology adoption - in particular, the public's widespread adoption of AI - has significantly affected the dynamics of online interactions between customers and travel-related companies, resulting in the growth of the tourism industry (Rafiq et al., 2022).

Studies exploring AI's potential began as early as 1990's. Since then, the topic has grown to include a constantly increasing amount of literature. Kong et al. (2022) traced the development of AI research in tourism starting in 1991 and performed an extensive review of the scientific literature. Their findings show a major shift from an early focus on AI technology to a rising interest in

understanding customer perceptions and AI acceptance across different industries. This change reflects the changing setting and priorities in the field. There was a noticeable increase in interest in AI by the end of 2020, indicating the field's potential (Goel et al., 2022). In their work, Goel et al. (2022) explored and synthesized the various aspects affecting customer acceptance of AI and robots in the hospitality and tourism sectors. Their research suggested important barriers, including psychological, social, economic, and technical-functional factors that influence the adoption of AI-powered products. The importance of voice assistants in the hospitality sector is discussed by Buhalis & Moldavska (2022), who note that the benefits and challenges are present for both hotels and guests. In their research, virtual assistants are described as digital helpers who improve operational skills, customer service, and cost-effectiveness in hotels. On the other hand, Fararni et al. (2021) discussed the issues of information overload for modern travelers and presented an overview of various tourism recommendation systems. To promote tourism in specific destinations, the approach they proposed integrates big data, artificial intelligence, and operational research. It also includes a conceptual framework and a hybrid recommendation-based architecture.

In a study by Tong et al. (2022), the mediating role between AI and intelligent automation in tourism is explored, focusing on aspects that enhance connectivity, sustainability, and responsible adoption, suggesting that these criteria ensure effective intelligent automation in tourism. According to Prahara et al. (2023), although AI-driven service automation influences the value creation, it does not immediately improve customer satisfaction or the overall guest experience. Instead, it influences the quantity of actual value that is generated. In addition, their study highlights the influence of traveler attachment to human agents in contrast to the adoption of chatbots, providing useful information for system designers and industry practitioners to improve accessibility and ease of use of chatbots.

According to Rafiq et al. (2022), AI - especially AI chatbots - is essential to the transformation of the travel and tourism sector. Despite being a relatively new technological advancement, AI chatbots have a lot of unused potential in the tourism and hospitality industries. The research they conducted on the aspects influencing the adoption of AI chatbots highlights their noticeable influence on customer engagement and experiences. Buhalis and Cheng (2020) add to the understanding of chatbot technology through their perspective of technology providers. By interviewing experts in the hospitality field, they determined that chatbots received positive feedback and that their benefits exceeded the negative aspects. This suggests a growing trend in the industry's adoption of chatbots and highlights the necessity to further develop their capabilities to reach full potential. The acceptance of chatbots in the tourism industry is supported by a number of key aspects, including perceived ease of use, usefulness, trust, intelligence, and anthropomorphism, as identified by Pillai & Sivathanu (2020). Tosyali et al. (2023) explored how interactions with Chat Generative Pre-Trained Transformer (ChatGPT) about a destination influence tourists' perceptions of that place and their intention to visit. In two studies conducted in this research, participants who found

the chatbot interactions informative had a more positive image of the destination. This increased their likelihood of wanting to visit. The destination image played a key role, acting as a mediator between chatbot informativeness and visit intention. The findings, replicated in their second study, highlighted the importance of human-machine interaction in shaping tourist attitudes and behavior. In a study by Duong et al. (2024), researchers explored why tourists continue to use ChatGPT for travel planning. They found that when tourists feel a personal connection with ChatGPT (parasocial interaction) and they are satisfied with its use, they are more likely to keep using it. Satisfaction partially explains this connection, while technology anxiety weakens both the tourists' satisfaction and their personal connection with ChatGPT.

AI has the potential to optimize business processes, including supply chain management, revenue management, and pricing optimization (Filieri et al., 2021; Ivanov et al., 2021; Çeltek & İlhan, 2020). Each of these areas presents opportunities for increasing profitability and decision-making processes in travel-associated businesses. In terms of the consequences of growing AI use, employment in the tourism and hospitality industries could also be a source of concern. As AI evolves to automate numerous tasks, low-skilled employees may face unemployment (Huseyn, 2023; Crowley et al., 2021). Young staff members suffer the most by this, as they typically hold entry-level positions with relatively low employment rates (Zdilar, 2021). This highlights how important it is to keep supporting educational and training initiatives that will empower workers with the skills required for jobs of the future (Ivanov, 2020). It seems apparent that AI will play a major part in defining the future of any business, and that the tourism sector will continue to use AI technology as it advances, even regardless of potential job losses. On this subject, customers' reactions to AI replacing human employees in the travel and hospitality sector were investigated by Vorobeva et al. (2023). Researchers concluded that customers are more likely to approve, use, and adopt AI-based services when AI is presented in a supporting role, rather than completely replacing human employees.

### **3. RESEARCH METHODOLOGY**

The research methodology proposed in this paper follows a three-step process, where methodology combines in-depth interviews with travel industry professionals and expert evaluations of AITIs.

First, a snapshot of the use of the AI language model is presented, containing the original query. Since this research aims to evaluate the usefulness and quality of AITIs, it is essential to introduce the basic instrument used in this effort to create an environment for the creation of five different AITIs (Figure 1).

Good day, please generate 5 different in-detail, day by day, travel itineraries based on the following Q&As Please add suggestions for accommodation and restaurants. State the approximate price for the proposed itineraries, including transportation, accommodation, food/drink costs, as well as attractions fees.

Q1: What would be the departing city?

A1: Belgrade, Serbia

Q2: Can you describe your desired travel location or region?

A2: Europe

Q3: What is the purpose of your travel (e.g. leisure, business, etc.)?

A3: leisure

Q4: How many days would you like to spend on your trip?

A4: 3 to 5

Q5: How would you like to travel to your preferred destination (e.g. airplane, train, car)?

A5: airplane or car

Q6: Are there specific sights or attractions that you would like to visit during your trip?

A6: must sees and cultural sights, Instagram popular places would be ok too

Q7: Are there any specific experiences (e.g. food, culture, adventure) that you would like to have during your trip?

A7: no

Q8: Are there any specific preferences or requirements that you have for your itinerary?

A8: low-budget travel

Thank you!

Figure 1 Example on request for generating AITIs

The language model tested in this research was developed by OpenAI Company and driven by AI (Pavlik, 2023). Through extensive training conducted on a substantial dataset of text data taken from the internet, it can generate text responses to queries that closely resemble the responses of an actual person. This globally available language model uses a transformer neural network architecture and is trained with a transformer variation known as the Generative Pre-trained Transformer (GPT) (Floridi & Chiriatti, 2020; Wang et al., 2023). As a result, it can generate text that is consistent with the data used for training's grammatical and tonal characteristics, making it suitable for many language-processing tasks, including question-answering. This language model employs probabilistic language generation methods to generate responses based on patterns and relationships in the text data that served as its training set. However, it is important to keep in mind that the responses generated by ChatGPT and used in this research are not always correct and may contain incorrect data, a phenomenon called "AI Hallucinations" (Nah et al., 2023). In practice, all information obtained from this tool must be verified before it is used (Figure 2).

Of course! Here are 5 different travel itineraries for your trip to Europe departing from Belgrade, Serbia for 3 to 5 days, taking into consideration your desire for leisure and to visit must-see cultural sights and popular Instagram places, with a low-budget preference. Prices are estimated and subject to change based on current exchange rates and seasonality, and can vary depending on the exchange rate and individual spending habits. I hope these itineraries provide you with a good starting point for planning your trip to Europe. Enjoy your travels!

Figure 2 Response from ChatGPT (OpenAI, 2023)

Secondly, selection of field experts and interview conduction is executed. Ten tourism sector experts from different backgrounds who have had at least five years of experience in the tourism industry are chosen in order to ensure a wide range of viewpoints. These experts are chosen for their expertise, reputation, and travel itinerary-making experience. Both in-person and online video conferencing is used for the in-depth interviews with the travel industry experts. The semi-structured interviews are scheduled to roughly 45 minutes each.

Next, a set of AITIs are examined and evaluated by the experts during the interviews, and they are asked to give their evaluations based on a number of factors, such as relevance (Yochum et al., 2020; Asaithambi et al., 2023; Vieira et al., 2024) to the destination, completeness (Vincent et al., 2024), accuracy (Elimadi et al., 2021; Vincent et al., 2024), usability (Brata et al., 2021), degree of tourist's satisfaction (Yochum et al., 2020; Carreira et al., 2021), etc. As part of their evaluation of the AITIs, the experts were also asked to discuss any potential negative aspects and challenges of such itineraries.

Finally, the experts were asked a series of questions, such as "How well does the AITI compare to a similar itinerary that a human travel agent might create?" "What potential challenges or obstacles might travelers face when using the AITIs in real-world situations?" etc. AITI's quality and usability evaluation through data transcription, coding, theme identification, data analysis, and interpretations is aimed at achieving the research objectives.

With the purpose of analyzing text data, creating themes and developing conceptual frameworks and theories, NVivo software is utilized to compile data from expert evaluations and in-depth interviews (Tang, 2023). Data is classified, and themes are identified based on expert assessments of the AITIs. After that, data analysis is carried out using the information collected to assess the overall quality of the AITIs as well as any possible disadvantages or challenges with using them. Analyzing data from in-depth interviews and expert assessments involves five typical steps (Parameswaran et al., 2020; Vindrola-Padros & Johnson, 2020; Deterding & Waters, 2021):

- Transcription. The first step in the process is to convert the audio recordings from the in-depth interviews into written text. This results in the ability to analyze data in a more practical and effective manner.
- Coding. This includes identifying and labeling important phrases or paragraphs from the interviews that are associated with specific themes or topics. In this case, for example, "organization" may be used to code quotes regarding how AITIs' information is organized and presented.
- Theme identification. To do this, the coded data must be analyzed to identify any trends, perspectives, or expert opinions. In this case, for example, if several experts express concerns about the quality of the information provided in the itinerary, design, usability or effectiveness and appeal, the theme of "Itinerary design and quality" could start to take shape.

- Data analysis. Data is then analyzed to establish the overall quality and accuracy of AITIs, as well as any potential limitations or challenges related to their use.
- Interpretation. The last step involves interpreting the analysis's results to determine the value of AITIs as well as any potential disadvantages or challenges associated with their use. To do this, an overview of the findings, a discussion of their meaning, and recommendations for future research or advancement in this field are offered.

## 4. RESULTS

The group of experts interviewed for the purpose of the research presented in this paper was predominantly composed of male individuals, with six out of ten experts being male. The age range among the experts was between 27 and 55, with a mean age of roughly 44. The group has been employed in a different of tourism professions, such as professors, managers, consultants, engineers, and assistants. Six of the experts have had degrees from higher education institutions, three with PhDs, and one with a Magister of Science, demonstrating the diversity of their educational backgrounds. The years of experience in the tourism industry ranged from 5 to 23 years, with an average of approximately 17 years.

First, the experts used a five-point scale to rate AITIs on ten aspects of information quality, ranging from 1 (very low) to 5 (very high). In regard to Clarity, the information was generally rated as clear and easy to understand, with most experts giving it high scores of 4 or 5, though one expert rated it as average (3). In terms of Organization, most experts felt that the information was well-structured and presented, with scores ranging from 4 to 5. However, three experts rated it as a 3, indicating potential improvements in the way the information is arranged. With respect to User-friendliness, the information was consistently rated highly, with most experts finding it easy to use, reflected by mostly 4s and 5s. Regarding Completeness, there was more variation. While some experts rated the information as thorough (5), others felt it lacked some relevant details, leading to a few ratings of 3. In terms of Relevance, most experts considered the information accurate and useful, with high scores of 4 and 5. However, one expert rated it as a 3, suggesting they found the information less relevant. For Timeliness, the ratings varied between 3 and 5, suggesting that while the information is generally seen as up-to-date, a few experts believe it could be more current. In regard to Objectivity, the information was rated highly, with most experts considering it impartial and free from bias, with scores of 4 and 5. Regarding Trustworthiness, the information was mostly considered credible and reliable, with high ratings from most experts, though one expert rated it slightly lower with a 3. When it comes to Cultural Sensitivity, the experts largely agreed that the information was respectful and appropriate for diverse cultures, reflected in mostly high scores of 4 and 5. Lastly, concerning Uniqueness, this aspect saw the widest range of ratings, from very low (1) to very high (5). Some experts felt the information was highly original, while others saw it



as lacking differentiation from other sources. In the overall evaluation (Table 1), analysis demonstrated that AITIs were well-rated in terms of clarity, user-friendliness, objectivity, and trustworthiness, but there were some mixed feelings regarding completeness, timeliness, and uniqueness.

Table 1 Expert evaluation

Aspects	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	Mean score
Clarity	4	4	3	5	5	5	4	4	5	4	4,3
Organisation	4	5	3	4	5	5	3	5	4	4	4,2
User-friendly	4	4	4	5	5	5	5	5	5	4	4,6
Completeness	4	4	5	5	3	3	4	4	4	3	3,9
Relevance	5	5	4	4	4	4	4	3	5	4	4,2
Timeliness	4	4	3	4	3	5	4	4	4	3	3,8
Objectivity	4	4	3	5	5	5	4	4	5	4	4,3
Trustworthiness	5	5	4	4	3	5	4	4	4	4	4,2
Cultural Sensitivity	4	4	5	3	5	5	5	5	4	4	4,4
Uniqueness	5	3	5	3	2	1	3	4	4	3	3,3

Next, transcribing the audio from the in-depth interviews into text was an important step in data processing. This led to more efficient and practical data analysis, which optimized the process of identifying key themes and patterns in the expert evaluation of use of AI in the tourism sector, specifically, determining the acceptability of AITIs.

During the coding phase of the analysis, through word frequency query results, key phrases from the interviews were identified. For example, the following terms were most frequently observed together with their variations or synonyms: information, cost, good, offer, specific, time, needs, availability, applications, and tourism. Through the process of organizing and categorizing the data into more manageable groups, the most significant terms and themes identified during the analysis were outlined, therefore making it easier to identify patterns and relationships within the data.

Figure 3, as part of the results obtained by this research, presents the results of word frequency queries based on experts' interviews, where the most dominant words are visually represented as the largest in the Word Cloud, providing a visual summary of the key terms identified during the analysis.



Figure 3 Word frequency query results - Word Cloud

*Source: Authors.*

As a result of the coding process, it was possible to create codes and subcodes that could be used to categorize quotes and paragraphs into different topics. The main codes were identified as Information quality, Itinerary Design and Usability, Itinerary Effectiveness and Appeal, Comparisons, Improvement or Feedback, Targeting, Challenges and Advancement. Subcodes were also identified within the first three codes.

For the Information Quality code, several subcodes were established, including Completeness, Relevance, Objectivity, Trustworthiness, and Cultural Sensitivity. Completeness refers to how much relevant information is contained in the itinerary, whereas Relevance evaluates the correctness and usefulness of the material presented. Objectivity assesses the impartiality and lack of prejudice in information, whereas trustworthiness assesses the credibility and reliability of information. Finally, Cultural Sensitivity analyzes how respectful and suitable the information is for different cultures.

For the Itinerary Design and Usability code, several subcodes were also identified, including Clarity, Organization, User-friendly and Timeliness. There were multiple subcodes discovered for the Itinerary Design and Usability code, including Clarity, Organization, User-friendliness, and Timeliness. Clarity defines the degree to which information is clear and understandable, and Organization evaluates the arrangement and presentation of information. User-friendliness

assesses the information's accessibility and ease of use, and timeliness assesses the up-to-date nature of the information.

Finally, for the Itinerary Effectiveness and Appeal code, several subcodes were identified, including Alignment, Uniqueness, Balance (organization), Effectiveness and Applicability. Alignment measures how well the itinerary aligns with travel trends and customer preferences, while Uniqueness measures the originality and differentiation of the itinerary compared to other sources. Balance (organization) assesses the organization and balance of the itinerary, while Effectiveness measures how well the itinerary meets the needs of travelers and the travel industry. Applicability assesses how applicable the itinerary is to a wide range of travelers.

Comparison code refers to the process of evaluating and comparing the itinerary to ones created by the travel agents in travel organizations. This included comparing pricing, features, or overall value for the customer. Experts highlighted the differences, or the lack of them, by comparing the AITIs to similar, already-available products. Improvement or feedback code refers to feedback from experts on areas of the AITIs that could be improved. It involves identifying areas for improvement and suggesting specific changes that could enhance the overall quality of the AITIs. Experts emphasized the importance of requesting feedback from customers to continuously improve the itinerary and meet evolving travel trends and preferences. Targeting code refers to the process of targeting specific customer segments with the AITIs. Experts emphasized the importance of understanding the target audience and creating an itinerary that meets their specific needs and desires. Challenges code refers to the obstacles and difficulties that could be possible while executing the AITIs. This includes challenges related to logistics, budget, or regulations. Experts discussed the need to identify potential challenges and develop strategies to overcome them to ensure the AITIs run smoothly and meet customer expectations. Advancement code refers to the need for innovation and progress in itinerary design, execution, and acceptance. Experts highlighted the importance of staying up-to-date with the latest travel trends and technologies to ensure the traditional travel agencies remain competitive and appealing to customers. This involves incorporating new technologies while utilizing various digital tools or platforms.

As a further step, i.e., theme identification, coded data was used to find any patterns, viewpoints, or opinions shared by the experts. In this case, several experts raised issues regarding the Information Quality, Itinerary Design and Usability and Itinerary Effectiveness and Appeal codes, creating the Itinerary design and quality as the first theme (Table 1). In the same manner, Comparisons, Improvement or Feedbacks, and Targeting affiliated with Evaluation and comparison as the second theme (Table 2). Further, Challenges and Advancement affiliated with Future direction and progress as the third and final theme (Table 3).

Table 2 Itinerary design and quality theme

Theme	Code	Sub code
Itinerary design and quality	Information Quality	Completeness
		Relevance
		Objectivity
		Trustworthiness
		Cultural Sensitivity
	Itinerary Design and Usability	Clarity
		Organization
		User-friendly
		Timeliness
	Itinerary Effectiveness and Appeal	Alignment
		Uniqueness
		Balance (organization)
		Effectiveness
		Applicability

Source: Authors.

In terms of Itinerary design and quality theme (Table 2), the majority of the experts concluded that presented AITIs aligned with current travel trends and customer preferences and that the itineraries were either very good or aligned with contemporary trends and customer preferences. Only one expert thought they were poorly represented. Two experts believed that there were innovative or unique activities or destinations included in the itinerary. The majority of experts, however, did not find any innovative or unique elements in the itinerary, but they did believe that they corresponded to general demand. All the experts, with the exception of one, thought that the schedule was well-balanced in terms of cost, time, and activities. The one expert who expressed reservations stated that travel costs were not well balanced, taking into account cost increases in the post-COVID era. Most experts agreed that the itineraries would be appealing to a broad range of travelers when asked if they would or if they were better suited to a particular kind of traveler. Finally, when asked about potential challenges or obstacles that travelers may encounter when using AITIs in real-world situations, the experts mentioned a variety of issues such as insufficient information, poor handling, information validity, up-to-date availability, and issues with specific user needs. According to one expert, the AI itineraries were useful for sightseeing tours but less precise when it came to transportation and hotel accommodations.

In terms of Evaluation and comparison theme (Table 3), when comparing the AITIs to one made by a human travel agent, experts generally agreed that the AI itinerary had advantages and was comparable in terms of content, though some noted that the cost projections and transportation segment of the itineraries could be more accurate.

Table 3 Evaluation and comparison theme

Theme	Code	Sub code
Evaluation and comparison	Comparisons	/
	Improvement (feedback)	
	Targeting	

Source: Authors.

Based on the responses given by the experts, most of them found the itineraries to be very good or satisfactory in terms of meeting the needs and interests of specific traveler demands, though some suggested that it could be more specific or include more information on micro locations and shopping locations. The experts suggested that the AITIs could be improved through utilization, generating faster connection speeds, and more accurate data. Additionally, some experts suggested that AITIs could be improved by including information about the need for reservations, museum and attraction opening hours, and information about the need for a guide in certain places. Overall, the experts appeared to agree that AITIs have the potential to enhance the travel experience for customers by offering current information that human agents might not have, by offering a good initial proposal that can be improved, and by lessening the workload of agents during peak travel times. They did, however, make the argument that human agents cannot entirely be replaced by AI and that some circumstances still call for human intervention.

In terms of Future direction and progress theme (Table 4), the expert field interviews provided some interesting insights into challenges, drawbacks, ethical issues, and future progress.

Table 4 Future direction and progress theme

Theme	Code	Sub code
Future direction and progress	Challenges	/
	Advancement	

Source: Authors.

Three experts discussed the difficulties that could arise when using AITIs and pointed out that external factors like world conflicts, crises, and crowds and lines could pose obstacles. Another expert suggested that the itinerary might be constrained by costs and travel times and that the AITI's aptitude would be tested by handling more challenging requests. Experts cited a lack of experiential feedback, information unavailability, and information validity as potential drawbacks of relying too heavily on AI in travel itinerary planning. Experts also stressed the importance of not ignoring alternative modes of transportation. According to one expert, itinerary cost predictions could also be a potential

disadvantage. Also, experts emphasized the importance of protecting user information, respecting ethical norms, principles, and traveler rights, as well as ensuring data security and GDPR compliance. Finally, experts predicted that AITIs would see increased usage and representation in the travel industry in the future. Two experts also suggested that there would be a greater emphasis on raising awareness of the importance of coordination between traditional agents and AI in tourism. The ratio of AI output to live agent correction, according to one expert's prediction, will be 99%:1% in ten years, indicating a significant advance in the quality of AITIs.

## 5. DISCUSSION

The research presented in this paper offers a contribution to the understanding of practical implications of use of AI in tourism. Based on expert evaluation, it provides a better understanding of how AITIs can be integrated into modern tourism practices and how they could improve efficiency and personalization in traditional travel itineraries, especially as modern tourists prioritize efficiency and prefer prompt responses because they were raised in a digitally-centric environment (Rudež, 2023). These results add to previous research on using AI in tourism (Biliavska et al., 2022; Sarfraz 2024; Martínez-Vera et al., 2023) and travel planning (Pillai & Sivathanu, 2020; Lalicic & Weismayer, 2021; Pavlov et al., 2023), offering experts' perspective into the practicality and usability of AITIs.

One of main conclusions of this research is the mostly positive reception of AITIs in terms of information quality, design, and usability. Experts rated AITIs as clear, user-friendly, and trustworthy sources for travel-planning, since they are rated highly for these aspects. However, some experts identified areas for improvement, particularly in completeness and timeliness. Although most experts agree that AITIs offer relevant information, opinions on whether the itineraries included all required details or whether the information was always current, particularly with regard to accommodation and transportation - where AITIs may need more development. This is consistent with previous research (Ashfaq et al., 2020; Prentice et al., 2020a; Prentice et al., 2020b) that imply that user satisfaction with AITIs recommendations is highly correlated with their quality and the quality of the information provided.

In terms of uniqueness, there was significant variation in expert opinions. While some argued the itineraries lacked uniqueness from conventional, human-generated itineraries, others rated AITIs as innovative. Experts highlighted that the strength of AITIs is more in convenience and efficiency than in providing special or highly personalized experiences.

When comparing AITIs to human-generated itineraries, experts generally concluded they had similar content, but also that AI still suffers with pricing accuracy and transportation planning. However, experts also pointed out that AITIs

can provide more timely responses than human agents, suggesting that AI may offer an advantage during peak travel periods when human agents are overrun. This supports previous research about AI's ability to complement rather than replace human agents with ability to save time and reduce the workload of travel agents (Garg, 2021), an important aspect considering the growing demands for personalized and efficient services in tourism. Additionally, experts highlighted that AITIs serve as excellent initial proposals but could benefit from more detailed recommendations on micro-locations and specific needs like reservations or opening hours for attractions.

In terms of advancement, experts suggested that the collaboration between human agents and AI could become a key driver of success in the tourism sector. One expert predicted that in the next decade, AI could handle 99% of the itinerary planning process, with minimal human oversight required. This insight contributes to the growing body of knowledge predicting the evolving function of AI in tourism, where it will likely become a vital tool in the hands of travel agents rather than a replacement. On the other hand, the acceptance and adoption rate of AI could be influenced by the research results (Ivanov, 2019) suggesting that travel agents may require training to use it effectively. Moreover, some findings (Raspor et al., 2020) suggest that a number of travelers may prefer to use travel agents for insights and assistance.

The results present potentially significant implications for both practitioners and policymakers. For travel professionals, results offer actionable insights into how AITIs can be integrated into existing workflows to improve efficiency without compromising quality. One example could be the integration of a pre-trained chatbot into a travel agency's website or social media messages. For policymakers, the results provide guidance on developing supportive infrastructures for the integration of AI into tourism. This aligns with earlier recommendations for creating enabling environments for AI adoption, through investing, training, and policy development (Puška & Štilić, 2022). Also, consumer resilience to web privacy violations may be an important aspect to consider (Rajh et al., 2021).

## 6. CONCLUSION

This paper highlights both the advantages and shortcomings of AITIs in the tourism industry, therefore offering insightful analysis of their acceptance and possible use. Though issues were noticed with completeness, timeliness, and uniqueness, experts generally found AITIs to be clear, user-friendly, and reliable. These results add to the growing body of literature about AI's role in tourism and have implications for professionals in the field who are interested in integrating AI tools into the products and services they provide.

However, several limitations should be acknowledged. Without evaluating their actual use or effect on travel experiences, this research concentrated just on expert assessments of AITIs produced for particular needs. Future research should address these gaps through an evaluation of how customers

engage with and respond to AITIs in use as well as investigating the long-term consequences of AI acceptance in the travel sector.

As AI technology advances, long-term research will be essential in understanding how AITIs and other AI travel products improve over time. Additionally, it will be important to investigate the broader ethical and social implications of AI in tourism, including data privacy, security, and algorithmic bias. Future research, by addressing such challenges, could provide a deeper understanding of AI's role in improving travel experiences.

The long-term goal could be to develop more efficient AI-powered products and services, ensuring that AI keeps transforming the tourist industry in innovative and traveler-centric ways while also contributing to Industrial Revolution 5.0.

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## **EKSPERTNO OCJENJIVANJE MOGUĆNOSTI UMJETNE INTELIGENCIJE U SUSTAVU PUTOVANJA I TURIZMA**

***Sažetak***

*Rad se fokusira na ulogu umjetne inteligencije u turizmu, s posebnim naglaskom na itinerare putovanja koje generira umjetna inteligencija i njihov potencijal da preobrazu način na koji putnici planiraju svoja putovanja. Na temelju stručne analize i kvalitativnih intervjua rad se bavi prihvatljivošću ovih itinerara, čimbenika koji određuju njihovu upotrebu, usporedbu s tradicionalnim itinerarima u smislu dizajna i kvalitete te promjenjivu ulogu putničkih agenata. Rezultati sugeriraju sposobnost putnih itinerara koje je generirala umjetna inteligencija da pojednostave planiranje, uz uočavanje njihovih ograničenja u usporedbi s proizvodima i uslugama koje pružaju ljudski agenti. Osim što nudi korisne prijedloge za poboljšanje turističkih proizvoda i usluga, istraživanje daje prijedloge za turističke djelatnike koji žele uključiti najnovije tehnološke inovacije u svoju ponudu. Također predlaže dodatno istraživanje dugoročnih učinaka ovih inovacija na turističku industriju.*

***Ključne riječi:*** putovanje, turizam, stručna analiza, chatbot, umjetna inteligencija.

***JEL klasifikacija:*** L83, Z39, O33.

