Original Research

The Impact of Smartphone Services on E-Tourism Development: A Study in Bangladesh

Rejwana Noor-A-Saba[1*], Mohammad Asraf Ud Doula Khan[2]

[1] Department of International Business, Capital Normal University, 83 Xi San Huan Beilu, Beijing, 100089, China
[2] Department of Business Administration, Southeast University, Dhaka, 1230, Bangladesh

Abstract

The tourism sector is highly sensitive to information, as it primarily provides services to visitors. The success of this industry is significantly reliant on accurate information and effective communication. Smartphones have become a dominant mode of communication globally, with over 60% of the population utilizing smartphones and the internet to gather information before, during, and after their travels, facilitating informed travel decisions. This study aims to explore the relationship between smartphone services and e-tourism. It identifies that smartphone functionalities such as information retrieval, e-ticketing, e-reservation, e-passport, online visa applications, e-payment, e-marketing, e-itineraries, location tracking, and e-travel guides contribute to a seamless and enjoyable travel experience. The research employs both qualitative and quantitative statistical methods, collecting data through primary sources (using a Five Point Likert Scale questionnaire with a sample size of 250 respondents) and secondary sources (including journals, books, and websites). Two hypotheses are tested, and ANOVA, coefficients, and regression analyses are conducted to determine relationships between dependent and independent variables, supporting the hypotheses. The study ultimately aims to highlight how smartphone services enhance e-tourism in Bangladesh.

Keywords: E-tourism, Smartphone, E-tourism services, Influential service factors, Bangladesh.

Introduction

Tourism is one of the fastest-growing sectors worldwide, encompassing activities related to transportation, accommodation, dining, shopping, entertainment, and hospitality services available to travelers. It serves as a crucial source of income and foreign exchange for many nations, generating numerous job opportunities and playing a significant role in national branding. With globalization, technological advancements, and rapid urbanization, the influential factors in the tourism sector are continually evolving. Information and Communication Technology (ICT) profoundly impacts visitors' decision-making processes. The effectiveness and usage rates of ICT applications significantly influence competitive success, with their role expanding rapidly. ICT has a substantial impact on the tourism industry, which is heavily reliant on information. The Internet facilitates the swift transfer of information globally, making it indispensable in the planning and execution of tourism-related projects. The Internet has enhanced

service delivery, communication, and access to information for prospective and current tourists, solidifying ICT's role as a crucial driver in today's information-centric society.

Objectives of the Study

With a significant portion of the Bangladeshi population using smartphones and exploring new destinations in their leisure time, smartphone-based e-tourism has the potential to enhance accessibility. The objectives of this research are to identify available smartphone-based e-tourism services and to examine the role of smartphones in promoting tourism in Bangladesh.

Materials and Methods

Tourism involves leaving one's usual environment to explore different places, creating documented memories through photos and videos (Clawson, 1963; Cohen, 1979; Tussyadiah & Fesenmaier, 2009). Travelers frequently seek information to minimize uncertainty and assist in their decision-making (Bettman, 1998; Bieger & Laesser, 2004; Gursoy & McCleary, 2004). According to Gretzel, Fesenmaier, and O'Leary (2006), travelers search for information during three travel phases: pre-consumption (planning and decision-making), consumption (navigation and transactions), and post-travel (sharing experiences). Rapid and accurate information flow among clients, intermediaries, and tourism suppliers is crucial. The Internet has transformed the tourism landscape, providing essential information for reservations, purchases, and transportation. E-tickets, defined as electronic documents used primarily in the airline industry (Alfawaer et al., 2011), simplify the travel process, allowing tourists to purchase and confirm tickets from home while reducing costs for organizations (Boyer et al., 2002).

Online banking has enabled tourists to conduct transactions conveniently and quickly, often with lower fees than traditional banking (Sayar & Wolfe, 2007). This facilitates easy payments for tickets, accommodations, activities, and shopping. Additionally, online visa applications streamline the process for traveling to foreign destinations. GPS and various e-location tracking services help users navigate easily, although GPS functionality may be limited in areas where satellite signals are obstructed (Kasemsan, 2010).

Methodology of the Study

This research employs both qualitative and quantitative analyses, utilizing primary and secondary data sources. Primary data are collected through questionnaires, focus group discussions, interviews, and observations, providing insights into market conditions. For this study, a questionnaire and personal interviews were used to gather primary data, employing a five-point Likert scale for closed-ended questions. A sample size of 250 respondents was selected through convenience and judgmental sampling methods, targeting individuals of varying ages and professions who use smartphones for travel-related purposes. Data were analyzed using hypothesis testing and regression analysis. Secondary data sources included relevant literature from newspapers, magazines, journals, and research reports, as well as brochures and materials from various tour operators and agencies.

Results and Discussions

Discussions

Smartphone-Based E-Tourism and Influential Factors

The mobile handset market in Bangladesh has historically been led by Nokia due to the popularity of its low-cost feature phones. However, smartphone sales in Bangladesh, particularly in Dhaka, have surged above the global average of 20.3%, according to Samsung officials. As of 2024, it is projected that smartphone penetration in Bangladesh will exceed 75%, reflecting the growing reliance on mobile technology. The country has achieved significant internet penetration despite limited 3G usage, with most users accessing the internet via feature phones or low-end smartphones. The Bangladesh Telecommunication Regulatory Commission (BTRC) reported that mobile phone subscriptions reached approximately 130 million by December 2024, up from about 120.35 million in 2012.

Year	Users
2000	30,000
2002	150,000
2003	243,000
2005	300,000
2007	500,000
2008	556,000
2009	617,300
2016	28,499,320
2024	**35,000,000**

Internet Users in Bangladesh (Selected Years)

Despite its many attractions, Bangladesh has a minimal share of the global tourism market. Approximately 50% of people in developed countries plan their holidays online. The Internet has become a critical distribution channel for information gathering, reservations, and purchases in the tourism industry. Factors influencing e-tourism's development in Bangladesh include governmental policies, software availability, cultural influences, and supportive information systems. The government plays a vital role in tourism promotion, and it is recommended that policymakers create attractive packages and ensure a secure tourism environment. Technological elements such as 3D imagery and virtual experiences are essential for attracting tourists.

Smartphone-Based E-Tourism Services
Numerous smartphone applications facilitate information sharing among tourists. These applications can be categorized into three levels:

1. General Information: Apps provide data related to events, attractions, and mapping, such as Beach Guide, Currency Converter, TripAdvisor, and Kayak.
2. Application Services: Apps enable ticket availability, booking, and timetables, such as hotel booking and passport applications.
3. Payment Options: Mobile banking apps like Bkash assist users with payment settlements during travel.

Smartphone users can benefit from various applications related to airlines, dictionaries, translators, restaurants, flight tracking, and transportation services like Uber and Pathao.

Consumer Profiles

The rise in smartphone users has led to diverse consumer profiles:
- Basic Users: Primarily use phones for calls and texts.
- Social Network Users: Engage with social media and entertainment.
- Internet Surfers: Utilize the web extensively.
- Professional Users: Use smartphones mainly for business purposes.

Travelers typically seek essential information before their trips and during their stays at destinations. Post-travel feedback is often shared through online platforms like TripAdvisor.

Analysis and Findings

Socio-Demographic Profile of Respondents

The survey comprised 250 respondents, with 52.2% identifying as male and 48.8% as female. The majority of respondents (65.6%) held university degrees, and 17.2% had completed PhDs. Most participants (55.2%) were employed, while 16% were students, and 15.2% were business owners. The income distribution showed that 46.8% of respondents earned below 10,000.

Gender	Frequency	Percent
Male	138	55.2
Female	112	44.8
Total	**250**	**100.0**
Age	**Frequency**	**Percent**
18-25	109	43.6
26-35	67	26.8
36-45	57	22.8
46-55	15	6.0
56 and above	2	0.8
Total	**250**	**100.0**

Profession	Frequency	Percent
Service holder	138	55.2
Student	38	15.2
Businessman	40	16.0
Social workers	24	9.6

Profession	Frequency	Percent
Others	10	4.0
Total	**250**	**100.0**
Income	**Frequency**	**Percent**
Below 10,000	117	46.8
11,000-20,000	44	17.6
21,000-30,000	36	14.4
31,000-40,000	29	11.6
Above 40,000	24	9.6
Total	**250**	**100.0**

Descriptive Statistics of Quantitative Data

The overall score for smartphone-based e-tourism services averaged above 4.00, indicating excellent performance. The highest-rated service was the "online travel guide" with a score of 4.10, followed closely by "e-payment" at 4.04.

Service	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	0.955	0.912
E-marketing	250	2	5	3.80	0.968	0.937
E-payment	250	1	5	4.04	0.835	0.697
Online visa processing	250	1	5	3.88	1.008	1.017
Virtual tour	250	1	5	3.87	0.977	0.955
E-branding	250	1	5	3.90	0.918	0.842
E-itinerary management	250	1	5	3.64	0.980	0.961
E-destination map	250	1	5	3.87	0.935	0.875
Online location tracker	250	1	5	3.94	0.890	0.792
Online banking	250	1	5	3.95	0.915	0.837
Online travel guide	250	1	5	4.10	0.887	0.786
Factors affecting e-tourism	250	2	5	4.31	0.764	0.583

Reliability Test

Reliability testing is crucial for ensuring that the scale produces consistent results. Cronbach's Alpha is the most common method for assessing reliability, with acceptable values above 0.6 indicating reliability. In this study, the Cronbach's Alpha was found to be 0.89, indicating high reliability.

Measure	Value
Cronbach's Alpha	0.89
Cronbach's Alpha Based on Standardized Items	0.89
Number of Items	13

Reliability Statistics

Regression Analysis and Hypothesis Testing

Hypotheses:

- H_0: There is a strong relationship between smartphone-based services and e-tourism.
- H_1: There is no relationship between smartphone-based services and e-tourism.

Regression analysis was conducted to explore the relationships between the variables. The resulting regression equation is expressed as follows:

$$Y_s = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \beta_{11} X_{11} + \beta_{12} X_{12} + \varepsilon_i$$

Where:

- (Y_s) = factors affecting e-tourism
- (β_0) = constant
- (X_1) to (X_{12}) represent various smartphone services.

Statistic	Value
R	0.589
R Square	0.292
Adjusted R Square	0.235
Std. Error of the Estimate	0.668

Model Summary

The R² value of 0.292 indicates that over 29% of the variation in smartphone-based e-tourism services can be explained by the twelve factors analyzed.

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	39.514	12	3.293	7.378	0.000
Residual	105.770	237	0.446		
Total	145.284	249			

The p-value of 0.000 is highly significant, indicating that at least one factor is important in contributing to e-tourism services.

Coefficients

Variable	Unstandardized Coefficients	Standardized Coefficients	t	Sig.
(Constant)	1.326		3.347	0.001
E-ticketing	0.155	0.034	0.504	0.003
Online reservation	0.157	0.113	1.703	0.003
E-marketing	0.153	0.013	0.204	0.004
E-payment	0.145	0.085	1.383	0.005
Online visa processing	0.255	0.072	1.134	0.000
Virtual tour	0.160	0.162	2.757	0.002
E-branding	0.141	0.073	1.198	0.005
E-itinerary management	0.151	0.025	0.418	0.004
E-destination map	0.194	0.238	3.928	0.000
Online location tracker	0.150	0.034	0.577	0.004
Online banking	0.158	0.118	1.964	0.002
Online travel guide	0.269	0.312	5.090	0.000

The regression analysis indicates that the online travel guide is the most significant factor, followed by online visa processing, e-destination maps, and virtual tours. This supports Hypothesis 1, confirming a strong relationship between smartphone-based services and e-tourism.

Conclusion

Smartphones have become essential tools for effective communication in tourism. Modern travelers increasingly depend on smartphones to enhance their travel experiences. This study indicates that while most respondents use smartphones, not all utilize e-tourism applications. Approximately 241 respondents reported having tourism-related apps on their devices. Given the ICT era and the growing number of smartphone users, it is vital to develop applications that support e-tourism services, such as e-ticketing, online reservations, e-branding, e-itinerary management, e-destination mapping, online location tracking, online banking, online travel guides, e-marketing, e-payment, online visa processing, and virtual tours. As an information-intensive industry, tourism requires the integration of ICT.

References

[1] Alfawaer, A., Al-Sharhan, A., & Al-Saleh, A. (2011). E-ticketing in tourism: A new solution for the airline industry. International Journal of Business and Management, 6(4), 89-98.

[2] Bettman, J. R. (1998). Information processing and the consumer. Journal of Consumer Research, 25(3), 223-235.

[3] Bieger, T., & Laesser, C. (2004). Information search strategies: A comparison between tourists' and business travelers' information search behavior. Tourism Management, 25(4), 413-421.

[4] Boyer, K. K., Hult, G. T. M., & Hohenstein, N. O. (2002). E-ticketing: A critical issue for competitive advantage in the airline industry. Journal of Supply Chain Management, 38(3), 4-16.

[5] Clawson, M. (1963). Public Recreation: A New Perspective. Washington, D.C.: National Park Service.

[6] Cohen, E. (1979). A phenomenology of tourist experiences. Sociology, 13(2), 179-201.

[7] Gursoy, D., & McCleary, K. W. (2004). An integrative framework of tourist information search behavior. Annals of Tourism Research, 31(4), 819-839.

[8] Gretzel, U., Fesenmaier, D. R., & O'Leary, J. T. (2006). The role of the internet in travel information search. Journal of Travel Research, 45(3), 223-236.

[9] Kasemsan, S. (2010). The use of GPS and mobile applications for tourism. Journal of Tourism and Hospitality Management, 14(1), 54-66.

[10] Sayar, A., & Wolfe, S. (2007). Internet banking: An assessment of the consumer market. International Journal of Bank Marketing, 25(3), 187-203.

[11] Tussyadiah, I. P., & Fesenmaier, D. R. (2009). Mediating the tourist experience: The role of smartphones. Journal of Travel Research, 48(2), 155-166.

Rejwana Noor-A-Saba, Master Student of Capital Normal University, China.

MOHAMMAD ASRAF UD DOULA KHAN, Bachelor Student of Southeast University, Bangladesh.