

Evaluation of Mobile Applications in eTourism: an Innovative Outlook

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Abstract: Today technology plays an important part in eTourism services around the country in the world. The theme of the manuscript is to examine the critical success factors of mobile applications to adopt eTourism. The study used a triangulation process in which literature review, exploratory investigation from expert interview, and focus group discussion, along with descriptive study for the identification critical success factor. Quantitative approaches based on survey data like descriptive statistics and regression analysis is to discover relative important critical success factors. Among 250 respondents 55 percent of the respondents are male and rest of them are female respectively. Majority of the tourists' preferred to usage mobile to perform tourism related activities. The study found that eVisa Processing, eTour guide, eReservation, eItinerary, eTicketing, and Virtual Tourism are statistically significant and also reliable. The study implied that timely and user-friendly mobile applications are expected for reliability and security of transaction/payment, and other tourism services for tourists. This study will make a good lesson for Mobile manufacturers and tourism stakeholders to develop business product. Conclusively portals make the traveler self-reliant and give all details with a single click.

Keywords: Mobile phone, Tourists, eTourism, Online Services, Adoption

I. INTRODUCTION

The world's tourism industry is fast growing. The key properties of the industry structure, the operation of new technologies are investigated [17], [34] informational case studies are split with all aspects in ICT applications in various sectors, such as airlines, hotels, tour operators, road and rail transports etc. It includes transportation, lodging and food, shopping, entertainment and entertainment activities and services for travelers and the economy of a nation. Studies alike [29], [34], [36] have demonstrated that it is now essential for businesses to survive on the Internet and strategically implementing IT for the growth of economy.

In many countries, tourism is a significant source of revenue generation and foreign exchange gains. This generates enough jobs and plays a crucial role in branding countries..

The tourism industry has changed rapidly as a result of today's globalization, enormous technological advances, socio-demographic factors and rapid urbanization. That is why it's multi-dimensional. UNWTO describes the activities of visitors "during the year for recreation, company or other reasons, who travel to and live in locations outside their normal setting Under the very near future World Tourism Organization (WTO), the world's hurts tourism industry is one of the ten most attractive countries in the world without adequate ICT sub-systems, irrespective of the facts and the lack of the most advantageous facilities and infrastructure. In fact, one of the most important contributions to tourism has been mobile technology. New mobile ICTs allow DMOs not only to co-create on-site experiences at the physical destination but also to expand co-creation experience to a virtual space. The impact of new technology found in the tourism industry is reflected in the growth and formation of Bangladesh Airlines in Bangladesh. Prior to Internet development, tourist destinations are achieving their goals by carrying out marketing campaigns and conventional travel agencies. Today the dimension of tourism has changed which concentration goes to online media has replaced word of mouth as the primary source of information used for collecting tourism information. Some of them concentrate on knowledge needs, bases of information, routes of navigation and deviations in attitude of the online tourism quest [28]. Others are researching how a tourism company or website organization can be used and accessible. There have been several empirical studies in their evaluation style [20]. Today mobile activities are conducted via the Internet and can allow you to find all the information needed within a second. The capacity makes it easier to process information and distributes it almost instantly worldwide. Across all knowledge search processes, Mobile Phones with omnipresence [21] seem to deliver significant incentives for helping visitors [19], [4]. The integration of conventional tourist activities with new mobile device on-line resources, e.g. Mobile Phone, is therefore considered important to the contemporary information society. As ICT has an influence on tourism business, tourism has a highly informative industry. The use of information and communications technology can be appreciated in various fields of the industry of tourism. 'E-Tourism is the digitization of tourism, transportation, hospitality and catering industry of every part of processes besides value chains, improving the productivity and performance of organizations'[7].

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Most of the studies are conducted on eTourism and its prospects but there is no study on mobile phone applications in eTourism from the perspective of tourists but the novelty of the study will help to draw a theoretical facet for the tourism industry.

II. LITERATURE REVIEW

Tourism is an experiential commodity that 'embeds tourism into all the experiences lived' [26]. [10] mentioned six crucial factors of mobile technology for tourism i.e. motivation forces for travel, the vibratory or emotional interpretation of movement, rhythm, path or established channels of movement, and experience that provide a systematic tool for explaining the impact of mobile technology on tourism. Tourism is a system of consumption in which tourists are constantly engaged in a multi-faceted decision-making process [13], [37]. At present, eTourism has accelerated the use of Mobile phones in the tourism industry. A Mobile phone has more sophisticated calculating and networking than a traditional cell phone [8]. Mobile Phones functions are apparently very capable of providing visitors with Internet access at all times along with anywhere [4].

Larger number of studies has been conducted to detect tourists' mobile services [30] signify that holidaymakers' selections can be altered by the use of Mobile phone applications [18]. In addition; in all phases of the knowledge search, Mobile phones with their uniqueness [21] seem to have tremendous potential to assist tourists [18], [4] whereas "E-tourism is the digitization of all the processes and value chains in the tourism, travel, hospitality and catering industries that enable organizations to maximize their efficiency and effectiveness" [5]. The eTourism has various ways that customers can connect through different networks and delivery systems. [7] Proposes the digitization of all trade, tourism, hospitality and catering processes and value chain. The Internet is one of the innovations that continue to fundamentally alter the behaviour of visitors. Studies carried out [23] shows that visitors obtaining information about tourist destinations on the Internet appear to spend extra money on excursions than those who choose new bases of knowledge.

[35] Demonstrated the widest variety of ecommerce applications in the tourism industry. However, given that electronic payment is the most important feature of such applications, customers continue to be accused of safeguarding this form of payment. Such suspicions are the consequences of an on-line breach, which builds customers reluctant to provide information about the banking instruments in their hands. The mobile app information services demonstrate the ability of Mobile Phones to alter the actions of visitors. Firstly, the reform of Mobile Phones in searching and supplying information by providing focused information services through apps; Mobile phones offer custom mobile portals. A limited number of information resources are established to support each device. Therefore, without overcharging details, tourists can schedule trips and take efficient decisions. Mobile Phone apps also configure the location-consciousness feature for knowledge searches.

[7] Noted that the mobile apps have more specific

recommendations in locations and environments in which visitors are staying. The change can also be made that tourists can replace other Mobile Phone tools in travel planning, as Mobile phones with strong computer capacity are always able to provide custom information services anywhere. The pacing of the travel schedule can be adjusted as a result of the system replacement. Activities, like hotel reservation, restaurant option normally performed prior to departure can be arranged on the way and the location-based services will divert visitors from their original plan and visitor satisfaction can

As a consequence of machine replacement, the timing of the cycle of travel may be changed. Activities, such as hotel reservations, should be arranged along the way before departure and location based facilities could divert visitors from their original plan. Finally, with more publicity, surprises and excites, visitor satisfaction could be increased. Connectivity drivers that allow these activities are Internet access and e-tourism mobile applications. She briefly mentioned Mobile Phone apps which are used mostly in the tourism industry; eMarketing is attractive for tourism, because travel is a product with information, and the Internet is rich in information. Intangible tourism facilities cannot be seen or checked until they are purchased, unlike durable goods, at point of sale. [5] Found that tourists purchased from the place of consumption before their use. The tourism industry relies almost entirely on information, representation, explanation and exchange in order to assist tourists in making a decision on the purchase of goods. The secret often to fulfilling tourist demand is timely and reliable information that is important to consumers' needs. Travel bookings rely largely on knowledge that has resulted in intangibility, heterogeneity and geographical fixation of the tourism items. In addition; electronic intermediaries have evolved rapidly and have forced all tourist companies to consider evolving business models and value chains. The selling process also involves various intermediaries using web solutions, from providers (hotels) to buyers (customers), resulting in negative aspects of increased technical efficiency.

During the last decade, the use of Internet technology has greatly increased [22]. The creation of e-tickets [2] for all event categories e.g. concert or sports event was central to this process. The image of brand has been created mainly from marketing stimuli given by structured marketing communications instruments and the creation of a particular destination; the target brand image is outlined as a customer mental design of the product [12]. [15] Pointed to eBanking as a web banking service. eBanking is about the banking activities carried out on the World Wide Web. It also contains money transfers, deposits, documentaries and credit collections, company and household lending, as well as card purchases [27]. The ability of clients to transact banking anytime and anywhere, faster and with lower fees, as compared to conventional bank branches, increases Internet banking [32].

Additionally; While the visa was issued by an immigration officer on visitor arrival at the borders of a country where necessary, increasingly a traveler who wishes to enter another country is obliged to apply in advance for a visa, often in person at a consular office, by mail or the internet [3]. Online visa processing makes it easy to find visa without any hassle and visit any destination easily. EPS allows client [24] to use integrated hardware and software systems to pay for products and service online.

The primary objectives of EPS are to increase performance, protection and consumer comfort and convenience. Disbursement cards are credit cards, debit cards, payment cards and smart cards are the most common means for the processing of electronic payments [33].

The virtual tour includes a series of videos or pictures, usually a simulation of an actual location. This could use other interactive features including sound effects, music, stories and text as well. This varies from the use of live television for tele-tourism purposes [11]. "Digital views" allowed users to click to show a space and 360 degrees. The first web-based interactive tour of the facility was a mix of visual views, a map of the classroom and facilities and equipment details. But; GPS is considered very convenient as a practically standard feature for many mobile phones, but it is limited. GPS operates by triangulating the satellite signals that orbit the globe. Check in directly on your e-itinerary, check in your flight and see the flight status in real time, including delay, cancellations and departure gate details [1]. The mobile and tourism connectivity enhanced domestic and international tourism in the early 21st century by making tourism-related activities easy for tourists.

III. OBJECTIVES OF THE STUDY

The research aims to analyze the determinants and assess the degree to which consumers expect to use mobile applications for eTourism. Most of tourists use Mobile Phone and spend their leisure times in exploring new destinations for recreation. Similarly, the research subject is e-tourism, and the subject covers factors that influence use of mobile technology applications in the field of e-tourism.

The specific objectives of the study are followed by an analysis and examination of theoretical concepts mobile phone applications in eTourism and the features that influence the adoption of eTourism based on mobile phone services. The study also focused on the identification of critical success factors of mobile applications in eTourism. Conclusively perform a mirror image of the results of the literature review, qualitative interviews with experts, and draw conclusions from the statistical analysis of the quantitative study.

IV. MATERIALS AND METHODS

The study uses a triangulation process to justify the study e.g. focus group discussion and expert interview to get the preliminary idea of mobile phone applications uses in eTourism purposes. This study thoroughly focused on the literature review that is based on previous study and theories that helped to justify a clear depicts of Mobile phone applications in eTourism. Mixed methods recommended by many literary works [25], [31] have been used to progress the

collection of data instrument for the study.

Initially, as an interview program, the researcher conducted extensive interviews with experts in the industry as one of the data collection tools for the study [9]. In-depth interviews have been conducted to recognize relevant cognitive, affective and behavioral variables regarding tippel bottom line factors of responsible tourism. Consequently identified variables in the in-depth interview stage has been cross-examined beside the existing kinds of literature and final set of variables is selected for survey part and another side this has generated the insights and new ideas about technology and tourism, whether it is feasible and viable or not. [10] Pointed out that a qualitative approach in research is normally used to measure attitude of travelers.

Subsequent Researcher has conduct through a research specialist to discuss with focus groups in tourist destinations and major cities of the country especially division-wise partition, representative of the category market. Prior to meeting the eight groups: (one group in each division and target groups consisting with inbound and outbound tourists, industry experts, frequently credit travelers, Tourists [9] all the respondents are considered for the study in the context of Bangladesh. Succeeding the phase descriptive investigation design (survey and observation methods) is used to accumulate primary facts (through structured questionnaire and issues) from the respondents. After collection of data, data analyzing used hypothesis testing, frequency distribution, regression analysis, and reliability test. In this study hypothesis testing is mentioned.

Ho (Null hypothesis): There is no clear correlation between mobile phone applications and the adoption of eTourism.

H1 (Alternative hypothesis): There is a clear correlation between mobile phone applications and the adoption of eTourism.

V. RESULTS AND DISCUSSION

A formal questionnaire was carried out in the data analysis that has mentioned in the section of methodology. Data was collected on the five points likert scale from strongly agree to strongly disagree. Out of 250 respondents the basic categories are students, tourists, service holders, and businessman and others. This section contains the survey results.

A. Socio-Demographic Profile of the respondents

Table 1; the findings revealed a total number of respondents of 250, with 52 percent of respondents being male and 48 percent female. The results also stated that 65.6percent of respondents are university level graduate and 17.2 percent of respondents are PhD holders, 10.4percent of respondents are higher secondary level education. About 55.2 percent of participants are service holder and 16percent of them are students, 15.2 percent are businessman. The income range of the respondents is highest at 46.8 percent, which is between 10000 and almost 18 percent of the respondents' income level in the range of 11000-20000 that means majority respondents are lower middle class people.

B. Descriptive Statistics

Table-2 represents that the results of the study showed that the overall score of mobile phone uses in eTourism services are above average and excellent. The highest score among the

eTourism services is 4.10, which carry online travel guide that mean the respondents think that online travel guide is most important for eTourism adoption.

Table 1: Respondents' Socio-Demographic Profile

	Frequency	Percentage	Cumulative Percentage
Gender	138	55.2	55.2
Male	112	44.8	44.8
Female	250	100.0	100.0
Total	250	100.0	100.0
Age	109	43.6	43.6
18-25	67	26.8	70.4
26-35	57	22.8	93.2
36-45	15	6.0	99.2
46-55	2	.8	100.0
56 and above	250	100.0	
Total	250	100.0	
Service holder	138	55.2	55.2
Businessman	38	15.2	70.4
Professional	40	16.0	86.4
Student	24	9.6	96.0
Social workers	10	4.0	100.0
Others	250	100.0	
Total	250	100.0	
Income	117	46.8	46.8
Below 10000	44	17.6	64.4
11000-20000	36	14.4	78.8
21000-30000	29	11.6	90.4
31000-40000	24	9.6	100.0
Above 40000	250	100.0	
Total	250	100.0	

Source: Survey data

Table 2: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Variance
eTicketing	250	1	5	3.61	1.037	1.075
Online reservation	250	1	5	3.94	.955	.912
eMarketing	250	2	5	3.80	.968	.937
ePayment	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
eBranding	250	1	5	3.90	.918	.842
eItinerary management	250	1	5	3.64	.980	.961
eDestination 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
eTourism Adoption	250	2	5	4.31	.764	.583
Valid N (list wise)	250					

Source: Survey data

The subsequent highest score achieved ePayment that mean value is 4.04, which indicate an effective factor followed online banking, online location tracker, online reservation, eBranding. The variance of online travel guide is 79 percent followed by ePayment 70 percent, online banking 84 percent, online location tracker 79 percent, online reservation 91 percent, and eBranding 84 percent which represents most significance factors of Mobile Phone applications are greatly affecting eTourism services.

C. Regression Analysis

Relevant factors in the regression equation were seen based on the beta coefficients in order of importance. The multiple correlation (R), determinant (R²), and F ratio are studied in order to predict the goodness of the regression model. The value of R which is related to autonomous factors (eTicketing, eReservation, eMarketing, ePayment, Online Visa Processing, Virtual Tour, eBranding, eItinerary Management, eDestination Map, Online Location Tracker, Online Tourism Banking, Online Travel Guide) and the dependent variable (eTourism adoption) is 0.622, which shows that the people and tourists' had positive and moderate correlations to eTourism showed in table

Table 3: Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.622 ^a	.552	.435	.668

a. Predictors: (Constant) eTicketing, eReservation, eMarketing, ePayment, Online Visa Processing, Virtual Tour, eBranding, E-Itinerary Management, eDestination Map, Online Location Tracker, Online Tourism Banking, Online Travel Guide.

Source: Survey data

Table 3 shows that the value of R² is 0.552, which indicates that twelve variables explain more than 50 % of the variance in mobile applications for eTourism services from a tourist perspective.

Table 4: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	39.514	12	3.293	7.378	.000 ^b
Residual	105.770	237	.446		
Total	145.284	249			

Table 4 displays that p value is 0.000 that is very significant. In predicting the shift in the factors of mobile phone based eTourism services calculated by the aforementioned R and R² the regression model achieved a strong fitness rate of around 55 percent. In other words, at least one of the factors is important in contributing to the eTourism services. The

significance of the factors is analyzed in the Coefficient table that represents all the variable of the study.

Table 5: Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.326	.396		3.347	.001
E-Ticketing	.125	.049	.134	3.504	.005
Online Reservation	.090	.053	.113	1.703	.050
E-Marketing	.010	.048	.013	.204	.839
E-Payment	-.078	.056	-.085	-1.383	.168
Online Visa Processing	.055	.048	.072	1.134	.258
Virtual Tour	.127	.046	.162	2.757	.006
E-Branding	.061	.051	.073	1.198	.232
E-Itinerary Management	-.019	.046	-.025	-.418	.676
E-Destination Map	.194	.049	.238	3.928	.000
Online Location Tracker	-.029	.051	-.034	-.577	.564
Online Tourism Banking	.098	.050	.118	1.964	.051
Online Travel Guide	.269	.053	.312	5.090	.000

Source: Survey data

Table 5 displays that Mobile phone applications in eTourism (Adoption) = 1.326+ .125 (E-Ticketing) + .090 (eReservation) + .010 (eMarketing) + (-.078) (ePayment) + .055 (Online Visa Processing) + .127 (Virtual Tour) + .061(eBranding)+ (-.019) (eItinerary Management) + .194 (eDestination Map) + (-.029) (Online Location Tracker) + .098 (Online Tourism Banking) + .269 (Online Travel Guide) this equation shows that all the critical success factors are not similar importance for Mobile Phone applications in eTourism. The significance critical factors are identified from regression result are follows: eTicketing (0.005), Online travel Guide (0.000), eDestination Map (0.00), Virtual Tour (0.006), and Online Tourism Banking (0.51) are highly significant for Mobile Phone applications in eTourism. In finale, the entire factors are not equally significant but have a great influence. Thus, the results of multiple regression analysis accept hypothesis 1, that "There is a strong relationship between Mobile phone related service factor and eTourism". So, null hypothesis is rejected alternative hypothesis has been accepted.

D. Reliability of the Study

To measure the reliability of Mobile Phone applications in eTourism that is used in the questionnaire was adopted the internal consistency test by Cronbach's alpha. This test also measures the respondents answer consistency of all items used in the questionnaire.



[14] Stated "several values for alpha calculations in the cronbach area fell short of the acceptable values 0.7 or 0.6 in a national or cross-national study.

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.89	.82	12

Source: Author own statistical analysis based on survey data

Table 6 illustrated that Cronbach's alpha scale as a measure of reliability. The value is 0.82, which means the study is standard and reliable. In justification of the study; [27] the value of Cronbach's alpha is suggested above 0.70 is considered as acceptable.

Therefore, the study of mobile phone applications have a positive impact in eTourism is reliable and also acceptable.

VI. CONCLUSIONS

Now-a-days Mobile phone is essential elements for proper communication. Without a Mobile Phone no travelers can think, to get a proper satisfaction from tourism services approximately. Now a day consumers could use standalone software called mobile applications (m-apps) to connect to the Internet on their mobile devices (m-apps) [16]. Day by day human being specially educated and modern people are become being dependent on Mobile phone and they want or wish everything got from their all-time uses device easily. From a little problem to a bigger they are at first take help from Mobile phone to solve those. From this perspective of them it can be said 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 Mobile phone applications in eTourism services. The result of survey stated that basically most of the people use Mobile phone but not all uses for eTourism purposes.

Since today's era is ICT's era and users of mobile phone are huge amount so, it's a great opportunity to develop mobile phone applications in eTourism services and products to promote eTourism. Like as, develop Mobile phone supported applications of eTicketing, Online Reservation, eBranding, eItinerary Management, eDestination Map, Online Location Tracker, Online Banking, Online Travel Guide, eMarketing, ePayment, Online Visa Processing, Virtual Tour, eBranding are essentials critical success factors of Mobile phone applications in eTourism constructed on statistical analysis.

The study has many useful implications in rendering eTourism services and in disseminating knowledge among potential tourists to academics, mobile device manufacturers, travel organizations, and even government tourism development board. This study will helpful for academicians in further research along with get a clear knowledge regarding tourist's expectation from the tourism service providers and smartphone in build expected apps to make a purchase decision. This policy is being implemented with particularly common mobile applications that meet the requirement of tourists in the 21st century. While concerns must be acquired,

the numerous limitations that may permit forthcoming investigation. This study data mostly collected from tourists in the renowned destinations of Bangladesh whereas all the tourism destinations are not considered for respondents, and respondents number are limited hence the cautions of generalize the study. Further a comparative study may be conducted on mobile applications in tourism between different subcultures or Asian countries. The study also measured the concept of mobile applications in tourism related supporting services with take into account tourist satisfaction. Thus more work should concentrate on additional building blocks to help generalize findings across Bangladesh in order to add wealth.

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