

The impact of iBeacon's technique on tourist experience

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Abstract:

Smart techniques play a significant role in the tourism experience because of its ability to assist tourists at different stages of the tourism experience, including pre-trip (anticipatory) during trip (experiential), and after-trip (reflection) experiences. One example of smart techniques is iBeacons technique. iBeacons is small wireless transmitter that use low-energy Bluetooth technology to send signals to other smart devices nearby such as smartphones. It is one of the latest developments in location technology and proximity marketing. Simply, it connects and transmits information to smart devices making location-based searching and interaction easier and more accurate. It involves sending a relevant message at the correct time to convince a tourist to visit a certain destination and take a vacation, rather than use fliers and other paper-based ads. Customers benefit from simpler and more targeted ads as a result of this system. iBeacons technique has been recommended to adopt in tourism organizations due to its impact on visitors' satisfaction and providing them with accurate information. The main aim of this study is to explore the impact of iBeacon's technique on the tourist experience. The research applied the quantitative method represented in a questionnaire. The questionnaire was distributed to 500 domestic and international tourists. The research findings revealed that the iBeacons technique has a positive impact on the tourist experience. The study ended with presenting a set of recommendations for tourism organizations and tourism decision-makers. The study contributes to helping the destination policymakers by providing a set of suggestions were to support the application of the iBeacons technique in the Egyptian Destination.

Keywords: Smart techniques; iBeacons; Tourism destination, Tourist experience.

1. Introduction

The tourism industry and technology go hand in hand. Smart techniques, especially smartphone techniques, have become an essential element in the co-creation of tourists' experiences (Femenia and Neuhofer, 2018). Mobile techniques not only reconstruct the business of tourism but also change the nature of the tourists' experiences distinctively (Buhalis and Law, 2008). Smart techniques have become pervasive in electronic markets through many areas, including the financial sector, retail, and tourism. Smart techniques have influenced the tourism industry, and they continue to serve as the main drivers for tourism innovations (Alt and Klein, 2011). In addition, smart techniques have drastically transformed the way to develop and provide tourism products. Moreover, smart techniques reduce time and distance limitations which lead to good relations between consumers and suppliers (Atembe and Abdalla, 2015).

Several smart techniques such as smartphones, sensors, and iBeacons, as well as software and applications, artificial intelligence, big data, internet of everything (IoT), cloud computing, autonomous vehicles, and drones, have been used to support interoperability and interconnectivity (Sun et al., 2016). iBeacons technique refers to smart phone based local area communication service supporting functions such as text sending and mobile payment by locating a user within a close range. iBeacons allows diverse services such as object and context awareness, contents ignorance, indoor locating, auto-check in, and GeoFence. Also, if a user reaches the iBeacons-attached terminal within a few meters, a pre-determined signal is received and iBeacons locates the user based on the signal (Kim and Kim, 2016). Nowadays, iBeacons technology is known and developed; this technology has a great uses in tourism, such as contactless payment, toll collection, sharing of important information, access control, exchange of data between two smart devices (Dragović et al., 2018).

Dudhane and Pitambare (2015) discussed that the usage of the iBeacons technique can optimize customer experiences, improve business processes and generate more revenue. iBeacons can engage customers in the right place at the right time while offering utility and value. Therefore, tourism service providers can do partnerships with each other to rationalize customer experience and loyalty as a result of providing personalized offers and suggestions. iBeacons technology enables tourism organizations to receive important information from (potential) customers and send out valuable notifications to them based upon their exact location. In this way, it opens new horizons in creating new

guiding or marketing applications. In addition to using this technique in remote controlling and paying through your mobile phone. This may affect the tourist's experience in tourist destinations positively. To the author's knowledge, there's a lack of research studying iBeacons technology, especially in Egypt.

The research will be beneficial to the tourism industry, especially in Egypt, by improving the awareness of iBeacons techniques and guide the destination policymakers to draw policies and strategies to boost their application of new technology, which in turn, achieve tourists satisfaction and enrich their experience.

This research aimed to:

- a) Identify the advantages of applying iBeacons technique
- b) Measure the impact of applying iBeacons technique on tourist experience.

2. Literature review:

2.1 iBeacons services concept:

For the travel and tourism industry, customer acquisition is the key to success. With the number of price comparison platforms, there is high competitive pressure and price transparency. With the use of iBeacons technology in the travel and tourism industry; organizations can outstand competition with the help of its hyper-local and contextual capabilities. Mobile apps connected with location-based technologies can be fruitful to increase sales and attract customers (BLE Mobile Apps, 2018).

Nabben et al. (2016, p.18) defined iBeacons as "an emerging mobile technology, based on Bluetooth Low Energy (BLE) which enables smartphones apps to pinpoint their exact location, indoor or outdoor, with a level of accuracy down to a few centimeters. In addition, iBeacons allow organizations to receive important information from potential customers and send out valuable notifications to them based upon their exact location".

iBeacons are inexpensive, small and often battery-powered devices that can be discreetly placed in retail, entertainment, hospitality, transport, healthcare, outdoor media, and private locations to enable a wide variety of use cases. For example, iBeacons allow tourism organizations to receive important information from tourists and send out valuable notifications to them based upon their exact location (Dalkılıç et al., 2017).

On one hand, iBeacons service refers to smartphone-based local area communication service supporting functions such as text sending and mobile payment by locating a user within a close range. In addition, iBeacons allow diverse services such as object and context awareness, contents ignorance, indoor locating, auto-check in, and GeoFence. On the other hand, the communication distance of BLE iBeacons device is from 5 ~ 50 m. Data

transmission is possible without a separate action of recognition (tagging). It can provide more precise location information than GPS scheme. Moreover, it adopted low-energy technology to sustain the battery for 1-2 days without charging. In addition, diverse information and services based on area locating and communication technologies emerge as a future key technology that will enable online-offline service convergence (Kim and Kim, 2016).

2.2 iBeacons technique in tourism:

iBeacons technology has been adopted in recent years between different sectors: such as retail, education, museums, tourism, etc. The retail industry is the leader in the implementation of iBeacons, but tourism also had an impact on the development of iBeacons technology as it enables travelers to navigate to their departure gate or area, find the closest restaurants and restrooms and locate nearby retailers. As well, tourists can receive location-aware alerts, including coupons and special promotions, from the airport and terminal retailers and restaurants, in addition, to alert travelers when it is time to go to the boarding gate (Babu, 2018)

Also, iBeacons provide tourists with flight notifications and gate updates. Airports using iBeacons can enhance the experience of their passengers through estimated time to the gate, duty-free promotions, and navigation maps. It provides hotel guests with easy-to-use and fast check-in. It defines the most loyal guests and automatically sends a greeting to their smartphones as they arrive or thank them for their stay as they depart. Moreover, tourists can easily navigate to their rooms or the hotel restaurant, fitness center, or swimming pool, as well as locate nearby stores and restaurants through iBeacons technique (Dragović et al., 2018).

Based on Babu (2018) iBeacons have immense value to both travelers as well as investors in the tourism industry. Firstly, travelers can now discover different experiences while they travel from easier airport navigation to discovering a new city through access to rich digital content on their mobile phones through iBeacons technology. Secondly, iBeacons are also of great value to investors in the tourism and hospitality industry. iBeacons, with their ability to store and retrieve customer data around physical locations, activities, time and personal interests, provide a huge window of opportunity to target customers with personalized and contextual experiences in order to ensure business success.

In addition, iBeacons technique helps tourists find the shortest check-in or other lines. Also, it is an essential advantage to identify travelers by name upon arriving and ask if they would like to order menu items they have

previously purchased. Moreover, iBeacons technology offers incentives to encourage previous tourists to return to the destination and its services (Hiramatsu et al., 2017).

2.3 Advantages of iBeacons technique

iBeacons is considered one of the most popular technologies implemented in indoor navigation. It has multiple strengths which allow tourism organizations to connect positively with their tourists (Sasaki et al., 2020).

Based on Jeon et al. (2018) the merits of iBeacons are; easy to install, as most don't need connectivity, providing accurate proximity information, even indoors, iBeacons hardware is inexpensive (cheap to implement, cheap to develop, and cheap to demo), running on batteries for several months to several years, depending on the configuration, very small and discreet.

More specifically, iBeacons work as a radio transmitter that has a range of 10 to 100 meters indoors. They are economical (from 200 to 2000 can be installed with minimal effort, determine an exact position up to one meter, and are supported by many operating systems and devices. It is also very energy efficient (Singh et al., 2015). In addition, it's suitable for indoor navigations (Uttarwar and Chong, 2017). See figure (1).

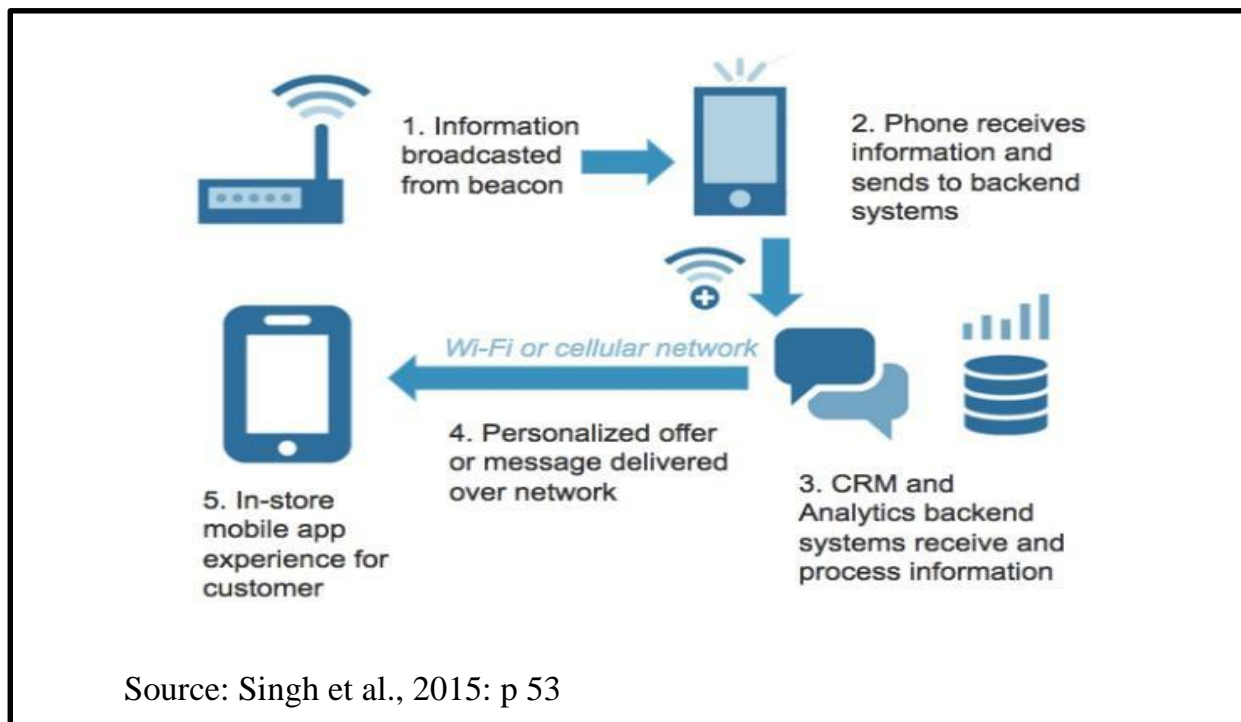


Fig (1): the way iBeacons work

Toledo et al. (2018) assured that iBeacons technology is also commonly used for advertising and marketing purposes. In that case, notifications with

advertising messages are sent to customers near the iBeacons area in order to provide users with information about offers or specific products depending on their location.

Also, iBeacons technology is considered one of the mobile ticketing solutions and offers several benefits, including enhancing flexibility, micro-location of passengers, good traveling experience and suitability to complex intermodal transport networks (Ferreira et al., 2020). Hiramatsu et al. (2016) assured that iBeacons technique not only provides a guide for a specific location but also explains the traditional customs and history of the area.

iBeacons can help tourists check the online prices or to obtain product information, providing customers with the information they seem to need at specific locations during their holiday and thus improve the overall tourist experience (Thamm et al., 2016). As well, iBeacons technology has the advantage of identifying more accurate positioning than GPS. Financial organizations provide their product information for users through the basic function of iBeacons, using an O2O (Online to Offline) marketing solution and, therefore, effectively enable customers to make relevant payments online and conduct their financial actions offline (Kwon et al., 2014).

2.4 Tourist experience:

Tourism experiences are fundamental to destination competitiveness and sustainability and assisting tourists in constructing their stories. Furthermore, tourism experience requires an improved understanding of the perception of consumers toward value by identifying specific characteristics (Lin et al., 2018). Experiences can be defined as "an integrated whole that affects customers emotionally, physically, intellectually, and spiritually" (Cetin and Dincer, 2014, p.183).

Experience dimensions can vary depending on the category of an offering (tangible products, intangible services, hedonic events), tourism experiences should be understood and measured with full consideration of the major products, services, atmosphere, and environments of a destination which are driven by the associated theme (Park, 2016).

Wang et al., (2017) divided the customer experience into 3 dimensions: brand experience; emotion experience, and functions experience. (Table 1).

Table (1): The Dimensions of the tourist experience

Dimension	Element	Measurement
Brand experience	Brand building	The experience of brand names, brand identity, brand reputation and brand awareness
	Marketing	The experience of sales and

	communications	advertisement
Emotion experience	Relax	Feel relaxed and alleviate the pressure and trouble when experienced
	Pleasure	Feel pleased or excited and bring surprise when experienced
Function experience	Website Experience	The experience of page design of website, product information, site speed and stability, convenience of browsing and purchasing, security mechanism
	Product Experience	The experience of the price, quality, package and kinds of product
	Service Experience	The experience of pre-sale service, after-sale service, logistic service, paying and personalized service

Adapted from: Wang et al., 2017, P.2.

2.5 The relationship between technology and tourist experience:

Smart techniques are a major contributing factor in enhancing the tourism product and achieving tourist satisfaction. In addition, they facilitate quick and immediate access to tourism products and services by potential tourists irrespective of their geographical location (Chevers and Spencer, 2017).

Stamboulis and Skayannis (2003, p.41) explain that "Tourist experience emerges from the interaction between destinations and tourists with destinations as 'theaters' at which experience takes place, and tourists as 'actors' who have to play their role". Today, tourists construct their experiences through technological tools and share their experiences through these technological tools in order to help potential consumers and relatives or keep tight and enduring social connections, among other motivations (Femenia and Neuhofer, 2018).

Smart techniques play important and differing roles in shaping the tourist experience in the three stages of the trip including pre-trip (pre-consumption), during-trip (consumption), and post-trip (post-consumption) stages (figure 2) (Wang et al., 2014; Tussyadiah and Wang, 2016).

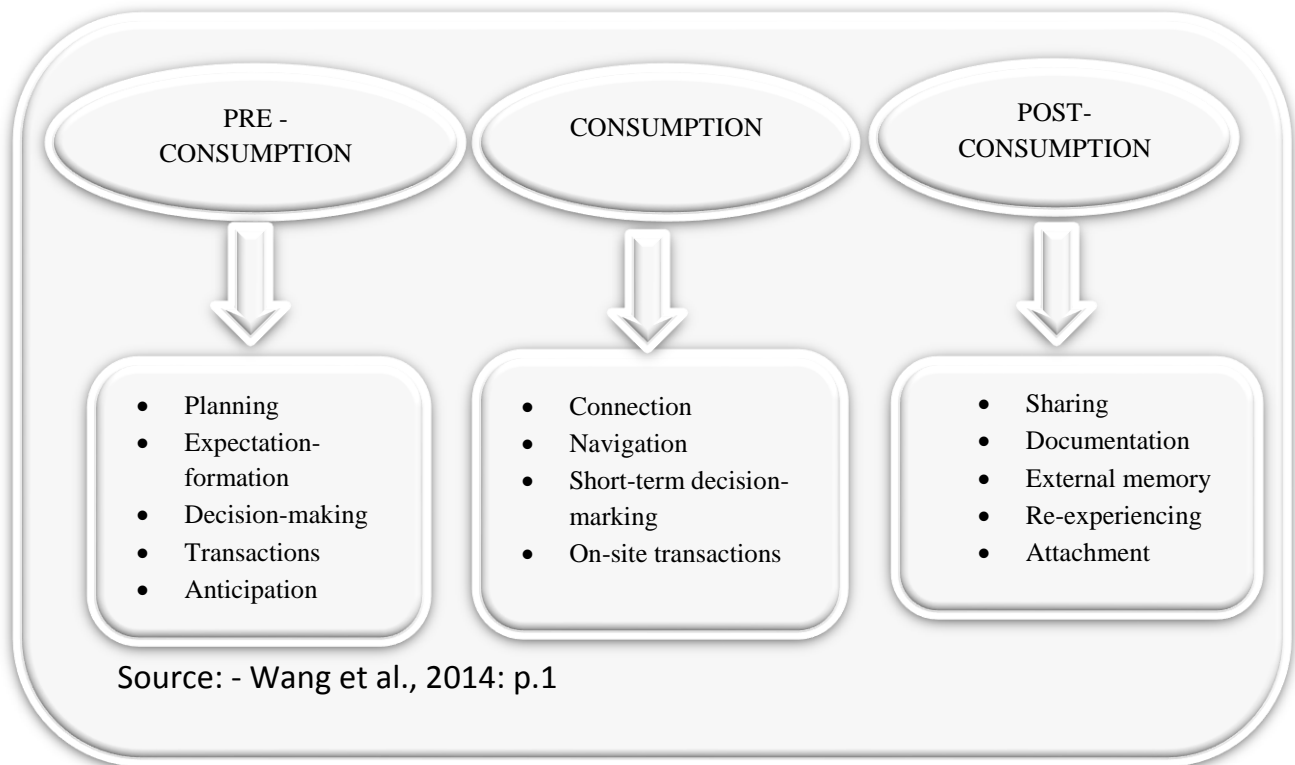


Fig (2): Three stages of tourist experience and the transformation by ICT

Furthermore, the smartphone as a new smart technique has impacts on problem-solving, information search, the flexibility of the trip, emotions, experience sharing, and storing memories. Tourists are more likely to plan less before the trip because they know that they can access online information sources during the trip to reserve hotels, select restaurants, or find directions. As well, tourists are more likely to change their plans if they are unsatisfied with the original plan or are not able to execute the plan due to certain unforeseeable conditions. As such, tourists are more likely to initiate on-site decision-making, and the smartphone becomes a “useful” tool for accessing information during the trip (Wang et al., 2014).

Tourists can rely on smart techniques to help them with decision-making and planning before travelling, during travelling, and after the travelling. Today, tourists have the motive to share, advertise and rate their experiences both in real and deferred time, generating large volumes of tourism crowd-sourced data (Leal et al., 2018).

Also, smart techniques enhance tourist experience and support tourists throughout numerous activities, such as inspiration, preliminary information search, comparison, decision making, travel planning, communication, engagement, retrieval of information as well as post-sharing and recollecting travel experiences (Neuhofer et al., 2014).

The importance of smart techniques in tourism is that it has become an essential tool in today's world of quick information. Also, it is an integral part of the tourist experience because tourists use different devices as their primary tools to plan their trips, enjoy the destination experience, and share this upon their return. Hence, tourist destinations must make greater use of smart techniques to provide tourists with the services required at each stage of a tourist's experience, thereby increasing the tourist's satisfaction and accomplishing efficient coordination between all the participating actors. Furthermore, smart techniques may transform conventional activities by establishing a whole new set of tourism activities (da Costa Liberato, 2018).

Also, the use of smart techniques allows smart tourism destinations to collect dynamic tourist data, helping destination marketers design and offer more tailored services. In addition, smart techniques are to satisfy tourists' needs and maximize their travel experience as well as their satisfaction with smart tourism destinations through reducing the time spent on information search. As well, smart techniques provide constantly the most relevant and appropriate information to tourists, thereby enhancing and maximizing tourists' travel experience (Jeong and Shin, 2020).

Based on Hiramatsu et al. (2016), iBeacons technique can be improved visitor experience by avoiding the use of GPS and reducing power consumption, providing information related to location, and displaying a timetable of the main bus routes. Moreover, iBeacons technique provides customers with a more seamless and convenient tourism experience. Also, this system will help the marketers exist in a competitive environment and also increase their sales (Pugaliya et al., 2017). Shahriar (2018) finds that the iBeacons technology gives tourists more details about the destinations and events and improves the experience of digital tourism in their leisure schedule. Moreover, this wireless device helps organizers to maintain crowd and security management during the event. Also, Saranya et al. (2019) explained that iBeacons technique is delivering a relevant message at exactly the right time to persuade a customer to visit a specific destination and make a holiday, instead of using fliers and other paper related advertisements. This system gives easier and more personalized marketing to the customers (Sterling et al., 2014).

Finally, based on the previous discussion the following hypotheses can be formulated: iBeacons technique has a positive impact on tourist experience.

3. Methodology

3.1 procedures and measurement

The study adopted the quantitative approach. Data was gathered through a questionnaire to answer research questions. Data collection started from

October 2020 to December 2020. A total of 404 surveys were used for statistical analysis with 67.3% response rate. It was designed electronically on Google forms and distributed through LinkedIn. The questionnaire was designed based on previous studies to assess the impact of iBeacons technique on the tourist experience. The questionnaire was divided into four parts. The first part included items about personal and demographic data (gender, age, nationality, Education, No. of visits to Egypt, and the purpose of visit).

The second part included Destinations where iBeacons technology is used. The third part included the advantages of iBeacons technique. The fourth part included items about tourists' experience of iBeacons at destination (Self-beneficial experiences, Novel Experiences, Affective Emotions, Perceived Significance, and Surprising Experiences). These dimensions were measured using 20 items adopted from Chandralal and Valenzuelam (2013); Chandralal and Valenzuela (2015); Yamaguchi et al. (2017) and Shahriar (2018). Each dimension measured by the 5-point- Likert scale ranges from (1) "strongly disagree" to "(5) strongly agree".

The target sample was random. This type of sample provides all respondents with an equal chance of being included in the study sample (Taherdoost, 2016). In addition, Simple linear regression analysis was used to measure the impact of iBeacons technique on the tourist experience. Simple linear regression shows the relationship between a dependent variable and an independent variable (Darlington and Hayes, 2017).

4. Results

4.1 The demographic profile of tourists

Table (2): Tourists' demographic profile

Items	Frequency	Percentage
Gender		
Male	151	62.6%
Female	253	37.4%
Age		
Less than 35	142	35.1%
35 to less than 45	150	37.1%
45 to less than 55	56	13.9%
55 years and more	56	13.9%
Nationality		
Domestic	206	51.0%
International	198	49.0%
Education		
Student	41	10.1%

Bachelor Degree	288	71.3%
Postgraduate	75	18.6%
Income		
Less than 3000\$	79	19.6%
3000 to less than 5000\$	93	23.0%
6000 - 7000\$	83	20.5%
8000 - 10000\$	80	19.8%
More than 10000\$	69	17.1%
No. of visits to Egypt		
One	78	19.3%
Two	135	33.4%
Three	66	16.3%
More than three	125	30.9%
The purpose of visit		
Health care	54	13.4%
Recreation	169	41.8%
Business	60	14.9%
Visiting friends	35	8.7%
Education	86	21.3%
Total	404	100.0

The results are shown in Table (2) indicate that (62.6%) of the respondents were female and 37.4%; were male. 37.1% of respondents were 35 years or older, while 35.1% were less than 35. Concerning nationality, half of the respondents (51.0%) were domestic tourists whereas 49.0% of respondents were international tourists.

Regarding education, the majority of the sample (71.3%) was having a bachelor's degree, while (18.6%) had a postgraduate degree, only 10% of the sample are students.

In terms of the tourists' income, about a quarter of the respondents (23.0%) earned \$3000 to \$5000. Only 17.1% of respondents stated that they earned \$10000 and more per month.

Concerning the number of visits, about (47.2%) of respondents had visited Egypt 3 times and more. While (19.3%) mentioned that this is their first time to visit Egypt. Regarding the purpose of visit, 41.8 % of tourists indicated that recreation activities were the prime purpose for visiting Egypt, also, 21.3% of them indicated that education was their purpose to visit Egypt. While 14.9% of tourists assured that their purpose to visit Egypt is business. Moreover, 13.4% of tourists indicated that health care was the prime purpose for visiting

Egypt, and only 8.7% of tourists mentioned that visiting friends and relatives was their first purpose to visit Egypt.

4.2 Places where iBeacons technology is used

Table (3): Usage of iBeacons technology:

Places using iBeacons technology	F	%
Hotels	125	30.9
Airports	72	17.8
Restaurants	65	16.1
Museums	93	23.0
Tourism companies	37	9.2
Other	12	3.0
Total	404	100%

Concerning the place of using iBeacons technology, 30.9% of respondents were using iBeacons technique at hotels. While 23% of respondents were using iBeacons technology at museums. Respondents who used iBeacons technology at airports and restaurants were 17.8%, 16.1% respectively. While 9.2% of respondents were using iBeacons technology at tourism companies.

According to Table (3), the results indicate that_hotels, museums, and airports are using iBeacons more than other tourist organizations. Tourism companies are in their first steps to adopt iBeacons technology.

4.3 The advantages of iBeacons technique:-

Data in Table (4) shows that the agreement level of tourists with the advantages of iBeacons is high, with a total mean (3.85) which indicates the respondents' approval.

Table (4) indicated that 74% of the respondents agreed that the greatest advantage of iBeacons was that it is not expensive (M=3.92). This is followed respectively by the ease of use (M=3.87), improving tourist experience (M=3.91), and not requiring mental efforts (M=3.88). In addition, the results in Table (4) indicated that 69.3% of the sample accepted that iBeacons technique displays information easily, with a mean value (**3.79**).

According to the same table, it is clear that 67.6% of the respondents accepted that the information iBeacons technique displays are clear, with a mean value (**3.84**). Also, the results described that 70.8% of respondents approved that iBeacons do not require internet access, mean value (**3.87**).

Table (4): Advantages of iBeacons technique

Advantages of iBeacons technique	5		4		3		2		1		Total		Mean
	SA		A		N		D		SD				
	F	%	F	%	F	%	F	%	F	%	F	%	

Interacting with this technique does not require mental efforts.	94	23.3	19 5	48. 3	90	22. 3	2 3	5. 7	2	0.5	40 4	10 0	3.88
iBeacons technique displays information easily.	66	16.3	21 4	53. 0	10 1	25. 0	2 2	5. 4	1	0.2	40 4	10 0	3.79
The information that iBeacons technique displays is clear.	90	22.3	18 3	45. 3	11 2	27. 7	1 7	4. 2	2	0.5	40 4	10 0	3.84
iBeacons do not require internet access.	87	21.5	19 9	49. 3	10 1	25. 0	1 4	3. 5	3	0.7	40 4	10 0	3.87
iBeacons technique is inexpensive	97	24.0	20 2	50. 0	85	21. 0	1 6	4. 0	4	10	40 4	10 0	3.92
iBeacons technique is easy to use	92	22.8	19 8	49. 0	91	22. 5	1 8	4. 5	5	1.2	40 4	10 0	3.87
Improving tourist experience and helping to discover a new destination through access to rich digital content on mobile phones	10 8	26.7	18 2	45. 0	90	22. 3	2 0	5. 0	4	1.0	40 4	10 0	3.91
Beneficial to control the crowds and also to ensure security issues.	77	19.1	19 3	47. 8	11 3	28. 0	1 7	4. 2	4	1.0	40 4	10 0	3.79
Enabling you to Share important information	79	19.6	19 6	48. 5	10 6	26. 2	1 8	4. 5	5	1.2	40 4	10 0	3.80
Overall													3.85

Table (4) shows that 71.7% of respondents accepted that iBeacons technology improved tourist experience and helped discover a new destination through access to rich digital content on mobile phones. The mean value was **(3.91)**.

Regarding the phrase "Beneficial to control the crowds and also to ensure security issues" 66.9% of the sample accepted it with a mean value

(3.79). Also; the results in Table (4) proved that 68.1% of respondents agreed that iBeacons technique enabled them to share important information". The mean value was (3.80), which indicates their acceptance.

4.4 iBeacons experience

As seen in Table (5) the majority of respondents (71.8%) have closely experienced iBeacons technique. The mean value was (4.08) which is located at the agreeing level. 78.2% of respondents were exposed to iBeacons technique". The mean value was (3.92) which is located at the agreeing level. Moreover, 55.9% of the sample agreed that they have visited destinations that apply iBeacons technique. The mean value was (3.62).

Finally, 64.8% of the respondents approved that iBeacons technique allowed them to experience the real day-to-day life of locals. The mean value was (3.68). The overall mean value was (3.83) which is located at the agreeing level. This means that the majority of the study sample has exposed and experienced iBeacons technique and it allowed them to experience the lifestyle of locals. This may indicate that iBeacons affect the tourist experience and make it richer.

Table (5): Level of iBeacons Experience

iBeacons Experiences	5		4		3		2		1		Total		Mean
	SA		A		N		D		SD				
	F	%	F	%	F	%	F	%	F	%	F	%	
I closely experienced the iBeacons technique	196	48.5	94	23.3	728	17.8	36	8.9	6	1.5	404	100	4.08
I was exposed to iBeacons technique	84	20.8	232	57.4	636	15.6	22	5.4	3	0.7	404	100	3.92
I visited destinations which apply iBeacons technique	70	17.3	156	38.6	149	34.9	31	7.7	6	1.5	404	100	3.62
iBeacons technique gave me an opportunity to experience the real day-to-day life of locals	51	12.6	211	52.2	113	28.0	21	5.2	8	2.0	404	100	3.68
Overall												3.83	

4.4.1 Self-beneficial experience from iBeacons technique:

The results tabulated in Table (6) showed that 60.4% of the respondents accepted that the usage of iBeacons technique help tourists to improve their self-confidence during the trip with a mean value (3.72). 61.9% of the study sample approved that iBeacons technique helped tourists to develop their identity; the mean value was (3.63).

Table (6): Mean of self- beneficial experiences from iBeacons

Self- beneficial experiences	5		4		3		2		1		Total		Mean
	SA		A		N		D		SD				
	F	%	F	%	F	%	F	%	F	%	F	%	
The usage of iBeacons technique helped me to improve my self-confidence during the trip.	86	21.3	158	39.1	129	31.9	26	6.4	52	1.2	404	100	3.72
iBeacons technique helped me to develop my personal identity	449	10.9	206	51.0	122	30.2	28	6.9	40	1.0	404	100	3.63
iBeacons technique helped me to learn more about destination	848	20.8	169	41.8	123	30.4	26	6.4	20	0.5	404	100	3.75
The usage of iBeacons technique helped me to acquire new skills	888	21.8	181	44.8	106	26.2	23	5.7	65	1.5	404	100	3.79
Overall												3.72	

According to the same table (6), 62.6% approved that iBeacons technique helped tourists to learn more about the destination, with a mean value (3.75). While 66.6% of respondents agreed that the usage of iBeacons technique helped tourists to acquire new skills; the mean value was (3.79). Finally, the overall mean value was (3.72), which refers to their acceptance on the self- beneficial experiences from iBeacons technique.

4.4.2 Novel experiences from iBeacons technique:

Table (7): Mean of novel experiences from iBeacons technique

Novel Experiences	5		4		3		2		1		Total		Mean
	SA		A		N		D		SD				
	F	%	F	%	F	%	F	%	F	%	F	%	
Many aspects of iBeacons technique were novel to me	56	13.9	130	32.2	135	33.4	75	18.6	8	2.0	404	100	3.37

The usage of iBeacons technique during the trip provided me with a unique experience	40	9.9	161	39.9	115	28.5	77	19.1	11	2.7	404	100	3.35
iBeacons technique made my trip an adventurous experience	40	9.9	115	28.5	147	36.4	90	22.3	12	3.0	404	100	3.20
I felt I was in a different world during the trip through using iBeacons technique	39	9.7	116	28.7	140	34.7	93	23.0	16	4.0	404	100	3.17
Overall													3.27

Concerning the following statements: "Many aspects of iBeacons technique were novel to me"; "the usage of iBeacons technique during the trip provided me with a unique experience"; "iBeacons technique made my trip an adventurous experience"; "I felt I was in a different world during the trip through using iBeacons technique" mean value ranges from 3.17 to **3.37** which indicates that the degree of respondents' approval was moderate.

The previous results indicated that tourists had a moderate positive perception of novel experiences. iBeacons technique was novel to the majority of tourists but it provided them with a unique experience.

4.4.3 Affective Emotions from iBeacons technique:

Table (8): Mean of affective emotions from iBeacons technique:

Affective emotions	5		4		3		2		1		Total		Mean
	SA		A		N		D		SD				
	F	%	F	%	F	%	F	%	F	%	F	%	
I experienced high stimulation during the trip through the usage of iBeacons technique.	41	10.1	121	30.0	155	38.4	75	18.6	12	3.0	404	100	3.25

I was very pleased with iBeacons technique during the trip	34	8.4	108	26.7	202	50.0	53	13.1	7	1.7	404	100	3.26
Overall													3.26

Table (8) illustrates that the respondents had moderate approval on the following statements: " I experienced high stimulation during the trip through the usage of iBeacons technique."; "I was very pleased with iBeacons technique during the trip". The mean value ranges from (3.25) to (3.26).

4.4.4 Perceived significance from iBeacons technique

Table (9) shows respondents' moderate acceptance of the following statements: "It was a special experience for me using iBeacons technique"; "The usage of iBeacons technique was a once in a lifetime experience for me"; " It was an extraordinary experience for me because of the usage of iBeacons technique". The mean value ranges from (3.29) to (3.38).

The overall mean value was (3.34), which indicates the moderate approval of respondents on perceived significance from iBeacons technique.

Table (9): Mean value of perceived significance from iBeacons technique:

Perceived significance	5		4		3		2		1		Total		Mean
	SA		A		N		D		SD				
	F	%	F	%	F	%	F	%	F	%	F	%	
It was a special experience for me personally by using iBeacons technique	46	11.4	149	36.9	134	33.2	64	15.8	11	2.7	404	100	3.38
The usage of iBeacons technique was a once in a lifetime experience for me	40	9.9	141	34.9	133	32.9	80	19.8	10	2.5	404	100	3.29
It was an extraordinary experience for me because of the usage of iBeacons	33	8.2	149	36.9	159	39.4	55	13.6	8	2.0	404	100	3.35

technique														
Overall														3.34

4.4.5 Surprising experiences of iBeacons technique:

Table (10): A mean value of surprising experiences of iBeacons technique:

Surprising experiences	5		4		3		2		1		Total		Mean
	SA		A		N		D		SD				
	F	%	F	%	F	%	F	%	F	%	F	%	
By using iBeacons technique, I faced unplanned and unexpected good experiences during the trip	53	13.1	135	33.4	158	39.1	49	12.1	9	2.2	404	100	3.43
I experienced iBeacons technique that really surprised me during the trip	36	8.9	124	30.7	185	45.8	54	13.4	5	1.2	404	100	3.32
I received unexpected benefits/advantages during the trip by using iBeacons technique	36	8.9	149	36.9	161	39.9	49	12.1	9	2.2	404	100	3.38
Overall													3.38

As shown in table (10), tourists had a moderate approval with the following statements: "I experienced iBeacons technique that really surprised me during the trip"; "I received unexpected benefits/advantages during the trip by using iBeacons technique". The mean value ranged from (3.32) to (3.38) which is located at a moderate level.

Concerning the statement of "By using iBeacons technique, I faced unplanned and unexpected good experiences during the trip" the mean value was (3.43); in the agreeing level. This indicates that the largest number of respondents agree with these statements. The overall mean value was (3.38), which indicates the moderate approval of respondents.

The researcher conducted **simple linear regression analyses** to measure the impact of iBeacons technique on the tourist experience. The findings are indicated in subsequent sections:

Table (11): Model Summary

Model	R	R Square	Adjusted Squar	Std. error of the Estimate
1	.700a	.490	.489	.41430

a Dependent variable (Tourist experience)

The table above indicates the model summary. From the findings, R was 0.700, R² was 0.490, and adjusted R² was 0.489. An R² of 0.490 implies that 49% of changes in iBeacons techniques are explained by the independent variables of the study. There are however other factors that influence tourist experience not included in the model which account for 51%. An R of 0.700 on the other hand signifies a strong positive correlation between the variables of the study.

Table (12): ANOVA

ANOVA					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	66.382	1	66.382	386.737	.000b
Residual	69.002	402	.172		
Total	135.385	403			

From the ANOVA table above, the value of F calculated is 386.737. Since the value of F calculated is greater than F critical, the overall regression model was significant and therefore a reliable indicator of the study findings. P values < .000 which is statistically significant.

Table (13): Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	0.518	0.153		3.385	0.001
iBeacons technique	0.781	0.040	0.700	19.666	0.000

Y (Regression Coefficient) = 0.518 (Tourist Experience) + 0.781 (iBeacons technique).

Finally, results of simple linear regression analysis indicated that "iBeacons technique has a positive impact on tourist experience" is supported by the data set.

5. Discussion:

The results of the questionnaire survey show that hotels, museums, and airports are using iBeacons more than other tourist organizations. Tourism companies are in their first steps to adopt iBeacons technology.

The results revealed that the greatest advantage of iBeacons was that it is not expensive, followed respectively by the ease of use, improving tourist experience, and helping to discover a new destination. iBeacons technique doesn't require mental efforts or internet access and enables tourists to share important information. These advantages are in line with the studies of (Jeon et al., 2018; Thamm et al., 2016). In addition, iBeacons technology enables the tourist to interact directly with the provided tourism services. Moreover, it leads to easy access to the provided tourism services.

Regarding iBeacons experience at the destination, it is found that the largest number of the study sample experienced the iBeacons technique in different destinations and it was novel to them, but it gives them a unique experience. They approved that iBeacons technique helped them learn more about the destination and acquire new skills. Also, the majority of the study sample assured that they received unexpected benefits during the trip by using iBeacons technique. This result is concurrent with the findings of (Shahriar, 2018). The study also indicates that iBeacons technique has a positive impact on the tourist experience.

5. Conclusion and recommendations:

This study aims to explore the impact of iBeacons technique on the tourist experience. The research attempts to understand the advantages of using iBeacons technique and how it affects the tourist experience. The literature review highlighted the definition of iBeacons, iBeacons technique in tourism, the advantages of iBeacons, and the relationship between iBeacons and tourist experience.

The practical study has been conducted to achieve the research aim and clarify whether iBeacons has a positive impact on tourist experience – or not, the advantages of this new technique for tourists and investors, iBeacons experience and finally providing suggestions that encourage iBeacons' implementation in Egyptian destination.

A quantitative method represented in the questionnaire has been undertaken with the study sample of domestic and international tourists to provide us with the information that increases our understanding of the advantages of iBeacons implementation and its impact on the tourist experience.

The study findings revealed that a large number of tourists appreciate the usage of this new technique for their experience. They listed many advantages that could be achieved through the implementation of iBeacons. The study findings also indicated that iBeacons technique is considered one of the smart marketing techniques which have a positive impact on the tourist experience.

The practical study also found that iBeacons technique was novel to the majority of tourists but it provided them with a unique experience.

The research will be beneficial to the tourism industry by shed light on the advantages of iBeacons technology for the tourism industry. Providing the way the tourism organizations can improve tourist experience. The research also helps Destination management and tourism industry to select the right and appropriate message which attract tourist.

The study urges destination management to employ smartness and start to drive a better experience for the visitor throughout tourist attraction and to have a strategic plan for internal/external audience to innovative technologies. iBeacons is an example of these innovative technologies.

The study recommends Destination management offer rewards to tourism organizations that apply the latest technologies such as iBeacons. Also, Destination management can use iBeacons as a guide when developing the marketing message and increasing satisfaction to increase the number of tourists whose information relating to travel decisions and improve their experience.

Destination management must use iBeacons to inform tourists about traditional cultures, allows knowledge of the culture of a location to be transmitted to the next generation and foreigners. Such travel information will inspire tourists and encourage them to treat the culture respectfully. This can empower the tourist experience.

According to theoretical and practical studies, tourism organizations must use iBeacons technique in their marketing practices to provide more information about the Egyptian tourist destination and encourage them to visit the Egyptian Destination. Accordingly, the market share of Egypt will be increased and achieve high revenues.

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أثر تطبيق تكنولوجيا أي بيكون كتقنية تسويقيه ذكية علي التجربة السياحية

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الملخص العربي:

تلعب التقنيات الذكية دوراً مهماً في التجربة السياحية نظراً لقدرتها على مساعدة السياح في مراحل مختلفة من التجربة السياحية ، بما في ذلك تجارب ما قبل الرحلة وأثناء وما بعد الرحلة. أحد الأمثلة على التقنيات الذكية تكنولوجيا أي بيكون. الأي بيكون هو جهاز إرسال لاسلكي صغير يستخدم تقنية البلوتوث منخفض الطاقة لإرسال إشارات إلى أجهزة ذكية قريبة مثل الهواتف الذكية. إنه أحد أحدث التطورات في تكنولوجيا الموقع والتسويق عن قرب. ببساطة ، يقوم بتوصيل المعلومات ونقلها إلى الأجهزة الذكية مما يجعل البحث والتفاعل المعتمد علي الموقع أسهل وأكثر دقة. يتضمن إرسال رسالة ذات صلة في الوقت الصحيح لإقناع السائح بزيارة وجهة معينة وأخذ إجازة ، بدلاً من استخدام المنشورات والإعلانات الورقية الأخرى. كما يستفيد العملاء من الإعلانات الأبسط والأكثر استهدافاً نتيجة لهذا النظام. تعد تقنية أي بيكون واحدة من أهم هذه التقنيات الذكية التي يوصي باستخدامها في المنظمات السياحية نظراً لتأثيرها على إرضاء الزوار وتزويدهم بمعلومات دقيقة. لذلك ، فإن الهدف من هذه الدراسة هو استكشاف تأثير تقنية الأي بيكون على التجربة السياحية. وطبق البحث المنهج الكمي المتمثل في الاستبانة. حيث تم توزيع الاستبيان على عينة من السائحين المحليين والدوليين و قوامها ٥٠٠. كشفت نتائج البحث أن تقنية الأي بيكون تؤثر تأثيراً إيجابياً علي تجربة السائح. وانتهت الدراسة إلي تقديم مجموعة من التوصيات لمديري المؤسسات السياحية ومتخذي القرار السياحي، حيث تساهم الدراسة في مساعدة صانعي سياسات الوجهة السياحية من خلال تقديم مجموعة من الاقتراحات لدعم تطبيق تقنية أي بيكون في الوجهة المصرية.

الكلمات الدالة: التقنيات الذكية ، أي بيكون ، المقصد السياحي ، الخبرة السياحية.