QUALITY OF SERVICE IN MOBILE PHONE INDUSTRY IN MADURAI DISTRICT

(*Dr. A. SHABINULLAH KHAN   **Dr. A. ABBAS MANTHIRI)

Dr. A. SHABINULLAH KHAN

ASSOCIATE PROFESSOR OF COMMERCE, Dr. ZAKIR HUSAIN COLLEGE

ILAYANGUDI – 630 702 , SIVAGANGAI DISTRICT, TAMILNADU

INDIA.

&

Dr. A. ABBAS MANTHIRI

ASSOCIATE PROFESSOR OF COMMERCE, Dr. ZAKIR HUSAIN COLLEGE

ILAYANGUDI – 630 702,SIVAGANGAI DISTRICT. TAMILNADU

INDIA.

A B S T R A C T

The telecommunication sector, especially the mobile phone sector, in India is one of the fastest growing business segments of the country which provide a lot of value addition to the society with its service and creation of employment opportunities. In dynamic global environment, every country is striving to bridge the digital divide and become competitive. Today, society is living with advance technology and everyone wants to keep pace with the new technologies. Mobile phone industry is growing larger because it has become a necessity. Parents are getting mobile phones for their teens because they want to communicate in case of an emergency and the wireless carriers have made it easy to add users to their existing plans. This increases buyers and increases market size worldwide. The competitive environment in mobile phone industry in the universe has become intense. Moreover, the forces of liberalization and globalization of telecommunication market have pressurized the companies to maintain their market share by focusing on retaining their current customer. They are being increasingly confronted with the challenges to attract their subscribers by

providing high quality of services. With the increase in the cost of acquisition of new customers,   cellular mobile companies continually seek new ways to acquire, retain and increase their subscriber base. Thus the ability to retain existing customer is increasingly crucial in this industry. This is possible only by providing quality services to the customers. Hence, quality of service from mobile phone users' perspective needs to be studied with a view to facilitate its measurement. An evaluation of relative importance of mobile phone service quality dimensions is essential to identify the effects of these dimensions on customer perception of mobile phone service quality. It is essential that service quality of mobile phone users be evaluated on regular basis to identify weaknesses, and emerging trends in the service. In this Article, the quality of service provided by the mobile phone industry in Madurai District is probed.

Key Words: Madurai , Mobile phone industry ,Quality of service, Rural ,Urban

Introduction

The telecommunication sector, especially the mobile phone sector, in India is one of the fastest growing business segments of the country which provide a lot of value addition to the society with its service and creation of employment opportunities. Mobile phone industry is growing larger because it has become a necessity. This increases buyers and increases market size worldwide. The competitive environment in mobile phone industry in the universe has become intense. Moreover, the forces of liberalization and globalization of telecommunication market have pressurized the companies to maintain their market share by focusing on retaining their current customer. They are being increasingly confronted with the challenges to attract their subscribers by providing high quality of services. With the increase in the cost of acquisition of new customers,   cellular mobile companies continually seek new ways to acquire, retain and increase their subscriber base. Thus the ability to retain existing customer is increasingly crucial in this industry. This is possible only by providing quality services to the customers. Hence, quality of service from mobile phone users' perspective needs to be studied with a view to facilitate its measurement. An evaluation of relative importance of mobile phone service

quality dimensions is essential to identify the effects of these dimensions on customer perception of mobile phone service quality. It is essential that service quality of mobile phone users be evaluated on regular basis to identify weaknesses, and emerging trends in the service. In this Article, the quality of service provided by the mobile phone industry in Madurai District is probed.

* & ** Associate Professors of Commerce, Dr. Zakir Husain College, Ilayangudi – 630 702, India.
Email: shabinullahk@gmail.com; amanthiri@gmail.com

Review of Literature

The changing paradigm of business has made the provision of quality of services as top priority for organizations. Customer-focused strategy has become a means of competitive advantage and survival for organizations (Taylor & Baker, 1994). Perceived service quality and its measurement has become essential focus for the organization in designing and implementing a customer oriented strategy (MacStravic, 1977).

In 2008, Telecom Regulatory Authority India carried out quality of service survey of mobile operators based on users' satisfaction. The sample consisted of 1318 mobile phone users. The important dimensions of regulatory services benchmark dimensions of service quality included billing, customer care, availability of network, value-added services and pre-sales and sales dimensions. Out of 11 operators, only five operators achieved the 90% service quality benchmark (Survey, 2008).

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The delivery of a service has been described as a 'performance' featuring the service provider and the customer (Bitner, 1992). It is during this performance that the actions and behaviour of service employees become the "Crucial determinants of service quality as perceived by consumers (Hartline and Ferrell, 1996)".

Service researchers have suggested that the search for universal conceptualization of the service quality construct may be futile (Levitt, 1981, Lovelock, 1983) and arguments have been advanced to suggest that service quality is either in specific or context specific (Babakus and Boller, 1992). Thus to be of practical utility, a service construct should not only be operational (non-global), but also context specific. The identification of service quality variables in the mobile phone service industry is based on Lapierre's (1996) observation:

➢ Service quality research is critically dependent on the quality of the operational measures;

➢ Given the nature of service, the search for universal conceptualization of service quality may be fertile ; and

➢ Construct measurements areas important as the examination of substantive relationships.

The service quality variables in mobile telecommunications are identified from the reviews (Holbrook, 1994 Dabholhar et al., 2000; Wang et al., 2002).

Methodology

The study area, namely Madurai District is one of the important districts of Tamil Nadu where there has been a significant progress in agricultural and industrial development since the year 1960. Purposive sampling technique was adopted in this study with a sample of 520 cellular mobile phone consumers. Out of them 260 respondents are from urban area (from Madurai city) and other 260 are rural customers from 13 blocks of Madurai District (Madurai East, Madurai West, Melur, Alanganallur, Kottampatti, Vadipatti, Usilampatti, Chellampatti, Sedapatti, T. Kallupatti, Kalligudi, Tirumangalam and Tirupparangundram.)

Statistical Techniques Used

To arrive at certain conclusions   regarding the   hypothesis framed in the present investigation, the following statistical tools for the analysis of data were employed. T-test, One way Analysis of Variance (ANOVA), Factor Analysis, Discriminant Analysis and Multiple Regression Analysis

Hypotheses

The following hypotheses were tested to identify the acceptability.

1. There is no significant difference among the urban and rural customers regarding their perception on service quality factors and their overall attitude towards the industry.

2. **There is no significant association between the profile of the customers and their perception on service quality factors and their overall attitude towards the industry.**

3. **There is no significant impact of perception on service quality factors in mobile phone service market and their overall attitude towards the industry.**

Service Quality in Mobile Phone Industry

In marketing and economics, quality often has been viewed as dependent on the level of product attributes. In operations management, quality is defined as having two primary dimensions, fitness of use and reliability. In service literature, quality is viewed as an overall assessment. Among them, the most comprehensive definition of quality is one proposed by Garvin (1988) with the following eight attributes:

- **Performance means a products' primary operating characteristics,**

- **Features refers to the additional features of the product,**

- **Conformance represents the extent to which a products design and operating characteristics meet the established standards,**

- **Reliability indicates the probability that a product will operate properly over a specified period of time under stated conditions of use,**

- **Durability means the amount of use the consumer gets from the product before it physically deteriorates or until a replacement is preferable**

- **Service ability refers to the speed, competence and, courtesy of repair**

- **Aesthetics refers to how a product appeals to the five senses and**

- **Customer perceived quality indicates the customers' perception of a products quality, based on the reputation of the firm.**

The variables related to the service quality in mobile phone service are derived from the reviews. The identified service quality variables are equipment, ability to inspire, transaction safety, individual attention, physical facilities, trust, service performance, personal care, appearance of personnel, knowing customers needs, adequate support, convenient operating hours, accurate service performance, record handling, prompt service, confidence, willingness to help customers, dependability, right at first time and timely service. The customers are asked to rate the above said service quality variables at five point scale from highly satisfied to highly dissatisfied. The assigned scores on these scales are from 5 to 1 respectively. The customers' attitude towards the service quality variables among the urban and rural users have been examined with the help of the mean score of the service quality variables. The 't' test has been administered to find out the significant difference among the two groups of users regarding their perception on service quality factors. The results are given in Table - 1.

TABLE - 1

Service Quality in Mobile Phone Service

Sl.No.	Service Quality Variables	Mean Score among Customers in		T-Statistics
		Urban	Rural	
1.	Equipment	3.5684	2.6174	2.1408*
2.	Ability to inspire	3.7303	3.0393	2.2403*
3.	Transaction Safety	2.9406	3.2417	-1.3317
4.	Individual attention	3.8183	2.9099	2.5696*
5.	Physical facilities	3.9089	3.4143	1.1409
6.	Trust	3.5147	2.8624	1.9964*
7.	Service Performance	3.6896	2.7089	2.4087*
8.	Personal Care	3.8024	2.9196	2.3344*
9.	Appearance of personnel	3.6173	2.8084	1.9823*
10.	Knowing customers' needs	3.8244	2.9342	2.6217*
11.	Adequate support	3.4093	2.6408	2.5089*
12.	Convenient operating Hours	3.2466	3.8144	-1.4517
13.	Accurate Service Performance	3.6089	3.1193	1.3396
14.	Record Handling	3.0936	3.4414	-0.9689
15.	Prompt Service	3.8024	3.0463	2.4046
16.	Confidence	3.1149	2.6987	1.1443
17.	Willingness to help customers	3.5084	3.9024	-0.8644
18.	Dependability	3.1446	3.8633	-2.0493
19.	Right at first time	3.2087	2.9143	-1.9892*
20.	Timely Service	3.8642	2.9634	2.0341*

* Significant at five per cent level.

Regarding the perception on Service Quality variables, the significant difference among the two group of users has been identified in the perception on equipment, ability to inspire, individual attention, trust, service performance, personal care, appearance of personnel, knowing customers' needs, adequate support, dependability, right at first time and timely service since the respective 't' statistics are significant at five per cent level.

Important Service Quality factors in mobile phone service Market

The important service quality factors in mobile phone service market are identified with the help of factor analysis. The score of the service quality variables have been included for the analysis. Initially, the test of validity of data for factor analysis has been executed to test the validity of data for factor analysis. The resulted KMO measures (0.6949) and the significance of Chi-Square value confirm the validity of data for factor analysis. The executed factor analysis results in five important service quality factors namely Reliability, Responsiveness, Assurance, Tangibles and Empathy. The factor loading of the variables in each factor, its reliability co-efficient, eigen value and the per cent of variation explained are summarised in Table - 2.

TABLE - 2

Service Quality Factors in Mobile Phone Service

Factors	*Service Quality Variables*	*Factor loading*	*Reliability co-efficient*	*Eigen value*	*Per cent of variation explained*
Reliability	**Service Performance**	0.9131	0.7342	3.3069	21.09
	Adequate Support	0.8646			
	Accurate Service Performance	0.7202			
	Dependability	0.6149			
	Transaction safety	0.5862			
Responsiveness	**Timely Service**	0.8447	0.7149	2.9442	18.33
	Prompt Service	0.7136			
	Convenient Operating hours	0.6309			
	Willingness to help customers	0.5717			
Assurance	**Trust**	0.9236	0.7706	2.0676	15.49
	Right at first time	0.7081			
	Confidence	0.6346			
	Ability to inspire	0.5991			
Tangibles	**Equipment**	0.8939	0.7107	1.4546	12.14

	Record handling	0.7616			
	Appearance of personnel	0.6884			
	Ability to inspire	0.5447			
Empathy	Individual attention	0.8641	0.7884	1.2408	10.62
	Knowing customers needs	0.7224			
	Personal care	0.7149			
KMO measure of sampling Adequacy: 0.6949		**Bartletts test of Sphericity: Chi-Square Value: 72.49***			

*Significant at zero per cent level.

The important variable in the above two service quality factors are trust and the identified last factor is empathy. The factor analysis results in five important service quality factors for further analysis.

Perception on Service Quality factors among the different Service Users:

The customers avail of mobile phone service from various service providers. In the present study, the service providers are confined to BSNL, Hutch, Aircel, Airtel, Reliance, Tata and BPL. The customers of different service providers may perceive the different service quality factors in different manner. The present analysis has made an attempt at analysing their attitude on service quality factors with the help of the mean score of perception on various service quality factors. The results are given in Table - 3.

TABLE - 3

Perception on Service Quality among different Service Users

Sl.No.	Customers of	Mean Score among customers				
		Reliability	Responsiveness	Assurance	Tangibles	Empathy
1.	BSNL	3.6817	2.9507	3.2445	2.7868	2.9091

2.	Hutch	3.0334	3.3417	3.3346	3.0648	3.6867
3.	Aircel	3.5161	3.6903	3.4033	3.7494	3.1446
4.	Airtel	3.6644	3.7233	3.4962	3.9581	3.7184
5.	Reliance	2.7188	3.8678	3.0644	3.7722	3.3681
6.	Tata	2.9441	3.6973	2.9449	2.8641	3.4562
7.	BPL	3.0930	3.3584	2.4606	2.9646	3.2939
	F-Statistics	2.5638*	2.2062*	2.7842*	2.3096*	1.4503

*Significant at five per cent level.

The perception on various service quality factors show the significant difference among the various service users has been identified with perception on Reliability, Responsiveness, Assurance and Tangibles

Perception on Service Quality Factors among the Customers

In order to identify the user's perception on the service quality factors, the score of the service quality factors has been computed from the mean score of the service quality variables in each factor. The mean score on each service quality factors among the urban and rural users has been computed separately. The 't' test has been administered to find out the significant difference among the two groups of users regarding their perception on service quality factors. The results are presented in Table -4.

TABLE - 4

Perception on Service Quality Factors among the Customers

Sl.No	Service Quality Factors	Mean Score among the Customers in		T-Statistics
		Urban	Rural	
1.	Reliability	3.3586	3.1148	1.8052
2.	Responsiveness	3.6054	3.4316	1.3193

3.	Assurance	3.3923	2.8787	2.0569*
4.	Tangibles	3.5477	3.0704	2.2417*
5.	Empathy	3.8151	2.9212	2.6096*

*Significant at five per cent level.

Regarding the perception on the service quality factors, the significant difference among the two group of users had been identified in the perception on Assurance, Tangibles and Empathy In total, the urban users perception on Service Quality factor is higher than the perception among the rural users.

Association between the Profile of Customers and their Perception on Service Quality Factors

The profile of the customers may be associated with their perception on the service quality factors. It is examined with the help of one way analysis of variance. The included profile variables are age, sex, level of education, occupation, family size, number of earning members, family income, value of movable and immovable assets, number of cell phones owned and years of experience. The perception on the service quality factors namely Reliability, Responsiveness, Assurance, Tangibles and Empathy have been examined separately. The resultant 'F' statistics are illustrated in Table - 5.

TABLE - 5

Association between the Profile of Customers and their Perception SQF

Sl. No.	Profile Variables	F-Statistics				
		Reliability	*Responsiveness*	*Assurance*	*Tangibles*	*Empathy*
1.	Age	2.4583*	1.9193	2.0642	2.4583*	2.6902*
2.	Sex	2.9144	3.9098*	2.9691	2.7086	3.2141
3.	Level of education	2.4508*	2.6607*	1.8994	2.0703	2.4508*
4.	Occupation	1.7702	1.8684	2.0841*	2.2344*	2.6779*

5.	Family size	2.0066	2.1149	2.2962	2.3962*	1.8342
6.	Number of earning members	2.1447	2.5443*	2.3143	2.3969*	2.4511*
7.	Family Income	2.0899*	2.1494*	2.5696*	2.8184*	2.0092
8.	Value of movable and immovable assets	2.3616*	2.4086*	2.0616	2.2919*	2.3343*
9.	Number of cell phones owned	1.9383	1.8474	2.1718	2.2141	2.4509*
10.	Years of experience	2.4569*	2.7142*	2.6446*	2.1449	2.3608*

* Significant at five per cent level.

The perception on Reliability has revealed the significantly associating profile variables are age, level of education, family income, value of movable and immovable assets and years of experience The significantly associating profile variables with the perception on Responsiveness are sex, level of education, number of earning members, family income, and value of movable and immovable assets and years of experience. Regarding the perception on Assurance, the significantly associating profile variables are occupation, family income and years of experiences. The significantly associating profile variables with the perception on the Tangibles are age, occupation, family size, number of earning members, family income and value of movable and immovable assets Regarding the perception on 'Empathy', the significantly associating profile variables are age, level of education, occupation, number of earning members, value of movable and immovable assets, number of cell phones owned and years of experience.

Discriminate Service Quality Factors among the urban and Rural Customers:

In order to identify the important discriminate service Quality factors among the Urban and Rural users, the two group discriminate analysis is used.

The score on the Service Quality factors among the urban and rural users has been used for the analysis. Initially, the mean difference of service quality factors, its statistical significance and Wilks Lambda co-efficients have been computed and shown in Table - 6.

TABLE - 6

Mean Difference and Discriminant Power of Service Quality Factors

Sl.No.	Service Quality Factors	Mean Score among the customers in		Mean Difference	T-Statistics	Wilks Lambda
		Urban	Rural			
1.	Reliability	3.3586	3.1148	0.2438	1.8052	0.4133
2.	Responsiveness	3.6054	3.4316	0.1738	1.3193	0.3908
3.	Assurance	3.3923	2.8787	0.5136	2.0569*	0.2162
4.	Tangibles	3.5477	3.0704	0.4773	2.2417*	0.1349
5.	Empathy	3.8151	2.9212	0.8939	2.6096*	0.1723

* Significant at five per cent level.

The Significant service quality factors have been included for the establishment of two group discriminant function. The unstandardised procedure has been followed to establish the discriminant function. The established discriminant function is;

$$Z = 0.9133 + 0.3086x_3 + 0.4564x_4 + 0.3442x_5$$

The relative contribution of discriminant service quality factors in total discriminant score is computed by the product of unstandardised canonical

discriminant co-efficient and the respective mean difference of the service quality factors. The results are given in Table - 7.

TABLE - 7

Relative Contribution SQF in Total Discriminant Score

Sl.No.	Service Quality Factors	Unstandardised canonical Discriminant co-efficient	Mean Difference	Product	Relative Contribution in Total Discriminant Score
1.	Assurance	0.3086	0.5136	0.1585	23.17
2.	Tangibles	0.4564	0.4773	0.2178	31.84
3.	Empathy	0.3442	0.8939	0.3077	44.99
	Total			0.6840	100.00
Per cent of Cases Correctly classified: 68.17.					

The higher relative contribution of discriminant factors in the total Discriminant score is noticed in the case of Empathy and Tangibles The important discriminant service quality factors among the urban and rural users are Empathy and Tangibles.

Findings

The communication services in the study area have witnessed a phenomenal change from 1991. The important factors influencing the choice of the mobile phone service are facility, services, economy, coverage, additional features, schemes and image. The important service quality factors in mobile phone service are reliability, responsiveness, assurance, tangibles and empathy. The important customer's attitude towards the service providers is moderate and dissatisfied. The discriminant service quality factors among the satisfiers and dissatisfiers are empathy, reliability and tangibles.

Conclusion

In Indian mobile phone market, competition among various players is more intense than ever, which is inevitable. They compete not only in network quality by a large amount of investment, network extension and upgrading, but also in customer satisfaction, customer retention and acquisition by direct and indirect price reduction.   An aggressive strategy is needed to enhance the trustworthiness of mobile phone operators by keeping customers' best interest at heart, providing customized services and exemplary behaviour of contact personnel to make the interaction a memorable experience. The competitive environment demand constant assessment of service quality to meet rapid changes in customers' demand. Hence, the existing mobile operators should also focus on other dimensions of tangible; responsiveness, assurance, and empathy because these aspects significantly affect customers' perception of service quality of mobile phone service provider and should take more care to analyse the customers' needs and generate the innovative value added services to withstand in the mobile phone service market.

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