Assessing the impact of mobile travel applications on tourism industries

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Abstract

Smart phones and tablets have played an important role in our lives as many of the mobile users spend their time using mobile applications. As the relationship between the tourism industry and technology grows, Smartphones continue make it easier to carry all the resources you need along your travels. Mobile users prefer comparing mobile travel applications to browsing the web or checking travel agencies 'web sites , especially while looking for hotels or flights . The main aims of this study are determining users' opinions regarding Mobile travel Applications. Identifying the relationship between demographic characteristics and customer loyalty and evaluating how customers view travel agencies websites. A survey was conducted to determine the views of a randomly selected sample of 228 of domestic tourists in Egypt and international tourists in relation to their mobile travel applications use. The results revealed that mobile travel users are increasing and the users' buying behavior show that they are loyal to mobile travel application.

Keywords Tourism**,** Mobile travel applications, Smartphone, tourists' loyalty and buying behavior

Introduction

"Mobile tourism" as an expression started to appear in the last two decades, and it involves using mobile devices as electronic tourist guides (Kenteris, et.al, 2009).The development of information technology is tremendous and this reflects on tourism field as well (Parro, 2013). Technological improvement and tourism have been going side by side for many years . Smartphone mobile applications are extremely important for the tourism industry as mobile applications have a considerable effect on tourism. They allow the user to access the contents through an installed application on the mobile devices (Alshattnawi, 2013). These mobile travel applications enable

users to be more aware of their surroundings as tourists can look up information about a point of interest (POI) on their mobile (Alshattnawi, 2013).

"The smart tourism is explained as a holistic approach that provide tour information, service related to travel, such as destination, food, transportation, reservation, travel guide, conveniently to tourists through IT devices " (Chulmo et al., 2013).

This study aims to explain the importance of mobile travel applications in the tourism industry and to measure their impact on tourism to determine where tourists' (users) position when it comes to adopting new technology ,in addition to measuring the loyalty of mobile travel applications users.

The objectives are

1- Assessing mobile travel applications effect on tourists' buying behavior
2- Evaluating users' loyalty to travel mobile applications .
3- Evaluating respondents' reviews of travel agencies websites, according to their experience.

2. Literature review

Smart phones:

Buhalis and costa (2006) stated that smart phones are *wearable computing systems* that can be used anywhere the person goes. "Smart phones are Mobile phones that combine communication with sophisticated personal use technology such as access to the Internet and the ability to download applications. The latest generation was introduced by Apple, in the form of its popular iPhone, in June 2007. Since then, a whole range of smart phones from competing brands using this technology have followed" (Tourism e kit ,2017). Smartphones gather all needed technologies for augmentation in one small device (Yovcheva et al., 2012).

Business insider (2013) mentioned that Smart phones have created a new business opportunity in hotel booking , as they facilitate last minute booking .Furthermore, business travelers prefer to book their travels on mobile and consumers who use their mobile devices for travel-related services tend to have higher than-average incomes. Grieve (2010) research found that Smartphone users were more frequent travelers, heavier users of social networking media, and they used their Smartphone devices for a range of travel related activities, including information search, location and directional tools ,and booking travels during their trips.

Mamaghani, 2009 and Langelund, 2007 stated that "smart phones have improved the traveler experience and mobile travel will soon be a must have tool for travelers". Travel can no longer be seen as a completely separate entity from everyday life, as smartphones make it easier to use travel applications during their trips . (Mortiz, 2015)

Mobile Travel Applications

Jieun et al, (2014) defined mobile applications as "Software that provides information in various formats, according to the technical features of the mobile devices for which they are designed and which can provide information and specific support to their users, being dedicated to daily or business activities". Travel applications help to plan and arrange the whole trip on the mobile device, having the whole itinerary in one place. These mobile travel applications cover travel agencies, hotels, car rentals, airlines, travel information, weather forecasts, maps, etc. The World Travel Market Global Trends Report revealed that bookings made from mobile devices will reach 35% in 2018 (Wtm , 2017) .

Furthermore, Mortiz (2015) shows that travel apps are still mostly used in the planning phase of arranging users' trips . Moreover , tourists use mobile applications on site as they enable users to select the best restaurants right on the spot, receive location based recommendations directly at the destination, or make use of GPS based navigation (Wang, Xiang and Fesenmaier, 2014).

Kenteris et al. (2007) divided existing commercial applications and research approaches in the field of mobile tourism into three main categories that involve :

• Tourist or museum guides with pre-installed applications that cannot be customized according to user preferences (rigidly defined content (in text, visual and auditory format)

• Mobile devices used to access mobile web portals to browse tourist information.

• Mobile electronic guides devices, which use either wireless or mobile network connections to access context awareness services.

Bicen and Sadikoglu' (2016) findings revealed that students plan their travels with mobile applications and social media content, choose their venues of interest using GPS, and, map applications, make price arrangements and compare hotels by using mobile applications. This indicates that they view mobile applications as reliable.

Buying Behavior and loyalty of Smartphone Users

Yoo and Gretzel, 2012 stated that the availability of online applications are rapidly growing and changing communication, making decisions and socializing .This influences consumers' behavior and in turn tourism.

Dick and Basu (1994) mentions that customer loyalty is the strength of the relationship between an individual's relative attitude and repeat patronage. Fiedler (2013) revealed that customer loyalty towards Mobile Travel Guide Application have a positive attitude where only (8 ;16.3%) stated that they either disagree (7; 14.3%) or strongly disagree (1; 2.0%). Furthermore, Good work label (2015) published that 30% use mobile apps to find the best hotel deals , 29% use mobile apps to find the best flight deals , 15% of users download travel apps to plan a trip ahead , 55.8% use mobile apps to check weather, 49.1 % use mobile apps to use mapping features , 62.1% use mobile apps to search nearby restaurant. 48.1% use mobile GPS to get travel directions , 46% use apps to find hotels and 36.1% use mobile apps to look for popular places for shopping.

All of that shows that tourists can actually have a loyalty for mobile applications as they can make a difference in customers' attitude towards the applications that are being used for their trip arrangements.

3. Hypothesis

H1: Customer loyalty has a positive influence on buying behavior.

H2: Usage of mobile travel applications has a positive influence on travel agencies website.

H3: There is a positive relationship between Demographic characteristics and customer loyalty.

4. Methodology

4.1. Participants, instrument and measures

This study uses the deductive approach and quantitative method to find out the causal relationships between studies independent and dependent variables, also a questionnaire was conducted to determine international and domestic travelers' opinions in relation to mobile travel applications. Only people who have smart phones were considered for this study. The questionnaire was randomly submitted to a sample of 228 national and international mobile travel application users . The research was started on the 6th of June 2017 and ended on 10th of February 2018.

4.2.Questionnaire lay out

Respondents were asked to responded to a questionnaire , the first part dealt with respondents demographics , the second part emphasized tourists buying behavior of mobile travel applications , the third part identifies the usage of mobile travel applications, the fourth part evaluates the travel agencies' website offers , and the fifth part discusses the customer loyalty to travel mobile applications .This questionnaire was obtained from Fiedler, 2013, parro 2013.

5. Results and discussion

5.1 Reliability and validity

To verify how the survey measurements met the objectives of this study, A Cronbach's alpha was used. The lower limit for Cronbach's alpha is 0.70 (Pallant, 2005) . The results of the reliability are shown in table 1. As the table shows Cronbach's alpha varies between 0.89-0.929 which are regarded as accepted reliability and the validity of the coefficient value above 0.35 which is very beneficial . Thus, the questionnaire items were considered reliable and valid

Table 1: Reliability and validity

	validity	reliability
Buying behavior	.466	.865
Usage of mobile travel application	.464	.928
Travel agencies website offers	.650	.893
Customer loyalty to travel mobile applications	.589	.897

Table 2: Respondents' demographic profile

Gender			
	Frequency	Percent	Valid Percent
Male	138	60.5	60.5
Female	90	39.5	39.5
Total	228	100.0	100.0

Age			
	Frequency	Percent	Valid Percent
21-30	86	37.7	37.7
31-40	102	44.7	44.7
41-50	32	14.0	14.0
51-60	8	3.5	3.5
Total	228	100.0	100.0
Education			

	Frequency	Percent	Valid Percent
Upper Secondary School/Vocational Education	4	1.8	1.8
Bachelor's Degree	112	49.1	49.1
Master's Degree	48	21.1	21.1
Doctor's Degree	64	28.1	28.1
Total	228	100.0	100.0

The result indicated that 60.5 % of the respondents were males and 39.5% were females. Age wise the majority of respondents (44.7 %) were between 31-40 , 37.7 are between 21-30 , 14% are between 41-50 and only 3.5 %are between 51-60. Regarding the education degree of respondents, the vast majority of respondents (49.1%) had bachelor degrees , (28.1%) have PhDs ,(21.1%) have Masters degrees and only 1.8 % are Upper Secondary School.

Table 3: Travelers' buying behavior

Do you book hotels via mobile application?					
	Frequency	Percent	Valid Percent	Mean	Std. Deviation
Yes	146	64.0	64.0	1.447	.4983
No	82	36.0	36.0		
Total	228	100.0	100.0		
Do you book flights via mobile application?					
	Frequency	Percent	Valid Percent	Mean	Std. Deviation
Yes	126	55.3	55.3	1.360	.4810
No	102	44.7	44.7		
Total	228	100.0	100.0		

Where do you mostly book your flights?					
	Frequency	Percent	Valid Percent	Mean	Std. Deviation
Online direct (on the airline's website/mobile application	70	30.7	35.1	2.061	1.0889
Online indirect (through booking websites/mobile application)	86	37.7	37.7		
Offline direct (with the ticket office of the airline)	46	20.2	20.2		
Offline indirect eg.(through a booking agency)	10	4.4	4.4		
I do not take flights	16	7.0	7.0		
Total	228	100.0	100.0		

Where do you mostly book your hotels ?					
	Frequency	Percent	Valid Percent	Mean	Std. Deviation
Online direct (on the hotel's website/mobile application)	53	23.245	23.245	2.447	.9672
Online indirect (through booking websites/mobile application)	143	62.71	62.71		
Offline indirect (e.g. through a booking agency)	12	5.26	5.26		
I do not book hotels	20	8.77	8.77		
Total	228	100.0	100.0		

Which Mobile Travel Application have you used in booking a trip					
	Frequency	Percent	Valid Percent	Mean	Std. Deviation
Directly from the airline, hotel, car rental app (e.g. Egypt air , British Airways, Hilton, Marriott, Hertz etc.)	70	30.7	30.7	2.263	1.3476
Tour operator apps (e.g. TUI, Thomas Cook etc.)	10	4.4	4.4		
Travel agencies (eg. Lucky tours, harty tours , travco etc .)	34	14.9	14.9		
Price comparison apps (e.g. TripAdvisor, KAYAK etc.)	114	50.0	50.0		
Total	228	100.0	100.0		

If the trip has the same price where do you prefer to buy?					
	Frequency	Percent	Valid Percent	Mean	Std. Deviation
Travel Agencies	50	21.9	21.9	2.140	.7495
Internet in general	96	42.1	42.1		
Mobile Travel Applications	82	36.0	36.0		
Total	228	100.0	100.0		

I usually buy my flight ticket and book my hotel using					
	Frequency	Percent	Valid Percent	Mean	Std. Deviation
Kayak	46	20.2	20.2	3.526	1.9877
sky scanner	52	22.8	22.8		
air BNB	16	7.0	7.0		
booking .com	72	31.6	31.6		
cheap flights	22	9.6	9.6		
Trivaco	2	.9	.9		
Yatra	2	.9	.9		
hostel bookers	4	1.8	1.8		
Others	12	5.3	5.3		

Total	228	100.0	100.0		

Buying a trip using a Mobile Travel Application is the most convenient way of shopping					
	Frequency	Percent	Valid Percent	Mean	Std. Deviation
Yes	182	79.8	79.8	1.202	.4022
No	46	20.2	20.2		
Total	228	100.0	100.0		

Buying trips using Mobile Travel Applications is less time consuming than buying them traditionally from the travel agencies					
	Frequency	Percent	Valid Percent	Mean	Std. Deviation
Yes	202	88.6	88.6		
No	26	11.4	11.4		
Total	228	100.0	100.0	1.114	.3186

Mobile travel applications help me to make the right buying decision					
	Frequency	Percent	Valid Percent	Mean	Std. Deviation
Yes	200	87.7	87.7		
No	28	12.3	12.3	1.123	.3289
Total	228	100.0	100.0		

Results revealed that more than half of the sample book their hotels and flights via mobile applications 64% book hotels via mobile application and 55.3%| book flights via mobile applications .37.7% of the respondents have indicated that they book their flights through Online indirect and 4.4 % book their flights through a booking agency . 62.71% have booked their hotels through Online indirect and 5.26% have booked their hotels through a booking agency, which means that travelers' attitude towards travel agencies has changed and they are not willing to get tourism services through them. Also, they have mentioned that the most used travel applications in booking a trip are the price comparison applications, 50 % of users utilize them. Furthermore, 42.1% of the respondents choose to buy their trip through internet in general and 21.9 % choose travel agencies which is an indicator that respondents prefer online to offline tools to select their trips .This should be put in to consideration when marketing a travel agencies offers. The most used travel applications are booking.com, sky scanner and kayak and other mobile travel applications include yelp, easy jet, ease my trip and make my trip .Customers also buy directly from hotel's websites or airline websites.

79.8 % of respondents indicated that buying a trip using a Mobile Travel Application is the most convenient way of shopping and 88.6 % responded

that Mobile Travel Applications are less time consuming than buying them traditionally from the travel agencies Also, 87.7% indicated that travel applications help them make the right buying decision.

Table 4 : Usage of mobile travel application

How often do you use your travel mobile applications on your smartphone/tablet?					
	Frequency	Percent	Valid Percent	Mean	Std. Deviation
Never	50	21.9	21.9	2.377	.9790
Once a week	66	28.9	28.9		
Some days	96	42.1	42.1		
Once a day	8	3.5	3.5		
All day long	8	3.5	3.5		
Total	228	100.0	100.0		
Do you use your Mobile Travel Application when you are					
Planning a trip	186	81.6	81.6	1.254	.6056
Buying a trip	30	13.2	13.2		
On a trip	8	3.5	3.5		
After a trip	4	1.8	1.8		
Total	228	100.0	100.0		
What is the best service when using a Mobile Travel Application?					
Flight Booking	86	37.7	37.7	2.079	1.5715
Hotel Booking	104	45.6	45.6		
Car Rental Booking	10	4.4	4.4		
General information of the destination	28	12.3	12.3		
Total	228	100.0	100.0		

The results in table (4) revealed that 42.1 % of respondents use travel mobile applications on their smart phones for some days , 81.6% indicated that they use mobile travel application while they are planning a trip and 45.6 % showed that the best service provided when using mobile travel application is hotel booking followed by flight booking.

Table 5 : checking travel agencies website

- Do you check travel agencies websites					
	Frequency	Percent	Valid Percent	Mean	Std. Deviation
Yes	114	50.0	50.0	1.500	.5011
no	114	50.0	50.0		
Total	228	100.0	100.0		

Do you view the offers of the travel agencies on face book mobile applications?					
	Frequency	Percent	Valid Percent	Mean	Std. Deviation
Yes	116	50.9	50.9	1.491	.5010
no	112	49.1	49.1		
Total	228	100.0	100.0		
The prices of the travel agencies published on their websites are appropriate for a domestic trip					
	Frequency	Percent	Valid Percent	Mean	Std. Deviation
Yes	156	68.4	68.4	1.316	.4659
no	72	31.6	31.6		
Total	228	100.0	100.0		
The prices of the travel agencies published on their websites are appropriate for an international trip					
	Frequency	Percent	Valid Percent	Mean	Std. Deviation
Yes	82	36.0	36.0	1.360	.4810
no	146	64.0	64.0		
Total	228	100.0	100.0		

As shown in table (5) the agreement level of all respondents with all statements are positive which means 1.500 , 1.491,1.316 ,and1.360 .However it is worth mentioning that these measures are insufficient, and misleading . Furthermore, the results shows, that half of the respondents only check travel agencies websites and view the offers of the travel agencies on facebook In addition 68.4% responded that the prices for a domestic trip published on travel agencies websites are appropriate however 64 % said that the prices for an international trip published on their websites are not appropriate. They said that the offers of the travel agencies for international trips had often expired on their websites. The prices ae a lot higher than the prices online. online they get a better value for their money . Travel agencies also charge a much higher commission which reflects on the total price . The prices of travel agencies are very expensive for international trips but appropriate for domestic trips . Travel agencies also charge high commissions on sightseeing ,ask tourists to pay in US dollars regardless of the currency of their countries, and the charge other hidden costs .

Table 6: Customer loyalty to travel mobile applications

Customer loyalty	SD %	D %	N %	A %	SA %	Mean	Std. Deviation
I am very likely to use such travel mobile applications	0	5.3	21.9	46.5	26.4	3.939	.8320
I have a positive attitude towards the application	0	1.8	16.7	51.8	29.8	4.096	.7267
I would prefer such travel applications over the travel agencies	0	8.8	26.3	43.0	21.9	3.781	.8881
I make my travel plans through mobile applications	0	8.8	20.2	44.7	26.3	3.886	.8980
I choose historical sites on the basis of user comments on Trip Advisor	0	8.8	22.8	47.4	21.1	3.807	.8692
I travel cities more easily with GPS	0	4.4	7.9	43.0	44.7	4.281	.7910
I find cheap flights through mobile applications more than travel agencies	0	4.4	21.9	43.9	29.8	3.991	.8342
I read user reviews before making hotel reservations through trip advisor	0	3.5	22.8	47.4	26.3	3.965	.7957
I make a price comparison among hotels using mobile applications	0	5.3	9.6	54.4	30.7	4.105	.7782
I prefer mobile applications to find companies for transfer from the airport	0	12.3	28.1	38.6	21.1	3.684	.9416
I do not need a tour guide as i can utilize mobile applications instead.	0	14.0	19.3	45.6	21.1	3.737	.9485
I find the places of entertainment by using mobile applications	0	7.0	14.9	56.1	21.9	3.930	.8044
I choose restaurants according to reviews and comments on mobile applications	0	8.8	17.5	44.7	28.9	3.939	.9031
Mobile travel applications have important impact on the tourism	0	1.8	8.8	52.6	36.8	4.246	.6841
I can rely on mobile travel applications rather than going to a travel agency	0	8.8	12.3	50.9	28.1	3.982	.8703
TOTAL (N=228)						3.957	0.172041

To understand Customer loyalty to travel mobile applications, the respondents have been asked to rate their level of agreement or disagreement as listed in table 6. As shown above, most customers view online applications positively with mean (3.957) and standard deviation (0.172041). This means that most customers are loyal to travel mobile applications .

Regression Analysis test

Table 7: H1: Customer loyalty has a positive influence on buying behavior

Linear Regression

Model Summary[b]									
					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.668[a]	.447	.444	7.80259	.447	182.359	1	226	**.000**
a. Dependent Variable: Customer loyalty									
b. Predictors: (Constant), Buying behavior									

According to the results in the previous table, which measures the relationship between customer loyalty and busying behavior, the overall regression model fit statistically. The "R" column represents the value of R, the multiple correlation coefficient. R can be considered to be one measure of the quality of the prediction of the dependent variable.

A value of 0.668 indicates a good level of prediction. The "**R Square**" column represents the R2 value. The value of 0.447 shows that the independent variables explain 44.7% of the variance of the dependent variable and it is highly significant ($p < 0.001$)

ANOVA[a]						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	11102.083	1	11102.083	182.359	**.000**[b]
	Residual	13758.969	226	60.880		
	Total	24861.053	227			
a. Dependent Variable: Customer loyalty						
b. Predictors: (Constant), Buying behavior						

The *F*-ratio in the **ANOVA** table (2) tests whether the overall regression model is a good fit for the data. The table shows that the independent variables statistically significantly predict the dependent variable, F(1, 226) = 182.359, p < .0005 (the regression model is a good fit of the data).Thus the results indicate that there is a linear relationship between the variables in the model.

Coefficients a

		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	22.357	2.789		8.016	.000	16.861	27.853					
	Buying behavior	1.981	.147	.668	13.504	.000	1.692	2.270	.668	.668	.668	1.000	1.000

a. Dependent Variable: Customer loyalty

b. Predictors: (Constant), Buying behavior

The model shows that the linear regression analysis estimates the linear regression function to be y = 22.357+ 1.981* x. This means that an increase in one unit of x leads to an increase of the y unit by 1.981. It is shown from the "Sig." column that all independent variable coefficients are statistically significantly different from 0 (zero). Also, there is a medium positive correlation between the two variables (customer loyalty and buying behavior) were (r = 0.668). Which proves the first hypothesis: the Customer loyalty has a positive influence on buying behavior

Table 8 :H2: usage of mobile travel application has a positive influence on travel agencies website

Model Summaryb

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.602a	.363	.360	1.63750	.363	128.625	1	226	.000	.311

a. Predictors: (Constant), usage of mobile travel application

b. Dependent Variable: travel agencies website

The researcher used the regression analysis to measure the relationship between usage of mobile travel application and travel agencies websites. According to Table (8), the overall regression model fits statistically. The "R" column represents the value of R, the multiple correlation coefficient. R can be considered one measure of the quality of the prediction of the dependent variable.

A value of .602 indicates a good level of prediction. The "R Square" column represents the R2 value. It shows from the value of .363 that the independent variables explain 36.3% of the variability of the dependent variable and it is highly significant ($p < 0.001$)

ANOVAa

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	344.896	1	344.896	128.625	.000[b]
	Residual	605.999	226	2.681		
	Total	950.895	227			

a. Predictors: (Constant), usage of mobile travel application

b. Dependent Variable: travel agencies website

The *F*-ratio in the **ANOVA** table tests whether the overall regression model is a good fit for the data. The table shows that the independent variables statistically significantly predict the dependent variable, $F(1, 226) = 128.625$, $p < .0005$ (the regression model is a good fit of the data), Thus the results indicate that there is a linear relationship between the variables in the model

Coefficientsa

del		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	8.681	.282		30.752	.000	8.894	10.313					
	offers	-.528	.0.47	-.602	-11.341	.000	-.806	-.568	-.602	-.602	-.602	1.000	1.000

a. Predictors: (Constant), usage of mobile travel application

b. Dependent Variable: travel agencies website

The model shows that the linear regression analysis estimates the linear regression function to be y = 8.681+ (-.528)* x. This means that any increase in one unit of x leads to a decrease in a y unit by (-.528). It is shown from the "Sig." column that all independent variable coefficients are statistically significantly different from 0 (zero). Consequently, there is a medium negative correlation between the two variables (usage of mobile travel application and travel agencies website) were (r = -0.602). The results revealed that the second hypothesis was correct. The use of mobile travel applications has a positive influence on travel websites.

Results of correlation tests

Table 9 : H3 : There is a relationship between Demographic and customer loyalty

Correlations					
		Gender	Age	Education	Loyalty
Gender	Pearson Correlation	1	.712**	-.689**	.045
	Sig. (2-tailed)		.000	.000	.495
	N	228	228	228	228
Age	Pearson Correlation	.712**	1	-.521**	-.313**
	Sig. (2-tailed)	.000		.000	.000
	N	228	228	228	228
Education	Pearson Correlation	-.689**	-.521**	1	-.302**
	Sig. (2-tailed)	.000	.000		.000
	N	228	228	228	228
Loyality	Pearson Correlation	.045	-.313**	-.302**	1
	Sig. (2-tailed)	.495	.000	.000	
	N	228	228	228	228
**. Correlation is significant at the 0.01 level (2-tailed).					

Pearson's bivariate correlation coefficient shows a medium negative linear relationship between customer loyalty, age and education scores (r =-.313, -.302) that is significantly different from zero (p < 0.001). However, Pearson's

bivariate correlation coefficient shows a non-significant linear relationship between customer loyalty, and gender (r=0.45). The findings confirm the third hypothesis, which is that there is a relationship between demographic characteristics and customer loyalty.

Based on the previous results, Table 10 shows the results of hypotheses testing.

Table 10
The Results of Hypothesis Testing

!	Hypothesis	Results
H1	Customer loyalty has a positive influence on buying behavior.	accepted
H2	Usage of mobile travel application has a positive influence on travel agencies website	accepted
H3	There is a relationship between Demographic and customer loyalty	accepted

6. Conclusion

The study measures the impact of mobile travel applications on tourism industries. The main aim of this study is to determine the users' opinions of using Mobile travel Applications , evaluate their view of travel agencies websites, and Identify the relationship between demographic and customer loyalty. The study use multiple regression to predict the how Customer loyalty influences buying behavior. These variables statistically significantly predicted, $F(1, 226) = 182.359$, $p < .0005$, $R2 = .447$, medium positive correlation between the two variables were ($r = 0.668$). However, the linear regression analysis estimates the linear regression function to be $y = 22.357 + 1.981 * x$. This means that an increase in one unit of x leads to an increase in a unit y unit by 1.981. All variables added statistically significantly to the prediction, $p < .05$. Furthermore, A multiple regression was used to predict the influence between Customer loyalty and buying behavior. These variables statistically significantly predicted that, $F(1, 226) = 128.625$, $p < .0005$, $R2 = .363$, medium negative correlation between the two variables were ($r = -0.602$). The linear regression analysis estimates the linear regression function to be $y = 8.681 + (-.528) * x$. This means that the increase in one unit of x leads to a decrease of unit y by (-.528). All variables added the statistically significantly to the prediction, $p < .05$. In addition, there is a negative medium relationship between customer loyalty and the two demographic

variables (age and education) However, the results indicated that there is no relationship between gender and customer loyalty.

7. Recommendations

- By using mobile apps, travel agencies can increase the number of their customers through retaining old clients and attracting new ones
- Through mobile travel applications, travel agencies can strengthen their market image establish a strong relationship with their customers , which will lead to customer loyalty .
- Traditional travel agencies have to acquire new electronic commerce technologies and enter the online travel segment by adopting strategies based on new technologies in order to survive in the new competitive environment (Chircu,Kauffman, 1999 ; Lin et al., 2009)
- changing the travel agencies website to have a mobile friendly layout.
- Travel agents should register in viator debuts as it is a booking platform for travel agents .It offers a lower prices for an identical activity and if the agent or customer finds a lower price, viator will refund the difference and the process is free (Skift, 2017)

8-Research Limitation and Future Researches

The data was mostly collected from the bachelor's degree, master's degree and PhD degree holders who represent mostly Gen Y (their ages vary between 21-40). They are known as "incredibly sophisticated, technology wise, immune to most traditional marketing and sales pitches as they not only grew up with it all, they've seen it all and been exposed to it all since early childhood''(Wjs, 2018). Members of this generation usually have money, they are well-educated and they usually use mobile internet and applications for work .So, it is easier for them to use smart phones to purchase products over the internet. Very few people from older age categories have responded to the questionnaire, probably because they do not use the internet for shopping purposes.

The recent study focused on studying the impact of mobile travel applications on tourism, whereas future studies could focus on mobile friendly hotels' websites in Egypt and the impact of changing travel agencies websites to mobile friendly websites. In the future I can conduct a similar survey to collect data from different demographic profiles such as generation x and baby boomers to determine whether there is any difference between studies of various demographic profiles.

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