

## Factors Affecting Customer Satisfaction in 3G Service

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### Abstract

3G is the source of high-speed transfer of both voice and data. Thus with the customer satisfaction label it is important to understand the interplay of factors involved in the affect on customer satisfaction in Bangladeshi mobile phone service companies. Therefore this study examined the relationship between perceived value, perceived quality, customer expectation and corporate image with customer satisfaction. The results obtained from 360 students of university selected by convenient sampling method were analyzed with SPSS software program. The study found that perceived value, perceived quality; customer expectation and corporate image have a significant positive influence on customer satisfaction.

**Keywords:** Perceived value; perceived quality; customer expectation; corporate image; customer satisfaction.

### 1. Introduction

The third generation of mobile telecommunications technology 3G supports high-speed data transmission, which is the result of research and development work in the early 1980s [1]. With a new generation of mobile communication system it refers to wireless communications and Internet and other multimedia communications [2]. In 2001, Japan adopt the 3G services at first in the world.

Deepti and Ajay [3] contributed to present the patterns, awareness and adoption of 3G users. Now-a-days, with the other technologies 3G services are became the important source for the developments of the countries worldwide.

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The expansion of 3G networks is enhancing quality of life and providing expanded economic opportunities. The 3G services contribute in the economic developments by increasing competition, the development of innovative new services for consumers and greater productivity for enterprises by workers [4].

Modern services are improving with the 3G growing world [5, 6]. The services of 3G are handling images, music, video streaming, including web browsing, conference calls, e-commerce and other information services. The development of 3G technology plays an important role in our daily life.

By the increasing amount of capacity and capabilities 3G can be differentiated from the 2G and 1G [7]. Though 3G has higher demand but it faces intense competition, as a result it is essential to provide better service to these concerned groups of customers [7]. Reichheld and Sasser [8] has advised to improve service quality and focus on customer to fight the competition.

For higher customer satisfaction “value added services” are to be offered by operators [9]. Because a firm can have better market share and increased customer retention if their customers are satisfied [10]. Jones et al. [11] identified customer satisfaction as the most important goal of service organization. Now quality of the service is the prerequisite of customer satisfaction [12]. Besides, in some researches, customer satisfaction was directly linked to the difference between customer expectation and perception regarding any product [13, 14].

Customer satisfaction is a key source to make a positive customer relational outcomes as increased customer retention, market shares, profitability etc. Anderson and Sullivan [15], and Anderson and Srinivasan [16] found that when customers are satisfied they find the alternative products as less beneficial and when they are dissatisfied they tend to seek competitors’ product. Anderson et al. Reference [15] added that better service quality i.e., when a service meets or exceeds customer expectation, ensures higher customer satisfaction. The narrower the gap of customer expectation and actual performance the higher will be the customer satisfaction [17]. So proper service quality to provide improved customer satisfaction should be the ultimate goal for 3G service providers. Measuring service quality is very difficult and depends on individual evaluation. Several models have been developed and used to evaluate service quality. SERVQUAL model assesses service quality using five dimensions – assurance, empathy, reliability, responsiveness and tangibles [18]. Later Parasuraman et al. [19] computed service quality by the gap between customer perception and expectations. Based on this model, Kabir et al. [20] found service quality is related to customer satisfaction and customer loyalty depends on service quality, switching cost and trust in a study of mobile telecommunication in Bangladesh. Quality in mobile phone service also measured by determining the dimensions as billing, convenience, pricing, coverage, device and value added services provided [21].

Nasser et al. Reference[7] used four measures to calculate customer satisfaction – perceived quality, perceived value, corporate image and customer expectation. 3G mobile phones offer communication and computing ability together in a device of mobility [22]. Previous studies showed that customer satisfaction can affect post-purchase behavior such as re-purchase and customer recommendations [23, 24]. Furthermore, customer satisfaction is considered as general and acceptable reaction for meeting the needs or desire of customers [25].

3G supports the customer not only to seek information or communicate but also to enhance lifestyle, improve productivity and create economic opportunities [26]. 3G can also be crucial in improving lives of people from developing countries where cell phone and internet users are relatively low in number [26].

Today's customers are more concerned about having high quality 3G services that satisfy them. Therefore, 3G service providers should understand the importance of customer satisfaction and loyalty while planning strategies for user retention. In the 3G market competition exists between the mobile operators to retain their existing customers and to reach maximum number of new customers. Because of this competition, in order to retain existing customers mobile operators are offering a wide range of high quality services that are efficient, cost effective and competitive to Bangladeshi customers.

Now-a-days, like other countries, in Bangladesh there has been a steady growth in 3G mobile adoption. Almost all mobile phone service operators in our country offer 3G service. The first 3G service in our country was introduced by Teletalk, and then the rest followed. On September 8, 2013; through open tender from Bangladesh government four mobile operators bought 25 MHz spectrum. The validity period for this license is 15 years. Out of 25 MGTz, Grameen phone, Robi, Airtel and Banglalink got 10 MHz, 5 MHz, 5 MHz and 5 MHz respectively at 21 million US Dollar. The users can now avail 3G service if they purchase 3G packages provided by these operators.

The 3G services sector is an emerging industry in Bangladesh. Arguably, existing evidence has shown that very few studies have been conducted on this topic in Bangladesh. Investigating this topic would provide both the academics and practitioners ideas about Bangladeshi customer satisfaction in the mobile sector.

Based on the highlighted earlier information there is no doubt about the lack of research evidence, so this study is a response to the calls on the need to investigate the important factors such as perceived quality, perceived value, customer expectation, and corporate image that could truly affect customer satisfaction in Bangladeshi mobile phone service companies. It is expected to help the policy makers and operators understand the present situation and they should focus on better 3G service for higher customer satisfaction which will in turn ensure better revenue and sustained business.

### ***1.1. Literature Review***

Customer satisfaction plays an important role to create competitive advantage which eventually affects the profitability of the firm [27]. Different factors such as reduction in price, increased efficiency, innovation helps to improve the satisfaction [27]. On the other hand, Raja, Sharma and Shashikala [28] have acknowledged product quality, service support, product distribution, service personnel, information services and corporate brand equality as the underlying factors of customer satisfaction. Several researches were conducted to find factors influencing customer perception regarding mobile service [27, 29]. Reference [30] identified some important dimensions such as network, convenience, empathy, assurance, reliability and tangibles. Power [27] claimed the overall customer satisfaction of telecom service and products depend on six factors – customer service, reliability, billing, brand image, cost of service, and offers and promotions.

This study examined the relationship of Perceived Quality, Perceived Value, Customer Expectation and Corporate Image with Customer Satisfaction.

### ***1.2. Customer Satisfaction***

According to mobile phone service providers, customer satisfaction is the perceived degree of fulfillment of expectations and the actual services provided by them. Customer satisfaction can be achieved through good qualitative and quantitative services [31]. These ways of services must meet and satisfy the customer requirements in order to maximize the level of customer satisfaction that in turn can lead to customer loyalty. Sendecka and Nysveen [32] found that more customized, specific or better-tailored services that meet customer's needs and expectations would lead to a high level of customer satisfaction. Again value-added services offered by mobile services providers can increase both customer satisfaction and total usage, which in turn can reduce churn rate, increase revenue and repurchase of entire services in future [9]. So, customer satisfaction is totally focused on the services provided to and perceived by the customers; if there is a high similarity between perceived and provided services, than the customer satisfaction level is very high. That directly leads to high customer loyalty for mobile service providers or vice versa. Therefore, specified services of 3G are necessary to satisfy customer.

### ***1.3. Perceived Quality***

Now-a-days, in business and academia, service quality and customer satisfaction are showing importance [33]. It is established that for building profit, customer satisfaction is a main determinant [34]. Furthermore, perceived quality is the customer's assessment of the overall excellence of the service [19]. This customer judgement results from comparisons that consumers make between their expectations and their perception of the actual service performance [19, 35]. Sureshchandra et al. [33] determined that the balance of power between service quality and customer satisfaction with an emphasis on these two constructs is the concept that is different from the view of customers. In context of 3G mobile service, service quality also measured through three measurements: reliability of network, availability and accessibility.

### ***1.4. Perceived Value***

The consumer's overall assessment of the usefulness of a product based on receptions on what is received and what is given, is perceived value [36]. Therefore, companies are able to increase customer satisfaction by creating customer value through many ways, such as by providing customers with the comparative net value, effectiveness, efficiency, and differentiation of services, which can be delivered via logistics [37]. Beside this, times and places of service delivery are indicated to be important dimensions of customer perceived value, and when or where the service is delivered should be determined by customers rather than by companies.

### ***1.5. Customer Expectation***

The wishes of a customer to be received from goods or services are represented as Customers' expectation [38]. From the study of Zeithaml, Bitner, and Gremler [39], it is also defined as beliefs working as standards. The

expectation of a consumer is reported to be dependent on various out of control factors such as experience, advertising, background, attitude, beliefs, word of mouth communications, needs, and knowledge of a product or service [40, 41]. However, previous works in [42, 43, 44], showed that the customer expectation have positive and strong effect on customer satisfaction. Hence, it is essential to identify and incorporate the customer expectations into the product or service to avoid any dissatisfaction among customers [45].

### 1.6. Corporate Image

According to Bouchet [46], Corporate Image is defined as how the organization is perceived by its most important audience and the overall market. It is the combination of positive corporate personality, marketing communications and channels as well as constant positive feedback from the target audience [47]. Clow and Baack [48] suggested that corporate image provides assurance to the customer quickens purchase decision and helps the customer to get social acceptance on the decision. Many previous researchers argued in favor of corporate image and presented the importance of creating and maintaining it [49, 50, 51, 52, 53, 54, 55, 56, 57]. It offers parameters very unique to the specific company which eventually helps to build “brand recognition”, “loyalty” and “Reputation”. Not only that, Doyle and Stern [58] identified corporate image as an differential factor in developing customer confidence in the product. The results from the studies of Hart and Rosenberger [59] and Salam et al. [60] showed positive influence of corporate image on customer satisfaction. As a result, a well established corporate image leads to higher customer satisfaction [61].

## 2. Research Methodology

The purpose of this study is to analyze effect of different factors on customer satisfaction. After thorough review of the literature, hypothesis and theoretical framework of research were selected. The framework from the study of Nasser et al. [7] is adopted in this investigation which indentified four factors- perceived quality, perceived value, customer expectation and corporate image affecting Customer Satisfaction (Figure 1). Therefore, customer satisfaction is assumed dependent variable and Perceived Quality, Perceived Value, Customer Expectation and Corporate Image are considered as independent variables for the analysis.

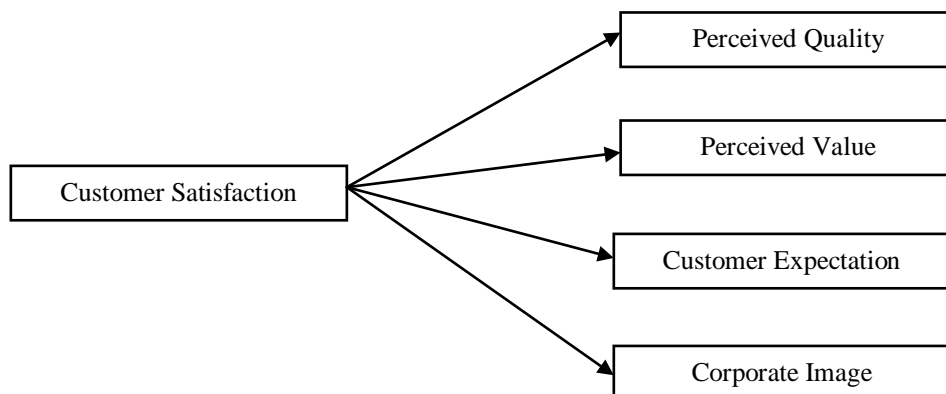


Figure 1: Theoretical Framework

Several sub-variables were chosen for each of the above variables. These variables were selected from previous investigations of Fornell et al. [42]. Variables like overall satisfaction, performance compared to expectation and ideal service are considered as indicator of customer satisfaction. The factor perceived quality was judged by after purchase opinions of the service. On the other hand, customer expectation was measured using pre-purchase opinion of overall quality, customization and reliability. Again, corporate image, another important factor was evaluated using issues like trust, stability, social contribution, customer orientation and innovation. Lastly, analysis is done on perceived value by comparing price and quality to each other.

For this primary data were collected. A pilot tested structured questionnaire was prepared and pilot testing was done. The questionnaire includes the demographic profile of the respondents and rating of different factors in a scale of 1 to 5, where 1 indicates highly dissatisfied and 5 indicate highly satisfied. Demographic profile included personal information such as age, gender, marital status, educational level, income etc. and tech behavior such as monthly usage, package choice etc. Primary data were collected using the questionnaire from 360 respondents of Dhaka using convenient sampling. As 3G is a comparatively newer technology in Bangladesh, the young generation (students) was our target as respondent. The period of study was October 2014.

After data collection, several analyses were done such as Descriptive statistics, Reliability testing and Regression analysis using Statistical Package for the Social Sciences (SPSS). Besides, four Hypotheses were tested to assess whether the four independent variables have any significant relationship with the dependant variable, “customer satisfaction of 3G users in Bangladesh” or not. These were as follows:

H1: There is a significant relationship between the perceived quality and customer satisfaction

H2: There is a significant relationship between the perceived value and customer satisfaction

H3: There is a significant relationship between the customer expectation and customer satisfaction

H4: There is a significant relationship between the corporate image and customer satisfaction

### **3. Results**

#### **3.1. Demographic profile**

Descriptive statistics were done and frequency distribution was measured on the profile of the study respondents. Among 360 students, 67.2% was male and rest 32.8% was female. Most of the participants (95.6%) were not married which is quite natural as our target correspondents were students. 70% of the students belonged to the age group of 21-25 years and Other 29.2% belong to 16-20 years old age group. Again, 68.6% of the students belong to the undergraduate level, 25.8% to the HSC level and only 3.3% to the graduate level in their educational background. As all our survey respondents were students, 91.1% did not have any income, 7.8% had 10-20 thousand BDT income per month and very few had income more than that. However, four types of packages of 3G are offered by different 3G providers in Bangladesh. These were post paid and prepaid packages for individuals and corporate clients. It was evident that 73.1% use individual prepaid packages

and 13.1% use individual postpaid ones. The usage amount per month was varied. From the feedback, 64.7% used up to 2 GB data in their cell during a month and the rest used more than that.

### 3.2. Descriptive Statistics

The descriptive analysis was performed to determine the mean, standard deviation, minimum and maximum of all variables (Table 1).

**Table 1:** Descriptive Statistics

Variables	Minimum	Maximum	Mean	Standard Deviation
Customer Satisfaction	1.00	5.00	3.39	0.73
Perceived Quality	1.33	4.67	3.20	0.67
Perceived Value	1.00	5.00	2.84	1.08
Customer Expectation	1.00	5.00	3.39	0.73
Corporate Image	1.20	5.00	3.61	0.76

The mean value of customer satisfaction was 3.39, indicated the users were moderately satisfied with the 3G service provided in Bangladesh as the minimum value was 1.00 and the maximum value was 5.00. The value of the standard deviation (0.73) revealed that there were small differences in the level of customer satisfaction. Again, perceived quality had a mean 3.20 for the minimum value 1.00 and the maximum value 4.67, which means that the perceived quality was moderate. Standard deviation 0.67 is the evidence of the small differences between values of perceived quality. However, the consumers of 3G service here think that they are getting less than average value in terms of price and quality because the mean of perceived value is 2.84. But, the standard deviation is somewhat high (1.08), so we can say there are medium dissimilarities in the opinions regarding this matter. The variables related to the expectation of customers had a mean 3.39 with standard deviation 0.73. So the users of 3G in Bangladesh do not expect very high or low about the quality, fitness and reliability of the service before buying the service. The fifth major variable, corporate image has the highest mean of 3.61 and a standard deviation of 0.76. So, the company image of 3G service providers is fairly high in the eyes of Bangladeshi clients.

### 3.3. Reliability analysis

Cronbach's Alpha was used to determine consistency and stability of the questionnaire. Several nominal and Likert type of questions were included in survey. According to Kaiser and Rice [62], most researches of social science accepted the value of Cronbach alpha is greater or equal to 0.5. The values of Cronbach alpha of different variables of this study are shown in Table 2.

**Table 2:** Reliability Statistics

Variables in Consideration	Cronbach's Alpha	No of Items
All	.898	29
Customer satisfaction, Perceived Quality, Perceived Value, Customer Expectation and Corporate Image	0.825	5
Customer satisfaction	0.719	3
Perceived Quality	0.594	3
Perceived Value	0.806	2
Customer Expectation	0.602	3
Corporate Image	0.772	5

According to the Table 2, the alpha ranges from 0.594 to 0.898 which are acceptable as the cut of criterion is 0.5. So, measurements of this research are deemed to be reliable.

**3.4. Bivariate analysis-pearson correlation**

The Bivariate Correlations analysis computed the pair wise associations for a set of variables and displayed the results in a matrix (Table 3). It is useful for determining the strength and direction of the association between two scale or ordinal variables. It can be used to calculate the Pearson correlation coefficient which measures the linear association between two scale variables. The coefficients of correlations between different pairs of variables are highlighted in Table 3. The coefficients have value between 0.4 and 0.611. This represents somewhat strong positive correlation between the variables at significance level of 0.05 for 2 tailed- test.

Though the variables are related to each other in a positive correlation, it is still not clear how much the level of customer satisfaction can be explained by the four independent variables. To answer this question, the multiple regression analysis has been included in this study.

**Table 3:** Pearson Correlation

	Customer Satisfaction	Customer Expectation	Perceived Value	Perceived Quality	Corporate Image
Customer Satisfaction	1				
Perceived Quality	.611**	1			
Perceived Value	.445**	.507**	1		
Customer Expectation	.529**	.549**	.400**	1	
Corporate Image	.584**	.534**	.432**	.561**	1

\*\*Correlation is significant at the 0.05 level (2 –tailed)



**3.5. Multiple regression analysis**

Though according to Pearson correlation the four target variables – customer expectation, corporate image, perceived value and perceived quality are related to the dependant variable – customer satisfaction, the explainable amount of variability in customer satisfaction by independent variables can be determined using Multiple Regression Analysis only. The output of the regression analysis in SPSS is presented in Tables 4, 5 and 6.

Table 4 gave coefficient of correlation, R and coefficient of determination, R<sup>2</sup>. The R<sup>2</sup> explains the variability in customer satisfaction due to the independent variables in consideration. It revealed that customer expectation, corporate image, perceived quality and perceived value were related to customer satisfaction by 69.8% in overall and they account for 48.7% variability in customer satisfaction in 3G service in Bangladesh. According to Table 4, all the major variables are measured into the model.

**Table 4:** Model Summary of regression analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.698	.487	.481	.52638

The linear relationship among the variables in regression can be evaluated using the Analysis of Variance (ANOVA) as in Table 5. The value of F was statistically significant at a level of 5% in result which suggests a linear relationship among the variables.

Table 6 shows that all the values of the t-statistic are significant and supported the hypotheses of regression analysis. Therefore, all the independent variables can be retained in the model.

Multiple regression analysis was employed to determine whether perceived quality has an effect on customer satisfaction (Table 6). The result revealed that there was a positive relationship between perceived quality and customer satisfaction at 5% level of significant. Therefore the hypothesis is accepted.

**Table 5:** ANOVA

Model		Sum of Squares	df	Mean Square	F	p-value
1	Regression	91.141	4	22.785	82.235	.000 <sup>a</sup>
	Residual	95.868	346	.277		
	Total	187.009	350			

<sup>a</sup> Significant at the 0.05 level

The value of multiple regression analysis gave the answer of the query, whether perceived value has an effect on

customer satisfaction (Table 6). The result said that there was a positive relationship between perceived value and customer satisfaction at 5% level of significant. Therefore the hypothesis is accepted.

Multiple regression analysis was used to determine whether customer expectation has an effect on customer satisfaction (Table 6). From the result it was found that there was a positive relationship between customer expectation and customer satisfaction at 5% level of significant. Therefore the hypothesis is accepted.

Multiple regression analysis was employed to determine whether corporate image has an effect on customer satisfaction (Table 6). The result revealed that there was a positive relationship between corporate image and customer satisfaction at 5% level of significant. Therefore the hypothesis is accepted.

**Table 6: Coefficients**

Model	Unstandardized Coefficients		Standardized	t	p-value
	B	Std. Error	Beta		
	(Constant)	.572	.162		3.524 .000
1	Perceived Quality	.353	.055	.327	6.383 .000
	Perceived Value	.067	.031	.098	2.128 .034
	Customer Expectation	.152	.051	.151	3.018 .003
	Corporate Image	.272	.048	.281	5.625 .000

**4. Discussion**

There are many available options for customers, in today’s competitive mobile service industry. Therefore telecommunication company should study the factors that enable a company to attract and retain a customer [7]. So, the focus of this study was to identify the key variables that significantly affect customer satisfaction in Bangladeshi mobile phone service companies. Therefore the four research questions for which the study was conducted, are as; 1) Is there any significant relationship between customers’ perceived quality and customer satisfaction? 2) Is there any significant relationship between customers’ perceived value and customer satisfaction? 3) Is there any significant relationship between customers’ expectation and customer satisfaction? 4) Is there any significant relationship between corporate image and customer satisfaction? So the study aimed to test four main hypotheses on the relations between perceived value, perceived quality, customer expectation, corporate image and customer satisfaction.

Table 7 shows that all the four variables (perceived value, perceived quality, customer expectation and corporate image) were significantly related to customer satisfaction at a 5% confidence level.

From the first hypothesis it was found that, there is a significant relationship between the perceived quality and customer satisfaction (Table 7). The results show the perceived quality has a very strong effect on the customer satisfaction.

Second hypothesis stated that, there is a significant relationship between the perceived value and customer satisfaction (Table 7). The results revealed that, perceived value is more relevant to customer satisfaction.

**Table7:** The summary of Hypotheses results

Hypotheses	Results
H1: There is a significant relationship between the perceived quality and customer satisfaction	Accepted
H2: There is a significant relationship between the perceived value and customer satisfaction	Accepted
H3: There is a significant relationship between the customer expectation and customer satisfaction	Accepted
H4: There is a significant relationship between the corporate image and customer satisfaction	Accepted

The third research question is stated as, is there any significant relationship between the customer expectation and customer satisfaction? This hypothesis stated that the customer expectation has a significant effect on customer satisfaction at a 5% confidence level (Table 7).

The fourth hypothesis gave the answer that, there is a significant relationship between the corporate image and customer satisfaction.

However, the results of correlation and multiple regressions demonstrated that perceived value, perceived quality, customer expectation and corporate image were significantly related to customer satisfaction as hypothesized (Table 3, Table 6).

All the four objectives of the study investigated the relationship between the four independent variables as perceived value, perceived quality, customer expectation and corporate image have positive influence on customer satisfaction. Since this finding had answered all research questions and objectives as well as supported the hypotheses, the study confirmed the relationship between the independent variables perceived value,

perceived quality, customer expectation, corporate image and the dependent variable customer satisfaction.

## **5. Conclusion**

In order to survive in the competitive market the service providers should offer attractive promotions and services to draw customers. Hence the service providers should know the effects that will make customers satisfied to keep customer loyalty on the telecommunications service. This study is very informative especially for Bangladeshi mobile service providers. The results of the study focused on identifying the key variables that significantly affect customer satisfaction in 3G service. The study concluded that perceived value, perceived quality, customer expectation and corporate image are the driving force for achieving customer satisfaction in the Bangladeshi mobile service market. Therefore the companies should consider these variables to acquire high customer satisfaction.

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