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5.1 Market Orientation measure

Market orientation is a popularly studied construct in the business literature. Kohli and Jaworski (1990) theorised a market orientation model that has been the basis for much of that research, and there is considerable evidence supporting their general proposition that adoption of a market orientation will lead to improved organizational performance (Cano, Carrillat and Jaramillo, 2004; Green et al., 2005). Green and Inman (2006) suggested that market orientation involves two dimensions, customer focus and needs assessment.

The customer-focus dimension attempts to capture the extent to which:

- Organizational objectives are driven by customer satisfaction.
- Organizational strategies are based on an understanding of customer needs
- The organization is more customer-focused than competitors
- The ability of the organization to show that it exists primarily to serve customers.

The needs-assessment dimension attempts to capture the extent to which:

- The organization constantly monitors its commitment and orientation to customer needs.
- The customer frequently/routinely/systematically measures customer satisfaction and quality of services.
- The organization freely communicates/disseminates information and data about its customers’ experiences and satisfaction.

5.2 Service quality measure

Marketing researchers have asserted that quality is a multidimensional construct for both products and services (Garvin, 1984; Parasuraman et al., 1988). For services, the SERVQUAL scale provides an approximate measure of quality for a general class of services (Parasuraman et al., 1988; Zeithaml et al., 1990). Its conceptualization and operationalization of service quality are based on a gap theory.
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The literature on service quality is replete with studies ranging from exploration of its inherent dimensions to its impact on service outcomes. This section provides an overview of the existing literature on the definition of service quality, its evolution, conceptualization and measurement and application in various sectors, and its influence on customer satisfaction. As service quality means “perceived service quality”, the literature on service quality has considered evaluating services from customers’ perspective (“A conceptual framework of service quality in healthcare Perspectives of Indian patients and their attendants” Panchapakesan Padma, Chandrasekharan Rajendran and L. Prakash Sai).

5.21 Development of SERVQUAL

The SERVQUAL scale consisting of reliability, physical characteristics, responsiveness, assurance, and empathy variables was developed to enable quantitative research by measuring service quality. Parasuraman and colleagues conducted the first studies on the SERVQUAL scale, and scales for various sectors have been used. The SERVQUAL scale is used to measure the difference between customer expectations and perceptions and was first adapted for use in evaluating healthcare services by Babakus and Mangold (Parasuraman et al., 1994; Babakus and Mangold, 1992). These investigators analysed the practical suitability of the scale for use by healthcare facilities and studied both its reliability and validity in the evaluation of hospital services (Devebakan, 2005; Buttle, 1996; Dursun and Cerci, 2004). In this study, the SERVQUAL scale was adapted for use in the evaluation of hospital services and was reduced to 15 questions designed to measure the expectations and perceptions of patients (Babakus and Mangold, 1992; Buttle, 1996). The questions related to reliability are listed as the patients’ expectations and perceptions from the hospital staff attitude and the behaviors while the second part of the questionnaire focused on the physical characteristics of the hospital. Under the responsiveness module, there are questions, which measure the accessibility and the continuity of the care. Under assurance and empathy, the questions are focused on hospital employees. The patients’ expectations and perceptions were measured on a scale that ranged from “very good” to “very bad” according to a five-point Likert-type scale. The SERVQUAL scale, which was determined by Devebakan and colleagues was found to be useful in measuring the functional quality of hospital services to be valid and reliable for the evaluation of hospital services (Devebakan, 2005; Dursun and Cerci, 2004; Cakirer, 2006).
The aim of this study was to conduct a preliminary assessment of the important aspects of the significance levels of service dimensions from the patient’s point-of-view by using the SERVQUAL scale that had been adapted to evaluate hospital services. SERVQUAL scores were calculated on the service provider level and the equal-weighted level by means of the quality scores obtained via the SERVQUAL scale. This study also aims to the effects of independent variables (age, educational level, healthcare insurance, sex) on patient satisfaction.

Gronroos’ (1984) model of service quality has been recognized as a seminal work in service quality research. The SERVQUAL instrument formulated by Parasuraman et al. (1985, 1988) is the most widely cited framework in the services marketing literature.

According to Gronroos (1984), service quality has two components, namely, technical quality and functional quality. The technical quality refers to the primary care attributes like treatment provided, infrastructure, etc. whereas functional quality indicates secondary care attributes or how the service is delivered like friendliness of service personnel, timely delivery, etc. Gronroos (1990) included “image” of the service provider as the third dimension, in addition to technical and functional quality in service evaluation. It acted as a filter in consumers’ perception of quality. Parasuraman et al. (1985) supported the notion that perceived service quality is an overall evaluation similar to attitude. They proposed that service quality is a function of the differences or gaps between customers’ expectation and performance along the quality dimensions.

Hence, this model is called “Gaps Model”. Gaps Model depicts five gaps in a service delivery process, which may lead to unfulfilled needs of the customers. Parasuraman et al. (1988) refined their existing model and came up with a scale to measure service quality and this scale is named SERQUAL. This scale consisted of five dimensions, viz., reliability, responsiveness, assurance, empathy and tangibles. The description of these dimensions is as follows:

- Reliability: Ability to provide services accurately and dependably.
- Responsiveness: Readiness or quickness in responding to customers’ needs.
- Assurance: Courtesy and knowledge of the employees and their ability to convey trust and confidence.
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- Empathy: Caring and individualized attention provided to customers.
- Tangibles: Physical evidence in a service facility (e.g. personnel, equipment, etc).

Several authors (Rohini and Mahadevappa, 2006) listed the advantages of SERVQUAL as follows:

- It is accepted as a standard for assessing different dimensions of service quality.
- It has been shown to be valid for a number of service situations.
- It has been known to be reliable.
- The instrument is parsimonious in that it has a limited number of items. This means that customers and employers can fill it out quickly.
- It has a standardized analysis procedure to aid interpretation and results.

5.22 Applications of SERVQUAL

The development of SERVQUAL framework marked an important point in service quality research. Several researchers attempted to apply this framework to myriad industries and sectors including healthcare services (Rohini and Mahadevappa, 2006; Ramsaran-Fowdar, 2008). An examination of the literature on services similar/related to healthcare like banking, hospitality, tourism, etc. would shed light on the various factors of service quality, which would impact the customers’ perception of service quality and their satisfaction.

Applications of SERVQUAL in hospitality and tourism. One of the earliest works in the hotel industry was an exploratory study by Akan (1995) that examined the relevance of SERVQUAL (Parasuraman et al., 1985) in Turkey hotels. The study identified new dimensions (such as accuracy of speed of service, solutions to problems, communication and transactions), and determined their importance to the customers. Alexandris et al. (2002) also applied SERVQUAL framework in Greece hotels, and found that tangibles received the highest mean value followed by the assurance-dimension. Akama and Kieti (2003) measured tourist satisfaction in Kenya. They used SERVQUAL instrument to operationalize service quality, and they considered two additional dimensions, namely, price and perceived value, apart from the five SERVQUAL dimensions. Lau et al. (2005) in their study on luxury hotels in Malaysia used SERVQUAL scale to evaluate the hotel services, and found that the tangibility factor was of at most importance in hospitality services. The study of Nadiri and
Hussain (2005) in North Cyprus revealed a two dimensional structure of service quality consisting of tangibles and intangibles, instead of five dimensions.

Applications of SERVQUAL to banking. Tamimi and Amiri (2003) applied SERVQUAL framework to UAE banks in Dubai and Abu Dhabi to determine that all the dimensions had a significant impact on overall service quality. Gan et al. (2006) used only three dimensions of the SERVQUAL model, namely, reliability, assurance and responsiveness, in their study on customers’ choice in electronic and non-electronic banking organizations. Several authors (Sureshchandar et al., 2002a) developed their own instrument to measure service quality.

Applications of SERVQUAL in other service sectors. Natalisa and Subroto (1998) employed SERVQUAL dimensions in their study on airline service quality in Indonesia, and determined that assurance had the strongest effect on customer’s satisfaction. Mai (2005) examined the differences in student satisfaction in higher education between UK and the USA. The students in UK rated most of the service quality attributes significantly less than their US counterparts. Chen and Lee (2006) used importance-performance analysis to determine the quality attributes leading to students’ satisfaction in dormitory services. They found that dormitory could increase its students’ satisfaction if it provided television programmes and lowered its fee. Tsoukatos and Rand (2006) customized SERVQUAL and applied to Greek insurance industry, and found that dimensionality of service quality was different from that proposed by Parasuraman et al. (1988). All the non-tangible factors merged together to form a single dimension whereas tangibles form another dimension. Even though SERVQUAL has been the most popular framework in services literature, it is widely criticized by many researchers.

5.23 Criticisms of SERVQUAL

The SERVQUAL scale, a milestone in service quality research and though popular, was severely criticized by numerous researchers. Babakus and Boller (1991) performed confirmatory factor analysis on SERVQUAL dimensions and arrived at a poor model fit. They suggested a two-dimensional structure, one with positively worded items and the other with negatively worded items. Parasuraman et al. (1991) addressed the issues raised by vindicating the use of gap scores for measuring service quality.
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They modified the negatively worded items in their instrument to improve the overall reliability values of the scale. Cronin and Taylor (1992) disagreed with the gaps-score measurement, and proposed that measuring service quality in terms of performance alone would suffice; they developed performance-only measurement scale, which they termed “SERVPERF”. Parasuraman et al. (1994) responded to these concerns and revised their original instrument but disagreed on replacing their model entirely with the ones proposed by these authors. Further criticism pertaining to SERVQUAL is that it fails to capture the dynamics of changing expectations. Parasuraman et al. (1985, 1988) asserted that SERVQUAL had five sound and psychometrically strong dimensions.

They also claimed that the structure and dimensionality was consistent across the chosen five independent samples from different industries. However, Carman (1990) arrived at a different dimensional structure while using SERVQUAL scale in a study pertaining to hospitals. Nine dimensions were found: admission service, tangible accommodations, tangible food, tangible privacy, nursing care, explanation of treatment, access and courtesy afforded visitors, discharge planning and patient accounting, and these dimensions explained 71 per cent of variation in service quality.

According to Babakus et al. (1993), service quality was a single-factor model explaining 66.3 per cent of overall service-quality variance, and they concluded that empirical evidence did not support a five-dimensional concept. SERVQUAL scale was also criticized for not considering the technical aspect of a service and its outcomes. Even though the developers of SERVQUAL scale claimed that it consisted of both the process (functional) and the outcome (technical) dimensions, it is devoid of any measure of technical quality (Gro¨nroos, 1990). Teas (1993) believed that expectations battery of SERVQUAL lacked discriminant validity. The use of seven-point Likert scales has been criticized on several grounds. Rust et al. (1995) supported the notion of using gap score but they asserted measuring the gap directly by asking the respondents to provide a score for each performance item in relation their expectations.

This could make the scale more reliable and reduce the length of the instrument. Some authors (Caruana et al., 2000) demonstrated that prior items could influence the respondents’ evaluation of subsequent items. For SERVQUAL, in which respondents complete the expectations- and perceptions-battery on the same Likert scale, such effects are more likely to
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occur. Further, the variance extracted by SERVQUAL scale accounted for very low proportion of item variances (Buttle, 1996). Table I provides a summary of critique on SERVQUAL. The varied comments on SERVQUAL mandated further investigation of dimensions of service quality and led some researchers to develop their own scale for measuring service quality. A number of authors (Lee et al., 2000) demonstrated that performance-only model of Cronin and Taylor (SERVPERF) to be better than SERVQUAL. Despite these developments, SERVQUAL is still the most widely used model in the field of service quality (Coulthard, 2004).

5.24 SERVPERF and its applications

The wide acceptance of performance-only model (SERVPERF – discussed in Section 2.3) of Cronin and Taylor (1992), resulted in the application of the model in a variety of sectors like travel, tourism, hospitality, etc. Cunningham et al. (2002) used SERVPERF model to find the link between service quality and customer satisfaction in airline industry. They compared the service quality perceptions of the USA and Korean travellers, and found that US passengers were more satisfied with the airline service than their Korean counterparts.

US travellers perceived higher risk in airline service, and hence, service firms should aim to promote less risk in their marketing strategies. Jain and Gupta (2004) conducted a study on Delhi restaurants to compare SERVQUAL and SERVPERF scales in Indian context. They concluded that SERVPERF should be employed for assessing overall service quality of a firm and in undertaking service quality comparisons across service industries because of its psychometric soundness and greater instrument parsimony. On the other hand, in order to identify areas relating to service quality shortfalls for possible intervention by the managers, the SERVQUAL scale needed to be preferred because of its superior diagnostic power. Johns et al. (2004) also showed that SERVPERF scores predicted overall satisfaction better, and they had higher validity and reliability than SERVQUAL scores.

5.25 Measurement of service quality in different service sectors

The area of service quality is well-researched. There are some researchers who employed/applied SERVQUAL framework in their study. Others developed their own scale for measuring service quality (this would be discussed in this section). Several authors like
Kano et al. (1984) and Silvestro and Johnston (1990) pointed out that the determinants of service quality which caused satisfaction and dissatisfaction were different. Further, measuring service quality and obtaining customer feedback on services enable the service providers to benchmark themselves with their competitors and thereby add value to their own processes. Hence, it becomes necessary to explore the various factors/dimensions of service quality, as perceived by customers and other stakeholders and also based on models other than SERVQUAL so as to satisfy the individual objectives of the study.

The area of service quality is well-researched. There are some researchers who employed/applied SERVQUAL framework in their study (this has been already discussed in Section 2.2.3). Others developed their own scale for measuring service quality (this would be discussed in this section). Several authors like Kano et al. (1984) and Silvestro and Johnston (1990) pointed out that the determinants of service quality which caused satisfaction and dissatisfaction were different. Further, measuring service quality and obtaining customer feedback on services enable the service providers to benchmark themselves with their competitors and thereby add value to their own processes.

**Bank:** Oppewal and Vriens (2000) determined that accessibility to the bank, competence of the personnel, accuracy and friendliness of the service offered and tangibles were the components of bank service quality. Suresschandar et al. (2002a) found that core service, human element of service delivery, systemization of service delivery, tangibles of service and social responsibility as the determinants of service quality in Indian banks. Jabnoun and Khalifa (2005) conducted factor analysis to find that personal skills, reliability, values and image formed the dimensions of service quality in UAE banks. Glaveli et al. (2006) found that effectiveness, price, assurance, reliability, access and tangibles to be the dimensions of retail banking service quality in Balkan countries. Olorunniwo and Hsu (2006), in their study on mass services in retail banking industry, found that responsiveness, tangibility, reliability, knowledge and accessibility formed the dimensions of service quality.

**Hospitality:** Ko and Pastore (2005) developed a reliable and valid measure of service quality in recreational sports industry. They operationalized service quality in terms of four constructs, namely, program quality, interaction quality, outcome quality and environment quality. Poon and Low (2005) utilized exploratory factory analysis to obtain the factors – hospitality, accommodation, food and beverages, recreation and entertainment,
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supplementary services, transportation, location, security and safety, innovation and value added services, appearance, pricing and payment. Olorunniwo et al. (2006) conducted a second-order factor analysis to find that tangibles, recovery, responsiveness and knowledge were the dimensions of service quality in lodging industry. Narayan et al. (2009) proposed dimensions of service quality in Indian tourism industry. They were: core tourism experience, information, hospitality, fairness of price, hygiene, amenities, value for money, logistics, food and security.

**Education:** Joseph and Joseph (1997) examined the New Zealand students’ perceptions of service quality in education. Seven dimensions, namely, programme issues, academic reputation, physical aspects/cost, career opportunities, location, time and other factors were identified. Sohail and Shaik (2004) determined that contact personnel, physical evidence, reputation, responsiveness, access to facilities and curriculum provided were the factors influencing students’ evaluation of educational service in a business school in Saudi Arabia.

**Other Services:** Some researchers attempted to study the customer perceptions of service quality in online service environments. Jun and Cai (2001) conceptualized internet banking service quality based on three quality perspectives:

1. Banking service product quality.
2. Customer service quality.
3. Online systems quality.

They also identified 17 underlying dimensions of electronic banking service quality including product variety/diversity features, reliability, responsiveness, competence, courtesy, credibility, access, communication, understanding the customer, collaboration, continuous improvement, contents, accuracy, ease of use, timelines, aesthetics and security. Issac et al. (2003) proposed a framework to evaluate software quality from customers’ perspective. Their model included the following factors: product quality, client focus, infrastructure and facilities, operational effectiveness, process quality and employee competence. Li et al. (2006) explored the service quality dimensions of US parcel services and came up with five dimensions, namely, access/availability, readiness to provide service, consistency/reliability, completeness of service and professionalism.
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Service quality research has made use of a variety of statistical like factor analysis, multiple regression, etc. to arrive at the dimensional structure of service quality and to find the impact of service quality dimensions on outcome variables such as customer satisfaction. Analytical tools like critical incident method, importance-performance analysis, etc. have been made use of in the literature to make strategic decisions. The next section gives a detailed description of such tools and techniques used in this context.

5.3 Service quality in the context of healthcare

Healthcare services, being credence in nature, are difficult to evaluate, hence, understanding the perceptions of customers’ gains prominence and significance, in the absence of availability of an objective measurement of medical care. This section deals with the literature on service quality in healthcare context, viz., application of SERVQUAL and other scales, relationship among service quality, patient satisfaction and behavioural intentions, and effect of demographics with respect to healthcare service quality.

5.31 Applications of SERVQUAL to healthcare

Brown and Swartz (1989) evaluated medical services from both the provider and customer perspectives by conducting a gap analysis and revealed that physician interaction was the most significant independent variable influencing customer satisfaction. Tucker and Adams (2001) used caring, empathy, reliability and responsiveness as service quality dimensions of the US hospital services in their study.

Curry and Sinclair (2002) tested the applicability of SERVQUAL model to healthcare services. They found that the patients appreciated the services even though the gap scores were slightly negative which indicated that negative score was because of higher expectation and not due to lower perception. Jabnoun and Chaker (2003) compared the service quality perceptions of patients between private and public hospitals in the UAE. They found reliability, responsiveness, supporting skills, empathy and tangibles to be the dimensions of the service offered and also discovered that private and public hospitals significantly differed in terms of all these dimensions except supporting skills. Sohail (2003) measured the quality of services provided by Malaysian private hospitals. It was found that perceptions exceeded expectations for all the
dimensions of service. Boshoff and Gray (2004), in their study on South African hospital, operationalized service quality by the dimensions, communication, tangibles, empathy of nursing staff, assurance, responsiveness of administrative staff, security and physician responsiveness.

Iyer and Muncy (2004) employed SERVQUAL dimensions to compare the service quality perceptions among different groups patients classified based on trust. It was revealed that for the high trust groups, reliability and responsiveness were the most important attributes, whereas, for the low trust groups, empathy and tangibles were crucial. Wu et al. (2004) argued that traditional methods to measure the dimensions of service quality were inadequate. They employed Fuzzy AHP to compare the services provided by different hospitals based on the dimensions of SERVQUAL model. Herstein and Gamliel (2006) dealt with the service quality perceptions in health maintenance organization. The study showed that in addition to the five dimensions of SERVQUAL model, private branding emerged as the sixth dimension of service quality. Rohini and Mahadevappa (2006) applied SERVQUAL framework and applied SERVQUAL factors in their study on Bangalore (Indian) hospitals. They obtained the perceptions of both the patients and the hospital management. The study concluded that there existed an overall gap between patient’s perceptions and expectations and also between management’s perception of patients’ expectations and patient’s expectations. The authors provided recommendations to fill those gaps. Ramsaran-Fowdar (2008), in a study on private hospitals, found that “reliability, and fair and equitable treatment” was the most important service quality dimension in Mauritius healthcare services. They had used modified SERVQUAL scale for this purpose. In spite of SERVQUAL’s popularity, some authors developed their own instrument to measure service quality, which would tailor to their research objectives.

5.32 Non-SERVQUAL studies in healthcare

Several authors developed their own framework to conceptualize and measure service quality in hospital services. Reidenbach and Smallwood (1990) conducted factor analysis and operationalized service quality in terms of patient confidence, business competence, treatment quality, support services, physical appearance, waiting time and empathy. Andaleeb (1998) found that communication, cost, facility, competence and demeanour were the important determinants of patient satisfaction in hospital services. Carman (2000) identified
that hospital service had two components, viz., technical and interpersonal aspect. Nursing care, outcome and physician care constituted technical care whereas, food, noise, room temperature, privacy, cleanliness and parking were parts of interpersonal care. According to the study conducted by Hasin et al. (2001) in Thailand, communication, responsiveness, courtesy, cost and cleanliness were the component dimensions of service quality in hospitals. O’Connor et al. (2001) analyzed the perceptual gap in understanding patient expectations among healthcare stakeholders. The authors concluded that health administrators were most likely to estimate patient expectations while medical and nursing students were most likely to underestimate them. Baldwin and Sohal (2003), in examining the relationship between service quality practices and service quality outcomes in dental care, found that patient fear and anxiety, patient’s appreciation of convenient and punctual service, involvement of patients in treatment were found to significantly influence the patient’s Otani and Kurz (2004), in their study on hospital services in the USA, found admission process, physician care, nursing care, compassion to family/friends, pleasantness of surroundings and discharge process to be the key dimensions of service quality. Rose et al. (2004) found that interpersonal aspect, patient education, cost, technical aspect, outcome of the care, access time, amenities and social support as the dimensions of service quality in Malaysian hospitals. The study also revealed that technical quality was the most important factor, consistent with other studies in the literature (Parasuraman et al., 1998; Carman, 2000, etc.) in both private and public hospitals. Secondly, interpersonal aspect and amenities were determined to be the most important for private and public hospitals, respectively. Pakdil and Harwood (2005) studied patient satisfaction in a pre-operative assessment clinic. They showed that patients were most dissatisfied with the waiting time and positive physician-patient interaction increased patient satisfaction more than any other provider-customer relationship. Arasli et al. (2008) suggested that in-patients’ needs had to be gathered systematically in order to manage their complaints effectively. Duggirala et al. (2008) proposed that healthcare service quality consisted of seven dimensions, namely, infrastructure, personnel quality, process of clinical care, administrative processes, safety indicators, overall experience of medical care and social responsibility. They found that all the dimensions were significant predictors of patient satisfaction.

It can be seen that in the context of healthcare services, some dimensions of service quality that are specific to healthcare services have emerged. It would be worthwhile to examine if
service quality has positive relationship with customer satisfaction and behavioural intentions in the context of healthcare services.

5.33 Service quality, customer satisfaction and behavioural intentions in healthcare services

In healthcare literature, some studies have established the link between hospital service quality and patient satisfaction. Reidenbach and Smallwood (1990) found that overall service quality perceptions of patients, their satisfaction and their willingness to recommend to others were strongly correlated to each other in different hospital settings, namely, in-patients, out-patients and emergency care patients. Taylor and Baker (1994) showed that the moderating effect of customer satisfaction between service quality and purchase intentions was significant in a variety of services such as communication, travel, recreation except healthcare. de Ruyter et al. (1998) concluded from their study that the relationship between service quality and service loyalty differed based on industry type; in an industry characterized by heavy switching costs (e.g. healthcare setting), customers would be loyal. Tucker and Adams (2001), in their study on patient satisfaction in public hospitals, determined that provider performance together with access explained almost 74 per cent of variance in satisfaction. It was found that service quality had positive relationship with customer satisfaction and behavioural intentions in the context of healthcare services as well. The next section deals with the impact of demographics on service-quality perceptions and satisfaction. Choi et al. (2005), in their study on South Korean healthcare, revealed that the relationship between service quality and patient satisfaction did not vary across patient groups based on gender, age and types of services received. Rhodes et al. (2008) found that family members of patients in the US hospices were satisfied if they were regularly informed about the patients’ condition. Williams et al. (2008) determined that patient satisfaction did not improve after renovation of the emergency department of a hospital under study. They further hypothesized that satisfaction scores might improve if the goals of renovation, efficiency and privacy were met.

5.34 Demographics in healthcare service quality

Researchers have always been interested in knowing the effect of demographic variables on patient satisfaction. Social psychological theories propose that patients’ evaluations are
measures, or mediated, by personal feelings of equity in the exchange, disconfirmation between desires and outcomes, individual preferences, social comparisons and other complex phenomena (Williams et al., 1998). These theories suggest that behavioural differences among patients can influence their attitudes (Reidenbach and Smallwood, 1990; Brennan, 1995). In healthcare industry particularly, patients’ needs differ based on age, gender, etc. and the health care seeking behaviours of different patient segments could produce experiences which influence different quality judgments, and hence influence satisfaction positively or negatively. Tucker and Adams (2001) determined that provider performance and access both affected the satisfaction. But, the demographic variables such as age, gender, education, race, marital status and number of visits did not have any moderating effect on satisfaction. Braunsberger and Gates (2002) reported that healthier patients, older patients, males, those with a lower level of education, those who perceived higher system performance and those with lower levels of system usage were more satisfied with their healthcare plan than their counterparts. Baldwin and Sohal (2003) attempted to include age, gender and location as moderating variables between quality and satisfaction. But the effect was not significant. Yavas et al. (2004) declared that different aspects of service quality and different consumer characteristics seemed to be associated with different behavioural outcomes. While tangible elements of service quality were closely associated with positive word of mouth and commitment for female customers, timeliness aspect of service was related to complaint and switching behaviours. Thus, it is evident that demographic variables have an effect on patient perceived service quality. Venn and Fone (2005) reported that patient satisfaction varied with age, gender, employment status and marital status. They also stated that satisfaction scores could not be benchmarked until the differences in socio-demographic composition were taken into account.

5.35 Benchmarking in healthcare service

Benchmarking is recognized as an effective tool to improve the quality of services. It enables the service providers to improve their performance and thereby gain competitive edge. Booth et al. (2005) highlighted the barriers in benchmarking hospital practices internationally. They used patient data gathered from UK and New Zealand and found that the average length of stay and death rates were less in New Zealand than in UK Güven-Uslu (2005) compared the perceptions of managers, clinicians and finance personnel towards the implementation of
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benchmarking in the UK health services. The study found that patients and their expectations were not considered in benchmarking processes. Stevanovic et al. (2005) outlined how benchmarking practices would aid in performance monitoring of public hospitals in New Zealand. The secondary and tertiary data from all public hospitals were collated and compared to identify potential areas of improvement. Thus, benchmarking provides the consumers with health information on hospital effectiveness, thereby assisting them in making a good choice while selecting a healthcare service provider. It also aids the industry practitioners to standardize the practices across organizations by comparing individual performances.

5.36 Research framework for developing measures in health care

This section deals with the findings from the literature and the current research framework. The existing literature on service quality throws light on various aspects of service delivery as follows:

- Antecedents and dimensions of service quality.
- Application of SERVQUAL and SERVPERF scales.
- Criticism on SERVQUAL.
- Comparison between SERVQUAL and SERVPERF.
- Conceptualization of service quality.
- Perceptual differences among different stakeholders about service provided.
- Differences in services offered by private and public hospitals.
- Link between service quality, customer satisfaction and behavioural intentions.
- Mediators and moderators in the context of service quality.

Even though much research has been conducted on service quality dimensions, a comprehensive framework combining various aspects of existing frameworks and models appears possible (in the sense a comprehensive framework incorporating all the relevant factors as constructs pertaining to healthcare). In Indian context, there is a dearth of an independent model of service quality as almost all the existing studies applied SERVQUAL framework, except that of Duggirala et al. (2008). They developed an instrument for measuring service quality from the patients’ and providers’ perspectives. They also found significant differences between patients of private and government hospitals. The current
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study extends their framework by incorporating other dimensions, namely, corporate image and trustworthiness of the hospital.

Besides, the current study has included items in every factor from the existing literature on healthcare services, related services, Malcolm Baldrige National Quality Award (MBNQA, 2007) and Joint Commission International (JCI, 2007) frameworks, thus going beyond the SERVQUAL dimensions and their items. In the current literature, there is not much work on the experience of users and observers of the service, except for the works of Strasser et al. (1995) and Butler et al. (1996). Strasser et al. (1995), in their study used the instrument designed from patients’ perspective to capture the perceptions of both patients and their family members. They recommended extending their research by pair-wise administering of two separate but similar instruments to patients and their family members and obtaining their perceptual difference. So, in this study, two instruments, one for patients and one for their attendants, have been developed. Strasser et al. (1995) and Butler et al. (1996) also claimed that there existed an influence of family members on the patients regarding the healthcare service. In healthcare, patient is physically or psychologically ill, and she/he may not be in a position to choose the service provider. Therefore, it would be her/his family members or friends (or attendants, in general), who mostly make decisions on their behalf. However, the existing literature has not focused on this aspect, so far. So, the current study attempts to include attendants’ perspective as well in the service-quality evaluation.

5.37 Service quality – attendants’ perspective for health care

Healthcare delivery systems in developing countries, where the resources are not in proportion to the demands placed on services of healthcare institutions, call for the increase in the effectiveness of the health-care system by the efficient management of hospitals. Hospitals in developing countries absorb more resources than any other kind of recurrent government spending on health. Review of the health sector in many countries suggests that these large recurrent expenditures on hospitals involve a great waste of resources because of the technical and managerial inefficiency within hospitals (Tabish, 1998). Further, today’s buyers are better educated and more aware than in the past. Hence, delivering quality service becomes vital. India has become a preferred medical treatment destination, providing cost-effective treatment to the patients from all over the world. It is currently contributing to about 4 per cent of India’s GDP (Danish Trade Council, 2007). If the services provided are
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improved, there is a greater chance of this percentage contribution to grow. The healthcare system must perform various functions, namely, oversight of the health system, public health service delivery, ambulatory service delivery and in-patient care and financing options (World Bank, 2001). This paper focuses only on the in-patient care. Service quality has been established to be an antecedent of customer satisfaction, which is again found to influence customers’ purchase intentions. Even though there are other antecedents of customer satisfaction, viz., situation, individual personality, location and price, service quality gains prominence because it is mostly within the overall control of the service provider. Hence, understanding not only the dimensions of healthcare services but also the extent of their influence of patient satisfaction gives valuable insights to hospital managers and administrators. In Indian context, patients’ attendants always accompany the patients (particularly, in-patients) during their hospital stay. Attendants gain importance in the context of Indian healthcare services due to the following:

(1) As patients are often in a state of physical or psychological discomfort, it is often these attendants who are in a good position to judge the care provided.

(2) Hospitals in India consider the presence of a patient’s attendant necessary for the following reasons:

Revealing patients’ identity: most Indian citizens do not have a uniform official document to reveal their identity unlike in the West, where everyone has a valid social security number. If a patient gets admitted in a critical condition, recognizing her/his identity becomes an issue in India, especially if in medico-legal cases. So, an attendant could help in resolving this issue.

Responsibility in case of critical care: attendants have to take the responsibility of patients in case of critical care by providing undertakings. If a major surgery is to be performed on a married female patient, her husband/parents have to give an undertaking in order for the hospital authorities to proceed with the surgery.

Support provided to patients: attendants provide both physical and emotional support to the patients. In many cases, attendants generally financial needs of patients, as hospitals do not allow them to possess money themselves. Attendants also act as a bridge between hospital authorities and patients. Sometimes, attendants aid the treatment process by arranging for blood required for surgery, without which, surgery cannot be performed. They also procure
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drugs required for treatment process in both private and government hospital set-up. They carry out the function of fetching food from home/outside, if food is not provided by the hospital.

So, not only the attendants aid the patients in choosing a particular care provider but they also influence patients in forming their judgments about the service. Hence, it becomes worthwhile to investigate service quality perceptions of attendants in the healthcare context. Extending the study of Strasser et al. (1995), the current study attempts to develop a separate questionnaire for capturing attendants’ perceptions.

5.38 The conceptual framework for measuring service quality for health care.

A conceptual framework for healthcare service quality, based on the literature review and discussions presented in previous sections is shown in Figure . The framework conceptualizes service quality on various primary and secondary dimensions, namely, infrastructure, personnel quality, trustworthiness of the hospital, administrative procedures, process of clinical care, social responsibility, hospital image and safety indicators. The dimensions have been already explained in Section 10. The proposed instrument for measuring these dimensions is provided. Items have been modified largely in order to suit the context of healthcare services. One of the criticisms on SERVQUAL was it focused only on the functional aspects of service and not on technical aspects. Therefore, the dimension, “process of clinical care” could be adapted from Duggirala et al. (2008). To make the instrument more comprehensive, two dimensions, namely, hospital image and trustworthiness of the hospital, have been added. Many of the items could be added with respect to these dimensions. Appendix gives the list of items, which could be adapted and modified from SERVQUAL, Duggirala et al. (2008), MBNQA (2007) and JCI (2007) and those items which are proposed in the present study.

The instrument for measuring patients’ perceptions could be supplemented with another instrument with same dimensions but the items modified to capture attendants’ perceptions. In the case of attendants, the items can be rephrased so as to obtain attendant’s perception of service provided to the patient. For example, the first item in “social responsibility” would appear as “Fair medical treatment provided to the patient by the hospital” in the instrument
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developed for capturing attendants’ perceptions, as opposed to “Fair medical treatment provided to the you by the hospital” in the instrument meant for patients’ perspective.

The issue of what and how to provide service that best attracts and retains customers has been gaining centrality of late. The current study addresses this issue by uncovering the critical determinants of healthcare service quality. The present study also adopts relevant aspects of MBNQA (2007) and JCI (2007) frameworks towards measuring service quality dimensions from patients’ and attendants’ perspective. Hence, the framework developed is comprehensive, and could be adopted by hospitals in measuring and monitoring the service quality perceptions of the service receivers.

The instruments developed can be used by hospital administrators and managers of healthcare institutions to measure the level of service delivered by them. This study would also help the service providers to identify the similarities and differences in the preferences of these two customer groups, namely, patients and attendants, in order to make strategic decisions. In turn they could decide where to make trade-offs while allocating resources so as to meet the needs of diverse customer groups. We propose a seven-point Likert scale (ranging from 1 indicating “very low” level of service to 7 indicating “very high” level of service) to measure the perceptions of services offered. A hospital scoring less than “4” in a dimension indicates that customers perceive low level of quality and has to improve its services with respect to that dimension. Further, a hospital which has high scores in patients’ perceptions may score low with respect to attendants’ perceptions. This means that it has to design new strategies to take care of the attendants’ needs. Thus, a hospital can compare its performance in terms of the service quality dimensions and its customers’ satisfaction with the benchmarks set by the best in class among similar hospitals. A hospital can also monitor its performance over time. Further, a hospital can do functional benchmarking by using the service quality dimensions across its departments.

The goal of any business is to satisfy customers’ needs, which in turn would result in customer satisfaction. A regression analysis of Service Quality as the dependent variable and Market Orientation as independent variables would aid in understanding those dimensions which impact the customer satisfaction the most.

This could be done with respect to both patient and attendant perspectives. This would enable the service providers to prioritize the dimensions on which they have to focus first. The study
can also be extended by obtaining the importance attached to each dimension by the respondents. Thereafter, a performance-importance analysis proposed could be undertaken. This analysis would reveal to the practitioners how to allocate or economize resources and where it is essential to focus for quality improvement.

A conceptual research framework has been proposed to measure service quality from the perspectives of patients as well as attendants. Two instruments, one each for patients and attendants, have been developed for this purpose. Any hospital embarking on a journey towards total quality management should understand its customers as “Quality” is defined as satisfying customer needs. For hospitals, understanding the customers’ needs marks the starting point of their journey. These hospitals could use the service quality perceptions as “voice of customers”, which would in turn serve to construct “house of quality” from organizational perspective. As discussed in the literature review, hospitals have to be aware of their customer (patient) requirements so as to satisfy them. The satisfied customers spread their word mouth and in turn persuade their family and friends to avail of services from a particular hospital. These recommendations play a significant role in patient purchase decision, as mostly patients depend on their attendants for availing healthcare services. The satisfied patients also remain loyal and are willing to pay more for enhanced services.

5.39 Determinants of healthcare service quality: patients’ and attendants’ perspectives

From the discussion so far, it is evident that any service consists of technical quality and functional quality components. In healthcare, technical quality is the quality of medical care provided (outcome of care). Functional quality is the way in which care is provided (process of care). It can further be divided into infrastructure, personnel quality, administrative procedures and safety indicators. The current study looks at corporate image, social responsibility and the trustworthiness of hospital as additional factors of healthcare service quality. Hence, we postulate that the following are the dimensions of the hospital service quality:

1. Infrastructure;
2. Personnel quality;
3. Process of clinical care;
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4. Administrative procedures;
5. Safety indicators;
6. Corporate image;
7. Social responsibility; and
8. Trustworthiness of the hospital.

A brief explanation of all these service quality dimensions and the related literature on these variables are now presented. The measurement of these variables (on a seven-point scale) is presented in the Appendix. In Table III, various dimensions of service quality and some related studies are shown. A discussion of service-quality critical factors or dimensions follows.

<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>Dimensions</th>
<th>Typology of dimension</th>
<th>Important related literature</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Infrastructure</td>
<td>Tangible facilities; physical environment; accommodation aspect</td>
<td>Parasuraman et al. (1985); Sureshchandar et al. (2002a); Olorunniwo et al. (2006); Reidenbach and Smallwood (1990) and Otani and Kurz (2004)</td>
</tr>
<tr>
<td>2</td>
<td>Personnel quality</td>
<td>Empathy; assurance; responsiveness; courtesy; human element of service delivery; interpersonal care</td>
<td>Parasuraman et al. (1985); Sohail and Shaik (2004); Issac et al. (2003); Andaleeb (1998) and Hasin et al. (2001)</td>
</tr>
<tr>
<td>3</td>
<td>Process of clinical care</td>
<td>Primary quality; technical quality; treatment process and its outcome; reliability; understanding of illness</td>
<td>Gronroos (1982); Baldwin and Sohal (2003) and Rohini and Mahadevappa (2006)</td>
</tr>
<tr>
<td>4</td>
<td>Administrative procedures</td>
<td>Process of service delivery; non-human element of service delivery; punctuality; waiting time</td>
<td>Sureshchandar et al. (2002a); Boshoff and Gray (2004) and Duggirala et al. (2008)</td>
</tr>
<tr>
<td>5</td>
<td>Safety indicators</td>
<td>Safety indicators</td>
<td>Poon and Low (2005); Duggirala et al. (2008)</td>
</tr>
<tr>
<td>6</td>
<td>Corporate image</td>
<td>Image; reputation; brand image</td>
<td>Groêmeuros (1990); Caruana (2002) and Hong and Goo (2004)</td>
</tr>
<tr>
<td>7</td>
<td>Social responsibility</td>
<td>Social responsibility; stakeholder focus</td>
<td>Chiu and Lin (2004); Sureshchandar et al. (2002a); MBNQA (2007) and Duggirala et al. (2008)</td>
</tr>
<tr>
<td>8</td>
<td>Trustworthiness of the hospital</td>
<td>Patient confidence; relationship of mutual respect; trust (of the patient on the hospital)</td>
<td>Parasuraman et al. (1985); Balasubramanian et al. (2003); Sureshchandar et al. (2002a); Iyer and Muncy (2004)</td>
</tr>
</tbody>
</table>
Measures

1. Infrastructure

Infrastructure includes the tangible features of a service delivery (including equipment, appearance of the firm/facility, signage, availability of resources, etc). It is also referred to as man-made physical environment or “service escapes”. The facilities should not only be visually appealing, but also be hygienic, particularly in healthcare service. As services are primarily intangible, customers judge the quality of services based on the tangible aspects of services. Technological capability of a hospital including equipment to test and treat various ailments is a part and parcel of the hospital infrastructure. Parasuraman et al. (1985), in their SERVQUAL model, used “tangibles” as a dimension of service quality. Sureshchandar et al. (2002a) also considered “tangible” elements of service as a component of service quality. Olorunniwo et al. (2006) endorsed “tangibles” to be an essential ingredient of service delivery. Reidenbach and Smallwood (1990) and Otani and Kurz (2004) used the constructs, “physical surroundings” and “pleasantness of surroundings” in their studies, respectively, to denote the physical facilities and ambience. JCI Accreditation (2007) has also identified “facilities management” as a key function in hospitals.

2. Personnel quality

It refers to quality of all the personnel involved in delivering service. The personnel offering service are expected to be responsive, reliable, friendly, sincere and competent by the customers. Personnel quality consists of all the interactions between service personnel and patients including moments of truth, critical incidents, service recovery, etc. Parasuraman et al. (1985) made use of assurance, empathy and responsiveness dimensions to indicate the quality of personnel. Sohail and Shaik (2004) identified “contact personnel” as one of the factors to influence service quality evaluations in Table III. Issac et al. (2003) used soft factors like employee competence and client focus, while evaluating software quality from customers’ perspective. Friendly and courteous staff viz., doctors, nurses, paramedical and support staff, tend to improve patients’ perceptions of the hospital. Andaleeb (1998) had three of the five dimensions, “competence of staff”, “demeanour” and “communication” related to patient-staff interaction, which reinstates the importance of patient’s relationship with hospital employees. Hasin et al. (2001) used “courtesy” and “respect and caring”, respectively, to represent personnel quality in their researches on healthcare.
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3. Process of clinical care

This is the core service or primary service or technical quality of hospital service. It explains “whats” of a service including the width and depth of services. This aspect of service is taken for granted by the customers. When a hospital fails in this aspect, patients do not attach any importance to other aspects, i.e. even if the personnel are friendly in a hospital, the patient may not perceive the service to be of high quality if the doctor lacks the necessary competence and skill. Gro¨nroos (1982) opined that service quality’s essential constituent was “technical quality”.

At the same time, this aspect of service is also difficult to evaluate as patients lack the technical knowledge to judge the quality of treatment provided (Rohini and Mahadevappa, 2006). Baldwin and Sohal (2003) included safety, reliability, technical ability and skills of dental practitioners in the factor “skill and ability”.

4. Administrative procedures

Administration of hospital includes the processes of admission, stay and discharge of patients. Many studies reported that patients are not happy with the long waiting times for diagnosis, treatment, etc. in the hospitals across countries. The ease of getting appointments, ambulance services, simplicity of admission and discharge, etc. all are essential in ensuring a hassle-free treatment to patients. Efficient administration makes patients appreciate service offered better. Service delivery processes should be standardized so that customers could receive a hassle-free service (Sureshchandar et al., 2002a).

During the whole hospitalisation experience and at each “contact point” all employees should demonstrate that they care about its patients, are careful in protecting and enhancing the hospital’s reputation, do everything to gain the patients’ confidence in the hospital and ensure that patients feel safe during their hospitalization (Boshoff and Gray, 2004). One of the important issues of administrative processes is the delay at different stages of the patient’s hospital stay (Duggirala et al., 2008). So, well-defined administrative procedures are required to make the patients’ stay in the hospital a pleasant one.
5. Safety indicators

Firms have to make their employees and customers feel safe and secure, because if either of these is threatened, it exerts a tremendous psychological impact on both. The safety is critical as it relates to the survival concerns, which are basic needs of individuals.

A service firm failing make their customers feel safe, loses out on everything. Poon and Low (2005) considered “safety and security” as an important construct of service quality in hospitality services. A hospital has to address safety critical issues in order to provide a good service because patients visit hospitals to improve their health status and thereby the quality of their life. Provision of ramps and elevators, checking for drugs causing allergic reaction in patients are some of the precautions to be taken by the hospital to avoid any crisis and enable a comfortable stay for patients. Further, the safety of customers who have special needs (e.g. use of ramps, elevators, etc.) has also to be considered. Older people (both patients and their attendants) and physically challenged people are in need of special facilities to take care of their needs. This is particularly important in healthcare services, as it deals with the survival of patients. So far only Duggirala et al. (2008) seemed to have used “safety indicators” as a dimension of service quality.

6. Hospital image

The existing literature on service quality argues that delivering core service is a necessary but not sufficient condition for customer satisfaction. Gro¨nroos (1990) realized the role of “image” in the conceptualization of service quality, and emphasized it as a filter in the perception of service quality in addition to the technical and functional quality dimensions. Caruana (2002) and Hong and Goo (2004) found that “corporate image” enjoyed by a service firm influenced its customer satisfaction. The image a firm enjoys also plays a pivotal role of conveying to a customer what the firm has to offer in terms of technical and functional qualities. The image affects the expectations of the customers and hence it is important in making the customers have realistic expectations. So, even in healthcare services, the reputation of hospital has to be considered as an element of service quality.
7. Social responsibility

It is an inseparable aspect of services, although ignored by several studies. Customers not only solicit good service but also fair service from the service providers. Chiu and Lin (2004) observed that customers might perceive higher service quality if the business satisfied their self-actualization needs, e.g. a customer might be willing to patronize a firm when he realizes that it is involved in a social cause such as charity work, promoting environmental awareness, etc. Sureshchandar et al. (2002a) took a similar view and asserted that an organization which displayed social responsibility would be revered and valued by customers. MBNQA (2007) emphasizes that social responsibility is a vital indicator of quality of service.

A service firm cannot be concerned only about its profitability but also about the society, as a whole. For example, if a hospital provides free treatment to economically downtrodden people, it certainly would boost the hospital’s image and thereby improve patients’ perceptions of service quality. Duggirala et al. (2008), in their study on Indian healthcare service, also emphasized on “Social Responsibility”.

8. Trustworthiness of the hospital

The trustworthiness of hospital measured by the sense of well-being he feels in the hospital, security, etc. does influence the confidence the patient has on the hospital. This will in turn play a role in the overall evaluation of service provided. Balasubramanian et al. (2003) considered “perceived trustworthiness” as a component of online service which could be a determinant of customer satisfaction. Ability to provide service as promised is considered to be a necessary aspect of service delivery by Parasuraman et al. (1985) and Sureshchandar et al. (2002a).

Iyer and Muncy (2004) considered that level of trust patients had varied across patient categories and segmented the patients based on the level of the trust they had on the service provider. This section has provided a detailed discussion on the determinants of healthcare service quality. The next section proposes a framework to conceptualize the healthcare service.