

## Promoting Accessible Tourism in Egypt through IoT Technology

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### ARTICLE INFO

### ABSTRACT

#### Keywords:

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Egyptian travel agencies should be able to provide services in accordance with the needs of people with disabilities. This research aims to propose a mobile application for Egyptian travel agencies which depends on IoT technology in order to allow them to provide suitable accessible tourism activities. Additionally, it helps to overcome some problems that prevent Egyptian travel agencies from providing their services for people with disabilities to participate in tourism activities. A survey has been conducted with travel agencies in Cairo from August 2020 through November 2020. This study has focused on all categories of travel agencies. According to the Egyptian Travel Agent Association ETAA (2019), Cairo has encompassed 1275 travel agencies. A total of 126 travel agencies, approximately 10 % of the whole population, have been selected. The main result of the research indicates that it is better for travel agencies to apply the mobile app based on IoT technology to meet disabled people's needs and requirements.

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### Introduction

Accessibility is a central element of any responsible and sustainable development policy. It represents human rights imperative and an exceptional business opportunity. In this context, accessible tourism benefits people with disabilities and all the society as well. So, it's considered a social right for both citizens and visitors (Buhalis et al., 2012).

Accessibility is a means of ensuring that people with special needs are able to exercise their rights appropriately and face social isolation by fully participating in society on equal terms with others (Munch and Ulrich, 2011).

A person with a disability is a person who cannot exercise all his or her rights in society, particularly his or her rights to travel or enjoy other tourism services as a result of a temporary or a permanent disability. Moreover, people with disabilities include those who have long-term physical, mental, intellectual or sensory impairments. People with temporary disabilities are people with crutches during a temporary period, the elderly, people carrying many bags, small children or people who are big size or dwarfs (Olkin, 2012).

**Disabled people can be specified as follows:**

- a) people with locomotion limitations
- b) people with sensory limitations
- c) people with speech limitations
- d) people with cognitive limitations
- e) people with mental limitations (Verkehr and Stadtentwicklung, 2000).

Although, one billion or 15% of the world's population live with a form of disability (The World Bank, 2019), a few examples of good practices in accessible tourism have been implemented. Those people with disabilities wish to enjoy their holidays with their families and friends. All over the world, rights of people with disabilities have been enhanced to equal participation in tourism. As a result, increased demand for accessible tourism offerings and products and service changes will occur.

According to Ozogul and Baran (2016), tourism is a right for all people. Therefore, it is necessary that Egyptian travel agencies must implement appropriate applications, regulations and standards to support and serve accessible tourism. Technological advancements have made tourism to witness a lot of changes from time to time. IoT is going to impact tourism industry through connecte devices. IoT technology allows to collect and utilize data by all stakeholders, serve tourists with all of their requirements, make communication easier and understand behavior and shopping patterns of the tourist (Verma and Shukla, 2019).

Egyptian travel agencies are looking forward to developing their bussiness in the coming years. Therefore, they should take into account accessible tourism since it is still relatively a niche market in the Middle East region. there is great potential in making Egypt one of destinations barrier-free in the region.

The importance of the research lies in assessing the ability of Egyptian travel agencies to provide services to the disabled and making sure that all people, regardless of their physical or special needs, are able to use and enjoy the available amenities in an equitable manner.

**Research Objectives**

1. Identify barriers to the introduction of accessible tourism in Egypt.
2. Study IoT technology and Determine its requirements.
3. Propose mobile application for Egyptian travel agencies that depends on IoT technology to improve accessible tourism.
4. Suggest recommendations regarding the Egyptian travel agencies on how to accelerate the introduction of accessible tourism based on IoT technology.

**Accessible Tourism and IoT Technology**

Accessible tourism is also called access tourism, universal tourism, inclusive tourism and barrier-free tourism. It enables people with access requirement to enjoy tourism

experiences (Buhails and Darcy, 2011). Craddock et al. (2018:266) have defined accessible tourism as:

“A form of tourism that involves collaborative processes between stakeholders that enables people with access requirements, including mobility, vision, hearing and cognitive dimensions of access, to function independently and with equity and dignity through the delivery of universally designed tourism products, services and environments”.

Souca (2010) has stated that accessible tourism includes any segment of the market that needs accessing a tourism experience with ease such as seniors that may prefer walking up a ramp than going up a large number of stairs and those with any type of disability, who will need tourism facilities with continuous pathways, tactile surfaces and clear signage.

Accessible tourism needs a special cooperation process among the components of tourism industry, whether governmental and non governmental, such as : stakeholders, governments, agencies, tour-operators and tourists themselves, including disabled people and their organization (Buhails and Darcy, 2011).

A successful tourism product requires effective partnerships and cooperation across many sectors at all levels. From idea to implementation, a single destination visit normally involves many factors including accessing information, long-distance travel of various means of transport, local transportation, accommodation, shopping, and dining. Therefore, The positive impact of accessible tourism is not limited to tourists only, but extends to the community as a whole (Nyanjom et al., 2018).

Internet of things (IoT) is the technology that connects devices with each other via the internet by installing sensors to collect and disseminate data and make the analysis easier, more accurate and in actual time. According to International Telecommunication Union (ITU) (2012: 1), The IoT can be defined as “a global infrastructure for the information society, enabling advanced services by interconnecting (physical and virtual) things based on existing and evolving interoperable information and communication technologies (ICT).”

IoT technology provides the disabled with support and assistance in order to achieve a good quality of life and allow them to participate in tourism activities. This attitude leads to increase their autonomy and self-confidence.

IoT aims to understand the needs of people with disabilities and their stimuli to travel. In addition, IoT demonstrates how tourists with disabilities are able to make decisions to choose accessible travel products (Nitti et al., 2018). The way to promote an effective and sustainable is to provide needs of disabled tourists by:

- a) Accurately collecting data,
- b) Using allocation control,
- c) Travelling smoothly,

- d) providing detailed understanding of different needs of people with disabilities through real data analysis,
- e) making immediate decisions in right time,
- f) Enhancing user experience and service efficiency,
- g) and easily monitoring the quality of services.

Despite the role of IoT technology in improving accessible tourism, it faces many challenges such as data security through electronic attacks, high cost, lack of sufficient knowledge. The data will not be used unless it is analyzed correctly, and IoT cannot be applied unless all cities are able to call it smart city (Verma and Shukla, 2019).

#### **Challenges that confront the disabled may include:**

1. Untrained professional staff capable of informing and advising on accessibility issues
2. Inaccessible booking services and related websites.
3. Lack of accessible airports and transfer facilities and services.
4. Unavailability of adapting and accessible hotel rooms, restaurants, shops, toilets and public places.
5. Inaccessible streets and transport services.
6. Unavailable information on accessible facilities, services, equipment rentals and tourist attractions.

#### **Accessible Tourism Value Chain**

This service value chain consisting of several parts can be subdivided into the following elements:

- a) Travel preparation including preparation, provision of information, booking.
- b) Travel action including journey to a destination, arrival and orientation, accommodation, catering, leisure time and sports, service and assistance, entertainment and culture, tours and shopping, return journey.
- c) Travel post-processing involving memories and confirmation (Rebstock, 2010).

In general, people with disabilities have the same travel requirements as ordinary people; however, a person with disabilities will face obstacles which are different from those that ordinary people may face while making a trip.

Thus, disabled people make different demands to tourism value chain. So, it's very important not to forget one of these chain links, because "a journey is like a chain" (Evail, 2018).

### Benefits of Accessible Tourism

In general, accessible tourism has a remarkable effect on all other sectors within tourist destinations, whether directly through tourism service providers or indirectly through local industries that serve the tourism sector.

One of the most important social impacts of accessible tourism is that it enables local disabled people to participate more effectively in society by providing accessible facilities of tourism purposes that allow them to realize active participation in society (Moura *et al.*, 2018).

The accessible tour will attract tourists from developed countries where this segment of tourism is in demand, This is evidenced by the increase in the number of organizations for the disabled that make them aware of their rights to travel and enjoy like others.

In addition, it will encourage domestic tourism since people with disabilities prefer to travel with friends or family for short distances that are reachable by various means of transport (Nyanjom *et al.*, 2018). As the following figure, travel agencies can achieve many benefits by meeting the needs of the disabled. These benefits include: improve quality, economic sustainability, reduce seasonality, more competitive and new market opportunities. (Figure No.1)



**Fig.1.** Benefits of Accessible Tourism

**Source:** The Authors

### Barriers of Accessible Tourism

Travel agencies have to understand barriers that face applied accessible tourism. These barriers are divided into three categories that have addressed physical access, attitudinal barriers and lack of information.

#### 1) Physical access

Inaccessible environment is a major barrier to people with disabilities. Limited physical access includes inaccessible transportations, accommodation and attractions.

Accessible transport includes two sides. These sides are arriving and leaving the destination as well as travelling within the destination during the tour. Accessibility features for disabled travellers in tourist attractions include many accessibility attributes such as, stair case, parking, access ramps, paths, elevators, sidewalks and rest rooms. In addition, other neglected aspects are accessible pathways from the hotel to attractions, events and amenities. The lack of accessible pathways prevents disabled people from enjoying an independent and complete tourism experience.

## **2) Attitudinal barriers**

Negative attitudes represent a major barrier that faces disabled people when they are involved in tourism participation. For example, some travel agencies believe that a disability excludes people from travelling and enjoying tourism experiences. Physical environment can be reduced through change in attitudes and increase awareness.

## **3) Lack of tourism information**

The lack of correct information, general availability of information, lack of accuracy and the format of presented information are considered major barriers. Travel agencies must provide detailed information for reaching the destination, returning home, moving around the destination and checking availability of accessible accommodation, attractions and other amenities.

Travel agencies must support all tourists at all travel stages to improve service quality and comply with customers' need (Eichhorn and Buhalis, 2010).

## **IoT Technology Key Requirements**

Key requirements for IoT technology are:

- a) Devices in IoT platforms will be readable and controllable over the internet. Therefore, networks must have strong built-in security in order to avoid vulnerability.
- b) IoT platform must have flexible, configuration access and authorization control and different levels of access to the data.
- c) IoT platform must comply with networking and device agnosticism. Configuration changes should give the freedom to hardware developers in order to develop their products without being limited by preset settings.
- d) IoT includes a large number of devices and sensors placed geographically at large distances. So, IoT platform must allow the remote management of these devices.
- e) IoT is more than a remote monitor of incoming data. IoT platform must be easily setup and defined on any type of devices.

## **The Design of the Egyptian Travel Agency's IoT based Mobile App for Accessible Tourism**

The main objective of this research is to create a new mobile application with IoT technology for the Egyptian travel agencies with suggested name ICanTravel App. This App allows travelers with disabilities to find suitable destination with accessible tourism activities. Therefore, they will be able to practice tourism activities in reality or virtual reality by using special tools.

**The main requirements of the App are:**

- a) The app should be designed for Android devices. It should be designed to suit use of portable devices with Android operating system since about 75% of devices are powered by this system in April 2019.
- b) The app should also contain pictures of tourism activities, so the information shown in the app should be complete and avoid overload pictures.
- c) The IoT environments always need the Internet connection. The app should be able to operate without need to download data. In other words, it must work even if the device has no connectivity. This may be important in tourist areas that are not covered by a mobile network.
- d) The app should be able to update its information when the device gains connectivity. In this way, annual updates should be visible in the app without the need to user intervention.
- e) The application should be designed to be easily used by users especially the disabled in order to help them with easy to access information.
- f) The app use of virtualization technologies enables users to interact with virtual objects.
- g) The IoT technology and its implementation as an IOT platform should be able to address the previously listed requirements. To deal with these requirements, the app must use virtualization technologies to exchange every real-world object participating in the destination with virtual one on the app.

**The App Features**

The app will target people with specific and situational needs when traveling locally nearby or abroad.

These people include families with babies, who have long-term physical, mental, intellectual or sensory impairments , people with temporary disabilities like those with crutches during a temporary period, the elderly, people carrying many bags, small children or people who are big size or dwarfs and people with special dietary needs. These different kinds of people require a customized search, scheduling and booking site that factors in their requirements before or during their journey.

The app will be designed with an easy interface to give a quick access to important details by opening the most useful and relevant information. Additionally, it provides the user with a range of customized search options where one simply inputs his/her needs i.e., accessible restrooms, roads , hotels and notifications appear with a predefined radius ,500 meters being the default option.

The app will help people with disabilities and all other people to find information on accessible services like: checking luggage on a plane, booking a room... etc.

Through virtualization, physical devices gain augmented capabilities and describe characteristics of every physical object with semantic technologies. As a result, the

disabled will be able to interact with other virtual objects, identify, analyze, and manage the context related to an object's surroundings and make the right decision.

After all, the app might help addressing some travel limitations, and emerging technologies might increase mobility for people with disabilities by making on-demand transportation and door-to-door service much more available. At the same time, people with disabilities use existing technologies less often.

### **The proposed Design of ICanTravel App**

The app is useful to maximize the benefit of services of Egyptian travel agencies for people with disabilities based on a repository of Points of Interest (PoIs), each one of them is represented on the platform of the app.

- 1- **My Profile:** The user will enter all his/her personal information and the type of disability with all approved medical certificates, if required, so that the application can determine suitable tourism services for him/her and. This attitude avoids displaying any activities that do not match the nature of disability.
- 2- **My Trips :** All previous trips will be recorded in this section. This information is used only if the customer requests repeating one of these previous tourist experiences.
- 3- **My Map:** This section will be used to identify the current place and how it is possible to access it and move to another place entered by writing or voice.
- 4- **My Booking :** Through this part of the application, all bookings have already been made, whether for specific trips or hotels or just travel tickets. In addition, it will send notifications to customers about their appointments as a reminder.
- 5- **My Search:** This feature is the main advantage of this application since IoT technology with the Points of Interest categories can track information that the customer has searched for in the past and shows services that are favorable for him/ her. This feature will be developed by representing the PoI related to travel agency services and every information that can be important for the user, such as his/her particular needs, possible routes to reach them....etc. Then the app will recommend all matched services with the user's preferences. Moreover, the information available on the platform are regularly taken, stored and updated in the back end of the mobile application.
- 6- **My Wallet :** It is a remarkable feature added to the main features of the app since carrying cash while traveling may not be always a good idea considering exchange hassle and of course possibility of losing money.

The additional feature which is facilitating payments digitally allows an easy mode of transaction and ensures a safe travel. Users can shop and make their payment using digital modes of payment, and they can make payments for reservations of hotels and travel online. In addition, they prefer to pay online since it is time saving and a lot secure. Therefore, if the app has an online payment feature, it will be a beneficial experience to customers.

The most popular mobile payment methods are paying by credit cards, and most people pay on these platforms using barcodes, known as QR codes, on their phones.

Few places accept foreign credit cards ,so tourists have few options to pay for their purchases . However, this attitude is about to change.

- 7- **My assistance** : The app can be available to disabled customers for 24/7.A customer can visit the app any time and check all details of the tour and plan a tour as per their convenient time. The main benefit of this feature is that travelers can review and book their tour even if the travel agency is closed in non-working hours.

## **Results and Discussion**

A survey has been conducted with travel agencies in Cairo from August 2020 to November 2020. This study has focused on all categories of travel agencies. According to Egyptian Travel Agent Association ETAA (2019), Cairo has encompassed 1275 travel agencies. A total of 126 travel agencies ,appromiximty10 % of the whole population have been selected.

There are two reasons for choosing travel agencies in Cairo . First, Cairo is the capital of Egypt. It includes the largest number of travel agencies in Egypt, so it has financial and technological capabilities. second, it is one of the promising cities that can be transformed into a smart city , and this point is considered one of the most important requirement to implement IoT. These two major reasons indicate possibility of implementing the application effectively.

The questionnaire form has involved two main parts. The first part aims to find out if Egyptian travel agencies provide their services to people with special needs or not, the percentage of them and the most types of disability dealt with.

While the second one aims to identify the extent of capabilities of these agencies in creating an application using IoT technology that is suitable for people with disabilities ,and what the problems that may face them to submit this application are.

### **1- The Ability of Travel Agency to Provide Services for People with Disabilities**

According to the tabulated data, the majority ,54%, of the participated travel agencies have confirmed that they have offered services for people with special needs because this segment is in demand in the last 10 decades. Moreover, there has been an increased focus on tourism sector's obligations to ensure that people with disabilities are able to exercise their right to enjoy leisure, sport and tourism under the same conditions as other people do. It is worthy of note that 46% of total sample have not offered any services to the disabled, so they haven't answered the two following questions.

**Table 1**

The travel agency's ability to provide services for people with disabilities

	Frequency	Percent
No	58	46.0
Yes	68	54.0
Total	126	100.0

## 2- The Percentage of Disabled People that the Travel Agency Deals with Annually

The aim of this question is to determine the percentage of disabled people that the travel agency deals with every year.

**Table 2**

The percentage of disabled people that the travel agency deals with annually

	Frequency	Percent
travel agencies do not provide services for people with disabilities	58	46.0
less than 5%	56	44.5
5-10%	10	7.9
more than 10%	2	1.6
Total	126	100.0

As depicted in table 2, about half of respondents 44.5% have dealt with less than 5% of people with special needs. Only 7.9% of participants have provided their services to a rate ranging from 5 to 10% of the disabled.

## 3- Types of Disabilities which Travel Agency Provides Services to

The aim of this question is to show all kinds of disabilities which the travel agency can deal with. These disabilities can be divided into locomotion, sensory, speech, cognitive and mental limitations (Verkehr and Stadtentwicklung, 2000).

The result explains that about 17% of respondents have dealt with all of these types. In addition, approximately 10% have offered services for those who have a physical limitation.

## 4- Services that the Travel Agency Provide to People with Disabilities

The presence of IoT-based mobile application will lead to an increase in communication between these travel agencies and people with disabilities. According to Nitti *et al.* (2018) IoT aims to understand the needs of people with disabilities and their stimuli to travel. Moreover, it aims to understand how tourists with disabilities make decisions to choose accessible travel products.

**Table 3**

Services that the travel agency provide to people with disabilities

	Frequency	Percent
travel agencies that do not provide services for people with disabilities	58	46
All services offered by the travel agency	62	49.2
Transportation and accommodation services	6	4.8
Total	126	100.0

The result shows that 49.2% of respondents have answered that their travel agencies provide all services offered by them to people with disabilities.

### 5- The Availability of a Mobile Application in Travel Agencies

This question aims to identify whether or not the mobile application is available in the sample.

**Table 4**

The travel agency has a mobile application to provide its services

	Frequency	Percent
Agree	46	36.5
Disagree	76	60.3
Neutral	4	3.2
Total	126	100.0

Most of respondents 60.3% have mentioned that they do not have a mobile application to provide their services which is a challenge to IoT-based mobile application.

### 6- Financial Capabilities to Implement the IoT-based Mobile Application in Travel Agencies

The goal of this question is to know whether or not travel agencies have the financial ability to carry out the IoT-based mobile application for disabilities.

**Table 5**

The travel Agency has financial capabilities to implement the IoT-based mobile application

	Frequency	Percent
Agree	24	19.0
Disagree	34	27.0
Neutral	68	54.0
Total	126	100.0

Data tabulated above have shown that the majority of respondents ,54%, have been neutral. 19% of respondents have indicated that they have financial capabilities to implement the IoT-based mobile application.

### 7- The Travel Agency has Technological Capabilities to Implement the IoT-based Mobile Application

The following question is to illustrate the technological ability of travel agencies to apply IoT-based mobile application.

**Table 6**

The Travel Agency has Technological Capabilities to Implement the IoT-based Mobile Application

	Frequency	Percent
Agree	26	20.6
Disagree	44	34.9
Neutral	56	44.4
Total	126	100.0

Data tabulated above have shown that the majority of respondents ,44%, are neutral. 34.9% of respondents have indicated that they do not have financial capabilities to implement the IoT-based mobile application. This is one of the challenges facing the implementation of this application.

### 8- Availability of Experts in Using the IoT Technology

The result of this question shows that 28.6% of respondents have confirmed that travel agencies do not have the human expertise or skills to implement the IoT-based mobile application. As shown in the table, the majority ,52.4%, of respondents have been neutral. Therefore, travel agencies are not sure whether or not they have qualified employees to deal with this application.

### 9- Travel Agency's Ability to Provide Tourism Services for Disabled

According to results of this question, the majority of travel agencies with a percentage of 81% have agreed that the application will increase the travel agency's ability to provide services to people with disabilities .Only 7.9% have disagreed. They have considered that there is no need for the application and it doesn't affect services offered to their customers.

### 10- The Relationship between the IoT-Mobile based Application and Customer Loyalty

The results shows that 82.5% of respondents have agreed that this application would help the travel agency to gain customer loyalty and achieve its sustainability. However, the minority of 4.8% have disagreed. They have suggested that there is no relation between applying the application and gaining customer loyalty. 12.7% have been neutral.

### 11- The IoT Mobile-based Application and Attracting People with and without Disabilities

The numbers indicate that 82.5% of respondents have agreed that the travel agency would benefit from this application in attracting people with disabilities and ordinary people. 6.4% have disagreed while 11.1% have been neutral.

### 12- The IoT Mobile-based Application and New Markets

The results assures that more than three quarters ,84.2%, of travel agencies in the survey have agreed that the IoT mobile-based application would lead to opening of

new markets and attracting new segments of customers with disabilities especially when applied properly. 6.3% have disagreed and 9.5% have been neutral.

### **13- The IoT Mobile-based Application and the Competitive Advantage**

The data collected illustrate that more than 76% of travel agencies in the survey have agreed that there is a positive relationship between applying the IoT mobile-based application and increasing the competitive advantage of the agency. 17.5% have been neutral while the minority with a percentage 6% have disagreed.

### **14- The IoT Mobile-based Application and Facing Implementation Problems**

The question has been designed to determine the problems that have been facing the travel agency to apply the IoT-based mobile application such as high cost of the app, special personnel and skills needed, security concerns, data amount, lack of technological infrastructure.....etc.

According to analysis, respondents' opinion about to what extent the travel agency can face problems when applying the IoT mobile-based application, represents that the majority of asked travel agencies, 66.3%, have agreed that there would be implementation problems, 22.5% have been neutral and 11.2% have disagreed.

The result declares that the largest percentage of the sample indicates that all presented problems are real problems. In addition, these problems impede the existence of application based IoT technology for people with disabilities.

This means that it is necessary to find appropriate solutions to these vital problems to enable Egyptian travel agencies to provide an application for people with disabilities using Internet of Things technology.

### **Conclusion**

According to the results and the findings of the survey, it can be concluded that accessible tourism is a new trend and the majority of travel agencies in the survey support applying IoT mobile-based application to attract and serve new segment of customers, those with disabilities.

Disabled people is a promising new segment that cannot be ignored and should be deliberated with all types of these people's disabilities. Applying the IoT mobile-based application creates new opportunities for travel agencies and those people.

The research presents a propose design of ICanTravel App which is based on IoT technology. The main goal of implementing this app is to provide tourism services to travelers with disabilities to enrich their travel experience.

Although the promising side of implementation the IoT mobile-based application, there are number of problems facing the implementation process that also ought to be considered, especially lack of technological infrastructure, special personnel and skills needed and high cost.

**Recommendations**

Applying to IoT mobile-based application in Egyptian travel agencies for promoting accessible tourism in Egypt.

Regarding travel agencies in Egypt, the following recommendations should be taken into consideration:

1. Continuous training and getting expertise from international specialized organizations.
2. Unifying the application for all agencies in Egypt.
3. Training personnel and getting certifications or specialized documents from people with disabilities to prove their disability.
4. Making infrastructure suitable for people with disabilities.
5. Making the application affordable and easy to use for the disabled.
6. Offering all necessary tourism services for the disabled people.
7. Securing online payment methods.
8. Making the application supervised by governmental authorities.
9. Making cooperation between travel agencies, tour operators and services providers to decrease the cost of the application.
10. Supporting travel agencies by governmental authorities.
11. Improving technological infrastructure.
12. Using mobile applications in all domains.
13. Solving financial issues involved with the application.
14. Training travel agency's staff to help people with disabilities to use the application.

**Bibliography**

- Buhalis, D., and Darcy, S., *Accessible Tourism Concepts and Issues*, 2011, Channel View Publications, UK/ USA/ Canada, p.p. 10,11, 291.
- Buhalis, D., and Darcy, S., Ambrose, I., *Best Practice in Accessible Tourism: Inclusion, Disability, Ageing Population and Tourism*, 2012, Channel View Publications, UK/ USA/ Canada, p.162.
- Craddock, G., Doran, C., McNutt, L., Rice, D., *Transforming Our World Through Design, Diversity and Education: Proceedings of Universal Design and Higher Education in Transformation Congress*, 2018, LOS Press, Amsterdam/ Berlin/ Washington, p. 266.
- Eichhorn, V., and Buhalis, D., *Accessibility: A Key Objective For The Tourism Industry*, 2010, Research Gate, Germany, p.p.5-14.
- ENAT, *Accessible Tourism in the Arab Region Forum*, Online, <http://www.enat.accessibletourism.org>, last access 17-8-2019.
- Evail, A., *Barriers and preferences to leisure activities for wheelchair users in historic places*, 2018, *International Journal of Tourism Space, Place and Environment*, Volume 20, 2018 - Issue 4: Inclusive Tourism, p.p 708-712.

- 
- GAATES, HELM – Hosting Egypt’s First Global Conference on Accessibility / Entaleq App, Online, <http://www.gaates.Global Alliance on Accessible Technologies and Environments.org>, last access 27-8-2019.
  - ILO and Red Sea Governorate, Egypt, Enhancing Tourism in Egypt by Reaching Persons with Disabilities. Competition on Accessible Tourism, 2016, Online, <http://www.ilo.org/addisababa/about-us/offices/cairo/lang--en/index.htm>, International Labour Organisation, last access 24-8-2019.
  - Moura, A. ,Kastenholz, E. and Pereira, A., Accessible tourism and its benefits for coping with stress, 2018, Journal of Policy Research in Tourism, Leisure and Events , Volume 10, 2018 - Issue 3: Social tourism at the crossroads, p.p 250-253.
  - Munch, H. and Ulrich, R. (Eds), The Long Tail of Tourism: Holiday Niches and their Impact on Mainstream Tourism, 2011, Springer Science & Business Media,Germany,p.159.
  - Nyanjom, A., Boxall, K. and Slaven, J., Towards inclusive tourism? Stakeholder collaboration in the development of accessible tourism, 2018, International Journal of Tourism Space, Place and Environment , Volume 20, 2018 - Issue 4: Inclusive Tourism, pp. 81- 685.
  - Olkin, R., What Psychotherapists Should Know About Disability, 2012, Guilford Press, New York/ London, p.65.
  - Ozogul, G., and Baran, G., 2016, Accessible Tourism: The Golden Key in The Future For The Specialized Travel Agencies, Journal of Tourism Futures, Vol.2 No.1, pp. 9,80.
  - Rebstock, M., “Success factors for the development of a Tourism for All approach in low mountain ranges - possible solutions and implementation difficulties on the basis of the Thuringian pilot project “model region for a barrier-free Tourism for All, 2010, in Kagermeier, A. and Willms, j. (eds.), Tourism Development in Low Mountain Ranges,USA , pp. 3–72.
  - Souca, L., Accessible Tourism – The Ignored Opportunity, 2010, Annals of Faculty of Economics, University of Oradea, Faculty of Economics, vol. 1(2), p. 1154.
  - Verkehr, B. and Stadtentwicklung, B., Citizen-friendly and Disability-friendly design of the street space - a handbook for planners and practitioners, 2000, Bad Homburg V. D., Berlin, p.45.

## تنشيط السياحة الميسرة الى مصر باستخدام تكنولوجيا انترنت الاشياء

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### الملخص

يهدف هذا البحث إلى تسويق السياحة الميسرة إلى مصر باستخدام تطبيق يعتمد على تكنولوجيا انترنت الاشياء IoT. يقترح البحث تنفيذ هذا التطبيق من أجل جذب الفئات المختلفة لذوي الإعاقة إلى مصر وتسهيل مشاركتهم في الأنشطة السياحية المختلفة لتعزيز التجربة السياحية لديهم. تم إعداد وتصميم استمارة استقصاء وجهت إلى وكالات السفر والسياحة في محافظة القاهرة، بجمهورية مصر العربية. تم توزيع مائة وستة وعشرون استمارة استقصاء بما يمثل عشرة في المائة تقريبا من إجمالي عدد وكالات السفر والسياحة المصرية في محافظة القاهرة (وفقا لغرفة وكالات السفر والسياحة المصرية أن عدد الشركات في محافظة القاهرة 1275 شركة) للتعرف على آرائهم ومقترحاتهم عن مدى إمكانية تنفيذ مثل هذا التطبيق والعوائق والتحديات التي قد تواجه التنفيذ. وقد اوضحت الدراسة أنه من الضروري تنفيذ هذا التطبيق لجذب هذه الفئة والتي أصبحت تمثل جزء لا يستهان به من الحركة السياحية الدولية وتوفير احتياجاتها السياحية المختلفة أثناء تواجدها داخل المقصد السياحي المصري والحد من التحديات التي تواجه هذه الشريحة السوقية الهامة.

### معلومات المقالة

#### الكلمات المفتاحية

تطبيقات الموبايل؛  
السياحة الميسرة؛  
انترنت الأشياء؛ ذوى  
الاحتياجات الخاصة.

### (JAAUTH)

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(2021)،  
ص 66-81.