**Heritage Conservation and Sustainable Tourism in Dhaka City: A Theoretical and Empirical Examination**

**Abstract:**

This research attempts to identify the prime factors associated with the sustainability of archaeological tourism sites in Dhaka city, Bangladesh. A quantitative method has been applied to the response of 100 respondents on the sustainability of archaeological tourism sites. Due to the prolonged two and half years’ Covid-19 pandemic, data are collected through online on e-questionnaire. The findings of this research paper show that tourism sustainability results in long-term economic benefits and helps preserve the archaeological history. This paper suggests that the sustainability of archaeological tourism sites helps increase visitor arrivals, enhance tourists’ satisfaction, enhance the learning of history through story-telling, and revive ancient arts and culture. However technological innovativeness, overcrowding, and waste management have negative impacts on the sustainability of archaeological tourism sites. This paper is expected to help scholars, learners, and policy planners to adopt measures that may ensure the sustainability of archaeological tourism sites.

**(Keywords:** Heritage, Conservation**,** Archaeological Sites, Tourism, Sustainability, Community, Satisfaction.)

**1. Introduction**

Tourism is an important recreation-based business sector. It contributes economically, socially, culturally, environmentally, and psychologically to both the destination countries and the host societies. The outcomes of this industry are remarkable both globally and locally. According to the World Travel and Tourism Council (WTTC), this industry in 2019, prior to the pandemic, accounted for 10.5% of all jobs (334 million - including its straight, roundabout, and induced) and 10.4% of world GDP which equaled to US$ 10.3 trillion (WTTC, <https://wttc.org/> research/economic-impact). Archaeological tourism is a major area of tourism. It is not a recent idea or phenomenon, but it has recently increased in prominence and become very popular today. Many interested people like to visit archaeological sites to gain knowledge of about the past period of the destination. As a result, marketers now use market-oriented, innovative, and strategic approaches to attract more tourists to their archaeological sites. Though some scholars opine that a customer-driven approach can cause positive outcomes on the sustainability of archaeological sites (Alazaizeh et al., 2016; Ely, 2013; Kavoura and Bitsani, 2013; Milman, 2015; Orbasli, 2014; and Poria et al., 2011), but empirical study on the influence of market direction, innovation and strategic approaches on tourism sustainability in archaeology-based sites is left under-researched. Other scholars opined that it is not possible to ensure their survival of these types of resources in reality, and as such, their continuity for economic and social outcomes (Benur and Bramwell, 2015; Kozak and Martin, 2012). Of course, this type of tourism has potentials to boost a country's brand image. Bangladesh has a long history of civilization leaving different archaeological remains which have appeal to local and foreign tourists. These have made Bangladesh an ideal place for archaeological tourism which requires proper investigation to explore the potentials and sustainability of archaeological tourism. As the research is conducted on Dhaka city in Bangladesh, it is the time to seize the archaeological hotspots for the advancement of tourism and thus enhancement of the economy.

**1.1 The Concept of Archaeological Tourism and Its Sustainability**

Archaeology provides a unique long-term past historical and cultural perspective of human society. These are now utilized as tourism resources by many destination countries. As such, useful policy planning and the interpretations of the spirit and sustainability (**Jacobson**, 2022) of archaeological sites are being emphasized by the destination countries. Archaeological tourism is a form of social tourism that aims to promote public attention in prehistoric research and the maintenance of historically significant sites (Hasan and Jobaid, 2014). An archaeological spot or site is referred to as a place or site that is the evidence of the past activity and is preserved in the record of archaeological discipline. Bangladesh is a place of full of archaeological sites (Pathan, 1933). Archaeological cultural heritage sites need the development of good practices along with proper preservation for sustainable investigation, conservation, management, and touristic promotion (<https://www.mdpi.com/journal/>sustainability/ special\_issues/archaeology\_sus).  "Sustainable Archaeology includes various disciplines – business, educational, professional – by consolidating the widely recovered archaeological sites and making their record accessible to all through digital data to let people the running and pioneering research involving this compiled data and rich archaeological heritage resources left by the previous people who respected, lived, and passed away in this place, and by today’s people who embody links, importance, worth, and identity from the human heritage of this place (Wikipedia)."

## 2. Objectives of the study

## This research paper attempts to present the existing state of archaeological sites in Dhaka city and how the sustainability of those sites can be ensured to achieve the following objectives:

a). To find the Archaeological resources of Dhaka city;

b). to highlight the importance of tourism sustainability of archaeological sites, and

c). to find out the ways and means of how to ensure the tourism sustainability of archaeological sites in Dhaka city.

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# 3. Literature Review

Tourism is the biggest and quickest emerging industry of the world (Neto, 2003). Archaeological Tourism is a kind of social tourism that aims to promote public interest in knowledge gathering on pre-historical times, conducting research and the preservation of historically significant sites (Hasan and Jobaid, 2014). An Archaeological site is referred to as a place or site having pre-historic establishments, which is the evidence of past activity and is preserved in the record of archaeological discipline. Bangladesh is a place of full of archaeological establishments in different sites which may mainly include Mahasthangarh, Moinamati, Lalbag Fort, Ahsan Manzil, Wari Bateshwar and so on (Pathan, 1933). In the present era, the archaeological sites are considered not only the historic and cultural attractions and resources but also the attraction means for the tourists and day-visitors. The first scheme of archaeological studies in the Bengal was done by Vangiya Sahitya Parishad in Kolcutta in 1893-94. At present, archaeological tourism in Bangladesh has a great influence on the economic development (Tuhin and Majumder, 2004) of the country. As such, to ensure long term tourism in archaeological sites, financial and non-financial goals must be met. The economic sustainability of archaeological sites have been primarily measured in terms of revenues generated, visitors arrivals and benefits achieved, whereas social sustainability has primarily been measured in terms of visitor satisfaction, sites image and status, and the enhancement of locals’ living standards (Gurel and Kavak, 2010; Loach et al, 2017; Stylianov-Lambert et al, 2014; Mc Donald, 2011). Although it may appear that all organizations have the same performance goals, archaeological sites have different ambitions since they advocate for long term tourism growth (Bryan et al, 2012; Camarero and Gartido, 2008). As such, archaeological sites of different destinations have adopted innovations to achieve and maximize the commercial and social aims by providing instructive and worthy services thar are highly valued (Comarero et al, 2015). It was determined that innovations boost service differentiations, resulting in higher tourists’ satisfaction and reliability (Hultman et al, 2015), and thus enhancing economic and social sustainability. Organizational innovation in service provisions and preservation promotes long-term economic, societal and cultural success of the tourism industry as well (Grissemann et al, 2013). But threats to archaeological attractions have increased today due to number and intensity of visitors and lack of proper preservation efforts. Climate change, development of vandalism, religious aggressions and cultural extremism have all intensified dangers to ancient archaeological sites around the world, which must be controlled (Boone, 2010; Meguerditchian, 2012; Reeder et al, 2012). Archaeological sites are non-renewable resources by their very nature; an archaeologist may only dig a site once before the context is completely obliterated (Canadian Broadcasting Corporation, 2013; Francioni and Lenzerini, 2003; Karimi, 2012; and Prakash, 2011). The non-renewable nature of archaeological sites as well as the increasing risks posed by natural and artificial forces add to the need to safeguard and maintain them (Goetz, 2010; Howard et al, 2008; Reeder et al, 2012). The global community recognizes the strategic significance of those sites for sustainable development and has recently focused its emphasis to improve links between cultural asset and its environment. Archaeological sites are important for long term growth of a nation (UNESCO, 2013). In Modern and contemporary practice, however, archaeological site protection and enhancement techniques rarely consider the surrounding environment, instead people focus on the predictions of episodic, largely punctual interventions (Trupiano G, Cristofaro, 2003). In majority of the cases, the procedure is unsustainable due to too much sectarian and limited programming as well as objective financial constraints (Carman, 2016).

**4. Research Methods**

This paper is prepared by conducting quantitative research. As such, the researchers have collected quantitative data for the purpose of making this research paper. The researchers have used a questionnaire survey for data collection and the data are analyzed those data in various ways to arrive at a decision. The researchers have collected data from 100 respondents conducting that survey. Some subjective responses were also converted into numeric figures to use the quantitative analytical method. Academic journals, research papers, online articles, blogs, industry newsletters, research reports, and other relevant secondary data were used for a comprehensive literature review and frame the structure of the paper. A worldwide perspective regarding tourism sustainability in archaeological sites has been looked into to find out the measures regarding tourism sustainability in archaeological sites.

**Coverage of the study:** This paper highlights the current scenario of the archaeological sites of Dhaka city, their economic benefits, historical background, visitors’ satisfaction level, technological innovativeness, attractiveness of the sites, and tourist functionality of the archaeological sites of Dhaka city. This paper will help us learn both the theoretical and practical procedures for maintaining the sustainability of archaeological sites. Additionally, the study focuses on Dhaka city and gives more concentration on it.

**Nature of the Research**: A questionnaire was used to conduct the survey and a quantitative analysis was done to draw conclusions and reach the decision. Here, the researchers have tried to find out the ways and means on how tourism sustainability in archaeological sites in Dhaka City can be ensured.

**Population**: The population for this Research is the tourism stakeholders associated with archaeological sites of Dhaka City in Bangladesh. The researchers have conducted a survey among those participants who have knowledge of sustainability regarding archaeological sites. For this reason, the researchers have collected data from tourism specialists, experienced employees of different archaeological sites, visitors/ tourists of archaeological sites, and from different scholars of tourism.

**Sample Size**: For the present study the researchers have collected data randomly from one hundred (100) respondents. This has reduced the biasness and redundancy rate. The researchers have selected the sample from the population based on the availability of the respondents. The researchers have also ensured the knowledge of the respondents about tourism sustainability of archaeological sites in Dhaka city. Finally, a small sample has been included from those who have visited archaeological sites of Dhaka City.

## Sources of Data: This research paper has included data from both field data and derived data. The field survey source of the data came from questionnaire survey on randomly selected 100 respondents. However, the researchers have talked directly with some employees of different archaeological sites in Dhaka city. Moreover, the researchers have collected data through face to face discussion with some tourism scholars. The secondary sources of data collections are listed below. Such are:

* Various journals articles
* Research paper
* Annual Report of BPC and BTB
* Newspapers
* Text books
* Various Websites online articles, blogs, etc.
* Industry newsletters, and
* Research reports

## Tools used for Data Analysis: For the purpose preparing this research paper the researchers have used some statistical tools. Among them SPSS is the main tool for analyzing the collected data. Here, the researchers have done Regression test, ANOVA test, Co-relations, Data frequency test and so on. Finally, the researchers have used Microsoft Excel for drawing some graphs and tables.

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# 5. Conceptual Framework and Hypothesis Development

The theoretical framework provides the researcher's synthesis of research on how to describe the fact of tourism sustainability on the Archaeological sites. It outlines the tasks required for the study, previous knowledge and thoughts of other scholars, and their experiences on the research topic. The suggested conceptual framework displays the aspects on how archaeological tourism can sustain under various factors that have impacts on the tourism sustainability of archaeological sites. It is assumed that these elements are favourably related to the sustainability of archaeological sites. Given that the research is done with the purpose of how tourism can sustain in the archaeological sites of Dhaka city in Bangladesh. As the number of archaeological sites of Bangladesh are declining and are losing their appeal to the tourists day by day. As a developing country, where people are still not properly educated or knowledgeable with tourism sustainability of archaeological sites, it is critical to analyse the factors that affects their sustainability. The following proposed framework depicts the path of tourism sustainability of archaeological sites especially in Dhaka city of Bangladesh.

Fig 1- Tourism Sustainability of Archaeological Sites

Economic Benefit

Visitor’s Functionality

Tourism Sustainability of Archaeological Sites

Technological Innovation

Overcrowding

Figure: The Proposed Conceptual Framework

## 

## 4.1 Hypothesis Development

**Test 01: Sustainability and Economic Benefit**

H0: Sustainability in Archaeological Sites does not have Economic Benefit

H1: Sustainability in Archaeological Sites does have Economic Benefit

**Test 02: Visitor’s Functionality**

H0: Visitor’s functionality has no impact on the Sustainability of Archaeological Sites

H1: Visitor’s functionality has an impact on the Sustainability of Archaeological Sites

**Test 03: Technological Innovation and Authenticity**

H0: Technological Innovation may not alter the Authenticity of the Archaeological Sites

H1: Technological Innovation may alter the Authenticity of the Archaeological Sites

**Test 04: Overcrowding**

H0: Overcrowding may not demolish the Sustainability of an Archaeological Site

H1: Overcrowding may demolish the Sustainability of an Archaeological Site

# 6. Analysis and Discussion

The analysis and discussion of the findings derived from this research are discussed here. For this discussion, the SPSS tool is applied.

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## 6.1 Frequency Statistics: This is the frequency statistics of the demographic data of the respondents. Here, the researchers have discussed the respondents’ demographic data like Gender, Occupation, Income level and Age. The first section of the questionnaire is framed to gather personal respondents’ personal data and the results are shown below:

**Frequency Table**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Gender** | | | | | |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Male | 74 | 74.0 | 74.0 | 74.0 |
| Female | 26 | 26.0 | 26.0 | 100.0 |
| Total | 100 | 100.0 | 100.0 |  |

Table 1: Gender of respondents

As depicted on the above table, among the 100 respondents, 74 are Male and 26 are Female. Thus the respondents constitute 74% male and 26% female. Thus, the Male is the dominant category of respondents in the data set.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Occupation** | | | | | |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Student | 48 | 48.0 | 48.0 | 48.0 |
| Government Employee | 22 | 22.0 | 22.0 | 70.0 |
| Private Employee | 19 | 19.0 | 19.0 | 89.0 |
| Business | 11 | 11.0 | 11.0 | 100.0 |
| Total | 100 | 100.0 | 100.0 |  |

Table 2: Respondents’ Occupation

Here, the respondents of the data set are from different occupational groups. 48 respondents are Students, which is 48% out of 100. 22 respondents are Government Employee, 19 are Private Sector Employee and the rest 11 are Business persons.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Income Level** | | | | | |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | 10,000-20,000 | 46 | 46.0 | 46.0 | 46.0 |
| 20,000-30,000 | 25 | 25.0 | 25.0 | 71.0 |
| 30,000-40,000 | 22 | 22.0 | 22.0 | 93.0 |
| 40,000-50,000 | 7 | 7.0 | 7.0 | 100.0 |
| Total | 100 | 100.0 | 100.0 |  |

Table 3: Income Level of respondents

There are 46 respondents whose income level is 10,000-20,000 per month. 25 respondents’ income level is in between 20,000-30,000, 22 of the respondents fall under the income level between 30,000-40,000 and finally 07 of the respondents fall above the income of 40,000.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Age** | | | | | |
|  | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | 21-30 | 58 | 58.0 | 58.0 | 58.0 |
| 31-40 | 33 | 33.0 | 33.0 | 91.0 |
| 41-50 | 8 | 8.0 | 8.0 | 99.0 |
| Above 50 | 1 | 1.0 | 1.0 | 100.0 |
| Total | 100 | 100.0 | 100.0 |  |

Table 4: Age of respondents

It is mentioned earlier that there are 100 respondents on which the survey was conducted. Among them 58 respondents are from age group 21 to 30, which is 58% of the data set and is a significant number. 31 to 40 aged group has 33 respondents which is 33% of the data set. Next, the 41 to 50 age group has the 08 respondents, which is about 08% of the data set. Finally, 01 respondent lies above 50 years and above age group.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Descriptive Statistics** | | | | | |
|  | N | Minimum | Maximum | Mean | Std. Deviation |
| Gender | 100 | 1.00 | 2.00 | 1.2600 | .44084 |
| Occupation | 100 | 1.00 | 4.00 | 1.9300 | 1.05653 |
| Income Level | 100 | 1.00 | 4.00 | 1.9000 | .97959 |
| Age | 100 | 1.00 | 4.00 | 1.5200 | .68873 |
| Valid N (list wise) | 100 |  |  |  |  |

Table 5: Frequency statistics

This is the frequency table of demographic data of the respondents, which represents the number of respondents and their mean, standard deviation and the limit of the data set. The number of the respondents for all the questions is 100. The mean tells us the approximate centre value of a given data set, and their standard deviation tells us the measure of how much average spread is there of the data set from the mean value of that particular data set. The centre value of Gender is 1.26. The Standard Deviation of Gender is .44084 which represents how much spread is there in the data set. The Mean of occupation is 1.93 while the Standard Deviation is 1.05653, and the Mean of income level is 1.90 while the Standard Deviation is .97959. Finally, the Mean of age is 1.52 while the Standard Deviation of age is .68873.

## 6.2 Descriptive Statistics on Likert Scale Value: Here is the descriptive statistics table which contains the responses of 15 Likert Scale type questions. In the questionnaire, there are 5 scales of choice for the respondents. Different person responded differently based on their opinion. The 5 scale contains “Strongly agree (5), Agree (4), Neutral (3), Disagree (2), Strongly Disagree (1)”. The table below will describe the number of respondents, range, the lowest value, the highest value, average value and standard deviation for each variable.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Descriptive Statistics** | | | | | | |
|  | N | Range | Minimum | Maximum | Mean | Std. Deviation |
| Sustainability in Archaeological Sites have Economic Benefit | 100 | 3.00 | 2.00 | 5.00 | 4.3300 | .72551 |
| Archaeological Site Helps to Preserve the History | 100 | 4.00 | 1.00 | 5.00 | 4.2100 | .84441 |
| To Revive Ancient Arts which is Mandatory to Maintain the Sustainability in Archaeological Sites | 100 | 3.00 | 2.00 | 5.00 | 3.3700 | 1.05078 |
| Sustainable Archeological Sites Help Increase Visitor Satisfaction Level | 100 | 4.00 | 1.00 | 5.00 | 3.6200 | .98247 |
| Technological Innovation may Alter the Authenticity of the Archaeological Sites | 100 | 4.00 | 1.00 | 5.00 | 3.3700 | 1.20315 |
| Govt. Intervention is the Prerequisite of the Sustainability of the Archaeological Sites | 100 | 4.00 | 1.00 | 5.00 | 3.6400 | .94836 |
| Sustainable Archaeological Site is an Excellent Source of Learning Stories | 100 | 3.00 | 2.00 | 5.00 | 4.0600 | .96211 |
| Tourists or Visitors Functionality has an Impact on the Sustainability of Archaeological Sites | 100 | 4.00 | 1.00 | 5.00 | 4.0500 | 1.04809 |
| Sustainable Archaeological Sites Help to Increase the Attractiveness of the Site | 100 | 3.00 | 2.00 | 5.00 | 3.5700 | 1.01757 |
| Waste Management is Directly Linked with the Sustainability of Archaeological Sites | 100 | 4.00 | 1.00 | 5.00 | 4.1200 | .94580 |
| Sustainable Archaeological Sites have Tremendous Effect on the Society | 100 | 4.00 | 1.00 | 5.00 | 3.2200 | 1.23567 |
| Restricted Area may be Uncovered with Proper Security | 100 | 4.00 | 1.00 | 5.00 | 3.3300 | 1.42882 |
| Archaeological Site Management Needs to be Ensured and well Trained | 100 | 4.00 | 1.00 | 5.00 | 3.7500 | .93609 |
| Community Involvement can Ensure the Sustainability of Archaeological Sites | 100 | 3.00 | 2.00 | 5.00 | 3.7000 | 1.02000 |
| Overcrowding may Demolish the Sustainability of an Archaeological Site | 100 | 3.00 | 2.00 | 5.00 | 4.3500 | .79614 |
| Valid N (list wise) | 100 |  |  |  |  |  |

**Table 6: Descriptive Statistics**

The number of total respondents in the survey for all the variables is 100. The range of the response value of the respondents in the survey is lying in between 3 to 4 among which 4 is playing the dominant role. The maximum value of their response for all the variables is 5 which is labelled as strongly agree. The minimum value of the responses is 1 for the variables. Variable numbers 2, 4, 5, 6, 8, 10, 11, 12 and 13 represent strongly disagree. The value of the responses for variable number 6 is 2. A total of 6 variables hold the mean value of around 4 while 9 variables hold around 3. Standard Deviation refers to the distance of the data set from the mean response value. Here, all the variables except 3, 5, 8, 9, 11, 12, and 14 have a standard deviation below 1. So, it can be said that the value of the data set are closer to their mean and they have a higher central tendency.

## 6.3 Result of the Regression Analysis: Here is the model summary table indicating the relationship between the dependent variable and the independent variables. Here, the Model Summary is discussed below:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Model Summary** | | | | |
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | .823a | .732 | .645 | .92081 |

**Interpretation:** The model refers to the relation between the dependent variable and the independent variable. Here, the researcher looked at the R value which represents multiple correlation coefficients. This can be termed as the linear correlation between the observed and the estimated dependent values of the model. The large value indicates strong relationship. Here, the R value is .823, which can be said as 82.30%, which is quite large. This indicates a strong relationship. R Square measures the extent of the change in the Dependent Variable which is explicated by the Independent Variable. Here, the R square value of this table is .732 which means 73.20%. It shows that about 73.20% of the dependent variable is explained by the independent variables. Adjusted variable shows the variation between the independent variables and dependent variables if other variables are included. Here, the adjusted R square is .645 which means 64.50%, predicting around 64.50% of variations of the dependent variable.

**6.4 Correlation**: Correlation measures the relationship among various variables. But it doesn’t predict anything. Here, the researchers have used the Pearson (R) method to correlate the variables. And SPSSs are used for the findings.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Items | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 1 | Sustainability in Archaeological Sites Has Economic Benefits | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 | Archaeological Site helps to preserve History | .35\*\* | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 3 | To Revive ancient arts it is mandatory to maintain sustainability in Archaeological sites | .39\*\* | .61\* | 1 |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 | Sustainable Archaeological Sites help to increase visitor satisfaction level | .69\*\* | 0.04 | .43\*\* | 1 |  |  |  |  |  |  |  |  |  |  |  |
| 5 | Technological Innovation may alter the Authenticity of Archaeological Sites | .23\* | -0.09 | .43\*\* | .46\*\* | 1 |  |  |  |  |  |  |  |  |  |  |
| 6 | Govt. intervention is the prerequisite for the Sustainability of the Archaeological Sites | 0.06 | 0.02 | 0.2 | .79\*\* | .32\*\* | 1 |  |  |  |  |  |  |  |  |  |
| 7 | Sustainable Archaeological Site is an excellent source of learning Stories | 0.12 | .23\* | 0.16 | .26\*\* | .24\* | .25\* | 1 |  |  |  |  |  |  |  |  |
| 8 | Tourists' or Visitors' functionality has an impact on the Sustainability of the Archaeological Sites | .64\*\* | .28\*\* | 0.11 | .22\* | 0.09 | 0.07 | .25\* | 1 |  |  |  |  |  |  |  |
| 9 | Sustainable Archaeological Sites help to increase the Attractiveness of the Site | .64\* | 0.01 | .39\*\* | .52\*\* | .59\*\* | .27\*\* | .88\*\* | .28\*\* | 1 |  |  |  |  |  |  |
| 10 | Waste Management is directly linked with the Sustainability of the Archaeological Sites | 0.12 | .22\* | 0.03 | 0.04 | -0.07 | 0.08 | 0.19 | .72\*\* | 0 | 1 |  |  |  |  |  |
| 11 | Sustainable Archaeological Sites have a tremendous effect on the Society | .26\* | 0.04 | .76\*\* | .56\*\* | .43\*\* | .69\*\* | .48\*\* | 0.19 | .51\*\* | 0.05 | 1 |  |  |  |  |
| 12 | Restricted areas may be uncovered with proper Security | 0.18 | -0.04 | .27\*\* | .44\*\* | .36\*\* | .35\*\* | .43\*\* | 0.1 | .43\*\* | 0.11 | .55\*\* | 1 |  |  |  |
| 13 | Archaeological Site Management needs to be ensured and well trained | .44\*\* | .55\*\* | .26\*\* | .43\* | 0.11 | .20\* | .63\*\* | .34\*\* | .38\*\* | 0.14 | .38\*\* | .59\*\* | 1 |  |  |
| 14 | Community involvement can ensure the sustainability of Archaeological Sites | .23\* | -0.01 | .34\*\* | .57\*\* | .31\*\* | 0.15 | .20\* | 0 | .50\*\* | 0.02 | .64\*\* | .62\*\* | .32\*\* | 1 |  |
| 15 | Overcrowding may Demolish the Sustainability of an Archaeological Site | .49\*\* | .43\*\* | -0.02 | -0.06 | -.21\* | -0.05 | 0.13 | .52\*\* | 0.14 | .28\*\* | 0.1 | 0.03 | .49\*\* | 0.03 | 1 |

Table 7: Correlation

**Interpretation:** This is the Pearson correlation table which basically indicates the relationship between various variables. Through this table it can be indicated the relationship among various variables. The Pearson correlation ranges from +1 to -1. Here, +

1 shows that there is a complete positive correlation among the variables. And the -1 shows that there is a perfect negative correlation among the variables. Correlations above .50 can be considered as strong positive correlation. The value which exceeds .50 in the data set of the table is strongly correlated. Correlation is significant at the level of 0.01 which is flagged as \*\* in the table of the data set and the correlation which is significant at the level of 0.05 is flagged as \* in the table of the data set. So, the data which contains \* and/or \*\* is significant in the table of the research paper.

Here, the correlation coefficients of the first (01) variable with the variables 4, 8, 9, 13 and 15 are respectively r = .69, .64, .64, .44 and .49 which indicate high positive correlation among them. Again, the correlation coefficients of the 4th and 6th variables are 1.00 and .79 which show strongly positive correlation. Finally, the correlation coefficient of 9th and 11th variable show they are simply positively correlated. The values of r of the variables 6, 10 and 15 are not so significant in this table. They do not contain any flag so, it can be said that this variables are not statistically significant and may not have any correlation among the data set. So, these should be excluded from further calculation.

## 6.5 Test of Hypothesis

**Test 01: Sustainability and Economic Benefit**

H0: Sustainability in archaeological sites does not have economic benefit

H1: Sustainability in archaeological sites has economic benefit

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Model | | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | Regression | 20.577 | 14 | 1.470 | 3.962 | .000b |
| Residual | 31.533 | 85 | .371 |  |  |
| Total | 52.110 | 99 |  |  |  |

**Interpretation:** Here, the tested F value is 3.962 which is greater than 1.00. Thus the null hypothesis is rejected and, therefore, the researchers accept the hypothesis H1, where the P value is .000 which means less than the significant value of .05. Thus, the result is significant and the decision is that sustainability in archaeological sites has economic benefits.

**Test 02: Visitor’s Functionality**

H0: Visitor’s functionality has no impact on the sustainability of the archaeological sites

H1: Visitor’s functionality has an impact on the sustainability of the archaeological sites

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Model | | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | Regression | 36.599 | 14 | 2.614 | 3.080 | .001b |
| Residual | 72.151 | 85 | .849 |  |  |
| Total | 108.750 | 99 |  |  |  |

**Interpretation:** Here, the tested F value is 3.080 which is greater than 1.00. Thus the null hypothesis can be rejected and the researcher cannot reject H1, where the P value is .001 which is less than the significant value of .05, so the result is significant and the decision is that Tourists/ Visitor’s functionality has an impact on the sustainability of the archaeological sites.

**Test 03: Innovation and Authenticity**

H0: Technological innovation may not alter the authenticity of the archaeological sites

H1: Technological innovation may alter the authenticity of the archaeological sites

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Model | | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | Regression | 60.190 | 14 | 4.299 | 4.396 | .000b |
| Residual | 83.120 | 85 | .978 |  |  |
| Total | 143.310 | 99 |  |  |  |

**Interpretation:** The tested value of F is 4.396 which is greater than 1.00. Therefore, the null hypothesis is rejected and the researcher accepts the H1, where the P value is .000 which is less than the significant value of .05, so the result is significant and the decision is that Technological innovation may alter the authenticity of the archaeological sites.

**Test 04: Overcrowding**

H0: Overcrowding may not demolish the sustainability of the archaeological sites

H1: Overcrowding may demolish the sustainability of the archaeological sites

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Model | | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | Regression | 24.775 | 14 | 1.770 | 3.961 | .000b |
| Residual | 37.975 | 85 | .447 |  |  |
| Total | 62.750 | 99 |  |  |  |

**Interpretation:** Here, the tested F value is 3.961 which is greater than 1.00. So the null hypothesis is rejected and the researcher accepts the H1, and the P value is .000 which is less than the significant value of .05, so the result is significant and the decision is that overcrowding may demolish the sustainability of the archaeological sites.

# 7. Policy Implications

After discussion and analysis of the findings, some policy implications may be drawn for the betterment of the overall archaeological tourism sites in Bangladesh and their sustainability. For the sustainability of tourism in the archaeological sites, according to the respondents, some factors have great impact on the sustainability of the archaeological sites. Some factors help sustain the archaeological tourism sites while other factors demolish tourism sustainability in the archaeological sites. According to majority of the respondents, tourism sustainability has great economic benefits. For that reason, archaeological sites need to be maintained and preserved properly so that these can sustain for longer years. Again, archaeological sites help preserve the history. By visiting archaeological sites, tourist or visitors can learn or know about the history of a specific nation. So, archaeological sites need to be maintained and preserved in a proper way for their longer existence.

Technological innovation may alter the authenticity of archaeological sites and most of the respondents have agreed with this statement. As such, technological innovation or improper renovation should not be appropriate for the sustainability of archaeological sites. It may help or modernize or facilitate tourist or employees of the sites. But at the same time it may demolish the authenticity of the specific tourist archaeological site or attraction. Thus, technological innovation should be discouraged for the sustainable tourism of the archaeological sites. Tourist or visitors functionality can destroy the attractiveness of the archaeological sites. Long term tourist functionality may cause many attractions to erase or destroy or change the nature in the archaeological sites. Again, every tourist attraction or site has a carrying capacity for the sustainability of the attraction or site. Overcrowding can demolish or change or erase the sustainability of any of the attraction or the site. As such, for the betterment of tourism sustainability, archaeological sites need to manage and control overcrowding.

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# 8. Conclusion

Bangladesh is a developing country having numerous attractive ancient archaeological sites along with a scenic land escape and other attractive tourism resources. Thus Bangladesh can be termed as an attractive and magnificent archaeological destination where tourism industry has gigantic and promising future to uplift its economy. Archaeological tourism can be described as a sort of social tourism that may aim at promoting public interest in prehistoric research and the maintenance of historically significant sites. This is not a recent concept. But it is a matter of great regret that with the passage of time, archaeological sites have been losing its appeal. As such, these need to be conserved and maintained for their sustainability and uses for the future generation. Tourism has harmonized and useful social impacts and economic benefits of locales of any nation and moreover on the global relationship building. The purpose of the study is to investigate the way out of key factors that can ensure the tourism sustainability in archaeological sites in Dhaka city. From the outcomes of the measurements of investigation, the paper uncovered that some factors really boost up archaeological sustainability and some factors demolish the sustainability of tourism in archaeological sites. As this paper is confined to tourism sustainability in archaeological sites in Dhaka city and, hence, may not apply to other destinations or regions or geographic areas. This research paper may be helpful to those who are really passionate to know the ways and means of how tourism sustains in archaeological sites.

# 9. References

Alazaizeh M.; Hallo, J.; Backman, S. J.; Norman, W. C.; and Vogel, M. A. (2016), “Value orientations and heritage tourism management at Petra Archaeological Park, Jordan”, *Tourism Management*, Vol. 57, pp. 149-158.

Avraham, E. (2016), “Destination marketing and image repair during tourism crises: the case of Egypt”, *Journal of Hospitality and Tourism Management*, Vol. 28, pp. 41-48.

Bryan, J., Munday, M. and Bevins, R. (2012), “Developing a frame work for assessing the socioeconomic impacts of museums: the regional value of the ‘flexible museum’, *Urban Studies*, Vol. 49 No. 1, pp. 133-151.

Brighton S.A.(2011), “Applied archaeology and community collaboration: uncovering the past and empowering the present”. *Human Organization*. 2011; 70(4):344–354.

Cohen, J. (1988), *Statistical Power Analysis for the Behavioral Sciences*, Lawrence Erlbaum Associates, Hillsdale, NJ.

Cong, L.C. & Dam, D.X. (2017).Factors affecting European tourists’ satisfaction in NhaTrang City: perceptions of destination quality, *International Journal of Tourism Cities*, 3(4), pp. 350-362.

Ely, P.A. (2013), “Selling Mexico: marketing and tourism values”, *Tourism Management Perspectives*, Vol. 8, pp. 80-89.

Gainer, B. and Padanyi, P. (2002), “Applying the marketing concept to cultural organizations: an empirical study of the relationship between market orientation and performance”, *International Journal of Non-Profit & Voluntary Sector Marketing*, Vol. 7 No. 2, pp. 182-193.

Grissemann, U., Plank, A. and Brunner-Sperdin, A. (2013), “Enhancing business performance in hotels: the role of innovation and customer orientation”, *International Journal of Hospitality Management*, Vol. 33, pp. 347-356.

Hair, J.F., Sarstedt, M., Ringle, C.M. and Mena, J.A. (2012), “An assessment of the use of partial least squares structural equation modelling in marketing research”, *Journal of the Academy of Marketing Science*, Vol. 40 No. 3, pp. 414-433.

Hasan, M. & Jobaid, M. M. (2014). Heritage Tourism Marketing: Status, Prospects and Barriers, *IOSR Journal of Business and Management*, 16(5), 40-48.

Hsieh, J., Curtis, K.P. and Smith, A.W. (2008), “Implications of stakeholder concept and market orientation in the US nonprofit arts context”, *International Review on Public and Non-Profit Marketing*, Vol. 5, pp. 1-13.

Hulland,J.(1999),seofpartialleastsquares(PLS)instrategicmanagementresearch:areviewoffour recent studies”, *Strategic Management Journal*, Vol. 20 No. 2, pp. 195-204.

Hultman, M., Skarmeas, D., Oghazi, P. and Beheshti, H.M. (2015), “Achieving tourist loyalty through destination personality, satisfaction, and identification*”, Journal of Business Research*, Vol. 68 No. 11, pp. 2227-2231.

**Jacobson, Matthew J. (2022),** “[Archaeological Evidence for Community Resilience and Sustainability: A Bibliometric and Quantitative Review](https://www.mdpi.com/2071-1050/14/24/16591)”, Sustainability,, 14(24), 16591; <https://doi.org/10.3390/su142416591> - 11 Dec 2022

Kavoura, A. and Bitsani, E. (2013), “Managing the World Heritage Site of the Acropolis, Greece”, *International Journal of Culture, Tourism and Hospitality Research*, Vol. 7 No. 1, pp. 58-67

McDonald, H. (2011), “Understanding the antecedents to public interest and engagement with heritage”, *European Journal of Marketing*, Vol. 45 No. 5, pp. 780-804.

MacMillan, K., Money, K., Money, A. and Downing, S. (2005), “Relationship marketing in the not-for-profit sector: annex tension and application of the commitment-trust theory”, *Journal of Business Research*, Vol. 58 No. 6, pp. 806-818.

Milman, A. (2015), “Preserving the cultural identity of a World Heritage Site: the impact of Chichen Itza’s souvenir vendors”, International Journal of Culture, Tourism and Hospitality Research, Vol. 9 No. 3, pp. 241-260.

Orbasli, A. (2014), “Archaeological site management and local development”, *Conservation and Management of Archaeological Sites*, Vol. 15 No. 3-4, pp. 237- 253.

Pacifico, D. and Vogel, M. (2012), “Archaeological sites, modern communities, and tourism”, *Annals of Tourism Research*, Vol. 39 No. 3, pp. 1588-1611.

Poria, Y., Reichel, A. and Cohen, R. (2011), “World Heritage Site: an effective brand for an archeological site?”, *Journal of Heritage Tourism*, Vol. 6 No. 3, pp. 197-208.

Salvo, S. (2013), “Innovation in lighting for enhancing the appreciation and preservation of archaeological heritage”, *Journal of Cultural Heritage*, Vol. 15 No. 2, pp. 209-212.

Stylianou-Lambert, T., Boukas, N. and Christodoulou- Yerali, M. (2014), “Museums and cultural sustainability: stakeholders, forces, and cultural policies”, *International Journal of Cultural Policy*, Vol. 20 No. 5, pp. 566-587.

Thomas, S.R., Pervan, S.J. and Nuttall, P.J. (2009), “Marketing orientation and arts organisations: the case for business sponsorship”, Marketing Intelligence & Planning, Vol. 27 No. 6, pp. 736-752.

Tuhin, M. K. W & Majumder, M. T. H. (2011). An Appraisal of Tourism Industry Development in Bangladesh, *European Journal of Business and Management*, 3(3), 287-298.

Verma R. & Rathore, M.J.S. (2018). Analysis of Service Marketing Mix of Rajasthan a Tourist Destination, *Asia Pacific Journal of Research*, I (LVIV), 66 -71.

World Travel & Tourism Council (WTTC*), Economic Impact Research - World Travel & Tourism Council*, Available at**:** https://wttc.org › research › economic-impact, 2019

Wikipedia,Sustainable Archaeology Collections Procedures and Standards**.** *Document on file at Sustainable Archaeology*. 2011.

Zannat, N. A. (2018). Measuring Tourists’ Satisfaction with Forest-Based Tourism Attractions in Sylhet: The Case of Lawachara National Park, *Journal of Tourism, Hospitality and Sports*, 39, 30-38

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