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MEDIATING EFFECTS ON SERVICE LOYALTY IN URBAN HEALTHCARE SERVICES IN SOUTH ASIA

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Abstract: *Purpose:* The purpose of this empirical research is to develop a new model, namely service loyalty in Urban Healthcare Services in India for the measurement of service quality. *Design/Methodology/Approach:* Data were collected by means of structured questionnaire comprising eleven Sections. The sampling procedure used for the study was stratified random sampling. The stratification has been done based on the Tamilnadu in India, non-probabilistic convenience and judgmental sampling technique was used. However, within such state, the respondents were selected by stratified random sampling. *Findings:* The government and private stakeholders need not competent each other in healthcare Sector. They must create their own niche market. This is possible only under non price competition especially consistent development of their service quality and delivery of the customized service. The study reveals that patients' satisfaction is most significant predictor of healthcare service sector. *Practical implications:* In several parts of India, civil society organisations have played a pioneering role in developing community health programmes. The process of community participation that has started needs to be strengthened with a shift of much greater share of promotive and preventive work to community-level institutions and functionaries. The support from these NGOs should be broad based in the twelfth five-year plan. *Originality/value:* The model described in this empirical research will assist Healthcare Services when mapping the level of service quality and thereby enhance the same.

Keywords: Modelling, Mediating Effects, Healthcare Service Loyalty, Patient Satisfaction, Economics Service Quality, India and Service Quality assurance.

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INTRODUCTION

"Everyone has the right to a standard of living adequate for the health and well-being of himself and his family, including food, clothing, housing and medical care and necessary social services" UN Declaration of Human rights (1948). It addresses the basic needs of consumer's governments is urged to cover pharmaceuticals, food standards and drinking water and food, clothing, shelter, education, healthcare, and sanitation. Health a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity WHO, (1946), is a precondition to the realization of human potential and for attainment of happiness. Thus, health is both a social and an economic good (Rena,2006). The World Health Organisation constitution states that, "The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without the distinction of race, religion, and political belief, economic or social condition" WHO, (2007). In realisation of the right to health, government of countries are urged to make healthcare available, accessible, acceptable and of good quality. Quality of healthcare have described as the consistent delivery of a product or service according to expected standards. Quality in healthcare delivery addresses both technical and non-technical dimensions. Patient perception has been described as an important measure of perceived quality of healthcare services.

CONCEPTUALIZED RESEARCH MODEL

There are 11 dimensions were framed for this study. Those are; i) General, ii) Ancillary Services, iii) Reception/Front office, iv) Medical Records, v) Out Patients Department, vi) In Patients, vii) Billing, viii) Medical Nursing, ix) Lab, x) Patient Satisfaction and xi) Customer Loyalty. Here Demographic variables, General, ancillary services, Reception/Front Office, Medical Records, Outpatients Department, In patients, Billing, Medical Nursing, Lab are independent variables and patient satisfaction and customer loyalty are the dependent variable. In the study the researcher examines that how and what extent the independent variables make changes in the dependent variable. The proposed conceptual research model shows the Customer Loyalty in Healthcare services (see Figure1 below).

Hypotheses Development

Mediation refers to a process or mechanism through which one variable (i.e., exogenous) causes variation in another variable (i.e., endogenous). Studies

designed to test for moderation may provide stronger tests of mediation than the partial and whole covariance approaches typically used (e.g. Baron and Kenny, 1986; James and Brett, 1984). It is useful to distinguish between moderation and mediation. Moderation carries with it no connotation of causality, unlike mediation, which implies a causal order. Based on the arguments discussed in the previously and in this section, the researchers formulated the following hypotheses.

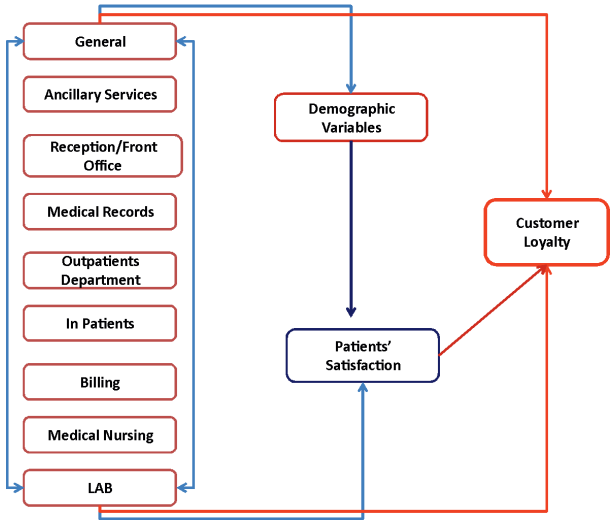

Figure 1: Conceptual Model

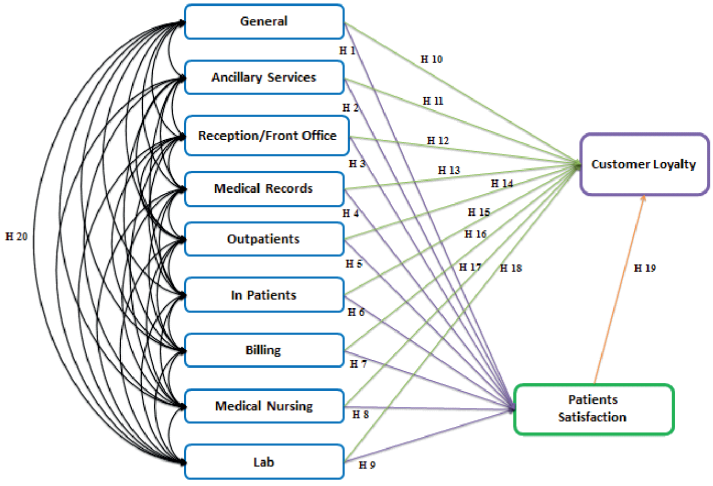

Figure 2: Hypothetical Model

- The dimensions of Healthcare service Loyalty were influenced by the mediating factor Patients Satisfaction.
- The dimensions of Healthcare service Loyalty were positively influenced by the Patients Satisfaction.

As depicted in Figure 2, a mediator hypothesis is supported if the interaction path (Gen, AS, RFO, MR, OP, IP, B, MN, L, and Patients Satisfaction) are significant. There may also be significant main effects for the predictor (Customer Loyalty) and mediator (Patient Satisfaction). Therefore, this research seeks to explore whether the relationship between Service Loyalty (CL) and Gen, AS, RFO, MR, OP, IP, B, MN and L are fully or partially mediated by Patients Satisfaction.

Hypothesis 1: *The service Loyalty dimension General (Gen) is mediated by Patients Satisfaction towards attainment of Service Loyalty to the Healthcare Services.*

Hypothesis 2: *The service Loyalty dimension Ancillary Services (AS) is mediated by Patients Satisfaction towards attainment of Service Loyalty to the Healthcare Services.*

Hypothesis 3: *The service Loyalty dimension Reception Front Office (RFO) is mediated by Patients Satisfaction towards attainment of Service Loyalty to the Healthcare Services.*

Hypothesis 4: *The service Loyalty dimension Medical Records (MR) is mediated by Patients Satisfaction towards attainment of Service Loyalty to the Healthcare Services.*

Hypothesis 5: *The service Loyalty dimension Out Patients (OP) is mediated by Patients Satisfaction towards attainment of Service Loyalty to the Healthcare Services.*

Hypothesis 6: *The service Loyalty dimension In Patients (IP) is mediated by Patients Satisfaction towards attainment of Service Loyalty to the Healthcare Services.*

Hypothesis 7: *The service Loyalty dimension Billing (B) is mediated by Patients Satisfaction towards attainment of Service Loyalty to the Healthcare Services.*

Hypothesis 8: *The service Loyalty dimension Medical Nursing (MN) is mediated by Patients Satisfaction towards attainment of Service Loyalty to the Healthcare Services.*

Hypothesis 9: *The service Loyalty dimension Lab (L) is mediated by Patients Satisfaction towards attainment of Service Loyalty to the Healthcare Services.*

Hypothesis 10: *The service Loyalty dimension General (Gen) positively influences the Service Loyalty to the Healthcare Services.*

Hypothesis 11: *The service Loyalty dimension Ancillary Services (AS) positively influences the Service Loyalty to the Healthcare Services.*

Hypothesis 12: *The service Loyalty dimension Reception/Front Office (RFO) positively influences the Service Loyalty to the Healthcare Services.*

Hypothesis 13: *The service Loyalty dimension Medical Records (MR) positively influences the Service Loyalty to the Healthcare Services.*

Hypothesis 14: *The service Loyalty dimension Out Patient (OP) positively influences the Service Loyalty to the Healthcare Services.*

Hypothesis 15: *The service Loyalty dimension In Patient (IP) positively influences the Service Loyalty to the Healthcare Services.*

Hypothesis 16: *The service Loyalty dimension Billing (B) positively influences the Service Loyalty to the Healthcare Services.*

Hypothesis 17: *The service Loyalty dimension Medical Nursing (MN) positively influences the Service Loyalty to the Healthcare Services.*

Hypothesis 18: *The service Loyalty dimension Lab (L) positively influences the Service Loyalty to the Healthcare Services.*

Hypothesis 19: *The services Loyalty mediating dimension Patients Satisfaction (PS), positively influence the Service Loyalty (SL) to the Healthcare Services.*

Hypothesis 20: *Including the interaction between dimensions of the service Loyalty and Patients Satisfaction (PS) will explain more of the variance in Service Loyalty (SL) than the direct influence of dimensions of service Loyalty or Patients Satisfaction on their own.*

Research Design

The research employed a cross sectional methodological approach. Methodology described as cross-sectional "is one used to collect data on all relevant variables at one time" O'Sullivan and Rassel, (1999).This approach is particularly useful for studies designed to collect information on attitudes and behaviours of large geographically diverse populations O'Sullivan and Rassel, (1999).The survey design is regarded as the most appropriate research design to measure the perceptions of the respondents in this study. A survey is the most appropriate research design as it can enable the researcher to collect information from a large population. The information obtained from the sample can then be generalized to an entire population Kerlinger and Lee, (2000). Survey research is usually a qualitative method that requires standardized information to define or describe variables or to study the relationships between variables.

Data Analysis

The Statistical Package for Social Sciences (SPSS) using techniques that included descriptive statistics, Correlation analysis and Analysis of Moment Structures (AMOS) package for Structural Equation Modelling and Bayesian estimation and testing.

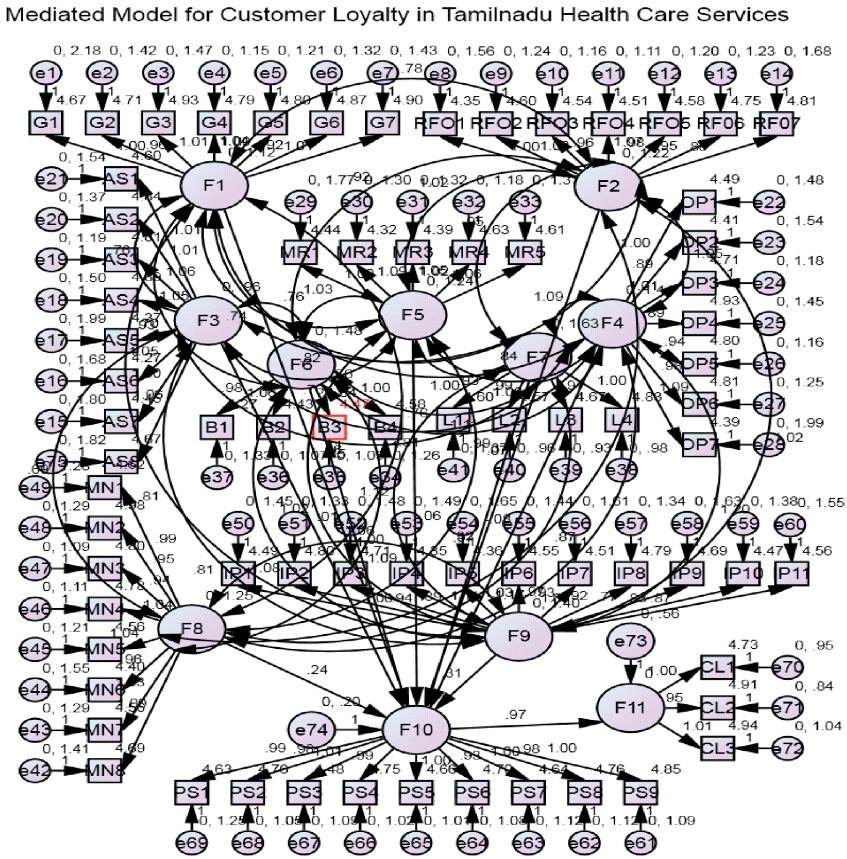

Figure 3 : Healthcare Service Loyalty Mediated Model

Figure 3 shows AMOS's path diagram output for the Overall Healthcare Service Loyalty Structural Equation Model. The RMSEA fit statistics for the model was 0.100, which was considered as a best fit model Senthilkumar and Arulraj (2011). The path diagram shows the Patients Satisfaction is the Mediating factor for Customer Loyalty. The regression co-efficient 0.46 signifies the impact of mediating factor Patient Satisfaction (PS) on the other dimensions towards CL the Healthcare Sector.

Evaluation of Healthcare Service Loyalty Mediated Model

The table 1 provides the summary of the various goodness-of-fit statistics and other values corresponding to the Healthcare Service Loyalty Mediated Structural Equation Model. Also the last column in the table provides the acceptable level for the various goodness-of-fit statistics and other values. The following table it is revealed that all the criterions of goodness of fit statistics and other measures of statistics are acceptable for the Healthcare Service Loyalty mediated structural equation model.

Table 1: Summary of the Various Goodness of Fit

S. No.	*Measures of fit*	*Various Goodness of Fit*	*Acceptable level for good fit*
1.	Chi-square (x^2) at p 0.01	11681.513	Significant
2.	Degree of freedom (d.f)	2509	Accepted
3.	Comparative Fit Index (CFI)	.828	>0.90
4.	Bentler – BonettIndes or Normed Fit Index (NFI)	.792	>0.90
5.	Root Mean Squared error of Approximation (RMSEA)	0.045	<0.05
6.	Non centrality Parameter (NCP)	9172.513	Accepted
7.	Non centrality Parameter, Lower Boundary (NCPLO 90)	8839.982	Accepted
8.	Non centrality Parameter, Upper Boundary (NCPHI 90)	9511.807	Accepted
9.	Parsimony adjusted NFI (PNFI)	.736	Accepted
10.	Parsimony adjusted CFI (PCFI)	.769	Accepted
11.	Minimum value of Discrepancy (FMIN)	9.583	Accepted
12.	Lower Limit of FMIN (LO90)	7.252	Accepted
13.	Upper Limit of FMIN (HI90)	7.803	Accepted
14.	Browne-Cudeck Criterion (BCC)	12245.766	Accepted
15.	ECVI	10.018	Accepted
16.	LO90	9.745	Accepted
17.	HI90	10.296	Accepted
18.	MECVI	10.046	Accepted
19.	HOELTER .05	275	<=
20.	HOELTER .01	280	Atleast 200
Source: Amos 20.0 output			

Bayesian Estimation and Testing

The research model is a SEM, while many managements scientist are most familiar with the estimation of these models' using software that analyses covariance matrix of the observed data (e.g. LISREL, AMOS, EQS), the researcher adopt a Bayesian approach for estimation and inference in AMOS 20.0 environment Arbuckle and Wothke, (2006). Since, it offers numerous methodological and substantive advantages over alternative approaches.

Posterior Diagnostic Plots

To check the convergence of the Bayesian MCMC method the posterior diagnostic plots are analysed. The following figures 4 and 5 provide the posterior frequency polygon of the distribution of the parameters across the 51000 samples. The Bayesian MCMC diagnostic plots reveal that for all the figures the normality is achieved, so the structural equation model fit is accurately estimated.

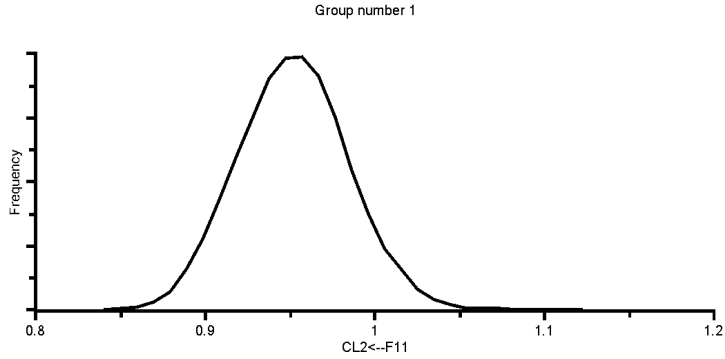

Figure 4: Posterior frequency Polygon Distribution

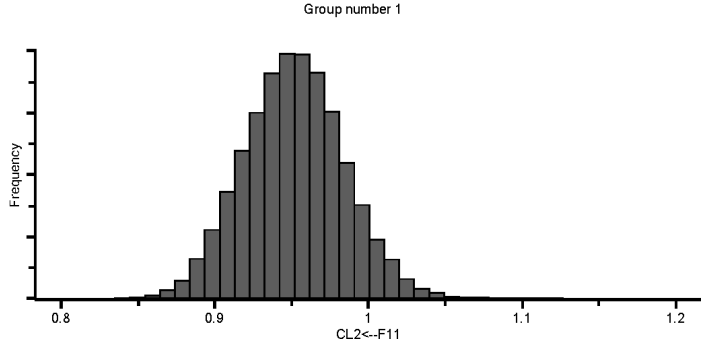

Figure 5: Posterior frequency Histogram Distribution

The trace plot also called as time-series plot shows the sampled values of a parameter over time. This plot helps to judge how quickly the MCMC procedure converges in distribution. The following figure 6 and 7 show the trace plot of the mediated Healthcare Service Loyalty model for the mediated factor Patients Satisfaction with Customer Loyalty dimension across 51000 samples. If we mentally break up this plot into a few horizontal sections, the trace within any section would not look much different from the trace in any other section. This indicates that the convergence in distribution takes place rapidly. Hence the mediated Healthcare Service Loyalty MCMC procedure very quickly forgets its starting values.

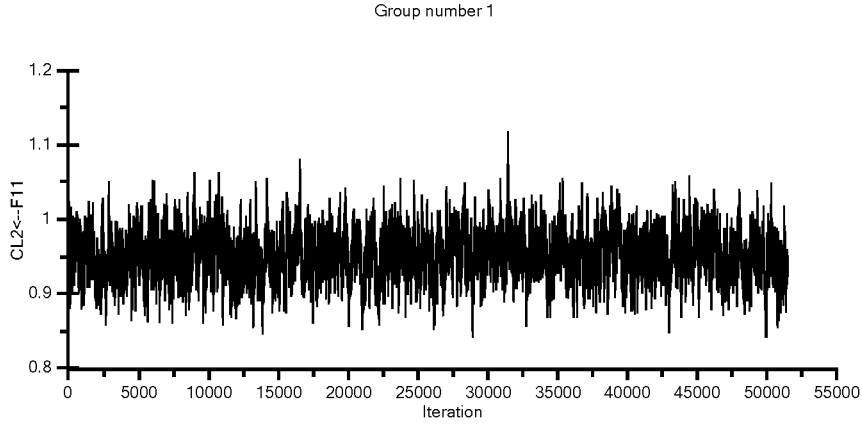

Figure 6: Posterior Trace Plot

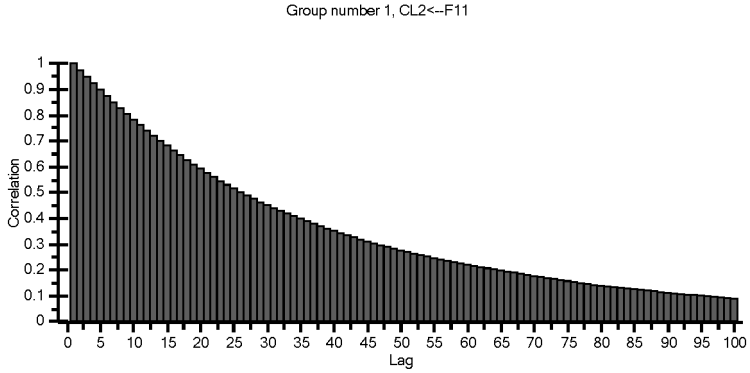

Figure 7: Posterior Correlation Plot

To determine how long it takes for the correlations among the samples to die down, autocorrelation plot which is the estimated correlation between

the sampled value at any iteration and the sampled value k iterations later for k = 1, 2, 3,…. is analysed for the Healthcare Service Loyalty regression model. The figure shows the correlation plot of the Healthcare Service Loyalty model for the mediated factor Patient Satisfaction with Customer Loyalty dimension across 51000 samples. The figure exhibits that at lag 100 and beyond, the correlation is effectively 0. This indicates that by 90 iterations, the MCMC procedure has essentially forgotten its starting position. Forgetting the starting position is equivalent to convergence in distribution. Hence it is ensured that convergence in distribution was attained, and that the analysis samples are indeed samples from the true posterior distribution.

Even though marginal posterior distributions are very important, they do not reveal relationships that may exist among the two parameters. The frequency polygons given in the figure 8 and figure 9 describe only the marginal posterior distributions of the parameters. Hence to visualize the relationships among pairs of Parameters in three-dimensional the following figures provide bivariate marginal posterior plots of the Healthcare Service Loyalty model for the mediated factor Patient Satisfaction with other dimensions across 51000 samples. The two figures it reveals that the three-dimensional surface plots also signify the interrelationship between the variable of Customer Loyalty with the other sub dimensions CL2 and CL3.

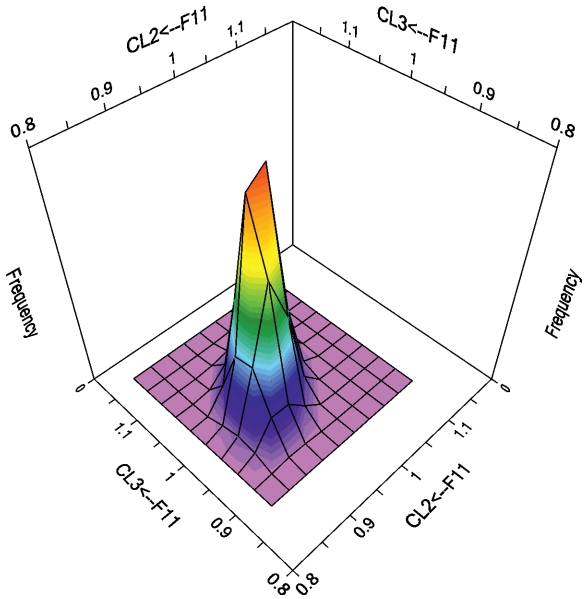

Figure 8: Two-dimensional Surface plot

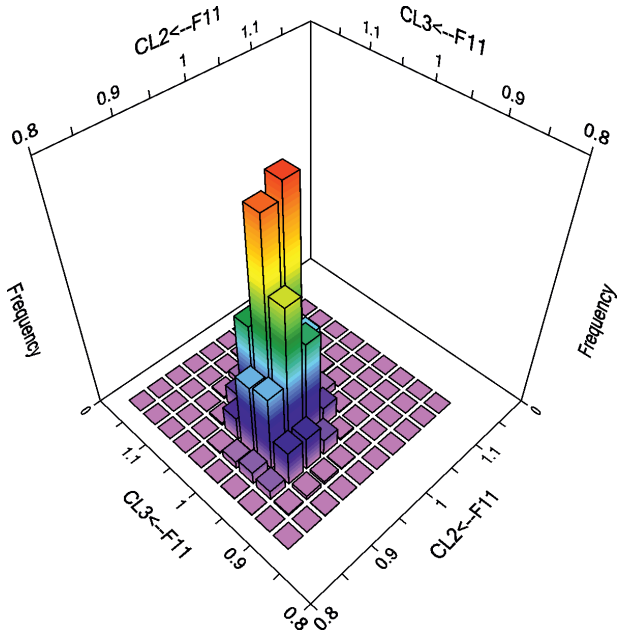

Figure 9: Two-dimensional Histogram plot

The following figure 10 displays the two-dimensional plot of the bivariate posterior density across 51000 samples. Ranging from dark to light the three shades of gray represent 50%, 90%, and 95% credible regions, respectively. From the figure, it reveals that the sample respondent's responses are normally distributed.

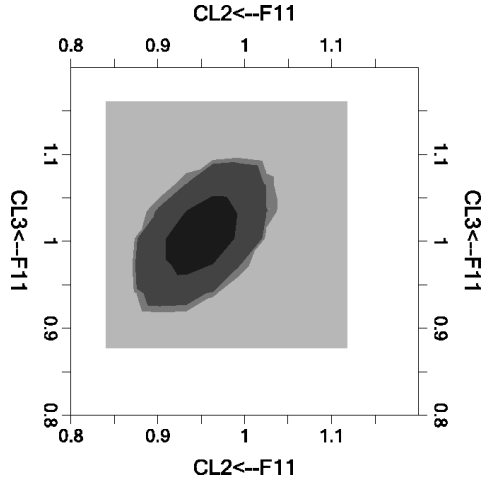

Figure 10 : Two-dimensional Contour plot

The various diagnostic plots featured from figure 4 to figure 10 of the Bayesian estimation of convergence of MCMC algorithm confirms the fact that the convergence takes place, and the normality is attained. Hence absolute fit of the Healthcare Service Loyalty regression model. From the Healthcare Service Loyalty regression model which is empirically tested with mediating factor Patient Satisfaction (PS) with the dimensions Gen, AS, RFO, MR, OP, IP, B, MN, L and the Customer Loyalty (CL) it is evident that the Healthcare Service Sector should concentrate on the Patient Satisfaction (PS) as the most important aspect of Customer Loyalty on Healthcare Service Sector in Tamilnadu and India.

RESULTS AND DISCUSSION

The Healthcare loyal Government Hospitals, Patients satisfaction is the mediating or the most influencing dimension for the customer loyalty. In Tamilnadu, most of the public used the government hospitals for their treatment. They have some negative or dissatisfaction opinion about the facilities available in the government hospitals ancillary services (-0.012), Medical Records (-0.026) and Billing (-0.054) dimensions are negatively influenced with the customer loyalty dimensions. Other dimensions are having positive but low influence a customer loyalty are importance finding in outpatient have negative opinion or highly dissatisfied with the facilities available in the government hospital (OP=>PS=-0.012). There is lack of sitting facilities, and long waiting time, diagnostic service locations and poorly maintained cleanness of OPs are the infected areas of patients' satisfaction. And, emergency services and diagnostic services are worst in condition or having poorly maintained instruments and some of the instruments were under not functioning. Some of the sub-dimensions are not satisfied for the patients those who are used the government hospital. These are all. In the ancillary services: Restaurant and laundry services and highly dissatisfied to the patients. In Inpatients services: Room space, Amenities, and furniture available in the hospital, Bath/toilet facilities, Hot water facilities, are highly dissatisfied to the patients, Diet & Housekeeping also very poor. Reception/Front Office: Most of the Government Hospital does not have a separate staff fir reception/front office so, they are not competent. Billing: most of the patients' opinion having dissatisfaction about the hospital billing staff. Lab: Most of the patients having dissatisfaction about the facilities available in the lab, most of the hospitals having insufficient lab facilities. Medical Nursing: Long waiting time in examination room and getting reports creating

dissatisfaction among the government hospital patients. Hence of efficiency in nursing care also creates dissatisfaction about the quality of nursing care in government hospitals. Overall, the Government Hospitals Patients having dissatisfaction about the General services, Reception/Front office services and Outpatients dimensions that reflect in the low mean score.

Challenges of Increased Private Sector Participation

Each part of the private sector is motivated by different objectives and, therefore, behaves in a unique way, producing a variety of outcomes. Informal providers are available in every village. Offering credit, convenient opening times, and home visits, they are extremely accessible to the population. Unfortunately, they are not qualified to provide the type of services that almost all of them are offering, including prescribing, and administering powerful drugs and injectable medicines. Given the low levels of education and poor record keeping of such providers, they would be difficult to incorporate into mainstream maternal and child health, immunization, and disease surveillance programs. However, several programs have successfully incorporated informal providers into selling family planning products. The NGO and NFP sector is largely self-regulating and able to offer a high-quality product at low cost to its users. The sector also targets the poor, often playing a complementary role to public facilities by filling the gaps in services provided by the public and for-profit private sector. However, most NGO activities are not centrally directed, and their interventions remain ad hoc; they are often at the mercy of donors, who might lose interest or commitment. In the long term, such models are not sustainable and cannot be scaled up. In the short term, given the small size of the NGO sector, it does not play a significant delivery role. However, given their objectives, NGOs could play a useful supervisory role in a system that involved more for-profit private sector delivery.

The formal for-profit sector encompasses the most diverse group of practitioners and facilities. At the top end of services are hospitals offering international-level quality. Such facilities are focused almost entirely on tertiary care, however, and are far too expensive to be relevant to the health care needs of the poor. Small private clinics and nursing homes are within the reach of some poor households, but even their moderate costs can plunge such families into poverty. Several studies indicate that parts of the for-profit private sector are involved in unnecessary procedures, such as high rates of caesarean sections and other unwarranted surgeries and tests. Much of the private for-profit sector

is also heavily underused, suffering low occupancy rates in all but the most successful hospitals. Because the private for-profit sector forms the largest part of the health sector, any future strategy to improve public health should take that sector into account.

Overall, the private sector's biggest problem is that it has grown without any oversight or regulation from the public sector. This unregulated growth has resulted in duplication of facilities in urban centers, variable quality services in the absence of licensing or accreditation, corrupt practices, variable charges, and lack of integration with public health issues such as disease surveillance. Those areas should form the focus of a future strategy to improve the private sector's performance.

CONCLUSION

The study reveals that Patients Satisfaction is most significant predictor of Healthcare Customer Loyalty. This suggests that management should ensure that the Healthcare Sector setting should concentrate on fair and prompt service to their consumers. In Tamilnadu, Doctor and patient ratio has 1:800, the WTO Recommended to Doctor and Patient Ration has 1:600 (WHO). Tamilnadu is the global arenas for health, not only of domestic Patients as well as International Patients. So, Tamilnadu Government must take necessary steps of increase the medical as well as Para-medical staffs' accrual to growth of domestic population as well as international medical thrust. Opening if new medical courses and Para-medical college the skilled personnel's nurses can be increased and Tamilnadu Government must set up a training and development indenture for medical professional for updating/upgrading their latest development in their relevant felts of healthcare. Tamilnadu Government stressed/enforced a policy decision for setting a global healthcare quality certification that can ensured quality of medical services rendered to the patients in terms of health services Tamilnadu Hospitals both Public and Private. This study can be further extended to investigate the causal relationship between service quality, customer satisfaction, loyalty, and retention. Such a study would enhance the level of understanding for managers and academicians.

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