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Abstract

Mobile-based marketing has been increasingly adopted by many enterprises' marketing campaigns with the dominance of smartphone usage all over the world. Geofencing technology is one of the innovative recent trends in this field that tracks consumers' locations in real-time and enables enterprises to personalize their marketing campaigns. This research aims to explain the fields of applying Geofencing technology in the tourism industry and how this technology can affect the Egyptian travel agencies' marketing campaigns and the Egyptian customers' purchasing intention for tour services.

In this regard, a quantitative approach will be adopted using an online structured questionnaire in order to investigate the acceptance of this technology among the Egyptian customers and accordingly to their purchasing intention to tour services. Finally, conclusions and recommendations of research will be discussed.

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Keywords: Geofencing, Mobile-based marketing, Purchasing intention, Tour services.

Introduction:

Most people have been actively using mobile technology, everywhere and every time (Zuva and Zuva, 2019). Despite the increasing number of enterprises spending more money on mobile marketing, the characteristics of this channel have various limitations including; (a) technological requirements such as mobile internet; (b) legal frameworks such as regulations of data protection; and (c) customer acceptance, which is the most critical challenge for the mobile marketing campaigns' success (Leibbrand, 2017).

In this regard, customer acceptance can form a significant limitation regarding two main issues, **firstly**, the *content* of the advertisement, which refers to offering content personalization based on customer preferences. **Secondly**, the *context* in which it is presented to the consumer, that can be called situational relevance (circumstances surrounding the consumer) by delivering the advertisement at the right location and time (Leibbrand, 2017; Kamiya and Branisso, 2021).

Regarding personalized *content*, Leibbrand (2017, P.13) highlighted the conclusions of the study of Defacto digital research (2015), which revealed the significance of personalization in mobile marketing. Results showed that the majority of respondents 86% emphasized their increasing preference towards more personalized mobile messages. In this respect, 30% preferred personalized advertisements, 37% preferred personalized information and product offers advertisements, moreover, 41% preferred information and products from their favorite brand.

On the other hand, the same study (P.14) discussed the importance of placing the advertisement's content in the right *context* as the second success factor for mobile marketing campaigns. The results showed that only 20% of respondents can be interested in mobile advertisements regardless of their location and sending time. Meanwhile, around 80% of respondents preferred checking mobile advertisements when they are near/at the point of sale.

Accordingly, the time of sending advertisements and customers' location can be vital elements in mobile marketing campaigns. Hence, the challenge is delivering a personalized advertisement to the right customer at the right time (Leibbrand, 2017; Chad et., al., 2020; Kamiya and Branisso, 2021).

In this regard, geofencing technology, the latest popular trend in mobile-based marketing, offering Location-Based Services (LBSs), can be an effective solution. It is an innovative technology to reach specific customers with personalized content and context in order to increase the

relevance of advertisements (Küpper et al., 2011; Qayum and Sohail, 2016; Garg et. al., 2017; Zuva and Zuva, 2019).

On the other hand, tourism sector has been negatively affected as many economic sectors by the COVID-19 pandemic; which has led to closures of various tourism businesses. In this regard, tourism industry needs innovative strategies in order to survive (Buja, et al., 2021; Saxena, 2021). Geo-fencing can be adopted as a location-based marketing technique by tour services' providers to push offers of tour packages via in-app messages in geographical areas called geo-fences (Garg et. al., 2017; Zuva and Zuva, 2019; Chad et., al., 2020; Saxena, 2021).

This research aims to explain the fields of applying geofencing technology in tourism industry and how this technology can affect the Egyptian travel agencies' marketing campaigns and the Egyptian customers' purchasing intention for tour services. Accordingly, the research has the following questions:

Q1: To what extent will geofence advertising enhance Egyptian customers' purchase intention to tour services?

Q2: What are the characteristics of geofence advertisement that would affect the Egyptian customers' purchase intention to tour services?

Q3: Is there a significant relationship between customer's demographic profile and their purchase intention based on geofencing advertising?

Geofencing:

Mobile marketing generally and advertising specifically have witnessed a tremendous shift owing to the usage of geofencing. Consequently, geofencing offers enterprises the right to direct their advertising to potential customers within a specific geographic radius. Moreover, geofencing technology enables advertisers to detect users when they enter and leave pre-identified geographical fences (Qayum and Sohail, 2016; Paulose et al., 2019 and Kamiya and Branisso, 2021).

Qayum and Sohail, (2016) stated that geofencing technology is a substitute for using billboards, where suppliers could use advertisements on customers' mobile that are more cost-effective tested correctly.

Accordingly, geofencing enables enterprises to offer customers when they enter their virtual fence, invitations, offers, coupons, and promotions. Moreover, when customers enter the fence of the enterprise, the former starts to send personalized messages to customers to encourage them to visit their organization (Garzon et al., 2019 and Zuva and Zuva, 2019).

Garg et al. (2017) stated that geofencing is considered one of the most popular LBS mobile marketing strategies. Furthermore, Qayum and Sohail, (2016, p.30) concluded that advertising using geofencing is 35% more valuable than other methods of advertising.

Definition of Geofencing:

Many authors have defined geofencing, for instance, Küpper et al., (2011, p.67) defined geofencing as "a small

geographic area that is defined to generate a location event as soon as a user enters or leaves this geofence and to process this event in the context of an LBS".

Geofencing was also defined as "a location-based marketing technique that allows brand marketers to push offers through in-app messages, location-based coupons, real-time updates, etc. in specific geographical areas called geo-fences" (Garg et al., 2017, p.1).

It is clear from both definitions that geofencing is a sort of LBS marketing that tracks customers by sending them advertising messages containing offers, coupons, or any news about the enterprises' products or services once they entered a specific geographical fence.

Leibbrand (2017, p.15) clarified through their definition of geofencing that it is "a virtual fence that can be drawn around any real-world physical location such as cities, streets, and stores. Via smartphones and apps, a Geofence tracks consumers' locations in real-time immediately identifying the entrance or exit of the determined space". This definition confirms that the geofence which is pre-determined is compatible with the one in the physical world. Moreover, the definition shows that using geofencing technology must be whether by using only smartphones or through an uploaded application on the smartphone.

As for Leibbrand (2017), geofence application can be beneficial in collecting data about customer behavior, and preferences and as a result, it can help in influencing their behavior. Additionally, geofence could be used as part of

the marketing strategy for companies and can measure the campaign success as well.

Stages of Geofencing:

Geofencing areas could range from 50 meters to a whole city. The geofencing technology works by identifying the virtual fence, which is compatible with the real area, and as a result, the geofence will appear on customers' smartphones. Furthermore, to use geofencing technology smartphones must be supported with a mapping service such as Google Maps to indicate and show the areas that need to be geofenced. Mostly, those areas take the shape of circles or polygons (Paulose et al., 2019).

Geo-fencing consists of two main stages:

- *The first stage* is the geofence design, which involves choosing the real area that is needed to be used in the geofencing technology. Then this area is defined on the virtual borders which will be known as a geofence.
- *The second stage* is the operation stage of geofencing and testing and the effectiveness of its work on the smartphone, and the accuracy of the timing once entering the geofence (Garg et al., 2017).

Types of Geofencing:

Geofencing has two main types, a type that needs an app to work, and the other that doesn't need an app. The first type, which is sometimes referred to as *App-based geofencing*, this type works once the customer opens the app and

indicates his place and the app will track him once he enters the fence, and he will start to receive advertising messages. Concerning the second type, it is referred to as ***network-based geofencing***, this type works only when the customer is turning on his network and it is not necessary to use an app. This technique starts to track the customer from 100 meters to a maximum of two kilometers, and then starts to send them the advertising messages (Leibbrand, 2017 and Zuva and Zuva, 2019).

Application of Geofencing:

Using Geofencing in different fields:

Geofencing has been designed basically as a new source for mobile marketing. Many enterprises have been using this technology to market their products and services. Besides, the geofencing technology has also been used in children tracking, which enables the parents to check the place of their children. Moreover, geofencing was used in the medical field to give the ability to the medical staff to monitor some patients (especially senior ones) who are in need of this tracking service. Using geofencing in smart cities is one of the most important applications of this technique (Küpper et al., 2011, Garg et al., 2017 and Garzon et al.,2019).

Accordingly, geofencing was used as a marketing technique for different stores. Defacto (clothes store) used geofencing applications for promoting their products. Malls, fitness centers, and even some universities benefited from geofencing techniques in their marketing campaigns (Leibbrand, 2017).

Geofencing in Tourism:

Albuquerque et al., (2020) confirmed that offering personalized and customized services are the most distinctive feature of the tourism and hospitality service, especially when promoting them. Since geofencing is based on the idea of offering personalized advertising to customers, using this technology in the tourism field would add more value to it. Until recently, there were not enough researches that showed the usage of geofencing in the tourism field.

The research of Buja et al. (2021) was studying a zoo in Malaysia that was using an application designed on employing both geofencing techniques and Bluetooth. This application was used for marketing and promoting the zoo. Using this application offered the visitors of the zoo an interactive experience for both marketing and visiting the zoo.

The promotional campaign of MacDonald's Germany used geofencing technology as a mobile promotional tool. They offered their consumers who are within one Kilometer of any Macdonald's branch a free coffee during breakfast time once they entered the fence during this period (Leibbrand, 2017).

Martin et al., (2011) have demonstrated a geofencing mobile service that was offering consumers entering a specific fence advertising messages about different tourism services (tourism offices, coffee shops, restaurants...) offered in this fence.

Methodology of the study:

This study is concerned with exploring the effectiveness of applying geofencing technology on the Egyptian customers' purchasing intention to tour services. The study's field survey aims to collect and analyze the appropriate data in order to answer the research questions.

Consequently, this study can be classified as being a ***descriptive–exploratory study*** *that uses a* ***quantitative approach*** by developing and distributing an online questionnaire, to collect the data required for answering the study questions.

Population and Sampling Technique:

A questionnaire was designed and distributed online to Egyptian customers using a snowballing sample technique. The survey was conducted in January 2022. The total received questionnaires were 214, only 202 of them were valid for analysis due to duplication and missing data *(validity percent 94.4%)*. IBM SPSS Statistical program (Version 25) was used for the data analysis to reach the intended results.

Questionnaire Design:

The questionnaire was divided into three main parts, the first part was concerned with the demographic characteristics of the respondents. The second part was allocated to measure the mobile marketing usage of respondents. Furthermore, the third part was designed to assess the factors affecting Egyptian customers' purchase intention to tour services based on geofencing advertising.

To measure customers' purchase intention the study tends to refer to different studies measuring the customers' purchase intention. The following table demonstrates how different studies measured customers' purchase intention.

Table 1: Studies Measuring Customers' Purchase Intention

The Study	Type of Purchase Intention Measured	Factors used in Measuring Customers' purchase Intention
Nunkoo and Ramkissoon (2013)	Measured the purchase intention of tourism products and services *online*.	• Perceived usefulness • Perceived ease of use • Trust • Perceived risks
Liat, C. and Wuan, Y. (2014)	Measured the *online* purchase intention.	• Trust • Perceived ease of use • Perceived usefulness • Perceived enjoyment • Subject norm
Roudposhti et al., (2018)	Measured purchase intention based on the *Technology Acceptance* Model (TAM)[3].	• Novelty • Diversity • Perceived Accuracy • Recommendation Quality • Satisfaction

[3] Technology Acceptance Model (TAM): "TAM (Technology Acceptance Model) is a theoretical model introduced by Davis (1989) to forecast the acceptance attitude of the individuals towards the information technology and whether such acceptance occurs under the effect of behavioral intention" (Roudposhti et al., 2018, p.240).

		• Customer Trust • Familiarity • Usefulness • Ease of Use
Wibisurya (2018)	Designed a model to measure the effectiveness of *Location-Based Advertising (LBA)* on purchase intention.	• Message Type • Customization • Permission • Intrusiveness • Involvement • Timing
Xiao, et al. (2019)	Measured the Purchase intention.	• Quality of service • The price (lowing price)
Chen and Lu (2020)	Measured the Purchase intention.	• Perceived risk • Price • Lesser availability of advertising
Goh, et al. (2020)	Studied the effect of some determinants on consumer purchase intention towards *mobile advertising*.	• Entertainment • Credibility • Irritation • Informativeness • Incentives • Emotional Value

From the previous table, six main factors were chosen to measure customers' purchase intention to tour services based on Geofencing advertising. The factors were chosen according to their relevance to the main core of the study,

which is using geofencing advertising for tour services. The six factors were: customization, timing, intrusiveness, permission, incentives/price, and novelty.

Results and Discussion

The research results will be introduced and discussed in this section in the context of answering research questions.

Table 2: Profile of Respondents

	Gender	Freq.	%
1.	Male	86	42.6
2.	Female	116	57.4

	Age Range	Freq.	%
1.	Less than 20	0	0
2.	20 -> 30 years	74	36.6
3.	30 -> 40 years	74	36.6
4.	40 - 50 years	40	19.8
5.	More than 50 years	14	6.9

	Edu. Qualifications	Freq.	%
1.	Doctoral	44	21.8

	Job	Freq.	%
1.	Governmental	86	42.6
2.	Private Sector Business	76	37.6
3.	Own Business	10	5.0
4.	None	30	14.9

	Marital Status	Freq.	%
1.	Single	72	35.6
2.	Married (No children)	20	9.9
3.	Married with children	100	49.5
4.	Not married	10	5.0

		Freq.	%
	Degree		
2.	Master Degree	30	*14.9*
3.	Bachelor Degree	126	*62.4*
4.	Secondary Education	2	*1.0*

(divorced/widow)

Percents are calculated based on the total number of respondents (n=202).

According to table (2), which demonstrates the demographic data of the respondents, most of the sample were female with an overall percentage 57.4%. Almost 70% of the sample was from 20 to 40 years. The results also showed that 62% of the sample held a bachelor's degree, while 21% held a doctoral degree. However, 42% of the sample had a governmental job, whereas 37% worked in the private sector. Nearly 50% of sample were married and had children, although 35% were single.

Table 3: Mobile Marketing Usage

	The device used to connect to the internet	Freq.	%		If yes, have you purchased or intended to purchase this product?	Freq.	%
1.	Smartphone	194	*96*	1.	Yes	126	*71.6*

2.	Laptop/ PC	8	4

	Have you ever received a marketing message on your mobile phone?	Freq.	%
1.	Yes	176	87.1
2.	No	26	12.9

Percents are calculated based on the total number of respondents (n=202).

	What do you usually do when you receive a mobile marketing message?	Freq.	%
2.	No	50	28.4
1.	Read it	44	21.8
2.	Read it occasionally (when I have time)	132	65.3
3.	Ignore it	26	12.9

According to the results demonstrated in table (3), more than 95% of the respondents used their smartphones to connect to the internet. This result resembles perfectly the results of Leibbrand (2017), who stated that it is anticipated that more than third of the world population will use smartphones by 2018. The results also clarified that 87% of the sample received a marketing message on their mobile phones. It was surprising to find that from the people who received those marketing messages more than 70% of them purchased or intended to purchase the products or services which they received the messages about, confirming the

results of the study of Leibbrand (2017). Besides, 65% of
the sample whom receives marketing messages on their
mobiles, read those messages occasionally when they have
time.

Table 4: Factors affecting purchase intention to tour services based on Geofencing advertising

Factors	Overall Agreement (n=202)										Mean	Std. Deviation	P-Value[@]
	Strongly Disagree		Disagree		Neutral		Agree		Strongly Agree				
	F.	%	F.	%	F.	%	F.	%	F.	%			
Customization													
1. Personalized (name/title) mobile advertisements.	4	2.0	16	7.9	40	19.8	108	53.5	34	16.8	3.75	.897	.000[*]
2. Mobile advertisements match my preferences.	0	0.0	4	2.0	18	8.9	104	51.5	76	37.6	4.25	.697	.000[*]
Timing													
1. Receiving mobile advertisements near the area of tour service	0	0.0	6	3.0	22	10.9	114	56.4	60	29.7	4.13	.715	.000[*]

providers (travel agencies).												
2. Receiving mobile advertisements reduces the time it takes to search for tour services.	0	0.0	4	2.0	24	11.9	90	44.6	84	41.6	**4.26**	**.742**	**.000**[*]

Intrusiveness												
1. Sending more than one mobile advertisement for the same product/service annoys me.	0	0.0	18	18.9	30	14.9	84	41.6	70	34.7	**4.02**	**.925**	**.000**[*]

Permission												
1. Turning my location on when I am using my mobile to receive mobile advertisements at the right place (the area of tour service providers/ travel agencies).	8	4.0	16	7.9	34	16.8	114	56.4	30	14.9	**3.70**	**.952**	**.000**[*]
2. Asking for my permission before sending me any mobile advertisement.	0	0.0	4	2.0	20	9.9	78	38.6	100	49.5	**4.36**	**.741**	**.000**[*]

Incentives/price												
1. Receiving mobile advertisements	2	1.0	0	0.0	16	7.9	88	43.6	96	47.5	**4.37**	**.715**	**.000**[*]

	offering me price discounted coupons on tour services based on my location at the right time.													
2.	Receiving mobile advertisements with offers on tour services based on my location at the right time.	0	0.0	2	1.0	28	13.9	84	41.6	88	43.6	*4.28*	*.735*	*.000*[*]
	Novelty													
1.	Purchasing a tour service promoted using Geofence technology as it would be a new and innovative way of advertising.	4	2.0	8	4.0	22	10.9	120	59.4	48	23.8	*3.99*	*.829*	*.000*[*]
2.	Using Geofence technology would help me to make better travel decisions.	4	2.0	4	2.0	20	9.9	122	60.4	52	25.7	*4.06*	*.783*	*.000*[*]
3.	I prefer to use the tour services offered on the Geofence app rather than other tour services	4	2.0	6	3.0	46	22.8	102	50.5	44	21.8	*3.87*	*.854*	*.000*[*]
4.	I would like to use discounted	2	1.0	4	2.0	16	7.9	104	51.5	76	37.6	*4.23*	*.758*	*.000*[*]

tour services on the geofence app										

[*] Rating was given on a 5-point scale; whereas (1='Strongly Disagree'; 5='Strongly Agree').
[@] Probability value is calculated using the "One-Sample *T*-test," where [*] shows a *significant* value at the 0.05 confidence level (2-tailed).

Regarding the Egyptian customer's purchase intention to tour services based on geofencing advertising, table 4 demonstrates that around 86% of the total sample agreed that using geofencing advertising will enhance their purchase intention to tour services; which can be the answer to the first research question. On the other hand, 70% of the total sample agreed that all characteristics of geofencing have a significant impact on their purchase intention to tour services with different percentages for each element.

It is revealed that above 80% of respondents agreed that the following characteristics affect their purchase intention (a) 'incentives', including discounted coupons and offers on tour services; (b) 'timing' and sending mobile advertisements near the area of tour service providers and its effectiveness of reducing searching time for tour services; and (c) 'geofencing novelty' and being a new innovative way of ads. Meanwhile, 75% of respondents agreed that sending ads. more than once a time is annoying, 'intrusiveness'. However, it should be noted that similarly to the conclusions of the study of Leibbrand (2017,p.14), messages' sending time was crucial for around 80% of respondents.

Surprisingly, the table shows that sending personalized messages with titles and preferences, 'customization', has less impact with a percentage of 70%. Unlike the conclusions of the study of Defacto digital research (2015) that were highlighted by Leibbrand (2017, p.13), showing that the majority of respondents (86%) emphasized their increasing preference towards more personalized mobile messages. Accordingly, the second research question was answered.

Table 5: The significant relationship between customers' demographic Profile & their purchase intention based on geofencing advertising

Dimensions	Demographic Information							
	Gender		*Age Range*		*Educational Qualifications*		*Marital Status*	
	t	*Sig.*[@]	*f*	*Sig.*[@]	*f*	*Sig.*[@]	*f*	*Sig.*[@]
Customization								
1. Personalized (name/title) mobile advertisements.	0.838	**0.403**	2.279	**0.081**	1.428	**0.236**	2.248	**0.084**
2. Mobile advertisements match my preferences.	-1.909	**0.058**	0.582	**0.628**	0.923	**0.431**	0.531	**0.661**
Overall	-0.408	**0.684**	1.294	**0.278**	1.009	**0.390**	1.010	**0.389**
Timing								

1.	Receiving mobile advertisements near the area of tour service providers (travel agencies).	-1.009	**0.314**	2.341	**0.075**	0.457	**0.713**	2.119	**0.099**
2.	Receiving mobile advertisements reduces the time it takes to search for tour services.	-1.567	**0.119**	1.931	**0.126**	1.642	**0.181**	0.950	**0.418**
	Overall	-1.506	**0.134**	1.736	**0.161**	1.225	**0.302**	1.871	**0.136**

Intrusiveness								
1.	Sending more than one mobile advertisement for the same product/service annoys me.	0.046	**0.964**	4.897	***0.003***	7.004	***0.000***	3.331	***0.021***

Permission								
1.	Turning my location on when I am using my mobile to receive mobile advertisements at the right place (the area of tour service providers/ travel agencies).	1.128	**0.260**	1.997	**0.116**	1.685	**0.171**	0.946	**0.420**
2.	Asking for my permission before sending me any mobile advertisement.	-0.895	**0.372**	0.940	**0.423**	0.757	**0.520**	0.880	**0.452**
	Overall	0.324	**0.746**	2.194	**0.090**	0.461	**0.710**	0.293	**0.830**

Incentives/price								
1.	Receiving mobile advertisements	-2.633	***0.009***	0.105	**0.957**	2.881	***0.037***	0.472	**0.702**

	offering me price discounted coupons on tour services based on my location at the right time.							
2.	Receiving mobile advertisements with offers on tour services based on my location at the right time.	-2.309	**0.022**	1.644	**0.181**	9.707	**0.000**	1.234	**0.299**
	Overall	02.793	**0.006**	0.345	**0.793**	6.193	**0.000**	0.643	**0.588**

		Novelty						
1.	Purchasing a tour service promoted using Geofence technology as it would be a new and innovative way of advertising.	-0.195	**0.845**	6.648	**0.000**	7.144	**0.000**	2.315	**0.077**
2.	Using Geofence technology would help me to make better travel decisions.	1.285	**0.200**	4.501	**0.004**	0.176	**0.912**	2.401	**0.069**
3.	I prefer to use the tour services offered on the Geofence app rather than other tour services	1.516	**0.131**	10.686	**0.000**	3.005	**0.032**	1.198	**0.312**
4.	I would like to use discounted tour services on the geofence app	-1.427	**0.155**	10.850	**0.000**	0.832	**0.478**	0.716	**0.543**
	Overall	0.401	**0.689**	11.565	**0.000**	0.624	**0.600**	1.769	**0.154**

♦Rating was given on a 5-degree scale; whereas (5) represents "Strongly Agree."

Table 5 shows the significant relationship between customers' demographic profile (gender, age range, educational qualifications, and marital status) and their purchase intention based on geofencing advertising. The results show that there is no significant relationship between the Egyptian customers' demographic profile and the following factors; (a) customization, (b) timing, and (c) permission as being factors affecting purchase intention. This means that mobile message personalization, timing, and permission don't affect the Egyptian customers' purchase intention, no matter what their gender, age, educational level, or marital status is when adopting geofencing technology.

However, there is a significant relationship between the Egyptian customers' demographic profile and intrusiveness with a high significance level except for gender with a significance level of ($P<0.964$). Noticeably, the education level has the highest significance level ($P<0.000$). This means that intrusiveness and customers being annoying by sending more than one message at a time is not affected by the Egyptian customer gender, but rather affected by their age (20-40 years), marital status (married with children), and strongly affected by the education level (bachelor degree).

Similarly, regarding price incentives and discounted coupons offered on tour services, it is revealed that there is a significant relationship between incentives and customers' gender (females) and education level (bachelor degree) with the highest significance level of (P<0.000) for education level. In this regard, it can be concluded that price incentive is a vital factor for Egyptian customers' purchase intention and is strongly affected by females and customers with bachelor degree.

Moreover, there is a significant relationship between the novelty of geofencing as an advertising tool and the Egyptian customers' age (40-50 years) with the highest level of significance (P<0.000). However, the educational level (bachelor degree) has the same level of significance but only in terms of considering geofencing as a new and innovative way of advertising. Accordingly, the novelty factor as a determinant of purchase intention can be affected by the Egyptian customers' age range from 40-50 years and educational qualifications, especially with a bachelor degree. Hence, the third research question was answered.

Conclusions and Recommendations

Geofencing is considered an improved technology used in Location-based marketing. This technology is based on sending marketing messages when a customer enters a pre-defined area around the point of sale to motivates buying behavior. Accordingly, geofencing technology can be

beneficial in competition through sending offers to customers near a competitor's location, enabling companies to customize their marketing approach and take advantage of the competitive opportunities.

Considerably, it can be concluded that price incentives and offers, message timing, and geofencing novelty are the most effective characteristics that have a significant influence on the Egyptian customers' purchase intention. On the other hand, the education level of the Egyptian customers has a crucial effect on their purchase intention when considering intrusiveness, price incentives, and geofencing novelty as factors affecting purchase intention to tour services based on geofencing. Meanwhile, customers' age (20-40 years) has an influence on their purchase intention in terms of intrusiveness, while it has a significant impact in terms of the novelty of geofencing as a new advertising tool (40-50 years).

Nevertheless, females have an effect on their purchase intention when including price incentives, such as discounted coupons, in tour services offers based on geofencing ads. Additionally, the marital status (married customers with children) has the slightest impact on the Egyptian customers' purchase intention on tour services based on geofencing technology. Surprisingly, the main characteristics of geofencing technology - mobile message personalization,

timing and permission, are not affected by the Egyptian customers' gender, age, education level, or marital status.

In this regard, geofencing technology could be a very innovative way of advertising which could be adopted in the tourism industry by travel agents and other tour service providers. Results showed that it can be accepted among Egyptian travelers and can influence their purchase intention. Accordingly, it is recommended that applying geofencing as an advertising tool would help travel agencies to sell more tour packages to Egyptian customers in the context of competing with other competitors and online travel agencies. Additionally, keeping customers' privacy along with offering incentives, such as discounted coupons, would help attracting Egyptian customers to purchase tour packages via Geofencing technology.

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