EFFECT OF SERVICE QUALITY DIMENSIONS ON URBAN CONSUMERS' SATISFACTION LEVEL IN WEST BENGAL TOWARDS MOBILE NETWORK OPERATORS

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Abstract : This study was set to determine the relationship between service quality and customer satisfaction in urban West Bengal. As the purchasing behavior in any part of the world is reliant mainly on various service quality dimension, this study too focuses on these factors so as to understand and comprehend which are the dimensions mainly influencing the satisfaction level of the customers. It was based on both descriptive and cross-sectional survey designs. A well structured questionnaire was used to collect primary data from 300 customers, using convenience sampling technique. The area chosen for the study is West Bengal, which comprises most prominent urban areas namely Durgapur, Baharampur, Cooch Behar, Krishnanagar and Haldia. The respondent's opinion has been recorded from various urban areas with the help of 5 point likert scale ranging from strongly agree to strongly disagree. Data were analyzed using SPSS's Exploratory Factor Analysis (EFA) and Multiple Regression and model has been developed from that. The study was based on the research objective, the effect of various service quality dimensions on urban consumers' satisfaction level in West Bengal towards various mobile network operators.

***IndexTerms* - Service quality dimensions, Empathy, Responsiveness, Convenience sampling, Satisfaction level**
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I. INTRODUCTION

According to World Bank "a 10% increase in mobile and broadband penetration increases the per capita GDP by 0.81% and 1.38% respectively in developing countries." This statement by World Bank is already visualized by the Indian Government and they have started taking various measures to improve the telecommunication infrastructure in rural India. According to the TRAI report of 2014-15 the total subscriber base in India 996.49 million where 969.89 million is wireless and the rest is wire-line. The Indian telecommunication sector has been divided in two areas – Wireless services & Wire-line services. The wireless service in India is increasing like anything whereas the wire-line services are decreasing also in a huge rate. From the below figures it has been clearly shown that the subscriber base in India is mainly wanting to use the wireless services due to its convenience, comfortable to use, can carry anywhere easily, providing various facilities like playing games, seeing videos, can do internet & many more. Customer satisfaction is having a positive significant association with customer retention. If the customers are satisfied with the services provided by service providers then they will retain themselves in the same brand as well as they will motivate others to use the services. There are various factors like original information about services; delivery promises, consistency, able to handle any problem etc are directly affecting the customer retention. Price, call quality & customer support are the main key factors whose workability depends on customer satisfaction. If these factors work properly in an organization then customers will be satisfied for sure (Bhatty et al. 2001).

II. REVIEW OF LITERATURE

Akbar et al. (2009) explained in their article that how the service quality, trust & customer satisfaction, these three factors are having an impact on customer loyalty or not. To analyze this from 304 customers the data has been collected in Bangladesh & Structure Equation Model has been used to find out the analysis. The result reveals that the trust & customer satisfaction both are having significant correlation with customer loyalty. Customer satisfaction is working as a mediator between customer loyalty & service quality. If the company will improve their service quality then automatically the customers will get satisfied. Satisfied customers will be the most loyal to the company as well as trustworthy.

Balaji (2009) illustrated that what the factors are mainly influencing the Indian customers to buy a mobile phone. 199 responses have been collected with a structured questionnaire & structural equation modeling has been used to find the result. American Customer Satisfaction Index model has been used for the framework purpose & to examine the relationship among the customer loyalty and satisfaction, expectation etc. Perceived quality is one of the important factors to enhance the customer satisfaction with the help of others like trust, price tolerance etc.

Negi (2009) in the research article mentioned that service quality has few dimension according to SERVQUAL framework. The study has been conducted in Ethiopian Telecom industry & 220 respondents have been chosen using stratified random sampling. Network has got the highest service quality dimension whereas convenience is the lowest one. Regression models has been developed from the study to find out the overall service quality.

Ali et al (2010) described that in today's market the main challenge of the cellular service providers are to retain their customers. The study has been conducted in Pakistan & data has been collected from the various university students of Pakistan for the survey. For finding out the result from the study Structure Equation Model (SEM) has been used with the sample size of 300 students. The study is also disclosing few interesting facts like there is a significant relationship between price reasonability & customer satisfaction, which means if the prices are reasonable enough then customers will be happy also & they will retain to the same company year after year. Call clarity is also having a noteworthy relationship with customer satisfaction & retention. Some people can choose any particular service provider from the market due to less call rate but if the clarity is not there in call then very soon customer will switch from one brand to another.

Md. Aamir et al. (2010) illustrated on their research article that customer loyalty is the key factor to retain the organizations position in the market in long run. The study has been conducted with five major telecom companies in Pakistan with 292 respondents have provided their responses to a well structured questionnaire. This research mainly focusing on the customer's satisfaction level in the context of various organizations, why the customers are switching from one brand to another brand, for how many moths or how many years customers are using a particular brand etc. SPSS 10 has been used to do the statistical analysis part. The result reveals that Mobilink share has been decreased & it lost the battle with Ufone. So, Ufone is leading the market. The result also reveals that in context of mobile phone uses, around 80 percent of the respondents are not ready to spend more. 50% of the customers are happy with services & they belong from Ufone family. These satisfied customers are using the particular brand for more than 4 years which is quite appreciable. 57.5% of customers also said that they will continue the services in near future also.

Edward et al. (2010) studied in their research article that there is a high level connection with customer loyalty, quality of services, value & customer satisfaction & every factor does have a link with switching cost. The study has been conducted in Cochin city of Kerala state. The result revealed that perceived switching cost is having a negative association with customer satisfaction & loyalty whereas; it has a positive effect on quality & perceived value.

Hanif et al. (2010) explained that which are the factors mainly influencing the customer satisfaction in the context of different telecom brands. The research has been conducted in Pakistan with few service providers namely Ufone, Telenor, Mobilink etc. The study has been revealed that the most important factors which are influencing the customer satisfaction are affordable price & customer services provided by the various service providers. The result also reveals that though both the factors are having an impact on customer satisfaction still price factor hs somewhat more impact compare to customer services.

Haque et al. (2010) elaborated that the study mainly finds out which are the key factor when customers are choosing a particular service provider. The study has been conducted in Bangladesh & Structure Equation Modeling has been used to find out the result with the help of AMOS software. Price, quality of the service, promotion, availability etc has been chosen as factors which are influencing to choose. The result reveals that Price is the most important factor which affecting the consumers more at the time of choosing a service provider. Findings of the study will definitely help the Bangladeshi companies to work more on innovative marketing strategies & promotion.

Khan (2010) explained that the study has been conducted to find out the service quality providing by various telecom operators to the subscribers in Pakistan. 800 consumers have been selected with a well structured questionnaire & convenience sampling method is also used to find out the desired number. The statistical analysis has been done with the Confirmatory Factor Analysis & Multiple Regression Analysis to find out the result. The study reveals that convenience & quality of the network are the most important aspects which are affecting the perception of mobile phone users in terms of service quality whereas reliability did not have a significant impact.

III. HYPOTHESIZED RESEARCH MODEL

This is a proposed hypothesized research model of how different service quality dimensions are affecting urban consumers' satisfaction level in West Bengal towards various mobile network operators. This model is having eight important service quality dimensions, namely, Tangibles, Reliability, Responsiveness, Empathy, Assurance, Economical, Technical Quality and Image of the Service Provider which are influencing the urban customers' satisfaction level in West Bengal. These eight hypotheses have been framed from the below mentioned model.
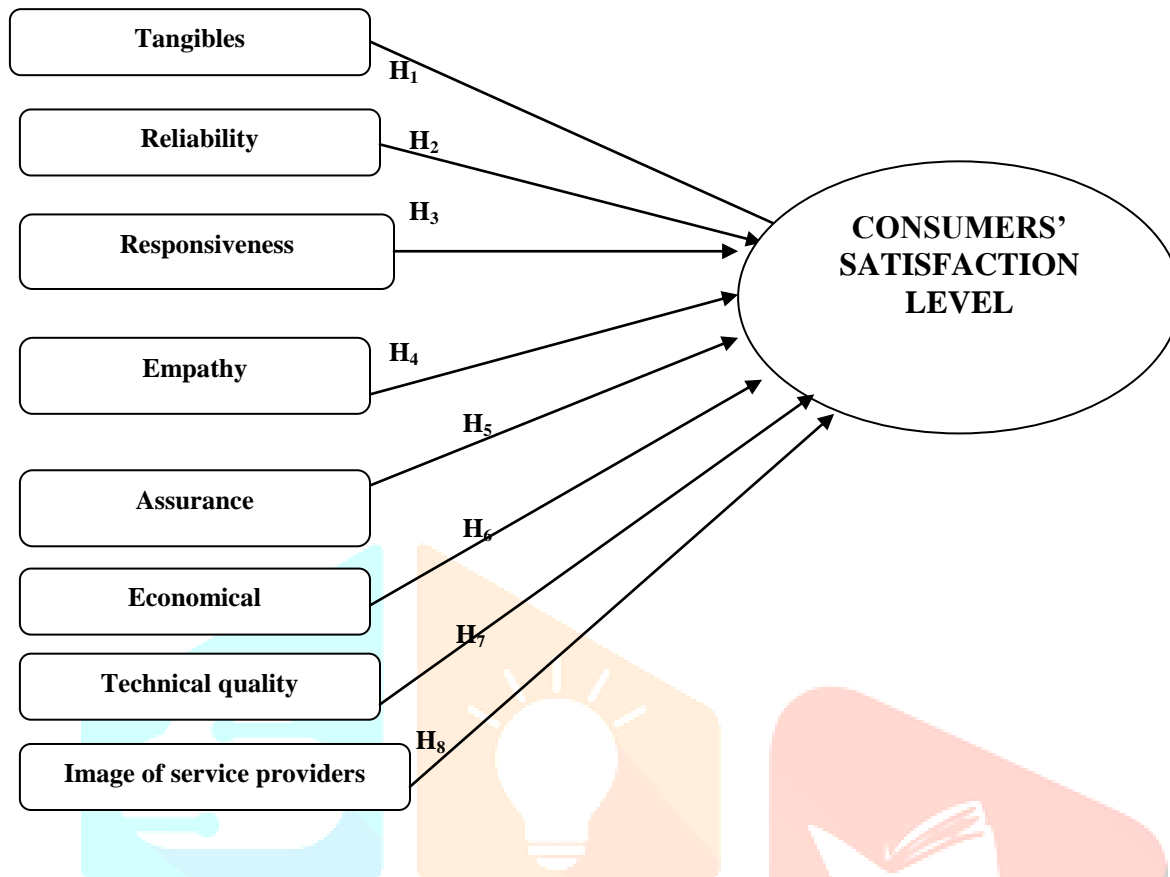
IV. HYPOTHESES

- Tangibles are having a positive impact on consumers' satisfaction level.
- Reliability is having a positive impact on consumers' satisfaction level.
- Responsiveness is having a positive impact on consumers' satisfaction level.
- Empathy is having a positive impact on consumers' satisfaction level.
- Assurance is having a positive impact on consumers' satisfaction level.
- Economical is having a positive impact on consumers' satisfaction level.
- Technical Quality is having a positive impact on consumers' satisfaction level.
- Image of the Service Provider is having a positive impact on consumers' satisfaction level.

V. RESEARCH METHODOLOGY

The research is done with the help of descriptive research with cross-sectional study. 350 questionnaires were floated while 300 responses were collected with a response rate of 85%. Questionnaires were floated everywhere in all the five urban areas of West Bengal namely Durgapur, Baharampur, Cooch Behar, Krishnanagar and Haldia. The convenience sampling technique has been used to conduct the study and respondent's opinion has been recorded from various urban areas with the help of 5 point likert scale ranging from strongly agree to strongly disagree. Data were analyzed using SPSS's Exploratory Factor Analysis (EFA) and Multiple Regression Analysis.

VI. ANALYSIS & DATA INTERPRETATION

VALIDITY TESTING

In order to be certain about the research instrument as well as the data collected, validity is checked. For this study, face validity, content validity, discriminant and convergent validity were checked for confirmation of the instrument. In face validity researchers determine whether or not their instrument is valid enough to measure what is intended to measure and this is done by taking the validity of the instrument at face value. In order to validate the instrument, academicians, professionals and potential respondents were shown the questionnaire to thoroughly review and analyze the content. Content that was unfit and may have caused issues in the future was deleted or modified. In content validity the content of the questionnaire was thoroughly checked and matched with the theoretical framework. Three questions were deleted after analyzing the content so as to make sure that the instrument is valid. So, here both face & content validity has been checked.

The construct validity contains convergent & discriminant validity. Here between the various variables of the factors is having the strong co-relation coefficient & most of the co-relation coefficients values are in higher ranges. So, here it proves that the convergent validity exists. Though there are high co-relation coefficients between the variables of a particular factor, there are very weak correlation also exists between the one factor's variable to another factor's variable. Here it also proves that the discriminant validity exists.

RELIABILITY TESTING:

Reliability Statistics

Cronbach's Alpha	N of Items
.895	22

The reliability analysis on reasons for shifting data has got the Cronbach's Alpha result of .895. From the table, we've depicted that this Cronbach's Alpha result acceptable & accordingly the researcher have conducted the further analysis.

FACTOR ANALYSIS:

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.834
Bartlett's Test of Sphericity	Approx. Chi-Square	1021.356
	df	49
	Sig.	.000

The KMO Measure of Sampling Adequacy is showing 0.834 which is quite suitable to conduct the factor analysis. It is also showing that Bartlett's Test of Sphericity is .000 which is quite acceptable. So, it means it is useful to conduct the study.

Rotated Component Matrix

Variables	Factors							
	Tangibles	Reliability	Responsiveness	Empathy	Assurance	Economical	Technical Quality	Image of Service Providers
Q1	.956							
Q2	.893							
Q3	.725							
Q4		.869						
Q5		.767						
Q6		.711						
Q7			.842					
Q8			.793					
Q9			.704					
Q10				.923				
Q11				.887				
Q12				.843				
Q13				.769				
Q14					.883			
Q15					.796			
Q16						.842		
Q17						.721		
Q18							.949	
Q19							.861	
Q20							.753	
Q21								.920

Q22								.899
Variance Explained	19.267	16.178	13.174	7.211	6.269	5.652	4.124	3.237
Cumulative	19.267	35.445	48.619	55.830	62.099	67.751	71.875	75.112
Cronbach's Alpha	.886	.869	.903	.919	.895	.847	.912	.896

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.[a]

a. Rotation converged in 6 iterations.

According to the table the eight components have found more than 1 Eigen values and the total variance explained by them is 75.112% which is quite adequate to conduct the study. From the above table it has been observed that all the 22 variables have been divided in 8 components. Here we have used the Principal Component Analysis for extraction & Varimax with Kaiser Normalization for rotation method.

Rotated Component Matrix table explains that the 1st component explains about Tangibles, 2nd component explains about Reliability, 3rd component is about Responsiveness, 4th, 5th, 6th, 7th & 8th explains about Empathy, Assurance, Economical, Technical Quality and Image of the Service Provider respectively. These all eight factors are service quality dimensions which also support the literature review. The component named Tangibles explains about modern equipments, attractive outlets & display material & visually appealing materials like pamphlets, where modern equipments are the most influencing factor. The component named Reliability explains about mobile network operators are providing the services as promised, dependable in handling customer complaints, providing correct billing information in time where mobile network operators are providing the services as promised is the most influencing factor. 3rd component explains about employees of various service providers are resolving the customer complaints in time, employees of various service providers are always willing to help the customers and employees of various service providers are providing information to the customers when services will be performed whereas, employees of various service providers are resolving the customer complaints in time is the most influencing factor. Like that, from 4th component the most influencing factor is an employee giving customers individual attention, the other most influencing variables are employees who understand the needs of their customers; employees understand customer specific needs & convenient business hour. In 5th component the most influencing factor is employees have the knowledge to answer questions, whereas the other factor is employees are courteous with customer. The next component in Economical category the most influencing factor is a variety of cards with various denominations. The call charged per minute or second with internet charges is the next influencing factor. In the technical quality factor the most important variable is network provides latest technology and improved services. The other influencing factors are service provider provides adequate network coverage and network clarity for call and other services. In last factor named image of service provider, the most influencing factor is service provider is best in the market compare to other companies.

REGRESSION ANALYSIS:

The eight factors which have been identified from the Factor Analysis are, Tangibles, Reliability, Responsiveness, Empathy, Assurance, Economical, Technical Quality and Image of the Service Provider respectively. Here the Consumer Satisfaction Level has been used as a Dependent Variable and the remaining eight factors have been used as an Independent variable.

Model Summary

R	R Square	Adjusted R Square	Durbin-Watson
0.859	0.738	0.731	1.974

Dependent Variable: Consumers' Satisfaction Level

Predictors: (Constant), Tangibles, Reliability, Responsiveness, Empathy, Assurance, Economical, Technical Quality, Image of the Service Provider

Coefficients

	Un-standardized Coefficients		Standardized Coefficients	t	Sig.	VIF
	B	Std. Error	Beta			
(Constant)	7.896	.756		16.237	.000	2.351
Tangibles	2.132	.245	.350	10.273	.000	2.117
Reliability	2.993	.237	.414	12.171	.000	2.136
Responsiveness	1.006	.211	.368	6.413	.000	2.172
Empathy	.883	.174	.298	5.265	.000	1.998
Assurance	1.431	.189	.299	8.110	.000	2.018
Economical	3.269	.293	.355	13.875	.000	1.887
Technical Quality	**3.883**	.312	.413	14.294	.000	1.924
Image of the Service Provider	.659	.158	.329	4.298	.000	2.125

Dependent Variable: Consumers' Satisfaction Level

Multi-collinearity has been checked through Variance Inflation Factor (VIF) which needs to be less than 3 for acceptability range. Here all VIF values are in acceptable range in & it concludes that the variables are free from multi-collinearity.

0.859 is the Correlation coefficient (R) for Model 1, it emphasizes an amount of correlation between the independent variables and dependent variable (Consumer Satisfaction Level). The R square value explains the 0.738 or 73.8% which is quite significant. Here the significance level also implies .000 significance level which means it is quite acceptable.

From the coefficient table the researcher has found that technical quality is having highest un-standardized B value of 3.883 as well as t value is also high. So it is the highest influence factor on consumer satisfaction level. After that the second highest will be Economical with the B value of 3.269. Reliability, Tangibles, Assurance, Responsiveness, Empathy and Image of the service providers are following after that.

So, here the multiple regression equation can be expressed as,

Consumer Satisfaction Level = 7.896 + (2.132) X_1 + (2.993) X_2 + (1.006) X_3 + (.883) X_4 + (1.431) X_5 + (3.269) X_6 + (3.883) X_7 + (.659) X_8

Tangibles = X_1
Reliability = X_2
Responsiveness = X_3
Empathy = X_4
Assurance = X_5
Economical = X_6
Technical Quality = X_7
Image of the service provider = X_8

VII. RESULT OF THE HYPOTHESES:

- Tangibles are having a positive impact on consumers' satisfaction level. So it accepts alternative hypothesis.
- Reliability is having a positive impact on consumers' satisfaction level. So it accepts alternative hypothesis.
- Responsiveness is having a positive impact on consumers' satisfaction level. So it accepts alternative hypothesis.
- Empathy is having a positive impact on consumers' satisfaction level. So it accepts alternative hypothesis.
- Assurance is having a positive impact on consumers' satisfaction level. So it accepts alternative hypothesis.
- Economical is having a positive impact on consumers' satisfaction level. So it accepts alternative hypothesis.
- Technical Quality is having a positive impact on consumers' satisfaction level. So it accepts alternative hypothesis.
- Image of the Service Provider is having a positive impact on consumers' satisfaction level. So it accepts alternative hypothesis.

VIII. FINDINGS & CONCLUSION

The study explains that technical quality is the highest influencing factor on consumer satisfaction level. After that the second highest will be Economical and then Reliability, Tangibles, Assurance, Responsiveness, Empathy and Image of the service providers are following one another. So it is evident from the study is urban consumers are really thinking about technical qualities first, then they are thinking about economy and reliability. Government is taking steps to improve the quality of network to provide the internet facilities in rural areas. Our PM Mr. Narendra Modi has also shown concern about the rate of call drop. One of the most difficult task is to aware & educate rural people regarding new technologies. With the help of different media we can help the rural people to use the latest technologies available in the market.

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ANNEXURE

Constructs	Questions
Tangibles	Q1. Modern equipments
	Q2. Attractive outlets & display material
	Q3. Visually appealing materials like pamphlets
Reliability	Q4. Mobile network operators are providing the services as promised
	Q5. Dependable in handling customer complaints
	Q6.Providing correct billing information in time
Responsiveness	Q7. Employees of various service providers are resolving the customer complaints in time
	Q8. Employees of various service providers are always willing to help the customers
	Q9. Employees of various service providers are providing information to the customers when services will be performed
Empathy	Q10. Employees giving customers individual attention

	Q11. Employees who understand the needs of their customers
	Q12. Employees understand customer specific needs
	Q13. Convenient business hour
Assurance	Q14. Employees have the knowledge to answer questions
	Q15. Employees are courteous with customer
Economical	Q16. A variety of cards with various denominations
	Q17. Call charged per minute or second with internet charges
Technical Quality	Q18. Network provides latest technology and improved services
	Q19. Service provider provides adequate network coverage
	Q 20. Network clarity for call and other services
Image of Service Providers	Q21. Service provider is best in the market compare to other companies
	Q22. Providing best of the technologies which also provides best services to customers
Consumer Satisfaction	Q23. Service quality dimensions are really important for consumer satisfaction