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IMPACT OF GENERATIVE ARTIFICIAL INTELLIGENCE ON THE PROFESSIONAL ACTIVITIES OF LOCAL TOUR GUIDES

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Abstract

Generative Artificial Intelligence (GenAI) entered widespread use several years ago. Considering its potential on one hand, and the nature of tour guiding on the other, generative AI can provide significant assistance to tour guides, particularly in the preparation phase of guided tours. The objective of this research was to determine, through a survey of a sample of guides from Osijek-Baranja and Vukovar-Srijem counties, whether local tour guides in these regions are familiar with generative AI technologies and whether they utilize them in preparing their tours. The study was conducted via a survey of local tour guides in the aforementioned counties. The collected data were processed using methods of descriptive and inferential statistics. The research results indicate a relatively poor level of knowledge and a low rate of AI utilization among the surveyed guides for tour preparation purposes. This study was conducted as part of broader research aimed, among other goals, at defining a lifelong learning model for local tour guides to enhance the quality of the tourism offerings in the specified counties.

Key Words: *Generative Artificial Intelligence, Tourism, Local Tour Guide, Statistics*

JEL classification: *C12, O33, Z32*

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Introduction

The public application of Generative Artificial Intelligence (GenAI) commenced in late 2022, and within two months of 2023, GenAI reached 100 million users (Reuters, 2023). In this context, success can be attributed to user-friendly GenAI tools such as ChatGPT. Abouobaia (2026) expects the global GenAI market to grow from \$67 billion in 2025 to \$738.7 billion by 2030, driven by a high adoption rate in the business sector. The development and implementation of GenAI significantly influence the functioning of the tourism sector. The Precedence Research (2026) estimates the global GenAI market in the travel sector at \$1.06 billion, with a projected surge to over \$5.7 billion by 2035.

In accordance with national objectives, the Osijek-Baranja and Vukovar-Srijem counties tend toward the growth and development of continental tourism, which is based on a shift away from mass tourism and a focus on sustainability, year-round offerings, authenticity, and digitalization (Ministarstvo turizma i sporta Republike Hrvatske, 2023). In this regard, local tour guides, acting as the front end of the tourism offering, play a significant role in tourism development. To ensure a successful increase in the educational quality of local tour guides, broader research has been initiated with the aim of defining a model for the lifelong learning segment of local tour guides. The conducted study is one in a series of fundamental research efforts functioning toward the realization of the aforementioned objective.

Literature Review and Research Gap

The conducted literature review indicates that the available sources do not present research results addressing the impact of GenAI on the professional activities of local tour guides in the Osijek-Baranja and Vukovar-Srijem counties. A study presented by Düz and Kavak (2026) correlates marginally with the research problem, focusing on the potential elimination of human tour guiding through the use of artificial intelligence. Wang et al.(2025) investigated the impact of the communication style of GenAI acting as a guide on user experience. Katsanakis et al. (2025) addressed the fear of workforce displacement by artificial intelligence and highlighted the necessity of lifelong learning programs on GenAI for tour guides.

Research Framework

The Republic of Croatia, through the Act on Provision of Services in Tourism (Article 69), define a tour guide as an authorized person who provides services consisting of showing, professionally interpreting, and explaining the specific characteristics of the area where the tour guiding service is rendered (Zakon.hr, n.d.). Pond (1993) views the tour guide as a location-specific expert who possesses in-depth knowledge of the history, culture, and contemporary life primarily of their narrow region or city, acting as a "cultural mediator". The success of tour guiding correlates greatly with an accurate assessment of the group as well as thorough preparation for the tour (Ham, 2013).

Within the preparation phase, Trezner (2008) differentiates between substantive (cognitive) preparation and technical preparation. Substantive preparation encompasses the creation of a detailed itinerary and a heritage interpretation plan (preparation of written materials - one's own literature). This preparation also includes group profiling, i.e., adapting the presentation of the locality to the socio-demographic characteristics of the group (age, nationality, cultural context, prior knowledge, etc.). According to Ham (2013), a tour guide must devise a strategy to make information relevant to a specific group.

Since November 2022, when OpenAI launched ChatGPT, artificial intelligence has enabled tour guides to prepare guided tours more efficiently (Hajdarović, 2023). According to the standard taxonomy, artificial intelligence encompasses machine learning, natural language processing, computer vision, and robotics (Russell & Norvig, 2022). The tools mass-utilized by the general population, colloquially referred to as artificial intelligence, are actually a component of so-called Generative Artificial Intelligence (GenAI). Contemporary GenAI systems are led by interactive platforms for generating human-like textual content (responses to queries) such as ChatGPT, Gemini, Claude, Grok, and Perplexity (Plavljanić, 2025).

Objectives, Research Questions, and Hypotheses

The purpose of the conducted research is to acquire insights that will facilitate the modeling of the lifelong learning segment for local tour guides. The objective is to determine the extent to which local tour guides in the Osijek-Baranja and Vukovar-Srijem counties are familiar with

GenAI technologies, the areas in which they apply them, and the degree to which they rely on them during the preparation phase of guided tours.

The following research questions were formulated:

- 1. Are local tour guides familiar with GenAI technologies?
- 2. For what purposes do local tour guides utilize GenAI technologies?
- 3. Do local tour guides utilize GenAI in the preparation and implementation phases of guided tours?

Accordingly, the following research hypotheses were defined:

H₁: Local tour guides are familiar with GenAI tools.

H₂: Local tour guides utilize GenAI tools to generate images, videos, and audio recordings.

H₃: Local tour guides utilize GenAI in the preparation and implementation phases of guided tours.

Methods

For the purposes of this research, a questionnaire comprising two main sections was designed. The first section encompassed items relating to the demographic and professional characteristics of the respondents, while the second section presented statements regarding various aspects of GenAI technology utilization. The study was conducted via an online survey, which was programmed and hosted on the official website of the Faculty of Economics in Osijek. The target group consisted of active, licensed local tour guides within the Osijek-Baranja and Vukovar-Srijem counties.

The collected data were analyzed using descriptive and inferential statistical methods. Descriptive statistics were employed to describe the sample and to determine the primary characteristics of the respondents' attitudes toward the researched issues. The one-sample sign test was used to test the null hypothesis that the median response is equal to 3 (neutral attitude), against the alternative hypothesis that the median response is greater than 3. The level of statistical significance was set at $\alpha = 0.05$.

Results

A total of 30 tour guides responded to the invitation to participate in the survey, comprising 15 (50%) males and 15 (50%) females. The average age of the respondents was 52.53 years with a standard deviation of 12.5

years, while the median age was 54.5 years. The youngest person in the sample was 23, and the oldest was 78 years old. The middle 50% of respondents were between 45 and 61 years of age.

Using a five-point Likert scale (1 – strongly disagree, 2 – disagree, 3 – neither agree nor disagree, 4 – agree, 5 – strongly agree), the respondents indicated their level of agreement with 8 statements relating to the knowledge and utilization of GenAI tools. Table 1 presents the descriptive statistics of the respondents' attitudes alongside the results of the one-sample sign test.

Table 1: *Descriptive statistics of attitudes and the one-sample sign test examination of tour guides' agreement with statements regarding the knowledge and utilization of GenAI tools*

Statement	Median (IQR)	Percentage of responses > 3 (%)	p-value
I am familiar with and utilize text generation tools and the ChatGPT chatbot.	4,0 (3,0–5,0)	63,3	0,007*
I am familiar with and utilize text generation tools and the Claude chatbot.	1,0 (1,0–3,0)	16,7	1,000
I am familiar with and utilize text generation tools and the Gemini chatbot.	1,5 (1,0–4,0)	26,7	0,968
I am familiar with and utilize text generation tools and the Copilot chatbot.	1,0 (1,0–3,0)	23,3	0,995
I am familiar with and utilize text generation tools and the Grok chatbot.	1,0 (1,0–3,0)	13,3	1,000
I am familiar with and utilize text generation tools and the DeepSeek chatbot.	1,0 (1,0–2,0)	16,7	1,000
I am familiar with and utilize web search and text generation tools, and the Perplexity chatbot.	1,0 (1,0–4,0)	26,7	0,990
I am familiar with and utilize another text generation and chatbot program from the GenAI tool group.	1,0 (1,0–4,0)	26,7	0,990

* Statistically significant at $p < 0.05$

Source: *Authors*

A median greater than 3 was established for only one statement. Specifically, a median value of 4 was computed for the statement regarding the knowledge and utilization of text generation tools and the ChatGPT chatbot. Thus, half of the respondents either agreed or strongly agreed with this statement. All other statements received substantially lower ratings. A median of 1.5 was calculated for only one statement, namely the one concerning the knowledge and utilization of text generation tools and the Gemini chatbot, whereas a median of 1 was computed for all remaining statements, suggesting that at least half of the respondents strongly disagreed with them. The largest interquartile range (IQR), indicating the highest degree of response dispersion, was determined for three statements: I am familiar with and utilize text generation tools and the Gemini chatbot, I am familiar with and utilize web search and text generation tools, and the Perplexity chatbot, and I am familiar with and utilize another text generation and chatbot program from the GenAI tool group. Conversely, the smallest interquartile range was calculated for the statement I am familiar with and utilize text generation tools and the DeepSeek chatbot.

The one-sample sign test was conducted to test the hypothesis that tour guides perceive themselves to be familiar with GenAI technologies. As can be observed in the Table 1, and in line with the descriptive statistics results, there is only one statement for which more than half of the respondents provided a response greater than 3. For this statement alone, the hypothesis that the median is statistically significantly greater than 3 was accepted, indicating that the majority of tour guides agree that they are familiar with and utilize the ChatGPT text generation tool and chatbot. Fewer than 50% of the respondents agreed with the remaining seven statements. The results of the one-sample sign test indicate that for these statements, the null hypothesis stating that the median response equals 3 cannot be rejected. Consequently, the first research hypothesis (H_1), which posits that tour guides are familiar with GenAI tools, cannot be accepted in general terms.

Table 2 presents the descriptive statistics of the respondents' attitudes regarding the purpose of utilizing GenAI tools, along with the results of the one-sample sign test used to examine whether the tour guides' agreement with the stated claims is statistically significant. For all three statements, the median was 1, indicating that half of the respondents strongly disagree that they are familiar with and utilize any GenAI software tools for image, video, or audio generation. The largest

interquartile range was established for the statement regarding the knowledge and utilization of a GenAI software tool for image generation. According to the one-sample sign test, the null hypothesis stating that the median response equals 3 cannot be rejected in any instance. Consequently, the second research hypothesis (H_2), which posits that local tour guides utilize GenAI tools to generate images, videos, and audio recordings, is not accepted.

Table 2: *Descriptive statistics of attitudes and the one-sample sign test examination of tour guides' agreement with statements regarding the purpose of utilizing GenAI tools*

Statement	Median (IQR)	Percentage of responses > 3 (%)	p-value
I am familiar with and utilize a GenAI software tool for image generation.	1,0 (1,0–4,0)	33,3	0,939
I am familiar with and utilize a GenAI software tool for video generation.	1,0 (1,0–3,0)	13,3	1,000
I am familiar with and utilize a GenAI software tool for audio generation.	1,0 (1,0–3,0)	10,0	1,000

Source: *Authors*

Table 3 contains the descriptive statistics of the respondents' attitudes and the results of the one-sample sign test examining the tour guides' agreement with statements related to the utilization of GenAI for tour preparation and implementation. A median greater than 3 was established for the statement regarding the utilization of GenAI to collect information required for preparing and executing operational tasks related to guiding that stem from the tourism offering, as well as for the statement concerning the utilization of GenAI for the rapid retrieval and/or verification of information on-site during a tour. For four statements, the median value was 3, while for two statements, it was less than 3. The lowest median was determined for the statement regarding the utilization of GenAI to gather information about the group to be guided. The interquartile ranges generally indicate a high degree of variability in the respondents' answers. For all analyzed statements, the results of the one-sample sign test suggest that the null hypothesis stating that the median response equals 3 cannot be rejected. Therefore, the third research

hypothesis (H₃), which posits that local tour guides utilize GenAI in the preparation and implementation phases of guided tours, is rejected.

Table 3: *Descriptive statistics of attitudes and the one-sample sign test examination of tour guides' agreement with statements regarding the utilization of GenAI for tour preparation and implementation*

Statement	Median (IQR)	Percentage of responses > 3 (%)	p-value
I utilize GenAI to collect information required for preparing and executing operational tasks related to guiding that stem from the tourism offering.	3,5 (2,0–5,0)	50,0	0,279
I utilize GenAI to collect information about the agency with which I am to cooperate.	2,5 (1,0–4,0)	33,3	0,885
I utilize GenAI to collect information about the group	2,0 (1,0–3,0)	23,3	0,983
I utilize GenAI to collect information about the service providers with whom I will cooperate during the implementation of the program.	3,0 (1,0–4,0)	26,7	0,933
I utilize GenAI to prepare, adapt, and/or supplement knowledge related to the cultural heritage of the destination to be guided.	3,0 (1,0–4,0)	43,3	0,577
I utilize GenAI to identify potential optional excursions that the agency may have overlooked.	3,0 (1,0–4,0)	43,3	0,500
I utilize GenAI to design new guiding programs to be offered to agencies.	3,0 (1,0–4,0)	30,0	0,857
I utilize GenAI for the rapid retrieval and/or verification of information on-site during a tour.	3,5 (1,0–5,0)	50,0	0,279

Source: *Authors*

Conclusion

The present study has provided the insights necessary for optimal decision-making regarding the design of this lifelong learning model. In this context, a survey of local tour guides was conducted, and the

empirical results demonstrated that the majority of local tour guides are generally not familiar with generative artificial intelligence tools, do not utilize them for generating images, videos, or audio recordings, and do not rely on them during the preparation phase of guided tours. Specifically, the results of the one-sample sign test confirmed that the majority of tour guides utilize GenAI only in the case of the statement concerning the text generation tool and chatbot ChatGPT. In accordance with these findings, all three research hypotheses were rejected.

The research findings indicate that it is necessary to implement additional educational programs for local tour guides regarding GenAI. Prior to the implementation of the subject lifelong learning model for local tour guides, further research is required to investigate the preferred formats of additional education regarding GenAI utilization among local tour guides, the specific purposes for which they would utilize GenAI in their professional activities, and whether they perceive GenAI as a useful asset or as a threat and hindering factor in their work. To address these subsequent questions, further research endeavors are already underway.

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