Opportunities for Development of Varna as a Smart Tourism Destination
(based on an expert survey among representatives of the tourism industry in Varna)

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Abstract
The main purpose of the publication is to present the opportunities for the development of Varna as a smart tourism destination based on a survey among tourism experts in the destination. The paper presents the theoretical framework of the smart tourism destination and a summary of the results of the survey conducted among representatives of the tourism industry in Varna. The expert's vision for the necessary changes and measures is presented. In conclusion, the main directions for the development of Varna as a smart tourism destination are outlined.

Keywords: smart tourism, digital technologies, smart governance

JEL Code: L83, O20, Q01, Z32

Introduction

This paper is part of a research project "Development of an Intelligent Tourist Destination '2030 (on the example of Varna Municipality)", funded by the targeted research subsidy in UE-Varna. The aim of the study is to establish the extent to which Varna meets the concept of „smart" destination and at the same time to summarize the views and proposals of experts from the tourism sector in Varna for its development as a "smart" destination.

To achieve the objectives of the project, a theoretical framework has been developed and a survey consisting of three parts has been conducted, each covering a different target group: citizens, tourists and experts working in tourism on the territory of Varna Municipality.

The main purpose of this publication is to present the opportunities for the development of Varna as smart tourism destination[1] based on a study of the assessment of experts in tourism. To achieve this objective, the following tasks have been carried out: a theoretical overview of the STD concept and of the indicators for studying the development of a destination as STD; summary and analysis of the results of the survey among 38 experts and drawing guidelines for the development of Varna as STD, according to expert opinions.

1. Theoretical overview of the STD concept

The concept of STD is based on theoretical research and programming documents on the development of smart cities (Ivars-Baidal Josep, A. et. al., 2019; Buhalis, D. & Amaranggana, A., 2015) The idea of digitalization and creation of a sustainable urban environment is applied to tourism management, considering the contemporary socio-economic challenges and the needs of

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[1] STD – smart tourism destination

tourists. In smart tourism destinations, the use of information technology and innovation is seen in the context of creating a better quality experience for the tourist and added value for the tourism industry. At the same time, the importance for the participation of all stakeholders in decision-making and the formation of the tourist product of the destination is considered.

The overview of the definitions of STD over a ten-year period, see Table 1, presents a comparative robustness in defining the nature and distinctive characteristics of the STD. This allows the pillars of the smart tourism destination to be brought out, by analogy with the key areas of smart cities - smart economy, environment and mobility, smart human resources and smart lifestyles (Giffinger, 2007; Dameri R. P., 2017). In this way, a theoretical basis is created for carrying out studies in different destinations on the extent to which they develop as STD and accordingly developing strategies and programs for smart development.

Table 1. Definitions of smart tourism destination in the period 2011-2022

Year	Author	Definition
2011	Cohen B.	Smart tourism destinations need to use appropriate tourism applications within smart cities. Therefore, when the destination follows the smart city approach, new business opportunities for travel and the tourism industry emerge.
2015	Lopez de Avila A.	STD is an innovative tourism destination, built based on high-tech infrastructure, guaranteeing sustainable development of tourist places, accessible to everyone and with facilitated connection and integration of tourists in their environment. As a result, the quality of the tourist experience and the quality of life of the local population are increased.
2016	Vargas-Sanchez A.	STD is such a destination that, from the shared vision of its participants, is based on the widespread use of cutting-edge technologies in order to create an advanced digital space ... is able to improve the overall management of the destination and therefore its differentiation and competitiveness. STD is based on the values of innovation and sustainability, working to enhance the tourist experience and improve the quality of life of local communities.
2018	Jasrotia A., Gangrotia A.	If a smart city uses information technology and innovation to improve tourism's six A's, it eventually becomes a smart tourism destination. In other words, smart tourism destinations are the cities or places that use available technologies, tools, innovations, and techniques to provide enjoyment and experience for the tourist and profit for organizations and destinations.
2022	European Commission	A smart tourist destination is defined as a destination where different stakeholders, possibly under the coordination of a destination management organisation, facilitate access to tourism and hotel products, services, spaces and experiences through innovative ICT-based solutions, making tourism sustainable and accessible, and making full use of their cultural heritage and creativity.

Source: Table elaborated by authors

In conclusion, the following pillars of a smart tourism destination can be derived from the theoretical overview of the STD concept: smart infrastructure, smart governance, smart mobility and sustainable development in order to ensure a quality tourist experience and improve the quality of life. Smart infrastructure has been digitized (Gretzel et. al., 2016) and "green" infrastructure, which is a foundation for competitive business activity and improvement of attractions and tourist services, for economic development with less or negligible impact on the environment and the creation of partnership networks for joint use of resources, knowledge, and information.

Smart governance is shared management, stimulating cooperation between stakeholders and implemented using large databases and open access platforms (Buhalis and Amaranggana, 2014). Smart mobility is mobility with intermodal transport, providing easy, diverse, environmentally friendly accessibility to and within the destination for people with different needs and financial capabilities. Sustainable development is defined by the development of a green and circular economy, the preservation and enrichment of local identity and the achievement of social integration.

The aim of the development of STD is to achieve satisfaction of tourists and locals at the same time, but while preserving the public interest in territorial and global aspects. Thus, the implementation of the STD concept is linked to the goals of sustainable development and competitiveness of the destination (Ivars-Baidal, Josep, A. et. al., 2021). Quality tourist experience is focused on pleasure, entertainment and satisfaction of special interests and is created through facilitated and quick access to information and places, through constant and real-time interconnection of tourists with the surrounding environment, through customization of data and services provided (Neuhofer, B. & Buhalis, D.,2014; Gretzel et. al. 2015). This can be done in a high-tech urban environment. It controls the impact on the environment through mobility, efficient use of resources and energy, accessibility to attractions and more. The quality of life is determined both by the high standard of the urban environment and by the access to quality social services, healthcare, and education.

2. Methodology of the study

The survey was conducted in the period from 01.08. 2021 to 31.10.2022. It involves 38 experts in the field of tourism – tour operators, hoteliers, restaurateurs, and tour guides, as well as experts from educational institutions in Varna. The respondents have many years of practical experience and in-depth theoretical knowledge in the field of tourism. In the selected period, 50 surveys were distributed, of which 42 were completed and 38 valid. The data was collected through two main methods - "face to face" and online through an email campaign with a link to the survey. The expert questionnaire consists of 6 closed (each with several subcategories), with a score scale of 1 for lowest and 5 for highest and 6 open questions. They are based on the basic characteristics of the intelligent tourist destination derived from theory, which are of key importance for achieving the quality tourist experience within the destination Varna. The analysis of the results is made with respect to the leading four pillars of the STD, according to the presented theoretical framework for STD.

2.1. Smart infrastructure

Experts have a variety of opinions when assessing the infrastructure in Varna as smart infrastructure (Figure 1).
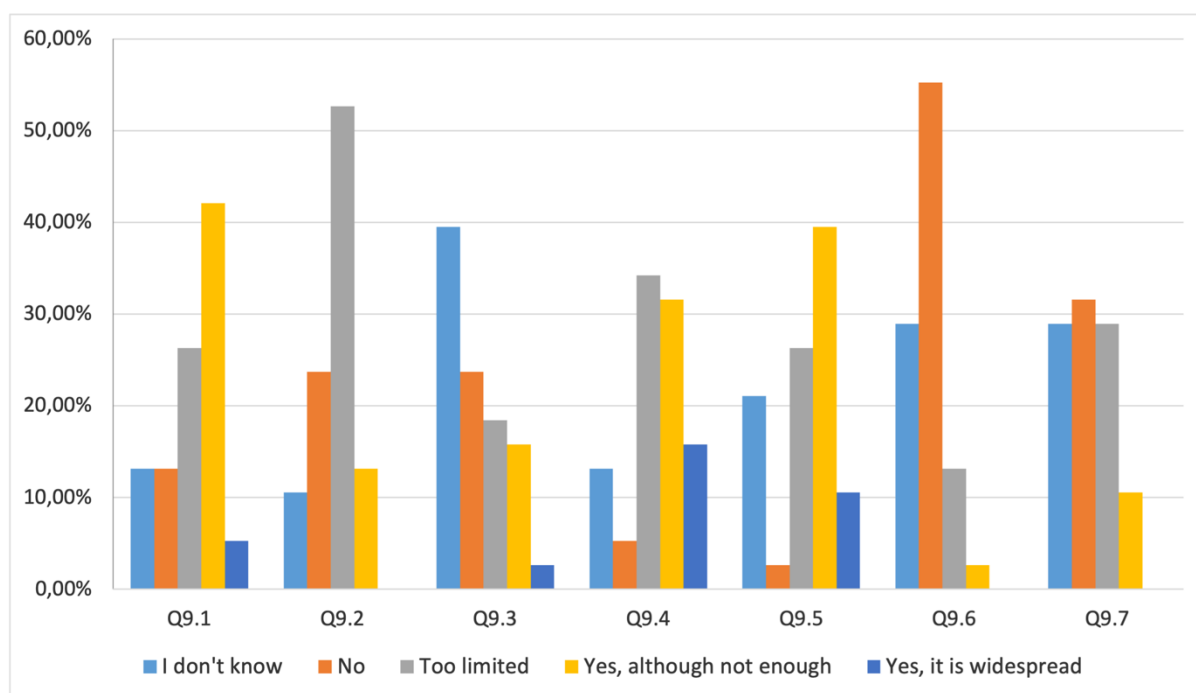
Figure 1. Distribution of answers to the question "Are "smart technologies" used in tourist destination Varna?"
Source: Figure elaborated by authors

The accessibility, diffusion and speed of Internet services are distinguished by good ratings, see Table 2. This is a leading factor that allows faster implementation of various technologies, helps to grow businesses, makes life easier for citizens and improves the overall experience of tourists. The most common technologies, according to the experts in destination Varna, are wireless – for payment, data transmission and sending messages, for logging and navigation. The smart technology most used by the tourist business on the territory of Varna is related to the presentation of various videos and animations about the destination. According to 42% of the survey participants, real-time bookings are used, but too limited. More than half of the respondents believe that virtual tours are part of the technologies offered in Varna.

At the same time, 40% do not know and 23% believe that interactive maps are not used. Energy management is not a widely used technology within destination Varna (12 experts). Respondents also believe that innovations are least being implemented to control the crowding of people in tourist places. In general, experts are the least familiar with control as well as with interactive maps for localization through a web-based geographic information system. Half of the respondents believe that no technologies are used at all to serve special groups – the blind, deaf and dumb, with difficult mobility, with special needs. Respondents have the least information (do not know) how much augmented reality is used in the tourist destination. In conclusion, experts assess the infrastructure in Varna as insufficiently responsive to modern smart infrastructure, despite the application of a number of digital technologies.

The survey paid special attention to the widely used in smart tourist destinations technology – QR Codes.
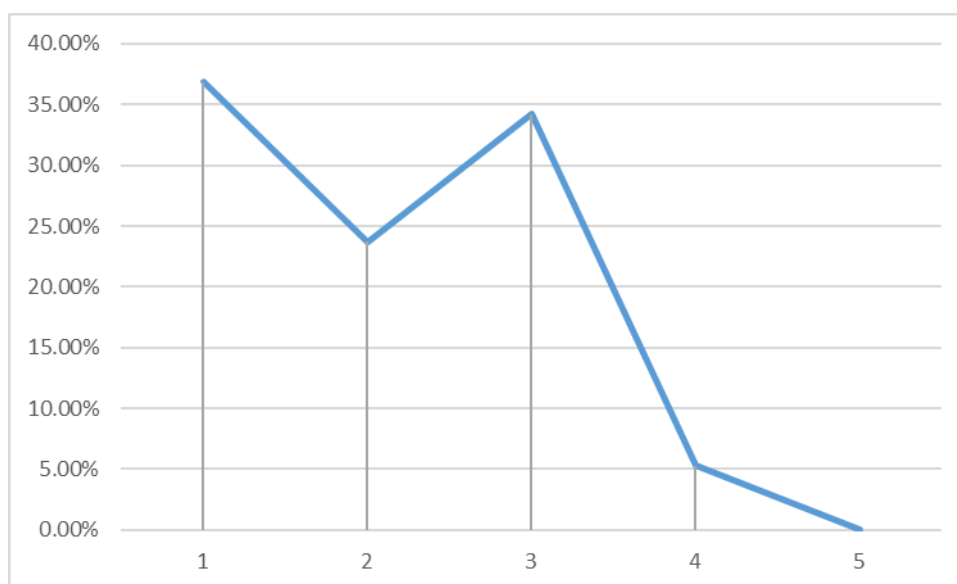
Figure 2. Distribution of answers to the question: "To what extent QR codes are used in Destination Varna for better and faster access to information about tourist attractions and places?"
Source: Figure elaborated by authors

The graph (Figure 2) shows that, according to the experts, QR codes are used to a very limited extent on the territory of the Varna municipality. A large percentage of respondents (37%) are not at all familiar with the ways of their application, while 24% believe that they are not applicable in the destination. The insufficient use of this technology in various tourist attractions, especially in museums, hinders the development of Varna as a modern smart destination.

2.2. Smart governance

The following questions from the survey "To what extent do you think that the following technologies (….) are implemented in the sector that you represent or in the business environment in which you participate?", "Which of the listed activities must be implemented in the sector or business environment you represent?" are related to the second pillar of STD. According to the experts, the elements of smart governance are moderately represented in the territory of the destination. The survey participants put in last place (with an average value of 2.68) the construction and implementation of a system that allows for the exchange of information - quantitative and qualitative data. With approximately the same rating (2.87) is the publication of documents such as reports, plans and strategies, policies, results, briefs, through which all the interested parties can obtain up-to-date information about the destination. The highest mean - 3.47 and mode - 4, is given to the variable "held meetings", including virtual ones. It is followed by "partnership between different interested parties - business, non-governmental organizations, public institutions, educational institutions, citizens". Based on the obtained results, it can be summarized that the experts in the field of tourism report that they have relatively good communication with each other, but there is a lack of easy-accessible information and statistics about the activities in the destination.

2.3. Smart mobility

The survey participants consider that the elements of smart mobility are relatively well developed and implemented in the destination. The mean for most answers is 3 and the mode is 4.

Table 2. Summary of the mean and mode of elements of smart mobility
in the destination of Varna

Elements of smart mobility	Mode	Mean
Enabling control over vehicle traffic	3	2,61
Allowing easy navigation in the city of Varna and its surroundings	4	3,29
Allowing a high level of mobility/intermodal transport	4	3,16
Providing access to data and facilitating communications (Wi-Fi in public places, including buses, kiosks and others)	3	3,05
Providing access to high-quality and fast Internet and allowing maintenance of cloud services	4	3,18

Source: Table elaborated by authors

The infrastructure facilitating navigation within and around the city has the highest mean - 3.29. The experts also have a positive opinion regarding the possibility of combining different types of transport. Traffic control of motor vehicles in Varna has the lowest mean - 2.61. This is a logical consequence and a common problem in the territory of large cities in Bulgaria and requires careful planning.

2.4. Sustainable development

Experts consider that issues related to ecology, maintaining the cleanliness of the city and creating an infrastructure that contributes to the fight against climate change are of extreme importance. The participants rate as low issues in both questions concerning sustainable development. The mean was calculated at 2.47 and 2.29, and the mode was respectively 2. The experts believe that the local municipality lacks infrastructure that aids fighting against climate change, protects from environmental pollution and keeps the city clean. Therefore, this factor must be given priority if Varna wants to prove that it is indeed a smart tourist destination.

3. Discussion

The main conclusions about the development of the destination as a STD were made based on an analysis of rating-scale questions regarding necessary changes and experts suggestions and comments derived from open-ended questions.

The participants give mostly opinions and suggestions regarding the transport in the destination, despite the relatively high score given to the elements of smart mobility. The need to rehabilitate the road network (streets, sidewalks) and create buffer parking lots is emphasized. According to the participants in the survey, it is imperative to increase comfort and cleanliness in public transport. They also propose a better maintenance of self-service kiosks for bus tickets. A more convenient, fast and more frequent transport to the resorts, especially to "Albena", as well as provision of parking spaces for tourist buses in the city is needed. Experts believe that a higher level of mobility should be achieved, therefore facilitating and easing the flow of traffic during peak hours in order to avoid traffic jams is mandatory. There is a lack of synchronization in the possibility to use a single prepaid card for integrated urban transport on urban lines served by different transport companies. The participants in the survey underline that the bicycle transport should be included in the regulation of movement outside the pedestrian areas and that there should be a regular traffic control of bicycles, scooters and electric scooters on bicycle lanes.

The availability not only of fast and high-quality Internet, but also the possibility of maintaining cloud services, providing free access to Wi-Fi in all public places such as the Marine Garden, public transport buses, bus stops and others is essential for the experts. For them it is imperative to improve access to information by placing information kiosks around the destination.

In terms of ranking the importance of digital technologies in the tourism business, 76 % of the experts put virtual reality and virtual panoramic tours in first place. This category also includes answers related to technologies for 24/7 service and virtual assistants. In second place, the respondents of the survey (34%) put technologies for serving people with disabilities and other special needs. Next in importance are augmented reality, mobile applications and websites, wireless technologies, technologies for simultaneous translation from and into foreign languages and QR codes. The experts in tourism accord last place to sensors (for movement, biometric data recognition and others).

More than 65% of the participants choose from the list the same technologies to be used in order for Varna to become a STD. They rank them in order of importance in the following way: interactive maps for localization through a web-based geographic information system; efficient energy management /lighting, heating of public places and transport/; crowd control technology /at events, queues, tourist places/; video and animation about the destination. At the same time, technologies for "real-time booking / integrated reservation systems in the destination website", "virtual tours" and "mobile applications and sites for mobile devices" remain outside the focus of the respondents' attention.

According to the participant in the survey, QR codes are most needed in the museums, both in the city (Archeological museum, Naval Museum, Museum "New History of Varna", Roman Thermae, Planetarium, etc.) and in the surroundings (Aladzha Monastery, Pobiti Kamani); followed by iconic temples such as the "Dormition of the Mother of God" Cathedral, St. Nikolay the Miracle worker. Specialists in tourism believe that the list should be completed with buildings of special architectural value, such as the Drama Theater in Varna, the Art Gallery, remains of the Roman walls of old Odessos, marked on Knyaz Boris I Blvd., Euxinograd Residence, the railway building railway station, the central part of the Marine Garden, Asparuhov Bridge, the village of Kazashko and

The lack of widespread QR codes as a digital technology prevents the creation of a quality experience for tourists during their stay in the destination of Varna.

The experts agree on the need for a quality partnership between the different interested parties – business, non-governmental sector, public institutions, educational institutions, and citizens. Therefore, the use of joint campaigns with common tourist offers, the creation of collective tourist products and collective mobile applications is required.

According to the experts, the smart governance of destination Varna requires the following measures:

- Consolidation of the actions of the tourist business and the local municipality;
- More transparency of decision-making and accountability on the part of the government of the city of Varna;
- Better access and participation of different interested parties in local tourism management;
- Increased advertisement of local sights and places of recreation;
- Providing broader access to information and data about the destination.

The specialists consider that an environmental policy related to transport and waste collection and treatment should be implemented. They also want a limitation on changing the appearance of valuable and significant cultural and historic buildings.

Conclusion

In the tourist destination of Varna, the applied technologies and infrastructure to a certain extent contribute for a better quality experience for tourists. They also support more effective marketing activities of the tourism business. Mobility is rated as smart due to the easy navigation in the city and providing access to information about different types of transport. The smart governance of the destination is shaped by the active and constant dialogue between the interested

parties and the municipal institutions. Varna cannot be rated highly as a STD from the point of view of the fourth pillar - sustainable development due to the lack of technological and infrastructure base and appropriate government policy.

The possibilities for the development of Varna as a smart tourist destination, based on the survey of the opinion of experts in tourism, can be summarized in the following directions:

- Implementation of technologies and improvement of infrastructure, which not only lead to an increase in the quality of experience of tourists, but also improves the lives of local residents. It also contributes to the sustainable development of the destination. This includes serving people with special needs, combating climate change, prevention of environmental pollution, preservation of cultural sites and customs, including through an attractive and modern way of presentation and interpretation, facilitating mobility and access to information and decision-making;
- Development and implementation of mobile applications that are necessary and useful for tourists and local residents, and at the same time stimulate the partnership between representatives of the tourism industry and the creation of joint tourism products and marketing campaigns.

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