Impactos da inteligência artificial nas agências de viagens: um estudo baseado na percepção dos agentes

Impacts of artificial intelligence on travel agencies: a study based on the perception of agents

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RESUMO

O setor de agências de viagens enfrentou diversos impactos desde seu surgimento, e agora enfrenta novos desafios devido à crescente adoção da inteligência artificial (IA). Este estudo teve como objetivo identificar os impactos da IA no setor de agências de viagens sob a perspectiva dos agentes de viagens. Trata-se de uma pesquisa qualitativa e exploratória. Os dados foram coletados por meio de entrevistas online com agentes de viagens, e a técnica de amostragem por bola de neve foi empregada para construir a amostra. No total, dez agentes foram entrevistados. Os dados foram analisados por meio da análise de conteúdo temática. Os resultados indicaram que a maioria dos agentes já havia incorporado uma ou mais ferramentas de IA em seu trabalho diário, e todos os participantes concordaram que essas ferramentas aumentam a eficiência. Em relação aos impactos negativos, os agentes destacaram a preocupação com a segurança dos dados como principal desafio. Nenhum entrevistado percebeu a adoção da IA como uma ameaça à sua segurança no emprego, em contraste com estudos precedentes que sugeriram essa possibilidade. A percepção do futuro com a implementação da IA no mercado de agências de viagens foi positiva, e os entrevistados consideram que tais ferramentas podem fortalecer e melhorar a eficiência e a produtividade no setor, trazendo benefícios. Este estudo contribuiu para uma compreensão mais profunda da adoção de IA no setor de agência de viagens, oferecendo insights que podem ajudar os agentes a se adaptarem a essa realidade em evolução em sua prática profissional.

Palavras-chave: Agências de viagens. Inteligência artificial. Impactos. Agente de viagens. Sistema Inteligente.

ABSTRACT

The travel agency sector has faced several impacts since its emergence and now faces new challenges due to the growing adoption of artificial intelligence (AI). This study aimed to identify the impacts of AI on the travel agency sector from the perspective of travel agents. It is a qualitative and exploratory research. Data were collected through online interviews with travel agents and snowball sampling technique was employed to build the sample. In total, ten agents were interviewed. The data were analyzed using thematic content analysis. The results indicated that most agents had already incorporated one or more AI tools in their daily work, and all participants agreed that these tools enhance efficiency. Regarding the negative impacts, agents highlighted concerns about data security as the primary challenge. No interviewee perceived AI adoption as a threat to their job's security, in contrast with previous studies that have suggested this possibility. The perception of the future with the implementation of AI in the travel agency market was positive, and respondents consider that such tools can strengthen and improve efficiency and productivity in the sector, bringing benefits. This study contributes to a deeper understanding of AI adoption in the travel agency sector, offering insights that may support agents in adapting to this evolving reality in their professional practice.

Keywords: Travel agencies. Artificial intelligence. Impacts. Travel agent. Intelligent system.

1. INTRODUCTION

Information and communication technologies (ICTs) play an important role in various sectors of the economy, and their evolution has enabled the development of several tools that have become part of the daily lives of all individuals. Through these tools, the tourism sector has made progress in improving management, communication, innovation, the ability to provide more efficient services and to promote better experiences for tourists (Knani, Echchakoui, & Ladhari, 2022).

With the continuous development of technologies, the impact of artificial intelligence (AI) on people's lives and on organizations in the tourism sector is undeniable. According to Xiang, Fuchs, Gretzel, and Höpken (2022), AI can be understood as an intelligent system (algorithm) capable of acting autonomously, thanks to the processing capacity of large amounts of data (big data), aiming to assist in better decision-making.

The fact is that over the years, humanity will have more and more experiences with AI and the application of these technologies in the tourism sector is progressively growing (Knani, Echchakoui, & Ladhari, 2022). AI was created with the objective of optimizing various processes and offering solutions to problems in a faster and more automated way, and such technologies help in the customization of tourist trips, gradually adding more value to the experiences (Grundner & Neuhofer, 2021). An example would be the use of robotic automation tools to improve customer engagement in hotels and restaurants (Doborjeh, Hemmington, Doborjeh, & Kasabov, 2022).

Indeed, AI technologies can help tourists find more relevant information faster and more accurately, improving the consumer decision process and providing them with better tourism experiences (Xiang, Fuchs, Gretzel, & Höpken, 2022). From this context of facilitation tourists' access to information, this raised the question of the possible impacts – both positive and negative - that AI technologies may have across various segments of the tourism sector.

This study focuses on travel agencies, which represent one of the most traditional segments in the sector and deal directly with the offer of products and services to tourists. The question arises: *what would be the impacts of AI technologies on the travel agency sector?* Thus, the objective is to identify the impacts of AI technologies, whether positive or negative, on the travel agency sector, considering the perspective of travel agents.

Studies have been found that discuss AI technologies in tourism, but none have specifically examined the impact on travel agency sector. Some have investigated the impacts on tourists or on organizations in other sectors, without focusing specifically on travel agencies. Examples include: the study by Knani, Echchakoui, and Ladhari (2022), which consisted of a bibliographic analysis on the theme 'artificial intelligence in tourism'; the book written by Xiang, Fuchs, Gretzel, and Höpken (2022), in which the authors address the impact of AI on the tourism sector in general; and the literature review developed by Tussyadiah (2020), which identified the themes addressed in research on AI in tourism.

Thus, the study is justified by the increasing use of AI technologies (or intelligent systems) in the tourism sector and the lack of studies that strictly analyze the impacts of these technologies on the travel agency sector. The research seeks to contribute to a better understanding of the use of AI technologies in the sector and support agent training by providing information that can help them adapt to this reality already present in their professional environment.

In addition, the study aligns with one of the seventeen Sustainable Development Goals set by the United Nations (UN) in the 2030 Agenda, specifically Goal 8, which addresses decent work and economic growth. This goal promotes sustainable and inclusive economic growth and aims to create opportunities for productive employment for all (United Nations, 2023). By contributing to the identification of the impacts of AI technologies in the travel agency sector, this research can help achieve the stated objective.

The article is structured into five main sections: introduction, literature review, methodology, presentation of research data and discussion of the results, and conclusion, including suggestions for future research.

2. LITERATURE REVIEW

2.1 Role of travel agencies in the tourism market

The travel agencies segment, composed of service-providing companies, is of extreme importance to the tourism market, since it is through them that the other products and services are distributed and marketed. According to the Ministério do Turismo (Brasil, 2013), travel and tourism agencies are companies that have the function of intermediating all tourist services for

their consumers, facilitating the meeting of demand with existing supply. Thus, it is noted that the agencies focus on the direct relationship with the consumer, providing support for the acquisition of various tourism products.

For years, agencies were the primary means of acquiring tourism products and services, as well as the information necessary to plan a trip. With the expansion and worldwide spread of the internet from the mid-1990s (Law, Leung, & Wong, 2004), information became more accessible to the public, leading to the phenomenon known as disintermediation, which, according to Tavares and Neves (2011, p. 5) "would be the increase of direct contact between the providers of the main tourist services with the claimants (potential tourists), reducing or even eliminating intermediaries, in which travel agencies fall".

Thus, access to information has become easier, faster, and more economical, providing companies that supply tourism products and services - such as airlines, accommodation facilities, restaurants - the opportunity to make direct sales to consumers. The reduced need for agencies has raised significant concern within the sector (Buhalis & Law, 2008).

According to Xiang, Wang, O'Leary, and Fesenmaier (2015), the impact of the internet on tourism was profound; however, it can be seen as a platform that fosters new practices of technological innovation and completely changes the competitive scenario of various sectors. From that moment, agents needed to reinvent themselves within the current context, acquiring new skills and becoming travel consultants (Xiang, Wang, O'Leary, & Fesenmaier, 2015).

At this moment of uncertainty in the sector, agencies have incorporated technologies into their various segments to provide more accurate and reliable information. The growth of agencies has become dependent on the capacity for innovation and use of these technologies to improve management, communication, and development of new products and services, and enhancing service experiences (Standing, Tang-Taye, & Boyer, 2014).

Going through the so-called reintermediation, which refers to the process of recovering customers lost due to disintermediation (Viljoen, Roberts-Lombard, & Jooste, 2015), agents had to become consultants, and agencies, to remain competitive in the market, began providing a personalized and planned travel consulting services for each client, considering their needs and desires.

In their study, Viljoen, Roberts-Lombard, and Jooste (2015) mentioned several competencies that travel agents had to develop in order to adapt to the process of reintermediation following the advent of the Internet. Among these were the provision of

differentiated and high-quality products, the improvement of personal interactions, and the ability to adapt to the use of technologies.

However, technological advances are continuous and more recently the process of cyber education has been regarded as an evolution of reintermediation. According to Sobiesk *et al.* (2015), cyber education enables individuals to gain a deeper understanding of the competencies required for engaging with emerging technologies, including artificial intelligence (AI). Consequently, by facilitating access to new knowledge through technological means, travel agents may be able to utilize AI tools in a safer, more ethical, and more efficient manner, thereby aligning their professional roles with the advancements of the digital society.

The term "artificial intelligence" was first introduced in the 1950s by John McCarthy, who defined it as a science and an engineering discipline that creates intelligent computer machines and programs (McCarthy, 2007). Bringing this discussion to the tourism sector, Gretzel (2011, p. 758) defined such intelligent software as "next-generation information systems that promise to supply tourism consumers and service providers with more relevant information, greater decision-support, greater mobility, and, ultimately more enjoyable tourism experiences", which is fully applicable to the travel agency sector.

This said, it is considered that agencies are also being directly impacted due to the greater adoption of AI technologies in the sector and need to adapt and improve in order to remain competitive in the tourism market.

2.2 Fundamentals of new artificial intelligence in tourism

In recent decades, technology has revolutionized and developed business environments in general, generating internationalization and increasing competitiveness, which led to the designation of industry 4.0 (Kuss & Medaglia, 2022).

As a result, the tourism sector also changed and migrated to a new phase - Tourism 4.0 - where increasingly innovative and revolutionary tools are used in its processes. The impacts of digital technologies and Tourism 4.0 are increasingly present in tourist behavior. The importance of the internet is clear, to the point of turning traditional tourists into digital ones (Pencarelli, 2020). It becomes clear, therefore, the influence of artificial intelligence in this era of Tourism 4.0.

Artificial intelligence has several applications in the tourism sector. From the

consumers' perspective, AI serves as a decision-support tool, enabling faster access to relevant information and allowing searches at any time and place, thereby creating a tourist experience that differs significantly from the traditional models. From a business perspective, the AI provide greater productivity, enable better dissemination of their products and services, as well as help in increasing demand and maximizing revenues (Tussyadiah & Miller, 2019).

One of the first and most widely used tool after the emergence of AI was the chatbot, which several companies in the segment use - such as airlines, accommodation facilities, and travel agencies - serving as a means for instant interactions with the public and adding value to the service, while preserving a sense of humanized service. Chatbots use intelligence based on the most frequently asked questions by users, creating greater opportunities to persuade users to acquire the service (Bulchand-Gidumal, 2022).

Another opportunity brought by the AI technologies to the tourism sector is predictive analysis. It is a technique widely used to make estimates about the future based on historical and contextual data, analyzing current trends (Bulchand-Gidumal, 2022). This technique can be applied across all sectors of the economy, and tourism also benefits from its adoption, as it holds great potential for global tourism management. Predictive analysis is performed with the help of AI technologies, especially through Big Data, which serves as a source for all necessary data (Gunter & Önder, 2016).

AI is also present in recommendation systems, which are tools that offer travelers options that best match their interests (Ricci, Rokach, & Shapira, 2015). These systems capture, cross-reference, and combine the characteristics to make suggestions that are more appropriate to their profiles, presenting information aligned with what they are most interest in at the time of search. Some websites widely used in travel planning - such as the Google Travel metasearch engine, the online travel agency Booking.com, and the airline ticket comparison site Skyscanner - have also integrated intelligent systems into their services to offer more personalized recommendations.

As artificial intelligence systems have continued to evolve alongside mobile devices, the concept of intelligent travel assistants (or smart travel agents) has gained strength and visibility. These smart travel assistants can profile travelers based on their preferences, interests, and availability, creating a complete travel itinerary and offering suggestions for services and products that can be purchased within minutes (Bulchand-Gidumal, 2022).

For example, Trip Planner AI (https://tripplanner.ai/) is an artificial intelligence tool

where the tourist enters all the necessary data to plan a trip of interest, and it creates the most suitable itinerary based on the traveler's preferences and possibilities. Another AI tool that has been used is Sygic (https://www.sygic.com/pt-br#), which, in addition to suggesting routes based on a few questions, offers real-time maps with information about the weather, the number of people currently visiting an attraction or locality, and provides 3D models to give travelers a preview of what they will visit.

Other examples of personal travel assistants include: Layla (https://layla.ai/pt), Travelandz (https://travelandz.com/), MyTrip.city (https://mytrip.city/), EasyTrip AI (https://easytrip.ai/), Travelities (https://www.travelities.com/), TripMate (https://www.tripmate.com/main/), Wanderlog (https://wanderlog.com/), Wonderplan (https://wonderplan.ai/), among others.

Additionally, although they are not specifically travel assistants, some of the most popular virtual assistants - such as Alexa, Siri, Google Assistant, Cortana, and Bixby - can also be used to obtain information when planning a trip.

Other examples of more advanced AI models that could be useful in travel planning include ChatGPT (Open AI), Gemini (Anthropic), and Microsoft Copilot (Microsoft), which function as AI virtual assistants or AI-based language models that give users easy access to information. They can be used to search for details about tourist destinations and attraction options, but also assist in other activities such as writing promotional content for social media, developing itinerary ideas, providing technical support to agents, or even discovering new travel options.

2.3 Impacts of new AI on the travel agency market

Studies on artificial intelligences in tourism have been progressively expanding, particularly in relation to the broader automation of the sector. A study developed by Kramer, Modsching, ten Hagen, and Gretzel (2007) analyzed intelligent systems in tourism used to perform functions traditionally offered by tour operators and travel guides, such as trip planning/scheduling, navigation, and interpretation tasks, showing behavioral impacts on tourists when using a mobile tour guide.

A study conducted by Tussyadiah (2020), based on a literature review on automation in tourism, enumerated some benefits and risks of AI for the sector. The author highlighted the

need to structure a more automated future for tourism, analyzing social impacts and how automation would affect this economic activity, without specifying the possible impacts of AI on the travel agency sector.

AI has a predominant application in tourism aimed at promoting greater efficiency, with its adoption focused on executing analytical tasks that support organizational decision-making (Tussyadiah, 2020). However, there are risks associated with the implementation of intelligent automation, such as job loss, especially in "low-tech" roles; loss of control due to the autonomy of intelligent systems; and challenges related to data protection and security (Boyd & Holton, 2018; Huang & Rust, 2018; Jarrahi, 2018; Kopacek, 2014; Nedelkoska & Quintini, 2018).

According to Huang and Rust (2018), in the service sector, more mechanical tasks are more likely to be replaced by intelligent or automated systems. In turn, this directly impacts the skill requirements for jobs in the broader tourism sector (Tussyadiah, 2020).

With the implementation of AI in everyday life, people may perceive it as consistently beneficial and increasingly helpful in improving jobs. However, as Tussyadiah (2020) points out, in certain areas of work, these intelligent systems can have negative effects - progressively eliminating human service in tourism and causing harm to local communities. As explained by the author,

> Although breakthroughs in artificial intelligence, robotics, and the internet-of-things are expected to create new employment opportunities, 'low-tech' tourism workplaces will gradually disappear, obliterating employment opportunities for local residents. Furthermore, because of the dominant implementation of 'analytical AI' tools, not only low-skilled jobs but also specialized jobs are prone to machine replacement (Tussyadiah, 2020, p. 6).

Analyzing the benefits of AI for the tourism sector, it can be considered that increasing leisure time and facilitating travel organization and planning through automation have the potential to further boost travel demand. In addition to this increase, AI - through a combination of predictive analytics and virtual tourism content generation - can encourage tourists to visit less popular attractions within a destination. This helps redistribute visitation flow, reducing pressure on heavily visited areas and bringing economic activity to other local communities (Tussyadiah, 2020).

AI also influences tourists to adopt a more socially conscious perspective of tourism, showing that they can undertake more sustainable trips (Tussyadiah & Miller, 2019). Beyond

these advantages, tourists benefit during their journeys from tools such as instant language translation apps and the experience of smart tourist destinations (Bulchand-Gidumal, 2020).

Based on the studies mentioned, it is clear that there are both benefits and risks associated with the adoption and implementation of AI in tourism. This discussion is considered useful for the present research, as these impacts may serve as a foundation for analyzing those identified by travel agents as relevant to the travel agency sector. As a highly specialized profession, travel agents may face challenges with the increasing implementation of AI. However, there is also the possibility of role readjustment, using AI to enhance the services offered by travel agencies.

A survey conducted by the McKinsey Global Institute (2023), with 1,684 respondents from organizations of various sizes and sectors, showed that over the next three years, AI adoption will transform many workforce functions. In general, more employees are expected to be requalified than dismissed. On average, four out of ten respondents from companies that have already adopted AI expect more than 20% of their workforce to be retrained, while 8% believe the number of employees could decrease by more than 20%.

In this scenario, travel agents have the chance to readjust and learn how to use AI in their work environment, bringing even more possibilities for improvement and learning. In a way, AI can be used by the travel agency sector for the creation of itineraries, as is the case of Trip Planner AI, Gemini, ChatGPT, among others. Agents can use AI in their daily work for faster information gathering, such as data on specific destinations or required travel documents, as well as other information that can speed up and improve customer service, convey greater confidence, and facilitate sales conversion.

One challenge agents may face is: "How can the client be attracted to the agency before independently exploring AI tools and purchasing a package elsewhere?". In this regard, the agency' traditional argument remains strong: it is a place where the customer receives personalized, human support throughout the trip.

AI is available 24 hours a day, 7 days a week, but after making a purchase, if the customer needs support, they may be redirected to a chatbot or to the direct service provider's support center, where the customer will need to go through the entire protocol opening process, resulting in wasted time. When hiring an agency, the customer will simply indicate the desired changes to the trip, and the travel agent will handle all the "bureaucratic process", delivering the finalized and adjusted service to the client. Thus, the argument of providing a personalized

and carefree service remains a key element of agencies' differentiation and should be leveraged in the sector's marketing strategies.

However, it is essential to understand travel agents' perceptions regarding the possible impacts of AI technologies on the travel agency sector, which was investigated through field research, with methodological procedures described below.

3. METHODOLOGY

This research adopts a qualitative approach and is categorized as exploratory. The research universe comprises travel agents from both conventional physical agencies and online travel agencies (OTAs). The sample comprised 10 agents from João Pessoa, Paraíba, Brazil, who participated in online interviews.

The interviews were conducted via Google Meet or WhatsApp videoconference, based on each agent´s availability. Data collection took place from 5 to 14 October 2023. All interviews were recorded and transcribed for further analysis. To participate in the survey, travel agents provided consent through a Free and Informed Consent Form (FICF), with all responses kept anonymous. The interviews had a total duration of 1 hour and 32 minutes, with an average of 9 minutes per interviewee.

To reach the interviewees who matched the survey's target profile, the snowball technique was used. This method enabled data collection from agents, forming the sample based on participants referrals (Bockorni & Gomes, 2021).

According to Fontanella, Ricas, and Turato (2008), in the qualitative research, the decision to cease participant inclusion is defined by theoretical saturation - when collected data become repetitive or redundant, as perceived by the researcher during the analysis of previously collected responses. Thus, the interviews were concluded once theoretical saturation was observed.

For data processing, the thematic content analysis technique was used (Bardin, 2008). Accordingly, categories and subcategories were defined a priori, based on the literature reviewed, and grouped into two main categories: 1) positive impacts of the implementation of AI technologies; and 2) negative impacts of the implementation of AI technologies (Table 1).

Table 1
Positive and Negative Impacts of AI Technologies

Analysis Categories	Analytics Subcategories	Authors (Years)
Positive impacts	Greater productivity	Tussyadiah and Miller (2019)
	Efficiency	Knani, Echchakoui, and Ladhari (2022)
	Marketing your products and services	Tussyadiah (2020), Huang and Rust (2018), and Knani, Echchakoui, and Ladhari (2022)
	Cost reduction	Claveria, Monte, and Torra (2015)
	More relevant and accurate information	Tussyadiah (2020), and Huang and Rust (2018)
	Increases employee job satisfaction	Gretzel (2011)
	General well-being of employees	Gretzel (2011)
	Predictive analysis to make estimates about future demand	Huang and Rust (2018)
	Better tourism management	Huang and Rust (2018)
	Understand the profile of tourist demand	Xiang, Fuchs, Gretzel, and Höpken (2022)
	Financial management in the sector	Buhalis and Leung (2018), and Gretzel (2011)
	Personalization of the tourist experience	Claveria, Monte, and Torra (2015)
Negative impacts	Replacing human labor with robots	Tussyadiah (2020), and Huang and Rust (2018)
	Data security and privacy threats	Tussyadiah (2020), Boyd and Holton (2017), Huang and Rust (2018), Jarrahi (2018), and Nedelkoska and Quintini (2018)
	Job loss	Tussyadiah (2020), Boyd and Holton (2017), Huang and Rust (2018), Jarrahi (2018), and Nedelkoska and Quintini (2018)
	"Low-tech" job loss	Tussyadiah (2020), Boyd and Holton (2017), Huang and Rust (2018), Jarrahi (2018), and Nedelkoska and Quintini (2018)
	Loss of control due to AI autonomy	Boyd and Holton (2017), Huang and Rust (2018), Jarrahi (2018), and Nedelkoska and Quintini (2018)

Source: Research data (2024).

The semi-structured interview with open-ended questions was selected. The central questions of the research were formulated to identify: 1) the perception of agents regarding the traditional role of travel agencies, and how they perceive its evolution in recent years with the introduction of AI technologies; 2) whether they currently use AI tools in their daily routines, and which tools they use; 3) the perceived benefits of using AI in the workplace, from each interviewee´s perspective; 4) the challenges or concerns they associate with the adoption of AI in the travel agency sector; 5) how they envision the future of the agency sector and the future of the travel agent profession amid growing influence of AI technologies; and finally, 6) the changes they anticipate.

4. DESCRIPTION AND DISCUSSION OF THE RESULTS

In total, ten agents were interviewed, aged between 22 and 50, with professional experiences in the sector ranging from 1 year and 3 months to 13 years, all working in the city of João Pessoa, capital of Paraíba (Brazil). The study was able to capture both the perspectives of agents who have already witnessed changes in the sector and those who are just entering it, encountering a more developed industry with various technological advancements.

Most agents have completed a bachelor's degree in tourism or are still in the process of training in the area. Only one interviewee lacks formal education in the area. This indicates that the sample is well-qualified for the sector, possessing the necessary academic background. Another important point is that among the interviewees, three work in their own agencies.

When asked about what would be the traditional role of a travel agent and how it has evolved in recent years with the introduction of AI, the interviewees stated that the agents would be responsible for mediating all the services offered by their suppliers to customers, and for the designing travel itineraries. They noted that with the adoption of AI, agents became consultants, maintaining the same core responsibilities, but with the ability to offer a more personalized support, developing itineraries that really work for each client profile, offering comprehensive guidance from the moment of planning, through the post-trip period.

Regarding the use of AI tools, only one agent reported that he does not use any intelligent systems in his work. The others mentioned some tools, with ChatGPT and Midjourney being the most frequently cited, as well as other proprietary systems developed by agencies for internal use.

Regarding the tasks and day-to-day processes that were most affected by AI, agents revealed that it was marketing since its use would enhance agency performance in this field. This result was aligned with the research of Tussyadiah (2020), Huang and Rust (2018), and Knani, Echchakoui, and Ladhari (2022). It was observed that the agents who most emphasized this impact were those operating their own agencies. Some of the following responses from agents illustrate this contribution of AI:

> *"The main task that affected was marketing, for sure, without a doubt, because it saves a lot of my brain".*

> *"[...] and I am now learning how to use Midjourney, which is a very*

interesting tool, because it helps you write texts, that is, create content to be used in these digital marketing strategies, right? So, it is the tool that I have been learning how to use for the future, to be able to help me both on my Instagram and on my blog".

"Sometimes I do not have time to create subtitles, to be creating content, ideas of more creative content and ChatGPT, if you know how to use right, you control, register everything in it [...] explain that is a marketing for travel agency and asks him to make a content, he does".

"The tasks that were affected by the AI were, without a doubt, the production of content for social networks".

When asked about the benefits of using AI technologies in travel agencies, agents reported greater efficiency and responsiveness in customer service, from initial screening to the design of travel itinerary. In addition, they saved time and streamlined the entire process, which were also emphasized in the studies of Knani, Echchakoui, and Ladhari (2022).

Through the use of these tools, another benefit cited was improved access to information about unfamiliar destinations. This information retrieval became faster and more efficient, directly supporting customers in the decision-making process and thereby increasing and streamlining the sales conversion rate.

An analysis of the responses provided by the interviewed agents revealed that they perceive adaptation to emerging AI technologies as a fundamental condition for client retention, as well as a means of automating certain routine tasks. In particular, the time savings associated with activities that can be automated or expedited, along with the knowledge acquired through the use of these technologies (via cyber education), would allow agents to devote greater attention to client relationships and to the development of skills that AI cannot replace. Among those interviewees who already use or are in the process of learning to use such AI tools, a more optimistic view emerged regarding the potential of these technologies to enhance client interactions - through increased efficiency and responsiveness, broader access to information, and improved capacity for itinerary personalization. The following excerpts illustrate this result:

"AIs have removed the overload from agents, today they produce more in less time".

"The main benefit was precisely the time savings. Before, we had

processes that took longer and demanded more mental effort. Now, I′m able to free up my time to focus on what truly matters in my work at the agency – serving clients, being present, engaging in conversation, paying attention. That′s what′s most important to me. So, artificial intelligence has taken over the bulk of the workload".

"Before a budget/ service that we took around 40 to 50 minutes, today we can assemble in 3 to 4 minutes".

"It helps to make decisions more accurately and quickly".

Regarding the negative impacts, two points were raised that reflect specific challenges and concerns. The first pertains to data security. Respondents noted that both they and their customers still have concerns about the security of data transmitted online and even stored on their systems.

This impact was mentioned by the authors Tussyadiah (2020), Boyd and Holton (2017), Huang and Rust (2018), Jarrahi (2018), and Nedelkoska and Quintini (2018). In fact, AI systems do not guarantee complete security in data transmission and storage. The testimonies presented reflect this concern among the agents:

"One of the biggest difficulties is still the issue of data security, there are still many people who do not feel comfortable with technologies".

"The concern, like any other profession, is about the dependence of data on Artificial Intelligence, that is, what are these data that algorithms take? Where do they get?".

The second point described by respondents was the fact that AI is not available only to agents but is freely accessible to all. That is, customers can access and obtain the information they need and purchase autonomously without going through an agency. However, they stressed that people need to know how to use AI correctly, filter information, and confirm whether it is accurate and up to date.

For the interviewees, this would be a fundamental role played by agents, who are professionals with the experience and training necessary for such service. Thus, AI would facilitate access to information, but if used in the wrong way, it could cause problems. The quoted passage reflects this issue:

"The challenges I consider are precisely the fact that artificial

intelligence is not only available to us, it is also available to customers, so many customers end up using it irresponsibly".

"It's a concern when people try to do this (use AI) independently without the curatorship of that travel agent, because they can be fooled by artificial intelligence that responds things in a way not as dependable as it seems".

"I think that right now, maybe the dilemma we're facing is that these technologies are being offered directly to clients. But honestly, that doesn't scare me. I still see the role of the travel agent - as a consultant, as a source of emotional stability during the purchase - as completely intact. AI isn't going to take that away. It's here just to make the processes easier".

One of the concerns raised by the agents relates to the potential risks consumers may face when accessing outdated or inaccurate information, which is sometimes provided by intelligent systems without adequate professional oversight. The challenge lies in reinforcing to the public the importance of seeking specialized and personalized consultancy during the travel planning process, thereby minimizing such risks. Despite this concern, most agents emphasized the importance of using AI as a supportive tool to enhance professional performance, while remaining aware that technology cannot replace human expertise.

In addition to the question regarding the autonomy that AI technologies provide to individuals in acquiring tourism services independently, there is also concern about the survival of travel agencies in light of the emergence of these technologies. Interviewees acknowledged that this concern exists and that it emerged early with the advent of such tools. However, all those who addressed this topic expressed confidence regarding potential displacement in the labor market.

Respondents believe that AI technologies will not replace agencies, much less travel agents. They argue that there are - and will continue to be - consumer profiles suited to agency services, which have consistently conveyed greater trust to their customers. This perception among research participants stands in contrast to studies by Tussyadiah (2020), Boyd and Holton (2017), Huang and Rust (2018), Jarrahi (2018), and Nedelkoska and Quintini (2018), which described the potential loss of employment in the tourism sector due to advances in AI technologies.

In this study, which focused on the perception of travel agents, it was found that they do not foresee a loss of relevance, but rather anticipate growth and transformation within their

field. The following testimony reinforces this view:

> *"With the advent of this tool, I think the discussion that is in vogue within the corporate travel agency world is to talk about it being a tool that can take away the work of the travel agent because it is able to do this automation of processes, soon it would be able to in a while, do the agency and such. I do not believe it. I am a person who goes beyond this understanding of what the profession of travel agent is [...]. It is impossible for artificial intelligence to have this capacity to understand the complexity that involves studies of leisure, recreation, and tourism management".*

It is likely that specific training in the field of tourism and professional experience within the sector enables the interviewees to recognize that the competitive advantage of their work lies in human competencies that cannot be replaced by technology - such as the ability to solve complex problems, empathy in understanding clients' needs, and the experiential knowledge acquired through practice. The research clearly indicated that the interviewees do not perceive their jobs as being threatened by AI, as they acknowledge the essential role they play in delivering safer and more personalized travel experiences to their clients.

Finally, agents were asked about their views on the future of travel agencies. It was observed that all participants expressed a highly optimistic view of the market with the implementation of AI technologies, recognizing that those who adapt and leverage these tools effectively will remain competitive in the industry.

The agents' perception corroborated the research by Claveria, Monte, and Torra (2015), which found that the AI technologies directly contribute to cost reduction and increased productivity, as well as with the findings of Knani, Echchakoui, and Ladhari (2022) regarding improvements in operational efficiency. Some answers illustrate this perception:

> *"Travel agents who know how to adapt will save more time, work, costs and will be able to do more with less, which is the economic principle of all business [...] saving time is the main thing, and time is money".*

> *"I think the travel agencies sector has to see the growing, and now uninterrupted influence of artificial intelligence as an ally, right? How everything within the technological world [...] And I have a positive thought that the sector will know yes, adapt, and extract the best things from this new tool so that the profession lasts".*

Regarding future expectations, agents emphasized that many tools could be improved, and others could still be developed - particularly those designed to support after-sales activities. Some emphasized a strong demand for the monitoring of sold services, in order to identify why changes occurred and which aspects may require adjustments. In light of this, it is evident that agents endorse the use of AI technologies in their professional activities and regard these tools as valuable allies.

In analyzing the agents' responses regarding positive impacts, most acknowledged an increase in productivity attributed to the use of intelligent systems (Tussyadiah & Miller, 2019). In addition, all respondents reported that the AI technologies would enhance the efficiency of their roles, as highlighted by Knani, Echchakoui, and Ladhari (2022).

In summary, Table 2 presents a comparison of the collected data.

Table 2
Comparison of results with the theoretical basis

	Impacts of AI	Authors (years)	Agents' perception
Positive impacts	Greater productivity	Tussyadiah and Miller (2019)	All interviewees
	Efficiency	Knani, Echchakoui, and Ladhari (2022)	All interviewees
	Better promotion of your products and services (marketing)	Tussyadiah and Miller (2019), Tussyadiah (2020), Kopacek (2014), Huang and Rust (2018), and Knani, Echchakoui, and Ladhari (2022)	5 interviewees
	Cost reduction	Tussyadiah and Miller (2019), Claveria, Monte, and Torra (2015), and Huang (2014)	3 interviewees
	More relevant and accurate information	Tussyadiah (2020), Huang and Rust (2018), and Kopacek (2014)	All interviewees
	General employee well-being	Gretzel (2011)	9 interviewees
	Understanding the profile of tourist demand	Bulchand-Gidumal (2022), and Gunter and Önder (2016)	All interviewees
	Personalization of the tourist experience	Claveria, Monte, and Torra (2015), Huang (2014)	9 interviewees
Negative impacts	Data security and privacy threats	Tussyadiah (2020), Tussyadiah and Miller (2019), Boyd and Holton (2018), Huang and Rust (2018), Jarrahi (2018), Kopacek (2014), and Nedelkoska and Quintini (2018)	3 interviewees
	Job loss	Tussyadiah (2020), Boyd and Holton (2018), Huang and Rust (2018), Jarrahi (2018), Kopacek (2014), and Nedelkoska and Quintini (2018)	Agents reported not feeling threatened by AI technologies
	Loss of control due to AI autonomy	Boyd and Holton (2018), Huang and Rust (2018), Jarrahi (2018), Kopacek (2014), and Nedelkoska and Quintini (2018)	1 interviewee

Source: Research data (2024).

Some of the interviewees mentioned the contribution of AI technologies in dissemination and marketing, as previously suggested by Tussyadiah (2020), Huang and Rust (2018), and Knani, Echchakoui, and Ladhari (2022). The agents also emphasized the cost reduction provided by AI technologies, corroborating the findings of Tussyadiah and Miller (2019) and Claveria, Monte, and Torra (2015). In addition, all respondents acknowledged that AI technologies provide the fastest, safest, and most practical access to relevant information, which represents a positive impact already recorded by Tussyadiah (2020) and Huang and Rust (2018).

Another point raised was the facilitation of sales through the use of AI tools, as visits, consultations, payments, and contract signatures can be completed online, eliminating the need for customers to physically visit the agency. In a world where everything is done instantly, this convenience contributes to attracting new customers, as they recognize that they will receive fast and practical service, along with the assurance and support of a specialized travel agent.

Based on the study conducted, it was possible to reveal the perceptions that travel agents hold regarding the perceived negative impacts of AI technologies in the agency market. It was found that a perceived negative impact in the agency sector contrasted with findings presented in the research by Tussyadiah (2020), Boyd and Holton (2017), Huang and Rust (2018), Jarrahi (2018), and Nedelkoska and Quintini (2018). In these cited studies, the authors analyzed the adoption of AI technologies in the tourism market more broadly and identified a potential threat to existing jobs in the sector.

In the survey, respondents did not perceive this risk of job loss in the agency sector and stated that the AI technologies have further supported their work. They stated that they use AI to improve and increase the efficiency of their professional functions within the sector.

Another negative impact observed was that some respondents agreed that AI technologies do not yet inspire sufficient confidence regarding data security. This negative aspect of AI technologies was also documented in studies by Tussyadiah (2020), Boyd and Holton (2017), Huang and Rust (2018), Jarrahi (2018), and Nedelkoska and Quintini (2018).

6. CONCLUSIONS

As discussed throughout the study, artificial intelligence (AI) is revolutionizing global markets, and the tourism sector is no exception. The rapid adoption and implementation of intelligent systems within tourism organizations reinforces the need for further research to deepen the understanding of these advances and their impacts. Travel agencies have also been directly affected by this growing integration of AI technologies, requiring them to adapt and evolve, in order to remain competitive in the tourism market.

Analysis of the survey results revealed that travel agencies and agents interviewed are already adapting and acquiring their own AI systems to streamline daily operations. Overall, the findings suggest that the agents who participated in the study perceive the adoption and implementation of AI technologies in the sector as predominantly positive. These tools contribute to greater efficiency and productivity and, as highlighted by the respondents, play a direct role in content creation for marketing and dissemination on social media platforms.

Furthermore, intelligent systems were perceived by the interviewees as valuable tools for retrieving unfamiliar information in a faster and more targeted manner. With the use of AI, agents reported being able to access the data needed to better serve their clients within minutes.

However, it is important to acknowledge that the data collected should not be generalized, as they reflect the specific context of the agents surveyed and represent an initial exploratory effort.

Despite its contribution to the travel agency domain, it is recommended that future research explore the impacts of AI technologies in other areas of the tourism industry. Such studies would enable a broader understanding of how different stakeholders in the tourism and hospitality sectors perceive these technologies. Another avenue for future investigation would be a comparative analysis of the impacts of AI in travel agencies across different countries, to better understand perception within diverse market contexts.

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