

Towards Smart Tourism Destination: An Empirical Study on Sharm El Sheikh City, Egypt

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Abstract

The quick advancement of modern technology imposes computerization and digitizing to all societies. The smart tourism destinations concept comes from the advances in smart cities. Recently, destinations began to reshape their duties and their entrepreneurial logics, involving tourists as active providers and initiators of their own experiences and considering new technologies as the essential instruments for deciding tourism outcomes. It means the advent of a novel pattern of destinations, the smart tourism destinations, in which new technologies are so comprehensively utilized to have a crucial impact on tourism experiences, improves destinations' abilities to compete and favor tourism development projects, starting from these issues.

The aim of the research is to investigate the development of Sharm El-Sheikh as a smart tourism destination and add to the ongoing debate on innovation in tourism, by presenting an interpretative framework indicating the way in which technological instruments in a smart tourism destination may enhance the co-creation of tourism experiences. This research used the descriptive analytical approach, where a questionnaire was prepared and distributed to a random sample of seventy five (75) experts in information and communication technologies and academic experts in the tourism sector. 60 (80%) of sample was retrieved.

The research reached several results, the highest mean values for barriers to become smart tourism destinations emerged for the item "deficiency of staff" (mean = 4.60, standard deviation =0.848).The highest mean value for opportunities to become a smart tourism destination is the item "Possibility of a network of municipalities as a platform for collaboration" (mean=4.60, standard deviation = 0.588). The research recommended that smart tourism destinations should be use of networks and technologies more effectively and efficiently. Training programs should also be considered to better utilize tools and techniques needed, to establish such kind of destinations.

Keywords: Egypt, Sharm El-Sheikh, Smart City, Smart Tourism, Smart Tourism Destination.

Introduction

Smart tourism development has become focus for several destinations all over the world, as it promises competitive benefits by increasing efficiency, fostering sustainability, and improving tourism experiences. However, smart tourism development is complicated and several destinations strive to with successfully implement it. This study investigates varied smart tourism initiatives. Gretzel et al., (2015) studied smart tourism destination as a part of smart tourism. While smart experience and smart business are being different components; information process, exchange and accumulation have been assessed as smart tourism layers. Nowadays, the notion of Smart Tourism Destinations emerged, expanding from the smart city concept (Zhu et al. 2014). To date there's little study conducted within the field of smart tourism destinations, where researchers essentially focused on the significance of Information and Communication Technologies in destinations (Guo et al. 2014; Wang et al. 2013). This study investigates the essential constructs of a Smart City and aims to supply a holistic framework for smart tourism destinations to take full benefit of Information and Communication Technologies infrastructures and technological applications. Such type of destinations could provide co-creation of value and experiences for tourists and competitiveness and gross margin for destinations.

Research Problem

The problem of the research is mainly focused on the concept of the smart tourism destinations, the delay of the commence and adoption of its applications in developing countries, and explanation of the role of technical and information development and how it influences the planning of smart tourism destinations, also the lack of a clear urban policy to advantage from recent technologies in the planning of future smart tourism destinations.

Research questions

1. What differentiates smart tourism destinations from alternative technology-dependent destinations?
2. What are the main challenges to establish new smart tourism destinations and converting existing destinations into destinations with smart technologies?
3. Many destinations have adopted the city's smart tourism applications in different ways; can these applications be adopted in ways that suit the city of Sharm el Sheikh?
4. What practical applications, tools and strategies are needed to convert Sharm el-Sheikh into smart tourism destination?
5. How utilizing technological elements in a smart tourism destination might enhance the co-creation of tourism experiences?

Research Aim

The research aims to develop a strategy to convert Sharm el-Sheikh city into a smart tourism destination, through identifying the necessary tools, procedures and priorities of action.

To achieve this aim, research attempts to achieve the following objectives:

1. Clarifying the concept of smart tourism destination and its components.
2. Introducing smart tourism destination as a new concept in the local market.
3. Identifying techniques and strategies to make cities smarter.
4. Developing a strategy to introduce smart tourism destinations.

Research Significance

The significance of research is that smart tourism destinations are crucial in providing customized service to their tourists by considering many aspects specifically access into real-time information to collect users' data, instant feedback loop to assist reveal users' knowledge upon provided service, dynamic platform which enabling completely different stakeholders exchanging information to promote service integration; and ability to accuracy forecast what tourist wants through pattern analysis to formulate distinctive services and effective recommender system.

Smart tourism destinations deals with the topic of technical development, which is a quickly development, where the world delivers each day and consistently another innovation, which clearly affects human idea, and on the day by day life of people, and hence on the spatial relationship of the components of the urban, The constructive outcomes of this advancement in the field of urban arranging and work on the improvement of future dreams for the city of Sharm el Sheikh as a smart tourism destination.

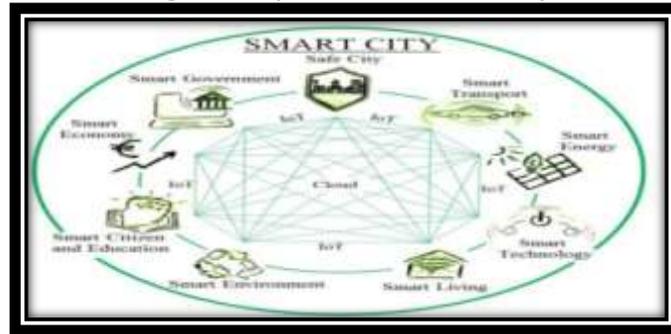
Literature Review

Smart Cities

Smart City is a new model of a city based on the utilizing of information and communications technologies with the aim to enhance its economic, social and environmental sustainability. Smart

City as a concept strategically presents Information and Communications Technology within an urban region to integrate urban processes in meditation of improving the competitiveness of the city (Caragliu et al., 2011). As stated by Kumar (2014) Smart City is one that is characterized by six elements as (1) Smart Governance, (2) Smart Environment, (3) Smart Mobility, (4) Smart Economy, (5) Smart People, and (6) Smart Living. Smart city is an emerging strategy aiming to enhance the quality of life of citizens utilizing the most innovative technologies to strengthen the particular wants of every city (Caragliu et al., 2013; Hollands, 2008; Shapiro, 2006). Smart city makes acutely aware effort to innovatively use Information and Communication Technologies to strengthen a more inclusive, diversified and sustainable urban environment (Eurocities, 2019). Smart city is the one that utilizes the technologies of information and communication to realize efficient management of all the areas of a city, and at the same time to satisfy the requirements of cities and their residents, ensure them sustainable development, and as a result being responsible with the environment. The researchers conclude from the previous concepts that smart city is an inventive and new activity by the government of Egypt to drive financial development and improve the personal satisfaction of individuals by empowering neighborhood advancement and tackling innovation to make results for natives. Figure (1) clarifies the elements of Smart Cities.

Figure 1: systems of a smart city



Source: (Centre of Regional Science, 2018).

Table 1: Tthe Characteristics and factors of Smart Cities

Aspect	Characteristics and factors
Smart economy (competitiveness)	Economic image, flexibility of labour market, prepared for challenges of globalization, develops and strengthens brands.
Smart people (social and human capital)	Level of qualification, high human development index, flexible, creativeness, participation in public life.
Smart governance (participation)	Accountability, Participation in decision-making, responsiveness, transparency, efficient and effective public service delivery, e-governance and e-democracy.
Smart mobility (transport and ICT)	National and international accessibility, transportation options, Sustainable, innovative and safe transport systems, availability of infrastructures and ICT.
Smart environment (natural resources)	Appealingly of characteristic conditions, values its regular legacy, normal assets, biodiversity and condition, successful waste administration framework and versatility to climatic changes, Environmental security.
Smart living (life quality)	enhance quality of life, celebrates local history Cultural facilities, offers safety, attractive tourism, social connection

Source: Giffinger et al. (2007)

Table 2: The dimensions to be evaluated in smart cities

Dimension	Concept
Governance	Dimension related to a level of sharing and cooperation of residents
Public management	It indicates to efficiency and searching of innovation by the management
Urban planning	A sustainable , accessible and scalable urban design
Technology	It impacts on quality and supportability of work and offers upper hands
Environment	Environmental sustainability , substitute energies and efficient Management.
International protection	It happens in light of the fact that the brand of a city is being improved through key plans of the travel industry , fascination of remote speculations and its portrayal abroad
Social connection	Inequality and immigration , interested of older persons, efficiency of residents security
Mobility and transport	Good connectivity and simple access to several public transport services
Human capital	To attract and include talents , to establish plans of enhancement of education and to encourage creativeness of a research
Economy	strengthening of local economy, strategically industrial projects and innovation

Source: SEGITUR (2019)

Smart Tourism

Smart Tourism has prospered as a novel approach to processing some of the emerging facts in tourism due to the effect of the foremost recent Information and Communication Technologies over destinations, tourists and businesses (Koo et al., 2017). Smart tourism is an advanced stage of tourism informationization. It comprises advanced, clever, and virtual travel industry dependent on computerized, keen, and virtual innovation. Data identifying with visitor exercises, the utilization of items, and the travel industry and social assets can be in a split second coordinated dependent on data and interchanges innovation; it offers to tourists, enterprises, and organizations with several of end-user devices (Zhang et al. 2012). Smart Tourism is dependent on information and communication technologies. These technologies communicate the physical, information, social, and commercial infrastructure of tourism, and supplies Smart Tourism value to numerous stakeholders of a destination (Guo et al., 2014). Smart Tourism is another popular expression connected to depict the expanding dependence of the travel industry goals, their enterprises and their voyagers on rising types of ICT that take into consideration monstrous measures of information to be changed into offers (Gretzel et al., 2015a; Gretzel et al., 2015c). According to No and Kim (2015) Smart Tourism Technology includes of informativeness, accessibility, interactivity, and personalization. Informativeness indicates to the benefit and confidence of travel information. Jeong and Lambert (2001) argue that information is one of the elements that have an effect on tourist intention to utilization. Therefore, the increased use of Smart Tourism Technology attributes is expected to enhance the tourist service expertise in a manner that powerfully guides the tourist's trip assessment toward positive feelings or satisfaction (Park & Gretzel, 2007). The researchers conclude from the previous concepts that Smart Tourism will boost the travel industry and explorers by improving their capacities to catch, investigate, and translate information, and these new devices will drive the travel industry's look for esteem creation, development and the capacity to manage tourism destinations.

Smart tourism levels

Smart tourism has three levels: for tourists (Wang et al. 2012)

1. Smart tourism offers access to tourism information and immediately arranges travel plans; for managers (for example: the government and tourism enterprises);
2. Smart tourism is an extensive and careful framework joining exactness, comfort, and the universality of the travel industry data applications by building a travel industry administration stage that offers guests booking, transportation, convenience, voyaging, and shopping; from a specialized point of view
3. Smart tourism achieves extremely systematic and elaborate interaction between physical tourism resources and tourism information resources, therefore serving the public, organizations and the government with a brand new of variety tourism services for the future.

The technological foundation of smart tourism

1. The strengthening technologies of smart tourism contain cloud computing, IoT, quickly mobile communication technology, geographic information systems, and virtual reality technology (Liu & Fan, 2011).
2. Smart tourism employed intelligent technology to complete tourism development and management processes and to take benefit of the intelligence and information residing within the entire tourism industry (Wang et al. 2012).
3. Smart tourism is tourist-centered, utilization intelligent technology, computers, mobile applications, and intelligent terminals as the main platforms to supply intelligent service, intelligent business, intelligent management (Yao, 2012).
4. Based on cloud computing technology with smart phones and intelligent terminal equipment, smart tourism will understand the assortment, real-time transition, and automatic declarative of tourism information (Fu&Zheng, 2013).

Smart Tourism Destinations

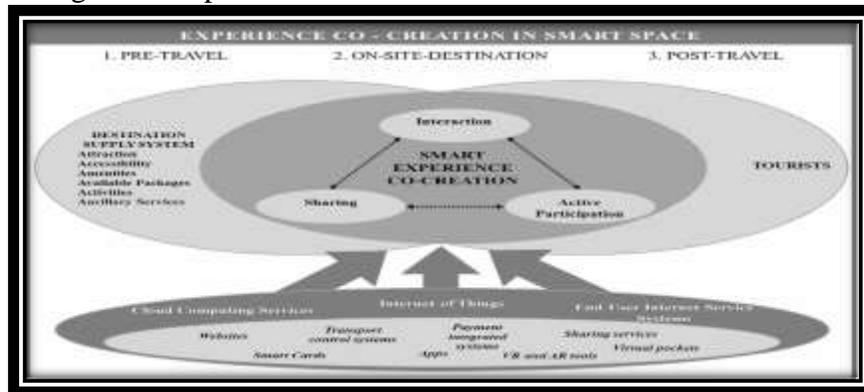
The implementation of smartness in tourism has begun the travel industry goals. The primary target of the travel industry goal is to make a speedy data trade with respect to all travel industry related exercises, shrewd the travel industry goal idea rose up out of the improvement of keen urban communities (Buhalis, & Amaranggana, 2013), characterized for being cities in that the huge utilizing of technology permits to co-ordinate all activities, information and services in real time, interconnect all local organizations, and enhance urban efficiency (Vicini et al. 2012). This recent 'smart tourism destination' concept will be understood as a related contribution to the very concept of tourism destination (Jovicic, 2017), and even as a possible new framework to manage destinations (Ivars et al., 2017) within the model of smart tourism (Koo et al., 2016), Smart tourism destination will be perceived as places using the available technological techniques to empowerment demand and provide to co-create value, which is implementing ICTs for example Artificial Intelligence, Cloud Computing and Internet of Things to provide the tourist personalized information and improved services created by mobile end-user devices (Boes et al., 2015). An innovative tourist destination, based on a foundation of best in class innovation ensuring the feasible advancement of vacationer regions, open to everybody, who encourages the guest's cooperation with and incorporation into his or her environment, expands the nature of the involvement with the goal, and improves occupants' personal satisfaction. (Lopez de Avila, 2015).The current literature stresses that smart tourism destination management is required to implement smart tourism, and improved ICTs infrastructure is vital in strengthening

destinations' efforts to the establishment of superior tourism expertise promised by the smart tourism model (Neuhofer et al. 2015). The researchers conclude from the previous concepts that Smart tourism destination is an innovative traveller place, accessible for all, based on technological infrastructure that assure the sustainable development of the region, facilitates the interactive and complementarity of the traveller with the environment and will increase the quality of its expertise within the destination and also the quality of life time of the residents.

Sharm El-Sheikh as a smart tourism destination

Tourism destinations use technologies such as smart applications to describe natural and tourist attractions in Sharm El Sheikh. In order to understand the way during which Sharm el sheik could enhance the co-creation of tourism expertise, an interpretative framework has been elaborated (Fig. 2). It is based on the literature review on smart tourism destinations (Buhalis and Amaranggana 2013) and on tourism expertise (Neuhofer et al. 2012) indicated in the previous section. The suggested framework could fill the current gap in literature, offering a better understanding of the method during which technological elements in a smart tourism destination may enhance the co-creation of tourism expertise. It considers that the typical technological elements of a smart tourism destination act on the six components (Attraction, accessibility, Amenities, Available packages, Activities, and Ancillary Services) which identify a destination, influencing the expertise co-creation with consumers. In the lower part of the framework, there are the technological elements of a smart tourism destination, distinguished by cloud computing services, IoT, and end-user internet service systems, and by the technological techniques relevant to them. These components, in fact, are at the basis of innovative technological techniques implemented by the destination provide system in order to improve the visit expertise.

Figure 2: Experience co-creation in smart tourism destinations



Source: Neuhofer et al. (2012)

Research Methodology

The researchers used the descriptive analytical approach, where a questionnaire was prepared and distributed to convenience sample of seventy five (75) of experts in information and communication technologies and academic experts in the tourism sector. 60 (80%) of sample was retrieved. The statistical analysis of the responses was carried out via SPSS v25.

Measures

To fulfill the research objective of introducing Sharm El-Sheikh as a smart tourism destination and contributing to the recent debate on innovation in tourism, a proposed interpretative framework able to explain the way in which technological components in a smart tourism

destination may improve the co-creation of tourism experiences was introduced. To achieve that, this research employed a method of descriptive analytical methodology by using a questionnaire tool, a survey consisted of eight sections was used as a data collection tool. The first section includes the demographic characteristics of respondents (gender, age group, educational level, current position, and experience with the current position). The second section included 6 variables assessing concept of smart tourism destinations. The third section included 6 variables representing Current Situation of smart tourism destinations. The fourth section included 13 variables representing using of Information and Communication Technologies. The fifth section included 17 variables representing using technologies and new process management and marketing in Smart Tourism Destinations. The sixth section included 5 variables representing the use of tourism applications in smart tourism destination. The seventh section included 11 variables representing Barriers to Become Smart Tourism Destinations. The eighth section included 6 variables representing opportunities to become a smart tourism destination. The questionnaire items were anchored according to the Five-Point Likert Scale, “1 = Strongly Disagree (SD)”, “2 = Disagree (D)”, “3 = Neutral (N)”, “4 = Agree (A)”, and “5= Strongly Agree (SA)”.

Data Validity and Reliability

Data Validity

To validate the data collection instrument utilized in this study in terms of its readability, format, and ability to measure the study’s constructs; the researchers distributed the questionnaire instrument to experts in Information and communication technologies and Academic experts in the tourism sector. The questionnaire instrument was then updated and refined to reflect the comments and suggestions received by the domain experts. Moreover, the experts showed interest and interacted with the researchers concerning the questionnaire instrument which adds to its validity.

Data Reliability

The reliability of an instrument is the degree of accuracy and consistency with that it measures whatever it is measuring (Ary et al., 2002). Before proceeding with further analysis, the reliability test was done in order to ensure consistent measurement across various items in the questionnaire. As depicted in table (3), the Cronbach’s Alpha Reliability was computed for seven sections. The tests showed that the Reliability Coefficients for all the sections were equal 0.849 and Validity Coefficient for all the sections were equal 0.921 which indicates that the instrument is reliable for being used.

Table 3: Cronbach’s Alpha Value for smart tourism destinations

Variables	No. of items	Cronbach’s Alpha Value	Validity Coefficient *
Assessing Concept of Smart Tourism Destinations	6	0.728	0.853
Current Situation of Smart Tourism Destinations	6	0.910	0.954
Use of Information and Communication Technologies	13	0.812	0.901
Use of technologies and new process management and marketing in Smart Tourism	17	0.855	0.925

Destinations			
Tourism applications in smart tourism destinations	5	0.804	0.897
Barriers to Become Smart Tourism Destinations	11	0.955	0.977
Opportunities to become a smart tourism destination	6	0.879	0.937
Total	64	0.849	0.921

* Validity coefficient = $\sqrt{\text{Reliability coefficient}}$

In order to measure the internal consistency and reliability of the study's constructs. Cronbach's Alpha (α) measure was used. The scales' reliabilities were measured and the Cronbach's Alpha of all scales in Table (3) ranged from 0.728 to 0.955, and for total questionnaire items was (0.849), this indicate an acceptable Cronbach's Alpha value for each field, whenever Cronbach's Alpha value is acceptable if it's more than (0.7). It is also evident that the validity coefficient is (92.1%) which means the reliability and validity of the study sample.

Results and Discussion

First Section: Demographic characteristics of respondents

75% of the respondents were male whereas 25% of them were female. Most of the respondents 44% were aged between 50 and 59 years, whereas 39% of them were aged between 40 and 49 years. Regarding the education level, 80% of the respondents were PHD degrees, whereas 15% of them were Master degree. the majority (50%) of the sample spent round 11-15 years in the current position, whilst (33%) spent round 5-10 years, and (17%) spent round more than 15 years. the majority (41%) of the sample spent round 11-15 years in experience with the current position, whilst (37%) spent round 5-10 years in experience with the current position, and (22%) spent round more than 15 years.

Second Section: Attitude Concept of Smart Tourism Destinations

Table 4: Assessing Concept of Smart Tourism Destinations

Variables	SD	D	N	A	SA	Mean	standard deviation	Rank
The concept of smart tourism destination is a sensible reference for the management of tourism destinations	0	13.3	5	18.3	63.3	4.32	1.066	2
The concept of smart tourism destination is vital, however does not present clear advantages for the tourists	23.3	36.7	21.7	13.3	5	2.40	1.138	6
The concept of smart tourism destination is flexible solely for destinations with an extensive number of tourists	23.3	38.3	5	16.7	16.7	2.65	1.436	5
The composition of a smart tourism destination is essential to adjusting to	5	15	8.3	16.7	55	4.02	1.308	4

demand trends								
The composition of a smart tourism destination is essential to competitive within the current tourism market	6.7	8.3	5	16.7	63.3	4.22	1.263	3
The composition of a smart tourism destination is vital to being progressively successful and decreasing expenses	6.7	6.7	0	13.3	73.3	4.40	1.219	1

The detailed examination of the results presented in Table (4) reveals the respondents' responses pertaining to assess concept of smart tourism destinations. The average score resulted with a mean of 3.67. This indicates that majority of the cases tend to mark on the middle of the scale on a 1 to 5 range. However, most of the items resulted with a slightly higher mean than 3 indicating the agreeableness of the respondents on those items, as imperative for assessing concept of smart tourism destinations. The highest mean values for assessing concept of smart tourism destinations emerged for the item "The composition of a smart tourism destination is vital to being progressively successful and decreasing expenses" (mean = 4.40, standard deviation =1.219), followed by "The concept of smart tourism destination is a sensible reference for the management of tourism destinations" (mean = 4.32, standard deviation =1.066), whereas, the lowest mean value for this construct is for "The concept of smart tourism destination is vital, however does not present clear advantages for the tourists" (mean = 2.40, standard deviation =1.138) followed by "The concept of smart tourism destination is flexible solely for destinations with an extensive number of tourists" (mean = 2.65, standard deviation =1.436).

Third Section: Current Situation of Smart Tourism Destinations

Table 5: Current Situation of Smart Tourism Destinations

Variables	SD	D	N	A	SA	Mean	standard deviation	Rank
Sharm El Sheik has an all-around characterized technique to wind up smart tourism destination	11.7	11.7	11.7	15	50	3.80	1.459	3
Sharm El Sheikh is advancing satisfactorily to sensible smart tourism destination	0	18.3	8.3	53.3	20	3.75	0.985	4
There is a high level of public-private partnership in Sharm El Sheik as a smart tourism destination	8.3	43.3	5	20	23.3	3.07	1.388	6
Different civil departments work together with the activities of smart tourism destinations	11.7	18.3	8.3	31.7	30	3.50	1.396	5
Internet connectivity ivilableas a in the fundamental tourist regions of Sharm El Sheikh	0	8.3	8.3	60	23.3	3.98	0.813	2
Sharm El Sheikh can be considered sustainable destination	0	0	1.7	68.3	30	4.28	0.490	1

Table (5) presents the means and standard deviations of Current Situation of Smart Tourism Destinations, where the means ranged between (4.28-3.07), compared with the total instrument

mean for the domain (3.73) the item “Sharm El Sheikh can be considered sustainable destination” ranked first with a mean and standard deviation (mean=4.28, standard deviation = 0.490) compared with the total instrument mean and the standard deviation. The item “There is a high level of public-private partnership in Sharm El Sheik as a smart tourism destination” ranked last reached a mean (3.07) and the standard deviation was (1.388) compared with the mean and standard deviation of the total instrument.

Fourth Section: Use of Information and Communication Technologies

Table 6: Use of Information and Communication Technologies

Variables	SD	D	N	A	SA	Mean	standard deviation	Rank
Sharm El Sheikh is exploiting benefit of the opportunities Provided by Information and Communication Technologies	0	8.3	6.7	48.3	36.7	4.13	0.873	7
Sharm El Sheikh is exploiting benefit of the opportunities Provided by Information and Communication Technologies for better information concerning Attraction.	8.3	8.3	15	35	33.3	3.77	1.240	13
Sharm El Sheikh is exploiting benefit of the opportunities Provided by Information and Communication Technologies to facilitate better services accommodation, transport, and gastronomy.	0	0	0	66.7	33.3	4.35	0.475	3
Sharm El Sheikh is exploiting benefit of the opportunities Provided by Information and Communication Technologies to manage tourist	0	0	0	71.7	28.3	4.28	0.454	5
Sharm El Sheikh is exploiting benefit of the opportunities Provided by Information and Communication Technologies to manage public	0	0	11.7	43.3	45	4.33	0.681	4
Sharm El Sheikh is utilizing Information and Communication Technologies method of measure public safety levels	3.3	8.3	1.7	60	26.7	3.98	0.965	10
Sharm El Sheikh is utilizing Information and Communication Technologies as a method of knowing the supply of lodging establishments	3.3	8.3	6.7	65	16.7	3.83	0.924	11
Sharm El Sheikh is utilizing the Information and Communication Technologies as a method of knowing the restoration projects	5	8.3	15	63.3	8.3	3.82	0.940	12
Sharm El Sheikh is exploiting benefit of the	0	0	0	40	60	4.60	0.494	1

opportunities Provided by Information and Communication Technologies for marketing								
Sharm El Sheikh is exploiting benefit of the opportunities Provided by Information and Communication Technologies to enhance the Tourism activities (adventurous, relaxing)	0	0	16.7	53.3	30	4.15	0.676	6
Sharm El Sheikh is associate innovative area in relation to the incorporation of new technologies	6.7	3.3	0	51.7	38.3	4.12	1.059	8
Sharm El Sheikh is innovative in the creation of new area, products and capture of new markets.	0	0	6.7	73.3	20	4.10	0.503	9
Overall, Sharm El Sheikh is an associate accessible area for tourists with disabilities	0	0	5	41.7	53.3	4.48	0.596	2

Table (6) presents the means and standard deviations of using of Information and Communication Technologies, where the means ranged between (4.60-3.77), compared with the total instrument mean for the domain (4.15) the item “Sharm El Sheikh is exploiting benefit of the opportunities provided by Information and Communication Technologies for marketing” ranked first with a mean and standard deviation (mean=4.60, standard deviation = 0.494) compared with the total instrument mean and the standard deviation. The item “Sharm El Sheikh is exploiting benefit of the opportunities provided by Information and Communication Technologies for better information concerning Attraction” ranked last reached a mean (3.77) and the standard deviation was (1.240) compared with the mean and standard deviation of the total instrument.

Fifth Section: Use of technologies and new process management and marketing in Smart Tourism Destinations

Table 7: Use of technologies and new process management and marketing in Smart Tourism Destinations

Variables	SD	D	N	A	SA	Mean	standard deviation	Rank
Placement of sensors in tourist areas	0	0	6.7	61.7	31.7	4.25	0.571	14
Marketing actions on social networks	0	0	0	68.3	31.7	4.32	0.469	11
GPS Systems	0	0	0	56.7	43.3	4.43	0.500	7
Relational marketing system	0	0	16.7	11.7	71.7	4.55	0.769	4
Business intelligence System at destination	0	0	6.7	58.3	35	4.28	0.585	12
Online reservation centers	0	0	0	75	25	4.26	0.437	13
Mobile applications (app)	0	0	0	63.3	36.7	4.37	0.486	9
Virtual assistant in the website	0	0	13.3	21.7	65	4.52	0.725	5
Augmented reality (AR)	1.7	3.3	3.3	41.7	50	4.35	0.840	10
Online surveys with destination companies	0	0	3.3	46.7	50	4.47	0.566	6

Online surveys with tourists	3.3	6.7	5	33.3	51.7	4.23	1.047	15
QR codes	0	6.7	3.3	55	35	4.18	0.792	16
Totens Touchscreen	3.3	13.3	0	50	33.3	3.97	1.089	17
Wi-Fi with free access in public spaces	0	0	13.3	31.7	55	4.42	0.720	8
Wi-Fi with free access in tourist information centers	0	0	0	40	60	4.60	0.494	3
Video guides	0	0	6.7	16.7	76.6	4.70	0.591	2
Audio guides	0	0	0	26.7	73.3	4.73	0.446	1

The detailed examination of the results presented in Table (7) reveals the respondents' responses pertaining to use of technologies and new process management and marketing in smart tourism destinations. The average score resulted with a mean of 4.39. This indicates that majority of the cases tend to mark on the middle of the scale on a 1 to 5 range. However, most of the items resulted with a slightly higher mean than 4 indicating the agreeableness of the respondents on those items, as imperative for using of technologies and new process management and marketing in smart tourism destinations. The highest mean values for using of technologies and new process management and marketing in smart tourism destinations emerged for the item "Audio guides" (mean = 4.73, standard deviation =0.446), followed by "Video guides" (mean = 4.70, standard deviation =0.591), whereas, the lowest mean value for this construct is for the item "Totens Touchscreen" (mean = 3.97, standard deviation =1.089) followed by "QR codes" (mean = 4.18, standard deviation =0.792).

Sixth Section: Tourism applications in smart tourism destinations

Table 8: Tourism applications in smart tourism destinations

Variables	SD	D	N	A	SA	Mean	standard deviation	Rank
Augmented reality (AR) allows tourists to expertise digital recreation of tourism sites and time travel.	0	6.7	0	63.3	30	4.17	0.740	4
Vehicle tracking system offers a period of time information of transport network and might be distributed to end-user devices.	3.3	20	0	45	31.7	3.82	1.186	5
Hotel should capable in predicting energy demand for building and perform energy audits based mostly on their environment management.	0	0	13.3	45	41.7	4.28	0.691	3
NFC tags and QR codes to access information concerning near points of interest through mobile	0	0	0	35	65	4.65	0.481	1

devices.								
Tourists are ready to register their complaints through a Complaints Management System that supported by numerous ICT _s channels	0	0	6.7	25	68.3	4.62	0.613	2

Table (8) presents the means and standard deviations of tourism applications in smart tourism destinations, where the means ranged between (4.65-3.82), compared with the total instrument mean for the domain (4.31) the item “NFC tags and QR codes to access information concerning near points of interest through mobile devices” ranked first with a mean and standard deviation (mean=4.65, standard deviation = 0.481) compared with the total instrument mean and the standard deviation. The item “Vehicle tracking system offers a period of time information of transport network and might be distributed to end-user devices, ranked last reached a mean (3.82) and the standard deviation was (1.186) compared with the mean and standard deviation of the total instrument.

Seventh Section: Barriers to Become Smart Tourism Destinations

Table 9: Barriers to Become Smart Tourism Destinations

Variables	SD	D	N	A	SA	Mean	standard deviation	Rank
Issues emerging from current laws	0	6.7	5	46.7	41.7	4.23	0.831	6
Difficulty accessing the internet	1.7	18.3	15	40	25	3.68	1.097	10
deficiency of collaboration between the destinations	3.3	20	10	26.7	40	3.80	1.260	8
deficiency of understanding of the concept of Smart Tourism Destinations	0	1.7	18.3	5	75	4.53	0.853	2
Insufficient qualification level	0	0	15	20	65	4.50	0.748	3
deficiency of staff	0	6.7	3.3	13.3	76.7	4.60	0.848	1
Low collaboration between civil departments	0	10	13.3	33.3	43.3	4.10	0.986	7
Low public-private collaboration	0	4	11.7	25	56.7	4.32	0.930	4
Restricted Budget	1.7	3.3	46.7	18.3	30	3.72	0.993	9
deficiency of well-defined strategy	0	13.3	10	11.7	65	4.28	1.106	5
Tourism Demand does not utilize the internet and Information and Communication Technologies	23.3	10	11.7	38.3	16.7	3.15	1.448	11

The detailed examination of the results presented in Table (9) reveals the respondents’ responses pertaining to barriers to become smart tourism destinations. The average score resulted with a mean of 4.08. This indicates that majority of the cases tend to mark on the middle of the scale on a 1 to 5 range. However, most of the items resulted with a slightly higher mean than 4 indicating the agreeableness of the respondents on those items, as imperative barriers to become smart tourism destinations. The highest mean values for barriers to become smart tourism destinations

emerged for the item “deficiency of staff” (mean = 4.60, standard deviation =0.848), followed by “deficiency of understanding of the concept of Smart Tourism Destinations” (mean = 4.53, standard deviation =0.853), whereas, the lowest mean value for this construct is for the item “Tourism Demand does not utilize the internet and Information and Communication Technologies” (mean = 3.15, standard deviation =1.448) followed by “Difficulty accessing the internet” (mean = 3.68, standard deviation =1.097).

Eighth Section: Opportunities to become a smart tourism destination

Table 10: Opportunities to become a smart tourism destination

Variables	SD	D	N	A	SA	Mean	standard deviation	Rank
High utilization of internet by Travel agencies	10	0	10	28.3	51.7	4.12	1.236	6
Rising utilization of smartphones during trips/vacations	6.7	10	11.7	1.7	70	4.15	1.347	5
Possibility of a network of municipalities as a platform for collaboration	0	0	5	30	65	4.60	0.588	1
Easy access to the internet for tourists	1.7	15	5	20	58.3	4.18	1.172	4
Rising utilization of social networks during trips	0	6.7	8.3	11.7	73.3	4.52	0.911	2
Information and communication technologies do not need a lot of investment	5	5	11.7	21.7	56.7	4.20	1.147	3

Table (10) presents the means and standard deviations of opportunities to become a smart tourism destination, where the means ranged between (4.60-4.12), compared with the total instrument mean for the domain (4.30) the item “Possibility of a network of municipalities as a platform for collaboration” ranked first with a mean and standard deviation (mean=4.60, standard deviation = 0.588) compared with the total instrument mean and the standard deviation. The item “High utilization of internet by Travel agencies”, ranked last reached a mean (4.12) and the standard deviation was (1.236) compared with the mean and standard deviation of the total instrument.

Summary and Conclusion

The real sense of smart tourism destinations is to concentrate on tourists’ requirements by combining the ICT with casual culture and tourist innovation industry in order to promote tourism service quality, enhance tourism management and expansion industry scale to a broader extent (Huang et al. 2012). The priorities of smart tourism destinations construction are to improve tourists’ travel expertise; to offer more intelligent platform both to gather and distribute information within destinations; to facilitate efficient customize of tourism resources; and to incorporates tourism suppliers at each small and macro level attending to make sure that like advantage from this sector is well distributed to local society (Rong 2018).

In the light of his findings from the theoretical and field studies, the researchers developed a strategy to convert Sharm el-Sheikh city into a smart tourism destination.

Services offered by smart tourism destinations

1. Provide visitors with a three-dimensional advanced visit control, giving data straightforwardly or by implication.
2. Virtual visits upheld by 3D PC advances.
3. Identify social and traveler courses in physical and virtual areas.
4. Internet access for sightseers in noteworthy and diversion regions.

Technical requirements smart tourism destinations :

Digital techniques are utilized to develop media content that contributes to interactive tourism. This content is available on mobile application and may be utilized for tourism guidance. These techniques are:

- Global Positioning system (GPS);
 - Multimedia content, voice and image;
 - Worldwide Interoperability for Microwave Access (Wi-MAX) is a family of wireless broadband communication
 - Magnetic sensors for steering.
- Multimedia tools additionally contribute to the preparation of explanatory materials to illustrate natural and tourist attractions.

Sharm El-Sheikh as a smart tourism destinations application methodology

Preparatory phase: This phase includes several sequential steps, namely:

1. The selection stage of the study case: the city of Sharm el Sheikh was chosen due to its excellence and value of tourism and natural attractions.
2. Data collection: This phase includes the collection of information about the city and includes several studies, namely:
 - The integrated plan to develop the city of Sharm el Sheikh to become a smart tourist destination.
 - Egyptian Ministry of Tourism website.

Utility Identification phase: All utilities (software and simulation methods) are selected at this stage, so that they meet the requirements.

1. GIS software.
2. Three dimensional modeling tools.
3. Web site Management System

Operational phase: This phase includes several steps in the processing of data obtained in the preparatory phase, to display the data in an interactive manner.

1. The operational stage utilizing the GIS program, through which the illustrations and manual diagrams are changed over into bi-and triple-measurement.
2. Operational stage utilizing three dimensional displaying instruments: at this stage the sights and characteristic attractions are demonstrate prompted set up a reproduction of common attractions, virtual visits.
3. The operational stage utilizing the site Management framework: (Word Press) the past information is shown in a site that speaks to the last item.

This data can be common and civilizational attractions locales important to guests in the city, for example, visitor resorts, inns, eateries, meeting corridors, shopping centers, banking administrations and business occasions.

This research investigates the development of Sharm El-Sheikh as a smart tourism destination. This research used the descriptive analytical approach, where a questionnaire was prepared and distributed to a random sample of seventy five (75) of experts in Information and communication technologies and Academic experts in the tourism sector. Different tests were applied, including reliability test and Frequencies, Percentages, Means, and Standard Deviation (SD): To describe the characteristics of the study population of the functional variables, and to determine the responses of its members towards the study axes. The following results were obtained.

1. The findings from the distributed questionnaires revealed that the highest mean values for assessing concept of smart tourism destinations emerged for the item “The composition of a smart tourism destination is vital to being progressively successful and decreasing expenses” (mean = 4.40, standard deviation =1.219).
2. The findings from the distributed questionnaires revealed that The highest mean values for Current Situation of Smart Tourism Destinations the item “Sharm El Sheikh can be considered sustainable destination” ranked first with a mean and standard deviation (mean=4.28, standard deviation = 0.490).
3. The findings from the distributed questionnaires revealed that the highest mean values for using of Information and Communication Technologies the item “Sharm El Sheikh is exploiting benefit of the opportunities provided by Information and Communication Technologies for marketing” ranked first with a mean and standard deviation (mean=4.60, standard deviation = 0.494).
4. The findings from the distributed questionnaires revealed that the highest mean values for using of technologies and new process management and marketing in smart tourism destinations emerged for the item “Audio guides” (mean = 4.73, standard deviation =0.446).
5. The findings from the distributed questionnaires revealed that the highest mean values for tourism applications in smart tourism destinations the item “NFC tags and QR codes to access information concerning near points of interest through mobile devices” ranked first with a mean and standard deviation (mean=4.65, standard deviation = 0.481).
6. The findings from the distributed questionnaires revealed that the highest mean values for barriers to become smart tourism destinations emerged for the item “deficiency of staff” (mean = 4.60, standard deviation =0.848).
7. The findings from the distributed questionnaires revealed that The highest mean values for opportunities to become a smart tourism destination the item “Possibility of a network of municipalities as a platform for collaboration” ranked first with a mean and standard deviation (mean=4.60, standard deviation = 0.588).

Recommendations

- Egyptian Ministry of Tourism should strengthen the development of Smart Tourism Destinations to enhance competitiveness of Egypt as the world tourism destination.
- Smart tourism destinations should be use of networks and technologies more effectively and efficiently. Training programs should also be considered to better utilize tools and techniques needed, to establish such kind of destinations.
- Smart tourism destinations applications should be compatible with local requirements, and accessible.

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