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Original Research Article

A Study on the Service Quality of Launch Terminal Based on Passengers' Satisfaction at Sadarghat Dhaka

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Abstract

Purpose: Quality of the service and effectiveness of service operations system are considered as important aspects of achieving the customers' satisfaction of any service organization. The goal of this research is to see how the quality of inland transportation services affects passenger happiness. The research was exploratory in nature, and factor analysis was utilized to determine the most important elements influencing passenger satisfaction with service quality. Passengers will be disappointed to learn that there is no canteen available. The rest of the launch terminal is in good shape. We also made some suggestions for improvements that would boost passenger happiness. ***Research methodology:*** SEM methodology has been extensively employed in research to study the causal links. SEM methodology has grown increasingly common in-service quality measurement study. It is hypothesized that socio-economic as well as launch service factors affect the maritime passenger vessel SQ. ***Results:*** This study makes empirical contributions to hospitality and tourism marketing literature especially in the way the ferry service can be upgraded. The results obtained via the definition of fuzzy number and linguistic level together with their membership functions as methods to measure service quality. The results also help the ferry company to better understand how the customers view their services. ***Limitations:*** During the data collection phase of this study, some unanticipated issues arose, causing the study to be postponed. The following are some of the issues: The personnel at the launch terminal were not particularly cooperative. Passengers and employees were uncooperative when it came to replying. Due to a time constraint, data for a single day was obtained; nevertheless, for an accurate data result, data for the entire year must be obtained. ***Contribution:*** The findings of this investigation will contribute to a better understanding of Launch SQ. The most crucial aspect is that it connects passenger demand to Launch SQ. Individual observations are used to generate the results in this thesis. The identification of key SQ variables that influence overall SQ can surely aid in improving SQ with low resources. The analysis yielded the following recommendations.

Keywords: Perceived Service Quality; Service Variables; Launch Terminal; Structural Equation Modeling.

1. INTRODUCTION

Bangladesh is a riverine country with a high population density. Numerous rivers crisscross the country and play an essential role in passenger and cargo transportation. Ferry service, cargo carriers, and petroleum carriers are three major types of inland river connectivity. Bangladesh's economy relies heavily on riverine transportation. Accidents do happen while operating various types of watercraft along riverine pathways, and they have varying degrees of impact on human lives, the environment, and property. Accidents have a wide range of consequences, from minor injuries to fatalities, and from little property damage to serious environmental, property, and human life loss. According to UNCTAD STAD, Bangladesh's GDP increased by 8.06 percent in 2019 and trade in transport services increased by 15878 million current US$. In addition, foreign trade in waterways transport services increased by 10.3%. **(**Crang, M., & Cook, I. ,2007**)** in the year 2019 A basic demand for establishing an effective transportation system is to reduce reliance on private vehicles and increase use of public transportation. To promote a specific mode of public transportation, the service quality that influences mode selection must be increased. Inland waterways, among other public transportation networks, have played a significant role in passenger transportation in subcontinental countries. As a result, the impact of service variables on passenger perceptions of service quality is an essential research topic for service

providers, regulatory agencies, and transportation planners looking to improve ferry service quality. Inland waterways play an important role in Bangladeshi culture and will continue to do so for a long time. Bangladesh's waterways total 2400 kilometres, with a passable route of 5,968 kilometres during the monsoon season and 3,865 kilometres during the dry season. Bangladesh's economy relies heavily on riverine transportation. Mishaps do happen while operating various types of watercraft along riverine pathways, and these accidents have varying degrees of impact on human lives, the environment, and property. Accidents have a wide range of consequences, from minor injuries to fatalities, and from little property damage to serious environmental, property, and human life loss. The basic goal of every accident investigation is to provide decision makers with accurate and reliable information so that they may make better decisions to prevent accidents from happening again.

The concept of service quality was proposed by the Nordic School in the nineteen eighties and picked up in North America (Baccarani et al. 2010). Service quality is a factor that influences traveller decisions in the passenger transportation business. It is defined as the user's opinion of how well a service fulfils or exceeds expectations. Because users are the sole judges of service quality, service quality is largely measured from their perspective. The most popular way for capturing users' impressions is through a user survey, in which users are asked to assess a specific service characteristic on a specified scale. However, asking consumers to evaluate or comment on a service variable might occasionally result in inaccurate estimate. Furthermore, research reveal that passengers' perceptions of Service Quality change when they express their thoughts on a previously unconsidered service variable. Passengers rate services in a variety of ways that are not always correlated with the frequency with which they are used. Aside from that, different consumers assess the same level of public transportation service quality differently, and their perceptions are influenced by many service variables. Furthermore, passengers' assessments of service variable ratings may not always reflect reality, as there is always the possibility of latent variables that users are unaware of. As a result, approaches to assess the true influence of service factors on perceived service quality must be developed in order to remedy all of these oversights and identify the essential variables of the delivered service.

The proposed study aims to assess the service quality of passenger ferries using a method for assessing and implementing service quality. As a result, we use a passenger satisfaction survey that can be quantified and converted into a variety of quantitative characteristics. Ferry has placed a greater emphasis on passenger satisfaction in recent decades. As a result, passenger satisfaction evaluation is now regarded as the most credible feedback, as it gives passengers' preferences and expectations in an effective, direct, meaningful, and objective manner. In this way, passenger satisfaction serves both a benchmark for performance and a potential benchmark for excellence for the Ferry System. Furthermore, passenger satisfaction gives all passengers participating in any level of the passenger service process a sense of achievement and accomplishment. As a result, satisfaction measurement pushes users to use the platform and provide better service.

2. LITERATURE REVIEW

The general understanding of the Launch Terminal Facilities is covered in this section. It gives you a broad perspective of current knowledge, helping you to spot pertinent ideas, methodologies, and research gaps. The concept of quality has become obvious as the transportation business has developed. This research looks at the quality of the launch terminal in terms of passenger satisfaction. Data from travellers utilising the Sadarghat ferry terminal was collected and evaluated using survey questionnaires. The relevant theories are discussed in this section.

As previously stated, academic research has not adequately covered service quality measurement, despite the fact that achieving quality in product and service has been a core marketing priority in the last two decades (Frankel, 1993). Nonetheless, a number of useful research in the marine and other industries are discussed in the following sections. The sadarghat launch terminal was redesigned in that paper (Anika Mahjabin, 2015). A design was created based on the other ferry terminal and the sadarghat terminal. This research was used to calculate the number of pontons and other facilities. This also took into account alternate uses of the area when it was available. Many additional functions are added to the existing terminal, which is insufficient to manage such a large number of people. Most notably, capacity is increased in accordance with passenger numbers. The structure holds a variety of events and activities, such as warehouses, a mosque, and a school. The Terminal function adds public functions, which have restricted access, but the public layers are exposed to anyone. They are dedicated to travellers (especially those who have been waiting for a long period) as well as the general public. The terminal will be more than just a terminal; it will also serve as a gathering spot and a leisure area for all. It is best to monitor a port as a multi-layered entity and evaluate both the external and internal elements impacting port activity within its immediate as well as wider environment in order to analyse the effectiveness of a port as well as the complete port system within a maritime state. Maritime-passenger ports are an important precondition for the growth of traffic, tourism, and economic activity, since they provide a variety of tourist amenities and meet passenger transit needs. Only by coordinating port policy with the goals

and actions of overall economic policy and doing it on a regular basis can the passenger port system develop optimally. Ports are unique in that they are not a goal in themselves, but rather are created to fulfil the needs of users, therefore everyone who benefits from them must be concerned about their business operation and development. In this study, (Zadeh, 1965) described the decision-making approach in fuzzy settings, and (Bellman and Zadeh, 1970) described the decision-making method in fuzzy settings. An growing number of research have used fuzzy set theory to deal with uncertain fuzzy situations. Based on such activities, this study employs fuzzy decision-making theory to account for the evaluators' probable subjective judgments when assessing ferry service quality. This method for determining the quality of ferry service can be made more objective. Customer perceptions are used to assess the quality of a ferry's service. The following are the applications of fuzzy MCDM in this study. The methodologies for evaluating service quality are divided into two areas. The processes for gaining performance for each criterion are described in the first subsection, while the processes for obtaining level and degree of satisfaction are explained in the second. And, just as the questionary survey, they gain level and degree of pleasure using this theory.

This research adds to the body of knowledge in the hospitality and tourism marketing fields, particularly in terms of how the ferry service might be improved. The outcomes of the fuzzy number and language level definitions, as well as their membership acts as ways for measuring service excellence. The findings also assist the ferry firm in gaining a better understanding of how clients perceive their services.

Slack, (1985) conducted a research to investigate the elements that shippers consider when choosing a port. It examined the elements addressed by exporters and freight forwarders in the process of containerized traffic between North America's Mid-West and Western Europe. They were asked to choose up to five characteristics from a list that included port security, port size, inland freight rate, port charge, quality of customs handling, free time, congestion, port equipment, number of sailings, port proximity, and the feasibility of intermodal interconnections. The number of sailings, freight pricing, proximity, congestion, and intermodal connectivity received the greatest marks. The study's findings revealed that perceived variations in port of entrance and exit effect decision makers more than perceived differences in land and carrier prices and services. (D'Este and Meyrick, 1992) conducted another study to determine the decision-making process used by shippers when choosing a carrier and port for a ferry transaction. They identified eight variables that shippers should consider when choosing a port: proximity, port fees, strike, facilities, tradition, marketing, turnaround time, and rail access. For shippers, proximity, turnaround time, strike, and facilities were identified as the most critical factors. The end result was that shippers are conservative and place a high value on service quality (Ha, 2001). In his research, Ha analysed the service quality of major container ports in the North East Asia region. He chose nine of the region's major container ports and divided the service quality variables into seven categories. The results indicate that transportation costs and port taxes are the top issues for shipping companies, whereas service quality aspects rated lower. (Adler and Berechman, 2001) evaluated the quality of various airports throughout the world from the standpoint of airlines; they had previously conducted a similar study from the standpoint of passengers. A survey was sent out asking for their opinions on various airport operations, as well as cost and demand factors such as airport turnaround time, local labour costs, and future demand. Based on the results of the Data Envelopment Analysis approach, it was deduced that the airlines' assessments of quality criteria and airports differ significantly. They also proposed that while evaluating an airport's overall quality, airlines make a clear distinction between the quality features of an airport's tradeoffs. (Lobo and Jain, 2002) conducted another study to assess port users' perceptions of container transshipment service quality in the ports of Singapore, Hong Kong, and Tanjung Pelapas. The port users were given a questionnaire covering 54 quality service criteria. The 54 attributes linked to port user expectations were divided into factor groups using Principal Component Analysis and Varimax Rotation. Among them, four elements were chosen: human, financial, operational, and port-specific. After examining the data, the port of Singapore was ranked first in service quality, followed by Hong Kong and Tanjung Pelpas. In 2003, Ha published another article in which he investigated the differences in service quality variables between Korean container ports and other ports across the world, including New York, Hong Kong, Rotterdam, and Hamburg. Ready information availability, port location, port turnaround time, facilities available, port management, port cost, and customer convenience were recognised as seven service quality elements. The opinions of shipping operators and logistics managers on service quality elements were obtained by interviewing them and having them fill out a questionnaire. Both port facilities and cost categories were preferred above the others, followed by customer convenience and information, according to the results of the rated factors. Surprisingly, port turnaround time was near the bottom of the list. However, it was discovered that the service quality indicators evaluated by respondents have a high level of agreement.

The researcher used Data Envelopment Analysis (DEA) to get to useful conclusions in evaluating service quality in that study. For example, the study Measuring Airport Quality from the Airlines' Perspective (Alder and Berechman, 2012), which used the DEA to evaluate and compare service quality in a

number of European and non-European countries, found that "airlines' evaluations of the airports vary considerably relative to quality factors and airport" (Alder and Berechman, 2012). (2001, p177). As a result of the wide range of quality perceptions and judgments, the author has chosen to emphasise and offer a number of primary tools and formulas for port users to utilise in evaluating port service quality prior to making any investment. Furthermore, it could serve as a starting point for figuring out what a port operator or authority means when they emphasise service quality in marketing. The final goal could be accomplished by giving a guideline for benchmarking port service quality.

The key conclusion of the chapter study is that the model can predict roughly 78 percent of the quality of a port's principal services. This is a significant statistical finding because quality is frequently considered as an unquantifiable entity. The model processes the way in which the quality determinants can be transformed to well-known indications and parameters in the industry, despite the fact that the quality determinants are conceptual elements in which the service quality is evaluated. Nonetheless, the objective is to recognise the overall port quality by analysing its primary services provided to ships and cargo, while keeping in mind that the overall port quality cannot be encompassed and evaluated solely by evaluating the primary services. For example, the quality of the port environment, auxiliary activities, and other aspects of port quality are not addressed in the services. As a result, there are other factors of quality that are crucial to the port's users.

3. METHODOLOGY

The techniques for gathering and interpreting data are referred to as methodology. Our study design includes the development of research methods. We will make two major options when planning the methods: First, we must decide how we will gather data. Decide how we'll analyse the data next. A field assessment was carried out to determine whether Sadarghat Launch terminal service area amenities exist in Dhaka city at the research location. The information was gathered by hand. MS Excel and Google Spreadsheet were used to analyse the data. A questionnaire survey was used to assess the quality of the launch terminal service.

3.1 Methodology Flow Chart:

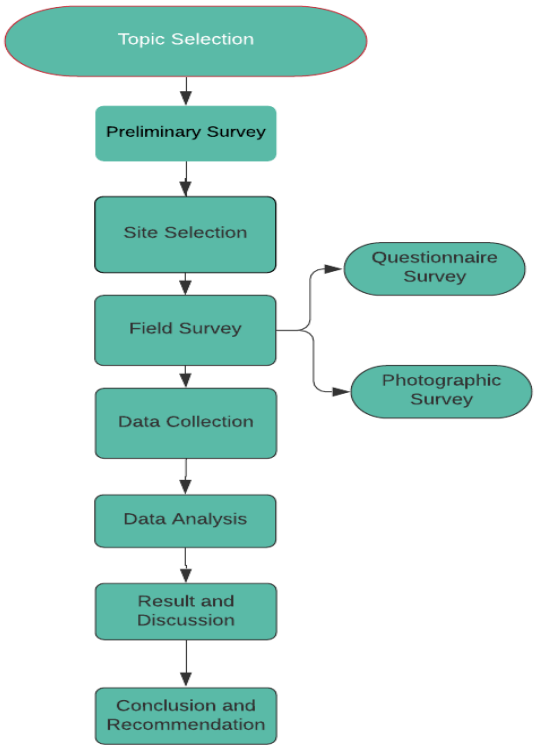

Fig-1: Methodology of flow chart

First we select a topic named: A study on the service quality of launch terminal based on passengers satisfaction at Sadarghat, Dhaka. By selecting the area we move into our next work Preliminary Survey.

3.2 Topic Selection

First we select a topic named: A study on the service quality of launch terminal based on passengers

satisfaction at Sadarghat, Dhaka. By selecting the area we move into our next work Preliminary Survey.

3.3 Preliminary Survey

On preliminary survey we select some three launch terminal which are, Narayangonj Launch Terminal, Maowa Launch Terminal and Sadarghat Launch Terminal. Watching the importance of Launch terminal we choose the Sadarghat Launch Terminal because it is the most crowded and over populated launch terminal in Dhaka.

3.4 Site Selection

The first step in preparing a dissertation is to choose a research topic. It is critical for anyone to select a study topic that is both professionally and personally intriguing to them. Sadarghat Launch Terminal, Dhaka is the area mentioned in the title and objectives. Sadarghat Port, also known as the Dhaka City River Front, is one of Dhaka's most dynamic areas, located on the river Buriganga in the southern portion of the city. Sadarghat River Boat Terminal is one of the largest river ports in the world. Every day, around 300 big and small passenger river boats (propelled) depart and arrive at the terminal, transporting 500 people each hour on average. Officials of the facility estimate that 1,50,000 people use the terminal every day for departure and arrival. At this point, hundreds of country boats, loaded with passengers and merchandise, cross the river. Throughout the emergence of Dhaka as a metropolis, Sadarghat port has always existed, whether nominally or informally. It has long served as a vital link between the city and the rest of the country. Thousands of people visit it every day, not only to transition, but also to take part in a variety of socioeconomic activities that have influenced the urban morph of old Dhaka directly or indirectly. Not just as a transitional hub, but also as a focal point for a range of activities generated by or related with Sadarghat, it has a considerable impact on the urban fabric. The Arot's or warehouses, markets, hotels, retail outlets, and many other businesses surround the riverbank.

Fig-2: Site Selection

3.5 Field Survey

During covid-19 we made our field survey in Sadarghat Launch Terminal. We made our field survey into two ways. One is Questionnaire Survey and Other is Photographic Survey. Based on the field observation and reconnaissance several draft questionnaires were prepared. These questionnaires were tested, verified and cross-checked for its efficiency, and final questionnaires were prepared after wards. In questionnaire survey we made 24 questions and asked this question; passengers and staffs. On the other hand we did photographic survey by taken photo of launch terminal. From photographic and questionnaire survey we collect our data so that we could analysis the data and make a result.

4. RESULT

We divided the questions into five categories in the questionnaire survey: tangibility, reliability, responsiveness, assurance, and empathy. We can determine the good and bad service quality from this.

Physical facilities, equipment, persons, and materials that can be perceived by the five human senses are referred to as tangibility. Reliability is defined as the supplier's ability to perform the service in a safe and efficient manner. It depicts dependable performance that is devoid of non-compliance and that the user can rely on. Without the need for rework, the supplier must deliver what was promised. The availability of the provider to attend voluntarily to users, offering a service in an attentive manner, with

precision and speed of response, is referred to as responsiveness. It concerns the institution's workers' availability to assist users and deliver fast service; Assurance is defined as the courtesy, knowledge, and competence of personnel to transmit trust. Empathy: refers to the ability to show interest and personal attention, and is related to whether the organisation cares about the user and assists him in a personalised manner. Accessibility, sensitivity, and effort in understanding the needs of users are all examples of empathy.

4.1 Data Gathering

The study used qualitative and quantitative data to assess the quality of passenger service at the launch terminal. Qualitative data is adaptable and can be collected from small groups. Quantitative data, on the other hand, may be utilised to systematically characterise enormous collections of things and produce repeatable knowledge. The study attempted to determine the current service quality of the launch terminal using a questionnaire poll of 100 passengers.

Table-1: Passenger's categories and Percentage

Different Categories of passengers	Percentage
Male	70.5 %
Female	29.5%
Age Range	30 to 40
30 to 40 age range	55.5%
Students	17%
Salesman	29%
Service Holders	18%

The passenger travelling by Sadarghat Launch Terminal are Male (70.5%) and compared to female (29.5%).The middle age range person between 30 to 40 age passengers percentage is 55.5%. Also from our survey it is revealed that there are students (17%), Salesman (29%), Service Holders (18%).

The percentage of financially solvent people and disabled people are negligible from the perspective of using Launch as a mode of transport by occupation. Income assessment shows that low income groups (whose incomes are less than 25,000 BDT) prefer to travel by launch (70%), while moderate or high income groups (whose incomes are greater than 25,000 BDT) are not very interested travelling by launch.

4.2 Data Analysis

According to the results of this report, the Quay has various problems. As passengers purchase tickets, they must wait in the waiting room before their lunch arrives. According to our poll, 17% of respondents thought the waiting room space was inadequate. Additionally, there are no children's toilets. As passengers step onto the Deck to board their ship, they are disappointed with the docking system because it is just average (50 percent). Despite the fact that the terminal, the waiting room, and the deck are all rusty (very poor-quality 50 percent). Maintaining a waiting room space, ensuring cleanliness of the Deck, and waiting room, among other things, were suggested as possible actions by the Ministry of Shipping Authority.

Improvements to the number of bollards, lighting system, and dock-to-dock joint are suggested as possible government actions. There is no canteen, so make one. It's high time to take the required measures to improve the visibility of this maritime transportation system in order to increase revenue.

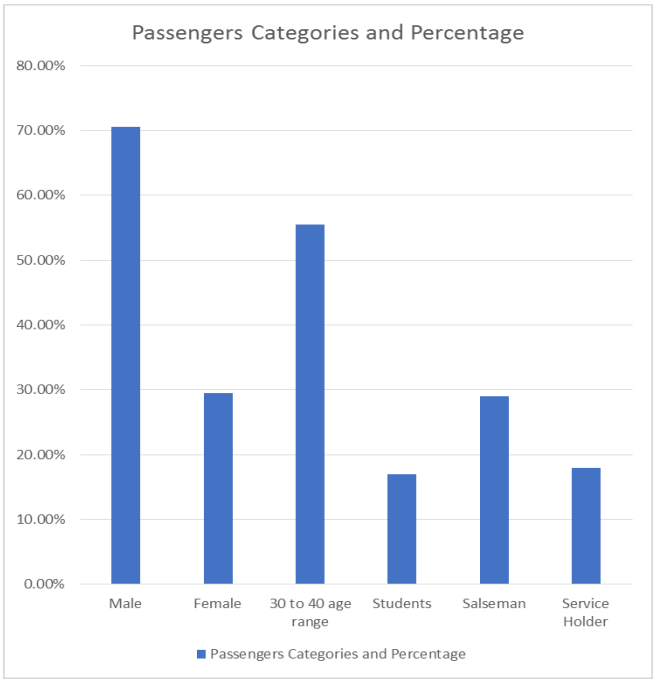

Fig-3: Passengers Catagories and Percentage

Table-2: Field observation of Sadarghat Launch Terminal

NO.	Categories	Ratio
1	Ticket counter	12
2	Washroom(VVIP)	0
3	Washroom (Common)	8
4	Washroom for disable person	1
5	Security Booth(Male Police)	2
6	Security Booth(Female Police)	0
7	Canteen	0
8	Parking slot	1
9	CCTV	42
10	Waiting Room (VVIP)	1
11	Waiting Room first class	2
12	Waiting Room General	3
13	Schedule Board	0
14	Station Ramp	12
15	Bollard Quantity	**219**
16	Platform	12
17	Charging Port	1
18	Brest Feeding Room	2
19	Staff Room	12
20	Information Center	1

Table-3: Summary table on the questionnaire survey at Sadarghat

	Service Quality Variable	**Very Poor**	**Poor**	**Average**	**Good**	**Excellent**	**Comments**
Tangibility	Ticket Counter	0%	10%	15%	55%	25%	In tangibility cleanliness and lighting system is poor on percentage. It should be improved. On the other side the ticket counter system, toilet facility and waiting room space is better on percentage.
	Toilet Facilities	10%	15%	35%	40%	0%	
	Lighting System	20%	25%	50%	5%	0%	
	Waiting Room Space	17%	11%	33%	39%	0%	
	Cleanliness	30%	50%	15%	5%	0%	
Reliability	Docking System	10%	20%	50%	20%	10%	In reliability staff accommodation's percentage is very poor. It should be improved. The docking, loading and unloading system is average on percentage. It should be improved.
	Service Quality Variable	**Very Low**	**Low**	**Average**	**High**	**Very High**	
	Man Power	5%	10%	20%	45%	20%	
Reliability	**Service Quality Variable**	**Very Poor**	**Poor**	**Average**	**Good**	**Excellent**	
	Fire Extinguisher	10%	15%	25%	50%	0%	
	Emergency Service	10%	15%	20%	50%	5%	
	Staff Accommodation	50%	40%	10%	0%	0%	
	Loading and Unloading System	20%	25%	40%	15%	0%	
Responsiveness	Dock railing system	80%	20%	0%	0%	0%	In responsiveness dock railing system, Canteen facilities is very poor in percentage. It should be improved. Also the snapback zone, dock to dock joint is poor in percentage. It should also be improved.
	Dock to Dock joint	20%	55%	25%	5%	0%	
	Service Quality Variable	**Very Low**	**Low**	**Average**	**High**	**Very High**	
	Snapback Zone System	30%	50%	15%	5%	0%	
	Hawkers volume	10%	20%	60%	10%	0%	
	Service Quality Variable	**Very Poor**	**Poor**	**Average**	**Good**	**Excellent**	
	Security for Passenger	15%	20%	40%	15%	10%	
	Canteen Facilities	100%	0%	0%	0%	0%	
	Service Quality Variable	**Very Low**	**Low**	**Average**	**High**	**Very High**	
Assurance	Quantity of Station Ramp	0%	10%	15%	30%	45%	In assurance, the bollard quality and mooring ropes quality is very poor in percentage. It should be improved.
	Bollard Quantity	0%	10%	15%	40%	35%	
	Mooring Ropes Quality	50%	35%	15%	0%	0%	
	Service Quality Variable	**Very Poor**	**Poor**	**Average**	**Good**	**Excellent**	
	Bollard Quality	35%	40%	10%	15%	0%	
	Service Quality Variable	**Very Poor**	**Poor**	**Average**	**Good**	**Excellent**	
Empathy	Facility For Disable Person	10%	15%	20%	50%	5%	In empathy, terminal maintenance and watchtower service is average in percentage. It should be improved
	Terminal Maintenance	20%	25%	40%	15%	0%	
	Watchtower Service	20%	40%	30%	10%	0%	

Sadarghat Launch Terminal's service quality needs to be improved. The worst case scenario, according to the report, is the dock railing system, and the next concern is the lack of a canteen. As a result, people are forced to purchase food from hawkers. The hawkers often draw a large crowd... There isn't any maintenance for hawkers. There is also no mechanism in place to notify passengers when the launch has left or arrived at the quay. There isn't any other way to go in Barishal or Potuakhali except launch and people have to suffer into there launch journey. It is high time for the government to examine and develop the maritime infrastructure. We gave some ideas for how to make this a more equitable scenario.

5. DISCUSSION & RECOMMENDATION

A model can be developed for enhancing to the service quality of launch terminal. From our survey, on the basis of the study we strongly recommend the following.

5.1 Ticket Counter System

Although there is an online app called "Jaljatra" for purchasing tickets, it is frequently unavailable. Also, there's no billboard for ticket prize. It is vital to create a billboard advertising the destination and prize so that passengers can conveniently buy tickets.

5.2 Waiting Room

For VIP passengers, there is no waiting area. As a consequence, it's important to have a VIP passenger waiting area. It's also a good idea to provide any book storage or newspaper for travelers. Also there isn't any air condition system in first class waiting room, and the first class waiting room only has two Fan. Even, in the case of Covid -19, there was a dog lying in the first-class waiting room while we conducted our survey. It's terrible because everybody is acting as if it never happened. People are still complaining about how much they are suffering as a result of covid-19, but no one seems to care about animals. It's a disgrace that we talk about equality but never care about animals.

Fig-4: A dog into the first class waiting room.

5.3 Toilet Facility

It is important to increase the number of toilets available. There is also no toilet for VIPs, so one will have to be installed. There is also no toilet cleaner inside the toilet (during the Covid 19 session). There is a need for a separate toilet for children.

5.4 Bollard Quality

There is 219 bollard inside the quay and almost 75 percent of bollard quality is very poor. Also most of the bollard is rust make sure there paint or powder coat is not scratched .

Fig-1: Rust bollard and broken bollard

5.5 Storage Facilities at Terminal

At each level of each Terminal, sufficient storage facilities must be incorporated to meet the functional needs of the operational Terminal as well as the demands of the maintainers. In most cases, storage space will be created in the following areas. For paper and customer care products, there is a customer service centre at the entrance/concourse level. Stores connected to retail activities are located at the entrance/concourse level of a retail service store.

Fig-2: Side Loading

5.6 Docking System

Docking configurations will largely depend upon the vessel. Passenger ferries are typically side-loaded, which can be accommodated by parallel or linear berthing facilities. The docking system is sufficient, but the station ramp, which passengers use to reach the deck from the ship, is made of wood. It should be updated. Often, the mooring ropes must be replaced because their consistency is weak, and when the ship arrives at its destination (deck), it shakes because the mooring ropes are not properly tightened with bollard.

5.7 Lighting System

The Deck's lighting system is terrible. There is only one light on each station ramp. The deck's lighting system could also be improved.

5.8 Emergency Service

There is no medical assistance available. As a result, it is crucial to provide a medical emergency service for passengers.

5.9 Fire Extinguisher Facility

Since there are only six fire extinguishers, more fire extinguishers are needed.

Fig-3: Poor Lighting System into Station Ramp

5.10 Cleanliness of platform

For waste products, there isn't enough waste bin. It's also vital to create a rule that anybody who throws trash on the platform or deck will be fined.

5.11 Dock Railing System

It is important to put some railing system into the dockyard.

Fig-4: No Railing into dockyard

5. 12 Dock to Dock joint

A dock bridge that spans the gap between two dock sections. The dock bridge is made up of two connecting plates and a flexible material that runs between them. The flexible material is composed of a water-resistant material, and each of the connector plates is made of a corrosion-resistant material. Because there was a gap between the docks during our survey, they need to be reconnected. There was just one dock bridge between the two connecting joints. As a result, the dock bridge will need to be enlarged.

Figure 11: Dock to Dock joint gap

Figure 10 Dock Bridge (Only one)

5.13 Mooring Ropes Quality

Vessels use mooring lines in order to be secured next to dock, pier or terminal. The mooring ropes quality of the dockyard is very poor. Also, Installation should be done by experienced crew, Incorrect winding on the drums or adding twists are examples of errors made during the installation. Twists will decrease the strength of the rope and can cause the rope to break. Using a rotating platform will avoid twist on the rope. Using 2 colors for an easy detection of the twist can help to observe the twist. Also, it is recommended to use the same ropes on all positions where ropes are working in parallel.

Figure 13: Twisted and same color mooring ropes

Figure 12: Poor Quality Mooring Rope

5.14 Snapback Zone

Snapped line which are wrapped around a lead under tension can be deadly. There isn't any paint or sign for snapback zone. So, it is need to paint the snapback zone on the deck plating (Azad, A. K., 2009). Also put some professional man into the snapback zone when the ship is about to dock or go.

Figure 15: Snapback zone painting (demo)

Figure 14: Snapback Zone (No painting)

5.15 Loading and Unloading System

There aren't any cargo cranes, side-loading systems with conveyors, side shifters or elevators. It is important to put that system. Also using a range of truck unloaders is a great idea for loading and unloading system.

Fig-5: Poor loading and unloading system.

The passenger clearance system is inadequate. With a ticket costing 10 taka, everyone can enter the terminal. There are 12 entrances to the terminal, but only two have security guards. The remaining 10 entrance need to be secured

6. CONCLUSION

Sadarghat Launch Terminal's service quality needs to be improved. The worst-case scenario, according to the report, is the dock railing system, and the next concern is the lack of a canteen. As a result, people are forced to purchase food from hawkers. The hawkers often draw a large crowd... There isn't any maintenance for hawkers. There is also no mechanism in place to notify passengers when the launch has left or arrived at the quay. There isn't any other way to go in Barishal or Potuakhali except launch and people have to suffer into their launch journey. It is high time for the government to examine and develop the maritime infrastructure. We gave some ideas for how to make this a more equitable scenario.

Limitation and study forward

The questionnaire survey would always be the same whenever anyone research about the service quality of Sadarghat Launch Terminal, so for this reason whoever next time go for further research they can use this same question and also put them questionary into different method. Such as Data Envelopment Analysis (DEA). By using this method into the service quality researcher can come to valuable conclusions in evaluating the service quality. Also, another method name "FUZZY DECISION MAKING" approach in evaluation ferry service. Furthermore, making more questionnaire can make the result more accurate.

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Appendix

Questionnaire Survey

This Information obtained in this survey will be accorded confidential treatment and will be utilized for academic research purposes only. We also assure the anonymity of the information

Survey Pre-Detail

The objective of this questionnaire survey is to determine service quality of the Launch passenger operating in inland waterways of Bangladesh, integrating commuters' attitude and predilections toward prevalent service variables in different routes. The survey form consists of a series of general questions with accommodated choice assemblage. The general set of questions is followed by a numerical perception rating survey to evaluate the existing service condition of the Launch passenger. Moreover, an optimized survey to opt requisite and desirable service quality variables is supplemented to substantiate the level of service designation

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Name of the Person interviewed: .....: Occupation: ……;

Office/Institution: ……..

Date: …….. Address: .....;

Contact Number: .....;

Destination of the Passenger: ……

Age: …… Gender: Male/Female

Income: ……. BDT

Purpose of travelling: Work / Recreation / Returning home/Others; Why travelling on this mode: No other potion/Cheaper/Comfortable; Alternate mode choice, if they are made cheaper: Yes/No/Depend on other facility

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