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An empirical Study on Smartphone based E-tourism Service Factors in Bangladesh

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Abstract

Tourism is an information sensitive sector which generally offers services to the visitors. And success of this industry largely depends on authentic information and proper communication. Smartphone is one of the most popular forms of communication all over the world. Now-a-days, more than 60% people use smartphone and internet which helps people to search information before, during and after travel and make proper travel decisions. This study tries to identify the relationship among services of smartphone and e-tourism. And able to find out that smartphone based services like information search, e-ticketing, e-reservation, e-passport, online visa processing, e-payment, e-marketing, e-itinerary, location tracker, e-travel guide help tourists to enjoy a comfortable and hassle-free travel. This research is empirical in nature and both qualitative and quantitative statistical methods are used. Data are collected from both primary (Five Point Liker Scale Questionnaire is used for conducting the survey, sample size was 250 respondents) and secondary (journals, books, websites and others) data sources. Two hypotheses are tested; as well as ANOVA, coefficient and regression analysis are done for identifying relationships among dependent and independent variables and proving hypothesis. After completing analysis some recommendations are made how smartphone based services help to promote e-tourism services. This study basically carried out to identify the smartphone based services which mediate e-tourism services in Bangladesh.

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1. Introduction:

Tourism is one of the worlds' fastest growing industries. It entails activities and services associated with transportation, accommodation, food, shopping, entertainment and hospitality services available for the travelers. Tourism is a major source of income generation and foreign exchange earnings in many countries. It creates ample job opportunities and plays a vital role in country branding. Due to globalization, technological advancement and rapid urbanization, influential factors of tourism sector are also changing day by day and in the field of global tourism, ICT plays vigorous role in visitor's decision making. The quality and the utilization rate of ITC's applications are significantly effect on competitive success and each day the role of these technologies is expanding with an unbelievable speed. Basically ICT has a potential impact on tourism business because tourism is a highly information-intensive industry and through the use of internet information can be transferred around the globe within a second.It is almost impossible nowadays to imagine touristic projects and visions without considering the major role of ICTs and the Internet. Moreover, the Internet has facilitated prospective tourists' and current visitors' services, communication, and information access. The role of ICT in tourism industry cannot be underestimated and it is crucial driving force in the current information driven society. It has provided new tools and enabled new distribution channels, thus creating a new business environment. Mobile technologies have offered one of the most significant contributions within the tourist experience paradigm.

2. Literature Review:

Tourism means leaving the usual living place and traveling to different places with various purposes and documented memories in the forms of photos and videos (Clawson 1963; Cohen 1979; Tussyiadiah and Fesenmaier 2009). During the travel people have to constantly search information to reduce the uncertainty and support their decisions (Bettman, 1998; Bieger&Laesser, 2004; Gursoy&McCleary, 2004). According to Gretzel, Fesenmaier and O'Leary (2006), travelers have to search information during three phases of travel: pre-consumption stage (information is used for planning, decision making and anticipation), consumption stage (information is used for connection, navigation and on-site transactions) and after travel, they can share their views, experience with others. Information must be able to flow quickly and accurately between the client, intermediaries and each of the tourism suppliers involved in servicing the client's needs. Internet makes it easy to modify, search and share information among the visitors.Tourism has closely been connected to progress of ICTs for over 25 years. Nowadays, the Internet and ICTs are relevant on all operative, structural, strategic and marketing levels to facilitate global interaction among suppliers, intermediaries and consumers around the world. The e-tourism concept includes all business functions (i.e., e-commerce, e-marketing, e-finance and e-accounting, e-HRM, e-procurement, e-production) as well as e-strategy, e-planning and e-management for all sectors of the tourism industry, including tourism, travel, transport, leisure, hospitality, principals, intermediaries and public sector organizations. Hence, e-tourism bundles together three distinctive disciplines: business management, information systems and management, and tourism.

Smartphone offers more advanced computing ability and connectivity than basic mobile p Smartphone is a blessings that will help to find all necessary information within a second (Charlesworth, 2009) and provides thousands of mobile application (apps) which offer a range of services such as communication, entertainment, news, social network and travel. Traveler can easily search any information using smartphone with the use of Internet. The

invention of GPS system as well as different apps like travel site Expedia, booking.com, Google map, Triplt: Travel Planner, Guides by Lonely planet, Opal travel, Tripadvisor, STA Travel, Hopper Book Flights, Uber etc make travel more easy nowadays around the world. Travelers not only use smartphone for making their trip easy they also share their experience through social media during or after travel. Tourism industry is almost entirely dependent upon information availability, representation, description and exchange to help tourists make a purchase decision. Timely and accurate information, relevant to consumers' needs, is often the key to satisfaction of tourist demand. The tourism industry is learning fast that the Internet or smartphone can satisfy these marketing imperatives far better than any other existing technology-marketing is attractive to the tourism industry as travel is an information-based product and the Internet is full of information (Bukhari, Ghoneim, Dennis & Jamjoom, 2013). Travel booking is based on information as tourism products are intangible, heterogeneous in nature (Wang, Park and Fresenmaier, 2012). The Internet has enabled organizations to distribute products both through direct distribution and through a network of channels. Intermediaries involve online travel agencies, as well as search engines, which are able to distribute static and dynamic information, like availability and prices. Now-a-days, e-ticket makes journey easier than before. E-ticked can be defined as "a paperless electronic document used for ticketing travelers, mainly in the commercial airline industry" (Alfawaer, Awni and Al-Zoubi, 2011). It helps tourist to confirm and buy their ticket from home. It also helps organization alongside tourists by reducing cost (Boyer, Hallowell & Roth, 2002).

Internet banking is enhanced by the ability of customers to conduct banking transactions anytime and anywhere, faster and with lower fees compared with using traditional bank branches (Sayar and Wolfe, 2007). So, tourist can easily give payment of ticket, hotel rooms, activities, shopping and for other services easily via online banking. Online-visa application, processing system helps people to find visa without any hassle and to travel foreign country's destinations easily. Different e-location trackers like GPS helps people to easily find any location although GPS usage will be impossible once the satellite signals cannot be received, for example, inside buildings, tunnels or undergrounds, places where the signals from the satellites are not reachable (M.L.Kulthon Kasemsan, 2010). E-Itinerary can be integrated into online calendar. Any changes to itinerary will reflect on the calendar instantaneously. Check-in to one's flight directly from his/her e-itinerary. View real-time flight status including delays, cancellations and gate information on the day of departure (Berry &Seltman, 2007).

3. Methodology of the study:

Both qualitative and quantitative analyses are carried out for this study. Primary and secondary data sources are used for information collection. Primary data are generally collected by suing different kinds of instruments like questionnaire, focus group discussion, interview, observation and others which provides the actual scenario of market. Here Questionnaire and personal interview are chosen as a tool for collecting necessary primary data. Five point linker scale method is used for making the questionnaire and questionnaire are close ended in nature. Both convenience and judgmental sampling methods are used for this study. Sample size is selected as 250. Data is collected from 250 people (respondents) of different ages and professions who use smartphone, its services or like to travel and interested to use the smartphone based tools that will mediate their touristic experience. After collecting data, data are analyzed and hypothesis testing, regression analysis are also done for finding out the most viable relationship among these two. Secondary data sources

are also used for collecting necessary data. For this study, some relevant literatures on tourism in general have been collected from different newspapers, magazines, journals, periodicals, internets, and research reports. Souvenirs, brochures, travel handbooks, leaflet, and folders of different tour operators have also been found useful. Other published and unpublished materials of both the government and non-government agencies have also provided some required information.

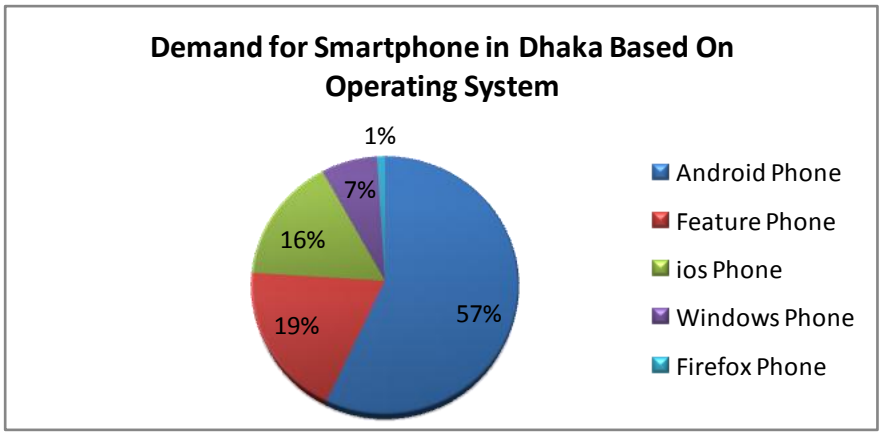
4. Objectives of the study:

As most of the people in Bangladesh use smartphone and spend their leisure times in exploring new destinations, smartphone based e-tourism could open more accessible door for them. The objectives of this research are: identifying the smartphone based e-tourism services which are available as well as identifying the role of smartphone in the promotion of tourism in Bangladesh.

5. Discussions:

5.1 Smartphone Based E-tourism and influential factors:

The mobile handset industry in Bangladesh has traditionally been dominated by the Finnish giant Nokia due to its low cost feature phones. As of now, the growth in the smartphone sales in Bangladesh, especially, Dhaka is much higher than the global average of 20.3%, according to high officials from Samsung.



Source: Light Castle Partners

Bangladesh has reached a remarkable internet penetration despite negligible 3G use, with most people using the internet over a 3G connection via feature phones or low-end smartphones. Smartphone use is growing and People are switching from feature phones to smart phones According to BTRC, mobile phone subscription reached about 120.35 million by the end of December 2012.

Internet Users in Bangladesh

Country	2000	2002	2003	2005	2007	2008	2009	2016
Bangladesh	30,000	150,000	243,000	300,000	500,000	556,000	617,300	28,499,320

Source: CIA World Factbook, June 30, 2018

Today, in spite of many fascinating attractions and potentials in Tourism filed, Bangladesh does not have a considerable global share among other countries. Today, about 50% of people in developed countries, plan for their holidays through internet. Internet, as a distribution channel in tourism industry in information gathering, reservation and ordering, purchasing and transportation fields has entered to value chain of e-tourism. Factors affecting on e-

tourism evolution in country are: governmental and managerial policies, software and applications, cultural and social factors and supporting information systems, respectively. The following factors mostly affect the promotion and features of e-tourism: Government and governmental management plays important role in tourism promotion. So, it's suggested that practitioners in e-tourism policy makers provide provisions in order to attain encouraging packages and Security in Tourism business atmosphere. Elements such as 3D pictures and games based on virtual trips in this regard are considered important. So, it's suggested that Tourism Organizations go through the development of digital and virtual content and use virtualization technologies and digital games for making this field attractive for tourists. Public and private sectors acting in IT can invest on planning and production of med wares based on mobile devices and optimum bandwidth. Also it was found that some preventing elements such as religious and racial prejudices, women limitations and other considerations have significant role in tourism development, which must be considered in future researches.

5.2 Smartphone based e-tourism services

There are a lot of smartphone based apps which helps to exchange information among tourists. Some applications give only information, others also offer the possibility to do reservations and few have payment options. The service offered by an application can be structured in three levels:

General information: information related to events, attractions, shopping, mapping could be done via mobile phone using internet at any time. Beach Guide, Beach Locator, Check my trip, Currency, Kayak, Packing, The Currency Converter, Trip Advisor, Trip Journal apps help visitors to find general information.

Application services: Tickets availability, booking/reservations, timetables, emergency services are now handled by mobile phone. Passport application, hotel booking all are done through smartphone now.

Payment options: Bkash, mobile banking and others apps help visitors for settlement of payment at different stages of travel.

Airlines: Online ticketing system, artile related information collection, job search all could be done through smartphone.

Dictionaries and Translators: Langenscheidt, Lonely Planet Phrasebook, Ponds, Multi dictionary, Word Lens helps to get proper directions.

Restaurants: Now facebook page/group and website of restaurant provide necessary information regarding all restaurants around the world.

Flight searcher or flight status: Airport Status Free, Flight Board, Flight Track Pro, Flight Tracker, Flight Status, Flight Update, Infovuelos, Liligo, Logitravel apps will help to flight related information search by suing smartphone.

Transport: Uber, Pathao, Shohoz and other apps help to find transport facilities easily at any time.

The increase of the number of smartphone users has led to a raise of different consumer profiles. There are mainly four smartphone consumer profiles:

Basic user: persons who mainly use the device for calling and sending text messages.

Players and social network users: linked to the profiles of younger consumers and socialization time.

Internet surfers: important use of the web environment

Professional users: persons who mainly use the phone for business purposes.

At pre-travel stage, traveller search necessary information via mobile phone. On-site information search occurs after arrival of travel destination and is the most important area in

mobile tourism marketing, because travellers are normally unfamiliar with the destination sites and often need information that is not foreseen before the travel. Finally, post-travel feedbacks can be given through online consumer reviews, such as Trip Advisor or Twitter. Mobile technologies have offered one of the most significant contributions within the tourist experience paradigm. Smartphones and tablets with wireless connectivity permit travellers to share personal content from their experiences while they are still experiencing the destination. These processes are easily shown in the following figure:

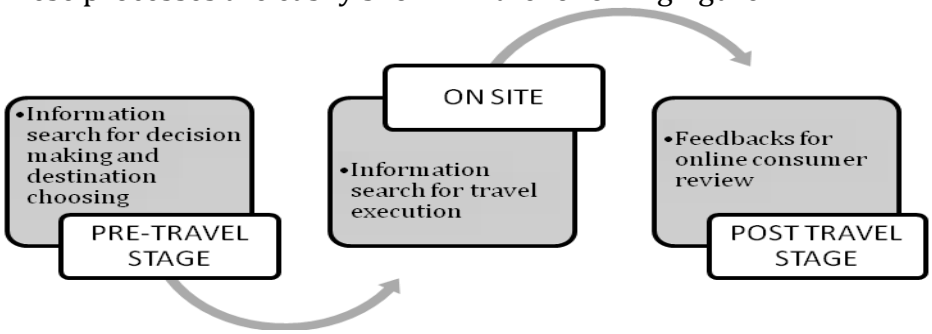


Figure: Uses of Smart phone in all phase of trip

It is worth pointing out that mobile devices also facilitate monitoring tourists at the destination. Before Global Positioning Systems (GPS), this task was expensive, labour-intensive, inconvenient and tiring – including observation or the use of questionnaires and interviews. Currently, GPS systems imbedded in personal mobile devices offer an alternative, as both a more efficient and effective means to understand the space-time dynamics of tourists at the destination.

6. Analysis and Findings:

6.1 Socio-Demographic Profile of the Respondents:

From the survey it can be seen that, the total number of respondents are 250 from which 52.2% respondents are male and 48.8% respondents are female. From the chart it can be said that most of the respondents are highly educated because 65.6% people are university level graduate and 17.2 % people have done PhD. Here, 10.4% people have higher secondary level education. In this survey most of the respondents know about e- tourism services. About 55.2% of participants are service holder and 16% of them are students. There are 15.2% are businessman. The income range of the respondents is highest at 46.8% which is between 10000.

Respondent's Profile analysis				
		Frequency	Percent	Cumulative percent
Gender	Male	138	55.2	55.2
	Female	112	44.8	44.8
	Total	**250**	**100.0**	**100.0**
Age	18-25	109	43.6	43.6
	26-35	67	26.8	70.4
	36-45	57	22.8	93.2
	46-55	15	6.0	99.2
	56 and above	2	.8	100.0
	Total	**250**	**100.0**	

		Frequency	Percent	Cumulative percent
Profession	Service holder	138	55.2	55.2
	Student	38	15.2	70.4
	Businessman	40	16.0	86.4
	Social workers	24	9.6	96.0
	Others	10	4.0	100.0
	Total	**250**	**100.0**	
Income	Below 10000	11.7	46.8	46.8
	11000-20000	44	17.6	64.4
	21000-3o000	36	14.4	78.8
	31000-40000	29	11.6	90.4
	Above 40000	24	9.6	100.0
	Total	250	100.0	

Source: SPSS Output

6.2 Descriptive Statistics of the quantitative data

From the table it can be said that the overall score of Smartphone based e-tourism services are above average and excellent. The highest score from the twelve e-tourism services is 4.10 which carry "online travel guide". That means the respondents think that online travel guide is the best e-tourism services of smartphone. The second highest score achieved "e-payment" which is 4.04, that means it is an effective factor. The variance of online travel guide is 79% factors affecting e-tourism services is 58% which represents most of the factor greatly affecting e-tourism services which is basically smart phone based.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
E-ticketing	250	1	5	3.61	1.037	1.075
Online reservation	250	1	5	3.94	.955	.912
E-marketing	250	2	5	3.80	.968	.937
E-payment	250	1	5	4.04	.835	.697
Online visa processing	250	1	5	3.88	1.008	1.017
Virtual tour	250	1	5	3.87	.977	.955
E-branding	250	1	5	3.90	.918	.842
E-itinerary management	250	1	5	3.64	.980	.961
E-destination map	250	1	5	3.87	.935	.875
Online location tracker	250	1	5	3.94	.890	.792
Online banking	250	1	5	3.95	.915	.837
Online travel guide	250	1	5	4.10	.887	.786
Factors affecting e-tourism	250	2	5	4.31	.764	.583
Valid N (list wise)	250					

Source: SPSS Output

6.2.1 User of Smartphone:

As the study is based on the smartphone based e-tourism services, the data is collected from the people who use smartphone. The respondent was 250 people and number of the user of smartphone was same.

Smartphone User					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	250	100.0	100.0	100.0

Source: SPSS Output

6.2.2 Any travel or tourism related app in smart phone:

Basically most of the people use smartphone but not all use e-tourism related any app. From the survey it can be found that about 241 respondents use or have tourism related app in their phone and about 3.6% respondents don't use tourism related app.

Tourism related app					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	241	96.4	96.4	96.4
	No	9	3.6	3.6	100.0
	Total	250	100.0	100.0	

Source: SPSS Output

6.2.3 E-ticketing made the travel thing just a distance of hours:

E-ticketing has become an effective tool of better travel experience. About 19.2% respondents strongly agree with the statement that e-ticketing made travel thing just distance of hours. The 41.6% people agree, 23.2% neutral with the statement, 12.8% disagree and 3.2% strongly disagree that e-ticketing has made travel thing just a distance of hours.

E-ticketing					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	8	3.2	3.2	3.2
	Disagree	32	12.8	12.8	16.0
	Neutral	58	23.2	23.2	39.2
	Agree	104	41.6	41.6	80.8
	Strongly Agree	48	19.2	19.2	100.0
	Total	250	100.0	100.0	

Source: SPSS Output

6.2.4 Online reservation facilitate tourist by offering them a flexible system to booking instantly:

Online reservation					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	4	1.6	1.6	1.6
	Disagree	18	7.2	7.2	8.8
	Neutral	44	17.6	17.6	26.4
	Agree	108	43.2	43.2	69.6
	Strongly Agree	76	30.4	30.4	100.0
	Total	250	100.0	100.0	

Source: SPSS Output

Online reservation is a greater way of reserving hotels before reaching to the destination. About 43% respondents think that online reservation facilitate tourist by offering them a flexible system to booking instantly and 30, 4 people are strongly agree. About 7.2 % have disagreed and 1.6% strongly disagrees with the statement.

E-marketing has become inevitable trend for the promoting tourism attraction:

E-marketing has become the most influential form for promoting tourism. From the survey it can be said 27.2% people are strongly agree, 37.6% people agree, 23.6% people are neutral. A small percentage of the respondents have negative opinion about the statement like 11.6% people disagree about e-marketing role for promoting tourism. The largest people agree with the statement regarding e-marketing.

E-Marketing					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	29	11.6	11.6	11.6
	Neutral	59	23.6	23.6	35.2
	Agree	94	37.6	37.6	72.8
	Strongly Agree	68	27.2	27.2	100.0
	Total	250	100.0	100.0	

Source: SPSS Output

E-payment has made travel easier:

E-payment is a great way of paying money as early as possible. About 31.6% respondents strongly agree with the statement that e-payment has made travel easier. The 45.6% people agree, 18.4% neutral with the statement. About 4% people disagree with it and .4 % people strongly disagree with the statement that e-payment has made travel easier.

E-payment					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	.4	.4	.4
	Disagree	10	4.0	4.0	4.4
	Neutral	46	18.4	18.4	22.8
	Agree	114	45.6	45.6	68.4
	Strongly Agree	79	31.6	31.6	100.0
	Total	250	100.0	100.0	

Source: SPSS Output

6.2.5 Online visa processing makes your travel easy and comfortable:

Online visa processing					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	.4	.4	.4
	Disagree	32	12.8	12.8	13.2
	Neutral	42	16.8	16.8	30.0
	Agree	97	38.8	38.8	68.8
	Strongly Agree	78	31.2	31.2	100.0
	Total	250	100.0	100.0	

Source: SPSS Output

On line visa processing has become a popular way getting visa easily. From the survey it can be said 31.2% people are strongly agree, 38.8% people agree, 16.8% people are neutral. A

small percentage of the respondents have negative opinion about the statement like 12.8% people disagree about online visa processing and .4% people strongly disagree with the statement.

6.2.6 Virtual tour help to enhance real world travel:

Virtual tour					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	.8	.8	.8
	Disagree	23	9.2	9.2	10.0
	Neutral	56	22.4	22.4	32.4
	Agree	93	37.2	37.2	69.6
	Strongly Agree	76	30.4	30.4	100.0
	Total	250	100.0	100.0	

Source: SPSS Output

Virtual tour enables a tourist to view the real world travel at glance. About 37% people are agreeing that virtual tour help to enhance real world travel and 30.4% strongly agree with it. About 9.22 % have disagreed and .8% strongly disagrees with the statement. About 22.4% people natural about the virtual tour related statement.

6.2.7 **E-tourism branding widen country's image and form a competitive position:**

E-branding					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	3	1.2	1.2	1.2
	Disagree	13	5.2	5.2	6.4
	Neutral	61	24.4	24.4	30.8
	Agree	101	40.4	40.4	71.2
	Strongly Agree	72	28.8	28.8	100.0
	Total	250	100.0	100.0	

Source: SPSS Output

From the survey it can be said 28.8% people are strongly agree, 40.4% people agree, 24.4% people are neutral. A small percentage of the respondents have negative opinion about the statement like 5.2% people disagree that E-tourism branding widen country's image and form a competitive position.

6.2.8 E- Itinerary management facilitates travelers stay on time, on target and connected:

Itinerary management					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	6	2.4	2.4	2.4
	Disagree	26	10.4	10.4	12.8
	Neutral	66	26.4	26.4	39.2
	Agree	105	42.0	42.0	81.2
	Strongly Agree	47	18.8	18.8	100.0
	Total	250	100.0	100.0	

Source: SPSS Output

From the survey it can be said 28.8% people are strongly agree, 40.4% people agree, 24.4% people are neutral. A small percentage of the respondents have negative opinion about the

statement like 5.2% people disagree about the statement e- itinerary management facilitate travelers stay on time, on target and connected. Large proportion respondents agree with that statement.

E-destination map directs tourist to find exact place to travel:

E-destination map					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	.8	.8	.8
	Disagree	22	8.8	8.8	9.6
	Neutral	49	19.6	19.6	29.2
	Agree	110	44.0	44.0	73.2
	Strongly Agree	67	26.8	26.8	100.0
	Total	250	100.0	100.0	

Source: SPSS Output

E-destination map is the effective way of direct the guest toward their expected destination. From the survey it can be said 26.8% people are strongly agree, 44% people agree, 19.6% people are neutral. A small percentage of the respondents have negative opinion about the statement like 8.8% people disagree about the statement-destination map directs tourist to find exact place to travel.

6.2.9 Online location tracker identifies the movement of tourist throughout their visit:

Online location tracker					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	2	.8	.8	.8
	Disagree	12	4.8	4.8	5.6
	Neutral	58	23.2	23.2	28.8
	Agree	104	41.6	41.6	70.4
	Strongly Agree	74	29.6	29.6	100.0
	Total	250	100.0	100.0	

Source: SPSS Output

From the survey it can be said 29.6% people are strongly agree, 41.6% people agree, 23.2% people are neutral. A small percentage of the respondents have negative opinion about the statement like 4.8% people disagree about the statement Online location tracker identifies the movement of tourist throughout their visit.

6.2.10 Online banking service ensures safe and quick transaction of money of the tourist:

Online banking					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Disagree	1	.4	.4	.4
	Disagree	19	7.6	7.6	8.0
	Neutral	48	19.2	19.2	27.2
	Agree	106	42.4	42.4	69.6
	Strongly Agree	76	30.4	30.4	100.0
	Total	250	100.0	100.0	

Source: SPSS Output

From the survey it can be said 30.4% people are strongly agree, 42.4% people agree, 19.2% people are neutral. A small percentage of the respondents have negative opinion about the

statement like 7.6% people disagree about the statement on line banking service ensure safe and quick transaction of money of the tourist.

6.3 Reliability Test

Before applying statistical tools, testing of the reliability of the scale is very much important as it shows the extent to which a scale produces consistent result if measurements were made repeatedly. This is done by determining the association in between scores obtained from different attributes of the scales. If the association is high, the scale yields consistent results, thus it is reliable. Cronbach's Alpha is the most widely used method. It may be mentioned that its value varies from 0 to 1 but the satisfactory value is required to be more than 0.6 for the scale to be reliable (Malhotra, 2002; Cronbach, 1951) and if the value is .70 then it is standard.

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.89	.89	13

Source: SPSS Output

In the present study, we therefore used Cronbach's alpha scale as a measure of reliability. In our study the value is .89, which means the study is standard and reliable.

6.4 Regression Analysis and hypothesis testing:

Ho1: Ho: Null Hypothesis: There is a strong relationship between smartphone based services and e-tourism.

H02: There is no relationship between smartphone based services and e-tourism.

In order to reveal more support for hypothesis 1, regression analysis can be used in the current study to test and explain the casual relationship between variables. The multiple linear regression procedure can be employed because it provided the most accurate interpretation of the independent variables and it helps to assess whether the identified independent variables exerted a significant influence on factors of smartphone based e-tourism services. The twelve independent variables were expressed in terms of the standardized factor scores (beta coefficients). The significant factors that remained in the regression equation were shown in order of importance based on the beta coefficients. The dependent variable, factors effecting e-tourism services was measured on a 5-point Likert-type scale. The equation for factors of smartphone based e-tourism services can be expressed in the following specification:

$$Ys= \beta 0 + \beta 1\, X1 + \beta 2\, X2 + \beta 3\, X3 + \beta 4\, X4 + \beta 5\, X5 + \beta 6\, X6 + \beta 7\, X7 + \beta 8\, X8 + \beta 9\, X9 + \beta 9\, X10 + \beta 9\, X11 + \beta 9\, X12 \varepsilon i$$

Where, Ys= factors affecting e-tourism β0 = constant (coefficient of intercept) X1 = E-ticketing X2= E-reservation X3=E- marketing X4=E-payment X5= E-visa processing X6= Virtual tours	X7= E-tourism branding X8= E-itinerary management X9= E-destination map X10=E-location tracker X11=E-tourism branding X12=E-travel guide εi= Disturbance term/ Error term B1,..., B8 = regression coefficient

From our survey we get the following regression equation:

Ys=1.326-.025 X1+.090X2+.010X3-.078X4+.055X5+.127X6+.061X7-.019X8+.194X9 .o29X10+.098X11+269X12

To predict the goodness –of-fit of the regression model, the multiple correlation coefficient (R), coefficient of determination (R2), and F ratio are examined. The following table represents the R value and R square value. The R of the independent variables (twelve factors, X1 to X12) and the dependent variable (factors of e-tourism) is .589, which shows that the people and tourists' had positive and highly correlations of smart phone based e-tourism services.

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.589[a]	.292	.235	.668

Source: SPSS Output

The R2 is .292 suggesting that more than 29% of the variation of smartphone based e-tourism services could be explained by twelve factors. In other words at least the twelve factors are very important to provide the evidence of smart phone based e-tourism services.

ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	39.514	12	3.293	7.378	.000[b]
	Residual	105.770	237	.446		
	Total	145.284	249			

Source: SPSS Output

The p value is 0.000, which is considered highly significant. The regression model achieved a level of goodness-of-fit of about 29% in predicting the variance of the factors of smart phone based e-tourism services, as measured by the above mentioned R, R2. In other words, at least one of the factors is important in contributing to the e-tourism services. The study is significant enough to test the hypothesis of the study. The significance of the factors is analyzed in the co-efficient table which represents all the variable of the study.

Coefficients

ModeL		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.326	.396		3.347	.001
	E-ticketing	.155	.049	.034	.504	.003
	Online reservation	.157	.053	.113	1.703	.003
	E-marketing	.153	.048	.013	.204	.004
	E-payment	.145	.056	.085	1.383	.005
	Online visa processing	.255	.048	.072	1.134	.000
	Virtual tour	.160	.046	.162	2.757	.002
	E-branding	.141	.051	.073	1.198	.005
	E-itinerary management	.151	.046	.025	.418	.004
	E-destination map	.194	.049	.238	3.928	.000
	Online location tracker	.150	.051	.034	.577	.004
	Online banking	.158	.050	.118	1.964	.002
	Online travel guide	.269	.053	.312	5.090	.000

Source: SPSS Output

In the regression analysis, the beta coefficient can be used to explain the relative importance of each of the twelve factors (independent variables) in contributing to the variance in smart phone based e-tourism services (dependent variable). As far as the relative importance of the twelve e-services is concerned, online travel guide (beta=0.312, p=0.000) has the highest contribution and carries heaviest weight for e-tourism services followed by online visa processing (beta-255,p=.000) ,e-destination map (beta: 0.194, p=0.000),virtual tour (beta=.160, p=.002), online banking (beta=.258,p=.oo2),online reservation(beta=157,p=.003), e-ticketing (beta=153,p=.003). Most of the factors have a positive co-relation and highly influential .In conclusion, the entire factors significant but have positive greater influence on the smart phone based e-tourism services. Thus, the results of multiple regression analysis accept hypothesis 1, that "**There is a strong relationship between smart phone based services and e-tourism"**. So, hypothesis 1 has been accepted.

7. Concluding remarks:

Now-a-days Smartphone is essential elements for proper communication. Without a Smartphone no travelers can think, to get a proper satisfaction from tourism services approximately. Day by day human being specially educated and modern people are become being dependent on Smartphone and they want or wish everything get from their all-time uses device easily. From a little problem to a bigger they are at first take help from Smartphone to solve those. From this perspective of them we can say that, at present to future if someone wants to give a hassle free tourism services and promoting tourism easily and confidently they have to focus on Smartphone based e-tourism services. From this survey result, it can be Saied that basically most of the people use smart phone but not all use e-tourism related any app. From the survey it can be found that about 241 respondents use or have tourism related app in their phone and about 3.6% respondents don't use tourism related app. Since today's era is ICT's era and users of smart phone are huge amount so, Smartphone application based on Tourism services and products need to be developed for promoting E- Tourism. Like as, develop smart phone supported applications of E-ticketing, Online reservation, E-branding, E-itinerary management, E-destination map, Online location tracker, Online banking, Online travel guide, E-marketing, E-payment, Online visa processing, Virtual tour, E-branding etc. As an information intensive industry, tourism requires the help of ICT, and the two influence each other. Travelers always try to make memory through travel. The places they experienced are connected with them by stakeholders including tourist providers, governments, communities and others.

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