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Discovering the current situation, future possibilities, and challenges of Parki Beach, Chittagong: A center for sustainable tourism opportunities

* Sadia Ibnat Raisa ¹, Syeda Tahmina Tasnim ²

¹ Department of Architecture, Chittagong University of Engineering & Technology, Bangladesh

² Assistant Professor, Department of Architecture, Chittagong University of Engineering & Technology, Bangladesh

Email¹: sadiabnat025@gmail.com, Email²: moon.tahmina@cuet.ac.bd

Abstract

Parki Beach, situated in Anowara, Chittagong, is a well-known tourist destination in Bangladesh that beautifully frames the country with its natural enchantments. The research study identifies the variables that will enable this virgin beach to become one of the top tourist sites in the country in the foreseeable future. The single most pressing issue confronting nature-based tourism today is how to effectively manage tourism destinations so that the resources that visitors come to experience are maintained. In light of this, the study includes an understanding of the current state and the sociocultural, economic, and environmental effects of tourism development in the area. The paper will compare similar tourist destinations and evaluate them using SWOT analysis. Finally, the findings of this study will suggest a method for better-analyzing visitor requirements and for creating more effective regional policies, regional plans, and an all-encompassing strategy for expanding tourism sustainably in the Parki Beach region.

Keywords: Tourism impact; Parki beach tourism; SWOT analysis; Development Factors; Sustainable tourism development.

1. Introduction

Bangladesh is a small nation with a huge ecological and heritage splendor collection. The country's stunning natural and cultural features make it one of the most popular tourist destinations in the world. In recent years, Bangladesh has been aggressively developing its tourism sector. The Ministry of Civil Aviation and Tourism established the autonomous body of Bangladesh Parjatan Corporation (BPC) in 1972. The growth of the tourism sector and the provision of services to both domestic and foreign tourists are the primary objectives of BPC. Six lakh tourists visited Bangladesh in 2012 to enjoy the country's natural beauty. The following year, travel and tourism contributed 4.4% of the GD, 3.8% to employment, and 1.5% to investors. (Chandra Roy & Roy, 2015) However, despite significant potential in the tourism industry, as a result of certain limitations, Bangladesh still has to market itself as a travel destination, and its potential has yet to be utilized.

Cities are becoming increasingly crowded while unable to offer a place to breathe easily (Amen, 2021, Aziz Amen, 2022, Amen et al.). People need some leisure time, a place to unwind, and a chance to look over their lives for the greater good, given that they are sick of being "locked up" in their daily routines. For this reason, the BPC is striving to enhance tourism destinations nationwide. One of their most recent initiatives is to improve Parki Beach and establish it as a popular tourist destination. This paper traces strategies for the sustainable growth of Bangladesh's tourism industry and models a derived framework from it in the context of Parki Beach in Anowara, Chittagong that creates an opportunity to release people from the chaos of everyday life and lean toward a patient respite.

Parki Beach is a sandy beach that is 15 km long, located at the Karnaphuli River Channel, about an hour and a half away from Chittagong City. Situated on the Southern Chittagong Anowara, this beach is protected from natural disasters by an exotic green belt of "Jhau" (Pine tree) forest planted in series on its shore. The beach draws thousands of visitors every week who want to enjoy the scenic beauty of the river Karnaphuli and the large ships anchored in the Chittagong Maritime Port's outer anchorage. People can also find Shampan (traditional fishing boats, commonly known as moon boats) finishing in the bay, the setting sun at the western horizon of the sea, various species of red crab, and migratory and local birds flying over the beach. Furthermore, a 170-meter bulk carrier, "Crystal Gold" vessel, was stranded on the beach due to cyclonic storm Mora in 2017 (Suman, 2019; Mahgoub, 2022). Although the ship has now been dismantled, it was undoubtedly one of the area's main tourist attractions, resulting in many visitors arriving to peek at the magnificent vessel stuck in the beach sand. Tourist arrivals and popularity increased by nearly 12.8% following the shipwreck on the beach. Tourists from various cities, as well as foreigners, come here to spend quality time. On Fridays and holidays, the place becomes increasingly crowded. Some individuals also use it as a picnic area.

Parki Beach is a wholesome place for any traveler or vacationer. Despite its beauty, this great beach site still needs to be familiar to many visitors due to its distance from Chittagong Town. However, with the completion of the Karnaphuli River Tunnel in 2023, and the increasing popularity of the beach, it is only a matter of time before the beach becomes clogged with people and garbage. Despite increased tourist demand, there has yet to be a provision for accommodation, security and sanitary safety facilities, or good food and shopping facilities centered upon that beach. At the moment, the potential beach is being neglected and exploited. Because of this, the tourism business

in Parki Beach needs to be developed sustainably and balanced, keeping in mind the economic, social, cultural, and, most importantly, environmental impact on the area. The tourism industry faces several challenges, and development efforts often need to be more viable.

The primary goal of this research paper is to protect, enhance, and provide. The article compares Parki Beach with other tourist spots in Bangladesh that have already deteriorated for not being developed in a planned and reasonable manner. Through different methodologies, it argues how Parki Beach will face the same dire consequences within the next few years if not controlled. The paper recommends various steps that should be taken. It aims to solve the problems of the beach's deteriorating condition, improve the surroundings, and then provide it to guests in a sophisticated and well-composed manner so that the economy and business are sustainable, environmentally sound, and linked to the well-being of its native people. The motto is to learn from mistakes and avoid repeating them for a better future.

2. Literature Review

2.1. Sustainable Tourism and the Importance of Architecture and Planning in it

In particular, sustainable tourism is an industry dedicated to having a low environmental and cultural impact while generating income and employment for its community members (Amen et al., 2023, Amen & Nia, 2020). Sustainable tourism seeks to guarantee that developmental progression is a positive experience for locals, travel service providers, and tourists, in addition to maintaining the economic and social benefits of tourism development while minimizing any negative impacts on the natural, heritage-listed, ethnic, or sociocultural context. This can be accomplished by balancing tourist needs with those of the desired location.

Nature's relationship with the urban fabric has always been confusing, contradictory, and paradoxical. Architects and urban planners manipulate the character and relationship of space and quality of life as professionals who operate at the interface of both humanity and nature. Their primary job is to assess the chronic situation of society and the environment, design alternative options, re-arrange environmental and physical settings, build structures that characterize human activities and create inspiring processes for achieving them, consider likely consequences, and examine the project following the end of a decision. The world's building sector now uses one-fifth of the water resources, one-quarter of the timber harvest, and two-fifths of the fossil fuels and manufactured materials that are accessible (Sharma, 2011). In general, sustainability in architecture refers to environmentally responsible design approaches in the real estate industry that seek to reduce the harmful environmental impact of buildings through improved productivity and rationality in using raw materials, resources, and design space. Ensuring that our decisions and behaviors do not limit the possibilities available to future generations is the primary objective of sustainability. As the twenty-first-century approaches, there is every reason to anticipate that ecologic principles and tourism behavior will frequently collide. As it is well known, many conflicts between conservationism and tourism cannot be resolved amicably. However, in other scenarios, ecotourism, traditional architecture, and contextual urban planning may be responsible choices. Addressing the viability of such commitments head-on is a task constantly faced by architects and urban planners. As illustrated in Figure 1, architecture and urban planning are the connecting factors between tourism and sustainability.

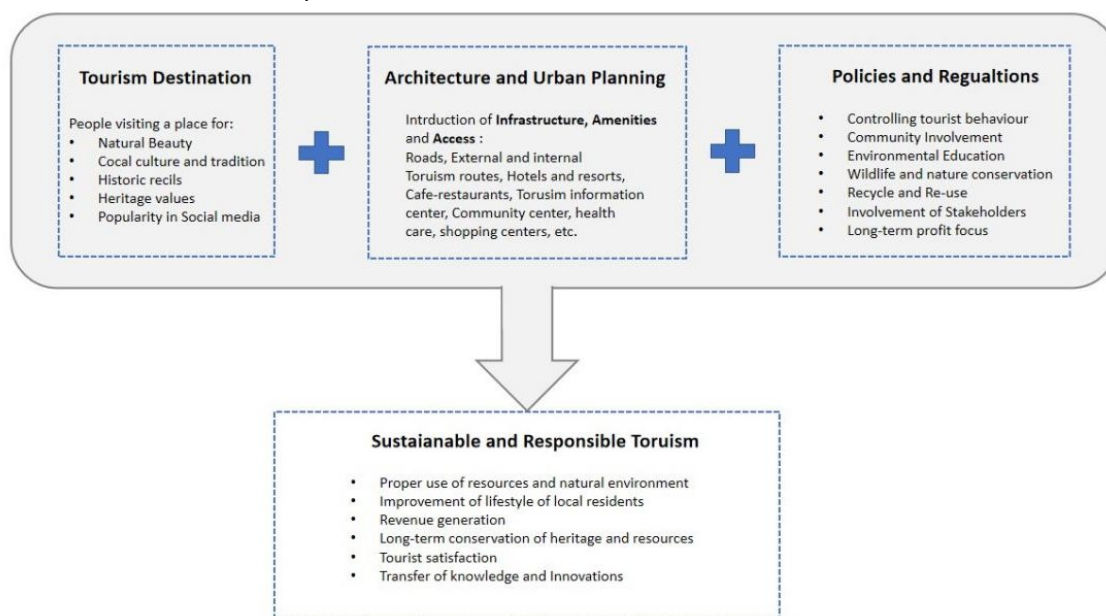


Figure 1: Importance of Architecture, Urban planning, and policy-making for developing Sustainable tourism destinations.

Planners and landscape architects are uniquely qualified to deal with the interplay of the tourism industry. A tourist is naturally inspired to visit a location for its new and old architecture and its natural beauty. Apart from that, tourism-related activities, like designing parks and gardens, resort facilities, recreational facilities, access facilities, landmarks and focal points, environmental analyses, and environmental impact statements, are works of landscape designers and architects. Urban planners are in charge of master planning, community structure planning, circulation facilities, site design, policy and implementation plans, public places, and social interaction spaces. All of those variables contribute to creating a livable environment, making architecture and urban planning inseparable elements for sustainable tourism development. Tourist attractions will only be able to retain their qualities and maximize their potential for tourists visiting the place if they are represented in a well-designed, anticipated manner that includes all appropriate infrastructure.

2.2. The effects of tourism development on the neighborhood.

The growth of tourism activities has the potential to have enormous impacts on an area, effects that can be beneficial or toxic brought on by spontaneous public investment. Natural, built, human, and economic dimensions are included in the framework of sustainable tourism, the four ways to examine the consequences of tourism growth in a location. Since these four factors are mutually dependent and connected, even if tourism is not directly to blame, a negative impact on one of the four aspects will have a dire consequence on another. The irony is that the entire hospitality industry and tourist spots will subsequently be affected if the percentage of negative influence is higher. Figure 2 depicts the connection between these four factors: the impact of tourism on an area's environment, sociocultural landscape, economy, and infrastructure.

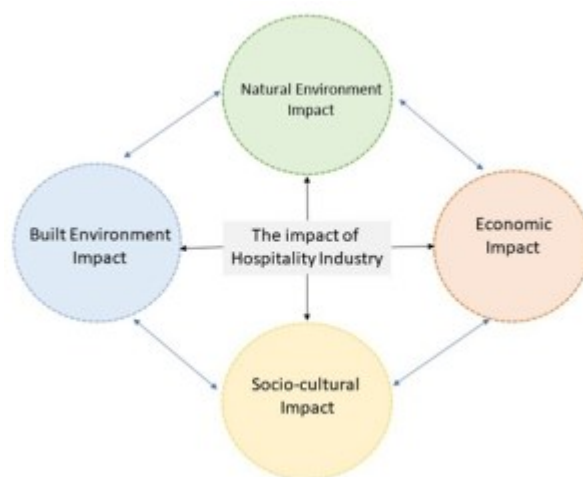


Figure 2: The Impact relationship between Tourism and societal aspects.

Economic Impacts: Economic sustainability, as defined by McVey (1993) in his study of the three key concepts, entails developing tourism while keeping an eye on the capacity to handle increased demand in order to prevent customer unhappiness (Sharma, 2011). Both excellent and harmful elements of seaside tourism's economic consequences are present. Direct work possibilities may be available locally in building and running hotels and other lodging facilities. The presence of tourists can result in the emergence of a wide range of support services and businesses, including restaurants, tour agencies, shopping, recreational activities, and many others, which can be formed and managed by the local population. Tourism can thus create new business opportunities for the local community and revenue-generating jobs.

On the other hand, tourism may have some adverse effects on local communities, such as increased commodities, land, and living costs, as well as the cost of additional infrastructure maintenance, such as roads, buildings, and tourist attractions. Aside from that, there is a high risk of seasonal tourism, which means that many businesses that rely on visitors only may incur losses. In other cases, profits may be outsourced by non-local organizers who might exploit local communities.

Environmental Impacts: The relationship between tourism and the environment is challenging; typically, environmental preferences are either given up or ignored to achieve the short-term development goal. If not properly maintained and sustained within the reasonable parameters of alteration, the tourism industry causes many harmful and detrimental effects on the natural environment. Many visitors know little about natural resources, so they frequently abuse them by disposing of non-biodegradable wastes in the wild. Unchecked conventional tourism places tremendous pressure on several natural areas all over the world, potentially endangering them and

having adverse effects like soil contamination, increased pollution, squanders into the sea, loss of habitat, extinction of species, increased susceptibility to forest fires, and competition for scarce resources among local populations. However, there are some environmental benefits to tourism as well. Alternative funding sources for the preservation of particular resources, such as flora and fauna, forest reserves, and marine parks, usually come from employment and other tourism-related revenues. Tourism can positively affect the environment by aiding in the awareness-raising process of environmental preservation and conservation.

Social Impacts: Every society has a lot of customs and traditions that help people connect to their heritage roots. Tourists generally prefer to travel to remote locations that need more urbanization. Old ethnic communities can be found in these locations, and the residents there often lead simple lives and are more in touch with nature. However, as more visitors from developed nations arrive, they become accustomed to urban life. Because of this, cultural landmarks and traditions must be carefully managed to prevent their values from being eroded in the modernization process. Although they can be hard to measure, the social effects of tourism activities are frequently quite detrimental. On the other hand, tourists frequently need to be made aware of regional values and customs, which can result in disputes between the host and visitor.

On the positive side, tourism can foster cross-cultural kinship between host and guest. Educating locals and visitors about their respective cultures can partially mitigate adverse social effects. Overall, there is no question that preserving and promoting cultural heritage can increase a destination's appeal to tourists.

Built Environment Impact: Built environments are portions of the tourism industry that are, at the same time, a blessing and a threat. It typically refers to the architectural and urban infrastructures introduced to tourist destinations to provide tourists with access, security, and comfort so that they can enjoy nature without encountering any significant issues. Often the natural beauty of a place is diminished by out-of-context structural implementations, and these infrastructural facilities can sometimes harm the environment by posing risks to the ecology.

Instead of being constructed obscurely, the structures should be planned to meet the unique requirements of each location. A place will attract more tourists and become more appealing if there are building regulations that use local materials, different hues, and forms to give the neighborhood a unique personality and style. Urban and architectural guidelines, electricity and water conservation plans, renovation materials and techniques, passive energy conservation, usage of sustainability assessment, Environmental Impact Assessment certification, and designing buildings to withstand the effects of climate change are all examples of sustainable development guidelines that must be implemented by current and future developments for attaining a good impact of the built environment (Mahgoub, 2021).

2.3. Examples of Sustainable Coastal tourism around the world

China's southern coast is where Hong Kong, the land of over 260 Islands, can be found, with a total area of 1100 sq km (Marafa, 2008). Many attractions are associated with the coastal region, seaward activities, and scenic coastal surroundings on some of the islands in Hong Kong's territorial seas, particularly those where there is evidence of human settlement. The case of tourism management in Hong Kong was examined to determine the steps taken by the government tourism sector and other responsible agencies to ensure sustainable approaches in the case of coastal tourism developments and the degree to which they successfully provided their benefits.

Unquestionably, a central economic pillar of Hong Kong is tourism, and this industry has been bringing in significant revenue for the nation. The environment is considered an essential component of tourism strategy, as per recent government strategy amendments. Since many nations viewed tourism as the sole solution to progression, many governments adopted plans based only on economic logic, which had immediate, adverse long-term environmental effects and destroyed the resources that had drawn tourists. However, Hong Kong's governing bodies know that tourism is about more than just having a good time; it also revolves around experiencing new things, morale support between people from different backgrounds, and share a devotion to the environment.



Figure 3: The location map of Marine parks and reserves in Hong Kong (*Designated marine parks and Marine Reserve 2022*).

Sea, sand, and sun, also known as the 3S, have long been linked to tourism in Hong Kong for a long time that encompasses the coastal and marine environments (Marafa, 2008). Hong Kong's diversification of habitats and life forms, particularly endemic species, attracted tourists from all over the world. However, the increased use of the environment brought on by greater access to these areas implies immense pressure on the quality of marine and coastal resources. Thus, the creation of marine protected areas was facilitated by the 1995 passage of Hong Kong's Marine Parks Ordinance. As shown on the map in Figure 3, all the marine parks and reserves are located on islands and coastal areas of the country. It was intended to preserve and manage ecologically significant areas of the marine environment for recreation, education, and conservation. Seven marine parks, namely Hoi Ha Wan Marine Park, Yan Chau Tong Marine Park, Sha Chau and Lung Kwu Chau Marine Park, Tung Ping Chau Marine Park, Southwest Lantau and South Lantau Marine Park, Brothers Marine Park, and Cape D'Aguilar Marine Reserve, have been established so far in this, with their respective areas ranging from 20 to more than 1200 km. Although enhancing the protection and conservation of biodiversity was the primary motivation behind establishing marine parks and reserves in Hong Kong, rising interest and tourism have exposed them to marine and ecotourism activities. As a result, establishing marine parks and reserves enhanced the protection of natural habitats and contributed to long-term strategic developments through steadily increasing tourism revenue.

2.4 Cox's Bazar: The national case study

2.4.1. The present, past conditions, and future threats of Cox's Bazar tourism industry.

Bangladesh's most famous tourist attraction is Cox's Bazar, a fishing port and district seat with a 120-kilometer shoreline that slowly dips into the Bay of Bengal. Cox's Bazar is a popular travel destination due to its many attractions, including its kilometers of sandy beaches to walk and sunbathe on, safe-to-swim clear waters with no predators, towering cliffs, surfing waves, unique tortoise shells, vibrant Buddhist monasteries, indigenous people, and outstanding cuisine. In the years following World War II, the area was dubbed "an industry without chimneys" due to the influx of foreign tourists (Bhattacharjee et al., 2018). Cox's Bazar, the "world's longest beach," has yet to become a significant tourist destination in Asia.

Although Bangladesh's independence in 1971 allowed the government to open Cox's Bazar to just a small number of visitors, the tourism industry has been booming since the last decade. During the peak season (from October to April), more than 2 million tourists go to Cox's Bazar, and 15 million are expected to arrive by 2030. (UDD 2011). By drawing more local and international tourists, the government wants to generate more than \$5 billion in tourism revenue over the next ten years (Ethirajan, 2012). In addition to shopping in Rakhine markets, tourists can enjoy the area's views and sea bathing on the most popular beaches in the country. The district town is home to over 200,000 people, including the almost 1,000 local and foreign aid workers who serve the Rohingya refugee camp. Since 2000, almost 750 hotels, motels, and guesthouses have opened on the beachside side, and 24 of these megahotels offer luxury amenities for guests. The area also has over 250 cafes and eateries (Faruque, 2021).

However, Cox's Bazar's tourism business sparked unplanned expansion, transforming the once tranquil beach resort into a wretched enclave with a planned infrastructure. Particularly on islands and tiny states like this that rely on international tourists for foreign exchange and employment, the value of tourism as a development instrument is "vigorously challenged" (Harrison, 2001). The increased population and tourists in Cox's Bazar town, especially during peak seasons, is causing noise, pollution, traffic congestion, infrastructure pressure, and inconvenience to locals. The hills are demolished, and trees are no longer prominent by the beach. The public's ability to enjoy parks, gardens, beaches, and community resources must be improved. Despite the area's natural beauty, visitors have expressed dissatisfaction with municipal transit, destination information, health, emergency services, and manufactured recreational facilities. Surveys also found that visitors' average length of stay was under two days exclusively because of the high prices, unaffordability, and lack of conveniences. Maritime ecosystems are at high risk of extinction. Careless discarding of non-biodegradable items such as plastic bags, cans, wrappers, and water bottles poses a danger to already fragile ecosystems and has devastating environmental effects. The pressure of post-COVID-19 travel in Bangladesh is already negative. Increased domestic and international tourism to coastal and marine regions significantly contributes to more of these human-caused problems.

2.4.2. Reasons behind the conditions of Cox's Bazar.

Today's Cox's Bazar is a clear example of the phenomenon described as "exceeding the carrying capacity," in which limited coastal resources are stressed beyond their point of endurance (Sharma, 2011). Until roughly twenty years ago, the town was a quiet seaside destination for those who live in cities and want to escape the noise and chaos of the city. Although advantages are attained, environmental or social costs were initially overlooked or excessively downplayed, resulting in the "shallow" end of sustainability or just the "greening" of the tourism industry (Sharma, 2011).

Most government organizations in Bangladesh are content to sit on the sidelines while the private sector takes the lead in promoting tourism. Hence, private tourism enterprises and non-governmental organizations have been the primary beneficiaries of the tourism industry's revenues. Almost every structure built in the last decade was done without an urbanization plan, thus failing to follow environmental regulations. Architectural logic was widely disregarded, and beachfront installations were either overlooked or ignored throughout construction activities. Instead of mid-height green projects and eco-friendly resorts for tourists, the city developed high-rises that block the ocean view and beach road. Even at the beachfront Hotel-Motel Zone, Cox's Bazar Pouroshova (township authority) needs a functioning recycling center or sewage infrastructure. Due to the massive number of visitors, loads of waste, including disposable cups and food containers, are left on the coast and end up in the ocean without treatment. Even with the 2019 Supreme Court restriction on development within 300 meters of the shoreline, several tourism establishments were built adjacent to the shoreline, including government projects, with no apparent attempts to relocate them (Ethirajan 2012).



Figure 4: Unplanned hotels and motels are present on the prohibited area despite the fact that development is prohibited within 300 meters of the Cox's Bazar sea beach. Photo: Mohammad Minhaj Uddin (Faruque, 2021)

Due to the haphazard construction, the Cox's Bazar Development Authority needs help expanding the city's road network. Most of the 43 drainage channels have been eliminated, and the minor drains are still blocked by garbage (Faruque, 2021). However, the neighboring hills are in danger, the hillside tree cover is being systematically destroyed, and the ground is just being prepared for construction. Tourists often collect coral as mementos. Because of this, the marine ecosystem and many beaches have become desolate since merchants and people often strip

them of their coral and seashells. Many factors, including a lack of proper organizing and budgetary allocation, an emphasis on short-term profit making, a lack of civic engagement and knowledge among residents, a lack of coordination between agencies, a lack of publicity and marketing activities, a lack of policymaking, and poor research and development threaten Cox's Bazar. Both nature and tourism necessitate protective measures to ensure that sand and water remain unoccupied and that masonry does not replace sandy coastlines.

2.4.3 Initial Probable solutions

Specific problems of a tourist city can be avoided if some measures are taken in advance, rather than facing the consequences. It should go without saying that Cox's Bazar should be an ecotourism heaven rather than a popular vacation spot. The prominence of Cox's Bazar in Bangladesh's tourism industry highlights the importance of a thoughtful tourism policy, where the needs of visitors and the local community are "factored in" at every stage. Cox's Bazar can maximize its potential through vernacular architecture while minimizing its built environment impact. A person's feelings can be affected by a building's design; the aesthetic value of a product is increased when it is built to high standards. By fostering harmony between artificial and natural features, a consistent architectural presence in constructed activities may provide new opportunities to expand ecotourism. Cox's Bazar might benefit significantly from a well-thought-out zoning plan that allocates specific zones for various types of tourism development, where building new hotels on beaches are controlled. The tourism area's environmental regulations require incorporating environmental criteria for drinking water, bathing water, wastewater, and air pollution.

Additionally, guidelines for open space restrictions and building density might be created. Hence, artificial leisure facilities and a range of locations for at least a week should be made available to the masses of tourists who visit each year. Local control over the tourism industry, local employment and training facilities, a tourism development institute in Cox's Bazar, and establishing more vocational educational institutions are also suggested. Cox's Bazar's traffic control has been a critical deterrent to the city's tourism industry, and crime is rising because of the city's antiquated security structure. The tourism board should look into a proper planning scheme to avoid such situations. Our natural resources' societal and economic benefits can be increased and sustained with careful planning and active community participation. The government has forbidden construction on the southern shore to prevent encroachment, as it is building a marine drive connecting Cox's Bazar and Teknaf. Government policy should balance economic growth and the preservation of natural resources. Bangladesh's tourism industry was ignored for many years. If managed effectively in the current economic situation, tourism has the potential to diversify the country's revenue source and alter its image.

3. Methodology

This paper has conducted studies in three major stages. The first stage includes the background survey and literature survey of the Beach from articles and papers, comparing the present and past conditions of the Beach, the surrounding context, and its stages of development. This part associates a mixed methodology where qualitative and quantitative approaches are used, including a physical survey and interviewing of the local people to identify the situations and problems faced in recent times. This is followed by a SWOT analysis of the area, which examines the Beach's resources, possibilities, and drawbacks. The third stage compares the Beach with similar scenarios in Bangladesh and establishes the possibility of Parki Beach facing similar consequences. Finally, the survey findings of this study provide suggestions on how to comprehend visitor expectations and create better plans, regional policies, and a holistic strategy for long-term growth in tourism in the Parki Beach area.

Surveying and collecting data: The surveillance survey or site analysis is a preliminary step done quickly and inexpensively before thorough mapping to gather information about Parki Beach in general. To gain knowledge of past and present work performed on beach development, a comprehensive literature review was conducted using case studies from various countries, research papers, journal articles, conference proceedings, government reports, etc. The primary goal of the site investigation is to characterize the current beachfront and management structure in that location and create a schematic report highlighting the resources and problem sources. Residents of the nearby area, business people, and tourists who visit the area at different times of the week are asked to fill out a semi-structured questionnaire. This survey aims to gather their thoughts on the value of providing public interaction spaces and a planned accommodation and amenity facility along the seashore. A critical interview was also done with the governing body CDA (Chittagong Development Authority) about their future masterplan DAP (Detailed Area Plan) for the Anowara area and Parki Beach, its problems, and how to solve them.

SWOT analysis: To analyze strategic factors of the tourism industry in the Parki Beach region, internal strengths and vulnerabilities, as well as external opportunities and threats, were identified, followed by the creation of strategic planning based on the SWOT matrix. The current tourism operations in the area could be more sustainable. This study proposes various strategies based on the SWOT analysis to develop a sustainable tourism industry that attracts visitors.

Comparison with other similar scenarios: In Bangladesh, there are other popular beach areas, such as Cox's Bazar, Saint Martin's Island, and Kuwakata Beach, where the tourism industry has failed to establish maximum proficiency

due to a lack of strategic planning and appropriate utilization of natural resources. Since it is evident from previous studies that Parki Beach is still in a natural state, this article's study demonstrates that Parki Beach is on the verge of experiencing similar consequences if it is not treated correctly.

4. Result of the Study

4.1. Parki Beach and its surrounding area.

Parki Beach is a beautiful natural beach and a highly demanding tourist spot for Chittagong, lying at Karnaphuli River channel, 28 km away in the southern part of the city. This sandy beach is about 15 km long and 300 - 350ft wide. The location of the beach and its distance from the main town makes it a calm and quiet place, within proximity to the city. The beach, with its scenic beauty, attracts tourists to enjoy the river Karnaphuli, large-sized anchored vessels in the Outer Anchorage of Chittagong Maritime Port, fishing in the bay, sunset, crabs of different species, and local and migratory birds flying over the beach. A trail of the 20-km coastal exotic green belt of "Jhau" (*Tamarix dioica*) forest set up by the government in order to protect the beach in 1993 is another tourist attraction of the beach, as shown in Figure 5. The construction of the Karnaphuli tunnel in 2025 will make it easier for vehicles to reach the Anowara region, drastically changing the economic, cultural, and social aspects of the Parki Beach area.

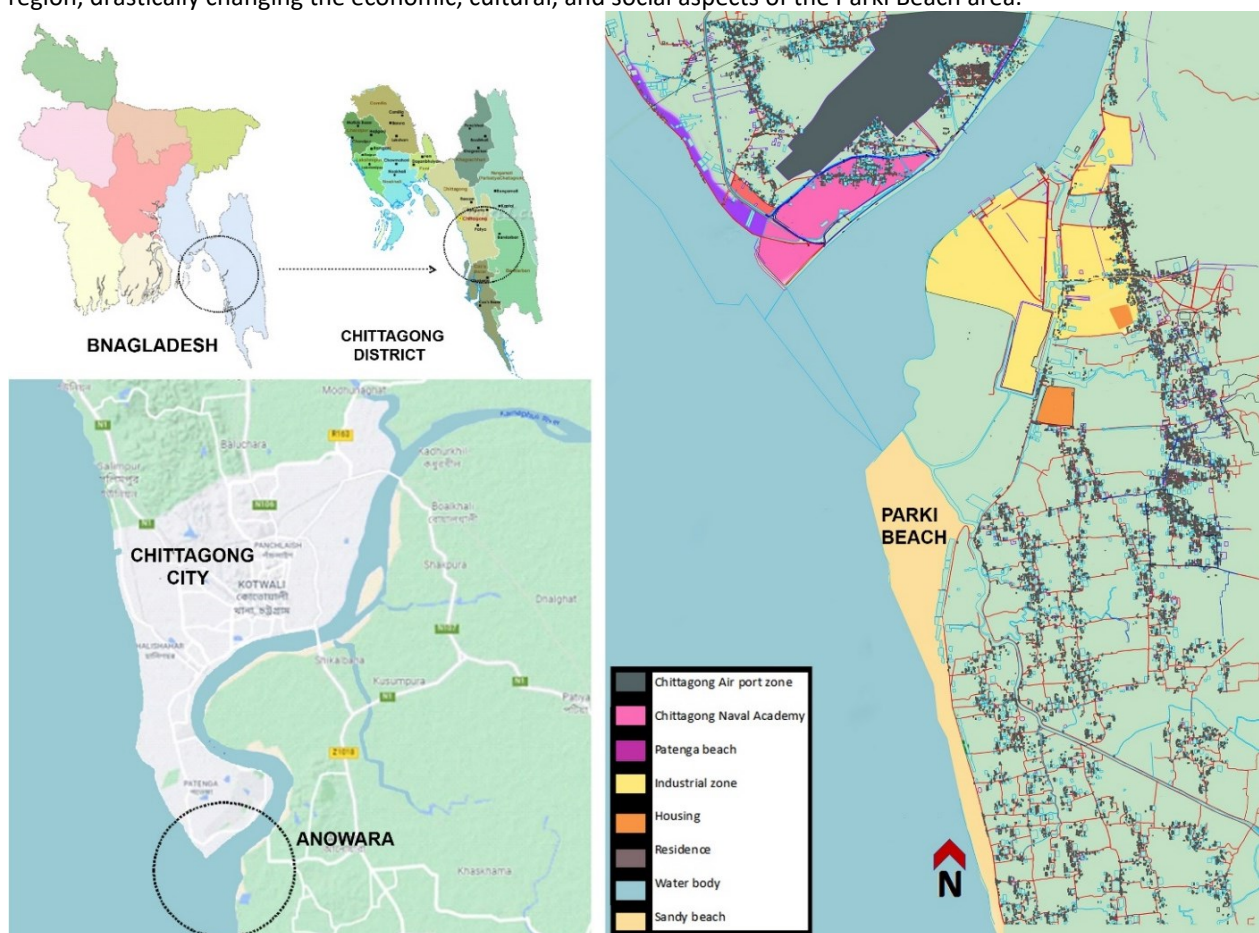


Figure 5: The map shows the location of Parki Beach and its proximity to Chittagong city.

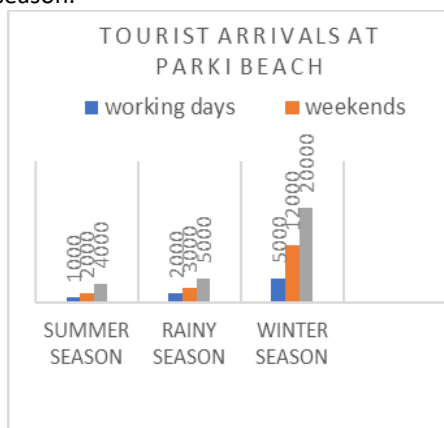
The site has been a popular beach since 2017, the rising period of fame of Parki Beach, due to the Vessel Crystal Gold, a shipwreck. 170-meter bulker Crystal Gold vessel (Figure 7) became stranded on the beach due to cyclonic storm Mora in 2017, threatening the environment. The ship became one of the main tourist attractions of the place. Authorities have recently started to dismantle the ship on the beach. Tourist arrivals and their popularity increased drastically by almost 12.8 % after the shipwreck on the beach.



Figure 6: The beauty of Parki Beach and its surroundings, and the Crystal Gold vessel stuck on the beach sand.

The survey also included interviews with both the residents and the visitors. The locals suggested that the beach had always been beautiful naturally, but very few people knew about it. There were settlements of fishermen on the beach almost 10 km long. The fishermen would catch fish on Shampan (traditional moon-shaped boats), and they used to sell them in the nearby bazaar for delivery to the city. Nevertheless, with the advent of tourists, they have shifted their positions approximately 20 km from the beach. Only a few of them remain now, and many have changed their professions, making more money by selling souvenirs to tourists or working with restaurants serving local food to tourists. The tourist arrival in the region is changing what locals do for a living. Still, many Shampan boats are seen anchored on the beach, and tourists enjoy the view.

The beach population has grown from 2017 onwards and is expected to grow more. It is found from interviews and past studies that tourist arrivals at the beach range from a thousand to up to four thousand people during the summer, and in the winter season, it reaches up to twenty thousand people visiting the beach. A massive group of tourists come from Chittagong City and other districts of Bangladesh. Some people also visit the beach to set up events and festivals like concerts and weddings. Arrivals increase during weekdays and festivals, especially during the winter season.



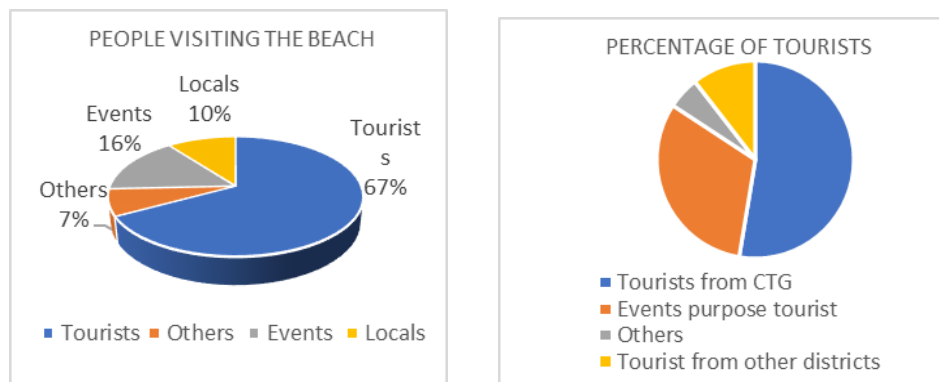


Fig 7: Data analysis of the tourist arrival, tourism growth, and percentage of tourists in Parki Beach region.

Also, foreign tourists visit the beach because of its proximity to the Chittagong International Airport. The government has taken various initiatives to create a tourism hub along the beachside. In the recent DAP (Detailed Area Plan) of the Chittagong area, the road leading to the beach is proposed to be 60 ft wide, with coastal afforestation, and the area adjacent to the beach has been identified for recreational, open space. In spite of having a greater tourist demand, there has yet to be any provision for accommodation, safety, and security, no sanitary provision, nor good food and shopping center around the beach. That is why the beach is being abused and neglected.

4.2. Strength, Weakness, Opportunity, and Threat Analysis for Parki Beach.

SWOT analysis is an effective decision-making tool, as it systematically evaluates an entity's weaknesses and strengths, possibilities for growth and development, and external obstacles to its survival. A SWOT analysis is handy before proposing a comprehensive assessment of a location's sustainable tourism potential. Following is a SWOT analysis of Parki Beach based on the field survey and literature review results to understand better what can be done with the beach in its current state.

STRENGTH

1. Wonderful tourist spot with a view of big ships, the junction of Karnaphuli and sea various, colored crabs at the beach, sunset, and anglers catching fish all are the tourist attraction.
2. Unique flora and fauna on the beach.
3. Easy transportation from the central city.
4. Availability of local food and tradition.
5. In recent years, floods could not affect much on this site because of the Jhau forest.
6. Making the Karnaphuli tunnel will make access to the beach easier.
7. Hospitable and tourist-friendly local people.
8. Abundant young and promising labor force.

WEAKNESS

1. Beach environment is rarely maintained, which causes piling up of waste from tourist visits.
2. The local markets and souvenir shops need to be well-developed.
3. The road connection to the beach is yet to be broadened.
4. There needs to be safety and security at the beach for tourists, especially after sunset.
5. Lack of accommodation and basic amenities are prominent on the beach.

OPPORTUNITY

1. There is a great scope for creating this beach as a sustainable tourism hub.
2. There is a vast population of local tourists with rising interest in visiting the beach, making it full of new possibilities.
3. Development from the government has been considered to be initiated and is still at a primary stage.
4. Availability of construction and building materials like wood and brick near the site.
5. Popularity of the beach is on the rise among the travel-loving people of the country.
6. Opportunities to create jobs for the local people and improve their economic condition.

THREAT

1. Sea pollution can be highly increased because of heavy metal contamination from ship-breaking industries in nearby areas, as well as the throwing of waste by tourists.
2. The natural beauty of the site is at risk since there is no proper utilization of the resources.
3. Cutting out of Jhau trees by locals irrelevantly is causing the beach sands to get washed away and making conversion and degradation of the beach.

4. Tourist transport and accommodation negligence and mismanagement by the Government are causing a great threat to the future of the beach.

5. Lack of awareness among the governing bodies in order to initiate sustainable tourism in the area.

6. Local communities face a threat to earning a livelihood and places to live.

4.3. Comparing the situation on Parki Beach with Cox's Bazar and Marine parks of Hong Kong.

It is evident from the preceding discussion that Parki Beach has more strengths and opportunities than threats and vulnerabilities. It is a rapidly expanding area that will soon see the construction of roads and highways, buildings, and infrastructures that will help generate revenue due to the abundance of environmental resources and rising popularity. Within a decade of the opening of the Karnaphuli Canal, tourism-related construction on the seashore will surge. Nevertheless, the issue is, will this result in long-term benefits for Parki Beach, or will it bring only short-term revenue and destroy the natural beauty of "Virgin Beach"? Since there has not been appropriate urban and regional planning or consideration of the beach's environmental resources in recent years, the second scenario is more likely to occur. The government has taken steps to develop infrastructure in the region, but without considering sustainability standards.

Given that the tourism industry is destroying the actual grandeur of Cox's Bazar, it is clear that the once-popular tourist spot is currently in a very regretful state. The increased population and tourist numbers in Cox's Bazar town, particularly during peak seasons, are causing disturbance, pollution, traffic congestion, infrastructure strain, and inconvenience for the locals. The city of Cox's Bazar once possessed exotic characteristics unique to the area, but these characteristics are no longer prevalent. In addition, unplanned construction transforms the beach into a city of buildings rather than a place to unwind and rejuvenate. On top of that, the beach is mismanaged, causing water pollution, the death of corals and migratory birds, and a hazard to marine life. The haphazard development of Parki Beach could lead to a situation comparable to Cox's Bazar, which is becoming increasingly unpopular among local travelers. Therefore, if Parki Beach fails to be handled appropriately, it will experience the same consequences as Cox's Bazar.

In the instance of Hong Kong tourism, however, the government has identified the environment as the most crucial factor for comprehensive tourism industry planning. They have envisioned alternative ways in which their natural coastal and marine resources can be utilized to provide a travel-friendly environment and contribute to economic viability while ensuring that natural resources are preserved, cared for, and safeguarded in all instances. Despite the difficulty of adhering to the utmost sustainability outcome, their government agencies' strategies are a recognizable indication of a shift towards environmental priority.

5. Discussion and recommendations of the study

This paper recommends a Sustainable Tourism Development Model based on the study's findings to alleviate the problems confronting the region and suggest strategies and solutions for any upcoming developments. This section of the study comprises strategies based on the researcher's independent judgments, ideas, perspectives, counterarguments, and the current concerns and beliefs of the Parki Beach locals. They are intended to be valuable and complementary to existing initiatives and help policymakers adopt a sustainable approach to the development of Parki Beach. The following suggestions serve as a roadmap for future choices regarding tourism growth in Bangladesh. It is based on the questionnaire survey findings, field visits, and literature research. In this stage, we have divided the recommendations into two categories based on their impact on the study area's future. We want to discuss two aspects: short-term strategies and long-term strategies.

Short-term strategies include actions to be performed to accelerate the region's economic growth. These strategies will take into account the current state of the region and enable it to deal with the impending tourism boom in a planned and cost-effective manner, thereby ensuring maximum profit.

1. Architectural reasoning in the expansion of the built environment, ensuring that construction is functional and aesthetically appealing to the coastal context. Initially, an appropriate site selection and an all-encompassing strategy for the area is necessary to create. The location of everything from the lobby to the guest rooms to the kitchen, the laundry room to the workshop and swimming pool to the parking lot and the access road should all be mapped out in detail on site plan.
2. Encourage the use of locally sourced materials that are simple to locate and construct.
3. Participation of local communities and the use of a participatory planning approach and development policy should be emphasized.
4. Contributing positively to the neighborhood economy and businesses by providing support and assistance in creating new work opportunities.
5. Introduce user-friendly, multi-layered methods of communication from the city.
6. Marketing strategy and promotion of the beach's natural beauty and resources through social media platforms.
7. Making that convenient access to utilities and utilities-related services is available, including power, roads, water supply, and waste management facilities (both solid and liquid).

8. provide affordable and moderately priced hotel and resort options for the local population where the inclusion of all types of visitors, from those with modest incomes to those with higher incomes will be included.
9. Landscape architecture and vegetation management within the coastal zone.
10. Creating hotel and resort common areas like banquets, restaurants, swimming pools, cafes, that are more inclusive and accessible to visitors staying within the premises and as well as outsiders to some extent such that many people can get benefit from them. (Sharma, 2011)
11. Utilize local labor forces to construct new buildings and generate new revenue streams for them.
12. People who lack the ability to afford accommodation or rent should have access to public beach facilities such as changing rooms, restrooms, showers, camping areas, and essential amenities. (Sharma, 2011)
13. Reasonably priced beach recreation activities such as fishing, speed boating, paragliding, horseback riding, and sports should be provided.

Long-term recommendations are crucial for beaches such as Parki Beach, which are on the cliff edge of experiencing development issues. These are the measures that must be taken to account for repercussions on society, long-term financial stability, and the protection of the significant area's natural biodiversity.

1. Providing coastal reforestation along the coastline, especially by Jhau tree.
2. For minimizing impacts and reducing hazards over the natural environment associated with excessive growth along the coastline, an all-encompassing tourism management plan with minimal risk of adverse effects should be established by the governing bodies.
3. Building and construction procedures should be done according to priorities, with the entire beach divided up into zones depending on their purposes so that different portions serve different activities.
4. Educate the public about sustainable Tourism, ecological preservation, and biodiversity
5. Target the long-term benefits of focusing on independent, high-spending foreign visitors as opposed to mass and corporate tourism.
6. Ensure Sustainable Development guidelines are followed throughout the development and management process.
7. Sensitive ecosystems of the beach e.g. the red crabs, migratory birds, and other marine life resources should be conserved.
8. There should be additional land for potential future growth and development.
9. Innovative means of cultural expression should be fostered in our modern structures. Instead of utilizing pricey, culturally insignificant wall treatments, traditional exterior treatments that are simple yet attractive can be used in our modern structures. (Lodson et al., 2018)
10. The Indigenous architecture contains regional sustainable solutions that are effective against climate change, the analysis of which can benefit locally oriented contemporary architecture. A detailed study of local materials and techniques in accordance with the socio-cultural and climatic preferences of the beach should be ensured and applied. (KHAFIZOVA, 2018)
11. Extending the scope of tourism to research and study by establishing maritime institutions in the region.
12. Considering the present tourist visits to the beach, the area's carrying capacity should be evaluated keeping in mind future endeavors. (Sharma, 2011)

6. Conclusion

The study of Parki Beach and its vicinity exposes some challenges and possibilities for the beach. Although this region is crucial to the growth of Bangladesh's tourism industry, it has yet to get nearly the attention it deserves in recent years. The only way to ensure that the beach receives the best treatment is to adhere to sustainable development guidelines from the onset of the development process. This approach to development should consider that resource exploitation, financial direction, advancement in technology, and organizational transformation are aligned with future and present needs. Overall, sustainability is a process, not a product, a function, not a structure (Mahgoub, 2021), so it cannot be expected to be accomplished individually. Instead, achieving the desired results will require tangible and intangible policies and procedures, years of effort, and consistency.

The study compares the circumstance to others of a similar scenario in Cox's Bazar and predicts the future situation of Parki Beach not taken into account. In addition, the study suggests strategies and policies that can be used to develop an all-encompassing strategy for sustainable tourism. These findings could be utilized for future planning in comparable areas. They can increase decision-maker's awareness of the harmful effects of unplanned development programs. The results should also apply to enhancing the sustainability of similar facilities in Bangladesh as a method that permits development without degrading or depleting the resources rather than enhancing them for better use. These recommendations aim to ensure that people have a comprehensive understanding of the scope of sustainable tourism development in Parki Beach and the potential tourism-related impacts on the area.

References:

- Amen, M. A. (2021). The Assessment of Cities Physical Complexity through Urban Energy Consumption. *Civil Engineering and Architecture*, 9(7), 2517–2527. <https://doi.org/10.13189/cea.2021.090735>
- Aziz Amen, M. (2022). The effects of buildings' physical characteristics on urban network centrality. *Ain Shams Engineering Journal*, 13(6), 101765. <https://doi.org/10.1016/j.asej.2022.101765>
- Amen, M. A., Afara, A., & Nia, H. A. (2023). Exploring the Link between Street Layout Centrality and Walkability for Sustainable Tourism in Historical Urban Areas. *Urban Science*, 7(2), 67. <https://doi.org/10.3390/urbansci7020067>
- Amen, M. A., & Nia, H. A. (2020). The Effect of Centrality Values in Urban Gentrification Development: A Case Study of Erbil City. *Civil Engineering and Architecture*, 8(5), 916–928. <https://doi.org/10.13189/cea.2020.080519>
- Mahgoub, Y. (2021). Sustainability of tourism development in the city of Ain-Sukhna, Egypt. *Journal of Contemporary Urban Affairs*, 6(1), 13–22. <https://doi.org/10.25034/ijcua.2022.v6n1-2>
- Sharma, K. K. (2011, April). Sustainable Tourism Development Through Sustainable Architecture: A projected case study of Cox's Bazar, Bangladesh. *Semantic Scholar*. Retrieved February 7, 2023, from <https://www.semanticscholar.org/paper/Sustainable-Tourism-Development-Through-Sustainable-Sharma/c96d813c661f320ed61e6313dfad3e0c24c5cb42>
- Chandra Roy, S., & Roy, M. (2015). Tourism in Bangladesh: Present status and prospects. *The International Journal of Management Science and Business Administration*, 1(8), 53–61. <https://doi.org/10.18775/ijmsba.1849-5664-5419.2014.18.1006>
- Suman, M. (2019, March 23). Ran aground, not removed in 2yrs Vessel on Parki sea beach threatens the environment. *The Daily Star*, pp. 16–10.
- Marafa, L. M. (2008). Integrating Sustainable Tourism Development in coastal and marine zone environment. *Études Caribéennes*, (9-10). <https://doi.org/10.4000/etudescaribeennes.1373>
- Mahgoub, Y. (2022). Sustainability of Tourism Development in the city of Ain-Sukhna, Egypt. *Journal of Contemporary Urban Affairs*, 6(1), 13–22. <https://doi.org/10.25034/ijcua.2022.v6n1-2>
- Designated marine parks and Marine Reserve. Agriculture, Fisheries and Conservation Department The Government of the Hong Kong Special Administrative Region. (2022, December 1). Retrieved February 17, 2023, from https://www.afcd.gov.hk/english/country/cou_vis/cou_vis_mar/cou_vis_mar_des/cou_vis_mar_des.html
- Hassan, M. M., & Shahnewaz, M. (2014). Measuring Tourist Service Satisfaction at Destination: A Case Study of Cox's Bazar Sea Beach, Bangladesh. *American Journal of Tourism Management* 2014, 3(1), 32–43. <https://doi.org/10.5923/j.tourism.20140301.04> (UDD 2011)
- UDD (2011). Preparation of Development Plan of Cox's Bazar Town and Sea Beach up to Teknaf, Ministry of Housing and Public Works, Government of the People's Republic of Bangladesh.
- Ethirajan, A. (2012, December 26). Bangladesh's Cox's Bazar: A paradise being lost? *BBC News*. Retrieved March 24, 2023, from <https://www.bbc.com/news/world-asia-19340259>.
- .Faruque, O. (2021, September 21). Cox's Bazar: An idyll losing itself to unplanned urbanization. *The Business Standard*. Retrieved March 24, 2023, from <https://www.tbsnews.net/bangladesh/coxs-bazar-idyll-losing-itself-unplanned-urbanisation-305260>.
- Mahgoub, Y. (2021). Sustainability of tourism development in the city of Ain-Sukhna, Egypt. *Journal of Contemporary Urban Affairs*, 6(1), 13–22. <https://doi.org/10.25034/ijcua.2022.v6n1-2>
- KHAFIZOVA, A. L. M. I. R. A. (2018). Vernacular architectural preservation of material and Spiritual Interconnected Cultural Heritage. *Journal of Contemporary Urban Affairs*, 2(3), 10–19. <https://doi.org/10.25034/ijcua.2018.4714>
- Lodson, J., Ogbeba, J. E., & Elinwa, U. K. (2018). A lesson from vernacular architecture in Nigeria. *Journal of Contemporary Urban Affairs*, 2(1), 84–95. <https://doi.org/10.25034/ijcua.2018.3664>