Factors Influencing Passenger Satisfaction toward Waterway Transportation

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Abstract - The study has been conducted to investigate the factors affecting customer satisfaction toward inland waterway transportation service in Bangladesh. The study has revealed that cost and management, staff attitude and behavior, safety and security, comfort and hygiene, availability of service and food & decoration has significant effect on overall satisfaction. Moreover, Time management has no significant effect on customer satisfaction. The result also shows that overall satisfaction has positive relationship with repeat visit intention and positive word to mouth advertisements.

Keywords: Inland Waterway Transportation, Satisfaction, Repeat visit, Positive word of Mouth, Bangladesh.

1. Introduction

The inland shipping industry plays a very significant role in Bangladesh for carrying passengers and goods for many years. This industry provides naturally appropriate and comparatively cheaper means of transportation for carrying passengers and commodities particularly in the southern districts of the country. The water transport system is both widespread and well-connected with the rest of the transport arrangement in Bangladesh. In terms of traffic intensity, the inland waterway network generates about one-and-half million passenger-kilometers per route-kilometer of waterway (Bangladesh Economic Review, 2004). The concentration of domestic ports and terminals is high with around three and half berthing facilities per one hundred route-kilometers. The density of passenger facilities on the inland waterways is also high at around 40 per 100 route-km.

Therefore, inland water transportation is an essential mode of transportation for building a balanced multimodal transport system in Bangladesh. Moreover, with the increase in population and the growing economy of the country, the waterways are getting congested as the inland waterways are not expanding significantly (Awal and Hoque, 2008). The Pakistan administration, in order to increase the role of water transport in the economic sector of the country, established five major inland ports with up to date facilities in Dhaka, Narayanganj, Chandpur, Barisal and Khulna. With the increase of commerce and industry in the post-Independence period, six more inland ports were upgraded and modernized since 1971 for easy movement of passengers and cargoes. These ports are Patuakhali, Nagarbari, Aricha, Dauladia Baghabari and Narshingdi.. Wayside terminals (Ghats) were provided since 1971 and at present there are more than one thousand terminals for the waterway passengers in Bangladesh. Many of those terminals are managed by BIWTA (Bangladesh Inland Water Transport Authority,) (Afrose and Ashraf, 2003).

Numerous studies have been conducted to measure passenger's satisfaction toward different modes of public transportations (Agarwal, 2008; Fellison and Friman, 2008; Pullen, 1993; Marquez et al, 2014; Eboli and Mazzulla, 2007). However, still now there is a serious lack of study on the factors influencing passenger's satisfaction in inland waterway transportation from the perspective of Bangladesh. Therefore, this study aims to analyze the factors that affect customer satisfaction toward waterway transportation in Bangladesh by answering the following research question: Which factors have significant influence on customer satisfaction toward waterway transportations in Bangladesh? Does customer satisfaction influence repeat visit intention in waterway transportations? Is there any relation between repeat visit intentions toward inland waterway transportations and positive word of mouth.

2. Literature Review

2.1 Customer Satisfaction

Customer satisfaction is a goal of each organization (Bagdonienė and Hopenienė, 2005). Customer satisfaction has been considered one of the most important factors in any industry or service due to its direct relation to customer retention. General customer satisfaction studies link the use or reuse of a commodity or service to the extent to which customers are satisfied. Customer satisfaction is important to measure because of its significant impacts on firms' long-term performance and also customer purchasing behaviors. The academicians have associated high customer satisfaction with higher customer loyalty and positive reputation (Fornell, 1992; Anderson & Sullivan, 1993; Wangenheim & Bayon, 2004). Customer satisfaction is an important concept that deserves further interest. From consumer research, satisfaction is known to be of great value in understanding customers' perceptions and evaluations (Oliver 1997), repeatedly showing itself to be an important indicator of future customer behavior (Fornell 1992, Johnson & Gustafsson 2000).

2.2 Water Transportation in Bangladesh

There is a 14000km long river network in Bangladesh. In this network there are 700 rivers (BIWTA). The three major river systems of the Ganges, the Brahmaputra and the Meghna converge in Bangladesh to form one of the world's largest deltas (Jansen, et al., 1994). These three mighty rivers also create one of the most multifaceted river systems in the earth. The number of watercourses increases from northwest to southeast in Bangladesh. Before the advent of the road and rail transport the rivers were the main arteries of movement for passengers and cargoes. Cities, towns, villages and market centres all grew up along rivers and canals for easy transport. Indeed, the whole economy of Bangladesh depends on the waterways. The combined waters of the Ganges and the Brahmaputra-Jamuna meet the Meghna in a large confluence south of Chandpur, which can be as wide as 11 km during the monsoon. From this point southwards the Meghna becomes one of the largest rivers in Bangladesh. The rivers Padma and Jamuna are very unstable and are inclined to lateral migrations. Both rivers can be classified as braided channels that are indicative of high sediment loads and slow water flows (Rashid, 1991).

After the independence in 1971, a great number of people have moved from southern areas of Bangladesh to capital city and water transport has become very popular. Inter-district and intra-district movements within the southern districts of Barisal, Bhola, Patuakhali, Jhalokathi, Borguna, Pirozpur and their sub-districts are by water transport. These areas of Bangladesh are linked with capital city Dhaka by both water transport network and road transport network. However, most of the people prefer water transport due to its economic convenience. The main river-port of the Dhaka City is known as the Sadarghat port from where 200 small and large motor launches go to different destination daily (Hoque and Dewan, 2017).

2.3 Customer Satisfaction toward Water Transport

Customer satisfaction explains the performance of a firm and customer's reaction toward it. To summarize, satisfaction is increasingly being put forward as key to the future development of public transport, both in theory and in practice. In transport research, satisfaction has been discussed from policy context (cf. Hensher 2007). To evaluate the performance of public transport, discussion from policy context is necessary. Factors show clear signs of an industry generic structure consisting of four basic quality dimensions, i.e. safety/security, system (with supply and reliability items), comfort, and staff behavior (Markus Felleson & Margareta Friman 2008). The performance of public transport's has been evaluated from cost efficiency dimensions for a long period of time (e.g. Hensher 1995; Pullen, 1993). However, for the last few years service quality of public transportation has been evaluated in numerous research works (Alireza et al., 2011). Transportation service has been evaluated from frequency of the service, the punctuality, the comfort and cleanliness, the safety, the availability of information, the personnel courtesy, the fare and others. In addition to these factors, other aspects should be considered which are appreciated by each user and are highly reliant on the users' social and demographic characteristics; their context (i.e. geographical area, social class and type of service); the reason for travel; and the modes of transport used (e.g. Andreassen, 1995; Ganesan-Lim et al., 2008).

3. Methodology & Conceptual framework

3.1 Population & Sample

The target population for this study is the passengers who have use the launch service from Dhaka to Barisal Route. This study is a descriptive research and quantitative in nature. The sample of the study consists of 100 passengers who travel frequently from Barisal to Dhaka through various launch services.

3.2 Sampling Technique and Data Collection

In this research, non-probability convenience sampling technique was used i.e., anyone who is available to be part of the survey can answer the question and data were collected from passengers through personal interviewing method. In this study a questionnaire form was used as a tool for collecting primary data. The secondary data has been collected from different sources such as previous research, different journals and articles related to the title.

3.3 Questionnaire design

In this study, self-administered Questionnaires have been used in the data collection, and the questionnaire is specially designed to meet the requirements of the research. The first part is about demographic information of respondent. The second part includes questions related to factors influencing passenger satisfaction, passenger satisfaction level, repeat visit intention and word of mouth intention . A category scale and Likert type scale questions been used where respondents had to make their level of agreement such as; Strongly Disagree, Disagree, neither agree nor Disagree (neutral), Agree and Strongly Agree. Scores of 1, 2, 3, 4, and 5 were assigned respectively for above mentioned categories.

3.4 Data analysis

The analysis of the study has been carried out through frequency distribution, Pearson correlation and regression analysis.

3.5 Analytical model

Based on the objectives of the study, literature review and conceptual framework the following hypotheses are proposed:

H1: Time management, cost and payment, staff attitude and behavior, safety and security, comfort and hygiene, availability of service, food and decoration influence the customer satisfaction toward waterway transportation

H2: Customer satisfaction influences repeat visit through waterway transportation

H3: Customer satisfaction influences positive word to mouth through waterway transportation.

H4: There is a strong association between time management, cost and payment, staff attitude and behavior, safety and security, comfort and hygiene, availability of service, food and decoration with customer satisfaction

H5: There is a strong association between repeat visit intention and positive word of mouth with customer satisfaction

4. RESULT AND DISCUSSIONS

The target population for this study is the customers who use the launch transportation service. We have taken about 100 samples on the people who have the experience of launch journey including all age group, gender. To assess the measurement, we use percentage, mean and regression (model summery, ANOVA, coefficient).

4.1 Demographic profile of respondents

Table 1
Demographic profile of the Respondents

Variables	Frequency	Percent
Respondent's Age Group		
Bellow 20	10	10%
20 to 25	69	69%
25 to 30	11	11%
Above 30	10	10%
Total	100	100%
Gender		
Male	60	60%
Female	40	40%
Total	100	100%
Marital status		
Married	25	25%
Unmarried	75	75%
Total	100	100%
Education level of the respondents		
Below SSC	7	7%
SSC	3	3%
HSC	14	14%

Honors	65	65%
Masters	11	11%
Total	100	100%
Frequency of using this transportation		
once in a week	5	5%
Once in a quarter	7	7%
Once in a month	39	39%
Once in a year	49	49%
Total	100	100%
Service class preference	frequency	Percentage
Dake	31	31%
Cabin	47	47%
Sofa	13	13%
VIP cabin	9	9%
total	100	100%

The analysis of demographics reveals that majority of consumers are male (69 %), maximum people are age between 20-25 (60 %), most of them are unmarried (75%) and educational qualification of majority are honors level (65%). Most of the people use the transportation once a year (49%). Most preferable service class is cabin (47%).

Table 2
Summary of Regression Analysis

Hypothesis	Independent variable	Dependent variable	R Square	Adjusted R Square	F value	Significance	Hypothesis tested
H1	Time management	Customer satisfaction	0.22	0.012	2.197	0.141	Rejected
	Cost and payment	Customer satisfaction	0.109	0.100	12.007	0.001	Accepted
	Staff attitude and behavior	Customer satisfaction	0.138	0.130	15.730	0.000	Accepted
	Safety and security	Customer satisfaction	0.127	0.118	14.238	0.000	Accepted
	Comfort and hygiene	Customer satisfaction	0.173	0.165	20.501	0.000	Accepted
	Availability of service	Customer satisfaction	0.137	0.128	15.587	0.000	Accepted
	Food and decoration	Customer satisfaction	0.062	0.052	6.442	0.013	Accepted
H2	Customer satisfaction	Repeat visit	0.385	0.378	61.273	0.000	Accepted
H3	Customer satisfaction	Positive word to mouth	0.360	0.353	55.038	0.000	Accepted

For testing hypothesis 1, customer satisfaction is taken as the dependent variable and time management, cost and payment, staff attitude and behavior, safety and security, comfort and hygiene, availability of service, food and decoration are taken as the independent variables. At 5% level of significance, our p-value of time management is 0.141 which is greater than the significant value 0.05. Therefore, time management shows no significant effects on overall customer satisfaction. P-value of cost & payment is 0.001 which is less significant table value 0.05. So, cost & payment has significant effects on customer satisfaction. P-value of staff attitude & behavior is 0.000 which is less than significant table value 0.05. So, staff attitude & behavior has significant effects on customer satisfaction. P-value of safety & security is 0.000 which is less significant table value 0.05. So, safety & security has significant effects on customer satisfaction. P-value of comfort and hygiene is 0.000 which is less than significant table value 0.05. So, comfort and hygiene has significant effects on customer satisfaction-value of availability of service is 0.000 which is less than significant table value 0.05. So, availability of service has significant effects on customer satisfaction-value of food and decoration is 0.013 which is less significant table value 0.05. So, food and decoration has significant effects on customer satisfaction. Among seven dimension, six dimensions' show significant effects on customer satisfaction. So, hypothesis 1 is partially accepted.

For testing hypothesis 2, repeat visit intention has been taken as the dependent variable and customer satisfaction as the independent variable. At 5% level of significance, our p-value is 0.000 which is less than the significant value 0.05. So our hypothesis is accepted that indicates customer satisfaction has significant effect on repeat visit intention.

For testing hypothesis 3, positive word to mouth has been taken as the dependent variable and customer satisfaction as the independent variable. At 5% level of significance, our p-value is 0.000 which is less than the significant value 0.05. So our hypothesis is accepted that indicates customer satisfaction has significant effects on positive word to mouth.

Table 3
Summary of Correlation Analysis

		Customer satisfaction	Time Management	Cost & Payment	Staff attitude & Behavior	Safety & Security	Comfort & Hygiene	Availability of service	Food & Decoration	Repeat visit	Positive word of mouth
Customer satisfaction	Pearson Correlation Sig. (2-tailed) N	1 100	.148 .141 100	.330** .001 100	.372** .001 100	.356** .000 100	.416** .000 100	.370** .000 100	.248* .013 100	.620** .000 100	.600** .000 100
Repeat visit	Pearson Correlation Sig. (2-tailed) N	.620** .000 100	.092 .363 100	.252* .011 100	.291** .003 100	.403** .000 100	.288* .004 100	.206* .040 100	.153 .129 100	1 100	.563** .000 100
Positive word of mouth	Pearson Correlation Sig. (2-tailed) N	.600** .000 100	.250 .012 100	.210* .036 100	.317** .001 100	.248* .013 100	.357** .000 100	.318** .001 100	.189 .060 100	.563** .000 100	1 100

Table 3 shows that the relationship between Time management, cost and payment, staff attitude and behavior, safety and security, comfort and hygiene, availability of service, food and decoration and customer satisfaction are statistically significant. Therefore, a hypothesis 4 is accepted.

The relationship between customer satisfaction and revisit intention is positive and statistically significant. The relationship between customer satisfaction and positive word of mouth is positive and statistically significant. Therefore, hypothesis 5 is also accepted.

5. CONCLUSION& MANAGERIAL IMPLICATIONS

The service quality of Waterway transportation is the combination of many factors which in turns paves way for satisfaction of the customers who use this transportation service. If the performance of the factors is not adequately met, or poorly implemented, the customers would visit once, but will not refer it to others and themselves will not use this service again. All the service dimensions have significant effect on overall customer satisfaction. Cost and payment, staff attitude and behavior, safety and security, comfort and hygiene, availability of service, food and decoration positively affect on customer satisfaction. 42 percent people agreed that they are satisfied with the service. About 53% of the population will use the service again and 52 % of population will recommend the transportation. Overall satisfaction has a positive relationship with repeat visit intention and positive word of mouth.

On the foundation of finding and result, we can see that cost and management, staff attitude and behavior, safety and security, comfort and hygiene, availability of service and food & decoration have significant effect on overall satisfaction. So, the transportation authority should focus on all six of the aspects. The waterway transportation authority should simplify the payment system. Staff attitude & behavior has been assigned the greatest relative importance by the respondents. This implies that the behavior of staff—their friendliness, politeness, cooperation, promptness, efficiency, knowledge level, trustworthiness, appearance, etcetera—can reinforce or decrease the satisfaction level of the customers. So legal obligations and skill requirements, service firms should seek to recruit staff to fill specific roles, train them to effectively handle the customers, and enable systems to monitor their speech, behavior and performance. Since safety and security during the journey are considered highly important by the customers, those should be afforded more attention by the waterway transportation authority. authority must focus on cleanliness of the vehicle and keep entering/exiting clean. Contracts can be entered into with other parties to provide better facilities of food and drinks. The waterway authorities should also ensure that proper service in terms of up-to date information and clean bed sheets and blankets are being provided to customers.

Limitations of the study and Directions for future research

There are some limitations for conducting this research which are given below:

- Only a single mode of waterway transportation has been selected for the study.
- The sample size was very small.
- Respondents were not included from all over country.

Inland waterway transportation is an essential mode of transportation for building a balanced multimodal transport system to confront the upcoming development challenges. The author proposes the following further research:

- Further research could be extended to other parts of the country so that the findings may be more useful
- There is a need to explore more independent variables that can have an impact on passenger satisfaction.

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