FACTORS INFLUENCING THE OVERALL CUSTOMER SATISFACTION OF THE WIRELESS INTERNET SERVICE USERS: AN EMPIRICAL STUDY IN BANGLADESH

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ABSTRACT

With the rapid development of wireless internet technology and heavy usage of internet services, wireless internet service has been widely adopted in Bangladesh. Although the subject of customer satisfaction has been discussed worldwide extensively in the literature of information systems, e-commerce and marketing, the exploration of antecedents to customer satisfaction with wireless internet service is still in its infancy in Bangladesh. This study has explored and identified seven specific factors, which act as the significant determinants of the overall customer satisfaction of the wireless internet service users in Bangladesh. The findings confirm that Webpage Content Visualization, Availability of Customer Care Centre, Post-purchase Tele Sale, Average Download Data Rate, Participative Programs, Rate of Network Failure and Setup Charge contribute to forming the overall customer satisfaction with the wireless internet service in Bangladesh. This paper ends with a brief discussion of the business implications of the research findings.

Keywords: Wireless Internet Service, Users in Bangladesh, Customer Satisfaction, Portable Internet Service, Antecedents of Customer Satisfaction, Factor Analysis, Webpage Content Visualization, Availability of Customer Care Centre, Post-purchase Tele Sale, Average Download Data Rate, Participative Programs, Rate of Network Failure and Setup Charge.

Introduction:

Internet can be considered as the backbone of today's technological infrastructure. According to Webster's Online Dictionary, the Internet is a worldwide publicly accessible series of interconnected computer networks. Where not capitalized, internet can refer to any internetwork. It is a 'network of networks, that consists of millions of smaller domestic, academic, business, and government networks, which together carry various information and services, such as electronic mail, online chat, file transfer, and the interlinked web pages and other resources of the World Wide Web (WWW). Therefore, modern citizens want to be connected in internet with others anytime, anywhere. Some years before, connecting with wire was essential to be connected with internet. But that scenario has been changed radically. Various wireless internet technologies like GPRS, EDGE, WiFi, WiMAX etc. have enabled the people to be connected with internet through their internet enabled cell phones, palmtops or by plugging-in wireless internet modems into laptops or even desktops. Consumer preference for portable internet service is increasing for usage convenience day by day. Wireless communication services are evolving rapidly in tandem with developments and vast growth of heterogeneous wireless access and network infrastructures and their potential. Many new, next generation and advanced future services are being conceived. Technological mobility has already shaped up the lifestyle of the people around the globe. People are buying more portable electronic devises like smart phone, palmtop, laptop, wireless internet modem etc. to meet up their different general and entertainment purposes than the previous. Now-a-day's internet technology is ruling everywhere. And it is becoming possible only for the advancement of the wireless internet technology.

As a developing country, Bangladesh has done remarkably well in last couple of years in case of adopting internet technology. There are over 8 million internet users in the country, which will soon cross 10 million marks, keeping pace with the boom in mobile users, according to Bangladesh Telecommunication Regulatory Commission (BTRC) (Rahman, 2011). The number of internet users in the country as of March 2009 is over 600,000 compared to

100,000 in the year of 2000 (Kabir, 2010). According to Bangladesh Sangbad Sangstha (the Financial Express, 2011), the number of internet subscribers climbed to 6 million in the last two years from only 0.60 million in 2008 and the mobile phone companies are playing the key role in increasing the internet subscribers. Besides broadband internet service providers, there are two fast-growing WiMAX (Worldwide Interoperability for Microwave Access) companies in the country- Qubee and Banglalion. The number of WiMax subscribers in the country is now about 80,000 (the Financial Express, 2011), The concept of customer satisfaction occupies a central position in marketing thought and practice (Churchill and Surprenant, 1982). Researchers have focused on antecedents of customer satisfaction because customer satisfaction is generally assumed to be a significant determinant of repeat sales, positive 'word-of-mouth', and consumer loyalty (Bearden and Teel, 1983).

Although the subject of satisfaction has been discussed extensively in the literature of information systems, e-commerce and marketing (DeLone and McLean, 1992; Liu et al., 2008), the exploration of antecedents to customer satisfaction with wireless internet service is still in its infancy. Unfortunately, there has been relatively no research on overall consumer satisfaction of the wireless internet service market of Bangladesh. The purpose of this study is to explore the factors that influence the overall customer satisfaction of the wireless internet service users in Bangladesh Worldwide different theoretical paradigms exist in consumer satisfaction related to internet service market. Those literatures may guide to a better understanding for identifying the variables that can influence the satisfaction processes of the wireless internet service users. Therefore, this study has examined and identified different factors that influence the overall satisfaction of the wireless internet service users in Bangladesh.

Present Scenario: Wireless Internet Service in Bangladesh:

In recent years, developing countries including Bangladesh have witnessed a phenomenal development in the technology-dependent communication medium, which is Internet (Azam, 2007). In May 21, 2006 Bangladesh has been officially connected with world's information super highway through submarine optic fiber cable network (the Daily Star, 2006). According to the latest ICT Development Index of International Telecommunication Union (ITU) for the year 2010, the report, which took into account eleven indicators to measure the level and evolution of ICT developments, found that Bangladesh had been ranked 137th in the list of 159 countries around the world in the year 2008 (Bhuiyan, 2010). According to Bangladesh Telecommunication Regulatory Commission (BTRC) (2011a), the number of internet users has been increased significantly in the last two years. There were approximately 4.8 million internet users in the year 2008

while at present; almost 10 million people are using internet service. At present, internet density in Bangladesh is 7.10%. Moreover 99% of the people and 90% of the area around the country is now under the telecommunication network coverage.

In Bangladesh, wireless or portable internet service is provided by all the six mobile operators. Those operators are: Grameen Phone Limited, Orascom Telecom Bangladesh Limited, Robi Axiata Limited, Airtel Bangladesh Limited, Pacific Bangladesh Telecom Limited and TeleTalk Bangladesh Limited. In addition, two companies (i.e. Augere Wireless Broadband (Bangladesh) Limited and Banglalion Communications Ltd) are given the license for providing Wireless Broadband Service throughout the country. Those two companies have already started their operation in Dhaka and other towns (BTRC, 2011a). The mobile operators are relying on GPRS/EDGE/CDMA technology for providing wireless internet service around the country. Total mobile phone subscribers up to January, 2011 is 70.340 million (BTRC, 2011b). On the other hand, the number of WiMax subscribers in the country is now about 80,000 (the Financial Express, 2011).

Review of the Literature :

At the firm level, customer satisfaction is related to profitability (Anderson et al., 1994; Bernhardt et al., 2000), long-term financial performance (Mittal et al., 2005), and shareholder value, through its effects on future cash flows (Anderson et al., 2004) that include increased growth and reduced variability (Gruca and Rego, 2005). There is but little doubt that the maximization of consumer satisfaction is considered by most to be the ultimate goal of the market economy (Pfaf, 1976).

Customer satisfaction generally regarded as customer reaction to the state of fulfilment and customer judgment of the fulfilled state (Oliver, 1997). Customer satisfaction, which refers to 'the summary psychological state resulting when the emotion surrounding disconfirmed expectations is coupled with the consumer's prior feelings about the consumption experience' (Oliver, 1981), is often considered as an important determinant of repurchase intention (Liao et al., 2009) and customer loyalty (Eggert and Ulaga, 2002). Satisfaction of customers with products and services of a company is considered as most important factor leading toward competitiveness and success (Hennig-Thurau and Klee, 1997).

Customer satisfaction can be broadly defined as an 'evaluation of the perceived discrepancy between prior expectations and the actual performance of the product' (Tse and Wilton, 1988; Oliver 1999). That is, customer satisfaction is actually how customer evaluates the ongoing performance (Gustafsson et al., 2005). According to Kim et al., (2004) customer satisfaction is customer's reaction to the state of satisfaction, and customer's judgment of satisfaction level.

Customer satisfaction, which according to the dominating expectancy-disconfirmation paradigm is defined as a

function of the customer's expectations and perceptions of performance (Tse and Wilton, 1988; Anderson and Sullivan, 1993), is a phenomenon closely related to perceived service quality. In the multi-attribute model of customer satisfaction (Oliver 1997, Ch.2–4; Mittal et al., 1998), a consumer compares the perceived performance on an attribute with a pre-consumption standard or expectation, formed from prior purchase experience and external information.

Previous literature theorized that customer satisfaction can be classified into two types: transaction-specific satisfaction and general overall satisfaction (Yi, 1991). Transaction-specific customer satisfaction refers to the assessment customers make after a specific purchase experience, and overall satisfaction means the customers' rating of the brand based on their experiences (Johnson and Fornell, 1991). From these descriptions, we can view overall satisfaction as a combination of all previous transaction-specific satisfactions (Jones and Suh, 2000). Overall satisfaction is a function of the extent of the multiple attribute disconfirmations, and mediates their effects on behavioural intentions.

Customer satisfaction is very important in today's business world as according to Deng et al., (2009) the ability of a service provider to create high degree of satisfaction is crucial for product differentiation and developing strong relationship with customers. Customer satisfaction is also an antecedent of positive word of mouth or recommendation (De Matos and Rossi, 2008; Swan and Oliver, 1989; Zeithaml et al., 1996). Consumers often turn to others for a recommendation when they are thinking of purchasing (Punj and Staelin, 1983). Word of mouth has been described as a dominant force in the marketplace (Mangold, Miller and Brockway, 1999) and the ultimate test of the relationship with a customer (Bendapudi and Berry, 1997). Satisfied customers can create a viral effect if they recommend a company to their friends, families, and colleagues (Reichheld, 2003).

Since customer satisfaction reflects the degree of a customer's positive feeling for a service provider in any context, it is important for the service providers to understand the customer's vision of their services. On the other hand, a high level of customer satisfaction may have a positive impact on customer loyalty (Mittal et al., 1998). Previous researchers have found that satisfaction of the customers can help the brands to build long and profitable relationships with their customers (Eshghi et al., 2007).

There are many benefits for a company from a high customer satisfaction level; they capture a high market share and able to maintain and sustain it: a basic and core policy of every business that heightens customer loyalty and prevents customer switching behaviour, increases customer price tolerance, reduces marketing cost (Fornell, 1992).

Though it is costly to generate satisfied and loyal customers but that would prove profitable in a long run for a firm (Anderson et al., 2004). Therefore a firm should concentrate on the improvement of service quality and charge appropriate fair price in order to satisfy their customers which would ultimately help the firm to retain its customers (Gustafsson et al., 2005).

According to Australian Communication and Media Authority (2006), internet performance across different technologies, regions and access plans can be assessed by six key parameters. Those parameters are: Average Download Data Rate, Average Upload Data Rate, Regional Variation in Data Rate, Internet Service Availability, Domain Name Server (DNS) Lookup Times and Latency

Average Download Data Rate is the mean speed achieved in transferring requested data from one point on a network to another. Advertised data rates for internet services are used to enable customers to compare access plans and service offerings. There may be a difference between the advertised data rate of an internet access plan and the actual download and upload data rates experienced by customers. Uploading is the process of sending data from one computer to another on a network, for example, when someone send an email or upload a image file or video in the websites from his computer. Upload data rate is important to those who regularly update web pages. Factors that affect download data rates, such as network bandwidth and simultaneous user traffic, also affect upload data rates. Average Upload Data Rate is the mean speed of uploading data in the network. The performance of internet service (i.e. the download and upload speed) in different regions under the coverage area is a key consideration for the portable or wireless internet service users. It is called the Regional Variation in Data Rate.

Both broadband and wireless internet users naturally want a reliable internet service. A reliable service is especially important to users who rely on their internet connection to conduct business. Reliability is an attribute of any product (i.e. goods or service) that consistently performs according to its specifications. Reliability of the internet service can be measured through Internet Service Availability.

Domain Name Server (DNS) Lookup Time is another service characteristic that may impact on internet user experience, in addition to download/upload data rates and internet service availability. It is particularly important when browsing the internet. DNS lookup (or resolution) is the matching of a universal resource locator (URL) to its corresponding internet protocol (IP) address. A long DNS lookup time can have the effect of a delay when nothing appears to be happening, followed by a web page appearing rapidly on the user's screen. Low DNS lookup times ensure fast web surfing. DNS lookup time is generally affected by factors such as: the capacity of DNS servers, the time of day, large spam volumes (congesting DNS servers), and part network failure etc. Latency is an indicator of the time delay of information to get through a network. It is tested by 'pinging' or bouncing packets off a specified IP destination. Low latency is important for applications

such as voice over internet protocol (VoIP) and online gaming.

On the other hand, in their study of Understanding Consumer Satisfaction for Internet Service Providers Erevelles et al., (2003) considered eight variables (found through an exploratory research) for further factor analysis and concluded that Ease of Use, Pricing and Customer Service are the three strategic dimensions that describe Internet Service Providers. Those eight variables were: response time, technical support, price, pay, responsiveness of service staff, banner ads, ease of installation and user friendliness of software.

Response time can be defined as a measure of the time taken to fix disruptions of service at the customer end. There is no doubt that timely response and uninterrupted service are critical in today's competitive environment. Technical support can be defined as the extent of service provided by the ISP with regard to setting up, troubleshooting and repairing hardware and software problems. Good error diagnosis and correction procedures are critical to minimizing the disruption of service at the customer end. According to Joseph and Stone (2003), customer support services may be defined as the ability to provide feedback on problems about the purchased goods and services, or the purchase process itself, and to the ability to solve customer problems and concerns.

Price refers to what the consumer pays for the access service, and includes initial and ongoing costs. Payment method is the flexibility with respect to payment options offered by the ISP companies. As Cronin and Taylor (1992) argue, it seems reasonable that customer satisfaction is affected not only by the quality of what the customer receives, but also by price and convenience. Liao and Cheung (2002) argued that in advanced societies, consumers tend to be highly sensitive to the speed of service delivery, thus transaction speed, as a time-saving feature is an essential consideration for customers' satisfaction with self service technologies.

Responsiveness of service can be defined as the extent to which the ISP is sensitive to the needs of the customer. It reflects non-technical aspects of vendor service and the extent to which the ISP handles complaints effectively, but does not include 'response time'. Banner ads are promotional advertisements that appear on a web page. Banner ads vary in size and may include animation. The more complex the banner, the longer it will take for the page to load. In this paper, we are concerned with how this affects satisfaction judgments. That is ultimately the speed of the internet service.

Ease of software installation is the simplicity with which the Internet service is installed. With increasing complexity of software, customers may find installation tedious and cumbersome. Often this can be a multi-part process. Thus, the installation measure assesses the ease with which customers have installed the software on their computers. User friendliness of software is an attribute that deals with user satisfaction with the start page design and

navigation tools. While an ISP may offer its own navigation tools, consumers are free to switch as many browsers as are available to download from the Internet. In information systems literature, ease of use has been regarded as a factor that influences users' satisfaction (Doll & Torkzadeh, 1988; McHaney & Cronan, 1998), a measurement of system quality (DeLone and McLean, 1992), and a determinant of IT adoption (Davis, 1989). Therefore, it is frequently discussed as an important factor of user satisfaction in information systems (DeLone and McLean, 1992; Srinivasan, 1985) or commercial web site evaluations (Aladwani and Palvia, 2002).

The concept of perceived service quality has been developed in the services marketing literature during the past decade. Based on the work by Parasuraman et al., (1988), perceived service quality is frequently referred to as the comparison between the customer's expectations and his/her perceptions of the service provider's performance. Parasuraman et al., (1988) have also suggested that service quality consists of five generic dimensions: tangibles, reliability, responsiveness, assurance, and empathy.

Grtnroos (1990) offers two other dimensions of service quality: technical quality and functional quality, i.e. the quality of what is delivered and how it is delivered, respectively. Grtnroos' model, which puts more weight on the tangible part of the offering, seems more adequate for the services where the technical part (in this case wireless internet service) is the core component of the offer. The viewpoint taken here is that perceived service quality, which is defined as the consumer's perception of a firm's offering, or performance, is an antecedent of customer satisfaction, which in turn is positively related to customer loyalty. Therefore, based on the different previous research findings discussed above, it can be hypothesized that conceptually twenty seven variables play the major role on determining the overall customer satisfaction in case of wireless internet service users. These variables are: Average Download Data Rate, Average Upload Data Rate, Regional Variation in Data Rate, Internet Service Availability, Domain Name Server (DNS) Lookup Time, Latency, Response Time, Technical Support, Price, Payment Methods, Responsiveness, Webpage Content Visualization, Ease of installation, Ease of use, Hourly Speed Variation, Rate of Network Failure, Tangibles, Assurance, Empathy, Availability of Customer Care Center, Skill of Support Staffs, 24 Hours Call Center Facility, Variation in Offerings, Post-purchase Tele Sale, Post-purchase Interaction, Participative Programs and Setup Charge.

Objective of the Study:

The primary objective of this study is to explore and identify the factors that have influence on the overall customer satisfaction with the wireless internet service providers in Bangladesh.

The specific objectives are:

Table 1: Respondents' Demographic Profile

Gender	%	Age	%	Profession	%	Service Using	%
Male	91.3	16-25 years	76.7	Student	70.7	Grameen Phone Internet	26.0
Female	8.7	26-35 years	20.0	Service Holder	18.7	Banglalion WiMax	20.7
		36-45 years	2.7	Businessman	6.7	Citycell Zoom/ Zoom Ultra	18.0
		< 15 years	0.7	Self-employed	2.7	Qubee WiMax	15.3
				Others	1.3	Banglalink Internet	6.0
						Robi Internet	6.0
						Warid Internet	4.7
						Others (i-connect, free WiFi etc)	3.3
Total	**100.0**	**Total**	**100.0**	**Total**	**100.0**	**Total**	**100.0**

Source: Survey Data

a) To study the present scenario of the wireless internet service industry of Bangladesh
b) To explore the customer satisfaction paradigm in the context of internet technology
c) To isolate the significant determinants of the overall customer satisfaction with the wireless internet service in Bangladesh

Methodology of the Study:

Data of this exploratory study was collected through a two-phase data collection process. In the first phase, a thorough analysis of the related secondary data (i.e. pervious works on customer satisfaction paradigm, internet service satisfaction etc) was conducted to explore the underlying variables that lead to end-users' satisfaction in respect to internet service. Along with secondary data analysis, a short exploratory study (i.e. focus group discussion with 15 participants) was also conducted to gain an insight about the issue of the research interest from the perspective of Bangladeshi users.

In the second phase, the primary data for this research was collected through a survey questionnaire involving a convenience sample of 150 wireless internet service users of Bangladesh comprising 137 males (91.3%) and 13 females (8.7%).

The survey was self-administered. All the questionnaires were distributed and collected with 100% response rate. A 27 item scale focusing on different environmental, functional and psychological variables was constructed to identify the factors that may have effect on the overall customer satisfaction of the wireless internet service users. As mentioned earlier, those variables were adapted from different works of the customer satisfaction paradigm and through a focus group discussion with a group of wireless internet service users from different demographic segments. These variables are: Average Download Data Rate, Average Upload Data Rate, Regional Variation in Data Rate, Internet Service Availability, Domain Name Server (DNS) Lookup Time, Latency, Response Time, Technical Support, Price, Payment Methods,

Responsiveness, Webpage Content Visualization, Ease of installation, Ease of use, Hourly Speed Variation, Rate of Network Failure, Tangibles, Assurance, Empathy, Availability of Customer Care Center, Skill of Support Staffs, 24 Hours Call Center Facility, Variation in Offerings, Post-purchase Tele Sale, Post-purchase Interaction, Participative Programs and Setup Charge. Participants' responses were recorded on a 5-point Likert scale (1= strongly agree; 5 = strongly disagree) and the questionnaire was drafted in English. The survey questionnaire was pre-tested with a pool of 12 participants to find out and eliminate any error and irrelevancy.

A reliability test was conducted to verify the internal consistency of the variables obtained in the sample. For this test, the Cronbach's alpha was used; the alpha value is 0.832, which is much higher than the minimum acceptable level suggested by Nunnally (1978) which is 0.70.

Factor Analysis was used as the analytical technique. The marketing and social science literature is abundant with applications of factor analysis (Churchill, 1987; Timm, 1975; Urban and Hauser, 1980). This widely used statistical technique is frequently employed by researchers who wish to identify a relatively small number of factors or underlying dimensions that can be used to represent relationships within a large variable set (Stewart, 1981). The Kaiser-Meyer-Olkin Measure and Bartlett's Test of Sphericity were computed to determine whether the data were suitable for factor analysis. Bartlett's sphericity test indicates that the distribution is ellipsoidal and therefore amenable to data reduction (Dillon and Goldstein, 1984). The Kaiser–Meyer–Olkin measure of sampling adequacy is 0.872, indicating a high-shared variance and a relatively low uniqueness in variance (Kaiser and Cerny, 1979) which ensures the suitability of conducting factor analysis.

Table 2: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.872
Bartlett's Test of Sphericity	Approx. Chi-Square	1687.746
	Df	351

Source: Survey Data

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Table 3: Total Variance Explained by Seven Factors

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Factor Number	Factor Name	Initial Eigenvalues		
		Total	% of Variance	Cumulative %
1	Webpage Content Visualization	8.990	33.298	33.298
2	Availability of Customer Care Center	1.714	6.348	39.645
3	Post-purchase Tele Sale	1.538	5.696	45.342
4	Average Download Data Rate	1.337	4.950	50.292
5	Participative Programs	1.228	4.547	54.838
6	Rate of Network Failure	1.137	4.210	59.048
7	Setup Charge	1.055	3.908	**62.956**

Source: Survey Data

Analysis & Interpretation:

The study has selected the factors which are being extracted for having Eigenvalues over 1. Here, the cumulative variance of the study is 62.965%. The rotated factor loadings matrix summarizes the structure by indicating which variables associate primarily with which factors. Based on the notion of 'simple structure' (Thurstone, 1947), here the word 'structure' is to denote the identification for each variable of the factor with which it is primarily associated, these variables have been classified with specific factor loadings into seven specific factors. The cumulative variance (see Table 2) confirms that the study result is quite acceptable as the extracted factors should account for at least 60 percent of the variances (Malhotra, 2008).

To reduce the respondents' responses to the 27 items to a fewer broader dimensions, factor analysis was performed using principal component analysis. Factors were rotated orthogonally using the varimax rotation. Using a minimum eigenvalue of 1.00 as the criterion for selecting the number of factors. Several more accurate methods for retaining factors are often grouped under the rubric of 'rules of thumb' (Gorsuch, 1983; Zwick and Velicer, 1986), among which the scree test is readily available, frequently used, and usually provides satisfactory results. The Cattell-Nelson-Gorsuch (CNG) scree test (Gorsuch, 1983) gives a statistical test for this point and contended that with principal components analysis the scree test usually produces cutoffs near Eigenvalue = 1.00. Seven factors were identified and meaningfully labeled as Webpage Content Visualization, Availability of Customer Care Center, Post-purchase Tele Sale, Average Download Data Rate, Participative Programs, Rate of Network Failure and Setup Charge. Only those variables with loading greater than 0.40 were used to summarize the factors. These factors which accounted for 62.956%

of the variance are shown in Table 3 with the loading and communality values of each of the items constituting the factors.

The first factor, Web Page Contents Visualization, which account for the most variance (33.298%), consists of five control variables. The five variables contained in this key factor are: Webpage Content Visualization (.678), Domain Name Server (DNS) Lookup Time (.675), Latency (.664), Regional Variation in Data Rate (.554), Payment Methods (.503) and Response Time (.450). The factor loading points for the first three variables are considerably higher than 60. Hence, wireless internet service providers should be more concerned about these variables if they wish to increase the overall customer satisfaction of their clients.

The second significant factor is Availability of Customer Care Center, which explains 6.348% of the variation in overall customer satisfaction of wireless internet service users. This factor's control variable includes Availability of Customer Care Center (.729), Price (.673), Ease of use (.584), Internet Service Availability (.557), Skill of Support Staffs (.516), Responsiveness (.460) and Ease of installation (.431). The factor loading points of first two variables are higher than 60. Thus, the Availability of Customer Care Center and Price is significant in explaining the overall customer satisfaction of the wireless internet service users.

The third factor, Post-purchase Tele Sale, which explains 5.696% of the variation in overall customer satisfaction of wireless internet service users. Variables included in this component are Post-purchase Tele Sale (.761), Variation in Offerings (.674), Empathy (.670), Tangibles (.633) and Assurance (.413). The factor loading points are also substantially higher (i.e. more than .60) for all variables except Assurance which shows that the Post Purchase contact is an important determinant of the overall customer satisfaction of the wireless internet users.

The fourth most important factor is Average Download Data Rate, which accounts for 4.950% of the variance. The specific variables loaded with this factor are Average

Download Data Rate (.823), Average Upload Data Rate (.804) and 24 Hrs Call Center Facility (.563). Among those, Average Download Data Rate and Average Upload Data Rate are two most significant variables with very high loading points (i.e., .80) that influence the overall customer satisfaction greatly.

The rest three factors named Participative Programs, Rate of Network Failure and Setup Charge are also important as each of them explains variation of 4.547%, 4.210% and 3.908% respectively. Participative Programs loaded with two variables Participative Programs (.774) and Post-purchase Interaction (.670). Rate of Network Failure loaded with Rate of Network Failure (.730) and Hourly Speed Variation (.619). Setup Charge loaded with Setup Charge (.741) and Technical Support (.534). In sum, factor analysis reveals that there are seven strategic dimensions that describe wireless internet service providers ability to meet expected overall customer satisfaction of the Bangladeshi users.

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'Pearson's r' correlations have also been calculated for assessing internal reliability of the seven factors. In Table 6 the results of item intercorrelations and correlations with the total attitude scores are presented. In a well constructed test item intercorrelations and item-test correlations should range between 0.10 – 0.60 and 0.30 – 0.80 respectively (Guilford and Fruchter 1973). In this research, all of the intercorrelation coefficients and the item correlations with the total scores are within the recommended range.

Table 5 delineates the mean scores and standard deviations of the seven factors extracted. All the factors are having scores more than 3.70 though the standard deviation is at least 0.80 for any of the factors. Respondents' level of satisfaction is positively reflected with the mean scores of the factors that influence the perceived satisfaction of the users.

Business Implications & Concluding Remarks:

One of the primary uses of internet service is to view the different web pages across the internet. Users want a clear visualization of all the contents like- texts, graphics, animations, picture, videos etc of the web pages. In addition, the clarity of the web pages mainly depends on some technical issues like Domain Name Server (DNS) Lookup Time, Latency Rate, Regional Variation in Data Rate etc. Hence, wireless internet service providers in Bangladesh should enhance the technical performance of the service thorough ensuring less network failure, steady internet speed and increasing the capacity of the DNS server.

Theoretically both technical and functional qualities are important to ensure highest level of service delivery. And the functional quality implies how the service is delivered. Therefore, the wireless internet service providers in Bangladesh should have sufficient customer touch points, sales centers and customer care points to serve the customer on demand and ensure smooth customer service delivery.

Table 4: Rotated Factor Structure of the Variables used in the Study

Variable No.	Variables	Webpage Content Visualization	Availability of Customer Care Center	Post-purchase Tele Sale	Average Download Data Rate	Participative Programs	Rate of Network Failure	Setup Charge
				Factors				
1.	Webpage Content Visualization	.678						
2.	Domain Name Server (DNS) Lookup Time	.675						
3.	Latency	.664						
4.	Regional Variation in Data Rate	.554						
5.	Payment Methods	.503						
6.	Response Time	.450						
7.	Availability of Customer Care Center		.729					
8.	Price		.673					
9.	Ease of use		.584					
10.	Internet Service Availability		.557					
11.	Skill of Support Staffs		.516					
12.	Responsiveness		.460					
13.	Ease of installation		.431					
14.	Post-purchase Tele Sale			.761				
15.	Variation in Offerings			.674				
16.	Empathy			.670				
17.	Tangibles			.633				
18.	Assurance			.413				
19.	Average Download Data Rate				.823			
20.	Average Upload Data Rate				.804			
21.	24 Hrs Call Center Facility				.563			
22.	Participative Programs					.774		
23.	Post-purchase Interaction					.670		
24.	Rate of Network Failure						.730	
25.	Hourly Speed Variation						.619	
26.	Setup Charge							.741
27.	Technical Support							.534
Initial Eigenvalues		**8.990**	**1.714**	**1.538**	**1.337**	**1.228**	**1.137**	**1.055**
% of Variance		**33.298**	**6.348**	**5.696**	**4.950**	**1.228**	**4.210**	**3.908**
Cumulative %		**33.298**	**39.645**	**45.342**	**50.292**	**54.838**	**59.048**	**62.956**
Source: Survey Data								

Table 5: Mean Scores of the factors of Wireless Internet Services

	Average Download Data Rate	Webpage Content Visualization	Availability of Customer Care Center	Post-purchase Tele Sale	Setup Charge	Participative Programs	Rate of Network Failure
Mean	3.7	3.9	3.8	3.7	4.0	3.8	3.6
Standard Deviation	0.9	0.8	0.8	0.8	1.2	0.9	1.0

Table 6: Item intercorrelations and Item correlations with the total attitude score

Factors	Average Download Data Rate	Webpage Content Visualization	Availability of Customer Care Center	Post-purchase Tele Sale	Setup Charge	Participative Programs	Rate of Network Failure	Total Score
Average Download Data Rate	1.00	0.60	0.54	0.42	0.23	0.32	0.24	0.65
Webpage Content Visualization		1.00	0.70	0.61	0.30	0.50	0.22	0.54
Availability of Customer Care Center			1.00	0.59	0.29	0.45	0.38	0.48
Post-purchase Tele Sale				1.00	0.20	0.47	0.23	0.41
Setup Charge					1.00	0.27	0.11	0.39
Participative Programs						1.00	0.23	0.36
Rate of Network Failure							1.00	0.34

Post-purchase Tele Sale and Participative Programs help to build up customer loyalty with the service providers. Thus, wireless internet service providers should focus more on regular post purchase phone calls or e-mail messages to the customer base to notify them about the new service offerings, packages, pricings etc. Moreover capable farms can organize and invite their customers to participate different sponsorship events like- concert, dj-shows, film shows, fairs, contest etc.

Last but not least, wireless internet service providers in Bangladesh must find the way to ensure a steady Average Download & Upload Data Rate and minimize the Rate of Network Failure as well as the setup charge to satisfy the users. The setup charge leads the users to determine which service provider to adopt. Hence, a convenient setup charge will surely attract the customer to adopt the service. Average Download & Upload Data Rate and the Rate of Network Failure influence the users to decide whether to switch or stay with the current service provider and moreover, these are the significant variables of the technical quality of the service delivered.

Finally it can be concluded that Webpage Content Visualization. Availability of Customer Care Center, Post-purchase Tele Sale, Average Download Data Rate,

Participative Programs, Rate of Network Failure and Setup Charge will have higher likelihood of influencing the level of customer satisfaction with wireless internet service providers in Bangladesh. Thus the outcome may be utilized by the concerned authorities and business entrepreneurs to encourage the development and implementation of sustainable wireless internet service in Bangladesh.

Limitations & Direction For Future Research:

The results of this study should not be generalized extensively since this study is based on the reported rather than the actual behavior. Moreover the participants of this study come from a single geographical region of the country (i.e., Dhaka), where a fair assumption can be made that the wireless internet service users in Dhaka are relatively more knowledgeable and experienced with the service than users in other geographical regions of the country. It is possible that overall consumer satisfaction with the wireless internet service may be influenced by other factors in different geographical regions.

This study was mostly administered to the student of different universities of Dhaka who have higher education level and previous knowledge on Internet technology

which make data collection more convenient. This brings in the question whether this result will be significant for the people working in many other professions in Bangladesh. It may be considered as the area of future research.

Although it seems to be a reasonable conclusion to say that the results of this study serve to provide a considerably more thorough understanding of the current wireless internet service market of Bangladesh and underlying factors that influence the overall satisfaction of the customer with the wireless internet service, further empirical research needs to be carried out in order to obtain a more comprehensive picture. This research has provided an initial insight into the factors that are significant antecedents of the overall customer satisfaction of the wireless internet service users. However, the framework and process of understanding the overall customer satisfaction in terms of wireless internet service yet remain to be investigated. This work will spur further research on extensions in these areas.

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