IMPROVING THE IMPORTANCE OF A SMART CITY IN ACHIEVING A SUSTAINABLE TOURISM SECTOR

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Keywords

Smart city; smart tourism; smart economy; information and communication technologies

Abstract

The terms "smart city" and "smart tourism" are now very popular and have become a topical issue. The purpose of the study is to review the latest literature on "smart cities" and "smart tourism" and analyze their role in achieving a sustainable tourism sector, increasing the competitiveness of the tourism sector in a modern way. In addition, to determine the ways of growth and development of tourism in the city through the creation and use of "smart cities". As a result of this study, it was determined that although there is a close connection between "smart city" and "smart tourism", "Smart city" plays a crucial role in the growth and development of tourist destinations. A smart city is the result of interconnections of tourist complexes. In the article, there are proposals to use the principles of "smart tourist cities" in the city of Turkestan. By using the principles of a smart tourist city, the way to form the brand of the city of Turkestan will be opened. The article uses statistical and survey methods. The answers to the survey were entered into the SPSS 22 program, and the normative test results and factor analysis were made regarding the variable elements for creating a smart city.

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Introduction

The main goal of" smart " cities is to introduce new technologies in all spheres of human life so that the work of urban infrastructure is effective, and the life of citizens is comfortable and safe. A single information network connecting all residents will help not to get lost or lose someone (a child, an elderly relative, a child with disabilities), as well as always be aware of changes in the urban environment, interact with the law enforcement system, administration and other citizens. The online platform for distance education will save you time, and the development of road transport infrastructure and reputation management systems will help to make the most of this time [1, p.16]. Smart city is a city that includes aspects of smart management, smart life, smart people, Smart Environment, Smart Economy, Smart Generation. The list of areas that require the introduction of smart technologies includes, with the exception of all sectors of the city's economy and urban infrastructure: analytics, banking, buildings, trade, e-government, communications, education, energy, emergency situations, catering, healthcare, manufacturing services, transport, retail, public safety, ecology and environmental monitoring, water and gas supply and much more. The general scheme of the process of "intellectualization" of urban management is a complex phenomenon that requires taking into account many factors, including the differences introduced by the population of the City [2, p.37].

Literature review.

The population is growing steadily, especially in urban areas. Half of the world's population lives in urban areas, and it is estimated that this figure will grow to 60% by 2050. This puts a lot of pressure on the environment and resources. Management and technology also depend on this large population. Smart means the ability to solve problems of understanding, speed, flexibility and accuracy, or the quality of experience, knowledge, and intelligence [3, 62 P]. The word "Smart" has become widely known in recent years to describe technological, economic and social developments that depend on sensors, large amounts of data, and new communication methods such as the inert effect of substances [4, p.17]. The growth of the urban population and the constant depletion of resources, together with the acquisition of the most basic services, put a strain on human life. Thus, many cities of the world have become "smart cities" that play a fundamental role in providing direct services to citizens through the optimal use of information and communication technologies.

The "smart tourist city" is an urban transformation that aims to provide basic services to urban residents and tourists through technology. Recently, many researchers have made proposals about the" Smart City "and its importance for the development of Tourism proposed to use the concept of" smart city " and combine it with human, social and technological capital [5, p.45]. In other words, the emphasis is on the integration of "smart city" engines, which are information and communication technologies, as well as intellectual and social capital. They also noted the impact of sustainable urban development, proposing a model of intelligent tourist destinations covering some stages [6, p.13]. The first: open coding, which involves the collection of initial classifications and the subsequent production of analytical classifications. Second: axial coding, which involves determining

the relationship between these classifications. The third: selective coding, represented by combining all classifications. This model can serve the development of intellectual tourist destinations. Cloud computing technologies and the Internet of things play an important role in creating "smart cities" that contribute to the development of industrial and Urban Business [7, p.15].

Proposed the creation of an Internet of things and cloud computing consisting of several levels that contribute to the processing of big data and have the flexibility to expand. A. Tripati and others noted the importance of solving the problem of achieving sustainable mobility for tourists through cooperation between citizens, city administrations and tourist institutions. The researcher proposed an application based on the Internet of things called I-Tour, which contributes to the independence of sustainable tourist mobility [8, P.51]. By analyzing a survey collected over 10 years from an electronic platform in which citizens of the city participate, W. Kim and others aim to promote the sustainable development of Seoul with the aim of providing citizens with urban planning to create a smart city that will satisfy all its residents. One of the main tasks of the" smart city " is to intellectually capture the preferences of tourists [9, p.63]. Abbasi-mood et al.offer automatic output of user preferences in intelligent tourism. User reviews and data posted on social networks are used. The researcher obtained the user's preferences by semantic grouping of data and mood analysis. The purpose of this document is to clarify the general vision of the "Smart City" and "smart tourism" and the relationship between them, as well as highlight the most important issues facing the construction of the "smart tourist city"[10, p.22].

The connection between" smart city "and" smart tourism". The trend towards a smart city will undoubtedly have its own impact on the face and appearance of the new Turkestan, which is now moving towards rapid development. According to the goals of construction and development of smart cities, Turkestan will effectively serve consumers if it introduces advanced digital technologies, taking into account the needs of residents and guests.

A smart city with such characteristics reveals a combination of abilities and actions of independent and educated citizens. To assess whether a designated city meets the "Smart City" criteria, six criteria are defined, which are: smart environment, Smart Economy, Smart management, smart people, smart life and Intelligent Mobility.

Information and communication technologies are an important factor in creating a "smart city". With regard to the tourism sector, information and communication technologies currently play a fundamental role in many activities, such as transport services, cultural and entertainment services. The human factor also plays a huge role in attracting tourists to the city. The infrastructure offers comfortable tourists and pleasant tourist experiences. The environment can provide tourists with a green environment or green tourism, which is a tourist activity carried out in a purely ecological way. In another sense, we can say that the smart city is a tourist destination [11, p.54]. Providing cultural experiences to tourists can help create an innovative city of knowledge capable of attracting tourists, as well as develop smart vehicles to support travel and make travelers comfortable [P.12, 46].

According to tourism statistics, 8.5 million tourists visited Kazakhstan and spent 2.9 billion US dollars in 2019. The cost of one tourist in Kazakhstan is only 343 US dollars. If this indicator is compared with those in developed countries, it becomes

clear that it is below the expected degree. At the same time, most of the visiting tourists, as a rule, are from post-Soviet countries. They account for 91.7% of visitors and 70.6% of expenses incurred by tourists to Kazakhstan. In addition, in the period from 2010 to 2019, the growth rate of the number of rooms in accommodation facilities will be 220%, but in the period from 2010 to 2019, the average occupancy rate in the same accommodation facilities is 25.7% and there is a decrease in occupancy rate by 10%. Visitors from other countries accounted for 8.3% of the total visitors, but 29.4% of the expenses incurred by tourists. As can be clearly seen, the market share, which is a source of tourism, is at a low level. In addition, according to the World Travel and Tourism Competitiveness Index (TTCI) (2019), Kazakhstan ranks 80th out of 140 countries. According to ergesh V. T., There is a shortage of domestic literature or scientific works that study the current state of tourism in Kazakhstan through the method of sentiment analysis, related to determining the current state of tourism through hotels, food, attractive places [13, 71 P.].

In a study by A. Huertas, in many aspects of smart cities, specific factors have been identified to establish the Hong Kong brand as a smart city. The results of the factor analysis identify four factors that determine what a smart city is in terms of visitors, namely the quality of a smart society: energy consumption in an urban environment, smart city management, and living in a smart city. The first two factors determine the successful smart city brand that visitors consider [14, P.53]. In this direction, Aragonese, etc. recently, a model of strategic urban management has been developed that involves citizens in medium-long-term urban strategies [15, p.36]. An experienced and demanding new tourist will appreciate the technology, personalization and thoughtful sights and destinations. It has also been shown that there is a positive correlation between intelligence and the creation of an attractive and memorable experience from the arrival of tourists in advance and during the trip [16, p.19].

According to M. Sajid Khan, among the most effective technological solutions in recent decades in the history of mankind, we can mention the emergence of smart cities. The main goal of smart cities is to improve the activities of the public and private sectors, as well as increase the results of the activities of the state, business processes and individuals, and improve the quality of life of people. In recent years, the concept of "smart tourism" has also emerged as an offshoot of the word "smart city", becoming one of the types of tourism focused on effective solutions that meet the specific needs and requests of tourists in the course of travel. Therefore, today the promotion of "smart tourism" through the development of smart cities is one of the most pressing issues. Having studied the characteristics of the development of the concepts of "smart city – smart tourism" in different countries of the world, it is worth studying the possibilities of considering innovative ways to develop this system through the motive of satisfying the interests of different parties in the field of Tourism [17, P.67].

According to kichan Nam, blockchain technologies can be highlighted among the new technologies that currently have a special impact in several industries, including tourism. Cryptocurrency, smrat contracts, decentralized applications, which are named as the main tools of blockchain technologies, can have a large impact on the transactions carried out by tourists. The role and importance of blockchain technologies in the development of smart cities and smart tourism is great. This somewhat simplifies the processes and actions of tourists in the course of their journey [18, p.13].

The emergence of innovative trends, technological solutions, changes in the development of smart technologies in smart cities was also somewhat influenced by the reasons of the pandenmia period around the world [19, P.59].

Gretzel U. confirms that smart tourism arises as a result of the use of previous technologies in the context of large cities. It is largely formed by the development of the idea of a" smart city". But its concept and implementation as a concept was separated from the concept of "smart city" in the singular. However, no effectiveness can be found in the use of these concepts in two different meanings. This is due to the fact that everyday city life and the process of visiting tourists develop in parallel. And smart technologies violate the boundaries between residential areas and tourist areas. To solve these problems, the concept of a smart tourist city is launched and testifies to the importance of the concept of a smart tourist city in the theoretical and practical plan [20, p.17].

Arye Herskovichi believes that for tourists in the city they visit, transport, transportation, personal security, recreation, etc.characteristics and the level of satisfaction with these services play an important role. And how the smart city system can regulate these nuances and increase the degree of satisfaction of tourists is one of the current topics. The smart city system can contribute to the travel of tourists in several aspects. These are: information, transportation, personal security and accessibility for tourists with disabilities. Therefore, with priority attention to these aspects, it is necessary to ensure the satisfaction of tourists and a long stay in the city where they are traveling. It is also recommended that the host cities of tourists work on the introduction of advanced technologies in order to allow tourists to fully get acquainted with the city at any time and for various purposes [P.21, 37]. According to the research of Jao Romao, the attractiveness of cities can be determined by the characteristics that arise from the ratio of the Sustainable Living of the population and the demand for international tourism. It turned out that the main place in the character of attractive cities is occupied by a combination of various innovative factors and a strategy for sustainable solutions for the development of the city in the "sustainable smart city" landscape. The growth process and dynamics of smart cities associated with such innovative features in cities can affect stakeholders in different ways. Therefore, it is better to pay special attention to the issue of providing new models for choosing the most convenient and optimal strategy for the development of the smart city system along with the tourism industry [22, P.67].

According to research by Peter O Connor, "smart tourism" affects the entire ecosystem of the tourism industry as a whole. This system, in turn, will help open up new business sectors in the field of tourism through the strategy" smart city – smart tourism". The smart tourism system leads to the emergence of the concept of Smart Hospitality. That is, it is inextricably linked with the emergence of such important aspects as customer orientation, an individual approach to each tourist [P.23, 58]. According to Luisa Erriciello, in recent years the topic of smart city has been widely discussed in terms of urban planning and from various perspectives, including aspects of sustainability, management and tourism. This process is developing largely due to the process of urbanization, which is widespread in the world today, and the growth of the urban population. These opportunities push many cities to come up with and implement a system of smart innovations. Currently, there is almost no systematic research in the context of the smart city phenomenon and its

impact on tourism. Therefore, by studying the concept of smart city along with the concept of smart tourism, it is advisable to study in depth the impact of smart city planning and its tourist attractions on the competitiveness of tourist areas, on the urbanization planning of cities, the use of smart strategies in tourism, what resources and abilities Smart Cities need to have to acquire new opportunities and what challenges they face from the tourism market [24, p.101].

"Smart cities" play a key role in the development of Tourism, says Ajay K. Tripati, but many cities face problems such as lack of security, fraud and lack of available information about resources that hinder independent mobility. According to the author, overcoming these obstacles involves the active involvement of local residents in providing assistance to tourists and the establishment of cooperation between residents of the city, the city administration and tourists. This collaborative approach can improve various aspects of "smart cities", including sustainable mobility in tourism and economic development. However, solving these problems is a complex process that requires a combination of the efforts of society and advanced intellectual tools. A practical solution called Itour based on the internet is given. Itour will be the basis for promoting independent mobility among tourists [25, p.24].

According to L. G. Selyutina, it is important to consider the development and current problems of the urban environment using smart city technologies, complex processes and the choice of intelligent solutions in the activities of the city economy in order to improve people's lives. Currently, an analysis of the main indicators of the development of smart city technologies in St. Petersburg is being carried out. According to the author, with special attention to the features of the "smart city" in St. Petersburg, the main attention is paid to the quality of life of each person through the development of technology in an urban disaster. According to the author, it is important to study the thoughtful and adaptive process of choice and smart solutions to solve current problems through traditional means. The positive impact of smart city technologies can often be realized through separation and emphasis, which leads to the further implementation of the concept under consideration [26, p.18].

According to B. Dimitrios, the rapid development of technology brings intellectuality to all organizations and communities. The concept of" smart tourism Destinations "(SMART Tourism Destinations - STD), according to the author, arises as a result of the development of" smart cities". According to the author, by introducing technology into all organizations and units, the places visited take advantage of the synergy between common sensor technologies and their social components to enrich the tourist experience. By using the concept of common sense to meet the needs of travelers before, during and after the trip, destinations can increase their level of competitiveness, according to the author.

According to P. Lee's research, the rise of information and communication technologies (ICT) caused by the digital and computer revolution has led to changes in market systems towards diversity. This transformation is especially evident in the ICT role caused by the widespread distribution of smartphones and the convergence of technologies, which culminated with the Fourth Industrial Revolution and the spread of the Internet of Things (IoT). Cities respond to problems arising from urbanization through the introduction of smart technologies by becoming smart cities that use sensors, data and connections for Sustainable Development. The term" smart " refers to technological, economic and social development enriched by ICT revolutions. Visionary cities make significant

investments in the design and development of "smart cities", defined as high-tech, intensively connected urban areas that use advanced technologies to ensure sustainability, innovation trade, and improve quality of life [P.31, 86]. All of these factors, in addition to the availability of green tourism while maintaining an urban environment for tourists, help create a smart tourist city.

Research methods. The research carried out through the following methods in the rest of the article is of great importance for achieving the goals set. This study covers questions within the scope of testing objectives and forecasts; data collection method definition, research space and pattern definition, application of questionnaire form, data coding, organization and analysis, data collection tool reliability, statistical analysis information. The results of the study can be summarized as follows.

Table 1. normative test results for variable elements for creating a smart city

	Колмогоров-Смирнова			Shapiro-Wilka		
	Статис	n	p	Statisp	r	
Turkestan is a smart city	,194	50	,000	,907	50	,000
Turkestan has enough urban infra-structure and high structure	,233	50	,000	,898	50	,000
Turkestan has a sufficient tourist infrastructure	,216	50	,000	,903	50	,000
Turkestan is an attractive city with cultural values	,222	50	,000	,877	50	,000
There are interesting historical sites in Turkestan	,208	50	,000	,875	50	,000
Rest in Turkestan is very interesting	,202	50	,000	,896	50	,000
Logo for Turkestan (mausoleum) - the best option	,204	50	,000	,878	50	,000
It is very convenient to live in Turkestan	,207	50	,000	,877	50	,000
People living in Turkestan are friendly and friendly	,238	50	,000	,868	50	,000

Turkestan is an important center of the University	,221	50	,000	,882	50	,000
Turkestan is an important shopping center	,218	50	,000	,859	50	,000
Turkestan is an important fair and meeting center	,212	50	,000	,898	50	,000
Note-based on the results of the survey conducted						

When analyzing Table 1 Above, It is observed that not all questions related to its variable elements are normally distributed to create a smart city (p <0.06).
Based on these data, it was considered necessary to use nonparametric tests in the analysis of the data, since not all variables of the study showed a normal distribution.

Demographic features of the participants. In accordance with the results of the survey obtained, an analysis was carried out, data on the demographic characteristics of 50 participants in the study are presented below using tables and graphs. Within the framework of demographic

Table 2. demographic information according to survey results

Sections number	respondents	specific weight, %
On young features		
17 and below	-	-
18-25	18	36
26 – 35	5	10
36 – 45	13	26
46-55	10	20
56 and above 4	4	8
By gender		
Male	22	44,0
Woman	28	56,0
Note-based on the results of the survey conducted		

The analysis showed that in the age group 18-25 - 36%, in the age group 26-35 - 10%, in the age group 36-45 – 26% and in the age group 46-55 – 20%, 56 and older-8%. 44.0% of the participants were men and 56.0% were women.

Results.

A factor analysis was carried out among the participants in Turkestan to determine the internal dimension associated with the elements of perception of the value of smart city and smart tourism. To test the validity of data for Factor Analysis, The Kaiser-Meyer-Olkin (KMO) sample match Test and the Bartlett spherical ability test were used. The analysis found that the KMO value was higher than 0.910 and 0.50, and the probability of the Bartlett test queuing was significant at 0.05, so the data set was more suitable for factor analysis. The analysis was carried out using the main component method and the Varimax spin method.

Table 3. results of Factor Analysis

Factors	Object	Factor loads	
		1	2
General infrastructure and centralization	Turkestan has a sufficient tourist infrastructure.	0,78	
	I find it very interesting to relax in Turkestan.	0,79	
	Turkestan is a tourist brand.	0,77	
	Turkestan is an important fair and meeting center.	0,74	
	Turkestan is an important shopping center.	0,71	
	Turkestan has a sufficient urban infrastructure and high structure.	0,65	
	People living in Turkestan are friendly and friendly.		
City attraction	Turkestan has interesting historical sites.		0,83
	Logo for Turkestan is the best option.		0,79
	Turkestan is an important center of the University.		0,72
	Turkestan is an attractive city with cultural values.		0,68
	Accommodation facilities in Turkestan are convenient.		0,59
Values		4,276	3,280
Variance		36,636	27,330
General explained variance		68,966	
Notes: (i) analysis of the main components of Varimax rotation (ii) KMO = 0.910, Bartlett test = 1080,227; p = 0.00 (P <0.001)			

When analyzing the above table 3, as a result of the factor analysis, the scale of the elements of smart city and smart tourism in Turkestan, consisting of 12 comments, is involved in the survey.

It was determined by the respondents in two sub-criteria. The volumes are called general infrastructure and centrality (7 elements) and city prominence (5 elements), respectively. The overall interpreted deviation was determined to be 68.966%. When the sums of measurements related to this explained deviation are considered separately; 35.636% for overall infrastructure and centralization and 27.33% for urban beauty.

A smart tourist city and its problems are an important component of economic and social activity, as it provides opportunities for employment and doing business [32, p.58]. Tourism activities are greatly influenced by information and communication technologies, which are the basis of the tourism industry, since the availability of information depends on the decision-making of travel. The information went to many tourism sectors, including travel companies, hotels and aviation. In order to build more intelligent and sustainable tourist cities for their citizens, governments must use information and communication technologies in an exemplary manner. The smart city of sustainable tourism is an innovative urban aspect that uses information and communication technologies to improve the quality of life of urban residents and tourists, the efficiency of urban operations and services, and competitiveness by meeting the needs of present and future generations in terms of economy, social, environmental and cultural.

According to UN data for 2018, by 2050, two out of every three people will live in cities. Therefore,

cities must have reasonable and sustainable planning to counteract population growth.

To achieve a smart tourist city, it is necessary to ensure and develop investments in tourism for the city associated with overall economic growth based on four main sources: natural resources, human resources, intellectual capital and institutional factor. By increasing the growth of these resources, it has a positive effect on the growth of the economy. To achieve this goal, it is necessary to have access to tourist sites in order to attract investment in tourism and become the basis for providing services to tourists using modern tools and at a safe level. In addition to the tourist guide, websites and electronic applications are used for places visited by tourists. The tourism industry is an important and effective factor in the construction of"smart cities". Therefore, it plays an important role in the" smart city " strategy. Consequently, intelligent tourism requires knowledge and awareness of tourist information such as tourism, economy, events and tourist participation in order to achieve changes that allow tourist information to be obtained at the right time and place through internet tools.

Conclusion

In conclusion, an overview of the construction and relationship between the "Smart City" and "smart tourism" was made. In addition, we analyzed the most important obstacles and tasks in the construction of a smart tourist city. The most important conclusions and recommendations made as a result of the review of the literature can be summarized as follows:

- The transformation of cities into "smart cities" is based on several key elements, namely: "smart transport", "smart people", "Smart Life", "Smart Economy", "Smart Environment", "Smart Government", "smart services" and "smart infrastructure". For those here, tourism is part of a smart life that includes cultural and entertainment facilities, safety, attractions, quality of housing, health conditions and educational institutions.

- The development of smart tourist cities is mainly ensured by the continuous development of artificial intelligence technologies, the Internet of things and intelligent networks.

- Focusing on sectors that society needs, such as education, energy, transport, among others, facilitates the process of becoming "smart cities".

- Development of sustainable plans that will lead to the creation of" smart " tourist destinations.

- A smart tourist city is the result of the connection between a tourist city and a "smart city".

Elements that form and distinguish an effective brand for the city of Turkestan have been identified:

- centuries-old history of the ancient city
- quality of tourist places
- lifestyle and traditions
- associated with a special culture.

The city brand has a high income:

- smart urban branding ensures the image, importance, originality and significant economic value of the city;

- smart urban branding is seen as a form of competition for many cities. To become a multi-faceted city, it will increase its investments in this area. It also tries to host international fairs and organizations.

Information and communication technologies can be used by governments to create "smart" and sustainable tourist cities for citizens and tourists visiting these cities in order to improve the quality of life and improve the efficiency of urban services, meeting the needs of social, cultural and economic aspects.

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