

# SERVICE QUALITY AND CUSTOMER SATISFACTION: AN EMPIRICAL INVESTIGATION IN INDIAN MOBILE TELECOMMUNICATIONS SERVICES

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*The Indian mobile telecommunications services market has experienced a tremendous growth over the last few years. This has been bolstered by the influx of the foreign direct investment in this sector. Competition among existing players has also intensified as companies are increasingly focusing both on retaining their existing customers as well as attracting new ones. This study attempts to identify service-related factors in the Indian mobile telecommunications market which influence customer satisfaction (CS), repurchase intention (RI), and customers' propensity to recommend the service to others. The results of the study will help the mobile service providers to focus on maintaining and enhancing the service leading to enhanced customer satisfaction, repurchase intention and recommendations of services to others.*

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## INTRODUCTION

The telecommunications sector in India was liberalized in the early 1990s, paving the way for a significant influx of private as well as foreign direct investment in the sector. Over the last six or seven years, the sector has experienced an exponential growth in subscriber base, crossing the 150 million mark in 2007 (Boston Analytics, October 2007). The mobile phone service providers are now operating in a highly competitive environment with tight margins and fleeting customer loyalty. Revenue leakage, customer churn and ineffective customer service have put pressure on the profitability of the service providers.

In the wake of these changing dynamics, the Indian mobile phone operators face a number of significant challenges. First, retaining existing customers in a predominantly pre-paid and high churn market has become more difficult and costly. Similarly, new customer acquisition is becoming more elusive than ever as potential customers have more options to choose from and mobile phone operators offer attractive

deals to lure prospects. Third, as mobile phone operators have had to incur additional expense in keeping existing customers and acquiring new ones, their average revenue per user (ARPU) has declined, leading to deterioration of their financial performance.

In light of these challenges, mobile phone operators may want to make customer satisfaction a strategic priority. Research evidence suggests that customer satisfaction has a direct effect on the financial performance of a company (Smith and Wright 2004; Ittner and Larcker 1998). Moreover, satisfied customers have a higher propensity to stay with their existing service provider than the less satisfied ones (Cronin et al. 2000) and are more likely to recommend the service provider to others, leading to improved bottom line for the company (Reichheld 2003; 2006). Therefore, it is imperative that Indian mobile phone operators gain a better understanding of the relationship between the service related factors, customer satisfaction, repurchase intentions and recommendation of services to others. In this paper we explore these relationships.

The purpose of the paper is twofold: (1) to identify the service related factors in the mobile telecommunications services sector and (2) to

examine the impact of these factors on customer satisfaction, repurchase intention and customers' propensity to recommend the services to others. The rest of the paper is organized as follows:

First, we provide a snapshot of the Indian mobile telecommunications market followed by a review of the literature regarding the constructs of service quality, customer satisfaction, repurchase intentions and recommendations of services to others. Next, we describe the research methodology used in the paper as well as the survey instrument that was used in data collection. We then present the results of our analysis followed by a discussion of the findings. Finally, based on the empirical evidence from the analysis, we develop recommendations for companies in the Indian mobile telecommunications industry.

#### **Indian Mobile Telecommunications Market: A Snapshot**

The mobile phone industry all over the world has been witnessing high growth rates in subscriber base in recent years. In developing countries, mobile phone service is capturing an increasing share of the overall telecommunications market. India is one of the fastest growing mobile telecommunications markets among developing countries. In the last five years, Indian mobile phone market has grown from 13 million subscribers in 2003 to about 165 million subscribers in 2007, registering an annual growth rate of about 89 percent (Boston Analytics, October 2007), overtaking the fixed line subscriber base in 2003 for the first time.

One factor that is responsible for such a rapid growth is a significant reduction in call tariffs. Since 1999, the call tariff rate has declined by more than 26 percent, from Rs.6.70 per minute in 1999 to Rs.1.06 in 2005. As a result, the Indian subscriber base has increased by almost four million subscribers per month on average, surpassing the 100 million mark in 2006 (Telecom Regulatory Authority of India) making India the fifth largest country in terms

of mobile subscriber base in the world after the USA, China, Japan and Russia. The contribution of the telecommunications sector to India's GDP has also increased from 1.5 percent in 2000 to 1.9 percent in 2006. This was partly due to the huge inflow of foreign direct investment in the mobile telecommunication sector. The growth in the subscriber base has naturally led to a revenue growth in the sector from \$0.92 billion (Rs.36 billion) in the quarter ended September 2005 to \$ 1.30 billion (Rs.51 billion) in September 2006, registering a growth rate of 10.7 percent. Interestingly, the Average Revenue Per User (ARPU) has declined 2.7 percent, from \$8.58 in September 2005 to \$7.21 in September 2006. The decline in ARPU has been fuelled by a host of factors such as the "life time incoming free plans" provided by the service providers, the market structure of the mobile telecommunications market, dominance of the prepaid segment and low switching costs between service providers.

According to the Cellular Operators Association of India (COAI), the cellular market of India is broadly divided into four circles (zones) as follows:

- *Four metros:* Delhi, Mumbai, Chennai and Kolkata
- *A Circle:* Maharashtra, Gujarat, A.P., Karnataka, Tamil Nadu
- *B Circle:* Kerala, Punjab, Haryana, U.P. (W), U.P. (E), Rajasthan, M.P., West Bengal, Andaman and Nicobar.
- *C Circle:* Himachal Pradesh, Bihar, Orissa, Assam, North Eastern States, Jammu and Kashmir.

At the end of the fiscal year 2006-07, the market shares of the major players were Bharti Airtel (23.7 percent), BSNL (17.8 percent), Reliance (17.7 percent), Hutch (16.8 percent), Idea (8.9 percent), Tata Teleservices (7.3 percent) and the rest 7.8 percent is shared by other players in the market (Voice and Data, July 2007).

#### **LITERATURE REVIEW**

In the review provided below, we document most recent research evidence on customer

satisfaction and service quality and their impact on customers' repurchase intention and recommendation of service to others.

### Customer Satisfaction

Customer satisfaction has been extensively studied in the field of marketing over the last two decades (Oliver 1980, 1981, 1999; Fornell et al. 1996; Anderson and Fornell 1994; Yi 1989; Johnson et al. 2001; Anderson et al. 2004). It has become an important construct for marketing scholars (McQuitty et al. 2000; Morgan et al. 1996) and an important goal to achieve for marketing practitioners (Erevelles and Leavitt 1992). It is by far the most commonly used customer-oriented metric by managers (Gupta and Zeithaml 2006) because it is generic and can be measured universally for all products and services including nonprofit and public services (Zeithaml et al. 2006; Johnson and Fornell 1991). After an extensive and critical review of the customer satisfaction literature, Yi (1989) conceptualized customer satisfaction as an attitude like judgment following a purchase act or based on a series of consumer-product interactions. The definition highlights that customer satisfaction is essentially the customer's judgment about the extent to which a product or service meets or falls short of expectations. The literature has also emphasized the disconfirmation of expectations paradigm to a great extent (Oliver 1996; Yi 1989). This explains that the consumer compares the product/service with a pre-consumption expectation. Tse and Wilton (1988) defined customer satisfaction as "the consumer's response to the evaluation of the perceived discrepancy between prior expectations (or some form of performance) and the actual performance of the product as perceived after its consumption." This definition conforms with definition of Oliver (1997).

Customer satisfaction research has developed around two broad types of evaluations: (1) transaction-specific satisfaction (2) cumulative satisfaction or an overall satisfaction concept which is similar to the attitude (Johnson et al.

2001). Traditionally, satisfaction was considered to be transaction-specific, which is a result of the immediate post purchase judgment or affective reaction (Oliver 1993). De Ruyter et al. (1997) used the transaction-specific concept and showed the relationship between perceived quality and satisfaction.

A more economic psychology-based approach to satisfaction has been developed in the literature over the last decade or so which is cumulative satisfaction concept. This concept defines customer satisfaction as a customer's overall experience to date with a product or service provider (Johnson et al. 2001). Studies done by Anderson and Fornell (1994); Fornell et al. (1996); Johnson et al. (2001) etc. have used the overall customer satisfaction concept. According to these studies satisfaction is viewed as an "overall evaluation based on the total purchase and consumption experience with a good or service over time (Anderson et al. 1994, p.54)." More and more satisfaction studies are now using the overall evaluation of satisfaction concept which develops over all the experiences a customer has with the firm (Gupta and Zeithaml 2006). The fact that customer satisfaction is an important predictor of customer loyalty has been widely studied in the marketing literature (Yang and Peterson 2004; ACSI model; ECSI model; TCSI model; HCSI model). Appendix A shows a tabular synthesis of the selected literature relevant to customer satisfaction studies in different service sectors. Thus based on the extant body of literature on customer satisfaction we conclude that customer satisfaction is a post-consumption assessment of customers about the product and or service used. Our conceptualization is in consonance with Churchill and Suprenant (1982).

### Service Quality

Service quality has received a great deal of attention from both academicians and practitioners. In the services marketing literature service quality is defined as the overall assessment of a service by the customers. Parasuraman et al. (1988; p.16)

defined perceived service quality as “global judgment, or attitude, relating to the superiority of the service.” Parasuraman et al. (1985) conceptualized service quality as perceptions resulting from the comparison of customer expectations and actual service performance. They further pointed out that service quality perceptions are not solely the outcomes of service but it also involves the evaluation of the service delivery process by the customers. Lehtinen and Lehtinen (1982) conceptualized service quality as a three dimensional construct viz. “physical”, “interactive” and “corporate.” Physical quality is the quality dimension which originates from the physical elements of service like physical product and physical support. Interactive quality indicates the interaction between the customer and the service organization. And corporate quality is symbolic in nature and indicates the perception of customers about the image of the organization. Garvin (1988) provided a comprehensive definition of service quality comprising of the attributes viz. performance, features, conformance, reliability, durability, aesthetics, serviceability and customers’ perceived quality. Asubonteng et al. (1996; p.64) defined service quality as “the difference between the customers’ expectations for service performance prior to the service encounter and their perceptions of the service received.” Yoo and Park (2007) state that the firm’s ability to create and sustain competitive advantage depends upon the high level of service quality provided by the service provider. They defined perceived service quality as the extent to which a firm serves the needs of its customers successfully. Again, Dabholkar et al. (2000) considered service quality as a set of different sub-dimensions like reliability and responsiveness which form the antecedents to customer satisfaction. SERVQUAL (Parasuraman et al. 1988) emerged as an instrument to measure service quality consisting of the five dimensions of service quality viz. reliability, tangibility, responsiveness, assurance and empathy. But it had its own share of criticisms because it was based on the difference between the expectations and performance. Its reliability

and validity has been questioned by many researchers (Carman 1990; Cronin and Taylor 1992; Strandvik and Lijander 1994; Babakaus and Boller 1992). Appendix B provides a tabular synthesis of the literature relating to service quality and service quality as an antecedent of customer satisfaction. Thus, service quality is conceptualized both as a one-dimensional and a multidimensional construct in the literature. Furthermore, there is strong evidence in the literature for service quality being an antecedent of customer satisfaction.

### **CUSTOMER SATISFACTION AND SERVICE QUALITY IN MOBILE TELECOMMUNICATION SERVICES**

With the growth of the mobile telecommunication services around the world, a significant body of literature has emerged over the past several years. For example, Turel and Serenko (2006) empirically investigated customer satisfaction with mobile services in Canada. They adapted the American Customer Satisfaction Model to identify the antecedents and consequences of customer satisfaction for young cellular subscribers. They developed and estimated a model using a PLS (partial least square) path modeling developed by Chin (1998, 2001). The results indicated that perceived service quality and perceived value are the key constructs affecting the customer’s satisfaction with mobile services. Satisfaction in turn leads to customer loyalty.

Woo and Fock (1999) investigated determinants of customer satisfaction in the Hong Kong mobile phone services sector. They conducted an exploratory factor analysis on 20 attributes followed by confirmatory factor analysis and obtained four determinants of customer satisfaction viz. transmission quality and network coverage, pricing policy, staff competence and customer service.

In their study in the New Zealand’s telecom services industry Danaher and Gallagher (1997) identified that certain attributes of the personnel delivering the service, such as *friendliness* and *competency*, more strongly influence the

overall service quality than other factors viz. clear voice and time taken to respond. In another study Wang et al. (2004) investigated the impact of quality-related factors on customer value and customer satisfaction using structural equation modeling (SEM) in China. They used the SERVQUAL (Parasuraman et al. 1988) factors (reliable, tangible, responsive, assurance and empathy) to measure service quality, but added “network quality” as another antecedent of customers’ perceived service quality. Results indicated that all the service quality factors had significant and positive impact on customer satisfaction. Also customer perceived value had a moderating effect on the service quality and customer satisfaction link. Similarly, Lai et al. (2007) tested the SERVQUAL model in China’s mobile communication industry using exploratory and confirmatory factor analysis. They found that the SERVQUAL instrument is a valid means for measuring service quality. They also identified “service convenience” as an important additional dimension of service quality in China’s mobile services sector.

Johnson and Sirikit (2002) conducted their study on both landline and mobile users of Thai telecommunication industry using the service quality dimensions (reliability, responsiveness, assurance, empathy and tangibles). Tangibles emerged as the most important factor, but no significant link was found between the service quality ratings and the customers’ behavioral intentions. Athanassopoulos and Iliakopoulos’ (2003) study of the residential customers of a European telecommunication company revealed that customer perceived performance (i.e., satisfaction, recommendation to others, relationship and value for money) were affected by product performance satisfaction, directory enquiries, branch network, billing and corporate image. Gerpott et al. (2000), through a structural equation modeling approach, found that customer retention, customer loyalty and customer satisfaction are important goals for the telecommunications operators in the German mobile telecommunications market. Results also indicated that network quality, assessment of price and personal benefits had

positive and significant effect on customer satisfaction. Mobile service price, personal service benefit perceptions and number portability had the strongest effects on customer retention as well.

Kim et al. (2004) investigated the effect of different service features and switching barriers on customer satisfaction and customer loyalty in the Korean mobile telecommunication services sector. They used SEM to test their proposed structural model. The results indicated that customer satisfaction is significantly and positively affected by call quality, value added services and customer support. They also found that customer satisfaction and switching barrier had a significant and positive impact on customer loyalty.

Aydin and Ozer (2005) used the SEM technique to study the impact of service quality, perceived value, customer expectations and complaint handling on customer satisfaction in the Turkish mobile telephone market. The results showed that service quality, customer expectations and complaint handling had positive and significant effect on customer satisfaction. Service quality had the strongest effect than other constructs in their model. All these studies have looked at different facets of service quality or service features affecting customer satisfaction. In this study we consider the service-related factors in the Indian mobile telecommunications sector.

### **Service Quality and Repurchase Intentions**

Repurchase intention refers to “the individual’s judgment about buying again a designated service from the same company, taking into accounts his or her current situation and likely circumstances” (Hellier et al. 2003; p.1764). In other words, repurchase intentions are the subjective judgments about how a customer will behave in the future. As such, repurchase intention has been used as a dependent variable in many satisfaction and service quality models in the literature.

There is strong empirical evidence that service quality directly influences customers' repurchase intentions. Boulding et al. (1993) in their longitudinal study found that the service quality perceptions of customers positively affect their intended behaviors. Additional support is found in the work of Bitner (1990), Bolton and Drew (1991), Bolton (1998) and Woodside et al. (1989). The authors contend that when the services offered by a service provider meet or exceeds customer's expectations, the customer is more likely to choose the same service provider in the future. Other studies by Cronin and Taylor (1992, 1994), Choi et al. (2004), Zeithaml et al. (1996), and Cronin et al. (2000) also support the direct linkage between service quality and repurchase intentions of customers.

### **Service Quality and Recommendation of Services to Others**

The ultimate measure of customer loyalty is customers' recommendations of the service provider to other people and friends (Reichheld 2003, 2006). That being the case, many researchers have used service recommendation to other customers as a proxy for customer loyalty (Narayandas 1999; Ganesh et al. 2000; Zeithaml et al. 1996 and Bloemer et al. 1999). Rust et al. (1995) and Zeithaml et al. (1996) in their studies found a significant and positive relationship between these two constructs. Authors state that customers will recommend the service to others if their expectations are met or exceeded. The direct relationship between service quality and service recommendation also finds support in the studies of Johnson and Sirikit (2002), Host and Anderson (2004), and McDougall and Levesque (2000).

## **RESEARCH METHODOLOGY**

The empirical phase of this research aimed at identifying the underlying factors that determine customer satisfaction, repurchase intention and recommendation of mobile phone service to others. Below we describe our research methods in more detail.

### **The Survey Instrument**

The survey instrument was developed based on a thorough literature review. As shown in Table 1, the variables included in the study have been extensively used in previous studies. The questionnaire was further refined based on a pretest among the MBA students of a business school in Hyderabad.

### **Sampling and Data Collection**

Data was collected using self-administered questionnaires from the mobile phone users in four cities of India viz. Delhi, Kolkata, Mumbai and Hyderabad. A convenience sampling method was used to select the respondents for the study. In all 350 questionnaires were distributed, yielding 255 completed questionnaires. Of the 255 completed questionnaires, 238 were usable, resulting in a 68 percent response rate, which is quite reasonable for a survey of this type (Malhotra 2007). Respondents were asked to state their level of agreement with a series of statements using a 5-point Likert scale ranging from "strongly disagree" to "strongly agree." The detailed sample characteristics are shown in Table 2:

### **Data Analysis and Results**

Data was analyzed in two stages. In the first stage the 32-variables related to service quality were factor analyzed using principal component analysis with varimax orthogonal rotation. An orthogonal rotation was used for its simplicity (Nunnally and Bernstein 1994). We then used service quality factor scores as independent variables in three multiple regression analyses with customer satisfaction, repurchase intentions and recommendation of service to others as dependent variables, respectively. The descriptive statistics of thirty two service quality variables and customer satisfaction; repurchase intention and recommendation to others are shown in Table 3.

**TABLE 1**  
**Measurement of Variables**

<b>Constructs</b>	<b>Measurement Items</b>
Customer Satisfaction	<ol style="list-style-type: none"> <li>1. Overall you are satisfied with the service provider. (Fornell et al. 1996; Turkyilmaz and Ozkan 2007; Anderson and Sullivan 1993; Kim et al. 2004; Sharma et al. 1999)</li> <li>2. The services of my mobile phone service provider are close to my expectations. (Fornell et al. 1996; Ayden and Ozer 2005; Turkyilmaz and Ozkan 2007; Levesque and McDougall 1996)</li> <li>3. My present mobile phone service provider is comparable with my ideal mobile phone service provider. (Bruhn and Grund, 2000; Fornell et al. 1996; Turkyilmaz and Ozkan 2007)</li> </ol>
Repeat Purchase Intention	<ol style="list-style-type: none"> <li>1. If I were to choose a mobile phone provider today, I would choose my present service provider again. (Aydin and Ozer 2005; Turkyilmaz and Ozkan 2007; Johnson and Sirikit 2002; McDougall and Levesque 2000; Cronin et al. 2000)</li> </ol>
Recommendation of Service to others	<ol style="list-style-type: none"> <li>1. I would recommend the mobile phone service provider to friends and relatives. (Reichheld 2003, 2006; Johnson and Sirikit, 2002; McDougall and Levesque 2000; Aydin and Ozer 2005)</li> </ol>
Service Quality	<ol style="list-style-type: none"> <li>1. The cellular company provides service reliably, consistently and dependably (Cronin, Brady and Hult 2000; Caruana 2002)</li> <li>2. The cellular company is trustworthy and its employees are believable and honest (Cronin, Brady and Hult 2000; Caruana 2002)</li> <li>3. The company fulfils its promises (Caruana 2002; Host and Andersen 2004; Sureshchandar et al. 2002)</li> <li>4. Employees are efficient and competent [knowledgeable and skillful] (Cronin, Brady and Hult, 2000; Host and Andersen 2004; Sureshchandar et al. 2002)</li> <li>5. Employees are easily approachable (Cronin, Brady and Hult 2000; Danaher and Gallagher 1997)</li> <li>6. Employees are courteous, polite and respectful (Cronin, Brady and Hult 2000; Danaher and Gallagher 1997; Caruana 2002; Host and Andersen 2004)</li> <li>7. Employees listen to customers and are willing to help (Cronin, Brady and Hult 2000; Caruana 2002; Host and Andersen 2004)</li> <li>8. Employees are pleasant, friendly and caring (Danaher and Gallagher 1997; Caruana 2002)</li> <li>9. The company makes efforts to understand the specific needs of customers (Caruana 2002; Host and Andersen 2004; Sureshchandar et al. 2002)</li> <li>10. The company provides individual and personal attention to the customers (Johnson and Sirikit 2002; Caruana 2002; Sureshchandar et al. 2002)</li> <li>11. The company performs any service right first time (Caruana 2002; Host and Andersen 2004; Sureshchandar et al. 2002)</li> <li>12. All the records are maintained accurately by the cellular company (Johnson and Sirikit 2002; Wang and Lo 2002; Lai et al. 2007)</li> <li>13. The company provides accurate and timely information (Ndubisi and Wah 2005)</li> <li>14. The services provided the company is prompt [low waiting time and quick response] (Danaher and Gallagher 1997; Host and Andersen 2004; Sureshchandar et al. 2002; Olorunniwo and Hsu 2006)</li> <li>15. When there are problems, the service provider is sympathetic and reassuring (Johnson and Sirikit 2002; Lai et al. 2007; Gilbert et al. 2004)</li> <li>16. Complaint resolution or fault repair is fast (Athanasopoulos and Iliakopoulos 2003; Sharma et al. 1999)</li> <li>17. Employees in the offices are neat and clean (Cronin, Brady and Hult, 2000; Caruana 2002; Host and Andersen 2004)</li> <li>18. Physical facilities of offices are visually appealing (Johnson and Sirikit 2002; Caruana, 2002; Host and Andersen 2004)</li> <li>19. It is easy and convenient to take up a new cellular connection as well as get recharges and top-ups (Lai et al. 2007; Athanasopoulos and Iliakopoulos 2003; Olorunniwo and Hsu 2006)</li> <li>20. The network is up-to-date and low congestion problem [even in peak traffic hours] (Johnson and Sirikit 2002; Athanasopoulos and Iliakopoulos 2003; Olorunniwo and Hsu 2006)</li> <li>21. The call quality (voice clarity) is good and call drops are minimal (Athanasopoulos and Iliakopoulos 2003; Kim et al. 2004)</li> <li>22. The coverage area of the company is wide (Aydin and Ozer 2005; Kim et al. 2004)</li> <li>23. The company has sufficient presence in different geographical areas through own offices or dealers, franchises (Aydin and Ozer. 2005; Sureshchandar et al. 2002)</li> <li>24. The operating hours are convenient for the customers (Johnson and Sirikit. 2002; Athanasopoulos and Iliakopoulos 2003; Wang and Lo 2002)</li> <li>25. The services provided by the company are competitive (Athanasopoulos and Iliakopoulos 2003)</li> <li>26. The pricing of the services are reasonable and competitive (Host and Andersen 2004; Gilbert et al. 2004)</li> <li>27. There is enough variety of pricing plans available (Sharma et al. 1999; Kim et al. 2004)</li> <li>28. The range and variety of Value Added Services (SMS, Ring tones etc.) provided is comprehensive and competitive (Aydin and Ozer 2005; Kim et al. 2004)</li> <li>29. The billing is accurate and easy to understand (Levesque and McDougall 1996; Sharma et al. 1999)</li> <li>30. The cellular company has reputation and good image (Aydin and Ozer 2005)</li> <li>31. The company is innovative and forward looking (Athanasopoulos and Iliakopoulos 2003; Aydin and Ozer 2005)</li> <li>32. The advertisements and promotional campaigns of the company are effective (Aydin and Ozer 2005; Ndubisi and Wah 2005)</li> </ol>

**TABLE 2**  
**Demographic Profiles of Respondents and Their Usage Patterns**

<b>Gender</b>	
Male (73 percent)	Female (27 percent)
<b>Age</b>	
Less than 24 years (20.79 percent)	Between 24-30 years (48.60 percent)
Between 31-35 years (10.92 percent)	Greater than 35 years (19.69 percent)
<b>Level of Education</b>	
Non-graduate (4.2 percent)	Graduate (52.9 percent)
Post-graduate and above (42.9 percent)	
<b>Monthly Income</b>	
Less than \$1200 (35.3 percent)	Between \$1201-\$2500 (11.3 percent)
Between \$2501-\$7500 (29.8 percent)	Greater than \$7500 (23.6 percent)
<b>Mobile usage time</b>	
Less than 3 months (11.8 percent)	Between 3-6 months (8.8 percent)
Between 6-12 months (15.1 percent)	Between 1-3 years (35.3 percent)
More than 3 years (29 percent)	
<b>Average Monthly Usage (in US\$)</b>	
Less than 12.5 (36.6 percent)	Between 12.6-25 (32.8 percent)
Between 25.1-75 (27.7 percent)	More than \$75 (2.9 percent)

**TABLE 3**  
**Descriptive Statistics**

Variables	Mean	Variance
1. Reliability and Consistency	3.668	0.729
2. Trust	3.378	0.768
3. Promises Fulfilled	3.357	0.838
4. Competent Employees	3.432	0.846
5. Employees Approachable	3.369	1.027
6. Employees Courteous	3.630	0.825
7. Employees Helpful	3.609	0.813
8. Employees Friendly	3.512	0.791
9. Specific Needs of Customers	3.344	0.944
10. Personal Attention	2.941	0.975
11. Right First Time	2.882	0.889
12. Accurate Records Maintained	3.365	0.773
13. Accurate Information	3.605	0.957
14. Prompt Services	3.189	1.133
15. Sympathetic Problem Solving	3.205	0.974
16. Fast Fault Repair	3.046	0.947
17. Employees Neat and Clean	3.664	0.680
18. Physical Facilities of Offices	3.702	0.725
19. Convenience in Taking Services	4.130	0.949
20. Network Quality	3.000	1.333
21. Call Quality	3.202	1.233
22. Coverage	3.668	1.083
23. Geographical Presence	3.479	1.103
24. Operating Hours	3.727	0.756
25. Competitive Services	3.874	0.659
26. Competitive Prices	3.782	0.923
27. Variety of Price Plans	3.869	0.780
28. Value Added Services	3.773	0.860
29. Billing	3.349	1.334
30. Reputation and Image	4.004	0.705
31. Innovative	3.760	0.774
32. Promotions	3.837	0.953

**Factor Analysis Results**

Results of the factor analysis are shown in Table 4.

As can be seen from Table 3, six factors were extracted, accounting for 63 percent of the total variance. We retained factor loadings greater than 0.40 for further analysis. Reliability of the factors was calculated using the Cronbach’s alpha. A Cronbach’s alpha value of greater than or equal to 0.7 is considered acceptable for the factor to be reliable (Hair et al. 2006). In our case all the factors had satisfactory value of Cronbach’s alpha. Hence the factors are reliable.

**Regression Analysis**

As noted before, three separate regression analyses were carried out as follows:

(i) *Impact of service related factors on customer satisfaction.* In the first regression model, we used customer satisfaction as the dependent variable and the factor scores of the service related factors as the independent variables. We measured customer satisfaction through a multiple item scale with Cronbach’s alpha reliability score of 0.885. Below is the regression model:

$$y1 = a + b1*x1 + b2*x2 + b3*x3 + b4*x4 + b5*x5 + b6*x6 \dots\dots\dots (1)$$

where, y1 = customer satisfaction; x1 = relational quality; x2 = competitiveness; x3 = reliability; x4 = reputation; x5 = support features; x6 = transmission quality. Table 5 shows the result of the regression analysis.

Sixty five percent of variance in the dependent variable was explained by the six service related factors. From Table 5 it is evident that “support features” is not significant at five percent significance level and competitiveness and reliability had the greater impact on customer satisfaction than the other factors.

(ii) *Impact of service related factors on recommendation of services to others.* The second regression analysis was performed with

recommendation of services to others as the dependent variable and the six service related factors as independent variables. The regression model is:

$$y2 = a + b1*x1 + b2*x2 + b3*x3 + b4*x4 + b5*x5 + b6*x6 \dots\dots\dots (2)$$

where y2 = recommendation of services to others; x1 = relational quality; x2 = competitiveness; x3 = reliability; x4 = reputation; x5 = support features; x6 = transmission quality. Table 6 shows the result of the regression analysis.

Results show that the six service-related factors explain 46.7 percent of variance in the dependent variable. Table 6 shows that market reputation and support features are not significant at five percent level of significance, whereas the other four factors are highly significant and impacts “recommendation of services to others” positively.

(iii) *Impact of service related factors on the repurchase intention of customers.* The third regression was performed with repurchase intentions as the dependent variable and the service related factors as the independent variables. The regression model is:

$$y3 = a + b1*x1 + b2*x2 + b3*x3 + b4*x4 + b5*x5 + b6*x6 \dots\dots\dots (3)$$

where, y3 = repurchase intention of the customers; x1 = relational quality; x2 = competitiveness; x3 = reliability; x4 = reputation; x5 = support features; x6 = transmission quality. Table 7 shows the result of the regression analysis.

Results show that the independent variables explain about 40 percent variance in the dependent variable. “Support features” is not significant at the five percent level of significance, whereas other five factors impact the repurchase intention positively and significantly. Transmission quality had the least impact on repeat purchase intentions whereas relational quality and reliability had the highest impact on repeat purchase intentions of customers.

### Discussion and Implications

The purpose of this study was to identify the underlying service-related factors and to understand their impact on CS, RI and recommendation of service to others in the Indian mobile telecommunications market. We found that six factors: relational quality, competitiveness, reliability, reputation, support features and transmission quality represent the underlying dimensions by which Indian mobile phone customers assess the quality of their service. We then examined the impact of these service-related factors on customer satisfaction, repurchase intention and recommendation of services to others.

In our analysis relational quality, competitiveness, reliability, reputation and transmission quality factors emerged as significant predictors of customer satisfaction. However, the top three factors in order of importance were competitiveness, relational quality, and reliability. Repurchase intention is influenced by relational quality, competitiveness, reliability and transmission quality. Ranked first in term of importance was relational quality followed by competitiveness and reliability. Finally, relational quality, competitiveness, reliability, reputation and transmission quality emerged as significant predictors of recommendation of services to others. In this case, relational quality has the greatest impact on recommendation of service to others, whereas reliability and competitiveness have the second and third most impact, respectively. While our results indicate that relational quality, competitiveness, reliability, transmission quality, and reputation were all significant predictors of customer satisfaction, repurchase intention, and recommendation of service to others, the most important factors somewhat varied depending on the dependent variable under consideration. Thus, the Indian mobile phone service providers can view these service-related factors as levers in improving customer satisfaction, encourage repurchase intention, and promote recommendation of service to others.

Furthermore, the degree of emphasis placed on these factors depends on the objective of mobile phone service provider. For example, if the service provider is interested in enhancing customer satisfaction, competitiveness is the key factor to be emphasized. In contrast, relational quality is the primary driver of repurchase intention and recommendation of service to others.

These findings are consistent with past research results. For example, Woo and Fock (1999) found that the core service of mobile phone service providers is to provide users uninterrupted service reliably. Similarly, corporate reputation has been found to be a key driver of customer satisfaction (Andreassen and Lindestad 1998; Gronroos 1984; Bloemer et al. 1998; and Hart and Rosenberger 2004) in the literature. This finding implies that corporate reputation is used as a proxy for service quality by the customer and has a positive impact on customer satisfaction. Thus, we conclude that in the Indian mobile telecommunications services sector reputation is intertwined with the perceived service quality and ultimately with enhanced customer satisfaction. In other words, building and maintaining a positive corporate reputation through innovative communications strategies and public relations campaigns can go a long way in enhancing customer satisfaction.

Relational quality also emerged as a service quality dimension which had a significant impact on customer satisfaction, repurchase intention and customers' propensity to recommend the services to others. Similar findings were reported by Storbacka et al. 1994 and Thurau and Klee 1997. This implies that service providers should have competent, friendly and approachable employees who pay close attention to the specific needs of customers and provide prompt customer service.

Another interesting finding of this study is the impact of reputation on customers' propensity to recommend the services to others. Again,

**TABLE 4**  
**Rotated Factor Matrix**

<b>Factors</b>	<b>Items</b>	<b>Factor Loadings</b>	<b>Reliability</b>
<b>Relational Quality</b>	Competent Employees	0.535	<b>0.901</b>
	Employees Approachable	0.723	
	Employees Courteous	0.720	
	Employees Helpful	0.748	
	Employees Friendly	0.804	
	Specific Needs of Customers	0.612	
	Personal Attention	0.570	
	Accurate Information	0.468	
	Prompt Services	0.514	
	Sympathetic Problem Solving	0.646	
	Fast Fault Repair	0.557	
<b>Competitiveness</b>	Competitive Services	0.741	<b>0.811</b>
	Competitive Prices	0.758	
	Variety of Price Plans	0.678	
	Value Added Services	0.680	
<b>Reliability</b>	Reliability and Consistency	0.653	
	Trust	0.672	
	Promises Fulfilled	0.741	
<b>Reputation</b>	Right First Time	0.413	<b>0.710</b>
	Accurate Records	0.645	
	Geographical Presence	0.480	
	Billing System	0.637	
	Reputation and Image	0.508	
<b>Support Features</b>	Employees Neat and Clean	0.790	<b>0.732</b>
	Physical Facilities	0.793	
	Operating Hours	0.410	
	Promotions	0.550	
<b>Transmission Quality</b>	Network Quality	0.817	<b>0.701</b>
	Call Quality	0.767	
	Convenience	0.634	
	Coverage	0.705	

**TABLE 5**  
**Regression 1**

<b>Independent Variables</b>	<b>Standardized Beta</b>	<b>t-value</b>	<b>p-value</b>
Relational quality	0.367	9.476	0.000
Competitiveness	0.448	10.403	0.000
Reliability	0.402	5.770	0.000
Reputation	0.223	1.706	0.000
Support features	0.066	7.835	0.089
Transmission quality	0.303	2.868	0.000
<i>Note: R-square = 0.656; F-value = 62.59; Sig. F = 0.000</i>			

**TABLE 6**  
**Regression 2**

<b>Independent Variables</b>	<b>Standardized Beta</b>	<b>t-value</b>	<b>p-value</b>
Relational quality	0.399	8.292	0.000
Competitiveness	0.368	7.643	0.000
Reliability	0.349	7.252	0.000
Reputation	0.093	1.934	0.054
Support features	-0.011	-0.219	0.827
Transmission quality	0.152	3.163	0.002
<i>Note: R-square = 0.467; F-value = 28.76; Sig. F = 0.000</i>			

**TABLE 7**  
**Regression 3**

<b>Independent Variables</b>	<b>Standardized Beta</b>	<b>t-value</b>	<b>p-value</b>
Relational quality	0.362	7.087	0.000
Competitiveness	0.296	5.790	0.000
Reliability	0.356	6.954	0.000
Reputation	0.161	3.150	0.002
Support features	-0.016	-0.310	0.757
Transmission quality	0.147	2.885	0.004
<i>Note: R-square = 0.399; F-value = 21.8; Sig. F = 0.000</i>			

building and maintaining a positive corporate reputation can encourage service recommendation to others, which is consistent with past research (Reichheld 2003; 2006). Last but not the least, transmission quality consisting of network quality and convenience variables were found to impact customer satisfaction, repurchase intention and recommendation of services to others. Needless to say that mobile phone service provider would be well-advised to improve call transmission quality.

In closing, we caution the readers not to generalize the findings of this research as they are based on a convenience sample. Additional research with a more representative sample of the mobile phone users in the India must be undertaken before the findings can be generalized to the population of mobile phone users. Future research can extend this study by including the construct service loyalty as an outcome of customer satisfaction. Similarly, factors such as trust, perceived switching cost and price fairness can be included as antecedents of customer satisfaction.

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**APPENDIX A**  
**Customer Satisfaction Studies in Other Services**

Author(s), Year	Context and Objectives of the Study	Conceptualization/ Variables/ Constructs/Frameworks	Methodology	Results/Findings
Anderson and Sullivan (1993)	To investigate both analytically and empirically the antecedents and consequences of CS	A model has been developed to understand and predict the relations between the antecedents and consequences of CS.  The framework has satisfaction as a function of perceived quality and expectations.  Authors expect that satisfaction has a positive impact on repurchase intentions.	Data was provided by the Customer Satisfaction Project at UMI.  Computer aided telephonic survey of 22300 customers of 57 companies.  Just identified path analysis has been used to estimate the model.	The estimates of the path model support the analytic framework.  Satisfaction was linked explicitly to retention in a utility-oriented framework.  Authors propose that this model can form the basis for future research concerning the relationship between CS and retention.
Fornell (1992)	To construct the annual Customer Satisfaction Barometer for Sweden	Proposed a model consisting of the antecedents and consequences of customer satisfaction.	Data from 30 industries was collected.  Model was estimated using PLS (partial least square) methodology.	Customer satisfaction is a function of pre-purchase expectations and post-purchase perceived performance, while loyalty was a function of customer satisfaction and switching barriers and customer complaints.
Fornell et al. (1996)	To develop the ACSI as a new type of market-based performance measure for firms, industries, economic sectors and national economies.	<i>Put forward the ACSI model with the following variables:</i> <u>Antecedents of customer satisfaction</u> Perceived quality Customer expectations Perceived value <u>Consequences of CS</u> Customer complaints Customer loyalty	The model was estimated across customers within each of the 7 sectors of the US economy included in the survey  The ACSI model was estimated using PLS method.	The overall ACSI for the year 1994 was 74.5.  All the hypothesized directions in the model held good.  Average ACSI for goods was 80, 75 for services and retailers, and 64 for public and government agencies. This implies that customers are generally more satisfied with services and are least satisfied with public administration and government agencies.
Cronin et al. (2000)	To study the effects of service quality on customer satisfaction and the behavioral intentions of customers.	They have proposed an empirical model of service encounter to verify the relationship among the constructs.	Data collected from several services industries viz. sports, entertainment, healthcare, long distance carriers and fast food.  Model estimated using SEM	Sacrifice and service quality affect service value while service value and service quality affect satisfaction Behavioral intentions are affected by service quality, service value and satisfaction.

## APPENDIX A (continued)

Author(s), Year	Context and Objectives of the Study	Conceptualization/ Variables/ Constructs/Frameworks	Methodology	Results/Findings
Szymanski and Henard (2001)	To advance the understanding of the CS concept.	An overview of the rationale behind the general antecedents, outcomes and potential moderators of CS.  The framework guiding authors' theoretical and empirical investigation is based on the relationships from Oliver's (1997) conceptual model of CS.	Meta-analysis of the satisfaction findings has been done.	Antecedents to satisfaction (the meta-analysis results showed that these are): expectations, disconfirmation, performance, affect and equity.  Outcomes of satisfaction: complaining behavior, negative word of mouth (WOM) and repeat purchasing.  Positive relationships between CS and repeat purchasing.  Satisfied (dissatisfied) customers are likely to be less (more) vocal consumers on an average.
Johnson et al. (2001)	The primary goal of this research is to propose and test a number of modifications and improvements to the national index models.	Based on the different CSI models prevalent in the literature proposed a new model for NCSB (Norwegian Customer Satisfaction Barometer) model.  They have positioned customer loyalty as the key dependent variable in the model.	Criticized the existing CSI models like SCSB, ACSI, NCSB, etc.  Based on the critics proposed a new model.  NCSB is estimated using telephone surveys from national probability sample of 6900 customers.  Data collected from five industries viz. banking, gas stations, airlines, bus transportation and train transportation.  Proposed model estimated using PLS	An important finding is that four out of five industries, the model explains more variation in loyalty than in satisfaction.  The model explains more than 50percent of the variation in loyalty evaluations.  This is in complete contrast with the ACSI results where average variation in loyalty explained is only 36percent. Note: While the model was successful in isolating a complaint-handling construct, the construct did not have much effect on either satisfaction or loyalty.
Caruana (2002)	To investigate the mediation effect of customer satisfaction on the service quality-service loyalty link.	Proposed a model with service loyalty as the dependent variable and service quality as the independent variable with customer satisfaction as the mediator.	Data collected from the retail banking customers in Malta.  The model was estimated using SEM technique.	Service quality affects customer satisfaction which in turn affects service loyalty.
Krepapa et al. (2003)	To investigate the impact of market orientation on customer satisfaction.	Proposed a relationship between market orientation perception of service provider, market orientation of customers and customer satisfaction. Customer satisfaction is the dependent variable in the model.	Data collected from the corporate banking customers.  Confirmatory factor analysis and multiple regression analysis used in the study.	Gap between customers' and providers' perceptions of market orientation had a unique effect on customer satisfaction.  Entire market orientation gap had an overall impact on customer satisfaction.

## APPENDIX A (continued)

Author(s), Year	Context and Objectives of the Study	Conceptualization/ Variables/ Constructs/ Frameworks	Methodology	Results/Findings
Host and Anderson (2004)	To present an analysis of price and service quality effects through customer satisfaction on customer loyalty.	Proposed a model with SERVPERF factors and price as antecedents of customer satisfaction and customer loyalty and willingness to recommend as the consequences.	Data collected from the mortgage credit card companies' customers in Denmark Model estimated using SEM technique.	Reliability, assurance and price emerged as significant antecedents of customer satisfaction and customer loyalty and willingness to recommend as the outcomes.
Ndubisi and Wah (2005)	To understand the impact of relationship marketing underpinnings on customer satisfaction.	Relationship marketing underpinnings: Competence, trust, conflict handling, communication and commitment.	Data collected from the customers of 20 banks in Malaysia.  Used factor analysis and discriminant analysis	The underpinnings of relationships marketing found to discriminate between the customers in terms of perceived relationship quality and customer satisfaction.  The overall bank-customer relationship quality discriminates between satisfied and non-satisfied customers.
Andaleeb (1998)	To identify the determinants of customer satisfaction in case of hospitals.	Proposed a five-factor model for patient satisfaction.	Data collected from four hospitals in Pennsylvania.  Multiple regression analysis used.	Satisfaction emerged as a function of communication, cost, facilities, competence and demeanor.
McDougall and Levesque (2000)	To investigate the relationship between core service quality, relational service quality, perceived value and customer satisfaction.	Proposed a comprehensive model of customer satisfaction in services setting. The model proposes that perceived service quality and perceived value influence satisfaction which, in turn, influences future intentions. Perceived service quality is made of two components: core SQ and relational SQ.	Data collected from four services viz. dentist, auto service, restaurant and hairstylist using questionnaire survey  LISREL used to test the hypothesized relationships	Core service quality and perceived value emerged as the most important drivers of customer satisfaction. Direct link between customer satisfaction and future purchase intentions was also significant.
Sureshchandar et al. (2002)	To investigate the relationship between service quality and customer satisfaction.	This study views customer satisfaction as a multidimensional construct. Core service or service product Human element of service Non-human element Servicescapes Social responsibility	Data collected from 41 banks in the Indian banking service sector.  Factor analytic approach and t-tests were used.	Service quality and customer satisfaction are two distinct constructs.  There is a high relationship (correlation) between SQ and CS.
Gilbert et al. (2004)	To develop and validate a scale for the measurement of customer satisfaction in the international fast food industry.	Developed a scale for service satisfaction.	Data collected from five fast food establishments in four English speaking countries, Jamaica, USA, Scotland, and Wales.  Factor analytic methodology	The study revealed two cross-cultural fast-food customer satisfaction dimensions: satisfaction with the personal service and satisfaction with the service setting.

**APPENDIX A (continued)**

Author(s), Year	Context and Objectives of the Study	Conceptualization/ Variables/ Constructs/ Frameworks	Methodology	Results/Findings
Sharma et al. (1999)	To illustrate the use of a framework for monitoring customer satisfaction over time.	The framework is based on the control theory. Control theory posits that the primary objectives of control model is the identification of changes in the performance criteria, determining its causes and taking necessary actions to bring the system back in control.	Data collected from a Fortune 500 company. Confirmatory factor analysis used.	Factors affecting customer satisfaction: Installation, sales team leader, product, delivery, maintenance, software and technical support, business solution development, education, cost of ownership and invoice.
Martin et al. (2008)	To identify the impact of perceived service quality on satisfaction and the impact of emotional satisfaction on future behavioral intention.	Proposed a research model linking perceived service quality, customer satisfaction, emotional satisfaction and future behavioral intention.	Data collected from the spectators of football teams. Sample size: 407 Exploratory factor analysis and structural equation modeling using AMOS 5.0	Emotionally based satisfaction was found to be a better predictor of future behavioral intention than cognitive measures of satisfaction.

**APPENDIX B  
Service Quality**

Author(s), Year	Context and Objectives of the Study	Conceptualization/ Variables/ Constructs/ Frameworks	Methodology	Results/Findings
Gronroos (1984)	To develop a service quality model.  To understand (a) how service quality is perceived by consumers and (b) determine in what way service quality is influenced.	Proposed that perceived quality is the result of an evaluation process when the consumer compares the perceived service against the expected service. The result of this is perceived service quality.  <i>The model parameters:</i> Technical quality Functional quality Corporate image Perceived service Expected service	In-depth interviews with service business executives.	Service quality consists of two components: Technical quality (what the consumer gets)and Functional quality (how he gets it)

**APPENDIX B (continued)**

Author(s), Year	Context and Objectives of the Study	Conceptualization/ Variables/ Constructs/ Frameworks	Methodology	Results/Findings
Parasuraman et al. (1985)	To propose a conceptual model of service quality.	Service quality is a comparison between expectations and performance.  <i>Proposed the GAP model of service quality.</i>	Exploratory investigation based on interviews and focus group interviews with executives from the services sector.	<i>Determinants of perceived service quality</i> Reliability Responsiveness Competence Access Courtesy Communication Credibility Security Understanding Tangibles
Carman (1990)	Replication of SERVQUAL	Original SERVQUAL framework has been used	Four service settings have been chosen for the study viz. dental clinic, business school placement cell, a tire store and an acute care hospital. Sample size: 600  The items were modified to suit the service settings.	Did not find support for the SERVQUAL across all the services settings chosen.
Bolton and Drew (1991)	To examine the relationships among prior experiences, expectations, overall service quality, and service value.	Authors have proposed a multistage model of service quality and value. <i>Model parameters</i> Perceptions of performance Expectations Disconfirmation Customer satisfaction Service quality Service value Intentions Behavior A customer's assessment of value is dependent on sacrifice (monetary and nonmonetary costs) and the customer's frame of reference (tastes and characteristics). SQ = F(CS/D, EXPECTATIONS, PERFORMANCE)	Survey research  Data collected from a system wide national probability sample of 1408 telephone subscribers.  Two stage least square estimation procedures were used to estimate the model.	Results indicate that residential customers' assessments of quality and value are primarily a function of disconfirmation arising from discrepancies between anticipated and perceived performance levels.  Perceived performance levels were found to have direct effect on quality and value assessments.

## APPENDIX B (continued)

Author(s), Year	Context and Objectives of the Study	Conceptualization/ Variables/ Constructs/ Frameworks	Methodology	Results/Findings
Babakus and Boller (1992)	To empirically assess the SERVQUAL scale.  It's a critique of SERVQUAL	Proposes that SERVQUAL has some inherent problems.  <i>Issues with SERVQUAL</i> 1.Dimensionality 2.Defining a construct using a GAP score 3.Effects of mixed item wordings 4.Convergent and discriminant validity	Data collected from the customers of an electricity and gas utility company.  Sample size: 689  Reliability analysis done  Exploratory factor analysis performed	Authors' effort to replicate SERVQUAL failed.  Separate analyses of the expectations and perceptions of SERVQUAL produced a two factor structures which appears to be determined by the directions of the item wordings. The negatively keyed items loaded on one factor and the positively keyed items loaded on the other factor.  This study raises issues regarding the 5-dimentional nature of SERVQUAL.
Cronin and Taylor (1992)	To (i) investigate the conceptualization and measurement of SQ and  (ii) the relationships between customer satisfaction, SQ and purchase intentions.	Used the same items of the original SERVQUAL paper.  Propose an alternative of SERVQUAL in the form of SERVPERF	Random sampling Sample size: 660  <i>Three step analysis</i> 1. The dimensionality of SERVQUAL tested using CFA (LISREL VII). 2. Comparison of alternative forms of SDERVQUAL; original SERVQUAL, importance weighted, and performance based approach (SERVPERF) 3. Analysis of relationship between SQ, CS and purchase intentions.	A performance based measure of SQ (SERVPERF) may be an improved means of measuring the SQ construct.  SQ is an antecedent of customer satisfaction  Consumer satisfaction has a significant impact on purchase intentions.  SQ has less impact on purchase intentions than does CS.
Boulding et al. (1993)	To propose and estimate a dynamic process model of service quality	Developed a dynamic model of SQ. <i>Parameters in the model</i> <ul style="list-style-type: none"> <li>• Will expectation</li> <li>• Should expectation</li> <li>• Delivered service</li> <li>• Perceived service</li> <li>• Overall perceived service</li> <li>• Behavioral intention</li> </ul>	Two methods were used to estimate the model.  Longitudinal experimental study (sample size 96)  Field study (sample size 177)	Service quality is directly influenced by perceptions Increasing customers' expectations will lead to higher perceptions of quality during a service encounter. SQ perceptions positively affect intended behaviors.

APPENDIX B (continued)

Author(s), Year	Context and Objectives of the Study	Conceptualization/ Variables/ Constructs/ Frameworks	Methodology	Results/Findings
<p>Gotlieb et al. (1994)</p>	<p>To examine the relationships among disconfirmation of expectations, perceived quality, satisfaction, perceived situational control and behavioral intentions.</p> <p>To combine two different streams of research viz. perceived quality and satisfaction to get a better understanding of behavioral intentions.</p>	<p>Proposed two comparative models:  <i>Model1:</i>                      Disconfirmation of expectations → perceived quality → satisfaction → behavioral intentions.  <i>Model2:</i>                      Disconfirmation of expectations → satisfaction → perceived quality → behavioral intentions</p>	<p>Data collected from hospital patients</p> <p>Sample size: 232</p> <p>Models estimated using SEM (LISREL VII)</p>	<p>Results showed that model1 explained more variation in behavioral intentions as compared to model2.</p> <p>That means focal and contextual dimensions of disconfirmation of expectations affect perceived quality enroute to their influence on behavioral intentions through satisfaction.</p> <p>Perceived value is the antecedent of satisfaction</p>
<p>Zeithaml et al. (1996)</p>	<p>To summarize the literature on the behavioral consequences of service quality at the individual customer level.</p> <p>To offer a conceptual model of the impact of SQ on particular behaviors that signal whether customers remain or defect from the company.</p>	<p>Proposed a conceptual model linking the behavioral and financial consequences of service quality.</p> <p><i>Service quality</i></p> <ul style="list-style-type: none"> <li>• Superior</li> <li>• Inferior</li> </ul> <p><i>Behavioral intentions</i></p> <ul style="list-style-type: none"> <li>• Favorable</li> <li>• Unfavorable</li> </ul> <p><i>Behavior</i></p> <ul style="list-style-type: none"> <li>• Remain</li> <li>• Defect</li> </ul> <p><i>Financial consequences</i></p> <p><i>+\$</i></p> <ul style="list-style-type: none"> <li>• Ongoing revenue</li> <li>• Increased spending</li> <li>• Price premium</li> <li>• Referred customers</li> </ul> <p><i>-\$</i></p> <ul style="list-style-type: none"> <li>• Decreased spending</li> <li>• Lost customers</li> <li>• Costs to attract new customers</li> </ul>	<p>Data collected from a retail chain, computer manufacturer, automobile insurer and life insurer</p> <p>Total sample size: 3069</p> <p>Multiple regression analysis using dummy variables</p> <p>ANOVA</p>	<p>Service quality is associated positively with favorable behavioral intentions and negatively with unfavorable behavioral intentions. Customers experiencing no service problems have the strongest levels of loyalty intentions and the weakest switch and external response intentions. But the pay more intentions are not significantly higher than those of the customers experiencing service problems that were resolved satisfactorily.</p> <p>Authors identified five dimensions of service loyalty:</p> <ul style="list-style-type: none"> <li>• Loyalty to company</li> <li>• Propensity to switch</li> <li>• Willingness to pay more</li> <li>• External response to problem</li> <li>• Internal response to problem</li> </ul>

## APPENDIX B (continued)

Author(s), Year	Context and Objectives of the Study	Conceptualization/ Variables/ Constructs/ Frameworks	Methodology	Results/Findings
Caruana et al. (2000)	To examine the relationship between service quality, satisfaction and value.	Authors propose the moderating role of value on the link between service quality and satisfaction.	Data collected from an audit firm.  Sample size: 80  Regression analysis Moderated regression analysis performed	The link between SQ and satisfaction was significant.  Value had a partial moderating effect on the link between SQ and satisfaction.  The beta coefficient for the moderating effect was negative.
Bloomer et al. (1999)	To empirically examine the relationship between perceived service quality and service loyalty.	Proposed that there exist a direct relationship between perceived service quality and service loyalty.  And the relationship varies across different industries.	Data collected from four services industries in Belgium  Sample size 718  Questionnaire survey  Confirmatory factor analysis performed to test the factor structure.  Multi-sample analysis using LISREL 7.	<i>Dimensions of service loyalty:</i> <ul style="list-style-type: none"> <li>• Word of mouth</li> <li>• Purchase intention</li> <li>• Price sensitivity</li> <li>• Complaining behavior</li> </ul> WOM is positively affected by responsiveness and tangibles for entertainment services. Purchase intentions by reliability, responsiveness and tangibles. WOM and purchase intentions positively affected by assurance and empathy in fast food industry.
Dabholkar et al. (2000)	To understand the antecedents and consequences of service quality	Proposed that customer satisfaction mediates the relationship between service quality and behavioral intentions.  Also the perceptions and measured disconfirmation offer several advantages over computed disconfirmation (i.e. difference scores) and that a cross-sectional measurement design for service quality is preferred to a longitudinal design.	Sample size 397  Focus group interviews  Data collected through telephonic interviews  CFA and estimation of the proposed model using SEM (LISREL)  A special technique of LISREL "model fit using regression.* it is based on the covariance matrices and all the indicators for each construct summed to provide a single indicator in each case.	<i>Four antecedents of service quality</i> <ul style="list-style-type: none"> <li>• Reliability</li> <li>• Personal attention</li> <li>• Comfort</li> <li>• Features</li> </ul> The antecedents' model provides a more complete understanding of SQ and how these evaluations are formed.  CS acts as a mediator between SQ and behavioral intentions.  Perceptions measures are more important than the disconfirmation measures.

APPENDIX B (continued)

Author(s), Year	Context and Objectives of the Study	Conceptualization/ Variables/ Constructs/ Frameworks	Methodology	Results/Findings
Brady and Cronin Jr. (2001)	To identify a new and integrated conceptualization of service quality in order to move the SQ research forward.	<p><i>Proposed a research model</i></p> <p>Service Quality (primary dimensions)</p> <ul style="list-style-type: none"> <li>• Interaction quality</li> <li>• Physical environment quality</li> <li>• Outcome quality</li> </ul> <p>The sub dimensions</p> <p><i>Interaction Quality</i></p> <ul style="list-style-type: none"> <li>• Attitude</li> <li>• Behavior</li> <li>• Expertise</li> </ul> <p><i>Physical Environment Quality</i></p> <ul style="list-style-type: none"> <li>• Ambient conditions</li> <li>• Design</li> <li>• Social factors</li> </ul> <p><i>Outcome Quality</i></p> <ul style="list-style-type: none"> <li>• Waiting time</li> <li>• Tangibles</li> <li>• Valence</li> </ul>	<p>Data collected from four service industries fast food, photograph developing, amusements parks, and dry cleaning</p> <p>Sample size 1149 CFA performed using LISREL 8.</p>	<p>Results provided the evidence that SQ perceptions are formed as a result of the evaluations of three dimensions outcome, interaction and environment.</p> <p>Further the results confirm that these three primary dimensions composed of the proposed sub dimensions.</p> <p>Also the study reassures that reliability, responsiveness and empathy of service providers are important to the provision of superior service quality.</p>
Fodness and Murray (2007)	To contribute to the development of a conceptual model of service quality in airports.	Proposed a service quality expectations model for airports consisting of servicescape, service personnel and services.	<p>In-depth interviews and focus groups used in the qualitative model development stage.</p> <p>Sample size: 1000 airport users.</p> <p>Model tested through a confirmatory factor analysis using AMOS 4.01</p>	Passengers' expectations of airport service quality is a multidimensional, hierarchical construct that includes three key dimensions: function, interaction and diversion.
Eisingerich and Bell (2008)	To understand the relation between perceived service quality, customer education and trust.	Proposed a conceptual model linking dimensions of perceived service quality, customer education and customer trust.	<p>Data collected from customers of a global financial services firm.</p> <p>Sample size: 1268</p> <p>Multiple regression analysis with interaction effects used to test hypotheses.</p>	Customer education affects the relative importance of technical and functional service quality for building customer trust in a firm.