
FACTORS AFFECTING CUSTOMER SATISFACTION IN MOBILE TELECOMMUNICATION INDUSTRY IN BANGLADESH

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Abstract. Identification of factors responsible for customer satisfaction is a key concern of marketing scholars and marketers in now a days and it will remain in the future. There is considerable evidence that quality factors affecting customer satisfaction in numerous ways. However, this empirical study is initiated to find out what particular factors responsible for customer satisfaction in the mobile telecommunication industry in Bangladesh. 282 samples have been collected through structured questionnaire; study reveals that service innovativeness, service reliability, service competitiveness and service consistency have significant influence on making customer satisfied and the operator's network/signal coverage, pricing, offering, fulfillment of customer demand, value added service, brand value and operators contribution for society have insignificant influences on making customer satisfied at five percent level of significant at multiple regression analysis. On the basis of these findings; study concludes that in promoting customer satisfaction mobile service providers should be concerned for factors responsible for insignificant influence on customer satisfaction and care of those factors have significant influence on promoting customer satisfaction in telecommunication industry in Bangladesh.

Keywords: customer satisfaction, quality factors, customer, mobile telecommunication.

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1. Introduction

Today, telecommunication is an inseparable part of our everyday life. Besides telephone, now-a-days mobile phones are playing a great role to communicate from one place to another place. The phone is not only used for making calls, among many other functions, it is used for communicating through text-messages, multi-media messages, as

well as to connect us to the internet. The opportunities that lie in the telecom market seem endless and the growing demand for mobile telephony systems is creating a world-wide market. Actors in this industry are seeking the most profitable markets throughout the world (Hossain, Suchy 2013). The mobile telecommunication is one of the fastest growing industrial sectors in Bangladesh. It is projected that Bangladesh will be the third biggest telecom market in Asia after China and India (Uddin, Akhter 2012). The competition in this sector has become very intense and the companies' need for survival, in these very difficult conditions that dominate in this sector, forces them to search for ways to attract and retain customers (Vranakis *et al.* 2012). The increases in the number of subscribers on the various operators in Bangladesh have brought with it the challenges of customer satisfaction. Though the industry is relatively new yet the growth is much faster in comparison to other industries due to aggressive market oriented business strategy. The mobile telecommunication industry of Bangladesh is going towards high market penetration rate. Many foreign investors are now interested to do business in telecom sector in Bangladesh which reveals that Bangladesh has become a significant hub for telecoms. Bangladesh has currently six mobile phone operators in Mobile Telecommunication Industry (BTRC 2014). This industry has reached maturity stage in telecommunication business in 2G network services. Mobile telecommunication industry of Bangladesh has rapidly expanded in recent years. The total number of Mobile Phone subscribers has reached 111.797 million at the end of October 2013 (BTRC 2014).

Table 1. Market Share (Source: BTRC, January 2014)

Operators	Active Subscribers	Percentage
Grameen Phone Ltd. (GP)	46.663	41.74
Banglalink Digital Communications Limited	28.387	25.39
Robi Axiata Limited (Robi)	24.835	22.22
Airtel Bangladesh Limited (Airtel)	8.229	7.36
Pacific Bangladesh Telecom Limited (Citycell)	1.344	1.20
Teletalk Bangladesh Ltd. (Teletalk)	2.340	2.09
Total	111.797	100.00

Table 1 shows Grameenphone, the largest mobile operator in the country, reached 46.663 million at October 2013 at the rate of 41.74% market share, Banglalink acquired 28.387 million subscribers October 2013 at the rate of 25.39% market share, Robi captured 24.835 million subscribers October 2013 at the rate of 22.22% market share, Airtel captured 8.229 million subscribers October 2013 at the rate of 7.36% market share, Citycell maintained 1.344 million subscribers October 2013 at the rate of 1.20% market share and Teletalk captured 2.340 million subscribers October 2013 at the rate of 2.09% market share.

The Bangladesh Telecommunication Regulatory Commission (BTRC) gave the approval of the 3G service packages for the three private operators in conformity with that of the state-owned telecom operator, Teletalk. The operator bought spectrum of 2100 bands with the cost of US\$ 21 million per megahertz (MHz) spectrum. Only GP bought 10 MHz spectrum while others bought 5MHz spectrum each for the 3G service (BTRC 2014). The new era is introducing, advancement in mobile telecommunication appeared. Mobile operators in Bangladesh currently provide voice call, voice message, SMS, MMS, internet service, international roaming and information services e.g., news, stock quotes, weather, etc. Operators are enthusiastic to promote quality of services for customer satisfaction at present and near the future.

In spite of these outstanding and remarkable improvements in accessibility of mobile services in Bangladesh; there are higher rate of customer complaints on the high rate of tariff, interrupted voice signals, irresponsible to customer preference, poor customer service, connection errors, poor interconnect with other networks. There is therefore the operators need to evaluate the determinants of customer satisfaction in the mobile telecommunication industry in Bangladesh. The customer remains the key concern of marketer and marketing manager now a days and it will remain the future; because customer performs a key role in business, without customer business is impossible. It is customer for which business is created. There are considerable evidences that higher customer satisfaction leads to higher profitability in business. In today's competitive business; marketing manager concern for attracting, developing and maintaining customers through quality of customer services that of the competitors do.

Therefore, this study is initiated to investigate respondents demographic, to investigate user's value added service interface, to identify the factors (service innovativeness, service reliability, service competitiveness, service consistency, the operator's network/signal coverage, pricing, offering, fulfillment of customer demand, value added service, brand value and operators contribution for society) responsible for customer satisfaction in mobile telecommunication industry in Bangladesh and finally provides some policy implications on the basis of findings of the study.

2. Literature review

2.1. Customer satisfaction

Creating satisfied and loyal customers is a key concern of marketers and marketing managers in now a days and it will remain in the future. It is well accepted that customer satisfaction is both a goal and a marketing tool for customer-centered companies (Kotler, Keller 2012). Customers' satisfaction with their purchase is a significant factor that leads business to success. In recent times, customer satisfaction has gained new attention within the context of the paradigm shift from transactional marketing to relationship marketing (Sheth, Parvatiyar 1994). Organizations can accomplish cus-

customer satisfaction by satisfying their customers' needs and wants (LaBarbera, Mazursky 1983). Customer satisfaction as a judgment that a product or service feature, or the product or service itself, provides a pleasurable level of consumption related fulfillment (Oliver 1997). In general satisfaction is a person's feelings of pleasure or disappointment that result from comparing a product's perceived performance or outcome to the expectation (Oliver, Richard 2006). If the performance falls short of expectations, the customer is dissatisfied. If the performance matches the expectations the customer is satisfied. If the performance exceeds expectations, the customer is highly satisfied and delighted (Fournier, Mick 1999). In case of mobile commerce, customer satisfaction is customer's post-purchase appraisal and emotional response or reaction to the overall product or service, familiarity in a mobile commerce environment (Lin, Wang 2006). Jones, Sasser (1995) mentioned that achieving customer satisfaction is the main goal for most service firms today. Increasing customer satisfaction has been shown to directly affect companies' market share, which leads to improved profits, positive recommendation, and lower marketing expenditures and greatly impact the corporate image and survival (Pizam, Ellis 1999). Better service quality results in enhanced customer satisfaction, which in turn leads to strong customer loyalty. It can be stated that customers, when satisfied with the services they have experienced, are more likely to establish loyalty (Taylor *et al.* 1993), resulting in repeat purchases (Fornell 1992) and favorable word-of-mouth (Halstead, Page 1992).

In today's dynamic business environment from the firm's point of view, it is about building and sustaining a strong relationship with their customers by understanding the ingredients of customer satisfaction. The key to customer loyalty is customer satisfaction which largely depends on the service quality offered by service providing firms. Service quality and customer satisfaction have been identified as key elements of the service-profit chain (Heskett *et al.* 1997). Customer service quality is a significant source of distinctive competence and often considered a key success factor in sustaining competitive advantage in service industries (Palmer 2001). Nowadays, delivering quality service is an integral part of an ongoing strategy of most business firms and constitutes an essential ingredient for success and survival in the present day's competitive environment (Ulwick, Bettencourt 2008).

2.2. Factors affecting customer satisfaction

Service quality has been the subject of considerable interest by both practitioners and researchers in recent years (Henderson 2013). According to the satisfaction model customer satisfaction is influenced by service quality (Uddin, Akhter 2012). When customers get expected service quality, it leads to higher satisfaction (Hutchinson *et al.* 2009). Quality is a multi-dimensional phenomenon (Mosahab *et al.* 2010). Thus, reaching the service quality without distinguishing the important aspects of quality is impossible. In his discussion of service quality, Gronroos (2000) refers to three dimensions of output technical quality, service performance quality, and an organization's mental

picture. Parasuraman *et al.* (1988) identified 10 detailed determinants of service quality through focus group studies: Tangibles, reliability, responsiveness, communication, access, competence, courtesy, credibility, security, understanding/Knowledge of the customer. Later these ten dimensions were further purified and developed five dimensions-tangibles, reliability, responsiveness, assurance and empathy to measure service quality, SERVQUAL (Parasuraman *et al.* 1988). The SERVQUAL instrument has been the predominant method used to measure consumers' perceptions of service quality. It has five generic dimensions or factors and is stated as follows:

- Tangibles: Physical facilities, equipment and appearance of personnel.
- Reliability: Ability to perform the promised service dependably and accurately.
- Responsiveness: Willingness to help customers and provide prompt service.
- Assurance: (Including competence, courtesy, credibility and security). Knowledge and courtesy of employees and their ability to inspire trust and confidence.
- Empathy: (Including access, communication, understanding the customer). Caring and individualized attention that the firm provides to its customers (Dehghan *et al.* 2012).

McKenna (1991) suggests that organizations to achieve satisfied customers should forget about market reviews, advertising, and promotions instead they should emphasize appropriate infrastructure in order to provide appropriate products and services to meet customer's needs. Therefore, in order to upgrade the perceived quality, regular assessment of customers' needs, desires, tastes, and interests is recommended (Ranjbarian *et al.* 2012).

Several factors affect on customer satisfaction, price is one of them. Price is used as an indicator of product quality, which results in better expectations from the product and determines higher satisfaction. The research shows that price perceptions directly influence satisfaction judgments as well as indirectly through perceptions of price fairness (Herrmann *et al.* 2007). Price reasonability and consumer satisfaction are significantly associated with each other. The customers can switch to any other cellular service provider who offers fair prices this reveals that the consumers can be held on to for a longer duration by offering them the fair prices so; the customer satisfaction is caused by the fairness of the price (Ali *et al.* 2010).

The company brand image is a valuable intangible capital that is hard to imitate and it can help an organization to achieve a sustainable and superior financial performance (Roberts, Dowling 2002). The company image is defined as the total impression that the public has for a company. From the companies' perspective, being reliable, professional and innovative, having social contribution and valuing the customers are the elements that form the company image (Vranakis *et al.* 2012). Martensen *et al.* (2000) indicate that the image is an important element in the customer satisfaction model. The image is expected to have a positive relationship towards the customer expectations, customer satisfaction and loyalty of customers to the company. Gupta (2002) found

the empirical evidence between corporate reputation and competitive advantage for the firms by successfully differentiating it from competitors. Among the components of competitive advantage are willing to purchase, willingness to pay a premium price, customer satisfaction and customer loyalty. Meanwhile, the components of a company's reputation found by Gupta (2002) are corporate ability and corporate social responsibility. This finding supports the popular view in business literature that when customers are faced with parity in price and quality of a product, they would prefer to choose products from the company that contributes to corporate social responsibility when making the consumption related decision.

The rapid changes in the technology are the challenge for the companies to satisfy the customers and to get their loyalty through innovative products. The innovation used for strategic orientation toward customer satisfaction, loyalty, and to gain market potential that increases the market share of the company. Innovativeness is described as a process of converting the invention or idea into a product that customer purchase and provides financial benefits to its providers. This idea that has to convert into an innovation into a product or service must have the quality to satisfy some specific needs of the customers and can be implemented at an economic cost to be converted into an innovation. Service innovativeness, or the propensity to introduce service innovations

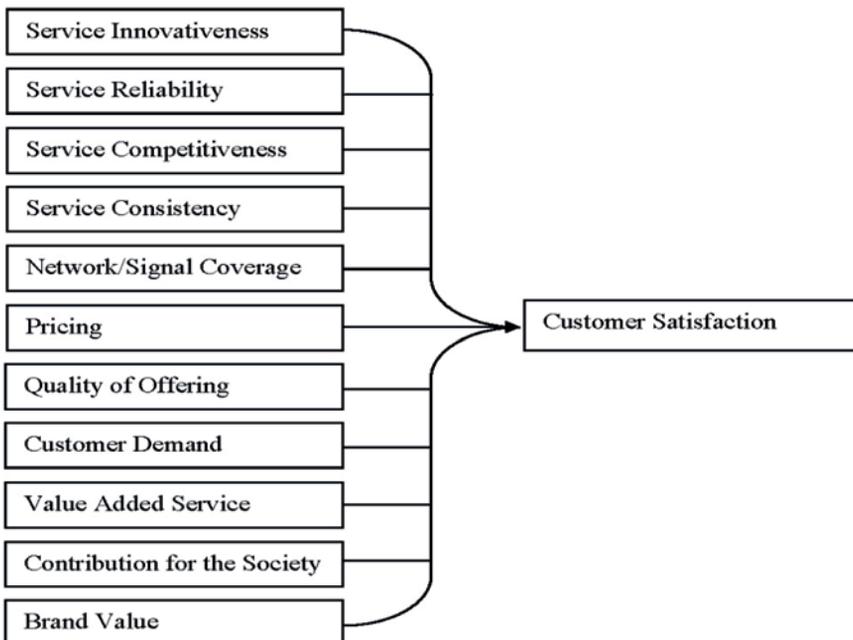


Fig. 1. Factors affecting customer satisfaction (source: created by the author)

to satisfy customers and improve firm value at acceptable risk, has become a critical organizational capability (Dotzel *et al.* 2013).

Signal quality and network coverage have always been essential criteria for selecting MTS providers. During the previous years, where technology had not advanced so much in this area, company networks were limited only to certain locations. Today the signal quality has been improved and the company networks have grown to a great extent. Surveys have shown that both signal quality and network coverage affect positively consumer's satisfaction and the image of the company (Woo, Fock 1999).

The strategic importance of managing customers' complaints was examined for the first time by Fornell, Westbrook in 1984. They showed that by encouraging the expression of customer complaints today, a company might be able to decrease future complaints. It is very important for any customer to know where he can address his complaints which will be given the proper consideration (Vranakis *et al.* 2012).

Currently mobile service provider's concern for providing value added service for promoting customer satisfaction; includes SMS, MMS, voice call service, SMS alert, information service etc. This study is concern for assessment of customer satisfaction on the basis of several quality factors (see Fig. 1) like; service innovativeness, service reliability, service competitiveness, service consistency, the operator's network/signal coverage, pricing, offering, fulfillment of customer demand, value added service, brand value and operators contribution to society.

3. Research methodology

This Section defines the research design, conceptual framework, hypothesis development, population samples, data collection procedures and the techniques of data analysis and reliability test for examining the factors that affect customer satisfaction in the mobile telecommunication industry in Bangladesh. The said factors are service innovativeness, service reliability, service competitiveness, service consistency, the operator's network/signal coverage, pricing, offering, fulfillment of customer demand, value added service, brand value, operators contribution to society and customer satisfaction.

This study is descriptive and hypotheses testing in natural. This study aimed to examine the factors that affect the customer satisfaction to the customers of mobile services. This study was involved the hypothesis testing based on what has been developed in the conceptual model. The hypothesis tested was explaining the relationship between the independent and dependent variables.

A conceptual model (Fig. 2) was developed to explain the satisfaction of services that directs the proposed relationship between independent and dependent variables. This relationship, then, was tested with the empirical findings.

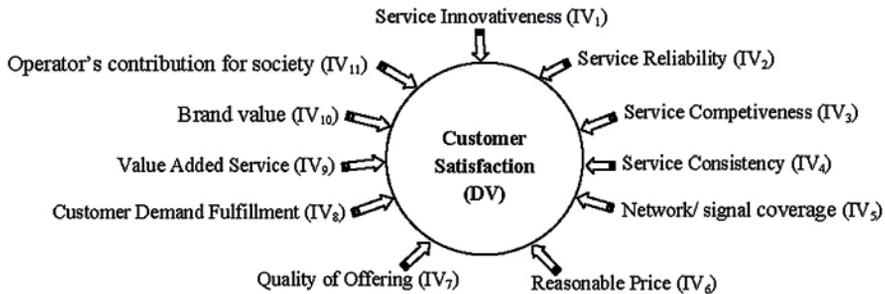


Fig. 2. Conceptual model developed by author

In this study, the hypotheses have been selected based on the literature review mentioned above to describe the relationship among those variables that influences on customer satisfaction.

H₁: There is a positive/significant relationship between the service innovativeness and customer satisfaction.

H₂: There is a positive/significant relationship between the service reliability and customer satisfaction.

H₃: There is a positive/significant relationship between the service competitiveness and customer satisfaction.

H₄: There is a positive/significant relationship between the service consistency and customer satisfaction.

H₅: There is a positive/significant relationship between the network/signal coverage and customer satisfaction.

H₆: There is a positive/significant relationship between the reasonable price and customer satisfaction.

H₇: There is a positive/significant relationship between the quality of offerings and customer satisfaction.

H₈: There is a positive/significant relationship between the customer demand fulfillment and customer satisfaction.

H₉: There is a positive/significant relationship between the value added service and customer satisfaction.

H₁₀: There is a positive/significant relationship between the brand value and customer satisfaction.

H₁₁: There is a positive/significant relationship between the operators contribution to society and customer satisfaction.

For questionnaire survey convenient method of sampling was used. There is an available source of the address of mobile phone users. Therefore, friends, relatives, and other informal reference group were used to locate the potential respondents in

Bangladesh. Questionnaires were sent by email, postal mail and directed to 400 respondents of mobile phone users. The number of initial replies received was 240. After a screening first round replies a second round personal contact conducted by a researcher and finally 282 respondents were taken for this study.

This study mainly based on primary data originating from a survey. For this purpose a constructed questionnaire was developed. Excepting the questions regarding demographic characteristics and user’s value added service interface of the respondents and the issues relating to service innovativeness, service reliability, service competitiveness, service consistency, the operator’s network/signal coverage, pricing, offering, fulfillment of customer demand, value added service, brand value, operators contribution to society and customer satisfaction were constructed, measured and investigated through 5 point Scale standardized by Brayfield-Rothe (1951). The scale consists of 12 statements, for each statement has five options/points such as strongly agree/5, agree/4, undecided/3, disagree/2, and strongly disagree/1.

SPSS Statistics software package was used for statistical analysis. Scale Reliability Test based on 282 valid sample case processing. ANOVA Table 2 indicates that scale reliability is significant ($F = 52.595$, $p = .000$) at the 5% level of significance.

Table 2. ANOVA (source: created by the author)

		Sum of Squares	df	Mean Square	F	Sig
Between People		1046.040	281	3.723		
Within People	Between Items	517.585	11	47.053	52.595	.000
	Residual	2765.332	3091	.895		
	Total	3282.917	3102	1.058		
Total		4328.957	3383	1.280		
Grand Mean = 3.32						

Table 3. Reliability statistics (source: created by the author)

Cronbach’s Alpha	N of Items
.760	12

Reliability of data was measured by using the Cronbach’s Alpha (Cronbach 1951). Cronbach Alpha is 0.760 (see Table 3). Alpha is higher than that is suggested by Nunnally (1978) and therefore data collected can be considered reliable. Descriptive statistical techniques such as mean and standard deviation were used to measure the mean scores and their variability. Pearson Correlation is used to indicate correlations among the variables, Linear Regression analysis is used to test the hypothesis.

4. Data analysis and empirical findings

Survey results in Table 4 indicate that; the questionnaires were distributed to the users of mobile phones among them 63.1% respondents at first time has used GP service, 18.4% users were Banglalink, 5.3% users were Robi, 3.2% users were Airtel, 2.5% were Taletalk, 7.4% were Citycell users. Among them, 56.7% respondents currently use GP service, 16.0% use Banglalink service, 7.4% use Robi, 12.8% use Airtel service, 3.9% currently use Taletalk service and 3.2% currently use Citycell service. Among the respondents, 71.6% users use multiple operators' service. 19.5% users use the mobile service under 3 years, 36.9% respondents use within 3–6 years, 43.6% use for 6 years and above. Respondents under 30 years comprise 77.0%, within 30–45 years users comprise 16.0% and above 45 years users are 7.1%. 59.6% respondent's monthly expense bellows Tk.500, 28.4% incur expense within Tk. 500–1000 and 12.1% respondents have above Tk 1000 monthly expense. Among the respondent's 6.7% below SSC, 5.7% SSC, 31.2% HSC, 35.1% Bachelor, 20.6% Master, 0.7% PhD degree. 58.9% Student, 24.5% Service Holder, 8.9% Businessman and 7.8% respondent's occupying other profession. 79.8% Male and 20.2% are Female respondents.

Table 4. Survey results (2013–2014) (source: created by the author)

Demographic Variables		Frequency	Percent	Cumulative %
First Mobile Operator	GP	178	63.1	63.1
	Banglalink	52	18.4	81.6
	Robi	15	5.3	86.9
	Airtel	9	3.2	90.1
	Taletalk	7	2.5	92.6
	Citycell	21	7.4	100.0
	Total	282	100.0	
Current Mobile Operator	GP	160	56.7	56.7
	Banglalink	45	16.0	72.7
	Robi	21	7.4	80.1
	Airtel	36	12.8	92.9
	Taletalk	11	3.9	96.8
	Citycell	9	3.2	100.0
	Total	282	100.0	
Use of Multiple Operator's Service	Yes	202	71.6	71.6
	No	80	28.4	100.0
	Total	282	100.0	
Year of Connection	below 3 years	55	19.5	19.5
	3-6 years	104	36.9	56.4
	6 years and above	123	43.6	100.0
	Total	282	100.0	
Age	bellow 30 years	217	77.0	77.0
	30–45 years	45	16.0	92.9
	above 45 years	20	7.1	100.0
	Total	282	100.0	

End of Table 4

Monthly Mobile Expense	bellow Tk 500	168	59.6	59.6
	Tk 500–1000	80	28.4	87.9
	above Tk 1000	34	12.1	100.0
	Total	282	100.0	
Education	below SSC	19	6.7	6.7
	SSC	16	5.7	12.4
	HSC	88	31.2	43.6
	Bachelor	99	35.1	78.7
	Master	58	20.6	99.3
	PhD	2	.7	100.0
	Total	282	100.0	
Profession	Student	166	58.9	58.9
	Service Holder	69	24.5	83.3
	Businessman	25	8.9	92.2
	Others	22	7.8	100.0
	Total	282	100.0	
Gender	Male	225	79.8	79.8
	Female	57	20.2	100.0
	Total	282	100.0	

Table 5 shows: among the mobile phone user's 100% respondents use Voice call service. 24.8% use voice SMS service, 95.7% use SMS service, 35.8% use MMS service, 67% use internet service, and 26.2% use information service.

Table 5. User's value added service interface (Survey 2013–2014) (source: created by the author)

User's value added Service Interface		Frequency	Percent	Cumulative %
Voice Call	Yes	282	100.0	100.0
	No			
Voice SMS	Yes	70	24.8	24.8
	No	212	75.2	100.0
	Total	282	100.0	
SMS	Yes	270	95.7	95.7
	No	12	4.3	100.0
	Total	282	100.0	
MMS	Yes	101	35.8	35.8
	No	181	64.2	100.0
	Total	282	100.0	
Internet Service	Yes	189	67.0	67.0
	No	93	33.0	100.0
	Total	282	100.0	
Information Services	Yes	74	26.2	26.2
	No	208	73.8	100.0
	Total	282	100.0	

Descriptive statistics such as mean (5-point scale) and standard deviation (Higher σ indicates higher variability of customers' perceptions) were used to measure the variables and also used to describe the mean of dependent and independent variables. Table 6 shows the mean value of service innovativeness is 3.50 and standard deviation 0.992. The mean value of service reliability is 3.53 and standard deviation 0.977. The mean value of service competitiveness is 3.39 and standard deviation 1.146. The mean value of service consistency is 3.32 and standard deviation 1.005. The mean value of network/signal coverage is 3.68 and standard deviation 1.144. The mean value of reasonable price is 2.77 and standard deviation 1.190. The mean value of quality of offering is 2.68 and standard deviation 1.134. The mean value of fulfillment of customer demand is 2.69 and standard deviation 1.142. The mean value of value added service is 3.27 and standard deviation 1.000. The mean value of brand value is 3.94 and standard deviation 0.930. The mean value of the operator's contribution to society is 3.39 and standard deviation 1.048. Finally, the mean value of customer satisfaction is 3.68 and standard deviation 1.012.

Table 6. Descriptive statistics (source: created by the author)

Variables	Factors	N	\bar{X}	σ
Independent Variable (IV ₁)	Service innovativeness	282	3.50	0.992
Independent Variable (IV ₂)	Service reliability	282	3.53	0.977
Independent Variable (IV ₃)	Service competitiveness	282	3.39	1.146
Independent Variable (IV ₄)	Service consistency	282	3.32	1.005
Independent Variable (IV ₅)	Network/ signal coverage	282	3.68	1.144
Independent Variable (IV ₆)	Reasonable price	282	2.77	1.190
Independent Variable (IV ₇)	Quality of offering	282	2.68	1.134
Independent Variable (IV ₈)	Fulfillment of customer demand	282	2.69	1.142
Independent Variable (IV ₉)	Value added service	282	3.27	1.000
Independent Variable (IV ₁₀)	Brand value	282	3.94	0.930
Independent Variable (IV ₁₁)	Operators contribution to society	282	3.39	1.048
Dependent Variable (DV)	Customer satisfaction.	282	3.68	1.012

Bivariate Correlations are used to know the nature, direction and significance of the bivariate relationship of the variables of this study. Therefore, the researcher used the Bivariate Correlations procedure to compute Pearson's correlation coefficient. Table 7 shows the Pearson's correlation coefficient of the variables of the study. Based on the analysis presented in Table 7 the results show that there is a positive/significant relationship between the service innovativeness (IV₁) and customer satisfaction (DV), indicates that there is a significant/positive correlation between two variables

with coefficient correlation $r = .453$ at $p < 0.00$ level. In addition, There is a positive/significant relationship between the service reliability (IV₂) and customer satisfaction (DV), indicates that there is a positive/significant correlation between two variables with coefficient correlation $r = .450$ at $p < 0.00$ level. Therefore, there is a positive/significant relationship between the service competitiveness (IV₃) and customer satisfaction (DV), indicates that there is a significant/positive correlation between two variables with coefficient correlation $r = .502$ at $p < 0.00$ level. The result presents that, there is a positive/significant relationship between the service consistency (IV₄) and customer satisfaction (DV), indicates that there is a significant/positive correlation between two variables with coefficient correlation $r = .236$ at $p < 0.00$ level. As the result shows, there is a positive relationship between the network/ signal coverage (IV₅) and customer satisfaction (DV), indicates that there is a positive correlation between two variables with coefficient correlation $r = .048$ at $p < 0.421$ level. Furthermore, the result shows that, There is a positive/significant relationship between the reasonable price (IV₆) and customer satisfaction (DV), indicates that there is a significant/positive correlation between two variables with coefficient correlation $r = .239$ at $p < 0.00$ level. It is found that there is a positive/significant relationship between the quality of offering (IV₇) and customer satisfaction (DV), indicates that there is a significant/positive correlation between two variables with coefficient correlation $r = .217$ at $p < 0.00$ level. In addition, There is a positive/significant relationship between the customer demand fulfillment (IV₈) and customer satisfaction (DV), indicates that there is a significant/positive correlation between two variables with coefficient correlation is $r = .291$ at $p < 0.00$ level. Furthermore, the result shows that, There is a positive/significant relationship between the value added (IV₉) service and customer satisfaction (DV), indicates that there is a significant/positive correlation between two variables with coefficient correlation is $r = .268$ at $p < 0.00$ level. It is found that There is a positive/significant relationship between the brand value (IV₁₀) and customer satisfaction (DV), indicates that there is a significant/positive correlation between two variables with coefficient correlation is $r = .179$ at $p < 0.00$ level. Finally, There is a positive/significant relationship between the operators contribution to society (IV₁₁) and customer satisfaction (DV), indicates that there is a significant/positive correlation between two variables with coefficient correlation is $r = .272$ at $p < 0.00$ level.

Table 7. Correlations among variables (source: created by the author)

	IV ₁	IV ₂	IV ₃	IV ₄	IV ₅	IV ₆	IV ₇	IV ₈	IV ₉	IV ₁₀	IV ₁₁
DV Pearson Correlation	.453**	.450**	.502**	.236**	.048	.239**	.217**	.291**	.268**	.179**	.272**
Sig. (2-tailed)	.000	.000	.000	.000	.421	.000	.000	.000	.000	.003	.000
N	282	282	282	282	282	282	282	282	282	282	282

Notes: **: Correlation is significant at the 0.01 level (2-tailed);

*: Correlation is significant at the 0.05 level (2-tailed).

In order to achieve the objective of this study, multiple regressions were used to study the effect of the independent variables (X_1 = service innovativeness, X_2 = service reliability, X_3 = service competitiveness, X_4 = service consistency, X_5 = network/signal coverage, X_6 = reasonable price, X_7 = quality of offering, X_8 = customer demand fulfillment, X_9 = value added service, X_{10} = brand value, X_{11} = operators contribution to society) to dependent variable (Y = customer satisfaction).

Significance level for, variables are accepted on Alpha (α) = 1%, significance level = 99% significant at 1% (*). Table 8 shows the analysis of multiple regressions. The value of R is .638, the value of R square is .407 and the standard error of the estimate was .795. The model summary and the data are shown in Table 8.

Table 8. Model summary (source: created by the author)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.638 ^a	.407	.382	.795

^a Predictors: (Constant), service innovativeness, service reliability, service competitiveness, service consistency, the operator’s network/signal coverage, pricing, offering, fulfillment of customer demand, value added service, brand value, operators contribution to society.

The results from Table 8 show that the regression equation explains more than 40.7% of the variability in customer satisfaction. This is an acceptable level for R^2 (R Square) in explaining variability of customer satisfaction. The results of the multiple regression models indicate that service innovativeness, service reliability, service competitiveness, service consistency, the operator’s network/signal coverage, pricing, offering, fulfillment of customer demand, value added service, brand value, operators contribution to society explain the variance in customer satisfaction. The value of the R^2 (R Square) is an acceptable value for explaining variability of customer satisfaction.

Analysis of variance test statistics (ANOVA) indicates that the model is significant at $\alpha = 0.000$. Table 9 provides the information on the significance of the model indicating a significant p-value of 0.000. The ANOVA findings are shown in Table 9 below.

Table 9. ANOVA^b (source: created by the author)

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	116.948	11	10.632	16.818	.000 ^a
Residual	170.686	270	.632		
Total	287.635	281			

^a Predictors: (Constant), service innovativeness, service reliability, service competitiveness, service consistency, the operator’s network/signal coverage, pricing, offering, fulfillment of customer demand, value added service, brand value, operators contribution to society.

^b Dependent Variable: Customer satisfaction.

Table 9 shows the ANOVA findings that the independent variables as a whole have significant relationships with customer satisfaction ($F = 16.818$) (Sig 0.000). Furthermore, this result is supported by the significant correlation among the variables. The findings

show that the multiple regression coefficients for all independent variables with customer satisfaction is R (.638) and R square (.407). The number of independent variables relative to the sample size influences R square. The adjusted R square becomes smaller as fewer observations per independent variable are made. It reflects the decreasing ratio of estimated coefficients to the sample size and compensates for (Over fitting) of the data as R square increases (Hair *et al.* 2006). Table 10 shows that the values of the T-statistic are significant for service innovativeness, service reliability, service competitiveness and service consistency. Thus, all the independent variables can be retained in the model. In other word, these variables can explain the change in customer satisfaction. Table 10 shows that four independent variables were found to be very significant and supportive of the hypothesis regression analysis except the operator’s network/signal coverage, pricing, offering, fulfillment of customer demand, value added service, brand value, operators contribution to society was not statistically significant and it does not support the hypothesis.

Table 10. Coefficients^a (source: created by the author)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.461	.309		1.489	.138
Service innovativeness	.187	.059	.183	3.164	.002
Service reliability	.213	.056	.206	3.784	.000
Service competitiveness	.249	.049	.282	5.118	.000
Service consistency	.113	.053	.112	2.142	.033
Network/signal coverage	-.046	.048	-.052	-.965	.335
Reasonable price	.031	.051	.037	.617	.538
Quality of offering	-.030	.056	-.033	-.533	.594
Fulfillment of customer demand	.092	.054	.104	1.718	.087
Value added service	.017	.054	.017	.317	.751
Brand value	.051	.060	.047	.865	.388
Operators contribution to society	.073	.053	.076	1.387	.167

^a Dependent Variable: Customer satisfaction.

Multiple regression analysis in Table 10 was employed to determine whether service innovativeness has an effect on customer satisfaction; the result of regression analysis revealed that there is a significant relationship between service innovativeness and customer satisfaction ($p = .002$); $B = .187$. The first (H_1) hypothesis is accepted because the result of significance is less than 0.05 (Significance requirement standard < 0.05). The result of regression analysis revealed that there is a significant relationship between service reliability and customer satisfaction ($p = .000$); $B = .213$. The second (H_2) hypothesis is accepted because the result of significance is less than 0.05 (Significance requirement standard < 0.05). The result of regression analysis revealed that there is a significant relationship between service competitiveness and customer satisfaction ($p = .000$); $B = .249$. The third (H_3) hypothesis is accepted because the result of significance is less than 0.05 (Significance requirement

standard < 0.05). The result of regression analysis revealed that there is a significant relationship between service consistency and customer satisfaction ($p = .033$); $B = .133$. The fourth (H_4) hypothesis is accepted because the result of significance is less than 0.05 (Significance requirement standard < 0.05). The regression analysis as in Table 10 was employed to determine whether the Network/signal coverage has an effect on customer satisfaction; the result of regression analysis revealed that there was no significant relationship between these two variables at the significance level ($p = .335$) $B = -.046$. Because the significant value can't be met the requirement which is the value of significant should be less than 0.05. Therefore, fifth hypothesis (H_5) is rejected. The result of regression analysis revealed that there is a significant relationship between reasonable price and customer satisfaction ($p = .538$); $B = .031$. Because the significant value can't be met the requirement which is the value of significant should be less than 0.05. Therefore, sixth hypothesis (H_6) is rejected. The result of regression analysis revealed that there is a significant relationship between quality of offering and customer satisfaction ($p = .594$); $B = -.030$. Because the significant value can't be met the requirement which is the value of significant should be less than 0.05. Therefore, seventh hypothesis (H_7) is rejected. The result of regression analysis revealed that there is a significant relationship between fulfillment of customer demand and customer satisfaction ($p = .087$); $B = .092$. Because the significant value can't be met the requirement which is the value of significant should be less than 0.05. Therefore, eighth hypothesis (H_8) is rejected. The result of regression analysis revealed that there is a significant relationship between value added service and customer satisfaction ($p = .751$); $B = .017$. Because the significant value can't be met the requirement which is the value of significant should be less than 0.05.

Table 11. The summary of hypotheses results (source: created by the author)

Hypotheses	Results
H_1 : There is a positive/significant relationship between the service innovativeness and customer satisfaction.	Accepted
H_2 : There is a positive/significant relationship between the service reliability and customer satisfaction.	Accepted
H_3 : There is a positive/significant relationship between the service competitiveness and customer satisfaction.	Accepted
H_4 : There is a positive/significant relationship between the service consistency and customer satisfaction.	Accepted
H_5 : There is a positive/significant relationship between the network/signal coverage and customer satisfaction.	Rejected
H_6 : There is a positive/significant relationship between the reasonable price and customer satisfaction.	Rejected
H_7 : There is a positive/significant relationship between the quality of offering and customer satisfaction.	Rejected
H_8 : There is a positive/significant relationship between the customer demand fulfillment and customer satisfaction.	Rejected
H_9 : There is a positive/significant relationship between the value added service and customer satisfaction.	Rejected
H_{10} : There is a positive/significant relationship between the brand value and customer satisfaction.	Rejected
H_{11} : There is a positive/significant relationship between the operators contribution to society and customer satisfaction.	Rejected

Therefore, ninth hypothesis (H_9) is rejected. The result of regression analysis revealed that there is a significant relationship between brand value and customer satisfaction ($p = .388$); $B = .051$. Because the significant value can't be met the requirement which is the value of significant should be less than 0.05. Therefore, tenth hypothesis (H_{10}) is rejected. The result of regression analysis revealed that there is a significant relationship between operators contribution to society and customer satisfaction ($p = .167$); $B = .073$. Because the significant value can't be met the requirement which is the value of significant should be less than 0.05. Therefore, eleventh hypothesis (H_{11}) is rejected. Finally, table 11 shows summary of hypotheses results.

5. Conclusions and recommendations

Customer satisfaction is a parameter for measuring profitability of business; higher satisfaction leads to higher sales of merchandise and services generating higher revenues of the business. Particular factors that heighten customer satisfaction have greater concentration of marketers to care about it. In this study quality factors such as service innovativeness, service reliability, service competitiveness and service consistency have greater promises to satisfy customers in the mobile telecommunication industry in Bangladesh. Customers intention to maximize their service values through innovative services offered by mobile service providers; the degree of newness has greater impact on valuing customer satisfaction. Reliability of service perceived by one of the key factors in promoting customer satisfaction; depended on the basis of trust of promoting expected needs at a high level of confidence of customer on service providers. Competitiveness in market benefited by greater quality of service with sophisticated touch on service with low perceives cost with higher value of the customer becomes a key component of making customer satisfied. Service provider and receiver are promised in providing and obtaining services at a zero percent rate of variation; low the variability in service higher the customer satisfaction and vice versa.

Users demographic of mobile telecommunication service provide valuable insight that, market share of mobile telecommunication changes over the time. Since mobile telecommunication in Bangladesh is matured, increase in market share of one operators refers to loss of share of other operators. Study reveals that most of the mobile telecommunication service users have multiple operators' connections, indicates low switching cost and higher customer autonomy. Therefore, customer satisfaction remains key driver of maintaining market share in competitive business environment.

Users value added service interface indicates that mobile telecommunication network is utilized for making voice calls, SMS, internet service and other service offered by service providers. Therefore, technical performance remains key issues of customer satisfaction in the mobile telecommunication industry. Thus, ease of access of service, price and strong network connection should be taken into consideration for promoting customer satisfaction in mobile telecommunication service.

Study also reveals that, the operator's network/signal coverage, pricing, offering, fulfillment of customer demand, value added service, brand value and operators contribution to society have insignificant influence on customer satisfaction. Strong signal coverage is key determinants of customer satisfaction; mobile telecommunication build upon a network signal that convey voice call, voice SMS, internet service, information service etc. Operators should be concerned with establishing a strong network signal for promoting value added service has great impact on client satisfaction. Pricing that operators charge for rendering service perceive insignificant to customer satisfaction. Pricing should be consistent with the value that operators provide. Therefore, operators should have to have cared about pricing policy that reveals as a fair to the customer that they ready to pay. The survey reveals that the service offers that operators provide have insignificant influence on valuing their service satisfaction; operators should designed service offering consistent with the requirement of customer has a greater service value. The service is intended to provide to satisfy customer demand; however study reveals that customers have an insignificant perception towards fulfillment of demand that operators provide. Service should be what that customer demanded should be evaluated carefully. Currently, operators provided value added service has an insignificant influence on making them satisfied; fair price, customized service and convenient in use can promote value added service in promoting customer satisfaction. Since business is a part of society; social responsiveness of service provider creates positive soft corner in the inner mind of customer have greater satisfaction. However, study reveals that it has insignificant influence on promoting customer satisfaction. The mobile service operators should be responsive to the societal problematic areas as a social citizenship behavior that can promote operators to attract potential customers from society; have a societal touch have a high brand value that influences on customer satisfaction.

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