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Experience in Using Digital Tools Based on Artificial Intelligence: Case of the Tourism Organizations in Lithuania, Latvia and Sweden

Abstract

This article analyses the tourism organizations experience in using digital tools based on artificial intelligence (AI) in Lithuania, Latvia and Sweden. Purpose of the article is to identify the main digital tools based on artificial intelligence used in tourism organizations. An analysis of scientific literature has been carried out and the primary data has been obtained from 9 semi-structured interviews conducted in tourism enterprises of three countries. The survey sampling method used is criterion sampling. The data were analysed using qualitative content analysis, applying a conventional approach to content analysis using an inductive coding process. The article highlights the main groups of digital tools based on artificial intelligence used in tourism organizations.

Keywords: tourism organization, digital tools, artificial intelligence

1. Introduction

The tourism sector is undergoing a transformational change with the integration of technologies based on AI (Pei & Zhang, 2021; Jamshed et al., 2024). AI technologies are being integrated into various aspects of the tourism sector (Hayat, 2023). For these reasons, this paper aims to analyse the tourism organizations experience in using digital tools based on AI in Lithuania, Latvia and Sweden. By analysing the insights of tourism employees in three countries who have experience with the application of AI in tourism organizations, the aim is to identify the main digital tools based on AI used in tourism organizations.

The paper is related to deeper insights into the tourism organizations experience in using digital tools based on AI in Lithuania, Latvia and Sweden and contributes to the understanding of the practical applications of AI in the tourism sector.

The integration of AI into the tourism sector is indeed an emerging phenomenon with a great potential to transform tourism service delivery and improve customer experience (Rawal et al., 2022). AI has the potential to fundamentally change the way tourism organizations operate, from simplifying internal processes, improving customer experience, analysing data, to improving operational efficiency and financial performance (Seyitoğlu & Ivanov, 2022; Roy & Pagaldiviti, 2023; Chen, 2024; Bustamante Martínez et al., 2024). The COVID-19 pandemic has obviously intensified the necessity of anticipating clients' needs and providing highly customized and novel services (Šerić et al., 2023). AI-based digital tools, such as assistants - chatbots, facial recognition systems, etc., are increasingly being used in the tourism sector to overcome not only the challenges posed by the post-pandemic, but also to provide a competitive advantage to tourism organizations by increasing the speed and accuracy of tourism service delivery (Rawal et al., 2022; Gupta et al., 2023). Generative AI (and ChatGPT in particular) is an effective tool to automate marketing tasks (Almeida & Ivanov, 2024). There is potential for AI to streamline the ideation phase, thus saving significant time and expediting

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the creative process (Şener & Ulu, 2024). Text generation tools (e.g. ChatGPT and etc.), visualisation tools (e.g. Midjourney, DALL E and etc.), presentation tools (e.g. Synthesia, D-ID and etc.), etc. are widely used in the tourism sector. The use of AI-based tools to create tourism content has been highlighted by Iskender (2023), revealing their potential to influence visitor behaviour and improve customer experience. Research on easily adaptable Language processing solutions in the tourism sector (e.g. Google Translate, DeepL Translator and etc.) shows their importance in overcoming language barriers (Carvalho et al., 2023). The literature also highlights the importance of AI in the planning, organization and implementation of tourism itineraries (Ding, 2021; Heckmann et al., 2022).

2. Methodology

The aim of the research is to analyse tourism organizations experience in using digital tools based on AI of Lithuania, Latvia and Sweden.

The semi-structured interview was used to collect the research data. Semi-structured interviews are a valuable tool in research for collecting data (Adeoye-Olatunde & Olenik, 2021). Based on the analysis of the scientific literature, semi-structured interview questions were designed to obtain data for the research, consisting of open-ended questions and additional questions to clarify the information.

Since the current research was conducted in the "NordTournet-4: Developing the Creativity of Tourism Workers Through the Use of AI Powered Tools to Create New or Improve Existing Tourism Services" project (No. NPAD-2022/10078), the research sample had to comprise participants from three countries (Lithuania, Latvia and Sweden).

Criterion sampling is used (Palinkas et al., 2015). The sample for this research was selected according to the following criteria: 1) the informant has at least 2 years of experience in a tourism organization, and 2) the informant has at least 1 years of practical experience working with digital tools based on AI. All cases meeting the two criteria were selected for the research.

Nine semi-structured interviews were conducted in Lithuania, Latvia and Sweden between October 2023 and March 2024. The interviews were conducted face-to-face. The data from the interviews was sufficient for the content analysis, so no further interviews were needed and the interviewing process was stopped (Croucher & Cronn-Mills, 2019). The 3 informants from Lithuania who participated in the semi-structured interview were coded as LT1, LT2, LT3; the 3 informants from Latvia - LV1, LV2, LV3; the 3 informants from Sweden - SE1, SE2, SE3.

The data analysis was done by applying qualitative content analysis (QCA). Qualitative content analysis involves a process designed to condense raw data into subcategories based on valid inference and interpretations (Shava et al., 2021).

3. Results

Analysing the tourism organizations experience in using digital tools based on AI in Lithuania, Latvia and Sweden, was aimed at finding out the main digital tools based on AI, used in tourism organizations (Table 1).

As Table 1 shows, informants primarily focus on AI-based chatbots in tourism organizations, i.e. e.g. 24/7 customer service agents answering enquiries, making recommendations and even assisting with bookings and solving various customer problems without human intervention [LT2, LT3, LV2]. AI assistants not only increase the availability of tourism services, but also significantly reduce the operational costs and response times of a tourism organization. By using these AI-based tools, tourism organizations can significantly improve the speed and accuracy of tourism services.

Table 1
Main digital tools based on AI, used in tourism organizations

Category	Subcategory	Supporting statements
Main digital tools based on AI	AI assistants	"One of them is also integrated in Messenger platform and it's a Chatbot." [LT2]
		"An integrated Chatbot on the website..." [LT3]
		"...we have used Chatbots..." [LV2]
	Text creation tools	"... we use ChatGPT to prepare the descriptions..." [LT1]
		"...I work with ChatGPT, it gives me some insights..." [LT2]
		"...we use AI generated messages for press releases (ChatGPT)." [LV2]
		"...to create your contents...ChatGPT is a very helpful tool." [SE1]
		"...to create content for Social media, Facebook, Instagram ..." [SE2, SE3]
	Visualization tools	"...we are using platforms for making graphic design, we are using something called Canva." [LT1]
		"...I tried Midjourney, but now we are using Canva platform for making graphic designs..." [LT2]
		"We used Midjourney to create visuals to raise the awareness of Lithuania as a country." [LT3]
		"...we use Canva and BlueWillowAI for making AI generated imaginaries." [LV2]
		"...image generation tools..." [LV3]
	Language processing solutions	"We use AI for translation from different languages, speech to text and vice versa, voice-over." [LT1]
		"...AI tools for language processing, both understanding and generation ... speech to speech, text to text." [LV3]
		"We have lots of files with interviews that we have not used, but now, with automatic transcription it becomes possible." [SE2]
	Service optimisation and automation tools	"...travel assistant helps to save time." [LT1]
		"...Service booking platform..." [SE2]
	Data analysis and visualisation tools	"We usually monitor the website and ... making analysis of that." [LT1]
		"We are using mostly Power BI tool ... which is one of the simplest tools uniting few streams of information from our digital counters..." [LV1]
"...AI generated data and data interpretation" [LV2]		
"We use data tracking and analysis tool..." [SE2]		

Informants also highlighted the importance of the content they create and deliver to their customers for tourism organizations, and pointed out Text creation tools [LT1, LT2, LV2, SE1, SE2, SE3] and Visualization tools [LT1, LT2, LT3, LV2, LV3]. AI-based text generation tools generate a wide range of textual content and AI-based visualisation tools make it easier for tourism organizations to create distinctive, detailed images from textual descriptions, to visualise trips, accommodation or communicate cultural experiences in innovative ways.

As another important digital tool based on AI used in tourism organizations, informants mentioned Language processing solutions [LT1, LV3, SE2]. The main importance of these tools lies in their ability to overcome language barriers that often hinder foreign tourists from having a comprehensive experience in the country they are visiting and in the tourism organization. This supports research that highlights, for example, the role of Language translators in addressing one of the most common challenges in the tourism sector - language barriers (Zhai, 2021; Carvalho et al., 2023). By using the power of AI for language processing solutions, the tourism sector is taking steps towards a more inclusive and accessible global travel experience, where an unfamiliar language is no longer a barrier to travelling and experiencing the world.

Representatives of tourism organizations emphasised the crucial role of AI in optimisation and automation of tourism services [LT1, SE2] and in data analysis processes [LT1, LV1, LV2, SE2]. This supports research that highlights the role of data analysis in different areas, especially in tourism (Bustamante Martínez et al., 2024) and implies a shift from traditional tourism service processes to more automated, intelligent systems.

4. Discussion and conclusion

Considering the results of the research, it is possible to identify several main groups of digital tools based on AI used in tourism organizations. The most common tools used by the tourism organizations that participated in the research are AI assistants, Text creation tools, Visualization tools, Language processing solutions, Service Optimisation and Automation tools and Data Analysis and Visualisation tools.

Limitations and future research. The study was limited to three countries, Lithuania, Latvia and Sweden, with three interviews with tourism representatives in each country. This limited sample size and geographical orientation may not fully reflect the diversity of experiences and practices in the wider tourism sector.

Future research would benefit from larger studies covering more countries and more interviews. Also, future research should aim to identify the benefits of AI-based digital tools for the performance of tourism organisations, as well as the challenges related to their implementation.

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