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# Assessing The Relationship Between Water Transports Attributes, Tourist Satisfaction, and Response Behaviour at the Sundarbans, Bangladesh

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### **Abstract**

Purpose: The purpose of this study is to determine the relationship between water transportation attributes, tourist satisfaction, and response behaviour towards Sundarbans tourism. Water transportation is a crucial factor that has a direct effect on the tourism industry's rapid growth. Water transport presently accommodates a large number of tourists worldwide, particularly in Bangladesh's Sundarbans. While providing travellers with amenities, the quality of water transportation elicits a variety of responses regarding its benefits and drawbacks. Design/methodology/approach: This study was carried out in the Sundarbans, a popular tourist destination. The questionnaires were collected online using Google Forms and distributed to 400 Sundarbans-related Facebook group members. A linear and multiple regression data analysis was performed using the SPSS application (version 26). Findings: The results found that water transport attributes have a substantial effect on tourist satisfaction and response behaviour. Tourist satisfaction is acting as a mediator between water transport attributes and response behaviour in the Sundarbans. The study's findings suggested that in order to attract tourists to the Sundarbans as well as obtain tourist satisfaction and positive response behaviour, correct utilisation of water transport attributes is required. Originality/value: This study contributes to the development of the water transportation sector of tourism, especially in the Sundarbans, and provides an opportunity for future researchers to expand the context of the research framework in other tourism destination settings.

Keywords: Tourism, Water Transportation, Sundarbans, Satisfaction, Response Behaviour

# Introduction

Tourism is the practise and study of travelling to and spending time in other locations for leisure, amusement, and enjoyment while utilising the services of businesses (Netto,

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2009). As one of the world's largest economic sectors, "travel and tourism" creates employment, boosts exports, and promotes global prosperity. This diverse industry seeks to support and serve domestic and international businesses and leisure travellers (Manzo, 2019). Transportation is one of the most essential factors that has a direct impact on the tourism infrastructure. To increase a nation's income from the tourism industry, transportation must be in good condition, as this factor is essential for attracting tourists. A traveller can reach his or her destination via a variety of modes of conveyance. Bangladesh is a riverine nation, also known as the land of rivers; therefore, water transportation is prevalent. There is a river with a length of 24,140 kilometres (15,000 miles). Modern cruise ships and hovercraft have made it possible for people to travel in luxury.

The Sundarbans are not only one of the most popular tourist destinations in Bangladesh but also one of the most popular tourist destinations in the world. The Sundarbans Reserve Forest (SRF) is located in the south-eastern region of Bangladesh, between the "Baleshwar" and "Harinbanga" rivers, along the Bay of Bengal. The Sundarbans have the world's largest continuous mangrove vegetation (UNESCO, 2020). Some of Bangladesh's 177 rivers, including the Pasur River, Raimongol River, Baleswari River, Kalindi River, Malancha River, Bhola River, and Hariabhanga River, meander through the Sundarbans. Due to the expansive nature of the Sundarbans' waterways, water transport is the primary method for traversing the entire forest. Depending on the location of Sundarban, water transportation may facilitate travel and viewing more of the region.

Using boats operated by the boatman, groups of 8–20 tourists embark on the day excursion. These vessels charge between BDT 2,000 (\$25) and BDT 5,000 (\$62.5) for a day's journey. Moreover, day visitors pay for their lodging by remaining at one of the hotels in Mongla or Khulna. These hotels range in price from BDT 700 (\$12.5) to BDT 5,000 (\$60). Daytrippers typically spend money on food and merchandise while visiting these locations. On the other hand, the Sundarbans are renowned for their river-going launches, ships, and ferryboats. These vessels cost between BDT 80,000 (\$1000) and BDT 120,000 (\$1500) to charter for a 2- to 4-day journey. In addition, these yachts provide food that is locally sourced and obtained during their cruise. The average cost of daily meals per person is BDT 1,200 (approximately \$15). Several Bangladeshi tour operators offer all-inclusive packages for 2- to 3-day excursions to the Sundarbans, with prices ranging from BDT 8,000 (\$100) to BDT 16,000 (\$200) (Amin, 2018). These statistics indicate that water transport in the Sundarbans generates a significant quantity of revenue. Therefore, the government should pay closer attention to the quality, safety, and security of water transportation.

The success of tourism enterprises and the tourism industry as a whole is predicated on the satisfaction of tourists. Satisfaction results from visitors' pre-visit expectations and their actual experiences during the visit (Devesa, Laguna, & Palacios, 2010). Another researcher asserts that all of an event's elements—including transportation, which is one of the highlighted experiences—determine how enjoyable it is (Abou-Zeid & Fujii, 2016). Satisfied tourists remain longer, spend more, return frequently, and invite family and friends on their next trip (Zhang, Wu, & Buhalis, 2018). In the context of globalisation, tourist satisfaction has been regarded as a crucial weapon for enhancing competition between tourist destinations. It relates to efforts to deliver tourism that meets the expectations of visitors.

# **Problem Statement**

Bangladesh is less frequently visited than other countries due to a number of factors. This includes the transportation system. Bangladesh is endeavouring to address the challenge

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and expand its tourism industry, where water transport plays a crucial role in attracting both domestic and foreign tourists. Increasing numbers of visitors are visiting the Sundarbans. However, the proportion of domestic visitors is significantly higher than the proportion of international tourists. Approximately 98% of all Sundarbans visitors are domestic. Both domestic and international visitor numbers have decreased recently. Water conveyance can occasionally present a number of complications. To visit the Sundarbans by watercraft, visitors must submit a written application to the Divisional Forest Office, Circuit House Road, Khulna (Bangladesh, 2020). Tourists must visit the Divisional Forest Office on Circuit House Road in Khulna to obtain this permit. The responsible authorities grant permission to issue permits. Frequently, the issue confronts travellers. It may be too late, for instance, to obtain sanction, wasting time. It is common for travellers to be required to travel to Khulna the day prior to checking into a hotel, resulting in a price increase. In addition, ship or boat reservations must be made one or two days in advance at the Khulna Rupsha ferry ghat. There are times when, in response to tourist demand, the boats are unavailable or are unavailable entirely, resulting in an irregular schedule. Because there are not enough boats to accommodate all travellers, the price of boat tickets is occasionally increased.

Moreover, according to Amin (2018), it is remarkable that there are so few safety and security measures in place for these tourists given the large number of visitors to the Sundarbans who use various modes of water transportation. As a result, the majority of visitors are unhappy. Consequently, the daily number of visitors visiting the Sundarbans is decreasing (Amin, 2018). It is widely acknowledged that water transportation contributes significantly to the growth of tourism. Although the Sundarbans are a significant contributor to Bangladesh's gross domestic product, very little research has been conducted on water transport, passenger satisfaction, and response behaviour. Hossain, Chowdhury, and Lipy (2016) found that there was no debate as to whether there was a correlation between water transport characteristics and response behaviour because the research examined the tourists' satisfaction with the goods and services of the Sundarbans tourists' destination. More than half of the visitors were dissatisfied with the boat trip, whereas nearly half of the tourists were satisfied with the flora and fauna of the forest (Sarker, Rskaft, Ma-Suza, & Nobi, 2017). However, the reasons why passengers were dissatisfied with the boat were rarely discussed. There was no discussion about whether there was a response to the behaviour because of the tourists' satisfaction or dissatisfaction.

It is evident that limited studies have been conducted in Bangladesh, specifically in the Sundarbans, in which visitor satisfaction functions as a mediator between the relationship between transit features and responsible behaviour. Therefore, this study investigated the relationship between water transportation attributes, tourist satisfaction, and response behaviour in the Sundarbans among domestic or local tourists.

# **Review of Literature**

The transport industry has become an essential component of the tourism infrastructure and is an integral part of the global network system (NOTES, 2018). Tourists must travel from their homes to tourist locations because tourism requires people to travel from their homes to tourist destinations. Many modes of transportation can be divided into three categories: air travel, land transportation, and water transportation are examples of these modes of transportation. Water-based transportation is one of the most common and memorable modes of transportation for tourists to and from a place. It serves as both a mode of transportation and a tourist attraction. A great water transportation system provides tourists

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with a one-of-a-kind experience, exceptional service, and an incentive to visit locations with clustered tourism items and a choice of excursion and shopping options. Bangladesh is a popular cruise tourist destination due to its ability to maintain a competitive edge through the continual development of new coastal travel and activities (Project, 2018). As previously indicated, water travel has long been the most important mode of tourism in Bangladesh. It is still the most affordable form of transport and the only mode that can reach almost every corner of the country (Hasegawa, 2008). Boats, ships, ferries, steamers, speedboats, launches, and cockleboats are common modes of water transportation in Bangladesh. Water transport, in addition to being a tourist attraction, is also used to transfer people from one location to another.

Today, worries about safety and security are becoming increasingly important, not just for society as a whole but also as a prerequisite for travel and tourism (Ayob & Masroni, 2014). They selected crime, terrorism, food safety, health issues, and natural disasters as the most significant safety and security concerns in the tourism industry in the new millennium, in addition to crime, terrorism, food safety, and health issues. According to Le-Klaehn and Hall (2015), the most crucial element for tourists is safety. The key elements influencing their choice of a tourist package are how they will travel there, where they will stay, and what they will eat while there.

According to Rachael (2019), a "comfort zone" is an area or situation in which one feels safe, at ease, and stress-free. Because people leave their homes for a few days to rest, the tourism industry's comfort is dependent on the location, accommodation, food, and behaviour of the inhabitants. Water transportation's utility underlines versatility and cost-effectiveness. One of the most convenient ways for tourists to travel is through a flexible and economical ticketing system. Tourists can travel more easily if they can rapidly recognise or locate the path to their goal and obtain transportation along the way (Matveevskaya et al., 2018). The boat is a crucial aspect of making travel easy, fun, and convenient in this scenario. It is also one of the most affordable ways to see the Sundarbans.

Sightseeing is an activity that allows visitors to observe and appreciate nature in a convenient manner. Travellers can simply enjoy nature and cruises by taking advantage of water transportation. Waterways provide opportunities for cruises, jungle boating, and simply observing nature (Haque et al., 2016). There are numerous ways to see the river, ranging from pricey steamer tours that showcase its stunning scenery to hard-adventure tours down its most dangerous sections.

Visitor satisfaction is critical to the success of tourist enterprises and the tourism sector as a whole. Visitors' pre-visit expectations and actual experiences during the visit contribute to satisfaction (Devesa et al., 2010). Another study discovered that all aspects of the event contribute to enjoyment, with transportation being one of the standout experiences (Abou-Zeid & Fujii, 2016). Tourists, who are satisfied stay longer, spend more money, return more frequently, and invite family and friends on their next trip (Zhang et al., 2018). In the context of globalisation, tourist satisfaction has been considered a critical weapon for increasing competition among tourism destinations. It is linked to efforts to provide tourism that satisfies the expectations of tourists.

Visitors, according to Van Vuuren and Slabbert (2012), are prone to certain types of behaviour before, during, and after travel. Returning to the same sites and recommending them to others is an example of tourist response behaviour, also known as travel behaviour (Zainuddin et al., 2018). This behaviour is the outcome of the ongoing interaction of unique personal and environmental factors (Liu et al., 2019). The impact of people and situations on

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both sides, as well as their responses, is taken into account. As a result, travel behaviour can be defined as the way visitors act in accordance with their attitudes towards a certain product and their reactions to its use (Zhang et al., 2018). In this study, the activity of visitors following a trip is referred to as "response behaviour," and it includes things like:

Decision-Making: The decision-making process is a component of tourist reaction behaviour. The visitor decides to travel again based on his experience at a tourist destination (Han et al., 2016). The tourist's choice represents response behaviour (Mihart, 2012).

Attitude: Attitude is frequently defined as the relationship between an object's primary characteristics or, more generally, as a general attitude (Di Pietro, Di Virgilio, & Pantano, 2012). It is crucial to acquire a deeper understanding of tourists' sentiments in the context of their emotions and values (Juvan et al., 2017), because every man's reaction is expressed through his attitude. Consequently, it is evident that attitude is the primary factor in reaction behaviour (Kang & Moscardo, 2006).

Interpretation/Recommendation: According to their interpretation and suggestion (Juvan et al., 2017), a visitor's comprehension is an excellent approach for attracting more tourists to the destination. When a traveller has a positive experience at a tourist attraction, he or she will recommend it to others. This tourist response also constitutes responsive behaviour (Kang & Moscardo, 2006). Essentially, in the minds of tourists following a journey, all reactions to the destination are responses to behaviour.

# **Hypothesis Development**

This study examined tourist responses based on four characteristics, including safety and security, comfort, convenience, and ease of sightseeing. Therefore, with these characteristics, it is possible to acquire tourist satisfaction and elicit a favourable response from visitors (Horner & Swarbrooke, 2016). All of these water transport characteristics might give tourists satisfaction. The Sundarbans houseboat offers a private, tailored trip with a touch of luxury. The one-of-a-kind ship has been carefully built and fixed up to have rooms that look like high-end hotels (Sarker et al., 2017).

The first step should be to ensure water transit safety and security. The focus of policymakers should be on reducing the probability of catastrophic accidents by implementing scientific and long-lasting programmes. According to Probha and Hoque (2018), all watercraft can be outfitted with radar and VHF radios. The number of water transports must be increased, and the schedule must be maintained. Through thorough examination, it is possible to avoid overloading. A sufficient quantity of lifebuoys and other lifesaving equipment must be on hand for tourists at all times. A suitable weather forecasting system should be installed to warn sailors, captains, drivers, and passengers of natural disasters. Ships with the proper design should be permitted to plough (Probha & Hoque, 2018). Having at least one coastguard on each vessel boosts the tourists' sense of security. According to Mondal and Bhaduri (2013), present-day water transport is more secure, and it appears that the Sundarbans continue to rely mostly on water transport as opposed to traditional highways. However, it is essential that ships and boats have access to good water and food sources. For instance, boat authorities can install smoke detectors in smoking-prohibited places and designate a separate smoking space. In addition, they can install a fire alarm on the ship. Thus, the fire alarm can convey any anomalous alerts to the respective boats. In addition, they can administer or arrange for first aid if a tourist or visitor becomes ill while on board. In addition, they might take extra care to deliver food of high quality. With this, tourists may confidently navigate the Sundarbans by boat.

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According to a prior study, it might be possible to draw a large number of older tourists to the Sundarbans in this manner (Kanjilal et al., 2010). In a recent study, Hoque, Ara, and Shoeb-Ur-Rahman (2018) found that boat tourists in the Sundarbans are most worried about their safety and security. Tourists can travel safely, comfortably, and conveniently by water transport. Such amenities can enhance the passenger experience and influence mode selection. Tourists prefer large boats or ships because they are less stressful and congested than other modes of transportation. Other benefits mentioned include travel time savings and improved passenger comfort (Michael, 2019). According to a prior study, many tourists visit the Sundarbans because sleeping on a boat offers the unique experience of living on the water in a cedar-panelled, magnificent bedroom with all the conveniences of a luxury hotel. The researcher Shah (2012) reported in his study that visitors responded positively to the boat authorities' provision of a nice environment on board. Therefore, there is a considerable relationship between comfort and the tourist's responding behaviour. According to numerous studies that interviewed tourists, local food is also accessible aboard luxury boats and jetties during the day and night (Park, 2015). According to prior research by Mondal and Bhaduri (2013), boat travel is the most efficient and convenient means to explore the Sundarbans, which makes tourists want to return. To experience the animals of the Sundarbans up close and to ensure the guests' comfort and safety, luxury ships are constructed to withstand any natural calamity (Febriansyah et al., 2020). To realise a more comfortable on-site tour, it is important to collect dynamic tourism circumstances, such as pedestrian flow smoothness, crowds in mobility, temporary events, and temporary closures of tourist facilities, efficiently and with high spatiotemporal resolution (Hidaka et al., 2020). These amenities are available on the ships of the Sundarbans, which play a vital role in ensuring that tourists have a lovely and comfortable journey. In addition, Kawanaka et al (2020) showed that dynamic tourism data with a high spatial-temporal resolution is needed to make tourism more comfortable in response to the changing way people travel.

The river is a natural thoroughfare that requires no construction or maintenance costs. Nevertheless, the expense of building and maintaining canals is minimal for the populace. The rivers and canals are used for both transportation and irrigation. Moreover, water transportation has very low operational costs. Therefore, it is the least expensive way to transport goods and travel between locations in the Sundarbans region, as no or little tax is paid (Özfirat et al., 2018). There are fewer construction costs, and many individuals from low-to middle-income brackets can pay the transportation costs (in particular) (lamtrakul & Wongbumru, 2019). Alternatively, it is a fuel-efficient and environmentally beneficial means of transportation. Hornell (2015) discovered in his research that water transportation is more convenient and less congested than other modes of transportation, making it crucial for gaining positive feedback from tourists.

Another advantage of boat travel in the Sundarbans is that boatmen make it simple for tourists to identify the path. This makes travelling to the Sundarbans without difficulty very convenient for tourists. Since boat reservations must be made two days in advance, it has become exceedingly difficult for tourists to physically reserve a boat. In this instance, internet booking will play a crucial role in providing travellers with an easy booking system. Moreover, using the application, tourists will be able to obtain the needed information regarding boat or ship excursions to the Sundarbans (Mutedi, 2019). According to earlier research, tourists have had numerous difficulties reserving boat tickets; thus, they have expressed reluctance to travel to the Sundarbans, which was deemed a negative response (Hoque et al., 2018). Therefore, it can be assumed without any doubt that by providing convenient and luxurious

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services, it is feasible to have a favourable response from tourists. Otherwise, visitors to the Sundarbans will have a negative experience due to a lack of convenient services. This will result in fewer tourists visiting the Sundarbans.

Boating is essential for observing the natural riches of the Sundarbans, such as wild animals, birds, butterflies, etc., on both sides of the river. Moreover, amid the river's nice air, the boat performs the most important function in exploring the Sundarbans. According to Sundarbans travel guides, Bangladesh's portion of the Sundarbans is a must-see. "You must sit calmly on the boat's open deck and gaze at the sky. In excellent weather, you may see thousands of stars in the entire galaxy and listen to the soothing sounds of nature" (Hasan, 2020). According to an earlier study, if tourists can easily and comfortably view the surrounding landscape of a tourist location, they are more likely to exhibit positive response behaviours (Jelinčić, 2019). Prior studies have demonstrated that tourists have well-defined activity preferences. Some of the top-ranked activities are sightseeing, cultural and historical pursuits, shopping, and wildlife admiration (Chow & Murphy, 2008). Sightseeing activities have an effect on the behaviour of tourists visiting a tourist destination. The Sundarbans Forest Reserve offers a unique environment, exceptional visual beauty, and abundant fauna that can attract a wide range of visitors and serve as a convenient location for sightseeing (Sarker et al., 2017).

Tourism and water transportation have been linked since the beginning of time. For our modest tourism-based economy, water is an indispensable basic commodity supply (Becken, 2014). Visitors can enjoy well-preserved wildlife and landscapes, high environmental quality of goods and services (clean air and water), a healthy community with a low crime rate, and lively, authentic local culture and customs (Lal Mukherjee, 2019). In addition, while travelling by water, tourists may readily appreciate the beauty of their surroundings and the boats' many amenities, such as food, lodging, etc. Thus, this will significantly contribute to the satisfaction of tourists. It was discovered that the accessibility of locations involves infrastructure, equipment, operational elements, and government restrictions, and that accessibility has an effect on tourist satisfaction. At their locations, tourists use transportation, and it is vital to better comprehend their behaviours and enhance their transit experiences (Le-Klaehn et al., 2014). Since transportation is a technique for determining the reaction behaviour of visitors, it was simple to determine how satisfied tours are with the water transport features in the Sundarbans. It was feasible to determine the behaviour and reaction of tourists based on the level of satisfaction they experienced. Waterborne travel is one of the most traditional and memorable ways for tourists to reach their selected tourist sites. It is both a mode of transportation and a tourist attraction (Project, 2018). When tourists have a great travel experience, they are more inclined to positively evaluate the place (Murphy et al., 2000). Therefore, effective Sundarbans cruises and integrated transport features can elicit a favourable response from tourists (Pearce, 2001). This demonstrates that visitor satisfaction and tourist response are inextricably related.

The majority of the aforementioned water transport characteristics are becoming the most important aspects of tourist satisfaction. Modern tourists will not visit locations or use any mode of transportation if they are not satisfied, and their behaviour reflects this. Based on the notion that if sufficient security measures are implemented and comfortable water transportation is made readily available, more tourists will be drawn, and they will express a willingness to return (He & Luo, 2020). The relationship between tourist satisfaction, water transportation in the Sundarbans, and tourist response behaviour is evident. In light of water

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transport attributes, tourist satisfaction, and response behaviour, the following hypotheses are developed

H1: There is a significant relationship between water transport attributes and response behaviour.

H1a: There is a significant relationship between safety and security and response behaviour.

H1b: There is a significant relationship between comforts and response behaviour.

H1c: There is a significant relationship between convenience and response behaviour.

H1d: There is a significant relationship between easy sightseeing and response behaviour.

H2: There is a significant relationship between water transport attributes and tourist satisfaction.

H3: There is a significant relationship between tourist satisfaction and response behaviour.

H4: Tourist satisfaction significantly mediates the relationship between water transport attributes and response behaviour.

The research model of this study (Figure 1) was developed based on a literature review and hypotheses. There are four independent variables for underwater transport attributes (safety and security, comfort, convenience, and easy sight-seeing), one mediating variable (tourist satisfaction), and response behaviour is the dependent variable.

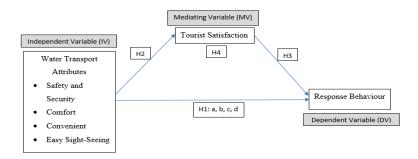


Figure 1: Conceptual framework that shows the relationships between different variables Adapted from: (Kim et al., 2012; Sankrusme, 2017; Li, 2013

# **Research Design and Methodology**

The effects of water transport attributes on visitor satisfaction and response behaviour are investigated in this descriptive and correlational study. To achieve significant results and findings on the investigated topic, a quantitative approach using a cross-sectional study was used. This study concentrated on domestic or local tourists who have visited the Sundarbans in recent years. The Sundarbans have a population of 75,000 people; hence, 392 samples are the appropriate sample size for the study, according to Krejcie and Morgan's (1970) sampling size identification table. Several inquiries led to changes in the questionnaire items. To avoid confusion, each of the 33 survey questions has been reviewed to utilise straightforward language and terms appropriate for the study. The convenience sample approach was utilised for this study because the researcher was able to readily select respondents in Khulna Rupsha ferry ghat in Bangladesh because boats and ships began cruising from Khulna Rupsha ferry ghat towards the Sundarbans (Planet, 2020).

The dependability and internal consistency of variables were tested to ensure that all components of an instrument were trustworthy. A panel of tourism specialists worked as evaluators during the pretesting phase to confirm the items' face and content authenticity. Following that, pilot research was undertaken with a limited sample size (32) to discover any

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defects or weaknesses in the equipment. The Cronbach's alpha value for each construct was higher than the minimal value (0.70) without item deletion, demonstrating that the instrument is reliable.

The researchers were unable to collect data in the study area due to the COVID-19 pandemic. In this case, the researcher used convenience sampling to collect data from Sundarbans' tourism-related Facebook groups. The questions were collected online using Google Forms and distributed to 400 Sundarbans-related Facebook group members. The data gathering period lasted two weeks, from June 6, 2021, to June 19, 2021. Because the researcher primarily received information from local tourists who spoke English and were active in Facebook groups, the surveys were created in English.

A preliminary investigation preceded the data purification process. The researcher used descriptive statistics to calculate the quantity and frequency of demographic profiles, as well as the mean and standard deviation for each variable. The SPSS data analysis programme (Version 26) was then used to perform Pearson correlation and regression analysis using inferential statistical techniques. Pearson correlation and regression analysis were employed, respectively, to examine the relationship effects between the independent, dependent, and mediating variables. Regression analysis was used to conduct the mediation test (Baron & Kenny, 1986). The findings of this study fulfilled all of the criteria of the Baron and Kenny mediation analytical technique.

# **Data Analysis and Results**

# Response Rate

This study attempted to collect data from a minimum of 382 samples, according to Krejcie and Morgan's (1970) sampling theory. A total of 392 survey questions were collected successfully out of the 400 distributed. However, data screening eliminated some responses due to issues such as carelessness and incorrect answers to confirmed questions. Only six survey responses were found to be improper for this study and had to be removed. As a result, with a success rate of 96.5%, this study was able to gather 386 valid samples for final analysis. Table 1 summarises the entire sample size and response rate.

Table 1
Total Sample Size and Response Rate

Sample Size (S)	Number of Respondents (N)		
Targeted Sample	400		
Returned Sample	392		
Incomplete Sample	6		
Valid Sample	386		
Percentage Valid Response (%)	96.5%		

<sup>\*</sup>Note: Suggested sample size Krejcie & Morgan (1970, 382)

# Respondents Profile

A total of 386 valid responses were collected in the final survey. The highest percentage of these respondents was male, at 236 (61.1%). The number of female respondents was 149 (38.6%). The number of tourists aged between 18 and 29 in the Sundarbans was the highest number of respondents who answered the questionnaire. The single-status tourists were the highest number of locals visiting the Sundarbans (n = 215 or 55.7%). Most of the respondents were undergraduate students (n = 178, or 46.1%), and most of the local tourists were students

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(n = 194, or 50.3%). Most of these respondents intended to travel to the Sundarbans for leisure purposes (n = 237, or 61.4%).

# Descriptive Analysis

The descriptive analysis for each of the study constructs is presented in Table 1. All items were measured using a five-point Likert scale, from 1 reflecting strongly disagree to 5, which depicts strongly agree.

Table 2
Mean Score and Standard Deviation

Code	Items		Std. Deviation (σ)	
Safety_Security1	The boat authority considers safety measures as a high priority	3.78	1.110	
Safety_Security2	The boat authority places a strong emphasis on tourist safety	3.86	1.110	
Safety Security3	The boat authority provides all the equipment needed to travel safely	3.72	1.165	
Safety_Security4	The boat authority has established an effective security policy for touring Sundarbans	3.51	1.109	
Safety_Security5	I felt protected from danger while travelling Sundarbans by boat	3.75	1.080	
Comfort1	Physically, I was very comfortable travelling on the boat	3.95	1.015	
Comfort2	I felt comfortable environment around the boat	3.91	.974	
Comfort3	I felt comfortable with all the sides of the boat	3.50	1.021	
Comfort4	The boat has comfortable accommodation	3.66	1.065	
Comfort5	The boat authority provides good food on the boat	3.68	1.163	
Comfort6	The boat authority provides a hygienic washroom on the boat	3.22	1.238	
Convenient1	It was convenient for me to use water transport for roaming Sundarbans	4.06	.871	
Convenient2	It was convenient for me to access Sundarbans by boat	4.17	.910	
Convenient3	A boat ticket is convenient to buy for touring Sundarbans	3.75	1.078	
Convenient4	It was convenient for me to enjoy the nature of the Sundarbans from the boat	4.33	.786	
Convenient5	It was convenient for me to move to the target place in Sundarbans by boat	4.07	.937	
Sight_Seeing1	I enjoyed the sight-seeing tour provided by the boat	4.36	.734	
Sight_Seeing2	The boat provides an easy sight-seeing tour in Sundarbans	4.27	.833	
Sight_Seeing3	The time was short for a sight-seeing tour in Sundarbans	3.20	1.146	
Sight_Seeing4	I can visit each sight-seeing spot in Sundarbans by boat	3.61	1.083	
Sight_Seeing5	I enjoyed the river-side sight-seeing location in Sundarbans by boat	4.45	.683	
Sight_Seeing6	I enjoyed the sight-seeing of wild animal location in Sundarbans by boat	3.93	.991	
Tourist_Satisfaction1	I am satisfied with the route used during roaming Sundarbans by boat	4.03	.853	
Tourist_Satisfaction2	I am satisfied with the ease of boat usage in Sundarbans	3.99	1.037	
Tourist_Satisfaction3	I am satisfied with the service that I received from the boat authority in Sundarbans	3.71	1.091	
Tourist_Satisfaction4	I am satisfied with the convenience surrounding Sundarbans	3.81	.994	
Tourist_Satisfaction5	Overall, I am satisfied with that travel experience in Sundarbans by boat	4.11	.836	
Response_Behaviour1	I will encourage friends and relatives to experience the Sundarbans boat trip	4.16	.858	
Response_Behaviour2	I will say positive things about the Sundarbans boat trip to other people	3.95	1.047	
Response_Behaviour3	I will repeat the boat tour in Sundarbans on a future trip	3.91	1.074	
Response_Behaviour4	I will share my enjoyable experience of the Sundarbans boat trip with my friends and family	4.19	.990	
Response_Behaviour5	I view Sundarbans as a unique tourist destination	4.30	.897	
Response_Behaviour6	I view Sundarbans as a friendly and popular tourist destination	4.33	.776	

\*Note: *N* = 386

There are four factors under water transport attributes. These are Factor 1 (safety and security), Factor 2 (comfort), Factor 3 (convenience), and Factor 4 (easy sightseeing). 22 items from these four factors were used to evaluate the water transport attributes. These items are presented as water transport attributes.

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There are five items under safety and security. 'Safety\_Security2 scores the highest ranking with the highest mean of 3.86 and a standard deviation of 1.110. The lowest mean is scored by 'Safety\_Security4", in which the mean is 3.51 with a standard deviation of 1.109. This result indicates that the majority of respondents agree with the safety and security measures provided by the boat authority.

The second factor, "comfort," has six items. The standard deviation ranged from.974 to 1.238 for all items in the administrative quality dimension, with the mean range from 3.22 to 3.95. 'Comfort2' scores the highest ranking with the highest mean of 3.91 and a standard deviation of .974. The lowest mean is scored by "comfort6," in which the mean is 3.22 with a standard deviation of 1.238. This result indicates that the majority of respondents agree that the boat authority provides a comfortable environment and facilities for tourists.

The third aspect, "convenience," is made up of five items. The mean of five measured items in convenience ranged from 3.75 to 4.33, with the standard deviation ranging from.786 to 1.078. "Convenient4" scores the highest ranking with the highest mean of 4.33" and a standard deviation of.786. The lowest mean is scored by "Convenient3," in which the mean is 3.75 with a standard deviation of 1.078. This result indicates that the majority of respondents agree that using boats to travel in the Sundarbans is convenient.

The mean and standard deviations for five items were used to measure the ease of sight-seeing. The mean for all items in easy sight-seeing ranged from 3.20 to 4.45, and the standard deviation ranged from 683 to 1.146. 'Sight\_Seeing5' scores the highest ranking with the highest mean of 4.45 and a standard deviation of .683. The lowest mean is scored by 'Sight\_Seeing3," in which the mean is 3.20 with a standard deviation of 1.146. According to the findings, the majority of respondents agree that they enjoyed the sightseeing tour with a boat in the Sundarbans.

The mean of five items that measure tourist satisfaction ranged from 3.71 to 4.11, with the standard deviation ranging from.836 to 1.091. "Tourist Satisfaction5" has the highest mean of 4.11 and a standard deviation of.836. The mean for "Tourist Satisfaction3" is 3.71 with a standard deviation of 1.091 is the lowest mean. The results indicated that all five items have high mean scores, and the majority of respondents were satisfied with the Sundarbans tour using water transportation.

There are six items for the response behaviour variable. The standard deviation ranged from .776 to 1.074 for all items in the response behaviour dimension, with the mean ranging from 3.91 to 4.33. "Response\_Behaviour6" scores the highest-ranking mean of 4.33" with a standard deviation of .776. 'Response\_Behaviour3,' in which the mean is 3.91 with a standard deviation of 1.074 scores the lowest mean. This result indicates that the majority of respondents agree that they will revisit the Sundarbans in the future and will recommend this tourism destination to their friends and families because the Sundarbans are a unique tourist attraction.

# **Hypotheses Testing**

This study developed and tested eight hypotheses, including Sections A: Water Transport Attributes, Section B: Tourist Satisfaction, and Section C: Response Behaviour. To validate the hypothesis, a linear regression on water transport attributes towards response behaviour was performed in this study.

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Table 3
Regression Analysis Output

Hypotheses	Regression (R <sup>2</sup> )	Regression correlation (β)	Regression statistical significance	Results
H1: There is a significant relationship between water transport attributes on response behaviour.	.375			Fully Supported
H1a: There is a significant relationship between safety and security, and responsible behaviour.	-	.133	.012*	Supported
H1b: There is a significant relationship between comfort and response behaviour.	-	.148	.010*	Supported
H1c: There is a significant relationship between convenience and response behaviour.	-	.173	.002**	Supported
H1d: There is a significant relationship between easy sightseeing and response behaviour.	-	.315	.000***	Supported
H2: There is a significant relationship between water transport attributes and tourist satisfaction.	.455	.675	.000***	Fully Supported
H3: There is a significant relationship between tourist satisfaction and response behaviour.	.449	.670	.000***	Fully Supported

<sup>\*</sup>Note: N=386, \*p < .05; \*\*p < .01, \*\*\*p < .001

As indicated in Table 3, the model of water transport attributes explained 37.5% of the relationship with response behaviour (R²=0.375, F (4,380) =57.044, p<0.05). According to this finding, four items significantly and positively predicted response behaviour. The most significant predictor of response behaviour was the ease of sight-seeing ( $\beta$ =0.315, p<0.001), followed by convenience ( $\beta$ =0.173, p<0.001). Finally, the comfort, safety, and security values are ( $\beta$ =0.148, p<0.05) and ( $\beta$ =0.133, p<0.05), respectively. Meanwhile, according to the regression analysis, the contribution from water transport attributes was R² = .375 or 37.5%. It is confirmed that the water transport characteristics influenced the response behaviour. Because the contribution percentage of water transport attributes is slightly lower, predictors that are more diverse may be connected with water transport attributes in addition to these four predictors. As a result, more predictors could explain the variance. Nonetheless, because the value of the four predictors of water transport properties is significant enough, the proposed hypothesis (H1) is clearly accepted. Because hypothesis 1 (H1) is accepted, the water transport items H1a, H1b, H1c, and H1d are also accepted. As previously stated, the p-value of each item is <.05.

The model of water transport attributes, as shown in Table 3, accounted for 45.5% of the variance in visitor satisfaction ( $R^2$ =0.455, F (1, 383) = 319.989, water transport attributes had a favourable impact on tourist satisfaction ( $\beta$ =0.675, p<0.001). The second hypothesis (H2) is fully supported because the significant value is less than 0.001.

The tourist satisfaction model explained 44.9% of the variation in response behaviour ( $R^2$ =0.449, F (1, 383) = 312.018, p<0.001). Tourist satisfaction had a positive influence on response behaviour (=0.670, p<0.001). The third hypothesis (H3) is also fully supported because the significant value is less than 0.001.

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Mediating Effect of Tourist Satisfaction

Table 4

Result of Tourist Satisfaction Mediates the Relationship between Water Transport Attributes and Response Behaviour

Predictor	Model 1 (Std. β)	Model 2 (Std. β)	R <sup>2</sup>	Adj. R <sup>2</sup>	F
Step 1:					
Water Transport Attributes	.591***		.350	.348	206.059***
Step 2:					
Water Transport Attributes		.256***	.485	.482	179.588***
Tourist Satisfaction		.497***			

<sup>\*</sup>Note: N=386, \*p < .05; \*\*p < .01, \*\*\*p < .001

A mediation test was done for the fourth hypothesis using multiple regression analysis. Step 1 involved performing a multivariate regression analysis on response behaviour based on water transport variables. As shown in Table 4, Model 1 indicates that water transport attributes have an effect on response behaviour ( $\beta$ =0.591, p<.001) and can explain 35.0% of the response behaviour ( $R^2$ =.350, F (1,383) = 206.059, p<.001).

In step 2, water transport attributes and visitor satisfaction were analysed using multiple regression on response behaviour. The association between water transport attributes and response behaviour became significant in visitor satisfaction ( $\beta$ =.256, p<.001), according to Model 2. As a mediator of water transport attributes and response behaviour, it explains 48.5% of the degree of visitor satisfaction ( $R^2$ =.485, F (2,382) = 179.588, p.001). In other words, visitor satisfaction acts as a mediator between water transportation attributes and response behaviour. As a result, hypothesis H4 is fully supported.

# Discussion

The purpose of this research is to investigate the relationship between water transportation attributes and response behaviour as mediated by visitor satisfaction. Water transport attributes are divided into four (4) dimensions, namely safety and security, comfort, convenience, and ease of sightseeing. According to the findings, water transport attributes have influenced the response behaviour of tourists in the Sundarbans, and it is obvious that water transport attributes have influenced the response behaviour of tourists in the Sundarbans. This suggests that a favourable impression of water transport attributes will result in favourable response behaviour (Horner & Swarbrooke, 2016; Cook, 2020).

Every tourist wishes to travel in safe and secure surroundings. Safety and security are critical for a wildlife tourist destination like the Sundarbans. Tourists usually spend the night on boats or ships while visiting the Sundarbans. In this situation, robbers and wild animals are more likely to attack at night. Natural disasters are also a possibility. In this instance, all forms of safety equipment must be kept in the boat. As examples, consider a life jacket, a fire extinguisher, sound signalling devices, visual signalling devices, and a very high frequency (VHF) radio to summon assistance, medical supplies, and so on. To avoid all of these concerns, it is the authorities' primary responsibility to guarantee maximum safety and security for tourists (Hoque et al., 2018; Febriansyah et al., 2020).

In order to elicit a response from tourists, comfort is as crucial as safety and security. The investigation revealed a better grasp of the various comfort requirements of tourists. Because tourists must spend a significant amount of time on the boat during their Sundarbans excursion, decent accommodation on the boat is one of their requirements. Aside from nice accommodations, they expect a healthy environment aboard the boat, including fresh food, clean drinking water, and sanitary restrooms. As a result, it is clear that comfort affects

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response behaviour, which is consistent with prior research findings (Mondal & Bhaduri, 2013; Michael, 2019; Febriansyah et al., 2020).

On a boat journey in the Sundarbans, convenience is the second-best predictor of response behaviour. Tourists that visit the Sundarbans anticipate comfortable accommodations and transportation. Because the Sundarbans' lodging is boat-friendly, tourists must spend the entire day and night on the boat. According to the findings of this study, tourists' responding behaviour can be improved by offering convenient amenities. Thus, it is obvious that convenience has a substantial impact on response behaviour, which plays an important role in determining tourist response behaviour (Hornell, 2015; lamtrakul & Wongbumru, 2019).

The boat cruise is essential for seeing the splendour of the Sundarbans, including wild creatures, birds, butterflies, grasshoppers, sport fishing, and other activities on both banks of the river, as well as visiting local coastal settlements. A boat is required to enjoy the Sundarbans River's wonderful breezes. The boat authorities should also be conscious of the period of sightseeing so that it does not fall short of the needs of the tourists. Providing a dependable bundle of simple sightseeing services can result in a high level of response behaviour from tourists (Jelinčić, 2019).

Increased tourist satisfaction will result from positive assessments of water transportation attributes. Tourists can be satisfied with water transport's dimensions of safety and security, comfort, convenience, and ease of sightseeing. The image of water transport attributes influences variables such as tourist satisfaction, which a tourist obtains from the place. Tourist satisfaction is judged in relation to the attributes of the place. "Tourist satisfaction" occurs when the attributes of a destination meet or exceed visitor expectations.

The main factor in receiving a positive response is tourist satisfaction. Tourist satisfaction is important for favourable reactions since good responses are expected from tourists in this study. Tourist satisfaction influences tourist behaviour, whereas tourist dissatisfaction causes tourists to lose interest in the tourist site. The Sundarbans boat authority should satisfy tourists in order to establish positive response behaviour and revisit intention among tourists. Furthermore, the boat authority should make efficient use of water transport attributes and provide tourists with services that meet their needs and expectations.

Tourist satisfaction is occupied, implying that it modulates the links between water transport attributes and response behaviour. According to the findings of this study, if the tourist is satisfied with the water transportation, it is possible to elicit a favourable response behaviour from the tourist, which is consistent with prior research (Sarker et al., 2017; Virkar & Mallya, 2018). Another researcher reported that the response behaviour was perceived negatively because of the tourists' dissatisfaction with the water transportation attributes (Paul & Rashid, 2016). This could be the cause of the Sundarbans' tourism decline. Tourists use transportation at their locations, and it is vital to better understand their behaviours and improve their transportation experience (Le-Klaehn et al., 2014). Because the findings show a positive relationship between water transports attributes, tourist satisfaction, and response behaviour, boat authorities should consider how to manage safety and security, comfort, convenience, and easy sightseeing to elicit response behaviour from tourists. Boat authorities may improve their policy and management more efficiently by focusing on the most critical aspects that influence response behaviour, as demonstrated by the findings of this study. Furthermore, management should look at the many aspects of water transport attributes that might give the boat excursion in the Sundarbans a competitive advantage.

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# Conclusion

As demonstrated in the preceding section, water transportation is crucial for accessing the Sundarbans. This study examines how safety and security, comfort, convenience, and simplicity of sight-seeing influence tourist satisfaction and behavior. This study focused exclusively on visitors to the Sundarbans as a tourist destination. The study found that water transportation amenities have a positive effect on the behavior of tourists. The results of the research explain the boat issues for Sundarbans tourists. The boating authorities may create a mobile application or an online portal to ease ticket booking. This app or website allows tourists to reserve boats and obtain additional information. Therefore, water transportation issues are manageable. Water transportation helps satisfy travelers and elicit their responses, providing governments with revenue and employment opportunities. The boat authorities must be more considerate of the requirements of such visitors to maintain and enhance the attractiveness of significant tourist destinations.

The Sundarbans have been the subject of extensive research, but water transportation satisfaction had not been previously investigated at the time this study was carried out. Therefore, this study is significant for those who are interested in related industries or tourist destinations. The research investigates the water transportation attributes, tourist satisfaction, and response behavior on Sundarbans boat tours. By accomplishing these aims, this research intends to contribute to the literature on hospitality and tourism, particularly for-profit enterprises. It was discovered that water transport parameters positively correlate with visitor satisfaction and behavior. Thus, to satisfy tourists, boat authorities must assure safety, security, comfort, and ease of sightseeing.

The collection of data provides an in-depth understanding of the relationship between water transport attributes, tourist satisfaction, and response behavior to Sundarbans boat excursions, but it has limitations. The researcher was unable to collect data on-site in the Sundarbans due to the COVID-19 outbreak. Therefore, the researcher gathered information from local Sundarbans tourists via Facebook. International tourists were not surveyed. The researcher utilized only data from English-speaking local visitors and online sources.

Future researchers may conduct a longitudinal study of local and international visitors' perceptions of the Sundarban water transport satisfaction and its attractive features. Prospective scholars may conduct passenger interviews on-site by employing probability sampling to enhance generalizability. The combination of visitor pricing acceptability, intrinsic appeal, and resource capacity could explain a better response pattern.

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