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Presenting a Model for The Growth of Sustainable Smart Tourism in Tehran Travel Agencies

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Abstract

One of the mechanisms that can be useful in improving the competitiveness and development of tourism is smart tourism. The purpose of this research is to provide a model for the growth of sustainable smart tourism in Tehran travel agencies. This research is a quantitative and applied research, and in terms of data collection and analysis method, it is a survey descriptive research. The statistical population of the research was managers and senior experts of travel agencies in Tehran. 50 managers and experts of travel agencies in Tehran have been selected as a sample size using the purposeful method. In order to analyze the research data, fuzzy Delphi method, fuzzy Dematel method and fuzzy Analytical Network Process have been used. The results of the research showed that the research model, in order of priority, included components such as factors related to competitors, environmental factors, environmental factors, technical and infrastructure factors, factors related to tourists, factors related to suppliers, natural factors, social factors, and economic factors which are ranked according to research experts, from 1st to 9th in terms of importance. Based on the results of the Fuzzy Dematel method, in this model, economic factors, environmental factors, factors related to competitors, factors related to tourists and technical and infrastructure factors were determined as causal variables (influential variables). And environmental factors, factors related to suppliers, social factors, and natural factors were determined among the affected variables.

Keywords: Smart tourism, Sustainability, Sustainable smart tourism, Tourism.

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Introduction

- Problem Statement

Today, tourism is one of the largest and most dynamic development activities in different sectors of a society (Alepis et al., 2018). Tourism and the need to study it, given its important role in our lives, is not hidden from anyone. Tourism, as a modern phenomenon, is essentially an economic activity with individual and social motivations that has resulted in different positive and negative environmental, economic, social, and cultural effects. (Christou et al., 2023). In fact, the concept of smart tourism has emerged with the development of information and communication technologies (ICT), and with the expansion of the application of this technology, its value and importance for the tourism industry are continuously increasing. In this regard, the concept of smart tourism destinations refers to destination management as a way to develop tourism destinations through "digital transformation" (Blancas et al., 2023). Smart tourism is described as the collection and aggregation of information from tourism operators, infrastructures and people associated with a specific destination. This information is digitized and gains information-business value for visitors and tourism service providers of the destination. This value (the value of digitized information) is related to the dimensions of sustainability and efficiency (Obster et al., 2023). Sustainable tourism is a type of tourism that anticipates the needs of future generations and uses the resources of society (natural-cultural-social) in a way that does not endanger the benefits of future generations. This means that there are broad perspectives on sustainable tourism. The United Nations World Tourism Organization (UNWTO) defines sustainable tourism as a type of organization of these activities that does not disrupt the balance between economic, social and environmental issues (Apak & Gürbüz, 2023). Travel agencies are among those organizations that play a significant role in the expansion and development of the industry. Therefore, paying attention to sustainable smart factors in this area seems very important and necessary. Travel agencies can help provide better services to customers by using smart tourism components such as destination information, accessible mass media, appropriate and extensive media advertising, tourism information platform, smart tools, smart climate system and Internet of Things. Today, upgrading traditional travel agencies and transforming them into a "smart travel agency" is a major issue that officials and stakeholders in this field must think about solving. One of the requirements for traditional travel agencies is to deal with the most unprecedented crisis in the history of the tourism industry, the Corona crisis, and to keep up with the changes in this industry. Recent changes in tourist behavior and the growing importance of communication and information technologies mean that much more attention should be paid to e-tourism. As the Internet has become the go-to choose for many tourists for travel information, online travel agencies and their offerings have become increasingly important worldwide, as well as in Iran. Iranian travel websites typically provide basic information that can be provided with some type of search form, but users need much more advanced travel planner and recommendation tools that include a built-in decision support system. The following discusses the purpose, questions, and background:

- Purpose:

The purpose of this research is to present a model for the growth of sustainable smart tourism in travel agencies in Tehran.

- Questions:

In this regard, the research questions were formulated as follows:

1) What is the sustainable smart tourism growth model in Tehran travel agencies?

2) What is the prioritization of the dimensions of the sustainable smart tourism growth model in Tehran travel agencies?
3) What is the cause-and-effect relationship between the dimensions of the sustainable smart tourism growth model in Tehran travel agencies?

- Background:

To identify the factors and dimensions of the sustainable smart tourism growth model in travel agencies, the research background was first reviewed. The summary of the results of identifying the factors and dimensions of the sustainable smart tourism growth model in travel agencies is presented in Table 1:

Authors	Variables affecting the growth of sustainable smart tourism in travel agencies
Calderón-Vargas et al. (2021)	Laws and regulations, executive policies, statistics related to sustainable energy production, tourism innovation, development of tourism attractions, financial and economic status of agencies, attracting government support, improving the quality of life of residents and tourists, use of tourism environments and spaces.
Tavitiyaman et al. (2021)	Tourist perceptions, improving perceived destination image, improving tourist experiences from smart tourism, smart communication tools, e-commerce
Romão (2020)	Socio-economic resilience of tourism, sustainable supply network, regional employment, position of competitors in smart tourism, access to tourist areas, provision of welfare facilities, experiences in the field of smart tourism, use of the value of smart tourism experience
Sigalat-Signes et al. (2020)	Quality of urban life, urban economy, urban environmental problems, ensuring tourist satisfaction with smart travel services, efforts to reduce environmental pollution, willingness to use more smartphone services.
Alepis et al. (2018)	Electronic public transportation, innovation in meeting tourism needs, smart infrastructure, the use of mobile phones, Wi-Fi networks, and sustainable development.
Xiang (2018)	Information platforms, access to information resources, experience enhancement, marketing, application of big data, development of competition in the smart tourism sector, applied innovations in smart tourism, visitors and site management, destination intelligence, digital economy infrastructures

Table 1: Extraction of variables affecting the growth of sustainable smart tourism in travel agencies

Methodology

The research method is a combination of qualitative and quantitative methods. In the qualitative stage, a closed questionnaire was designed and the Fuzzy Delphi method was used for analysis. In the quantitative stage, a survey method was used, and the final questionnaire extracted from the fuzzy Delphi section was used for Fuzzy Dematel analysis and Fuzzy Analytical Network Process (FANP). The statistical population of this study was a group of experts from travel agencies in Tehran, 50 of whom were selected through purposive sampling to participate in the research and form a panel of experts, and 10 of whom were selected to conduct the network analysis and Dematel method based on the criteria of management experience in travel agencies and teaching and writing in this field. The research data analysis method was carried out in three stages. First, the Fuzzy Delphi method was used to present a model of sustainable smart tourism growth in travel agencies in Tehran to present the research model and model. In the next step, based on the dimensions of the model, a paired comparison questionnaire for the Fuzzy Analytical Network Process method was designed and provided to the experts to prioritize the dimensions of the model and the factors affecting the growth of sustainable smart tourism in travel agencies in Tehran. In the final step, the fuzzy Dematel method was used to determine the effectiveness and impact of the factors and the network of relationships between the model factors.

Finding

In order to analyze and present a model for the growth of sustainable smart tourism in travel agencies in Tehran, the proposed Fuzzy Delphi analysis method, Fuzzy Dematel, and Fuzzy analytical network process have been used in the statistical inference test section. The findings are presented in two qualitative and quantitative sections as follows:

- Qualitative research section

In the first step, the final indicators of the research were screened and identified. To perform the fuzzy Delphi method, a total of 150 factors were identified based on a review of the research literature. The fuzzy Delphi approach was used to screen the indicators and select the final indicators. In this study, triangular fuzzy numbers were used to fuzzified the experts' views. The experts' views on the importance of each indicator were collected with a 9-degree fuzzy spectrum.

The fuzzy Delphi method was conducted in three rounds and after the third round, an agreement was reached between the experts. Accordingly, 43 factors out of a total of 150 identified factors that were provided to the experts were selected as the final factors of the research model and were selected based on the similarity of the factors: social, economic, environmental, suppliers, tourists, competitors, natural, technical and infrastructural, and environmental factors.

- Quantitative research section

In this study, the Analytical Network Process was used to determine the weight of the criteria and indicators of the model. First, the main criteria were prioritized based on the goal. Then, the internal relationships between the main criteria were identified. In the third step, each of the sub-criteria in its respective cluster was compared and priority was determined.

In the fourth step, the internal relationships of the sub-criteria were determined. Finally, by calculating the initial super matrix, the weighted super matrix, and the limit super matrix, the final priority of the indicators was determined. Based on the obtained eigenvector: factors related to competitors with a weight of 0.161 were ranked first, environmental factors with a weight of 0.149 were ranked second, environmental factors with a weight of 0.13 were ranked third, technical and infrastructure factors with a weight of 0.127 were ranked fourth, factors related to tourists with a weight of 0.12 were ranked fifth, factors related to suppliers with a weight of 0.089 were ranked sixth, social factors with a weight of 0.082 were ranked seventh, natural factors with a weight of 0.082 were ranked eighth, and economic factors with a weight of 0.06 were ranked ninth.

Conclusion :

Studies have shown that technical and infrastructure factors have the most influence. Factors related to competitors are in the next position. Social factors also have the least influence. Accordingly, natural factors have a very high level of influence. Economic factors also have the least influence than other criteria. Accordingly, natural factors have the most interaction with other criteria under stud. Tourist-related factors have the least interaction with other variables. In this model, economic factors, environmental factors, competitor factors, tourist factors, and technical and infrastructure factors are causal variables, and sustainability factors, supplier factors, social factors, and natural factors are the effects.

In the modern era, the tourism industry is on the verge of a new revolution. In fact, the tools used to plan trips and even the ways in which travel experiences are changing. On the one hand, tourism has become a competitive industry and countries are inclined to new methods and innovations in this industry to earn more money. The continuous evolution of information and communication technology has created new methods and facilities (such as the Internet, smartphones, etc.) in the design of services and the development of the tourism system. Therefore, combining traditional tourism activities with new tourism activities can create new opportunities for countries. "Smart Tourism Application" addresses the implementation of smart

tourism through various technological revolutions in a dynamic environment. Based on the results of the research, the following practical suggestions are presented to travel agencies in Tehran:

-Providing a platform for the use of smart technologies such as smart devices, the Internet of Things, dedicated applications, virtual and augmented reality technology, robots and chatbots, etc.

-Developing smart tourism infrastructures to better manage smart tourism activities

-Informing about ceremonies and rituals, festivals, exhibitions and special events through smart technology to improve the level of tourist awareness.

-Providing integrated and desirable information to tourists about smart tourism destinations that have more appropriate information infrastructures and superstructures, including access to higher quality internet services and mobile phone networks.

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