„SMART TOURISM DESTINATION TROYAN", CENTRAL BALKAN, BULGARIA*

KRASIMIRA STANEVA
Faculty Business Management
University of Forestry, 10 bld Kliment Ohridski, 1797 Sofia, Bulgaria
bagg.ks@gmail.com

MARTIN MARINOV
University of Library Studies and Information Technologies (ULSIT)
martinemarinov95@gmail.com

ABSTRACT

The concept of smart tourist destinations is based on the application of innovative technologies and management principles, which are designed based on a study of the tourism business and assessment of the condition and suitability of critical for the sustainable functioning of the municipality systems. The aim of the study was to present a conceptual model for development of Smart tourist destination Troyan and build an innovative media profile, maintaining a vision of leadership and building a brand experience through metadata management. The model contains four elements, the synergy of which will fill the Troyan smart destination with new content. A study and thematic analysis of the tourist resources have been made, which determine the specifics of the tourist offer in the region. The assessment of the readiness for inclusion of the digitized data in a unified municipality open platform for their management has been done. A Municipal tourist identity has been developed through the application of smart technologies through rethinking the traditional business model and creating a competitive municipal tourist identity using cataloging of tourist resources in ontology. The model is complemented by the creation of a Municipal intelligent information network for safety and security in tourism, shared between the stakeholders.

KEYWORDS: smart tourism destination, municipality, tourist identity, intelligent network, safety tourism

1. INTRODUCTION

The territory of Troyan Municipality represents a serious tourist interest and is well recognized as a year-round destination in the direction of cultural-historical, religious, ecotourism (fig.1). The rich event calendar is a competitive advantage for the municipality as a year-round tourist

destination. The developed tourist infrastructure and the two SPA resorts - Shipkovo and Chiflik are an attractive center in the heart of the Balkans for family and SPA tourism [Станева, 2017].

The idea of smart tourism was presented in 2012 as a set of new experiences for tourists – virtual and augmented reality, joint activities between local communities and tourists, social and ecological sustainable development of areas, application of web-based applications, etc. [Molz, 2014].

The opportunity for tourists to use social networks for interconnection and exchange of tourist information is taken into account. All this today, is a realized opportunity that gave desired experiences to tourists in the period after 2019.

A specific approach in the management of tourism in the municipality is the creation of a vision for intelligent (smart) management of tourist resources. In the present study we have adopted the view of Erdem, A., Seker, F. [2022]: "A smart destination is one with a strategy for technology, innovation, sustainability, accessibility, and inclusivity along the entire tourism cycle: before, during and after the trip. A smart destination is also one with residents as well as tourists in mind, factoring multilingualism, cultural idiosyncrasies, and seasonality into tourism planning".

Figure 1. Troyan Municipality map

Source: https://www.troyan-bg.com/engturism.php

The concept of a smart tourist destination is a prerequisite for appropriate management decisions based on digital connectivity and building a municipal tourist identity. This is a necessary condition for promoting investments, stimulating the tourist market, the labor market and a basis for a balanced use of resources.

If we adhere to the philosophy of intelligent tourism, which is based on innovative methods of collecting and processing the information necessary for the development of tourism, we accept that it is necessary to use the achievements of information communication technology, cloud technology, artificial intelligence, virtual and added reality. The sustainability of tourism products will be positively affected by using technological innovations and practices [Lee et al., 2018].

2. METHODS OF RESEARCH

The aim of study was to present a conceptual model for development of Smart tourist destination Troyan.

The object of the study is the Municipality of Troyan with the thematic focus of creating a conceptual model for the development of a smart tourism destination (fig.1).

A meta-integrative method and a survey of the tourists' satisfaction, who are using smart tourist technologies were applied. The profile of the participants in the survey consists of 50 males and 50 females, aged between 20 and 30, with secondary and higher education (BSc and MSc students).

The construction of the model went through two different levels – collection and evaluation of regional data: dynamic, static and statistic information and creating of the architecture of the conceptual model.

3. FINDING

3.1. EVALUATION OF TOURISM RESOURCES DATA

The municipality of Troyan is located in North Central Bulgaria in Lovech district (NUTS level 3 region), part of the Northwest region (NUTS level 2). The total territory of the municipality is 894.8 km^2. The balance of the territory is as follows: forest territories (50.9%), agricultural territories (44.5%), urbanized territories (3.3%). The complicated morphology of the relief and the large difference in altitude predetermine the territory of the Municipality to observe two types of climate - temperate continental and mountainous. Water resources are represented by full-water rivers – Beli Osam and Cherni Osam, 6 mineral springs in Shipkovo and Chiflika, the Sopot dam. The terrain of Troyan Municipality is part of Central Balkan National Park, Steneto and Kozya Stena reserves, protected areas and some natural attractions. Ten protected areas included in the Natura 2000 European ecological network belong to the Trojan area.

The list of researched and summarized anthropogenic resources for tourism is presented below (according to https://www.troyan.bg/bg/turisticheski-obekti-v-obshtina-troyan, downloaded 31.07.2022, https://visit.troyan.bg/en/events, downloaded 31.07.2022):
- Church "St. Paraskeva Petka" - town of Troyan
- Chapel "Holy Mother of God - Life-giving source" Oreshak village
- Church "St. Petka Paraskeva" and chapel "Nativity of Christ" - Chiflik village
- Church "St. Dimitar" - Terziysko village
- Church of the Ascension of the Lord - Shipkovo village
- Church "St. Archangel Michael" - Vrabevo village
- Church "St. Nikolay Letni" - Gumoshtnik village
- "St. All Saints" Church - G. Zelyazna village
- Museum of Folk Art Crafts and Applied Arts - Troyan
- Natural History Museum - Ch. Osam village Museum gatherings in the villages of Debnevo and Chiflik.
- "Seryakova House" Art Gallery - Troyan
- National exhibition of artistic crafts and arts - Oreshak village

- Roman roadside archaeological complex "Sostra", consisting of an early Christian basilica "St. George"
- a Roman roadside station and civilian settlements. It is located in the valley of the Osam River, near the village of Lomets in Troyan Municipality
- Sopot dam
- Beklemeto winter sport complex

112 places of accommodation and 53 places of food and entertainment, situated in 15 settlements of the Municipality are categorized in the National Tourist Register, according to the requirements of the Law on Tourism (2020). They provide travel services for mid- to high-end customers.

As a result of the evaluation of the tourism resources and infrastructure, we can conclude the diversified (varied) tourism resources located on the Troyan municipal territory - those of natural, anthropogenic and mixed nature, create conditions for the sustainable development of tourism in all its varieties (fig.2). A serious resource for this, on the one hand, are the favorable natural conditions - climate, waters, soils, biodiversity, and on the other hand- protected natural and historical sites and localities, such as: Roman settlement, Roman road, remains from medieval fortresses and settlements, preserved ancient houses from the Renaissance era, religious temples - the Troyan Stauropiogial Monastery (the third largest in Bulgaria) and churches, Museum of Folk Art Crafts, Applied Arts and Ceramic Production, National Exhibition of Art Crafts and Arts, natural science museum, art gallery, etc. [Станева, 2017]. The general, technical and social infrastructure, including the transport and communication network, electricity and heat supply, water supply and sewerage, the treatment of domestic waste, are relatively good, but insufficiently modernized and undersized in relation to future investment projects in tourism.

Figure 2. Types of tourism in Troyan Municipality
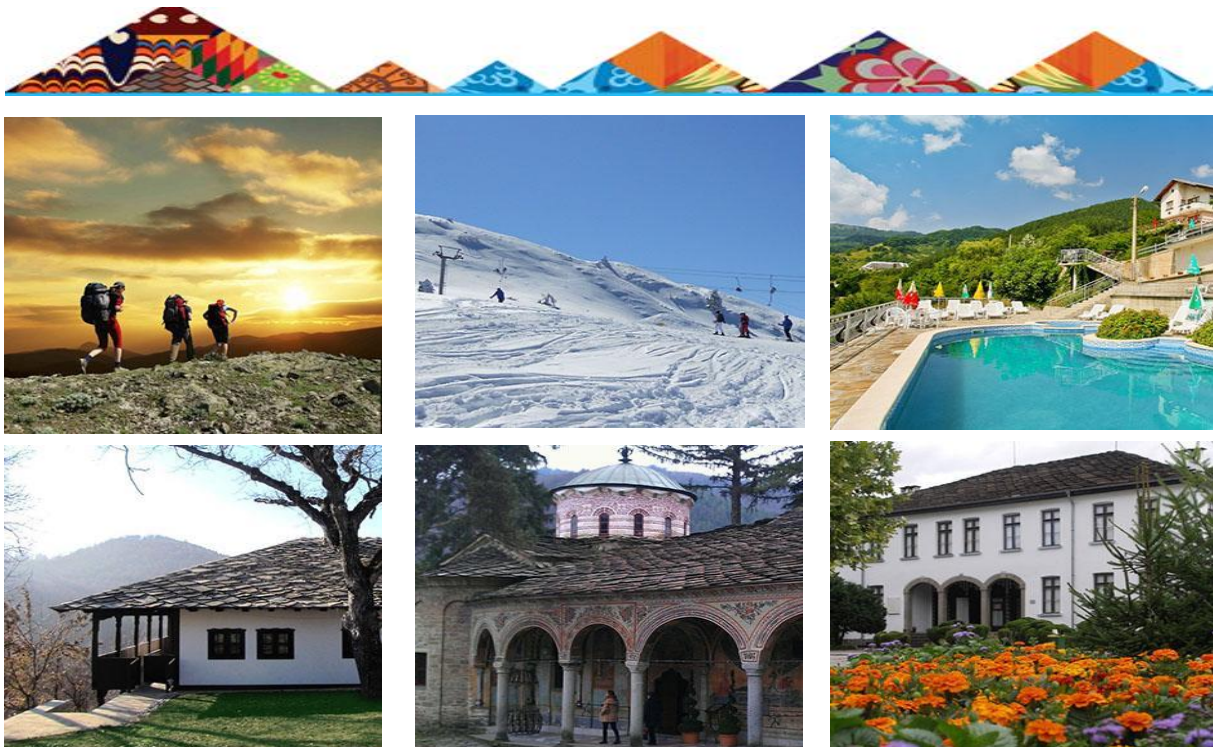
Source: Община Троян- ИКЦ, 2022, adapted by authors

3.2. EVALUATION OF STATISTICAL DATA ON TOURISM IN THE MUNICIPALITY 202-2022

Analyzing the results achieved by the implementation of the program in Troyan municipality [Municipality Troyan, 2021], the following more significant facts could be noted:

- The main tourist flow on the territory of the Municipality is concentrated in four settlements-the town of Troyan, the village of Chiflik, the village of Oreshak and the village of Shipkovo
- Most of the visitors are of active, working age in the range of 30-59 years
- The Municipality is visited by 6,316 tourists per month, who have spent 13,728 nights
- The average stay during the considered period is 2.24 nights (weekend tourism)
- The relatively low share of visits by foreigners (1,411 against the background of 75,800), around 1.86% of visits, is maintained
- Dominant share of foreign visits to European Union countries
- The main part of overnight stays by foreign visitors was realized in high categories of 3 and 4 star properties 2,034 out of 2,655.

The quality of the presented tourist information contributes to the good recognition of the tourist destination Troyan. There is a need to expand the information offered to one that directly addresses health prevention and risk assessment for both health and customer safety.

3.3. EVALUATION OF TOURISTS SATISFACTION SURVEY

To the question "How do you choose your destination?", the largest percentage of respondents (65.30%) answered that they choose their next vacation destination through Internet platforms or other sources of information – friends, family, media etc. - 30,67% and assistance from travel agencies - 4,00% only (fig.3). Nowadays, the Internet is one of the most preferred methods of advertising for any business. This is confirmed by the result regarding different media (magazines, newspapers) or television. None of the people listed them as a source of information when choosing a place to visit. In second place /30.67%/ of the respondents said that they consult with friends or acquaintances when choosing a place to rest. Many people

make their choice based on someone's experience and thus feel more confident about it. Only 4% said that they choose their destination through agencies offering such holidays, and we should note that they have the opportunity to use the online offers of a travel agency.

Figure 3. Information on how to choose the destination
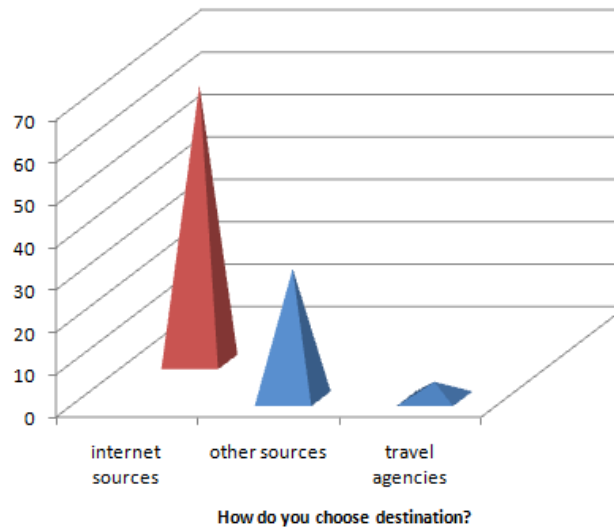
Source: Authors

When asked if they would come again, the interviewees were generally satisfied with the services offered and would come again: 45% of respondents are satisfied and will visit Troyan again, 52,3% regularly rest in Troyan, and only 2.7% would not come again (fig.4). These data are an indication of a well-presented tourist destination that enjoys the trust of tourists.

Figure 4. Information on tourist's satisfaction with Troyan destination
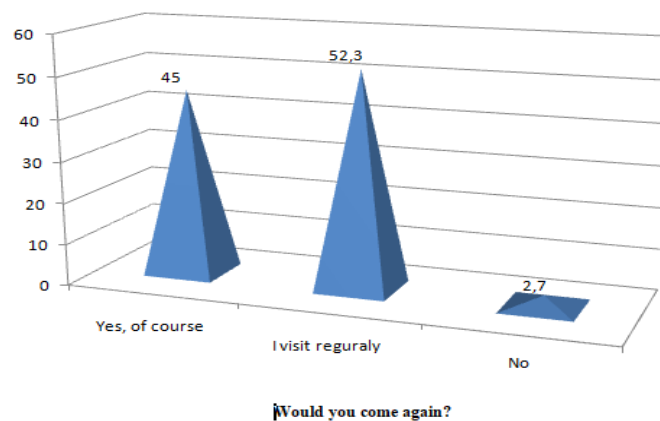
Source: Authors

Refining the collected and processed information about the available tourist resources in the study area, we focus on stimulating tourist activity based on the principles of the "green" and "blue" economy, which correlates with climate change and the changed tourist profile and a good basement for development of smart destination (Staneva, K. 2017). The opportunities that exist for the sustainable development of tourism in the Municipality of Troyan are the real challenge for local autonomous management structure in the conditions of a dynamically changing environment.

4. THE CONCEPT

The concept of smart tourist destinations is based on the application of innovative technologies and management principles that are projects based on tourism business search and report evaluation and the suitability of critical for sustainable functioning of the common systems. The proposed smart technology should be connected to a real-time communication system and digitized information should become more accessible to tourists through smart devices. The idea of an intelligent use of natural tourism resources is based on the changed profile of the tourist, which is related to the dynamics of the physical environment, geopolitical changes and health risk analyses also (fig.5). This idea further develops the concept of balanced nature resources use and management of natural resources through smart technologies.

Figure 5. Context-enriched human and technological sensor information for Smart Tourism Destinations
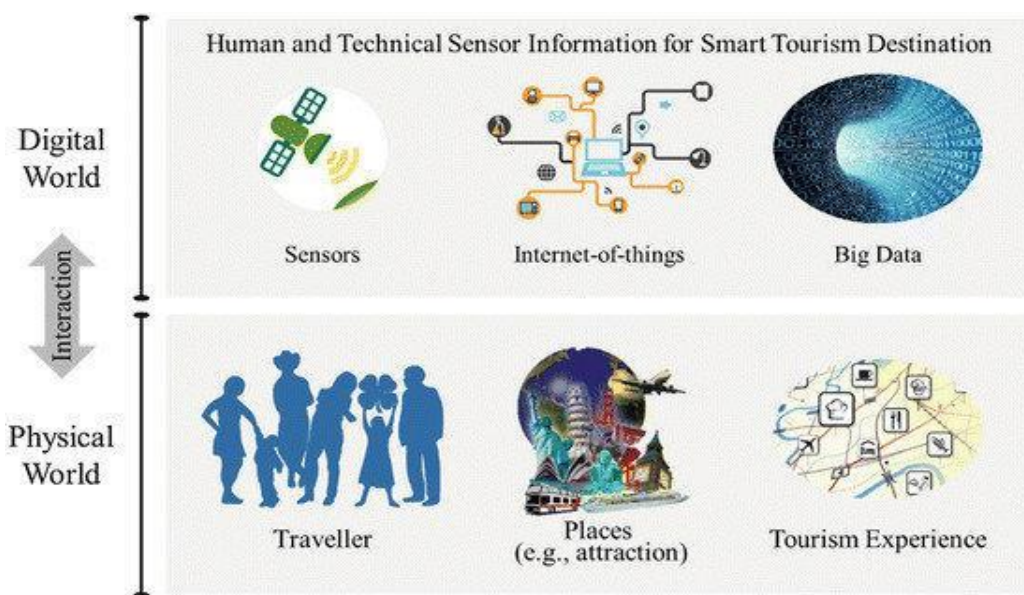
Source: Choe, Y. and D.R. Fesenmaier (2017)

The result of its implementation is sustainable tourist management destination Troyan through cooperation between residents, businesses, scientists and NGOs with the leading role of the municipal self-government.

Figure 6. Architecture of Smart tourism destination Troyan

Source: Authors

The model contains four elements, the synergy of which will fill the Troyan smart destination with new content.

- **The first element is the Creation of an Open Urban Platform OUP**

The creation of a unified digital space for sharing data that is critical for the sustainable development of the municipality will affect the quality of life of citizens, reduce the footprint of activities on the environment and create a stimulating environment for sustainable tourism development in the destination of Troyan.

This will be done through assessment of tourism-critical public urban systems: transport infrastructure, light flow management, the green system, public health, education and culture, tourism resources, geomedical tourism information and risk analysis for prevention of natural disasters and accidents. Data from the fire service, seismology, hydrometeorology, etc. can be plugged into the IoT network and used effectively for risk management facing citizens and tourists. The real success will be a development of strong relationships between Municipality, local population and professionals in tourism.

- **The second element is Building a Municipal Tourist Identity through the application of smart technologies.**

This will be realized through a study and thematic analysis of the tourist resources, which determine the specifics of the tourist offer in the Troyan area and assessment of the readiness to include the digitized data in a knowledge based system for their management and sharing.

In this way, the traditional business model will be rethought and a competitive municipal tourist identity will be created by cataloging the tourist resources in ontologies (knowledge bases, thematically systematized for the resources that define the tourist identity of the destination).

- **The third element is Management of the reputation of Smart Tourist Destination Troyan**

Building an innovative media profile, maintaining a leadership vision and building a brand experience will be realized through metadata management. The current management business model in the tourism sector and its adaptability to an application of IoT, IA, VR, analysis of the big data that tourists leave behind (about accommodation, purpose of travel, duration, interest, community behavior, etc.). Smart data networks will be built, recognizable among stakeholders who seek to be engaged in the sustainable development of the municipal tourism community.

- **The fourth element is Management of Safety and Security Tourist Destination Troyan**

The municipality has a leading role in the process of creating, maintaining and managing the municipal intelligent information network for safety and security tourism destination. All information that ensures the tourist's awareness of his safety will be collected and managed by the municipality administrative body, and the access to it will be through the Open Urban Platform. Dynamic and static data about environmental characteristics, prevention of natural disasters and accidents, functioning of the health system, information about first and specialized medical aid, road safety, fire prevention, social disturbance, terrorist attacks, etc. will be aggregated available to every tourist through Open Urban Platform. Municipal video surveillance will be used to determine safe zones for tourists, which will be properly signposted. In general, all relevant information should be put on e-platform. In this way, a dynamic relationship will be established between the stakeholders for smart and sustainability tourism in Troyan municipality. We will meet the requirements for safe tourist destinations, summarized in 1996, but adapted to the changed external environment (World Tourism Organization,1996).

5. CONCLUSION

Tourist destination Troyan is defined as a combination of suitable geographical location, attractive natural attractions, significant cultural and historical heritage, remarkable landscapes and natural landscapes, favorable climate, presence of warm mineral springs and traditions in the offered tourist products.

The proposed model is tailored to the specifics of the region, the level of tourism development and resource provision to achieve more intelligent management of tourism destinations and contribute to maximum competitiveness. It will affect the quality of life for both the local population and tourists. The expected results can be summarized as follows: improved connectivity in the urban environment, efficient management of municipally critical systems such as light flow, waste, traffic and public health. It is expected to achieve better quality of air, water and soil, effective management of the risk of natural disasters and accidents. All of them will have the effect of creating a better reputation of Troyan smart destination.

The conceptual model is a real opportunity to ignore the negative impact of the natural, political and socio-economic crisis on the sustainable development of tourism. The model can be a specific tool for creating a qualitatively new and effective public tourism product that could be successful in the context of tracking trends in the changing tourism environment (search - offer) and the regional tourism opportunities.

The practical benefit of introducing such a model is linked to regional planning and the place of tourism modeling in creating a sustainable tourism profile of the region.

REFERENCES

1. Община Троян-ИКЦ, 2022. https://visit.troyan.bg/en/events [downloaded on 31.07.2022]

2. Станева, К. 2017. Управление на горския рекреационен туризъм в Община Троян. Второ, допълнено издание. Авангард-Прима. 131 с. ISBN 978-619-160-841-6.

3. Choe, Y. and D.R. Fesenmaier (2017). The Quantified Traveler: Implications for Smart Tourism Development. *In book: Analytics in Smart Tourism Design*, DOI: 10.1007/978-3-319-44263-1_5.

4. Erdem, A., Seker, F. (2022). Tourist Experience and Digital Transformation for a smart destination according to which ". *In: Oliveira, L.(2022). Handbook of Research on Digital Communications, Internet of Things, and the Future of Cultural Tourism. ISBN13: 9781799885283.* https://www.igi-global.com/chapter/tourist-experience-and-digital-transformation/295499, downloaded 31.07.2022

5. Hanna Lee, Jimin Lee, Namho Chung & Chulmo Koo (2018) Tourists' happiness: are there smart tourism technology effects?, *Asia Pacific Journal of Tourism Research, 23:5, 486-501,* DOI: 10.1080/10941665.2018.1468344

6. Huang,D.J. Goo, K. Nam, Ch. Yo.(2017). Smart Tourism Technologies in Travel Planning: The Role of Exploration and Exploitation, *Information & Management 54(6)*, 757-770 DOI: 10.1016/j.im.2016.11.010

7. Molz, J. (2014). Travel Connections Tourism, Technology and Togetherness in a Mobile World. Routledge, ISBN 9781138020061, 216 p.

8. Municipality Troyan, 2021, *https://www.troyan.bg/bg/saobshteniya/otchet-na-programa-za-razvitieto-na-turizma-v-obshtina-troyan-za-2021-g/, [downloaded* on 01.08.2022]

9. Staneva, K. (2017). Digitalization impact on quality of tourism destinations. Croatian Direct Marketing Association Conference, Book of papers, 73-81, ISSN 2459-7953

10. World Tourism Organization, 1996. Tourist safety and security. Practical Measures for Destinations ISBN: 92-844-0152-6, 173 p.