



MEASURING INDIAN PATIENTS' SATISFACTION: A CASE OF PRIVATE HOSPITALS

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Abstract

Exposure to global markets and competitors has placed increasing demands on all sectors of the Indian market. Introducing consumer choice was one of the key motivations underpinning the various healthcare utility privatization of the Indian Hospitals in 1980s, along with enhancing the quality of service provided to consumers. Customer satisfaction is becoming increasingly important for organizational survival, let alone prosperity. This paper aims to study the effect of service facilities provided to patients in private hospitals of India. Suitable satisfaction drivers are identified from the literature and talks with experts. A new customer satisfaction index is discussed. This index is based on American Customer Satisfaction Index (ACSI). The concept is developed specially for the private hospitals operating in New Delhi and NCR market of India. A survey was carried out and 180 responses were collected. Application of factor analysis for satisfaction drivers shows that these variables are well represented by four dimensions, viz. information, process, service and expectation.

From the point of view of the user, an advantage of the new customer satisfaction index, which can be named the Patients Satisfaction Index (PSI), is that the values of the coefficients of the satisfaction drivers give clear hints on potential improvements for researchers and practitioners.

Keywords: hospital, private hospital, satisfaction, consumer, patients, factor analysis, ACSI, PSI, SPSS 16.0, AMOS.

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1. INTRODUCTION

India is considered to have a good health care network available in both rural and urban area of the country. The important component of the value chain in the Indian Healthcare industry rendering services is the hospital industry. A hospital is an institution for health care that provides treatment by specialized staff and equipment, and often but not always provides for longer-term patient stays.

The Indian health care delivery system compares favorably with many other Asian countries. This industry is growing at an annual rate of 14%. The size of the Indian healthcare industry was estimated to Rs. 1,717 billion (USD 359.85 million)¹ and is projected to grow by 2012 to Rs. 3,163 billion (US\$ 662.91 million) at 13% CAGR. The private sector dominates the healthcare market, accounting for nearly 80% of the healthcare market, while public expenditure accounts for 20%². Many new hospitals are being established in response to growing disappointment in the role of healthcare for the public in general. The new hospitals, which are coming up as government, charitable, contemporary and private hospitals, are making healthcare the new emerging, largest service sector in India. Healthcare spending in terms of National GDP accounted for about 5.2 percent at par to about US\$ 34.9 billion in year 2004. As per the latest estimate, healthcare spending is set to rise by 12 per cent per annum through 2005-09, increasing to 5.5 per cent of GDP, or US\$ 60.9 billion, by 2009. It is projected that healthcare spending will scale 8 percent of GDP by 2012, employing around 9 million people.

Considering a pan-India perspective, there are presently about a half million doctors employed in 15,097 hospitals employing 0.75 million nurses to look after more than 870,000 hospital beds. The percentage of medical practitioners holding specialized qualifications in various fields is about 30 percent³.

The special medical treatment provided by the Indian healthcare sector has achieved tremendous success worldwide and India is now recognized as a health destination attracting medical tourism, which is growing by 30 per cent each year. The liberalization of Indian economic policies brought a major progressive shift towards the global economy and induced the entry of foreign brands in the healthcare market in south east Asian countries. In this study we examine patient satisfaction in private hospitals. We define a private hospital as one run by an organization and financially managed through payment for medical services by the patients themselves, by insurers, or by foreign embassies.

Due to advances made in technology in diagnosing technology, diseases can now be diagnosed very fast and treated quickly. However, modern breakthroughs

¹ Currency exchange rates all refer to 1 US\$ = 47.7133 as on May 26, 2010.

² www.cygnusindia.com/viewlatestreports.asp accessed 7 Feb 2009.

³ www.cygnusindia.com/viewlatestreports.asp accessed 7 Feb 2009.

in medicine for treatment of critical disease are rather costly (Smith, 2004). In India health care has become more expensive in comparison with earlier treatment expenses as diagnostic facilities like ultrasound, CT scan, MRI and angiography have made diagnosis easy but costly. Indians are not prepared to pay so much for the medical care and very often develop the feeling that they are being over-charged. Moreover, today's health care is more expensive than it used to be because it works well. The private hospitals target the 300 million Indians who count themselves among the nation's middle class. Despite the price difference, private Indian hospitals provide world-class service: doctors with training comparable to that of U.S. physicians (many with medical training in the United States), the latest technology and equipment, and infection and mortality rates that compare to those of U.S. hospitals⁴. India is a land of stark contrasts, with a heterogeneous health care delivery system and 1.2 billion people who exhibit vast health disparities. Similar disparities exist in the quality of health care offered by India's hospitals. While India's public hospitals have struggled, the private health sector has seen an explosion of interest concurrent with the country's economic growth. Two-thirds of Indian households rely on private medical care, a preference that appears to cut across classes, and even rural and paramedic care are dominated by the private sector (Sengupta, 2008).

Many private healthcare groups that are being established will incorporate as distinguishing features patient centricity in hospital design, services, program and an excellent caring approach of people. Many private hospitals already established endeavour to provide quality comparable to leading hospitals of the world. They have the reputation for providing finest medical skills and compassionate patient care, benchmarked to international standards⁵. Hospital management is now giving full attention to conditions that prevent the transmission of diseases and infection through patients. The management has established their own risk analysis department to cope with risks that may occur in day-to-day functioning. Considerable attention has been given to the emerging strategy of relationship marketing. The strategy ensures that customers return to the same hospital for treatment and recommendation is made in their social circles. Although the importance of relationship quality as a mediating role between predictors and relationship outcomes is well established in the literature, some central questions concerning the relationship between these constructs have not been fully explored (Kim *et al.*, 2007).

It is because of intense competition for market share that managers are motivated to cultivate loyal customers. Yet, despite recent developments in the India healthcare sector, there is still great concern about the quality of some healthcare

⁴ http://www.who.int/whosis/database/core/core_select_process.cfm (accessed 5 June 2008).

⁵ www.ficci.com/health-more.htm accessed 2 July 2008.

services in the country. Public hospitals are doing their best with limited staff, and the general impression that public hospitals are dirty, people are clumsy and chaos exists is justified. Government hospitals are mostly over crowded and under staffed. Huge crowds and long lines are always seen in OPD. For example, Safdarjung hospital of New Delhi gets more than 6000 people in OPD. Nearly 300 patients are admitted daily for observation and treatment. It is believed that doctors in public hospitals carry a good amount of experience. Their services are sought by everyone. The budgetary constraints in public hospitals greatly affect procuring advance equipment and facilities. Because innovations are very costly, they do not provide flexibility and restrict creativity. Patients usually prefer to go to private hospitals, hoping to receive high service quality (Jabnoun and Chaker, 2003). But in a recent study by Arasli, Ekiz and Katircioglu (2008), research results revealed that the various expectations of inpatients have not been met in either the public or the private hospitals.

Several studies have been done in the past few years to find out consumer satisfaction in different service sectors, but few studies have been conducted in the health care sector to examine the cause-effect relationships. Keeping the patient satisfied is also dependent on a number of factors. Very few studies have been devoted to the satisfaction of Indian patients in private hospitals. The effect of satisfaction is important to the private hospital marketing manager because it provides him with the opportunity to take certain actions to improve customers' satisfaction. As the Indian hoi-polloi has become health conscious with good socio-economic conditions, it has opened up an interesting research prospect in an area that has not been explored to its optimum. Against the background elaborated above, this paper aims to study the service facilities being provided to patients in private hospitals and their effectiveness evaluated by PSI model. Patients may look for other providers because they believe that they might receive better service elsewhere. The aim is to measure facilities available in private hospitals while highlighting patients' choice for expensive private hospitals. This study contributes to the body of academic knowledge by shedding more light into the role of ACSI dimensions, and especially patients, in the PSI for private hospitals.

The study will contribute insights for researchers and managers for decision-making processes. The paper is structured in different sections: the first section provides an introduction about hospitals in India; the next section deals with a review of literature in the area and section 3 discusses the methodology. Section 4 provides an analysis of the results and is followed by the conclusion in section 5.

2. LITERATURE REVIEW

Edvardsen *et al.* (1994) noted that developing quality in service begins with analysis and measurement. Acharyulu, G.V.R. K and Rajashekhar (2007) advocated continuous measurement of service system as a necessity for quality in service. The key factor for studying customer satisfaction in any setting is to know who the customer is. According to Parasuram *et al.* (1985), evaluation of service involves the process of service delivery and the outcome of the service.

Considerable attention has been given to the pursuit of customer satisfaction by services marketing researches. Sitzia, Wood (1998) reviewed and presented issues arising from over 100 research cases published in the field of patient satisfaction. Westbrook and Oliver (1991) are of the opinion that organizations are expected to provide services that yield highly satisfied and loyal customers. Some benefits are increase in income, reduction in costs for acquiring new customers as well as spreading good news and recommending the product and services to others (Asif and Sargeant, 2000; Hansemark and Albinsson, 2004; Reichheld and Sasser, 1990). Consequently, customer satisfaction is considered to be a key to the survival of the organization (Jones and Sasser, 1995), as well as to increased market share (Rust *et al.*, 1992) and profitability (Heskett *et al.*, 1994). It is important to explore how customer satisfaction is affected by service facility. There are several peculiarities associated with service industries that need to be addressed as services to some extent are intangible. Their production and consumption are simultaneous and inseparable. While the production process of services involves the active participation of customers, (Grönroos, 1982, 1988), it is difficult to ensure consistency and reliability due to employee-customer interaction (Haysa and Hill, 2000; Jun *et al.*, 1998). Customers' perception of the service experience is the only way to estimate the quality level of services provided accurately (Babakus and Mangold, 1992).

According to Rust *et al.*'s (1996), customer service is all about perceptions. No service can be tested before it is sold, it cannot be stored, returned or exchanged. For all these reasons what matters most is customers' perception of their experience and interpretation of it (Grönroos, 2001; Ross, 1995). According to Leeds (1992) and Reichheld (1996), unsatisfied customers may not choose to defect because of uncertainty of better service elsewhere. However producing customer satisfaction is dependent on a wider range of product choices, greater convenience, better prices, and enhanced income (Storbacka *et al.*, 1994).

Porter (1985) suggested that an organization maintaining an edge over rivals in retaining customers is in an advantageous position. It is, therefore, important for successful organizations to carefully monitor and manage customer satisfaction (Bitner *et al.*, 1994). Zineldin (2000) considers satisfaction as an emotional reaction to the difference between what customers anticipate and what they re-

ceive. Gale and Wood (1994) pointed out that a system that customer can see is preferable and has to be effectively managed.

One key factor in studying customer satisfaction in a healthcare setting is determining just who the customer is. Some researchers identify the customer as the individual who pays for the service. Others identify the recipient of the service as the customer. In this proposed research, a customer is the direct recipient of the healthcare service and/or anyone who acts on the recipient's behalf. Many researchers have talked about comparison of patients' satisfaction from public and private hospitals. Rehman, Shahiduzzaman and Rashid (2002) highlighted that nurses are doing a better job in private hospitals than their counterparts in public hospitals, but are behind nurses in the foreign hospitals. Services rendered by nurses in Bangladesh have been criticized, particularly with regard to the inefficiency of nurses.

It has been argued that understanding consumer expectations is more complex than other health services. The staff of a medical city, who are striving to gain optimum quality level, believe that the core indicator of quality service is to know the customer's perspective as highlighted in the paper for a hospital of Riyadh tertiary centre. The findings emphasized that satisfied areas should be sustained and improved (Alaloola, Albedaiwi, 2008).

While quality is a major concern both in public and private healthcare services, most complaints noted by consumers focused on interaction with hospital staff and other services like comfort, cleanliness, parking, etc. When variables were compared with different hospitals, differences were found at the 0.05 level in 7 different hospitals examined (Tengilimoglu, Kisa, Dzienielewski, 1999).

This case study by Rahman, Qureshi (2008) aims to demonstrate the various strategic options available to a pro-profit hospital and a burgeoning middle-class population for choosing services that can be offered to target population. LIFENET are into a super specialty hospital. In early 2004, LIFENET considered licensing the brand name and establishing India's first health maintenance organization.

A tool of particular interest and note for measuring customer satisfaction is the ACSI and ECSI, which are used in and Europe respectively. It has been extensively applied across service industries (Fornell *et al.*, 1996; Anderson and Fornell, 2000; Martensen *et al.*, 2000; Dermanov and Eklöf, 2001; Fornell, 2001; Eklöf and Westlund, 2002; Yeung *et al.*, 2002). In ACSI, customer satisfaction is considered an intangible economic indicator and is used to monitor the financial viability of companies and industries (Fornell, 2001). The companies are required to focus their attention on outstanding service quality as the entry-level necessity for long-term customer loyalty and advocacy. They serve as a gross assessment of the variability of the large economic block in the USA and Europe. Although individual customer needs and brand attachment also play crucial roles, without customer satisfaction, these attributes alone will not result in brand loyalists or

advocates. It is therefore imperative for companies to focus their efforts on outstanding service quality as the entry-level requirement for long-term customer loyalty and advocacy. Benchmarking between public and private sectors, and for each customer segment is done between one year's result and the next. A common methodology is used in the ACSI model to produce information that is unique to each agency on how its activities that interface with the public affect the satisfaction of customers. The effects of satisfaction are estimated, in turn, on specific objectives. As yet, the ACSI model has not been used within the Indian private hospital sector. This study aims to explore the way that relates to patients' satisfaction for Indian private hospitals.

ACSI has not been widely used in India. The measurement of service is done on a 1000-point scale and known as **Customer Service Index (CSI)**. Maruti Udyog Limited uses this scale to measure satisfaction among vehicle owners during the warranty period for the first 12 to 18 months. To determine the quotient of satisfaction, seven factors are considered: **problems experienced; service quality; user-friendly service; service advisor; service initiation; service delivery; and in-service experience**⁶. Another organization, Gail (India) Ltd, demonstrates commitment to continually improving quality; it works out customer satisfaction level by evaluating it on quarterly basis. Each main business area comprising of Natural Gas, Petrochemicals, Transmission, Liquid Hydrocarbons, and GAILTEL provides online feedback for carrying customer satisfaction measurement.⁷

ACSI uses a tested, multi-equation, econometric model, shown in Figure 1. Input to the cause and effect model comes from the customer surveys of each measured company or agency. For private sector/ industries, company scores for satisfaction (ACSI) and other model components are weighted by company revenues to produce industry indices. Industry indices are weighted by revenues to product economic sector indices. The sector indices, in turn, are weighted by the sector's contribution to the Gross Domestic Product (GDP) to produce the national ACSI. For the federal government agencies, each is weighted by the budget spent on activities for the chosen customer segment to produce a federal government ACSI. ACSI is updated on a rolling basis with data from 1-2 sectors collected each quarter and used to replace the data from the previous year. Each company or agency is measured annually.

Each federal government agency serves many segments of the public, both those internal to government and external users. For the ACSI measurement, each agency is asked to identify a major customer user segment which is central to its mission for which to measure satisfaction, as well as the causes and effects of

⁶ <http://indianautosblog.com/2008/10/maruti-suzuki-ranks-highest-in-automotive-customer-satisfaction-in-india> accessed 24 Dec 2008.

⁷ <http://gailebank.gail.co.in/extapps/csi/home.asp> accessed 10 January 2009.

that satisfaction. The basic strength of any model lies in its applicability to and adoptability in various environments. The proposed model is inductive of patients' satisfaction by means of several factors. It is meant to assure patients' satisfaction in its totality and is considered innovative as patients' expectations and perceived quality are taken to measure satisfaction. Various models have attempted to define and interpret the idea of determining individual perceptions of the quality of health care delivered. Determinants of satisfaction are examined in relation to the literature on expectations, and demographic and psycho-social variables.

3. RESEARCH METHODOLOGY

This study is based on the ACSI model and it aims to find out the percentage of patients who are satisfied with the service provided by Private Hospitals: Forties, Maxlife, Rockland hospital, Apollo, and Escorts, which are situated in and around Delhi and NCR of India . The work was performed in different hospitals on a sample unit of 180 outpatients of these hospitals on the basis of convenient random sampling techniques. The survey instrument was mostly adapted from existing relationship quality studies, and the measurement items were modified in the light of a pilot test given to 10 respondents as well as on the basis of interviews with experienced researchers and quality managers of these hospitals, so as to capture the unique features of the Indian healthcare industry. A total of 27 items (i.e.7 items for information, 6 items for process, 7 items for service, and 7 for expectations) were generated by the researchers (see Appendix A) . For each item, a five-point Likert scale anchored by 5=strongly agree and 1=strongly disagree with 3=neutral (neither agree nor disagree) as the midpoint was utilized. The Likert scale was adopted considering the education and exposure of the sample base. Additional questions about respondents' demographic profiles were also employed.

The survey was conducted from January to May, 2009. Respondents were selected at random in the healthcare providers within these last five months. Care was taken to obtain diversity in terms of gender, age, and income. Some demographic data were also collected, such as gender, age, and income etc to have demographic data. Further, the questionnaire addressed the factors such as information, process, service and perceived quality. The questionnaire was distributed in waiting areas around the offices of medical service providers in multiple locations. The questionnaire covers these areas in relation to any medical services provider visited by the patient in the past five months.

The present paper examines research on patient satisfaction and the factors that influence patient attitudes regarding quality in general practice. Based on Fornell's ACSI variables, the authors tried to identify the effects of each variable

for satisfaction. Data were collected through field research among 180 patients including those who were discharged recently during the last year 2009, and the data were analysed using a modified model based on the ACSI, which was named PSI.

3.1. Research Model Base

For this study, the ACSI Model is used to calculate the customer satisfaction index of the Indian private hospitals. The American Customer Satisfaction Index (ACSI) is the national indicator of customer evaluations of the quality of goods and services available to U.S. residents. It is the only uniform, cross-industry/government measure of customer satisfaction. Since 1994, the ACSI has measured satisfaction, its causes, and its effects, for seven economic sectors, 41 industries, more than 200 private sector companies, two types of local government services, the U.S. Postal Service, and the Internal Revenue Service. ACSI has measured more than 100 programs of federal government agencies since 1999. This allows benchmarking between the public and private sectors and provides information unique to each agency on how its activities that interface with the public affect the satisfaction of customers.⁸

The ACSI is produced through a partnership of the University of Michigan Business School, CFI Group, and the American Society for Quality. The measurement of all industries serves to offer ongoing local and international comparisons to satisfaction of local businesses to achieve world-class levels of customer satisfaction, customer loyalty and customer advocacy.

Customer satisfaction is a key driver of customer loyalty. As we are interested in calculating only the satisfaction level of the customer (patients), we will not take into account customer loyalty or customer complaints. Figure 1 shows our model for this research paper and conceptual framework for this study. Based on the literature review, the authors generated four factors associated with the patients satisfaction index (PSI) model. The overall format of the ACSI and ECSI surveys was followed with appropriate adaptations to suit the Indian market. The study is therefore globally comparable and offers a benchmark against which we can compare our service with competitors across the globe.

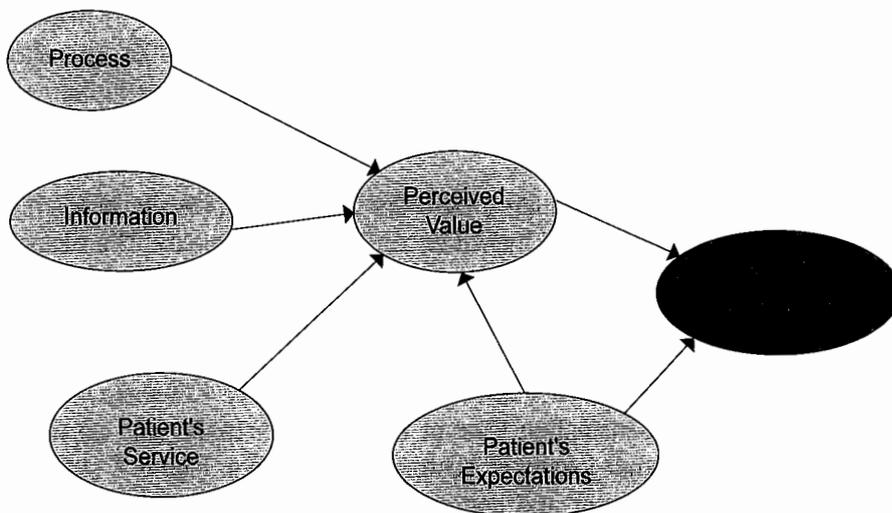
We use a conceptual model to measure the satisfaction. Anderson and Weitz (1989) have suggested that satisfaction with delivered products and services is an influential element in a customer buying decision on whether to continue a relationship (Fornell, 1992), and conversely it can reduce the likelihood of exit from the relationship (Singh, 1988). When a buyer is satisfied with a supplier, he/

⁸ <http://www.theacsi.org/images/stories/images/about/model>, accessed 7 March 2009.

she expects that supplier is able to deliver what has been promised. Yau (1994) found that there is a positive relationship between satisfaction and intention to re-purchase a product in a consumer survey. Fornell (1992), who studied Swedish consumers, notes customer satisfaction is more important for loyalty in industries such as banks, insurance, mail order, and automobiles. As the ACSI model has been used in many industries and service sectors, it is considered a model base for this research paper. We, however, are interested in measuring the satisfaction of patients, not the loyalty of healthcare industry. The empirical results show that the extension of the model by satisfaction drivers is a necessary feature for the ACSI model to be adequate, at least in the case of the patients from private hospital.

FIGURE 1

Conceptual model



4. FINDINGS AND ANALYSIS

The above table shows that the greatest number of respondents belong to the age group of 45-60 years i.e 27.8 %. The smallest number of respondents are from age group of 20 to 25 years i.e 5.5%. 60% of respondents are married and 40 % of respondents are unmarried. With regard to education, the undergraduate category accounts for the largest group, 44.44%. The table further shows that 23.9% of respondents have an annual income of 6 lakhs to 10 lakhs.

Factor analysis was performed to identify the key dimensions affecting patient satisfaction levels and the impact of various private hospitals. The respond-

TABLE 1

Demographic profile of respondents

	Category	No of people	Percentage	Cumulative percentage
Age in years	20-25 years	10	5.5	5.5
	25-35 years	14	7.8	13.3
	35-45 years	40	22.2	35.5
	45-60 years	50	27.8	63.3
	> 60 years	66	36.7	100
	Total	180	100	
Marital Status	Married	108	60	60
	Unmarried	72	40	100
	Total	180	100	
Sex	Male	87	78.9	78.9
	Female	93	21.1	100
	Total	180	100	
Education	Up to school	27	15	15
	UG under graduate	80	44.44	59.44
	PG postgraduate	68	37.78	97.22
	Up to Phd	05	2.78	100
	Total	180	100	
Occupation	Business	52	28.9	28.9
	Service	47	26.1	55
	Homemaker	30	16.6	71.6
	Entrepreneur	51	28.4	100
	Total	180	100	
Income group	Below 1 lakh per year	5	2.7	21.11
	1-3 lakh per year	48	26.8	29.5
	4-6 lakh per year	42	23.3	52.8
	7-10 lakh per year	43	23.8	76.7
	Above 10 lakh	42	23.3	100
	Total	180	100	

ent ratings were subject to principal axis factoring with varimax rotation to reduce potential multicollinearity among the items and to improve reliability on the data (see Appendix B: Rotated Factor Matrix). Varimax rotation with Kaiser Normalization was converged in twelve iterations. As for the results of the factor analysis and reliability check, the service-quality variables were finalized as: information, process, service and expectations. In factor analysis, scales having a loading value of 0.5 and higher were accepted as an important component of the variable. Each factor was analyzed using Kaiser's eigen value of greater than or equal to

one (Kaiser, 1960) to see whether each component measured a single factor or not. Lastly, the factors forming a component were tested for reliability ($\alpha=0.6$ or higher). Following this technique, the above-mentioned eight variables of the quality of healthcare services were obtained. Factor analysis was done to determine the various factors leading to customer satisfaction in the health sector (Ali, 2008, 2006 a, b). In our data examination process, we deleted cases incorporating missing values prior to data analysis. Second, we tested the assumptions underlying the use of ACSI modeling. With respect to sample size (Anderson and Gerbing, 1988), we used somewhat larger sample sizes given the risk of moderate normality violations. Normality was tested by means of PRELIS2 based on the skewness and kurtosis of the observed variables (Bollen, 1989). All the samples revealed significant kurtosis and skewness p-values for most observed variables.

Finally, we tested for the existence of univariate and multivariate outliers. Our analyses revealed that there are nearly no outliers.

TABLE 2

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.667
Bartlett's Test of Sphericity	Approx. Chi-Square	1474.287
	Df	325
	Sig.	.000

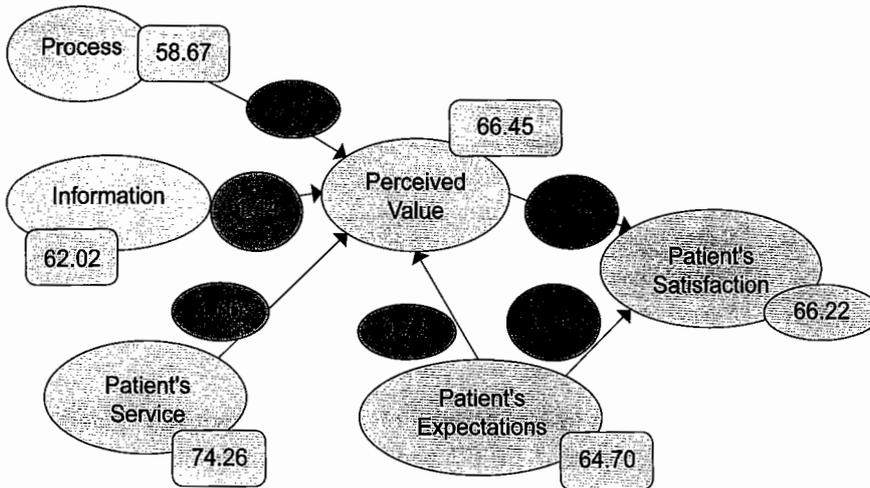
As KMO Value is greater than 0.50, we can go for further analysis of the data.

4.1. Model Indices

Patients' satisfaction level from service of Indian private hospital's was assessed by PSI model in the modified form. The model estimates the satisfaction/dissatisfaction of patients by identifying the principal activities that interface with patients. Thus the model, shown in Figure 2 for the patient's satisfaction index should be viewed as a cause model that moves from left with satisfaction (PSI) to the right. The percentage of variable components is measured by several questions. The large arrows connecting the components in the circles represent the strength of the effect of the component on the left to the one to which the arrow points on the right. These arrows represent "impacts." The larger the number on the arrow, the greater the effect of the component on the one on the right.

FIGURE 2

Patient's Satisfaction Index



The PSI is a weighted average of four parameters in the questionnaire in Appendix A. The questions are answered on 1-5 scales, but the weighted average is transposed and reported as an index on a 0-100 scale. These four parameters measure overall satisfaction of the patients with the service of private hospitals in Delhi and NCR.

The Patient's satisfaction index (PSI) for private hospital Patients is 66.22 on a 0-100 scale.

4.1.1. Drivers of Satisfaction

Three activities interfacing with private hospital patients are identified: Process, Patients Service, and Information, as shown in Figure 2 above. Multiple questions are used first to measure the primary driver of satisfaction for the activity. Weighted averages of these questions are shown as scores or indices. Apart from these, patients' expectations are also considered as drivers of satisfaction. The score for the drivers is listed in Table 3 (Annex B: E1-E3).

Among the identified drivers of satisfaction within the PSI model, process has the lowest score at 58.67. The primary driver of satisfaction is perceived quality scores at 66.45. In the PSI model patients perception of the overall measured component clearly stands-out above the rest—Patient service, with a score of 74.26. This component scores statistically higher than either Process or Information (Annex B: Tables P1, P2, P3 and I1, I2, I3).

TABLE 3

Drivers of satisfaction of private hospital patients

Activities that Drive satisfaction	Year
	2009
Process	58.67
Information	62.02
Patients Service	74.26
Major Drivers of satisfaction	
Patients Expectation (Anticipated quality)	64.70
Patients Expectation (Perceived quality)	66.45

Process represents the lowest scoring of the three identified drivers of satisfaction within the PSI model at 58.67 and the Information of the hospital is in between the two drivers with as score of 62.02. Perceived quality, the primary driver of satisfaction in the PSI model, scores at 66.22. This component measures patients' perceptions of the overall quality of their experiences with the private hospitals for patients' expectations, as a measure.

5. RESULT AND CONCLUSION

As the satisfaction index becomes increasingly established and recognised as the benchmark for decision-makers, consumers, patients and other stakeholders, the study will continue to be published periodically. In addition when results are compared to the American (ACSI) and European (ECSI) studies, it will continue to offer a benchmark against which patients' satisfaction and anticipated quality can be compared across the globe. The study will be rolled out across other major industries in India in the near future.

The satisfaction level of patients in private hospitals, at a score of 66.22, needs to be increased. Private hospitals should work to improve information provision to the patients and they would also be well-served in working on the Process part. Private hospitals are advised to work for improvement in either or both components of process and information as these are likely to enhance patients' satisfaction in future. Results of this analysis have also shown that as the age of customers increases, so too does the propensity to stay with healthcare industry. In addition, respondents with higher education are most likely to switch hospital, perhaps because highly educated consumers tend to have greater expectations of services. Gender and income appear not to have

significant association with the respondents' intention to stay with or leave their service providers.

The results obtained for measuring patients satisfaction in hospitals using PSI model compares well with the ACSI model used for measuring satisfaction. The satisfaction level of patients at private hospital is 66.22. People generally prefer private hospitals for a few reasons: they are considered clean; they offer the best-qualified doctors and they provide good services and facilities. Employees are well dressed and cooperative and extremely professional in their work. Naturally treatment is costlier than in other hospitals. Nonetheless, it will add to their reputation positively if testing facilities and laboratories are available in hospitals only so that recovery rate will be much faster than now. Another common comment was that the quality of food served in private hospitals is not up to the mark. These hospitals would start giving CGHS (CENTRAL GOVERNMENT HEALTH SCHEMES), which provide free medical treatment, to government employees. Foreign and Indian experts in medical skills are advised to provide medical services as a part of Doctor's Exchange Program for worldwide benefits. Patients from rural areas should be given treatment at subsidized rate. Innovating and reinvesting, although very costly, must be encouraged. Hospitals need to focus on other facilities besides patient care to enhance the level of satisfaction and comfort experienced by patients. Hospitals also need to emphasize the timely provision of services and invest in staff training and capacity building to make them patient-friendly and technologically knowledgeable. As most of patients pay out of pocket, the hospitals should devise novel payment options to enhance patient convenience. Patient satisfaction levels with regards to infrastructure and level of technology are always high as these hospitals have world class facilities.

6. MANAGERIAL IMPLICATIONS

There are many issues which need to be given due consideration. The hospitals need to organize training sessions based on the critical importance of service quality and the crucial role of inpatient satisfaction in the health care industry.

The service recovery techniques of promptness, courtesy, effort and professionalism should be used whenever an internal employee has a negative encounter with a patient which must be resolved. The most direct application of service recovery techniques is in the area of conflict resolution. Johnson and Hewa (1997) describe what are called retaliatory behaviors connected with service failures. These include nursing a grudge, complaining to others and trying to turn them against the firm, withholding opportunities for business and other vengeful activities.

A hospital has many of the billing and patient privacy problems that doctors and other healthcare professionals have to deal with. Only two to four percent of our population is insured, the media must project health insurance correctly and educate the population about insurance and medical claims as the more people get insured, probably the more market share will be achieved by these insurance companies. Hospitals should start their own private insurance schemes. Some hospitals in Bombay and Calcutta are doing this already. But more importantly, a good private health insurance company is needed. Though healthcare insurance facilities exist in some private and public hospitals, they should progressively be made mandatory to cover at least urban hospitals in the beginning. Some hospitals may deal with a number of people who have chronic conditions; some of these can be alleviated by diet and lifestyle advice, particularly in conditions like diabetes and heart disease. If healthcare providers can help patients manage their habits to the extent where the condition can be controlled, then they are engaging in good risk management. Those hospitals that treat more than their fair share of chronic cases need to find some way to make their patients take preventative measures.

Payment for medical treatment is done by employer or insurance companies all over the world, but this system is not very common in India and needs to be examined. Another concern of managers is to regulate diet habit of the patients suffering from chronic conditions like diabetics and heart disease.

One thing noticeable in hospitals in general and public hospitals in particular is the lack of courteous language. Patients who go to hospitals are in dire need of some soothing language to ease their conditions. Formal greetings can help them along with polite language by staff (Leeds, 1992). An important concept for managerial attention is innovation. It is well known that cost of innovating is high, and management seeking evidence tend to look for practices that have worked in the past. After an innovation is purchased, an organization has to make sure that the new technology can be put into use; otherwise, the adoption decision would generate little value. The World Health Organization (WHO) have identified that about 50% of the medical equipment in developing countries is unusable (Costa, A. De and Diwan V. 2007). Hospitals have lots of visitors and this makes managing risk to the patients a lot more difficult because staff may not know who is going or coming at any given time.

7. LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

The PSI model used for measuring patients' satisfaction needs to be tested in different cultures and environments. In doing so, a different perspective from the theory developed in western culture is likely to emerge. In the present situation

of internationalization it is possible to test the theory of PSI in global contexts, in different cultures and in different nations. Practitioners should also gain additional insights regarding the acceptance of a model used in a mainstream. Many hospitals do not have the facilities of risk management. Hospitals should establish RM departments with research and development facilities available. Future research needs to examine innovation resistance that affects the implementation of an innovation within hospitals.

This study was subject to several limitations that affected the interpretation of the results. The study was restricted by geographical area of Delhi and NCR. Other important areas of India, such as metropolitan cities, if covered, are likely to yield a better understanding of the quality of satisfaction of patients. This research focused only on the satisfaction of patients in private hospitals. To extend this research is expensive in terms of money and time. But there are ways for improvement. Doctors, nurses and administrative staff can be asked to provide inputs about expectations and satisfaction with their job in the organization. This is important as satisfied employees of the hospital impact ultimately patients' cure and satisfaction. A good result is likely to emerge without additional expenses.

The first limitation relates from the sample size. Gorsuch (1983) and Hatcher (1994) proposed a minimum subject to item ratio of at least 5:1 concerning exploratory factor analysis, and they noted that higher ratios are generally better. This study only collected 180 useable questionnaires. In addition, those variables examined in this study, especially the most significant predictors affecting relationship quality, may vary. Further studies should examine whether determinants of relationship quality differ with regard to private hospital. As discussed earlier, much research has been conducted primarily in the U.S. and the West, but scant attention has been paid in India. However, India has become a center for medical tourism as well as medical outsourcing. There is a need to investigate service quality and its outcomes in India, to enhance service quality standards. The results of such research would help medical service providers to address the issue of waiting time, to strengthen long-term relationships with patients, since continuing loyalty is a key determinant of service providers'. Limitations relate to the use of a non-probability sample and the restricted geographical area of the field research.

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APPENDIX A: Questionnaire

Dear Respondent,

To indicate your response please put a tick mark in the appropriate box that most closely represents your opinion. Please give your opinion based on the views of your current situation. There is, of course no right or wrong answer. For each question an 'undecided' response is available if you cannot decide about a statement or if does not apply to you.

Thank you for agreeing to participate.

The research contains two parts.

Part 1 concerns demographic particulars. Part 2 refers to the various factors that influence patients' satisfaction with a private hospital.

Part 1:

- 1) Please specify the age group to which you belong.
a) 15-25yrs b) 25-35 yrs c) 35-45 yrs d) 45-60yrs e) More than 60 yrs.
- 2) Please specify the appropriate qualification to which you belong.
a) Up to School b) Up to under-graduate c) Up to post-graduate
d) Up to PhD.
- 3) Please specify your marital status:
a) Married b) Unmarried.
- 4) Please choose option:
a) Male b) Female.
- 5) Please specify the Income – Group to which you belong
a) less than Rs1Lac per year b) Rs1Lac- Rs3Lac per year
c) Rs4Lac- Rs6Lac per year d) Rs7Lac- Rs10Lac per year
e) more than Rs10Lac per year.

Part 2:

Please tick (✓) the appropriate box

Strongly Agree: 1; Agree: 2; Neither Agree Nor Disagree: 3; Disagree: 4;
Strongly Disagree: 5.

1. PROCESS

Sl. No.		SA	A	N	DA	SDA
1	Private hospitals have excellent service					
2	Private hospitals have convenient parking space					
3	Private hospitals accept major credit cards					
4	Private hospitals have do not have enough employees to meet customer needs					
5	The check out service is fast and saves time					
6	Private hospitals have an excellent queuing system					
7	Private hospitals have the latest medical equipment					

2. INFORMATION

Sl. No.		SA	A	N	DA	SDA
8	The display at Private hospitals makes it easy to find what is needed					
9	Private hospitals give schemes /offers					
10	I can find Private hospitals advertised in newspaper/TV					
11	I can get a good bargain with Private hospitals					
12	Prices are reasonable as compared to other government / charitable hospitals					
13	Private hospitals have strong visibility in the media					

3. PATIENT SERVICE

Sl. No.		SA	A	N	DA	SDA
14	I am satisfied with Doctors and nurses					
15	The hospital layout makes it easy to find what is needed					
16	The Doctors and employees offer personal attention					
17	I feel safe in conducting with the fortis hospital					
18	Doctors give preferential treatment to some emergency patients					
19	I feel as comfortable in this hospital as I feel at home					
20	Public places are very attractive					

4. PATIENT EXPECTATIONS

Sl. No.		SA	A	N	DA	SDA
21	I prefer those who provide a variety of services					
22	Free treatment is important for me					
23	I like this hospital due to its good hygiene and cleanliness					
24	I prefer to go to the hospital which is open 24*7					
25	I prefer to go to the hospital where the facilities are easily available					
26	Hospital should have a friendly policy					

Table: 2 ACSI: Process Part

TABLE P1

Total Variance Explained

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.736	24.804	24.804	1.597	22.821	22.821
2	1.260	17.993	42.798	1.269	18.132	40.954
3	1.112	15.881	58.679	1.241	17.725	58.679
4	.936	13.374	72.053			
5	.902	12.888	84.941			
6	.659	9.418	94.358			
7	.395	5.642	100.000			

Extraction Method: Principal Component Analysis.

TABLE P2

Rotated Component Matrix (a)

	Component		
	1	2	3
Private hospitals have excellent service	.176	.263	-.671
Private hospitals have convenient parking space	.029	.696	.106
Private hospitals accept major credit cards	.684	-.296	-.263
Private hospitals have do not have enough employees to meet customer needs	.698	.361	.410
The check out service is fast and saves time	.740	-2.58E-006	.098
Private hospitals have an excellent queuing system	.234	.109	.681
Private hospitals have the latest medical equipment	.091	-.697	.260

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.
 A Rotation converged in 6 iterations.

TABLE P3

Component Score Coefficient Matrix

	Component		
	1	2	3
Private hospitals have excellent service	.190	.203	-.581
Private hospitals have convenient parking space	-.021	.548	.083
Private hospitals accept major credit cards	.488	-.259	-.306
Private hospitals have do not have enough employees to meet customer needs	.386	.257	.250
The check out service is fast and saves time	.467	-.029	-.014
Private hospitals have an excellent queuing system	.060	.075	.536
Private hospitals have the latest medical equipments	.052	-.555	.206

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.

INFORMATION

TABLE I 1

Total Variance Explained

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.504	41.728	41.728	2.149	35.821	35.821
2	1.218	20.294	62.022	1.572	26.201	62.022
3	.901	15.012	77.034			
4	.573	9.543	86.577			
5	.512	8.531	95.108			
6	.294	4.892	100.000			

Extraction Method: Principal Component Analysis.

TABLE I 2

Rotated Component Matrix (a)

	Component	
	1	2
The display at Private hospitals makes it easy to find what is needed	-.164	.865
Private hospitals give schemes /offers	.252	.661
I can find Private hospitals advertised in newspaper/TV	.534	.572
I can get a good bargain with Private hospitals	.857	.242
Prices are reasonable as compared to other hospitals	.674	.018
Private hospitals have strong visibility in the media	.765	.032

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.
 A Rotation converged in 3 iterations.

TABLE I 3

Component Score Coefficient Matrix

	Component	
	1	2
The display at Private hospitals makes it easy to find what is needed	-.248	.641
Private hospitals give schemes /offers	.005	.418
I can find Private hospitals advertised in newspapers/TV	.167	.302
I can get a good bargain with Private hospitals	.396	.009
Prices are reasonable as compared to other government / charitable hospitals	.344	-.114
Private hospitals have strong visibility in the media	.388	-.121

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.

PATIENTS SERVICE

TABLE S 1

Total Variance Explained

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.910	41.572	41.572	2.704	38.630	38.630
2	1.236	17.663	59.234	1.372	19.598	58.228
3	1.052	15.028	74.262	1.122	16.034	74.262
4	.610	8.721	82.983			
5	.579	8.273	91.256			
6	.329	4.706	95.962			
7	.283	4.038	100.000			

Extraction Method: Principal Component Analysis.

TABLE S 2

Rotated Component Matrix (a)

	Component		
	1	2	3
I am satisfied with Doctors and nurses	.504	.586	.081
The hospital layout makes it easy to find what is needed	.696	.111	-.088
The Doctors and employees offer personal attention	-.048	.932	-.048
I feel safe in conducting with the private hospital	.850	.131	-.060
Doctors gives preferential treatment to some emergency patients	.689	.321	-.361
I feel as comfortable in this hospital as I feel at home	.875	-.165	.181
Public places are very attractive	-.033	.013	.969

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.
 A Rotation converged in 5 iterations.

TABLE S 3

Component Score Coefficient Matrix

	Component		
	1	2	3
I am satisfied with the Doctors/nurses	.121	.398	.145
The hospital layout make it easy to find what is needed	.258	-.020	-.037
The Doctors/employees offer personal attention	-.157	.741	.028
I feel safe in conducting with the private hospital	.319	-.025	-.002
Doctors gives preferential treatment to some emergency patients	.212	.125	-.269
I feel as comfortable in this hospital as I feel at home	.384	-.244	.194
Public places are very attractive	.033	.092	.881

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.

PATIENT EXPECTATION

TABLE E 1

Total Variance Explained

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.720	28.660	28.660	1.676	27.925	27.925
2	1.104	18.408	47.068	1.109	18.480	46.405
3	1.058	17.630	64.699	1.098	18.293	64.699
4	.819	13.658	78.356			
5	.716	11.941	90.298			
6	.582	9.702	100.000			

Extraction Method: Principal Component Analysis.

TABLE E 2

Rotated Component Matrix (a)

	Component		
	1	2	3
I prefer those who provide a variety of services	.730	-.209	.085
Free treatment is important for me	-.603	-.205	.496
I like this hospital due to its good hygiene and cleanliness	.761	.097	.142
I prefer to go to the hospital which is open 24*7	-.408	.577	-.339
I prefer to go to the hospital where the facilities are easily available	.123	.814	.228
Hospital should have a friendly policy	.137	.137	.811

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.
 A Rotation converged in 9 iterations.

TABLE E 3

Component Score Coefficient Matrix

	Component		
	1	2	3
I prefer those who provide various variety of services	.427	-.161	.019
Free treatment is important for me	-.414	-.209	.507
I like this hospital due to its good hygiene and cleanliness	.453	.117	.068
I prefer to go to the hospital which is open 24*7	-.197	.506	-.280
I prefer to go to the hospital where the facilities are easily available	.088	.741	.199
Hospital should have a friendly policy	.022	.127	.736

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.

