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Modern methods of researching tourist behavior: from traditional analyses to AI

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Abstract: The paper provides a bibliographic analysis of modern methods used in tourist behavior research, with a focus on the integration of artificial intelligence (AI) and big data analytics. The aim is to highlight the transition from traditional methods, centered on declarative data, to predictive and automated methods, which use machine learning and natural language processing algorithms. The results of the study show emerging trends in the field and the relevance of applying AI in the development of intelligent systems for personalizing tourist experiences, including in rural areas..



• Introduction

Researching tourist behavior is essential for the sustainable development of tourism and for improving the visitor experience. In Romania, digitization brings opportunities, but infrastructure and sustainability remain major challenges. Understanding tourists' motivations and preferences allows for the creation of personalized offers, influenced by economic, social, and psychological factors. New technologies, based on artificial intelligence and machine learning, have modernized the analysis of tourist behavior, offering deeper and more predictive insights.

Material and method

This article proposes an analysis of the transition from traditional methods of researching tourist behavior to methods based on Big Data and AI. The research method was qualitative, based on relevant scientific articles published between 2013 and 2025.

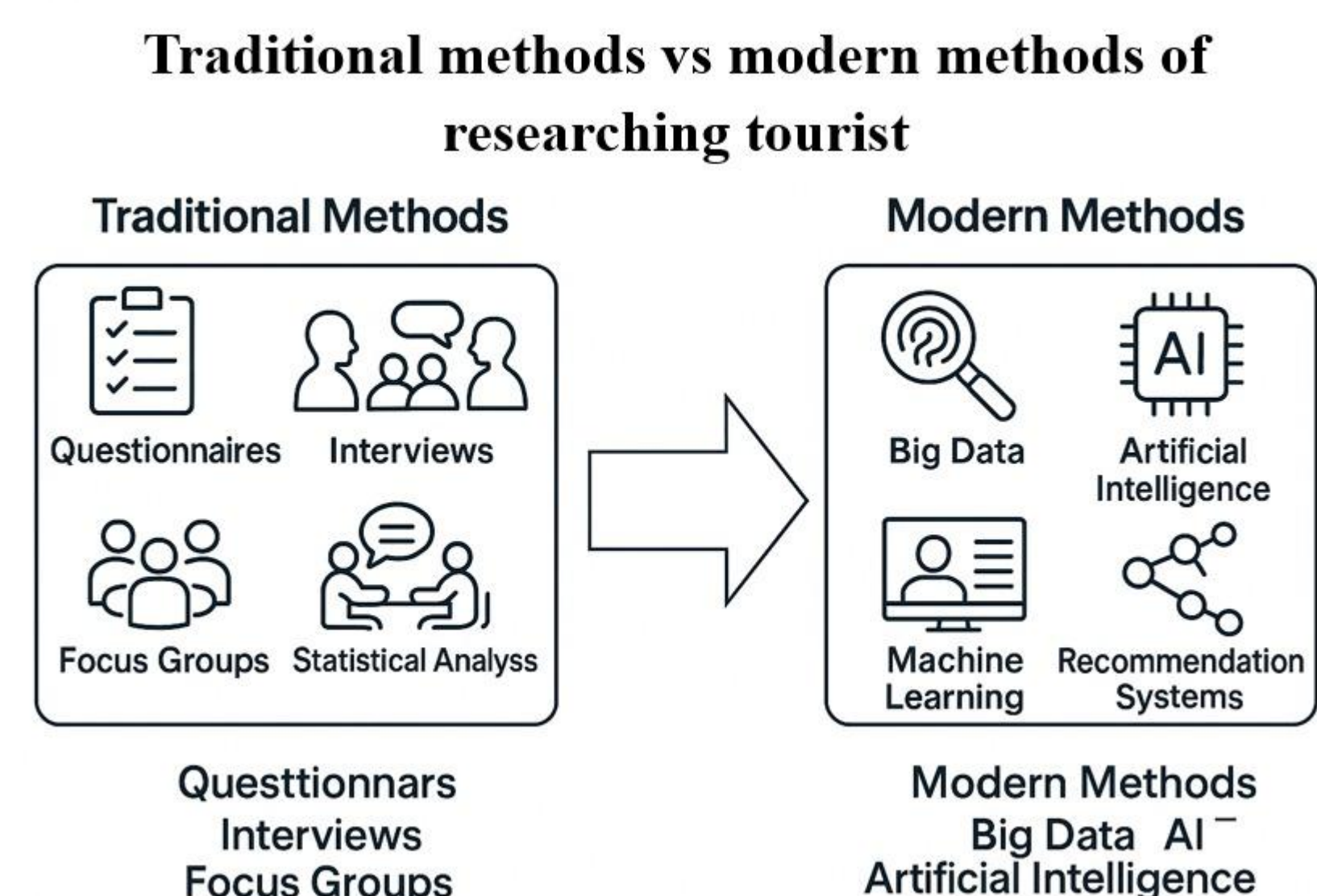
• Results and discussions

Research into tourist behavior has evolved from traditional methods based on questionnaires, interviews, and statistical analysis to modern approaches based on big data and artificial intelligence. Classic methods provided essential concepts but were limited by small samples, high costs, and a lack of predictive power.

With digitalisation, tourists generate huge amounts of data online, which allows for the analysis of actual behaviour, not just declarative behaviour. Techniques such as sentiment analysis, theme modelling and clustering provide a complex picture of preferences and satisfaction.

Artificial intelligence, through machine learning and deep learning, allows for the prediction of booking intent, satisfaction assessment, and identification of tourist loyalty. Analysis of user-generated content (reviews, posts, comments) provides a detailed understanding of tourists' perceptions and emotions.

At the same time, intelligent recommendation systems personalize tourist experiences through algorithms that anticipate individual needs and preferences, contributing to a more relevant and efficient tourist experience.



• Conclusions

The evolution of tourist behavior research marks a major paradigm shift from traditional methods based on declarative data and statistical analysis to modern approaches using artificial intelligence and Big Data analysis. This transition allows not only the description but also the anticipation of tourist behaviors and preferences, providing a dynamic and real-time understanding of the tourist experience.

However, the use of AI also brings ethical challenges related to data protection, transparency, and algorithm fairness. A responsible approach is needed, guided by ethical and sustainable principles, in an interdisciplinary framework that combines technology with social sciences.

In conclusion, modern methods transform tourism research into a strategic tool for sustainable development and personalization of experiences, but their success depends on the digital skills and ethical commitment of researchers and professionals in the field.

