An Exploratory Study On The Cultural Deviation, Deteriorating Heritage Monuments Challenges In Indian Tourism Industry

Mr. A. Benito Maria Jose[1] , Dr. B. Zobedha[2]

[1]Ph.D. (Part-Time) Research Scholar Department of Hotel Management and Catering Science Madurai Kamaraj University College (Affiliated to Madurai Kamaraj University) Alagarkovil Road, Madurai, Pin Code – 625 002 Madurai District. Tamil Nadu State, India.
[2]Associate Professor Department of Hotel Management and Catering Science Madurai Kamaraj University College (Affiliated to Madurai Kamaraj University) Alagarkovil Road Madurai. Pin Code – 625 002 Madurai District. Tamil Nadu State, India.

ABSTRACT

India's rich history, cultural variety, and creative ability are all demonstrated by its architectural legacy. A trip through historic tourism reveals a wealth of wonders, each with a unique tale to tell. Like the nation itself, India has a rich and varied architectural heritage. Every building, from historic marvels to colonial artefacts, represents a different period in India's rich history. Indians explore the realm of heritage tourism, identifying the best places for tourists looking to fully immerse themselves in history and culture as well as the importance of conserving architectural wonders. This paper aims to focus on studying the cultural deviation and deteriorating heritage monument challenges in the Indian tourism industry. The convenience sampling method is used to collect the primary data. Around 450 participants were selected, whereas 374 responses were received. Simple percentage analysis, regression, and analysis of variance methods are used to interpret the results. Further ranking method based on respondent opinions to reveal the insights. The results revealed that there is a very strong direct relationship between special amendments on tourist policy for cultural preservation and foreign tourist population increase. Furthermore, it reveals that when there is an upsurge in special amendments on tourist policy for cultural preservation by 1, the worth of the foreign tourist population increase increases by 0.9736. The outcomes of this paper are limited to Indian regions only.

Key Words: Challenges, Heritage, Tourism, Exploration.

1. INTRODUCTION

Indian mural paintings, the rock-cut caves at Ajanta have earned a special place. The addition of painting, the third art form that has contributed most to Ajanta's international renown, surpasses the architectural and sculpture values found in these rock-cut caves. The 30 caverns in Ajanta are cut out of the Deccan Traps' basalt flows on the Wager River's steep left bank. Together, the paintings at Ajanta provide a historically significant record of artistic, cultural, and intellectual advancements. Because the Ajanta caves have been neglected for a long time, they require specialized research across a range of fields to comprehend their deteriorating issues and suitable preservation techniques. (Bagde, M. N., Badge, Y., Soni, A. K., & Sinha, A. K. 2010). In India, re-table art is gradually being ignored, forgotten, and twisted due to a mix of cultural influences and a dearth of specialized research, which is causing it to disappear daily. Its memory will eventually deteriorate completely, and actions to stop this from happening can't be restricted to particular research. Portuguese India has long since disappeared, and with it, its artistic characteristics are merely being buried alongside the generations who came before it. Politics is a two-edged blade that may be used to support or undermine art and culture. What causes this decline in Indo-Portuguese retable art? And can understanding these causes enable us to create a preventative strategy to preserve retable art? Could India be a collaborator in preserving the expression of two civilizations

through miscegenized Indo-Portuguese Christian art? How will Christian table art fare in Hindu India? Another study examines the past and present in order to introduce the topic of contemporary retable art conservation (Reis, M. E., 2010). It is difficult for developing nations to preserve their cultural history, especially when those locations are dispersed over rural areas and might not have striking structures and monuments. Connecting tiny, primarily local sites into a cultural heritage route and marketing them as a package while simultaneously enhancing heritage asset management and conservation is one possible option that an increasing number of these nations are doing. Local economic development plans frequently highlight the tourist potential of these routes, which are seen to offer chances for producing income for the preservation of cultural treasures. An essay investigates the Liberation Heritage Route's potential for both economic growth and cultural preservation in South Africa. (Snowball, J. D., & Courtney, S., 2010). The government of Tamil Nadu has designated the downtown of South India, Tranquebar, a Danish trade colony, as a historic town because of its well-preserved Indo-Danish townscape and potential for tourism. The town's growth as a tourist attraction and its preservation as a manifestation of cultural heritage are the goals of both Indian and Danish stakeholders. Examining the ways in which perceptions of history and development are involved in this transnational process of post-colonial legacy-making, it is argued that the establishment of Tranquebar as a heritage town is largely dependent on the widely held belief that it is an undeveloped "remote area."(Jørgensen, H., 2011).

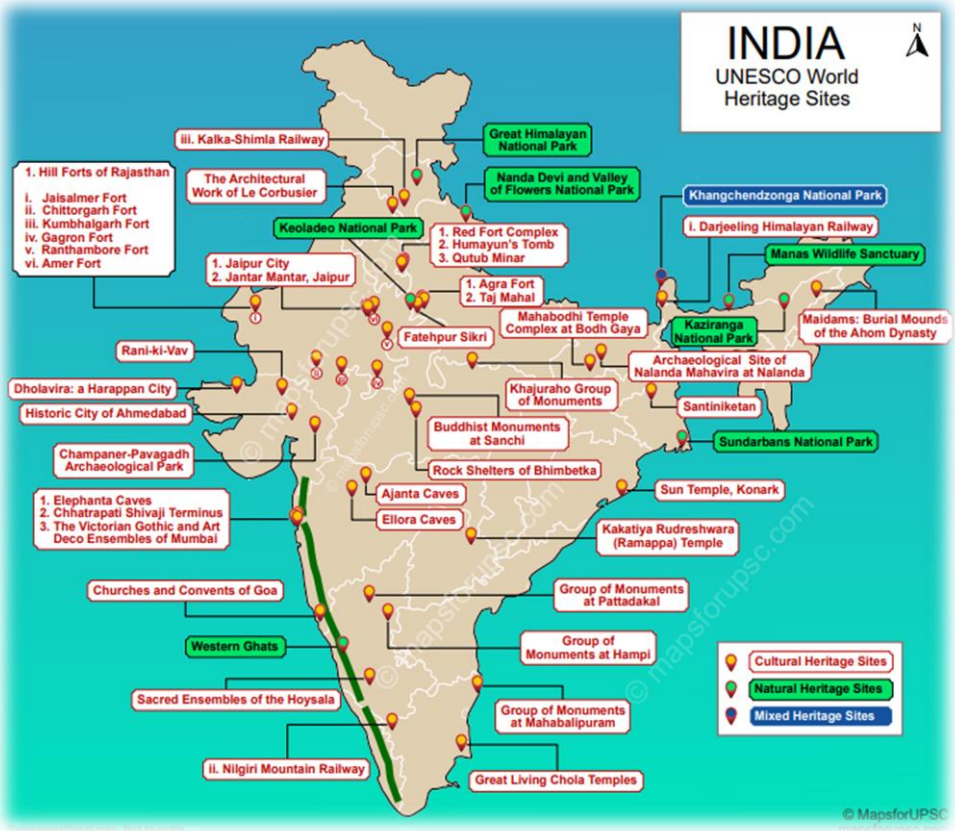

Figure - 1. India UNESCO World Heritage Sites (Source: Maps for UPSC)

The tenets and tactics supporting the nation’s ambitious aims to create a very distinctive worldwide destination are first described in another study. However, the conversation acknowledges the difficulties brought about by the worldwide economic slump as the potential need for nations to implement recessionary policies to attract large numbers of tourists. It is suggested that countries should need to consider market niches other than the conventional luxury tourist industry, especially by building more affordable hotels. This might exacerbate already-existing societal issues and cast doubt on any fruitful idea of a socially sustainable tourist environment. (Stephenson, M. L., & Ali-Knight, J., 2010). In order to meet the demands of visitors, tourism promotion needs enough infrastructure, but it shouldn't have a negative impact on the historic environment. This calls for establishing a set of location-specific criteria for the building of tourist infrastructure. To illustrate the importance of such guidelines, a case study of Sri Varaha Lakshmi Narasimha Swami Temple, also called Simhachalam Temple, built in 1098 AD by Chola King Kulothunga in the Chalukyan and Orissa architectural style in Visakhapatnam, India,

has been discussed. By tearing down old buildings, contemporary tourist infrastructure was recently built at the Simhachalam Temple site to accommodate the increasing number of pilgrims and tourists (Giduthuri, V. K., & Mahammood, V., 2011). Splendor and loveliness are the objectives of architecture since ancient times. The Taj Mahal, Milan Cathedral, Roman Catacombs, Rome's Necropolis, and other monuments were built by artists and architects using marble and limestone, which are strong, long-lasting, and aesthetically pleasing. Because these ancient monuments are open to the elements, an army of cyanobacteria, fungi, algae, and other microorganisms may readily infiltrate them. Through a variety of methods, the incursion of bacteria and their succeeding interface with the mineral matrix of the stone substrate under varying environmental circumstances causes stones to deteriorate, losing their strength, durability, and aesthetic appeal. Another paper addresses existing remediation techniques, outlines the main pathways and mechanisms that caused biodeterioration, and makes recommendations for future research (Dakal, T. C., & Cameotra, S. S. (2012).

2. LITERATURE REVIEW

Assorted inhabitants of microbes alive in biofilms pose a threat to the bio-deterioration of stone cultural heritage items. The degradation of the underlying substratum is caused by the infectious metabolites of these biofilms, which can also cause the stone to become physically weaker and discoloured. The staining and deterioration of various stone kinds in cultural heritage items are significantly influenced by fungi's capacity to produce pigments and organic acids. The colonies of microorganisms involved in the bio-worsening process may be supported by stone items. Another study examines the mycological studies of microbial biofilm from the sandstone-based Bhimkichak temple in Malhar, Bilaspur District, Chhattisgarh state, which is severely fungus-colonized. On the sandstone, eight fungus species were identified (Gupta, S. P., Sharma, K., & Chhabra, B. S., 2012). Another study looks at how national heritage ideas, both cultural and natural, were not only expanded but also created during the British imperial era. It also looks at how these ideologies have since been reinterpreted and reconstructed in the post-colonial epoch. From the romantic antiquarianism of the nineteenth century, which was attracted to the remnants of a vanished civilization, archaeology, paleontology, and natural history have grown in stature in the colonies. At the same time, heritage laws have spread from the Indian subcontinent to African regions and even to British empires, thanks to individuals like Lord Curzon, the Viceroy of India, whose passion for monumental architecture inspired him to preserve the Taj Mahal and then to bring similar ideas to Britain, where he played a key role in the creation of the 1913 Ancient Monuments Consolidation and Amendment Act (Damodaran, V., 2013).

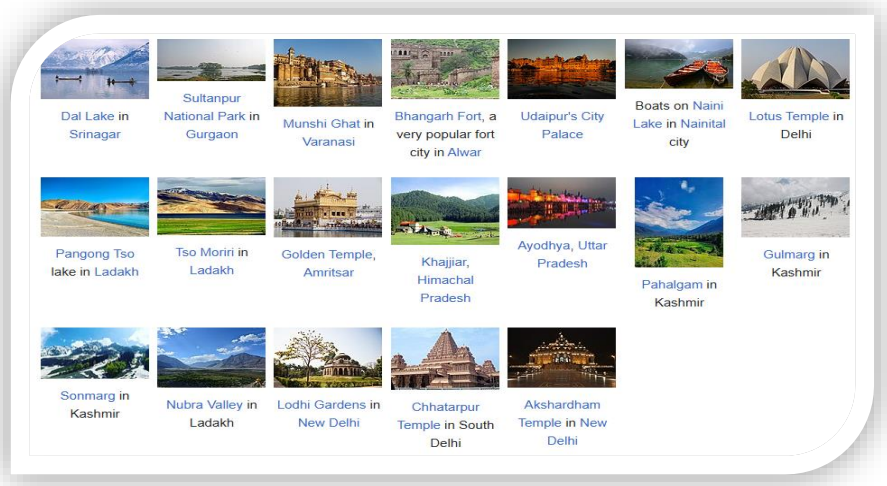

Figure - 2. Tourist Spots in North Indian Regions (Source: Wikipedia)

Hindu temples are an intricate architectural typology with even more intricate cognitive links found in customs, beliefs, and rituals. This debate is pertinent in backgrounds far beyond India because, although this construction typology is most prevalent in India, it is also expanding outside the

subcontinent due to an expanding Hindu diaspora. However, another study looks at how Indian preservation laws and the Venice Charter's requirements frequently lead to disputes over ancient religious buildings like Hindu temples, including issues with categorization, preservation, upkeep, and usage. Other religions, such as Islam, Jainism, Sikhism, Buddhism, and Zoroastrianism, are among the many non-Judeo-Christian religions that make up a sizable portion of India's historic built environment. Each of these religions has its own set of beliefs and practices that dictate how its sites and structures should be maintained, including how they are used and reused. Although the diversity of these religions merits a thorough examination, a different study focuses on Hindu places of worship in order to facilitate a more comprehensive discussion about how Indian central and state policies, as well as the principles of the Venice Charter, affect non-Judeo-Christian sites. Additionally, it will suggest ways to better serve and maintain them while taking cultural and religious considerations into account (Joshi, M., 2014).

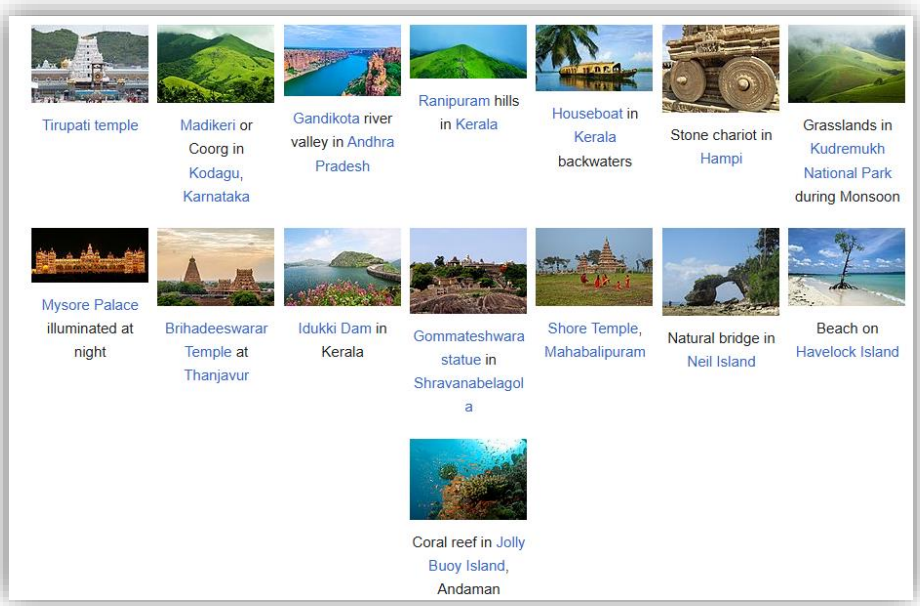

Figure - 3. Tourist Spots in South Indian Regions (Source: Wikipedia)

Numerous studies have demonstrated that the archaeological and legacy places spread over India are vulnerable to industrial contamination, which jeopardizes the survival of these historical remains. Government must take preventive action to stop the deterioration of the foundations of these buildings and then put a plan in place to mitigate damage caused by industrial pollution because the rate of pollution increase is increasing with the size of factories, workshops, and residential complexes. In addition, industrial and vehicular emissions of pollutants like carbon monoxide and sulfur dioxide are causing degradation in other sites, such as the Gwalior Fort, which is situated between the crowded streets of Gwalior, Madhya Pradesh. When it rains, the organic debris and dust that settle on the structure cause moths to develop. Pollutants, including carbon monoxide and sulfur dioxide, as well as vibration levels that can cause plaster to peel off, can be produced by nearby vehicles. According to existing world heritage statistics, industrial pollutants and transportation are the primary causes of air pollution in metropolitan areas. In city centers, electric cars or vehicles powered by other fuels should take the place of diesel vehicles, which significantly contribute to smoke and the blackening of monuments. Furthermore, factories, power plants, automakers, and other significant polluting companies may be required to adopt cleaner technology in response to suggestions for stricter air quality regulations (Pandey, A. K., & Kumar, V., 2015).

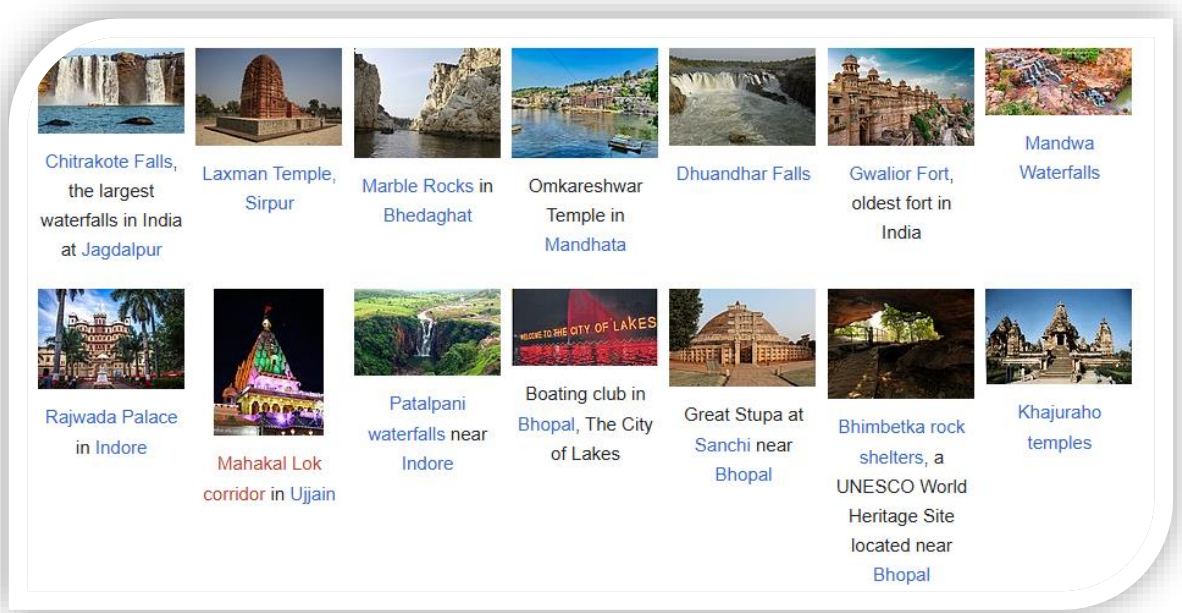

Figure - 4. Tourist Spots in Central Indian Regions (Source: Wikipedia)

The consequences of climate change and the difficulties facing the maintenance of World Heritage are unmatched in human history. The application of sustainability at heritage sites is one of the main obstacles. According to a survey by the World Wildlife Fund, industrial operations, including mining, building, oil & gas exploration, unlawful sorting, and overfishing, pose a threat to over half of these locations. Eleven million people reside in these areas, and their livelihoods, food, and water supplies are all connected to the preservation of the area. The potential of communities to deliver both economic and non-economic advantages is being jeopardized by destructive industrial operations that deteriorate the environment (Senthil, R. B., & Ramya, M. S., 2016).

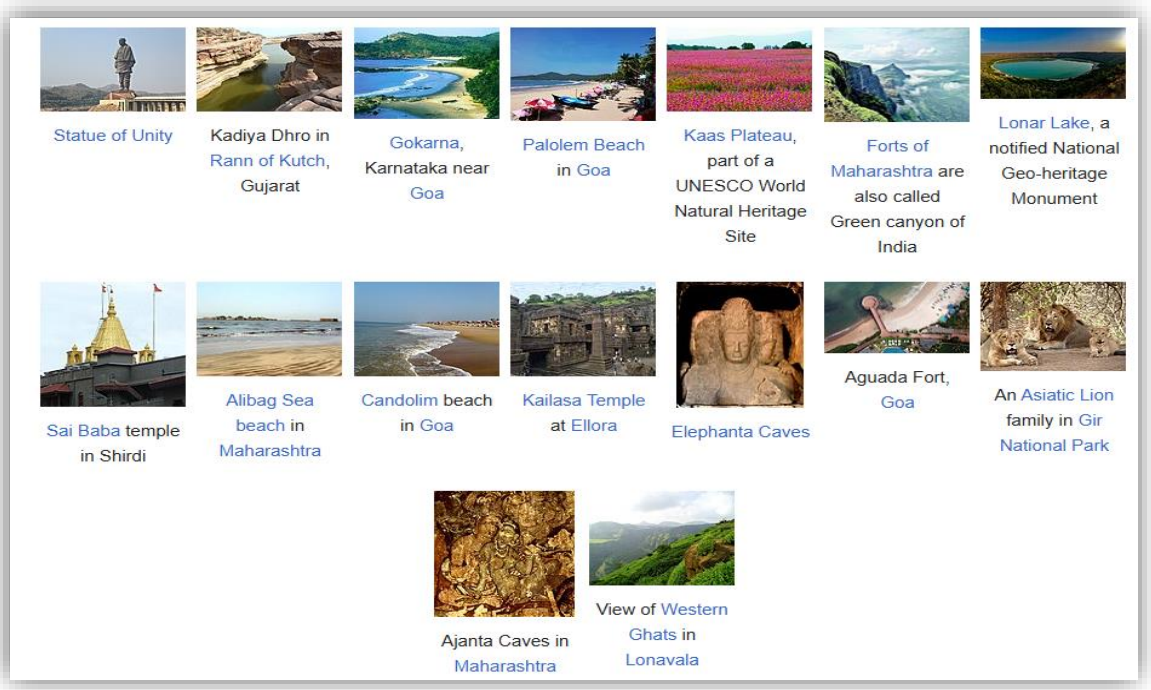

Figure - 5. Tourist Spots in West Indian Regions (Source: Wikipedia)

The procedures of comprehending (by knowing and recognizing), protecting, and managing different forms of cultural heritage are together referred to as cultural heritage management. These manifestations may be concrete, such as locations or artifacts, or intangible, such as traditional trades, talents, folklore, rituals, etc. Artifacts, murals, and sculptures are examples of transportable cultural property, whereas buildings, monuments, precincts, canals, and bodies of water are examples of immovable cultural property. The administration of these many manifestations of cultural heritage is progressively utilizing new scientific findings and emerging technology. But the manifestation of cultural heritage in the form of immobile national possessions or legacy locations seems to lend itself best to examination using the several methods that fall under the broad heading of geospatial technology. Built heritage is well-suited for geospatial analysis owing towards its inherent characteristics, which include the fact that structures must be constructed in specific geographical and cultural contexts, most likely as a consequence of careful site selection to trace them and their constituents appropriately, & the novel layout and any additions made later would have a spatial spread (Rajangam, K., & Rajani, M. B., 2017).

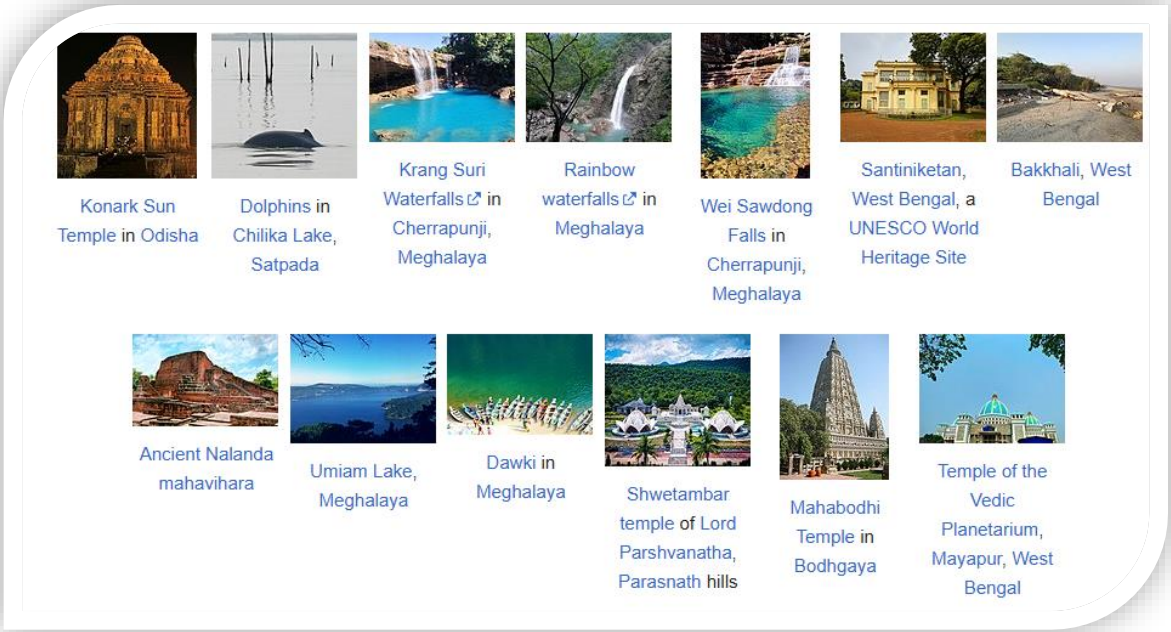

Figure - 6. Tourist Spots in East Indian Regions (Source: Wikipedia)

Because metals bio-accumulate and impact an ecosystem's whole food chain, metal contamination is a topic of increasing concern. Globally, anthropogenic meddling and growing industrialization have severely strained self-sustaining ecosystems. As a UNESCO World Heritage site, the Sundarbans mangrove estuary is badly impacted by urbanization, ecotourism, and overexploitation of natural resources, human stress, and the discharge of municipal and industrial waste products. The heritage property is in concerning condition, rendering to the conclusions of another research. This estuary mangrove is gradually deteriorating due to metal concentrations over toxicity levels, which can only be stopped by creating sustainable management plans (Roy, D., Pramanik, A., Banerjee, S., Ghosh, A., Chattopadhyay, D., & Bhattacharyya, M., 2018). Scientific and technological developments can provide fascinating and creative ways to save our monuments and historic structures. Nonetheless, there aren't many resources allocated to scientific study. Furthermore, there are still a ration of unanswered questions about the nature of conservation issues and in what way to address them. Some of the scientific and technical obstacles to their protection are clarified by research on the issue (Kumar, D., Prasad, J., Pandey, A. K., & Upadhyay, M. K., 2018).

Figure - 7. Tourist Spots in North East Indian Regions (Source: Wikipedia)

The murophytic plants often colonize the walls of the historic monuments. Numerous species from several groups are unintentionally and inadvertently growing on these structures. Certain plants that grow on walls frequently cause damage to structures and need to be removed. The distribution places where wall degradation occurs determine how severe it is. To recognize the vascular plant flora growing on legacy buildings in the Malda area of West Bengal, an India state, another investigation was accompanied. The majority of species were found in the groups Poaceae, Fabaceae, Amaranthaceae, and Asteraceae. The cavities at ground level had the highest species diversity across the distribution locations (Sarkar, A. K., Dey, M., & Mazumder, M., 2018). Numerous biological and physical pressures have an impact on heritage monuments worldwide. As anthropogenic pressure increases and the climate changes, insect and pest damage to cultural sites increases. Because of their low temperatures, little to no sunshine, and high moisture content, cave monuments are sole biodiversity places that serve as homes for microorganisms, algae, fungus, and insects. Another study evaluates the knowledge currently available on significant elements that contribute to the development of insect pests and the degradation of historical sites. Understanding the many stressors and conditions that have significantly impacted Ajanta cave portraits in recent decades—with an emphasis on insect pests—is the subject of another study report (Singh, S., Dhyani, S., Kokate, P., Chakraborty, S., & Nimsadkar, S., 2019). India's rich cultural legacy from a series of civilizations that were prolific in building monuments has both given her enormous benefits and challenged her with daunting challenges. These societies produced more variety of utilitarian artistic products, paintings, fabrics, texts, sculptures made of various materials, and what may be called transportable art. When conservation seems to be at odds with commercial interests, there is constantly a foyer that complains about how important it is. Another issue facing conservationists is the sharp rise in both domestic and international tourism, and the specialized protectors of heritage are afraid that an increase in tourists may negatively impact their ability to preserve such legacy (Dehejia, V., 2019).Adopting suitable preservation solutions for historic sites requires knowledge of the characteristics and behaviour of the historical materials. Ancient stone structures frequently used coral stones, which had special physical qualities. However, they are rarely used in new construction, and in certain island nations, it is even illegal to harvest coral stones. However, it is necessary to specify their characteristics and performance in light of the significance of historical conservation. Through in-situ and laboratory testing, another research examines the physical, mechanical, and chemical characteristics of a coral stone to document its state and typical damage patterns. To comprehend how coral stone weathers, the material characteristics and microstructural features are investigated. Through the use of immersion and drying cycles with sodium sulphate & sodium chloride, the material's resistance to salt crystallization was investigated. The distinctive pore distribution system in coral stones is identified as the key to a stronger resistance to crystallization of soluble salts based on the findings of the microstructural changes seen on artificial salt weathering. It is determined that erosion brought on by wind and rain is one of the possible sources of the damages shown in their study (Manohar, S., Bala, K., Santhanam, M., & Menon, A., 2020). India's rich and varied past has been extensively acknowledged. As a result, the nation has also become a popular travel destination for foreigners. The diversity of the urban fabric, particularly in heritage areas, provides an excellent framework for analyzing it from every angle using imperial pedagogy. The idea of history in Indian cities is under threat due to a number of issues, including the country's fast urbanization, rising housing demand, cultural and climatic shifts, and other factors that put additional strain on the cities. Since tourism and heritage are closely related, it may boost the local economy and create jobs for residents. However, heritage depends either directly or indirectly on tourism to make a living. However, the city's historic sites are unable to harness the curiosity of tourists by striking a balance between the growth of the old and the modern. Only those who reside in the core region are able to practice the magnanimous manifestation. By combining tourism and heritage and making cities more development-responsive, the problem of creating an ever-increasing

economy and jobs may be solved. By analyzing the problems and difficulties that the heritage precincts have encountered, another research aims to comprehend the strain that more recent infrastructure developments have had on the present heritage fabric. In the situation of Indian historic sites, it also looks for the gap between best practices and existing procedures. To accomplish supportable heritage-based expansion in Indian cities, it also suggests workable ideas which might be put into practice through effective governance and administration (Goswami, S., & Kumar, A., 2021). In the 'Urbanocene' era, Indian cities have expanded rapidly to meet the growing demands of their urban population. 'Heritage' and 'urban' have a complicated, multi-layered, and cyclical relationship. With each city letting its own history develop in its own unique manner and narrating forth dominating, contrasting, and even repressed storylines that demand our attention, the concept of "heritage" has become increasingly significant in discussions about urban design. Once considered a "Mini Europe," the European colony on the Hooghly River was permanently impacted by Portuguese, Danish, Dutch, British, and French influences. The diamond in this spatial crown is the crescent-shaped Chandannagar on the riverbank, which is attracting attention as a likely historic monument. The construction of multi-story buildings, supported and enabled by the navies of transcontinental capital and land market speculation, is already overshadowing the rich historical private structures of several of the town's key neighbourhoods, including Palpara, Lalbagan, Bagbazar, and Loxmigunj Bazar. If she can regain her former greatness, it has every chance to become a world-class cultural landscape. It is necessary to critically examine the discourse around urban heritage, especially the initiatives to renovate or rehabilitate constructed heritage and the resulting effects on the creation of new urban areas in small towns (Bose, L., & Mukherjee, J., 2022). Almost everyone and families have found inspiration and wonder in traditional stone monuments. India's rich and varied cultural legacy is embodied by these architectural wonders. People all throughout the world appreciate them. The ordinary stones used to build these monuments have corroded and become soiled due to anthropogenic factors, including environmental contamination. Every segment of society is now concerned about these monuments' deteriorating beauty and speeding up of degradation. An analysis of the legal framework's suitability for safeguarding legacy stone monuments from environmental contamination has been attempted in another research. Since both the Lotus Temple and the Taj Mahal were built using heritage stones, case studies of the two monuments have been conducted for comparative research. The Taj Mahal was built using Makrana marble that was taken from Rajasthani mines, but the Lotus Shrine was built using marble that was taken from old Greek mines. The latter was constructed in the late 20th century, whereas the former was constructed during the Mughal era. Both the Taj Mahal in Agra and the Lotus Shrine in Delhi, the nation's capital, have been humming with social, political, and economic activity for many centuries. (Kaur, P., 2022). The importance of historic urban landscapes in relation to Indian heritage management policy is examined in another study work. It looks into the difficulties in maintaining and conserving significant city zones and offers suggestions for improving the way landscape methods are incorporated into the current legislative framework. The results highlight the necessity of an inclusive, comprehensive strategy that acknowledges the complexity of urban history and promotes sustainable growth while maintaining historical relevance. In order to successfully integrate landscape concepts into Indian inheritance management policies, the study provides policymakers and urban planners with useful suggestions (Sharma, A., & Aulakh, R. S., 2023). India is home to a significant amount of both natural and cultural history. However, the full potential of a thorough effort to document them at the national level is not being realized. Many culturally significant assets, inheritances, or locations have not been properly identified, conserved, or recorded; as a result, once they are lost, they are never remembered. The part of certain cultural heritage groups and people is unclear, and their documentation does not adhere to any universal criteria. Documentation is crucial for every conservation effort, and native communal support is also crucial. It is necessary to support international cooperation in the management and promotion of the heritage. Rendering to the fallouts of another study, digital technology must be cast-off to help with the documentation process. In order to support heritage conservation, preservation, and sustainability, it highlights the necessity of establishing a web-based, single-window online portal where a person or community may share the resources and information they have (Gireesh Kumar, T. K., 2024). Another study looks at how national and international organizations, such as UNESCO, other UN bodies, the World Bank, and the Asian Development Bank, used their larger objectives to talk about the wicked complications of contamination, the pro-poor service sector, and sustainable development. These findings imply that the Taj, and more especially its preservation in the future, is entangled in a number of conflictual connectivity and centrifugal forces that go well beyond normative heritage and conservation practices. As a result, the

Mughal tomb became "the critical receptor" and the focal point of a flurry of global methodological, economic, developmental, and conservation initiatives that sought to connect environmental concerns with cultural preservation in tandem with social and economic advancement, well-being, and urban resilience (Meskell, L., 2024).

3. RESEARCH GAPS & HYPOTHESIS OF THE STUDY

From the literature reviews, it is identified that there are several studies carried out on the cultural deviation and deteriorating heritage monuments. This investigation reports the gap in how the cultural deviation, heritage monuments protection will boost the heritage tourism. Further, this paper aims to focus on the relation and impact of the special amendments on tourist policy for cultural preservation and the foreign tourist population, which boost heritage tourism.

4. OBJECTIVES OF THE STUDY

i) To identify the facts and opinions of the participants to rank the challenges & problems in sites fall under heritage tourism.
ii) To identify the relation and impact of the special amendments on tourist policy for cultural preservation and the foreign tourist population, which boost the heritage tourism.

5. SAMPLE SIZE SCHEMING & RESEARCH METHODOLOGY

The total population is accounted for founded on the source tables below. Table - 1 indicates the tourist classification based on foreign and domestic.

Table – 1: Population of Tourists

Tourist Classifications	Total Population in Million
Foreign	8.59
Domestic	1731.01
Total	**1739.6**

Source: Tourism in India - Wikipedia

Calculated the sample size with the following confidence interval: **proportion ± 0.04**.

The standard deviation is based on the proportion (p) is:

$\sigma = \sqrt{(p(1-p))} = 0.3.$

$\alpha = 1 - 0.99 = 0.01.$

$p = 1 - \frac{A}{2} = 1 - \frac{0.01}{2} = 0.995$

We use $p = \alpha/2$, and get the same sample size.

$Z_p = Z_{0.995} = 2.5758$, we instead used $Z_{\alpha/2} = Z_{0.005} = -2.5758$.

The required sample size is:

$$n = \frac{Z^2_{0.995} * p(1 - p)}{MOE^2}$$

$$n = \frac{2.5758^2 * 0.1(1 - 0.1)}{0.04^2} = 373.2129$$

Rounded up to: **374**.

Since the population size is finite: N=1739600000, the corrected sample size is:

$$n' = \frac{n * N}{n + N - 1}$$

$$n' = \frac{373.2129 * 1739600000}{373.2129 + 1739600000 - 1} = \mathbf{373.2129}$$

Rounded up to: **374**.

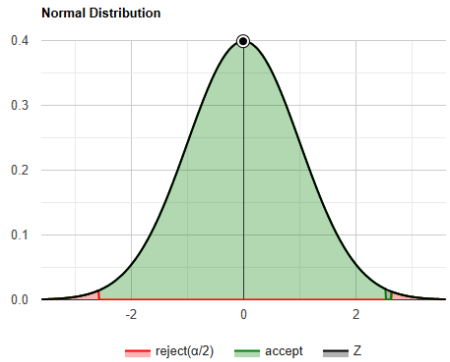

Figure – 8. Sample Normal Distribution

The convenience sampling method is adopted to gather the primary data. Around 450 participants were selected whereas 374 responses were received. Simple percentage analysis, regression and analysis of variance methods are used to interpret the results. Further ranking method based on respondent opines to reveal the insights.

6. RESULTS SUMMARY

6.1 CHALLENGES & PROBLEMS IN HERITAGE INDUSTRY TOURISM

Table – 2. Ranking of Challenges & Problems in Heritage Site

Challenges & Problems in Heritage Site	**Rank**
Air Pollution	1
Restriction by rules / policies	2
Nuisance by robbers	3
Language issues	4
Troubles to tourist (by others)	5
Environmental issues (Pollution, water, Air quality)	6
Crowd controlling issues	7
Loss of materials carried by tourist	8
Mobile Signal issues	9
Transit issues	10
Location familiarity	11
Lack of cleanliness	12
irregular maintenance of Heritage sites	13

Un cleaned rest rooms	14
parking challenges	15
Local currency exchange issues / ATM issues	16
improper amenities	17
Product price at tourist spots	18

6.2 DETERIORATING FACTORS IN MONUMENTS & HERITAGE TOURISM

Table – 3. Ranking of Deteriorating Factors in Heritage Site

Deteriorating Factors	**Respondents (N = 374)**	**Rank**	**Percentage**
Biological factors like Fungus, Moss etc	119	1	31.8%
Vandalism / Riot	76	2	20.3%
Fire (Natural / Manmade disasters)	54	3	14.4%
Ground water, salts and minerals	25	4	6.7%
Urbanisation	23	5	6.1%
Changing Temperature, humidity weather conditions	22	6	5.9%
Solar Radiation	21	7	5.6%
Moisture	20	8	5.3%
Floods / acid rain issues	14	9	3.7%

Table - 3 indicates the ranking of deteriorating factors in heritage tourism sites. Around 31.8% respondent opines that Biological factors like Fungus, Moss etc, and 20.3% respondents opines that vandalism / riot issues on monument due to local /religious related locations, 14.4% respondent opines fire / man-made disasters are Deteriorating Factors, whereas 6.7% respondent quotes Ground water, salts and minerals are Deteriorating the monuments, 6.1% respondents opines that due to Urbanisation / growing homes and commercial buildings near heritage sites also Deteriorating Factors, 5.9% respondents quotes that changing temperature, humidity and weather conditions whereas 5.6% respondents quotes solar radiation and 5.3% respondents inform that moisture also one of the degrading factors. However, only 3.7% of respondents opine that floods/acid rain affects the monuments and heritage sites.

6.3 PRESERVATION TECHNIQUES RECOMMENDED BY RESPONDENTS

Table – 4. Ranking of Preservation Techniques in Heritage Tourism Site

Techniques Recommended	**Respondents (N = 374)**	**Rank**	**Percentage**

Chemical Preservation & restoration	143	38.2%	1
Awareness Program	117	31.3%	2
Structural Conservation & Refurbishments	114	30.5%	3

Table - 4 indicates the ranking of preservation techniques in heritage sites. Around 38.2% of respondents opine that chemical preservation & restoration might aid to prevent the monuments & archaeological sites, and 31.3% of respondents opine that awareness programs will help the local population & tourists to preserve & maintain the quality of the site, and 30.5% of respondents opine that structural conservation & refurbishments help to avoid deteriorating factors & control degrading issues in the monuments & heritage sites.

6.4 REGRESSION ANALYSIS RESULTS AND INTERPRETATION

Regression line equation $\hat{Y} = 1.1116 + 0.9736X$, special amendments on tourist policy for cultural preservation predicted foreign tourist population increase, R2 = , $F(1,376) = 166460.57$, $p < .001$. $\beta = .97$, $p < .001$, $\alpha = 1.11$, $p < .001$. In 2010, the Indian government added some more recent subsections to the Ancient Monuments and Archaeological Sites & Remains Act 1958. The establishment of Heritage Byelaws for Prohibited and Regulated Areas for each centrally protected monument or site is one of the main changes. Table - 5 indicates the regression and ANOVA results. Table - 5 Regression ANOVA results.

Source	**DF**	**Sum of Square**	**Mean Square**	**F Statistic (df_1, df_2)**	**P-Value**
Regression (between $\hat{y}_i$ and $\bar{y}$)	1	193106.58	193106.58	166460.5657 (1,376)	0.00001
Residual (between y_i and $\hat{y}_i$)	376	436.1878	1.1601		
Total (between y_i and $\bar{y}$)	377	193542.7679	513.376		

Relationship between Foreign tourist population increase and special amendments on tourist policy for cultural preservation; R-Squared (R2) equals 0.9977. This means that 99.8% of the variability of foreign tourist population increase is explained by special amendments on tourist policy for cultural preservation. Correlation (R) equals 0.9989. This means that there is a very strong straight association among special amendments on tourist policy for cultural preservation and foreign tourist population increase. The Standard deviation of the residuals (Sres) equals 1.0771. The slope: b_1=0.9736 CI[0.9689, 0.9783] means that when there is an increase special amendments on tourist policy for cultural preservation by 1, the worth of foreign tourist population increases by 0.9736.The y-intercept: b_0=1.1116 CI[0.9978, 1.2254] means that when special amendments on tourist policy for cultural preservation equals 0, the prediction of foreign tourist population increase's value is 1.1116. The x-intercept equals -1.1417. Goodness of fit- Overall regression: right-tailed, $F(1,376) = 166460.5657$, p-value = 0. Since p-value < α (0.05), we reject H0. The linear regression model, $Y = b0 + b1X + \varepsilon$, provides a better fit than the model without the independent variable resulting in $Y = b0 + \varepsilon$. The slope (b_1): two-tailed, $T(376)=407.9958$, p-value = 0.0001. For one predictor it is the same as the p-value for the overall model. The y-intercept (b_0): two-tailed, $T(376) = 19.2021$, p-value = 0. Hence, b_0 is significantly different from zero. Residual normality: The linear regression model assumes normality for residual errors. The Shapiro-Wilk p-value equals 0.

7. DISCUSSION

Reviving the essence of both physical and intangible elements that have been waning due to modernism's impulse is known as revitalization. The aforementioned component may be effectively accomplished by

the use of conservation techniques including restoration, adaptation, preservation, reconstruction, etc. Up until now, urban development strategies have placed little emphasis on the preservation and rehabilitation of ancient Indian towns and their historic significance. Indian towns are losing their historical and architectural treasures in their haste for development. Therefore, conservation and rehabilitation must be implemented to honour our historic districts' respectable history and improve their quality of life. Indian cities are experiencing a thriving period of urban regeneration, yet many heritage assets are in poor condition and are not being used or protected effectively. Another study ends with suggestions for area revitalization strategies that preserve the typical urban tissue, the historic areas' key characteristics, the lives of the local communities, and the ability to modify the corporeal edifices and activities to meet some of the needs of the modern world. Proper maintenance and renaissance will be successful if they are combined into a new development model, and intangibility is emphasized as a component of reclaiming spiritual identity through appropriate conservation (Jagrati, S., Atul, K., & Ila, P., 2020). Basalt is the most common stone found in the Deccan volcanic provenance (DVP), which covers an area of approximately 2.5 million square kilometers in the Indian subcontinent. Under the Panhala formation, the basalt utilized in the Panhala fort is classified as belonging to the main group (DVP) and the sub-group (Wai). Basalt is the sole stone that is primarily utilized as a building material in Maharashtra since construction has begun. Despite being an igneous rock and being quite robust, historical monuments have over time shown evidence of weathering deterioration. The weathering pattern and behaviour of basalt were studied by a combination of in situ observations and laboratory experiments. Following in-depth investigations, weathering patterns, shapes, and profiles reveal that basalt is deteriorating as a result of air pollution and climate change (Patil, S. M., Kasthurba, A. K., & Patil, M. V., 2021).Heritage tourism provides genuine value in totalling to standardized experiences, offering unique and original souvenirs. In counting to well-known global heritage sites, there are hidden treasures that can combine novelty with hedonics. Located forty kilometers north of Kolkata, India, on the western bank of the Hugli River, Chandernagore was first established in the middle Ages and subsequently flourished as a French colony in Bengal. It has excellent potential for urban history tourism. Using historical literature, oral interviews, GPS plotting, and GIS mapping, a thorough spatiotemporal inventory of shared heritage legacies—both tangible and intangible—is created, providing an excellent foundation for marketing urban heritage tourism. Chandernagore is at an intriguing crossroads with another study attempt that aims to bridge the infrastructure gaps and get the locals involved in order to determine its true potentiality. The SWOT analysis is performed to make a blueprint for a traditional sightseeing revival strategy that takes into account the Indo-French blend. With a focus on the central and revolutionary assets, sightseeing progress strategies and management, travel outcomes, and resource sustainability, the SWOT analysis results in a thorough strategy formulation that seeks to serve as the foundation for the resuscitation of Indo-French cultural fusion through sustainable, robust tourism (Kar, N. S., Basu, A., Kundu, M., & Giri, A., 2022).Numerous historic structures are losing their uniqueness and the cultural significance that goes along with them as a result of the fast urbanization process. India is no different. The Kalan Mosque, a medieval mosque in Old Delhi, India, is rapidly becoming more urbanized. The medieval mosque, which is surrounded by a complicated network of residential structures, is heavily encroached upon. Unfortunately, the mosque has deteriorated as a result of some of these structures encroaching on its property. Thus, appropriate regulations are required to control these encroachments to stop the structure from being destroyed amid urban growth. A further study examines how the Kalan Masjid in Old Delhi, India, is exaggerated by the country's fast urbanization (Naaz, S., & Samiuddin, A., 2023). In recent years, scholars have paid more and more attention to the phenomenon known as "dark tourism," which includes travels to locations connected to death, misery, and past horrors. A case study of Delhi's Malcha Mahal Haunted Inheritance Pace that examines the idea's historical foundations, involvement incentives, and transformational effects on heritage sites. This historic monument, which had been abandoned for generations, rose to prominence in the 1980s when the self-proclaimed royal dynasty of Oudh took it. Delhi Tourism launched the Haunted Inheritance Pace with the objective of using this underutilized monument's potential for dark tourism. However, early difficulties, including worsening circumstances and safety issues, required cooperation with government agencies for site preparation and conservation, as it is the focus of another study (Ancheary, T., Mehta, P., & Mondal, A., 2024).

8. CONCLUSION

India's rich history, cultural variety, and creative ability are all demonstrated by its architectural legacy. A trip through historic tourism reveals a wealth of wonders, each with a unique tale to tell. Like the nation itself, India has a rich and varied architectural heritage. Every building, from historic marvels to colonial artefacts, represents a different period in India's rich history. Indians explore the realm of heritage tourism, identifying the best places for tourists looking to fully immerse themselves in history and culture as well as the importance of conserving architectural wonders. The main goal of heritage tourism is to comprehend and value the past by visiting historical and cultural places. It entails investigating sites, monuments, and artefacts that are important to the history and legacy of an area. Travellers who participate in historic tourism have a greater understanding of the world's common legacy by learning about other cultures, customs, and architectural styles. In order to preserve and promote cultural identity and legacy, heritage tourism is essential. Along with creating economic possibilities and promoting intercultural understanding, it also preserves architectural masterpieces. The results of this study are limited to Indian regions only.

9. REFERENCES:

1. Ancheary, T., Mehta, P., & Mondal, A. (2024). Reviving Forgotten Heritage as a Tourist Destination: A Case Study on Malcha Mahal Haunted Heritage Walks in Delhi. In Dark Tourism: Theory, Interpretation and Attraction (pp. 241-264). Emerald Publishing Limited.

2. Bagde, M. N., Badge, Y., Soni, A. K., & Sinha, A. K. (2010, October). Stabilization and preservation at world heritage historic Ajanta caves: problems and issues. In ISRM International Symposium-Asian Rock Mechanics Symposium (pp. ISRM-ARMS6). ISRM
3. .
4. Bose, L., & Mukherjee, J. (2022). Ruined or resurrected: Contemporary realities shaping heritage buildings of Chandan Nagar. Journal of the Indian Anthropological Society, 57(2).

5. Damodaran, V. (2013). 'Natural Heritage' and Colonial Legacies: India in the Nineteenth Century. Studies in History, 29(1), 1-20.

6. Dehejia, V. (2019). The Future of India's Past: Conservation of Cultural Heritage. In India Briefing, 1990 (pp. 131-157). Routledge.

7. Engelhardt, R. A. (2010). Developing local capacities for conserving heritage at heritage sites in the Asia and the Pacific (with specific reference to the Indian context). In New architecture and urbanism: Development of Indian traditions (Vol. 118, No. 123, pp. 118-123). Cambridge Scholars Publishing in association with GSE Research.

8. Giduthuri, V. K., & Mahammood, V. (2011). Guidelines for Development of Tourism Infrastructure at Heritage Sites: A Case Study of Simhachalam Temple, Visakhapatnam, India. International Journal of the Constructed Environment, 1(3), 37-54.

9. Gireesh Kumar, T. K. (2024). Identification, documentation and promotion of cultural heritage: problems and prospects in the Indian context. Journal of Cultural Heritage Management and Sustainable Development, 14(6), 950-962.

10. Goswami, S., & Kumar, A. (2021, October). Problems and Prospects of Heritage Based City Development in India. In F-EIR Conference on Environment Concerns and its Remediation (pp. 105-119). Cham: Springer International Publishing.

11. Gupta, S. P., Sharma, K., & Chhabra, B. S. (2012). Biodeterioration and chemical conservation of Bhimkichak Temple, Malhar, Chhattisgarh, India. Conservation Science in Cultural Heritage, 12, 135-147.

12. Jagrati, S., Atul, K., & Ila, P. (2020). Spiritual revitalization of Indian cities through heritage conservation. In E3S Web of Conferences (Vol. 170, p. 05005). EDP Sciences.

13. Jørgensen, H. (2011). Remoteness and development: Transnational constructions of heritage in a former Danish trading colony in South India. History and Anthropology, 22(2), 169-186.

14. Kar, N. S., Basu, A., Kundu, M., & Giri, A. (2022). Urban heritage tourism in Chandernagore, India: revival of shared Indo-French Legacy. Geo Journal, 87(3), 1575-1591.

15. Krishna, A. (2014). The care and management of historic Hindu temples in India: An examination of preservation policies influenced by the Venice Charter in Non-Judeo-Christian contexts. Change Over Time, 4(2), 358-386.

16. Kumar, D., Prasad, J., Pandey, A. K., & Upadhyay, M. K. (2018). A scientific approach to preservation of cultural heritage-sib Sagar (Assam) centrally protected monument. International Journal of Conservation Science, 9(2), 1-11.

17. Manohar, S., Bala, K., Santhanam, M., & Menon, A. (2020). Characteristics and deterioration mechanisms in coral stones used in a historical monument in a saline environment. Construction and Building Materials, 241, 118102.

18. Meskell, L. (2024). Teardrops at the Taj: wicked problems of World Heritage preservation, pollution and politics. International Journal of Heritage Studies, 30(4), 438-453.

19. Naaz, S., & Samiuddin, A. (2023). Impact of Urbanization on the Erosion of Identity of Historic Buildings in Vernacular Settlements: Insights from Kalan Masjid, Old Delhi, India. Journal of the International Society for the Study of Vernacular Settlements, 10(10), 1-22.

20. Pandey, A. K., & Kumar, V. (2015). Impact of environmental pollution on historical monuments of India: Conservation problems and remedial measures. Journal of Applied Geochemistry, 17(1), 50-55.

21. Patil, S. M., Kasthurba, A. K., & Patil, M. V. (2021). Characterization and assessment of stone deterioration on Heritage Buildings. Case Studies in Construction Materials, 15, e00696.

22. Rajangam, K., & Rajani, M. B. (2017). Applications of geospatial technology in the management of cultural heritage sites – potentials and challenges for the Indian region. Current Science, 1948-1960.

23. Reis, M. E. (2010). Retable art in India: its importance, the empathic apathy and the future. Cultural aspects concerning conservation. Heritage 2010: Heritage and Sustainable Development, 1129-1140.

24. Roy, D., Pramanik, A., Banerjee, S., Ghosh, A., Chattopadhyay, D., & Bhattacharyya, M. (2018). Spatio-temporal variability and source identification for metal contamination in the river sediment of Indian Sundarbans, a world heritage site. Environmental Science and Pollution Research, 25, 31326-31345.

25. Sarkar, A. K., Dey, M., & Mazumder, M. (2018). Exploration of Murophytes of Some Historical Buildings of Malda District of West Bengal, India. Int. J. Pure App. Biosci, 6(2), 1446-1459.

26. Senthil, R. B., & Ramya, M. S. (2016). Sustainable heritage management-need and challenges. Indian Journal of Research, 5(12), 478-483.

27. Sharma, A., & Aulakh, R. S. (2023). Historic Urban Landscape Recommendation in Indian Heritage Management Policies. The Historic Environment: Policy & Practice, 14(4), 428-443.

28. Singh, S., Dhyani, S., Kokate, P., Chakraborty, S., & Nimsadkar, S. (2019). Deterioration of world heritage cave monument of Ajanta, India: insights to important biological agents and environment friendly solutions. Heritage, 2(3), 2545-2554.

29. Snowball, J. D., & Courtney, S. (2010). Cultural heritage routes in South Africa: Effective tools for heritage conservation and local economic development?. Development Southern Africa, 27(4), 563-576.

30. Stephenson, M. L., & Ali-Knight, J. (2010). Dubai's tourism industry and its societal impact: social implications and sustainable challenges. Journal of Tourism and Cultural Change, 8(4), 278-292.