

“Socio-Economic and Situational Variables Influencing the Choice of Corporate Hospitals”

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***Abstract:** The Indian curative care scenario presents a complex mix of high-end corporate care ventures offering world-class care; the middle segment is served by non-corporate private hospitals of various sizes, specialties, operating standards and expertise; the bottom of the patient population is largely deprived of quality care. The corporate hospitals will eventually penetrate deeper into the smaller cities and towns. The pertinent question is regarding the specific model of expansion that ensures most effective and efficient expansion. This depends upon many factors like the preparedness of the patients; their purchasing power; intensity of their health-seeking behavior; among others.*

The present research effort attempts to: explore into the prevalence of positive satisfaction differential among the patients availing care from corporate hospitals; develop comparative profiles of the patients of corporate and non-corporate facilities; and to determine the specific socio-economic and situational variables that influence the selection of corporate/non-corporate hospitals by the patients.

The study found that patients receiving care from corporate hospitals experienced significantly higher levels of perceived satisfaction. Educational level, insurance coverage status and perceived stress level of the patients were the most potent factors that led the patients to prefer the corporate hospitals, while income and proximity to the location did not appear to have an influence in the selection of corporate hospitals.

***Keywords:** Quality Care, Model of expansion, Perceived satisfaction, Corporate Hospitals.*

BACKGROUND

The present curative healthcare scenario in India epitomizes the deep contrasts that prevail in many aspects of the country's evolving socio-economic paradigm. At one

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extreme, we have islands of excellent, state-of-the-art care provided by a handful of largely homegrown corporate healthcare ventures who offer cost-effective world class care. At the other extreme, a massive majority of the Indian population has to make do with the most unscientific cures meted out by a mind-boggling mix of quacks, paramedics, basic threshold-level practitioners and generally ill-equipped public healthcare centers. The middle-ground is held by adequately qualified individual practitioners, polyclinics, educational hospitals, and wannabe single and multi-specialty private facilities set up and managed by entrepreneurs with and without medical background.

The corporate healthcare facilities, which have been successful in designing, developing and delivering high quality care facilities have also achieved a decent level of financial success. The health sector reforms which were set in motion in the 1980s paved the way for private investments in the healthcare sector in a big way. Further catalyzed by the general opening up of the Indian economy over the 1990s, private corporations have succeeded in building a critical mass of high quality healthcare in India.(1) They have built loyal bases among the visiting medical tourists as also among the creamy layer of domestic population. Of late, most of these corporate ventures have been focusing upon expanding their presence internationally as well as domestically. With the ever-increasing demand that has been building up for better quality curative healthcare over the recent past in the domestic segment, corporate healthcare ventures are all-set to play a more vital role in enhancing the access to quality healthcare in the country. Almost entirely limited to tier-1 cities at present, some of these ventures have already adopted the hub-and-spokes model to penetrate deeper into the lower levels of Indian cities and towns. Studies have shown that the private corporate hospitals in India have been providing high quality healthcare.(2)

Not unexpectedly, the private healthcare facilities have tended to gravitate much more towards the urban areas. (3) That a deeper penetration of the corporate care ventures into the Indian curative healthcare system over the foreseeable future is merely an eventuality is beyond much doubt. The process of deepening of the penetration by corporate hospitals has already begun. The corporate healthcare ventures have been using the routes of establishing a network of the hub-and-spokes model, setting up new single specialty facilities and taking hospitals on lease for the purposes of expanding their reach and this has been triggered by the increasing competitive intensity and high real estate costs in tier-1 cities of India.(4) The private sector's predominant presence in the healthcare industry – which is estimated to be as high as 80 percent and growing – is unlikely to be reversed due to the reason that it has been quite successful in expanding and deepening access to healthcare facilities at various levels.

Against this backdrop, the pertinent question that needs to be addressed is regarding the specific model that the deeper penetration process of corporate hospitals will have to employ to provide economical and efficient access to high quality care to

the patients from the tier-2 cities and other smaller cities and towns. The obvious alternative models for expanding the reach of the corporate hospitals are: establishing full-fledged facilities; building a hub-and-spokes model with a specialty hospital operating in a major city with patient interface facilities set up in smaller towns; providing access by forming collaborations with educational hospitals; etc. Obviously, each of these models will have its own economics and care-quality implications. The fitness of any specific model is a function of the state of the social, economic and behavioral situation of the patient population in the tier-2 cities and other smaller towns. In other words, the level of preparedness of the patients in the tier-2 cities to upgrade from the present non-corporate private care facilities to the corporate care facilities needs to be properly anatomized, understood and modeled for arriving at a sound decision as regards to the selection of an appropriate model for expansion of corporate care facilities into the non-metro areas of the nation. The general presumption is that the patients from the tier-2 cities and their feeder areas consider the metro-focused corporate care facilities to be expensive and somewhat alien to their situations.(5)

Historically, the research attention on healthcare in India was not very high. However, over the period of about the past decade and a half, a lot of research has been carried out, particularly focusing on the patient satisfaction. However, very little attention appears to have been paid for investigating into the social, economic and behavioral variables that determine the intensity of health seeking behavior. As regards to the issues that are being raised in this research effort, no studies have been conducted at all.

RESEARCH QUESTIONS

Against the backdrop detailed in the paragraphs *supra*, the present study attempts to seek answers to the research questions enumerated below.

1. Do the patients availing secondary healthcare from corporate-hospitals derive significantly higher perceived satisfaction as compared to those availing from non-corporate hospitals?
2. Are the patients visiting the corporate care facilities significantly different from the tier-2 city-patients presently availing care from non-corporate private care facilities in terms of their socio-economic situations?
3. What socio-economic variables drive the better-health seeking behavior among those patients which prefer the corporate facilities to the non-corporate care facilities?
4. Which are the factors that significantly influence the choice of corporate hospitals?

Adequately concrete answers to these questions are likely to provide a reasonably solid basis for projecting the potential for the expansion of the corporate hospitals in

terms of deeper penetration into the smaller, non-metro cities in the near future. With the positive momentum in the growth of the private expenditure on curative care, the expansion of the corporate facilities appears to be the most natural way to upgrade the quality of healthcare for the teeming millions of Indian population. Thus, the present study attempts to chronicle evidence touching upon these questions.

OBJECTIVES

The core purpose of the present study is to envision the time and model dimensions of the expansion of the corporate healthcare model in India over the foreseeable future. The research objectives that the study has set out for gathering the relevant empirical information are stated in the ensuing paragraph. The study attempts:

1. to measure the perceived satisfaction differential derived by the patients availing healthcare services from the corporate facilities in comparison with those availing care from the non-corporate hospitals;
2. to map the profiles of the patients availing secondary healthcare services from: the non-corporate private healthcare facilities from tier-2 cities; and from the corporate healthcare facilities located in the Bengaluru metropolitan area in Karnataka, India; and,
3. to identify the socio-economic variables that determine the preference of the patients for the corporate healthcare facilities over the non-corporate private healthcare facilities for availing secondary healthcare.

MATERIALS AND METHOD

109 patients that visited a mix of corporate hospitals located in the Bengaluru metropolitan area for treatment and 121 patients that availed secondary healthcare services from various private facilities spread over three tier-2 cities in the state of Karnataka (Hubli-Dharwad, Shimoga and Davangere) were selected for the purposes of the present study. A conscious attempt was made to make the two groups of patients comparable by identifying those patients that availed healthcare services for similar types of ailments from corporate and non-corporate care facilities. For this purpose, a two-level sampling was employed: purposive sampling was used for selection of types of ailments which included problems relating to cardiology, orthopedics, urology, nephrology, gynecology, pediatrics, and neurology; and the in-patient respondents were selected on a random basis at the time of their exits post-discharge. The rationale for selecting these particular ailments stemmed from the fact that these are the categories of ailments that are most representative of what is categorized as "Secondary care" and for which both corporate and non-corporate hospitals provide reasonably comparable care.

A structured questionnaire with dual and multiple choice questions was employed for the purpose of gathering the data for the study after validating the same on a pilot

basis. The researcher personally administered the instrument to the patient respondents, almost always in the presence and participation of an attendant relative. Due clarifications and necessary semantic assistance was offered to the respondents, wherever necessary. The study duration covered the period of four months from February 2014 to May 2014. As most of the healthcare facilities did not respond positively for the conduct of the research effort, the identities of the same is not revealed. The data were analyzed using the 'data analysis' tool under MS Excel and the discriminant analysis tool on the SPSS 16 platform.

For measuring the differential in terms of perceived satisfaction, a composite measure entitled 'Overall satisfaction' was employed, which was the mean score for the various elemental components of patient satisfaction like the perceptions regarding clinical care, doctors' empathy, attitude of support staff, sufficiency and hygiene levels of infrastructure, availability and quality of laboratory and pharmacy services, waiting time, cost of treatment and such other commonly employed metrics of patient satisfaction. The elemental satisfaction for each of these measures was measured using the Likert's scale set at the minimum of 1 and maximum of 5. These scores were averaged to arrive at the composite metric which has been called "Overall Satisfaction".

With reference to the investigation into the socio-economic and ailment related situational variables of the respondents, the study has employed seven commonly employed variables of sex, place of residence, insurance coverage status, age, household income levels, educational level and the perceived stress level of the patients. Of these seven variables, income and age have been measured in terms of absolute values of rupees per month and completed years. Sex, place of residence and insurance coverage statuses have been measured with appropriate dichotomous statuses. The remaining two variables, namely educational and perceived stress levels have been measured using the Likert's 5 point scale.

RESULTS AND DISCUSSIONS

Perceived Satisfaction Differential

One of the primary objectives of the study was to investigate whether the levels of perceived satisfaction experienced by the patients visiting the corporate hospitals was significantly higher than experienced by those visiting non-corporate facilities. An independent two-samples t test was carried out using the MS Excel data analysis tool pack with the null hypothesis that the two groups did not significantly differ in terms of their perceived level of satisfaction. The results are presented in the form of the table 1.

It may be clearly seen from the t statistic value reported in the table 1 that the perceived satisfaction experienced by the two groups was significantly different. The 'p' value was reported at 0.00 indicating strongly significant difference between the two groups, rejecting the null hypothesis that there was no significant difference. The perceived satisfaction was greater for the patients visiting the corporate facilities with

Table 1

	<i>Variable 1</i>	<i>Variable 2</i>
Mean	3.74	2.41
Variance	0.55	0.48
Observations	109	121
Pooled Variance	0.518185	
Hypothesized Mean Difference	0	
df	228	
t Stat	13.98999	
P(T<=t) two-tail	0.000	
t Critical two-tail	1.970423	

a mean score of 3.74 while the mean overall satisfaction score for the non-corporate patients was much lower at 2.41. Hence, the alternative hypothesis that the patients visiting corporate facilities for availing secondary care derive significantly higher perceived satisfaction seems to have strong empirical evidentiary basis.

COMPARATIVE PATIENT PROFILES

For the purposes of anatomizing the possible differences in terms of social, economic and ailment related situational variables among the patients visiting corporate hospitals and those visiting non-corporate hospitals, the study carried out the 'discriminant analysis' using the SPSS 16 platform. Within the framework of discriminant analysis, 'summary statistics' are useful at an elementary level for discerning the differences in the profiles of the two groups of patients: those that availed healthcare from non-corporate hospitals; and those that chose corporate hospitals. The results are presented in the form of table 2.

Table 2
Summary Statistics

<i>Variables</i>	<i>Mean Scores</i>	
	<i>Corporate n = 109</i>	<i>Non-Corporate n = 121</i>
Percentage of male patients	62	42
Percentage of Urban Residents	59	52
Percentage of patients with insurance cover	64	27
EDCNSTATUS	4.27	3.14
STRESSLEVEL	3.54	2.56
Mean AGE in years	39.50	41.89
Mean monthly household INCOME (000)	56.83	54.79

As can be seen from the relevant table, the mean score of male patients visiting the corporate care facilities was much higher at 62% as compared to 42% in case of patients

visiting non-corporate private care facilities. In terms of the residence of the patients, the mean score of the urban patients visiting the corporate hospitals was 59% while it was 52% for those visiting the non-corporate facilities. In respect of the insurance coverage status, the mean score for patients visiting corporate hospitals was very high at 64% as compared to a lowly 27% for those availing care from non-corporate facilities.

The mean score for educational status was relatively high at 4.27 on a scale of 5 as compared to the mean score of 3.14 for those visiting non-corporate facilities. The mean scores for the perceived stress level were 3.54 and 2.56 respectively for patients visiting corporate and non-corporate hospitals. In terms of age and income levels, there appeared to be only marginal differences in the mean scores for the two categories of patients. The mean scores were 39.50 years and 41.89 years in terms of age and Rs.56.83 thousands and Rs.54.79 thousands respectively for the corporate and non-corporate patient groups.

The inferences that stem from a perusal of the results of the summary statistics are: more male, better educated, more patients with insurance cover and those with higher perceived stress levels chose corporate hospitals; and income, age and place of residence did not appear to be influencing the choice of corporate or non-corporate hospitals.

RESULTS OF THE ANOVA TEST

Obviously, the summary statistics are not capable of indicating the robustness of the apparent differences between different groups in terms of mean values for chosen variables. The differences could be merely due to chance. The one-way anova test is a robust tool to test whether the optical differences are statistically significant or not. The results of the anova test are presented in the table 3.

The significance values shown in the last column of the table 3 entitled ‘Test of Equality of Group Means’ – the anova test in common parlance – show that the two groups of patients that availed care from corporate and non-corporate hospitals differ significantly from each other in terms of four variables – sex, educational status, stress level and Insurance cover status. Each one of these variables has a reported significance level of 0.00. The other three variables, namely age, income and residential status have reported significance values that are much greater than 0.05, the normally chosen level of significance. This indicates that these variables do not play a significant role in the choice of corporate or non-corporate hospitals.

It might be further noted that among the four variables that significantly influence the choice of corporate/non-corporate hospitals, education status reported the lowest value for Wilks’ Lambda statistic at 0.685, while the other three significant variables – stress level, Insurance cover status and sex - reported this statistic at 0.820, 0.862 and 0.959. The lower values of Wilks’ Lambda are indicative of the stronger differentiating power of the variables under study. Thus, educational status, stress level, insurance cover and sex are the four variables the choice of the hospitals, in that order.

Table 3
Tests of Equality of Group Means

	<i>Wilks' Lambda</i>	<i>F</i>	<i>df1</i>	<i>df2</i>	<i>Sig.</i>
SEX	.959	9.720	1	228	.002
AGE	.995	1.051	1	228	.306
EDCNSTATUS	.685	104.902	1	228	.000
INCOME	.999	.169	1	228	.681
RESSTATUS	.996	1.021	1	228	.313
STRESSLEVEL	.820	49.985	1	228	.000
InsCover	.862	36.390	1	228	.000

CANONICAL DISCRIMINANT FUNCTION COEFFICIENTS

The most important result of the discriminant analysis are the values of canonical discriminant function coefficients, after accounting for collinearity between the variables under study, which were insignificant, as the Box's M test conducted for ascertaining this aspect reported a result of 0.250, which is insignificant at the level of significance of 5 percent. The final results are formally presented in the form of structure matrix, which is presented in the form of table 4. The discriminant analysis was carried out after giving due consideration to the relevant critical statistics like the Eigen value and the Wilks' Lambda which validate the robustness of the same. Eigen value was reported at 0.835. The Wilks' Lambda for Canonical discriminant was 0.545 and the significance value was 0.00. Both these values validated the robustness of the discriminant analysis.

As regards the results of the Canonical function values for the variables under study, it may be noted that education status is the most powerfully discriminates the choice of corporate/non-corporate hospitals with function value of 0.742. The other important variables that positively discriminate the choice of corporate hospitals over the non-corporate hospitals are stress level, insurance cover and sex.

Table 4
Structure Matrix

	<i>Function</i>
	1
EDCNSTATUS	.742
STRESSLEVEL	.513
InsCover	.437
SEX	.226
AGE	-.074
RESSTATUS	.073
INCOME	.030

Pooled within-groups correlations between discriminating variables and standardized canonical discriminant functions Variables ordered by absolute size of correlation within function.

Age appeared to have a negative marginal discriminating power, meaning that younger aged patients are likely to opt for corporate hospitals. Residential status and income, the two variables that are commonly regarded to be important factors in the choice of better healthcare did not indicate a significant influence on the choice of corporate hospitals. It is relevant to note here that the discriminant analysis carried out here resulted in a model that reported an ability to correctly classify the cases under consideration with a probability of 81.60 percent. In other words, the model that was constructed as the end result of the discriminant analysis had a predictive power of 81.60 percent of classification, which is fairly high.

CONCLUSION

The present research effort sought to examine whether the patients visiting corporate hospitals for availing secondary healthcare derived significantly higher levels of perceived satisfaction. It was found that the overall satisfaction derived by the patients visiting corporate hospitals was significantly higher than that perceived to have been derived by those that availed care from non-corporate facilities for comparable types of ailments. These results are in agreement with the results reported by Sumathi Kumaraswamy which found the corporate care providers were rated better by patients in terms of all the service quality factors employed by the study.(6) P Bhate-Deosthali et al also found that the quality of care provided by private secondary care providers in the area Obstetrics was poor, which corroborates the findings of the present study.(7) However, it is appropriate to note here that these studies were carried out in contexts that were not identical to the one in which the present study has been carried out.

At another level the study also attempted to identify variables that influence the choice of corporate hospitals over non-corporate hospitals among the patients that seek curative care for health problems for which care is available both from corporate and non-corporate hospitals. The factors that are commonly believed to determine the tendency to seek better cure among the patients like: income; proximity influenced by place of residence; educational status; insurance cover; stress level perceived by the patients; sex; and age of the patients were examined for their ability to discriminate the patients that chose the corporate hospitals from those that chose the non-corporate private hospitals. Contrary to the common belief, income and proximity did not influence the choice of corporate hospitals which are regarded to be superior as compared with the non-corporate private hospitals. The most important factors that decided the choice of corporate hospitals were: educational status; stress level experienced by the patients; insurance cover status and sex.

Apart from the immediate conclusions that emanated from the statistical analysis carried out and reported as above, the more important conclusion is that corporate hospitals need to focus on those particular geographies where there are concentrations of patient populations that are better educated and have insurance cover. These are the two variables that are operationally amenable for identifying those tier-2 cities and towns where there is better scope for immediate expansion. It might be noted that

perceived stress level of the patients is a variable that is difficult to be measured and documented. Should the expansion take the form of full-fledged hospital or a hub-and-spokes model interface facility or collaborate with an existing facility is a question that will have to be decided upon based on the presence of the critical mass of patients in each of those geographies into which the corporate hospitals are contemplating to enter.

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