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Consumer Satisfaction and Expectations towards the 4G Service of Nepal Telecom: A Case of Kathmandu Valley

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Abstract

This study examines the consumer satisfaction and expectations towards the 4G service of Nepal telecom: A case of Kathmandu Valley. Customer satisfaction is the dependent variable. The selected independent variables are speed, features, cost, reliability and availability. The primary source of data is used to assess the opinions of respondents regarding speed, features, cost, reliability, availability, and customer satisfaction. The study is based on primary data of 130 respondents. To achieve the purpose of the study, structured questionnaire is prepared. The correlation and multiple regression models are estimated to test the significance and importance of consumer satisfaction and expectations towards the 4G service of Nepal telecom: A case of Kathmandu Valley.

The study showed a positive impact of speed on customer satisfaction. It indicates that better speed leads to increase in customer satisfactions. Similarly, the study showed a positive impact of features on customer satisfaction. It indicates that attractive features lead to increase in customer satisfactions. Likewise, the study also revealed a positive impact of cost on customer satisfaction. It indicates that affordable cost related to 4G service leads to increase in customer satisfactions. Further, the study observed a positive impact of reliability on customer satisfaction. It indicates that higher the reliability, higher would be the customer satisfactions. In addition, the study observed a positive impact of availability on customer satisfaction. It indicates that availability of 4G service as per the necessity of the customers lead to increase in customer satisfactions.

Keywords: speed, features, cost, reliability, availability, customer satisfaction

1. Introduction

The new millennium has changed the total landscape of telecommunication sector (cellular phone sector) and emerged as one of the dynamic sectors of modern era economy. The fast connectivity, wider coverage, availability of 3G and 4G and decrease in prices make it one of the volatile fields of investment. As per Pakistan telecommunication authority (PTA), the total number of cellular subscribers has crossed 130 million marks. Now cellular phone is taken as utility rather a luxury item as it was due to its countless facilities and benefits (Sattar and Sattar, 2012). The telecom sector is one of the leading sectors in bringing the FDI to country; the most recent is through the auction of 3G and 4G. The market is already reaching its saturation and margins are beginning to drop. The level of services is rising day by day and we are almost at the edge of information age. There is a flow of information through the power of social media, thanks to quality services of cellular companies (Izogo, 2017). All the cellular companies are devising different strategies to attract and retain customers, by offering different packages, internet bundles, free coupons, free minutes, double SIM number and other adjoining benefits and lastly through heavy comparative advertisement reminder to retain a customer with particular company. Thus, all these circumstances are

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compelling companies to generate loyal customers that can stay for a longer period of time and company can cash their life time value. The tremendous growth in telecom sector is because of deregulation by the government, liberalization of policies, decreasing prices of mobiles phones, more geographical coverage has encouraged companies to introduce services for better serving the customers and creating loyalty (Nasir *et al.*, 2014).

The introduction of 4G and 5G services, bearing the promise of faster and more dependable Internet speeds, has conferred a transformative halo upon the customer experience (Islam, 2019). The crucible of heightened competition among mobile phone networks and internet service providers has further stoked the fires of service enhancements (Akhter and Jahan, 2020). These market fluctuations, intertwined with Bangladesh's socio-economic fabric, precipitate tangible repercussions for its clientele. The symphony of market growth orchestrates heightened connectivity, augmented service quality, and enriched access to information and entertainment. Simultaneously, network quality, a cornerstone of telecommunications excellence, concerns itself with reliability, performance, and the overall health of a telecommunications network, encapsulating dimensions like uptime and data transfer speeds (Karim and Rahman, 2022). Value-added Services (VAS), those ancillary embellishments bestowed by telecom companies upon foundational services, encompass a diverse suite of offerings, including multimedia messaging and premium content (Ali *et al.*, 2019).

Rout *et al.* (2021) analyzed the customer satisfaction towards internet speed of various telecom service providers in Bhubaneswar. The study showed that internet speed has a positive impact on customer satisfaction. Similarly, Suryanegara (2017) examined the 4G service attributes on customer satisfaction in Indonesia market. The results concluded that the strength of a 4G signal, mobile phone performance, and security are the attributes that have significant impact on customer satisfaction. Likewise, Daud *et al.* (2014) analyzed the satisfaction and service quality of using high-speed 4G wireless broadband in University Campus. The findings showed that service quality has a negative impact on customers' satisfactions. Similarly, Edy Rahmat and Ariyanti (2020) examined the effect of product quality, service quality and pricing on customer satisfaction and loyalty case study on 4G LTE-advanced Smartphone. The study concluded that product quality, service quality and pricing have a positive impact on customer satisfaction and customer loyalty. Further, Haq *et al.* (2023) analyzed the impact of 3G and 4G technology performance on customer satisfaction in the telecommunication industry. The study concluded that network coverage, customer service, video calls, and downloading speed are key driving factors of customer satisfaction. Similarly, Balaji and Senthilkumar (2024) assessed the users' satisfaction with various services of the mobile phone service providers. The result found that efficient and friendly customer service have great influence on users' overall perception of a provider. Likewise, Ashfaq (2019) analyzed the after sales service, customer satisfaction and loyalty in telecom sector. The study found that after-sales service is very important to satisfy and get customers loyalty, especially in the service sector organizations and customer satisfactions.

Alamgir *et al.* (2017) assessed the customer retention and telecommunications services in Bangladesh. The study found importance of customer satisfaction in building buyer-seller relationship, and revealed customer retention is the precursor of company's profit. Similarly, Kavitha and Haritha (2018) analyzed the customer experience and its relationship with repurchase intention among telecom subscribers in Coimbatore district. The

results revealed that the telecom customers are mostly reluctant in sticking to one particular service and the network experience, service delivery experience and store experience were found to have highly correlated with the repurchase intention. Likewise, Molem *et al.* (2018) examined the technological innovations, service quality and customer satisfaction in Cameroon's mobile telecommunication industry. The study found that the idea that signal quality and network coverage, customer service and service innovation stimulate quality and are incentives to customers' satisfaction. Further, Verma and Singh (2017) assessed the marketing mix, customer satisfaction and loyalty: An empirical study of telecom sector in Bhutan. The study revealed a significant and positive correlation among variables under study i.e., marketing mix, customer satisfaction and loyalty. In addition, Chong *et al.* (2015) analyzed the comparing customer satisfaction with China mobile and China telecom services. The study found that the telecommunication service providers should develop appropriate strategies based on their strengths in satisfying their customers as well as overcoming their weaknesses by learning from each other. Moreover, Nga (2019) examined the impact of customer satisfaction on brand loyalty for mobile telecommunications services in Ho Chi Minh City. The study found that the satisfaction with services is the strongest factor affecting brand loyalty, followed by satisfaction with employees, satisfaction with distribution channels, satisfaction with enterprise, satisfaction with brand image and environment. The study also concluded that value added services is extremely important in order to achieve high service quality which further achieve the customer satisfaction and ultimately negatively impacting the customer defection or churn. Olorunleke (2020) examined the survey of customer's service expectation and quality perception to GSM services in Ondo state. The study stated that 85% of the GSM subscribers cannot guarantee adequate satisfaction with the quality of services. Likewise, Ansah (2020) investigated the customer perception of service quality, price fairness and brand-image of telecommunication service providers in Ghana and its impact on customer satisfaction and loyalty. The study found that service quality, price fairness and brand-image have positive impact on customer satisfaction and loyalty. Further, Nekmahmud and Rahman (2018) analyzed the competitiveness factors in telecommunication markets. The study showed that price and tariff, conveniences, and customer care have positive and significant influence on customer satisfaction whereas communication and coverage and sales promotion have negative impact on customer satisfaction in telecommunication markets.

In the context of Nepal, Dahal (2019) examined the customer satisfaction in Nepalese cellular networks. The study concluded that mobile service providers should concentrate upon the factors responsible on customer satisfaction and care of those factors that have significant influence on promoting customer satisfaction in Nepalese cellular networks industry. Likewise, Sah and Pokharel (2021) analyzed the effects of telecommunication service quality dimensions on customer satisfaction in Kathmandu Valley. The study found that telecommunication industries need to enhance service quality and develop a strategy to create value of the customer satisfaction. Further, Shrestha (2021) assessed the impact of service quality on customer satisfaction and loyalty. The study concluded that service quality is the most important factor that makes customers satisfied and loyal. In addition, Shrestha and Ale (2019) assessed the service quality and its relationship on customer satisfaction of Nepal Telecom (NT) in Nepal. The study found that customer satisfaction depends on customer care services, promotion schemes and network coverage. Moreover, Manandhar (2021) assessed the factors influencing brand switching behavior on telecommunication industry in Nepal. The study revealed that service quality or network coverage and competitive offers causes

customers to switch from one mobile service provider to another.

The above discussion shows that empirical evidences vary greatly across the studies on the consumer satisfaction and expectations towards the 4G service of telecom. Though there are above mentioned empirical evidences in the context of other countries and in Nepal, no such findings using more recent data exist in the context of Nepal. Therefore, in order to support one view or the other, this study has been conducted.

The major objective of the study is to examine the consumer satisfaction and expectations towards the 4G service of Nepal telecom: A case of Kathmandu Valley. Specifically, it examines the relationship of speed, features, cost, reliability and availability with consumer satisfaction and expectations towards the 4G service of Nepal telecom: A case of Kathmandu Valley.

The remainder of this study is organized as follows: section two describes the sample, data, and methodology. Section three presents the empirical results and final section draws the conclusion.

2. Methodological aspects

The study is based on the primary data which were collected from 130 respondents through questionnaire. The study employed convenience sampling method. The respondents' views were collected on speed, features, cost, reliability, availability, and customer satisfaction. This study is based on descriptive as well as causal comparative research designs.

The model

The model used in this study assumes that customer satisfaction depends upon expectations towards the 4G service. The dependent variable selected for the study is customer satisfaction. Similarly, the selected independent variables are speed, features, cost, reliability and availability. Therefore, the model takes the following form:

Customer satisfaction = f (speed, features, cost, reliability, and availability)

More specifically,

$$CS = \beta_0 + \beta_1 S + \beta_2 F + \beta_3 C + \beta_4 R + \beta_5 A + e$$

Where,

CS = Customer satisfaction

S = Speed

F = Features

C = Cost

R = Reliability

A = Availability

Customer satisfactions was measured by using a 5-point Likert scale where the

respondents were asked to indicate the responses using 5 for strongly agree and 1 for strongly disagree. There are 5 items and sample items include “The customer satisfaction depends on the speed”, “Features affects the customer satisfaction” and so on. The reliability of the items was measured by computing the Cronbach’s alpha ($\alpha = 0.855$).

Speed was measured by using a 5-point Likert scale where the respondents were asked to indicate the responses using 5 for strongly agree and 1 for strongly disagree. There are 5 items and sample items include “The speed of my 4G network affects my overall satisfaction with the service”, “Delivery of SMS, voice message and other service is on time” and so on. The reliability of the items was measured by computing the Cronbach’s alpha ($\alpha = 0.763$).

Features were measured by using a 5-point Likert scale where the respondents were asked to indicate the responses using 5 for strongly agree and 1 for strongly disagree. There are 5 items and sample items include “The range of features provided by my 4G service provider significantly influences my overall satisfaction with the network”, “Telecom service providers add to new features of 4G communication service” and so on. The reliability of the items was measured by computing the Cronbach’s alpha ($\alpha = 0.846$).

Cost was measured by using a 5-point Likert scale where the respondents were asked to indicate the responses using 5 for strongly agree and 1 for strongly disagree. There are 5 items and sample items include “I believe that the cost of my 4G service accurately reflects its overall value and performance”, “The telecom service provider charges high interest for data pack loan” and so on. The reliability of the items was measured by computing the Cronbach’s alpha ($\alpha = 0.817$).

Reliability was measured by using a 5-point Likert scale where the respondents were asked to indicate the responses using 5 for strongly agree and 1 for strongly disagree. There are 5 items and sample items include “When comparing 4G service providers, reliability is one of the most important factors influencing my decision”, “I feel confident in recommending my 4G service network to others based on its reliability” and so on. The reliability of the items was measured by computing the Cronbach’s alpha ($\alpha = 0.850$).

Availability was measured by using a 5-point Likert scale where the respondents were asked to indicate the responses using 5 for strongly agree and 1 for strongly disagree. There are 5 items and sample items include “The 4G service network is consistently available when I need to use it”, “I rarely encounter situations where my 4G service network is unavailable or unreachable” and so on. The reliability of the items was measured by computing the Cronbach’s alpha ($\alpha = 0.914$).

The following section describes the independent variables used in this study along with the hypothesis formulation.

Speed

Speed is measured by data transfer speed in 4G network. The term might be used to denote a provider known for offering high-speed internet connections, quick data transfer rates, or responsive customer service. The 4G has the most useful features having high speed broadband internet usability and dealing over internet protocol (Patil *et al.*, 2012). Customers’ satisfaction studies, a group of researchers found that higher downloading speed

considerably more advantageous for both marketers and consumers (Harish and Sharma, 2010). The considerations of the variables are high-speed data transmission facility, low cost and customer care services. These variables are helpful for the operator to identify the elements which are responsible to satisfy subscribers demand (Ali *et al.*, 2014). Expenditure with a business model “providing high speed and faster access for fewer consumers to access business sites and for fewer consumers giving slower access”, it would not be a profitable business model (Islam, 2019). Satisfying and creating a favorable impression of the product in the minds of consumers become the priority of any organization quality and speed focus are customers (Asiagwu *et al.*, 2021). Based on it, this study develops the following hypothesis:

H₁: There is a positive relationship between speed and customer satisfaction.

Features

A feature is a distinctive trait or a special attraction. Saha *et al.* (2016) indicated that network quality is judged by the different elements such as signal of mobile phone network coverage, time to connect with another phone number, call drop rate, voice clarity, and time to send and receipt of SMS. Similarly, indicated that the 4G has the most useful features having high speed broadband internet usability and dialing over internet protocol (Patil *et al.*, 2012). Likewise, this aspect, the important and significant positive impact has been found in perceived quality, perceived value, customer expectations and corporate image on customers' satisfactions (Islam *et al.*, 2015). Similarly, Rahman *et al.* (2012) recognized that network quality has a positive effect on overall customer satisfaction. Based on it, this study develops the following hypothesis:

H₂: There is a positive relationship between features and customer satisfaction.

Cost

Cost is determined by various factors which include the willingness of the buyer to pay and accept mark-ups, the legal environment, and intensity of competition. Operators are offering a variety of attractive packages, voice services, advertising offers, and services with additional value such as SMS, MMS, welcome tunes, games, electronic transactions, and web surfing, among other things (Saha *et al.*, 2016). The study suggest that a fair pricing has a favorable direct influence on customer satisfaction, but service quality has no significant direct influence on customer happiness (Uddin *et al.*, 2014). Cost is an important determinant that will reflect the customer's purchasing decision. Price competition in the mobile phone sector is becoming very intense, whereby it plays a vital role, particularly for mobile phone service providers. Based on it, this study develops the following hypothesis:

H₃: There is a positive relationship between cost and customer satisfaction.

Reliability

Reliability is defined as capacity to execute the guaranteed benefit reliably and precisely (Armstrong, 2012). If a company is providing a good service, a company and its staff should be ready to respond to consumer's queries about products and services offered (Ojo, 2010). Moreover, Toosi and Kohonali (2011) stated that timely responses to requests, is one of the important customer's expectations. Further, Selelo and Lekobane (2017) found a positive influence of service quality dimensions on customer satisfaction. Based on it, this

study develops the following hypothesis:

H₄: There is a positive relationship between reliability and customer satisfaction.

Availability

Hossain *et al.* (2016) found that availability of customer service center, value added services and internet speed are the important determinants of customer satisfaction. Likewise, the findings revealed a significant link between customer loyalty and service quality, network, call rate, online capability, and social responsibility (Kumar *et al.*, 2020). Similarity, service providers need to ensure that the information provided to customers is accurate and correct, and to share relevant information with customers in a timely manner within the given deadline as promised (Joudeh and Dandis, 2018). Knowledge and courtesy of the employees and their ability to inspire trust and confidence of the customers in terms of meeting their expectations and address concerns competently (Jayawardhena, 2016). Likewise, Senguo and Kilango (2015) examined the link between market innovation and improvement in consumer satisfaction index in Vodacom in Tanzania. The study revealed that business performances have a positive relationship with firm performance. Based on it, this study develops the following hypothesis:

H₅: There is a positive relationship between availability and customer satisfaction.

3. Results and discussion

Correlation analysis

On analysis of data, correlation analysis has been undertaken first and for this purpose, Kendall's Tau correlation coefficients along with mean and standard deviation has been computed and the results are presented in Table 1.

Table 1

Kendall's Tau correlation coefficients matrix

This table presents Kendall's Tau correlation coefficients between dependent variable and independent variables. The correlation coefficients are based on 130 observations. The dependent variable is CS (Customer satisfactions). The independent variables are S (Speed), F (Features), C (Cost), R (Reliability) and A (Availability).

Variables	Mean	S.D.	CS	S	F	C	R	A
CS	4.085	0.691	1					
S	4.043	0.633	0.539**	1				
F	4.074	0.640	0.641**	0.615**	1			
C	3.985	0.669	0.549**	0.596**	0.668**	1		
R	4.043	0.659	0.569**	0.547**	0.654**	0.648**	1	
A	3.957	0.795	0.581**	0.554**	0.662**	0.699**	0.641**	1

Note: The asterisk signs (**) and (*) indicate that the results are significant at one percent and five percent levels respectively.

Table 1 shows the Kendall's Tau correlation coefficients of dependent and independent variables. The study shows that speed is positively correlated to customer satisfactions. It indicates that better speed leads to increase in customer satisfactions.

Similarly, features are positively correlated to customer satisfactions. It indicates that attractive features lead to increase in customer satisfactions. Likewise, cost is positively correlated to customer satisfactions. It indicates that affordable cost related to 4G service leads to increase in customer satisfactions. Further, reliability is also positively correlated to customer satisfactions. It indicates that higher the reliability, higher would be the customer satisfactions. In addition, availability is positively correlated to customer satisfactions. It indicates that availability of 4G service as per the necessity of the customers lead to increase in customer satisfactions.

Regression analysis

Having indicated the Kendall's Tau correlation coefficients, the regression analysis has been carried out and the results are presented in Table 2. More specifically, it shows the regression results of speed, features, cost, reliability, and availability on customer satisfactions.

Table 2

Estimated regression result of speed, features, cost, reliability, and availability on customer satisfactions

The results are based on 130 observations using linear regression model. The model is $CS = \beta_0 + \beta_1 S + \beta_2 F + \beta_3 C + \beta_4 R + \beta_5 A + e$ where the dependent variable is CS (Customer satisfactions). The independent variables are S (Speed), F (Features), C (Cost), R (Reliability) and A (Availability).

Model	Intercept	Regression coefficients of					Adj. R _{bar} ²	SEE	F-value
		S	F	C	R	A			
1	1.197 (4.009) **	0.714 (9.789) **					0.424	0.525	95.820
2	1.197 (4.009) **		0.714 (9.789) **				0.622	0.525	213.255
3	1.331 (4.851) **			0.106 (1.149)			0.443	0.516	103.439
4	1.331 (4.851) **				0.723 (10.785) **		0.472	0.502	116.321
5	1.841 (7.839) **					0.567 (9.743) **	0.421	0.526	94.933
6	0.411 (1.609)	0.139 (1.533)	0.724 (8.561) **				0.632	0.420	111.615
7	0.411 (1.609)	0.139 (1.533)	0.667 (6.778) **	0.106 (1.149)			0.633	0.419	75.037
8	0.286 (1.101)	0.139 (1.533)	0.581 (5.372) **	0.046 (0.480)	0.723 (10.785) **		0.639	0.415	58.104
9	0.318 (1.225)	0.121 (1.332)	0.559 (5.128) **	0.003 (0.026)	0.723 (10.785) **	0.723 (10.785) **	0.642	0.414	47.257

Notes:

- i. Figures in parenthesis are t-values.
- ii. The asterisk signs (**) and (*) indicate that the results are significant at one percent and five percent level respectively.
- iii. Customer satisfaction is dependent variable.

Table 2 show that the beta coefficients for speed are positive with customer satisfactions. It indicates that speed has a positive impact on customer satisfactions. This finding is consistent with the findings of (Patil *et al.*, 2012). Similarly, the beta coefficients for features are positive with customer satisfactions. It indicates that features have positive impact on customer satisfactions. This finding is consistent with the findings of Saha *et al.* (2016).

In addition, the beta coefficients for cost are positive with customer satisfactions. It indicates that cost has a positive impact on customer satisfactions. This finding is consistent with the findings of (Uddin *et al.*, 2014). Further, the beta coefficients for reliability are positive with customer satisfactions. It indicates that reliability has a positive impact on customer satisfactions. This finding is consistent with the findings of Selelo and Lekobane (2017). In addition, the beta coefficients for availability are positive with customer satisfactions. It indicates that availability has a positive impact on customer satisfactions. This finding is similar to the findings of Senguo and Kilango (2015).

4. Summary and conclusion

The telecommunications sector in Bangladesh has witnessed a phoenix-like ascent, with the mobile phone segment emerging as the dominant conduit for communication. A symphony of factors, including an insatiable appetite for telecommunication services and the advent of digitalization, has propelled this meteoric rise. Notably, the introduction of 4G and 5G services, bearing the promise of faster and more dependable Internet speeds, has conferred a transformative halo upon the customer experience (Islam, 2019). The crucible of heightened competition among mobile phone networks and internet service providers has further stoked the fires of service enhancements. These market fluctuations, intertwined with Bangladesh's socio-economic fabric, precipitate tangible repercussions for its clientele. The compass of Customer Satisfaction, of paramount significance in the telecom constellation, gauges the extent to which a company's offerings meet or transcend customer expectations. The symphony of market growth orchestrates heightened connectivity, augmented service quality, and enriched access to information and entertainment. Simultaneously, network quality, a cornerstone of telecommunications excellence, concerns itself with reliability, performance, and the overall health of a telecommunications network, encapsulating dimensions like uptime and data transfer speeds.

This study attempts to examine the consumer satisfaction and expectations towards the 4G service of Nepal telecom: A case of Kathmandu Valley. The study is based on primary data of 130 respondents.

The major conclusion of the study is that speed, features, cost, reliability and availability have positive impact on customer satisfactions. It indicates that higher the speed, features, cost, reliability and availability of 4G service of Nepal telecom, higher would be the customer satisfaction. The study also concludes that features is most significant factor followed by reliability and speed that determines the change in the level of customer satisfaction towards 4G service of Nepal telecom in Kathmandu Valley.

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