

Perceived Quality, Customer Satisfaction and Loyalty: An Empirical Study in the Telecommunication Sector of Bangladesh

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***Abstract:** The study aims to investigate the influence of several quality dimensions on user satisfaction in telecommunication sector in Bangladesh. Moreover, the study investigates the influence of customer satisfaction on customer loyalty in telecommunication sector. A structured questionnaire has been formed and distributed among 329 respondents in Dhaka, Barisal, and Patuakhali district. Data has been collected and analyzed through frequency distribution, factor analysis and regression analysis. The study shows that perceived quality dimensions have significant influence on user satisfaction in telecommunication sector. Moreover, customer service and network coverage are the most leading predictors of mobile phone user satisfaction which leads to customer loyalty.*

***Keywords:** Perceived Quality, Customer Satisfaction, Customer Loyalty, Bangladesh, Mobile phone operator.*

1. Introduction

Human being prolonged their boundaries by inventing new technologies which cover the long-distance within shortest possible time. Telecommunication firms are continuously trying to develop easy communication methods (Soukiet al., 2006). Souki and Goncalves Filho (2008) narrated that Martin Cooper, a Motorola researcher, first made a portable phone receiver in 1973 and called from the New York center in the USA to a landline. Industrial production and marketing of this technology started in 1983. From then, a dramatic change had been made through telecommunication firms in the field of communication. The changing wind of telecommunication firms also hit in Bangladesh. To control and set up rules and regulations, an institution was introduced named Bangladesh Telecommunication Regulatory Commission established on January 31, 2002.

There are four telecommunication firms in Bangladesh: Grameen Phone Ltd. (GP), Robi Axiata Limited (Robi) and Airtel, Banglalink Digital Communications Limited and Teletalk Bangladesh Ltd. (Teletalk). Saha et al.

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(2016) pointed out that the telecom market in Bangladesh is considered to be the biggest market after China and India in the Asian region. The aggregate number of Mobile Phone subscribers has extended 170.137 Million at the end of December 2020 (www.btrc.gov.bd).

In the 21st century, mobile phone is a necessary product all over the world. This device has become so much popular among the mass people in Bangladesh. Hafez and Akhter (2017) argued that telecom firms are continuously trying to satisfy their customers to increase loyalty by introducing several services in their service line. To satisfy their customers, they take several marketing strategies at the same time and change their marketing strategy frequently. So this industry is so much riskier than others. Moreover, Kabir et al, (2009) stated that there is severe competition faced by the mobile phone operators and the market penetration rate is high for the telecom industry in Bangladesh. The aggressive competition always forces operators to rethink their marketing and business strategies to improve customer satisfaction and customer loyalty in this market. Now, this sector has been in the maturity stage with 4G and 3G network services. To survive in this competitive market, customer satisfaction and loyalty are the prime concern for every operator.

Several studies have been conducted to investigate the factors that have significant influence on customer satisfaction and loyalty in telecommunication industry of Bangladesh (Hafez and Akhter (2017) Kabir et al, (2009) Hossain et al, 2016 ; Rahman ,2014; Uddin and Akhter, 2012). These studies have identified several factors that can influence customer satisfaction and loyalty in telecommunication industry in Bangladesh. However, most of these studies have several weaknesses. There is absence of enough studies that investigate the influence of perceived quality of different quality dimensions relevant to telecommunication service on customer satisfaction and loyalty in telecommunication sector of Bangladesh. Hence, the current study has been conducted to fill this important research gap by investigating the following research questions: Is there any significant influence of perceived quality on customer satisfaction in telecom sector of Bangladesh? Do quality of connection, internet package, network coverage and customer service have significant influence on customer satisfaction in telecom sector of Bangladesh? Does customer satisfaction significantly influence customer loyalty in telecom sector of Bangladesh?

This study has been structured as follows: firstly, literature review and hypotheses development have been presented. Secondly, the methodology and conceptual framework have been organized for this study. Thirdly, the data analysis and the results of the study have been authored . Finally, the study has been ended with a discussion on the result and managerial implications.

2. Literature Review and Hypothesis Development

Perceived Quality

Perceived quality is identified as the consumers' belief about an entity's services comprising overall excellence or superiority (Snoj et al., 2004). The quality of

products is very much related to the perceived quality. According to Zeithaml (1988), the perceived quality denotes the customer's evaluation of product or service excellence which has a direct impact on customer satisfaction and customer loyalty. Baker and Fesenmaier (1997) emphasized that the perceived quality of services is the key to create one of the sustainable competitive advantages in the competitive global market. Bitner et al. (1990) stated that quality is the customer's overall opinion related to the weakness or dominance of an organization and its service offerings. Service quality positively impacts customer satisfaction which in turn helps to retain the customer for a long time (Venetis and Ghauri, 2004). Ganguli and Roy (2011) described that customer service excellence can help to enhance customer satisfaction and customer loyalty. McDougall and Levesque (2000) suggested that only customer service can make a service provider different from others. The differentiation of the firm through customer service can create a positive image in the minds of customers.

Perceived Quality of Telecommunication service

Perceived quality in telecommunication sector is the combination of quality of products, quality of connections, internet packages, network coverage, and customer service (Souki and GoncalvesFilho, 2008).

Quality of Products in Telecommunication Service:

The perceived quality of products in telecommunication service depends on network coverage, pricing structure, distribution level, technology, variety and design of mobile devices, billing system etc (Souki and Filho, 2008; Santouridis and Trivellas, 2010).

Internet Packages:

Internet packages, also known as internet bundle offers, are offered by telecommunication firms that allows for internet access (surf the internet within a certain limit of bytes and/or time) or airtime (Jackson, 2021). Uddin and Akhter (2012) suggested that good *internet packages* will help to improve customer satisfaction to a greater extent.

Network Quality:

Saha et al. (2016) indicated that *network quality* is judged by the different elements such as signal of mobile phone network coverage, time to connect with another phone number, call drop rate, voice clarity, and time to send and receipt of SMS. Negi (2009) and Rahman et al. (2012) recognized that network quality has a positive effect on overall customer satisfaction. According to Chen et al. (2011), customer dissatisfaction derives from poor network quality which increases the number of complaints. Likewise, Khan and Afsheen (2012) presented that low network quality creates more dissatisfaction among mobile phone users which leads them to switch to another operator.

Quality of Connection:

Network connectivity quality depends on mobile network quality in an area and the numbers of errors during downloading and uploading activity. Network

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quality also refers to the excellence and power of the network signal (Munyanti and Masrom 2018). Souki and Goncalves Filho (2008) showed that quality of connections and product is significant predictors of customer satisfaction in the telecom sector.

Customer Service:

Customer service in telecommunication sector means problem solution skills, the manner of customer service people, the assistance of call-centers and the practice of reliable guidance. Customer service has considerable positive effect on customer satisfaction, which in turn has a significant positive effect on customer loyalty (Santouridis and Trivellas, 2010).

Customer Satisfaction

Satisfaction is an essential notion that has received much consideration in consumer behavior research (Danaher and Haddrell, 1996). Tse and Wilton (1988) described customer satisfaction as “the consumer’s response to the evaluation of the perceived discrepancy between prior expectations and the actual performance of the product as perceived after its consumption”. Zeithaml et al. (1990) defined customer satisfaction as the customer judgment between the expected result and the anticipated result. Alrwashdeh et al. (2020) and Souki and Goncalves Filho (2008) showed that perceived telecommunication service quality is positively related to customer satisfaction. Dick and Basu (1994) reported that a high level of customer satisfaction amplifies customer loyalty whereas low customer satisfaction results in greater customer turnover and higher customer replacement costs.

Customer Loyalty

The loyalty concept, a very popular concept in the marketing literature, is defined from various perspectives. Oliver (1993) defined brand loyalty as “a deeply held commitment to rebuy or re-patronize a preferred product or service consistently in the future, despite situational influences and marketing efforts having the potential to cause switching behavior”. This definition comprises two facets including behavioral and attitudinal loyalty. According to Sulieman Ibraheem (2013), customer loyalty is more desirable and less costly to keep existing customers than to search for new ones. Saha et al. (2016) stated that loyalty of the customer is viewed as the behavioral propensity to favor one brand to all others due to customers’ satisfaction with the product, service, or the business organization, its convenience or performance, or even the brand’s familiarity and comfortableness. Karthikeyan et al. (2020) assumed that customer satisfaction has a significant positive influence on enhancing customer loyalty.

Influence of Perceived quality on Satisfaction and Loyalty in Telecommunication sector

Dey et al. (2019) showed that speed, call quality, and customer service have direct influence on perceived value which in turn influences customer satisfaction and prevents switching intention. Karthikeyan et al. (2020) showed that service quality, service delivery, support services, and perceived value are significant

antecedents of customer satisfaction. Shrestha and Ale (2019) stated that service quality of telecom firms is usually evaluated by the service-provider’s relationship with customers. Moreover, the main factors of customer satisfactions are network coverage, billing method, customer care center, promotion and value-added schemes, delivery of SMS and MMS quality.

Based on the discussion, the following hypotheses are proposed:

- H1. There is a positive influence of quality of products on customer satisfaction.*
- H2. There is a positive influence of quality of connection on customer satisfaction.*
- H3. There is a positive influence of internet package on customer satisfaction.*
- H4. There is a positive influence of network coverage on customer satisfaction.*
- H5. There is a positive influence of customer service on customer satisfaction.*
- H6. There is a positive influence of customer satisfaction on customer loyalty.*
- H7: There is a positive influence of overall perceived quality on customer satisfaction.*

3. Conceptual Framework

A conceptual framework has been suggested based on previous literature discussed above. Perceived quality of telecom service dimensions for measuring service quality namely quality of products, quality of connections, internet packages, network coverage, and customer service are independent variables and customer satisfaction and customer loyalty are dependent variables for this research.

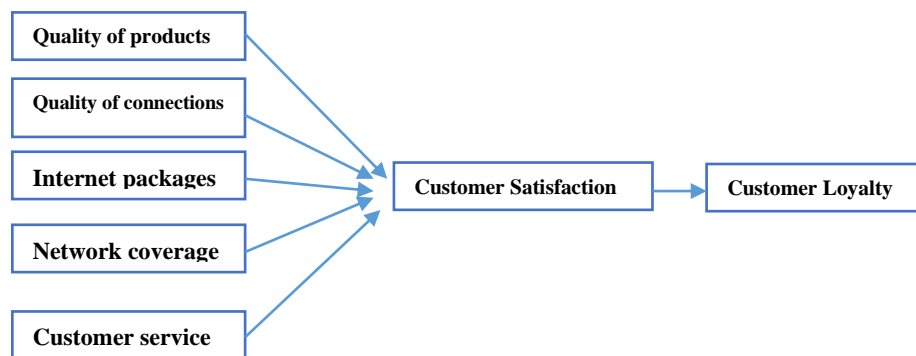


Figure 1. Conceptual Framework

4. Methodology

The research adopts ontological reality and positivism. This research is descriptive research because the mobile phone users' perception of the quality of products, quality of connections, internet packages, network coverage, customer service, and their effects on user satisfaction is measured in this study.

JUJBR***Sampling Design***

This research is covered by the telecom services used by mobile phone users. The sampling unit contains both male and female telecom service users. The sampling area comprises Dhaka city, Patuakhali, and Barisal. The selected areas have been chosen to collect data in a convenient way. Moreover, the chosen areas can provide a better representation of the total population of the study. The population of this study was the people having a mobile phone in Bangladesh. The sample size for the study was 329. The period of data collection was October to December 2020. The major portion of the sample was the young generation living in Barishal Division and Dhaka city. Some respondents, having more than one telecommunication SIM, use their telecommunication SIM for regular purposes. Convenience sampling method was used to collect primary data. The collection of data through convenience sampling is relatively inexpensive. As the research is not funded from any source hence the researcher has adopted this sampling method. Moreover, the population of the study is very large in number and this is nearly impossible to get access to the total target population and conduct random sampling.

Questionnaire Design and Data Collection

To achieve the goals of this research both primary and secondary data have been used. Secondary data have been collected from journals and books. Primary data have been collected from the mobile phone users by face to face interviews and online surveys through a self-administered questionnaire. The measurement items of the constructs related with perceived quality of telecom services: quality of products, quality of connection, network coverage, internet package and customer service have been adapted from Souki and Filho (2008). Measurement items of the other two constructs respectively customer satisfaction and customer loyalty have been adapted from Hasan and Hossain (2021). A 5-point Likert Scale was used with Strongly Disagree=1, Disagree=2, Neutral=3, Agree=4, and Strongly agree=5 has been used to gather data about the influence of perceived service quality on mobile user satisfaction and loyalty. A structured questionnaire has been designed in two parts. Part-I includes respondents' specific demographic information, including gender, age, monthly expense, education level, and name of the mobile phone service provider. Part-II- encompasses nineteen (19) statements under seven constructs namely quality of products, quality of connections, internet packages, network coverage, customer service, customer satisfaction, customer loyalty. Measurement items of the constructs have been adapted from Souki and Goncalves Filho (2008), and Aydin and Ozer (2005). Overall perceived service quality has been measured by combining the mean scores of five dimensions that measure service quality of telecommunication in Bangladesh.

Data Analysis

The data have been analyzed using the Statistical Package of Social Science (SPSS, 17.0). In this research, both the qualitative and quantitative analysis

techniques, including reliability statistics (Factor loading, Cronbach Alpha) and Regression analysis have been used to attain the research objectives.

5. Results and Discussion

To determine the scale validity and reliability of the questionnaire, Cronbach's Alpha and Factor loading are calculated for all the constructs. The results of the Cronbach's Alpha and Factor Loading are presented as follows:

Table 1. Reliability and Validity Statistics (See Appendix)

Cronbach's Alpha Coefficient (α) illustrates the variant percentage of the measurements that are free from random errors. Cronbach's Alpha Coefficient can be considered suitable for scale development when values will be at least 0.60 are acceptable for scales in development. Table 1 indicates that the Cronbach's Alpha values of the constructs are above the acceptable limit. Results show that the overall Cronbach Alpha is greater than 0.60 which means all statements can be taken for further analysis. On the other hand, all the Factor loadings are highly significant and exceed 0.5 levels. It indicates the statements are meaningful and reliable for analysis.

Table 2. Demographic Profile of the Respondents (See Appendix)

Table -2 shows mobile phone users' demographics profile, such as gender, monthly expense, level of education, and mobile phone service provider. The results show that male mobile consumers are predominant (73.25%) in the sample than female consumers (26.75%). There is serious gender gap in Bangladesh in terms of mobile phone use. According to recent statistics, females are less likely to use mobile phone in comparison to male (Bangladesh's gender gap in using mobile internet widest, 2022). Most of the users spend below 5000 Taka (65.05%) as a monthly expense for mobile phones. In the level of education, more than 70% of mobile users have undergraduate degree where as PhD has only 2.43% users. Moreover, most of the mobile service users (41.95%) use Grameen Phone Ltd. Services which constitutes 41.95%.

Table 3. Regression Analysis and Hypothesis Testing (See Appendix)

Table 3 shows that the coefficient of multiple determination is $R^2=.511$. This means that 51.1 percent variations in the dependent variable i.e. user satisfaction are explained by the independent variable i.e. perceived service quality that includes quality of products, quality of connections, internet packages, network coverage, and customer service and the remaining 48.9% can be attributed to other factors which are not included in the study. The value of adjusted R^2 (50.4%) is very close to R^2 (51.1) which indicates the addition of more independent variables contributing to explaining the level of mobile user satisfaction.

Table 3 also illustrates that quality of products, quality of connections, internet packages, network coverage, and customer service are significant predictors to measure user satisfaction Likewise, satisfaction is also the significant predictor to determine customer loyalty. Therefore, Hypotheses 1 (P value =0.00 <0.05),

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Hypotheses 2 (P value =0.00 <0.05), Hypotheses 3 (P value =0.00 <0.05), Hypotheses 4 (P value =0.00 <0.05), Hypotheses 5 (P value =0.00 <0.05), and Hypotheses 6 (P value =0.00 <0.05), are supported. Therefore, the telecommunication firms should provide more focus on quality of service, network coverage, connection quality, internet packages and customer service to keep the customers highly satisfied.

6. Discussion and Implications

The research aims to investigate the factors influencing customer satisfaction and loyalty of telecom service users in Bangladesh. The findings show that quality of products, quality of connections, internet packages, network coverage, and customer service are significant predictors to measure user satisfaction. The findings of the study are consistent with the previous studies (Soukiand Goncalves Filho, 2008; Uddin and Akhter, 2012; Rahman et al, 2012; Chen et al., 2011; Alrwashdeh et al, 2020). Therefore, telecommunication firms must provide attention to these factors to enhance customer satisfaction and loyalty.

The Mobile operators have reached a point of saturation in terms of subscribers in Bangladesh (Irani, 2021). Now, it is imperative for the firms to focus on service quality improvement rather than adding new subscribers. However, the service quality of telecommunication firms doesn't depend just on the telecommunication companies rather other stakeholders especially policymakers also have great role to play. The telecom sector still faces barriers due to several regulations imposed by the policymaker but the firms also have numerous things to do still now to enhance the service quality level. Although the internet facilities have become available in all areas of the country but telecom firms need to take measures seriously regarding their performance on providing internet facilities. The download and upload speeds on mobile internet are not so high in Bangladesh (Fernwick, 2020).

According to a research study conducted by USAID in 2019, there is a low investment in network upgradation and maintenance (Islam, 2023). In mid- 2019, BTRC has conducted a test drive to assess the quality of 4G service in two divisions of Bangladesh. However, none of the telecom firms meet the benchmark performance level. In addition, BTRC received a substainial number of complaints in their hotline regarding call drops and slow internet connectivity (Shawki, 2020). The firms also did not make sufficient investments to enhance the service quality. The telecom regulators blame that telecom operators are showing unwillingness to purchase sufficient spectrum (Sajid, 2021).

The telecom service operators must provide strong focus on the performance of quality on the factors discussed in the study. As there is strong competition in this oligopoly market, the consumers can easily switch to the competitors. The network connection must be given strong preference alongside with internet facilities. Moreover, the firms must provide strong emphasis on the customer service to ensure high satisfaction level of customers.

7. Limitation and Directions for Future Research

The research is based on small sample. Hence, the research can not be generalized in the whole country. The sample has been chosen through convenience sampling method. The performance of telecommunication service is dependent on more factors, such as managerial excellence, financial situation, promotional efforts, brand image, brand trust etc. Hence, in future studies more variables can be added. The impact of demographic characteristics of the respondents on satisfaction level can be studied in the future. There should be comparison regarding the satisfaction level among different customer groups .

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Appendixes

Table 1. Reliability and Validity Statistics

Factors	No of items	Cronbach's Alpha	Statements	Factor loading
Quality of products	4	0.832	1. This telecom firm is the best on the market.	.595
			2. This telecom firm has the best network coverage.	.595
			3. This telecom firm uses the best technology.	.613
			4. This telecom firm has more shops in the market.	.578
Quality of connection	3	0.835	1. Easy to receive calls.	.832
			2. Easy to make calls.	.832
			3. Quality of connection of this telecom firm is good.	.602
Internet package	2	0.848	1. This telecom firm has the best internet packages.	.735
			2. The internet packages of this telecom firm are affordable to me.	.735
Network coverage	2	0.746	1. The network coverage of my telecom firm is available everywhere.	.594
			2. The network coverage of my telecom firm is good for communication.	.602
Customer Service	3	0.761	1. Quality of customer service of this thetelecom firm is good.	.568
			2. The customer service of this telecom firm is fast.	.550
			3. The customer service is very much friendly.	.526
Customer Satisfaction	2	0.854	1. I am satisfied with my telecom operator.	.696
			2. I am satisfied with the service quality of my telecom operator.	.710
Customer Loyalty	3	0.820	1. I will choose the same telecom firm again.	.706
			2. I will recommend my telecom firm to people.	.680
			3. I intend to stay with my telecom firm for a very long time.	.644

Table 2. Demographic Profile of the Respondents

Variable	Category	Frequency	Percentage
Gender	Male	241	73.25%
	Female	88	26.75%
Monthly Expense	Below 5000 Taka	214	65.05%
	5000-8000 Taka	92	27.96%
	8000-10000 Taka	16	4.86%
	10000-15000 Taka	7	2.13%
	Above 15000 Taka	0	0
Level of Education	Undergraduate	243	73.86%
	Master	64	19.45%
	PhD	8	2.43%
	Others	14	4.26%

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Variable	Category	Frequency	Percentage
Mobile Phone Service Provider	Grameen Phone Ltd. (GP)	138	41.95%
	Banglalink	88	26.75%
	Robi Axiata Limited (Robi) and Airtel	63	19.15%
	Teletalk Bangladesh Ltd. (Teletalk)	40	12.15%

Table 3. Regression Analysis and Hypothesis Testing

Model	F-value	Significance of F-value	t-value	r ²	Adjusted r ²	p-value
Overall Perceived service quality ⇒ Customer satisfaction	135.7	0.00		0.511	0.504	0.00
Quality of products ⇒ Customer satisfaction	124.96	0.00	11.17	0.276	0.274	0.00
Quality of connections ⇒ Customer satisfaction	118.38	0.00	10.88	0.226	0.224	0.00
Internet package ⇒ Customer satisfaction	99.06	0.00	9.95	0.233	0.230	0.00
Network coverage ⇒ Customer satisfaction	179.61	0.00	13.40	0.355	0.353	0.00
Customer service ⇒ Customer satisfaction	238.93	0.00	15.45	0.422	0.420	0.00
Customer satisfaction ⇒ Customer loyalty	525.31	0.00	22.92	0.616	0.615	0.00