

## **Historical Monuments in India- Analyzing financial viability of their maintenance expenditure**

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### **Abstract**

Historical Monuments in India have always been an attractive destination for tourists within the country as well as outside the country. The recent statistics shows that Rs 190.23 crores have been collected through entrance fee during the financial year 2013-14 and 2014-15. This clearly reflects that historical monuments besides being cultural heritage of India can also be an importance of source of revenue for the Government. Therefore, their proper and continuous maintenance becomes imperative. The present study examines the financial viability of the cost incurred towards maintenance of historical monuments in India. The study further examines the reasons which are attributable to the deterioration of their appearance on account of change in climatic conditions and appropriate suggestions have been made to overcome these problems.

Keywords: Historical Monuments, ASI, Entrance fees , Air Pollution, Thermal expansion, solar effects

### **Introduction**

Historical monuments are not only representative of our past and cultural heritage but also serve as source of revenue and employment generation. In the light of the same, the need for restoring and maintaining their appearance becomes important. Significant efforts have been taken by various agencies at national as well as international level to prevent their deterioration with time on account of number of external factors including climate change, air and water pollution, etc. According to online newspaper report published in The Times of India , Business published dated July 19, 2016, the Archaeological Survey of India manages 116 monuments in 19 different states. In order to ensure holistic experience for any traveler to any historical monument , it is necessary that the environment surrounding the monument shall have facilities of cuisine, culture showcase,

shopping, hassle-free transportation, tout-less tours, sanitized toilets, parking and facilities for disabled and elderly, etc. With little investment in these amenities, the ability to attract tourist increases manifold. The study intends to increase awareness among the general public the need for preserving our Historical Monuments and not to proceed with the actions which may jeopardize the structure or appearance of our monuments in the long run. The awareness regarding direct and indirect impact of the pollution in different components of atmosphere such as air and water on Historical monuments would help tourist in improving their habits and ideology. The information would assist in creating the kind of environment essential for protecting the Historical monuments. This study would highlight various sources which adds to the potential of generating revenues by historical monuments and presents the quantitative data with regard to the amount of expenditure incurred towards maintenance of these monuments.

### **Review of existing literature**

Various authors have studied impact of climate change on historical monuments. Shoureshe Kanani and Hassan Zandi (2011) in their paper on climatic changes on historical monuments focused on the impact of air pollution in deteriorating the appearance of historical monuments. The paper apprised that UNESCO through its organizing committees and international conferences ensures coordination between nations so that cultural and artistic heritage which has existed for several years may be preserved in future also. Sanjay Prasad Gupta (2013) in his study on impact of climate changes on historical monuments identified various sources of climate which have bearing on the durability and appearance of the material used for construction historical monuments. The study concluded that deterioration of various monuments at Chhattisgarh has taken place not only due to age of the materials but also due to the changes in environmental factors which includes moisture in air, change in temperature, rainfall, etc..The author also described the role of living beings such as lichens and mosses in deteriorating the structure of the monuments particularly on account of relative humidity. The intensity of such damages increases in the area where relative humidity tends to be higher. Abd El-Aal AK (2016) , a civil engineer from Saudi Arabia, in his paper related to this area discussed various climatic factors responsible for deterioration of historical monument with specific reference to Ammon temple in Egypt. According to him, particles carried by winds can cause serious damages on the stones used in

construction of historical buildings. The author in most of the cases concluded with the same factors such as rainfall, air pollution, etc. being responsible for deterioration of Historical monuments.

### Objectives of the study

The present study has been conducted primarily to achieve the following objectives:

1. Quantitative analysis of revenue and expenditure incurred towards maintenance of historical monuments in India
2. To suggest measures for preventing deterioration of historical monument and increasing revenue potential of historical monuments.

### Research Methodology

In order to conduct this study, both primary and secondary sources of information have been used. The financial data with regard to revenues generated by historical monuments and expenditure incurred on their maintenance is observed from newspaper reports. Using the financial data, meaningful interpretations have been drawn and suitable suggestions were made.

### Data and Analysis

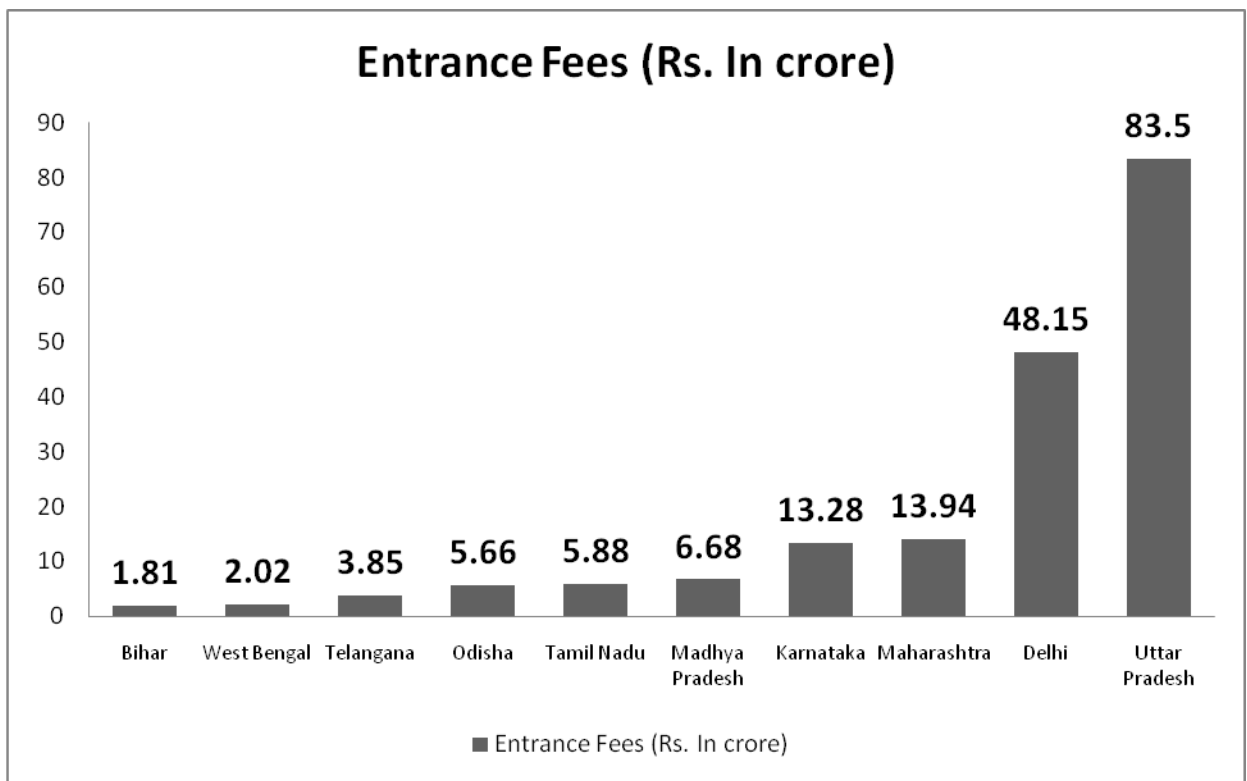
1. The information regarding revenues through entrance fees and expenditure incurred towards maintenance at Taj Mahal, for the period 2013-14 to 2016-17 (upto June, 2016), is given below:

S.No.	Year	Revenues through entrance fees and other paid services ( Rs. In lakhs)	Expenditure on Maintenance ( Rs. In lakhs)
1	2013-14	2245.80	314.17
2	2014-15	2126.28	442.40
3	2015-16	2388.83	366.60
	2016-17	830.74 (upto June,2016)	24.71 (upto June,2016)

\*Source: The Times of India , Business published on July 18,2016

Interpretation: As can be observed, the revenue by way of entrance fees is much above the expenditure showing financial viability of maintaining historical monument. In case one takes into consideration the indirect sources of revenues such as source of livelihood for small shopkeepers, agents, guides ,etc., the need for consistent monitoring of these monuments with the objective of protecting their aesthetic value will be further justified.

2. The statewise collection of entrance fees during the period 2013-14 and 2014-15 managed by ASI is shown below in figure



Interpretation: According to figures published by Archaeological Survey of India , the percentage amount spent towards monuments in U.P. and Delhi is around 23% of the total amount spent on all monuments under them but these monument contribute 69% of the total revenues of the entrance fees. This implies, there is need for creating good facilities for monuments in other parts of the country so that their ability to generate revenue increases.

3. Main Causes of deterioration

Monumental building gets impacted on account of various climate-related problems such as temperature differences between summer-winter and day-night, water movement inside the walls of buildings due to capillarity, rain water creates abrasive effects as it may carry different type of salts and chemicals , wind and air pollution may carry different particles alongwith them,etc. The historical monuments at different places have been constructed using material such as natural stones, bricks cut out from rocks, sand, woods , etc. When the impurities present in the environment gets mixed up with rainfall or air, they cause negative impact on natural stones and their intensity to create deterioration may increase in the humid atmosphere.

### **Thermal Expansions**

When the temperature increases , solid objects tends to expand whereas when temperature decreases , they tend to contract . This phenomena of thermal expansion has significant impact on the buildings of historical monuments. The temperature is generally higher during day time whereas it decreases during evening or night. This results in thermal expansion and contraction of the stones and other materials used for constructing historical monuments. Gradually, it leads to development of cracks within the stones of the building. Consequently during rainy seasons, water gets accumulated in these cracks and leads to further deterioration over a period of time.

### **Solar effects**

Due to change in temperature over day and night and different seasons , the colour of natural stones used for construction of historical monuments changes . This is known as solar effect

### **Destruction due to Relative humidity**

Relative humidity, in simple terms, means the amount of moisture in the air. There are two types of moisture: ascending and descending. Ascending moisture is created when water gets penetrated within the walls and moves upward on account of capillary action. This kind of problem is observed when gardens are build or trees are planted near the buildings , Descending moisture results due to precipitation and this kind of problem arises when constant care and maintenance of the building is not taken.

### **Conclusion and Suggestions**

Although, nothing is immortal in the world but historical monuments are deemed as immortal buildings and their existence is considered necessary so that our generations one after the other does not forget the past culture enjoyed by particular society or religion. It is with this concern our ancestors have always tried to protect their structure and existence. Therefore, it becomes important for us also to exhibit serious effort in protecting and preserving historical monuments. The study reveals that historical monuments not serves the purpose of reminding our past culture but also attract tourist from different places. As such, they help in generating employment for many people in the society in the area of transportation, hotels , restaurants, shopkeepers, tourist guide, etc. Their preservation, therefore, becomes important not only for historic purpose but also for economic purpose. The financial data, released by Archaeological Survey of India , clearly reflects financial viability of these monuments. With this objective at the background, this study has been pursued. Initially, various research papers authored by experts in this area were referred and it was noticed that the main reason for deterioration of monuments on account of climatic changes results due to presence of air and water pollution. Various climatic factors such as change in temperature, relative humidity, rainfall, etc. does impact the durability of their structures but their impact gets intensified in the presence of air and water pollution. In order to enhance tourist visits in these monuments, the areas around the historical monument need to be made free from pollution by not approving any construction or plying of vehicles. Industrial wastes should not be allowed to pollute our rivers, particularly those, which are flowing in the immediate vicinity of historical monuments. The chemicals presents in the industrial waste and emitted out of their chimneys contaminates the air and pollution which when interacts with the surface of natural stones and other material used for the construction of these old buildings creates weathering effects. Serious efforts shall be made by our Government agencies to restore and maintain the historical monuments and public shall also extend their cooperation in this direction. It is necessary that their durability and appearance shall be monitored at regular intervals and necessary steps should be initiated as and when required to ensure their strength and appearance.

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