

## **A STUDY ON SOCIO- ECONOMIC PROFILE OF PRIVATE MEDICAL PRACTITIONERS AND ITS IMPACT ON QUALITY HEALTH SERVICES**

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***Abstract:** In this paper our study mainly focuses on socio-economic profile of private medical practitioners and its impact on private health services of Vellore district in Tamilnadu. The study deals the allopathic medical practice only. The study is both descriptive and analytical in nature. Both primary and secondary sources of data were used in this study. Multistage random sampling method was adopted to collect data. The primary data was collected from about 335 private medical practitioners from Indian Medical Association (IMA), Vellore branch. Statistical tools such as percentage analysis, factor analysis, cluster analysis, discriminant analysis and chi-square test were used in the present study. It is found from the cluster analysis that 15.8 per cent of private medical practitioners' socio-economic profiles have medium impact and 53.4 per cent of practitioners' socio-economic profiles have high impact. The remaining 30.8 per cent of practitioners' socio-economic profiles have low impact on private health services. The private medical practitioners should take necessary steps to modify their practice method to group practice from individual practice and increase bed facility and attend to take care of more number of patients per day. The incurring cost should be balanced in a way to cover all the necessary aspects by making adequate reinvestment and known the procedure from time to time for obtaining bank loan and subsidy in right time and realign their goals.*

***Key words:** Private Medical Practitioners, Health Services, Socio-Economic Profile*

### **INTRODUCTION**

In India healthcare is delivered through both public sector and private sector. The public healthcare system dwell of healthcare facilities run by central and state government which provide services free of cost or at a subsidized rates to low income group in rural and urban areas. With the Indian economy enjoying a steady growth, the industry is heading towards growth phase. The introduction of product patents in

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India is expected to boost the industry by encouraging multinational companies to launch specialized life-saving drugs. Attracted by the advantages such as lower costs of production and skilled workforce that India offers many multinational companies are looking to set up research and development as well as production centres in India. Initially the government imposed high custom duty on imported medical equipment making it difficult for private entrepreneurs to set up hospitals. But by the recent post liberalization the duties have been cut down and some lifesaving medicines and equipments can be imported at duty free cost.

### **STATEMENT OF THE PROBLEM**

Studies indicate that private health care practice significantly affects both the cost and quality of available healthcare services in India (Uplekar 1988; Duggals 1989; Viswanathan& Rohde 1990; Yesudian 1990). Cases of superfluous services and the high cost of services rendered by private physicians and hospitals have been reported (Uplekar 1989; Dugglas 1989). The lack of awareness on health policy negatively affects in obtaining governments' subsidies, financial assistance and bank loans, for undergoing an adequate quality improvement training programmes, for maintaining an adequate medical facilities and efficient maintenance system, for knowing about the patients' rights and taking care of more number of patients per day. In turn, these factors affect the private health care system and its quality.

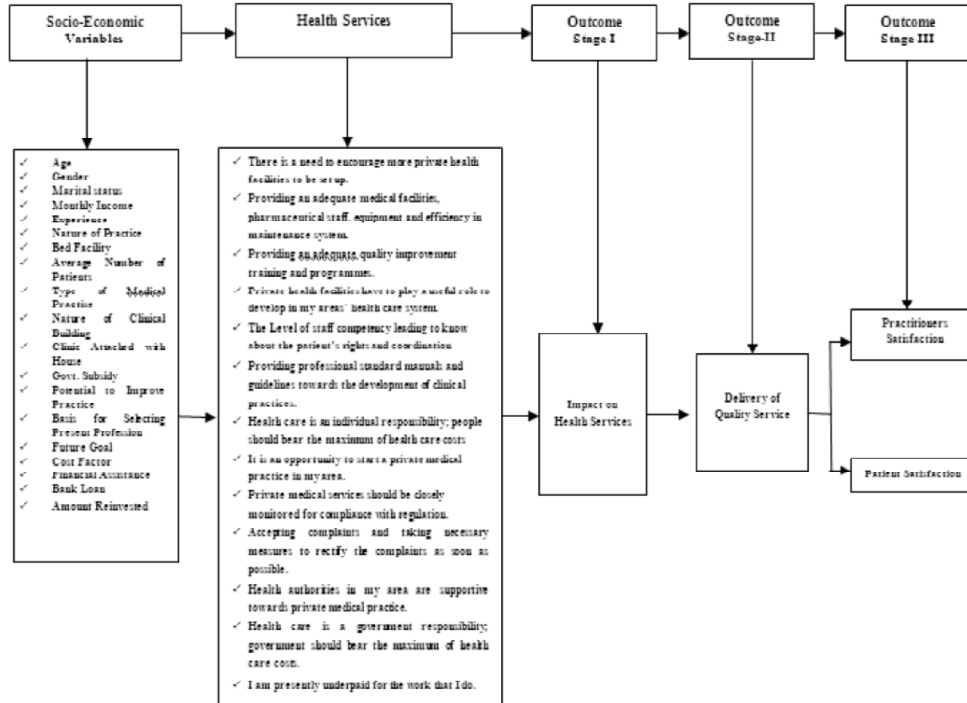
### **REVIEW OF LITERATURE**

This study is carried out with the acquaintance gathered from the following seminal work. Nandraj (1992) examined the conditions and functioning of private nursing homes/hospitals. It found that fifty per cent of the nursing homes are either in poorly maintained building or they are in dilapidated condition. Most of the nursing homes are congested, lack in adequate space and lack in qualified nurses. Nanda P. and Baru R (1993) identified the trends, characteristics and services offered by the private medical sector and described the factors that influence the choice of health care and gauge how the trends in privatization affect individual choices in Delhi. They found that a majority of these nursing home offer outpatient services but confined in patient services to maternity and surgical services. Syed Aljunid (1995) reviewed the role of private practitioners and their interactions with public health services in developing countries, focusing largely on the Asian region. Evidence on the distribution of health facilities, manpower, health expenditures and utilization rates shows that private practitioners are significant health care providers in many Asian countries. Existing literature shows that patient characteristics (socio economic status, ethnicity, age, gender, and source of finance), types of illnesses and characteristics of the service (geographical accessibility, quality of care, price and types of services offered) influence the relative utilization of public and private health care. Obubi *et al.* (1999) examined the role of the private sector in health care delivery particularly how the private sector emerged. It found that majority of for-profit practitioners were

in solo practices and relatively small in size and operated with only outpatient facilities.

Bloom *et al.* (2000) and Agha *et al.* (2003), reported that involvement of the private sector is, in part, linked to the wider belief that public sector bureaucracies are inefficient and unresponsive and that market mechanisms will promote efficiency and ensure cost effective, good quality services. Over the years the private health sector in India has grown remarkably. Baru (1999) and Ramesh *et al.* (2004) examined the commitment of health officials in health sector to enhance the quality of care. It found that the commitment of doctors at district and state level is significantly higher towards their profession than towards their departments. Kassem *et al.* (2006) examined that various economic indicators point to an oversupply of physicians and a poor allocation of their time for capacity building. Michel *et al.* (2009) concluded that financial and non-financial policy measures at macro level indeed might have provided a form of external pressure that forced hospitals to extend their scale by mergers and stimulated the further development of quality management systems. Chiai *et al.* (2009) aimed to explore whether there are gaps in the existing healthcare system in Tamil Nadu. It focused on four analyses, quality of service, accessibility, availability, and affordability both in the private and public healthcare sectors. Utkarsh (2010) studied that private

Figure 1



sector hospitals differ from one another in terms of technology, staff-patient ratio, affordability, efficiency and effectiveness of the practitioners. Ahmad Azam Malik *et al.*, (2010) identified that intrinsic and socio-cultural factors like serving people, respect and career growth were important motivators. Conversely, demotivates across setups were mostly organizational, especially in current jobs. Among these, less pay was reported the most frequently. Fewer opportunities for higher qualifications were a demotivation among primary and secondary physicians. Less personal safety and poor working conditions were important in the public sector, particularly among female physicians. Ann Levin *et al.* (2011) revealed the private sector is playing different roles and functions according to economic development levels, the governance structure and the general presence of the private sector in the health sector. Ramanujam (2011) revealed that there is scope for service quality improvement by corporate hospitals, especially on empathy and then on the responsiveness and reliability dimensions. Based on the above literature, the researcher evolved a conceptual model with respect to impact of socio-economic profile of private medical practitioners on private health services.

### **OBJECTIVES OF THE STUDY**

1. To study the socio-economic profile of private medical practitioners in Vellore district of Tamilnadu.
2. To ascertain the impact of socio-economic profile of private medical practitioners on private health services.

### **HYPOTHESES FORMULATION**

There is no significant relationship between select independent variables such as age, monthly income, experience, nature of practice, bed facility, average number of patients, basis for selecting present profession, cost factors, financial assistance & bank loans and private health care services.

### **RESEARCH METHODOLOGY**

The research describes the socio-economic profile of private medical practitioners and analyses the private health services in vellore district of Tamilnadu. Therefore, the study is both descriptive and analytical in nature. Both primary and secondary sources of data were used in this study. The primary data were collected from the private medical practitioners who have registered their roll with medical association of Vellore district of Tamilnadu using a well-structured questionnaire. The secondary data were collected from Indian Medical Association (IMA), World Health Organisation (WHO), various Journals, Thesis, Bulletins, Magazines, Periodicals and Dailies. The optimum sample size was determined to 335 using Cochran's formula. Multi stage random sampling method was adopted to collect data. Statistical tools such as mean analysis, factor, cluster, discriminant and chi-square analysis were used in this study.

## RESULTS AND DISCUSSIONS

### Analysis of Socio-economic Profile

Socio-economic profile of private medical practitioners studied through simple percentage analysis and presented in table 1.

**Table 1**  
**Socio-Economic Profile of Private Medical Practitioners**

<i>Personal Background</i>	<i>Particulars</i>	<i>No. of Respondents</i>	<i>Percentage</i>
Gender	Male	227	67.8
	Female	108	32.2
Age	Less than 30 years	10	3.0
	30-39 years	123	36.7
	40-49 years	120	35.8
	50-59 years	70	20.9
	60 years or more	12	3.6
Monthly Income	Less than Rs.25,000	37	11.0
	Rs.25,001 - Rs.35,000	122	36.4
	Rs.35,001 - Rs.45,000	132	39.4
	Above Rs.45,001	44	13.1
Marital Status	Married	285	85.1
	Unmarried	50	14.9
Experience	Less than 5 years	11	3.3
	5-9 years	108	32.2
	10-19 years	127	37.9
	20-29 years	77	23.0
	30 years or more	12	3.6
Nature of Work	An Individual Practitioner	272	81.2
	Group Practitioners	63	18.8
Bed Facility	Less than 5 beds	92	27.5
	6-10 beds	78	23.3
	11-15 beds	45	13.4
	16-20 beds	42	12.5
	More than 20 beds	65	19.4
	Not available	13	3.9
Number of Patients Per Day	Less than 5 Patients	5	1.5
	5-9 patients	17	5.1
	10-15 patients	99	29.6
	16-25 patients	103	30.7
	26-30 patients	73	21.8
	31 and above patients	38	11.3
Type of Medical Practice	Outpatient only	147	43.9
	Inpatient & Outpatient	188	56.1
Nature of Clinical House	Own	227	67.8
	Rental	108	32.2
House Attached Clinic	House Attached	126	37.6
	Without House Attached	209	62.4
Government Subsidies	Availed	251	74.9
	Not Availed	84	25.1

*contd. table*

<i>Personal Background</i>	<i>Particulars</i>	<i>No. of Respondents</i>	<i>Percentage</i>
Potential to Enhance Practice	Your Professional Association	148	44.2
	The Ministry of Health	135	40.3
	The State Government	52	15.5
Basis for Selection of Present Profession	My own long interest	171	51.0
	Family Profession	149	44.4
	Counselor/teachers suggested me	12	3.5
	Only way to get a job	3	0.9
Future Goal	For higher management position	222	66.3
	Get a job in my chosen specialization	46	13.7
	Get similar job in another organization	52	15.5
	Leave this profession as soon as possible	15	4.5
Cost Factor	Cost relating to location	54	16.1
	Cost relating to maintenance	136	40.6
	Cost of equipment & technology	100	29.9
	Cost of manpower	10	3.0
	Cost related to others	35	10.4
Financial Assistance	Yes	183	54.6
	No	152	45.4
Bank Loan	Yes	155	46.3
	No	180	53.7
Amount Reinvested	Less than Rs.1,00,000	29	8.7
	Rs.1,00,001 - Rs.2,00,000	113	33.7
	Rs.2,00,001 - Rs.3,00,000	91	27.2
	Rs.3,00,001 - Rs.4,00,000	52	15.5
	Rs.4,00,001 - Rs.5,00,000	50	14.9

(Source: Primary Data)

It is found that 36.7% of the medical practitioners are from the age group of 30-39 years, 67.8% of respondents are males, 32.2% of respondents are females, 85.1% of respondents are married, 39.4% of respondents have earned Rs.35001-Rs.45000, 37.9% of respondents have gained 10-19 years of experience, 81.2% of respondents are individual practitioners and 27.5% of respondents have less than 5 beds. It is also found that 30.7% of respondents used to attend and take care of 16-25 patients, 56.1% of respondents have concentrated on both inpatient and outpatient practices, 67.8% of respondents have own building, 37.6% of respondents have had house attached clinic, 74.9% of respondents have availed Government subsidies, 44.2% of respondents have improved their practice through professional association, 51% of respondents have chosen the present job on the basis of their own interest, 66.3% of respondents have preferred to attain higher managerial position, 40.6% of respondents have incurred cost relating to maintenance, 54.6% of respondents have received financial assistant, 46.3% of respondents have obtained bank loan and 33.7% of respondents have reinvested Rs.1,00,001 – Rs. 2,00,000.

### Factor Analysis

The private medical practitioners are asked to give their opinion for the 13 statements in the Likert Five point scale with the alternate options such as strongly disagree, disagree, neither agree nor disagree, agree and strongly agree.

**Table 2**  
**KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.864	
Bartlett's Test of Sphericity	Chi-Square	1.305E3
	df	78
	Sig.	0.000

[Sources: Primary Data]

The value of Kaiser-Meyer-Olkin test statistics is given above as 0.864, which means the factor analysis for the identified variables is found to be appropriate to the data. Another test is Bartlett's test of Sphericity is 1.305. Here the significant value is 0.000 which indicates that there exist significant relationships among the variables. The measure of KMO test and value of Bartlett's test indicate that the present data is useful for factor analysis. The next step in the process is to decide about the number of factors to be derived. The rule of thumb is applied to choose the number of factors for which "Eigen Values" with greater than unity is taken by using Principal Component Analysis (PCA) method. The component matrix so formed is further rotated orthogonally using Varimax rotation algorithm. All the statements are loaded on the three factors. The results so obtained have been given in the tables separately along with factor loadings.

**Table 3**  
**Total Variance Explained**

Component	Initial Eigenvalues		Extraction Sums of Squared Loadings		Rotation Sums of Squared Loadings	
	% of Variance	Cumulative %	% of Variance	Cumulative %	% of Variance	Cumulative %
1	36.516	36.516	36.516	36.516	22.540	22.540
2	9.906	46.422	9.906	46.422	20.629	43.169
3	8.094	54.515	8.094	54.515	11.346	54.515
4	7.595	62.111	-	-	-	-
5	6.167	68.277	-	-	-	-
6	5.953	74.230	-	-	-	-
7	5.045	79.275	-	-	-	-
8	4.477	83.752	-	-	-	-
9	3.964	87.716	-	-	-	-
10	3.636	91.352	-	-	-	-
11	3.122	94.474	-	-	-	-
12	3.087	97.561	-	-	-	-
13	2.439	100.000	-	-	-	-

[Sources: Primary Data]

The total variance accounted for, by all the three factors is 54.51 per cent and remaining variance is explained by other variables. Among the three factors, the first factor which accounts for 22.5 per cent of variance is the prima criteria considered to study the impact of the private medical practitioners towards health care system.

**Table 4**  
**Component Transformation Matrix**

<i>Sl.No</i>	<i>Name of the Factor</i>	<i>Statements coming under each factor</i>
1	Scope	<ol style="list-style-type: none"> <li>1. There is a need to encourage more private health facilities to be set up.</li> <li>2. It is an opportunity to start a private medical practice in my area.</li> <li>3. Health authorities in my area are supportive towards private medical practice.</li> <li>4. Health care is a government responsibility; government should bear the maximum of health care costs.</li> <li>5. Providing adequate quality improvement training and programmes.</li> <li>6. Providing an adequate medical facilities, pharmaceutical staff, equipment and efficiency in maintenance system.</li> </ol>
2	Need	<ol style="list-style-type: none"> <li>1. Private health facilities have played a useful role to develop in my areas' health care system.</li> <li>2. Health care is an individual responsibility; people should bear the maximum of health care costs.</li> <li>3. Providing professional standard manuals and guidelines towards the development of clinical practices.</li> <li>4. Accepting complaints and taking necessary measures to rectify the complaints as soon as possible.</li> <li>5. The Level of staff competency leading to know about the patient rights, coordination and consistence care and process such as discharge regarding reference and emergency care.</li> </ol>
3	System	<ol style="list-style-type: none"> <li>1. Private medical services should be closely monitored for compliance with regulation.</li> <li>2. I am presently underpaid for the work that I do.</li> </ol>

[Sources: Primary Data]

Factor scores are obtained for each factor by adding the ratings given for each statement. If the score is high the perceptual level of the factor will be high on the respondent.

#### **Cluster Analysis (Segmentation of Medical Practitioners based on Choice Criteria)**

The private medical practitioners can be classified into three categories based on choice criteria. They are classified into three segments because the difference between the coefficients is significant only on three cases on the hierarchical cluster. For the purpose of classification of private medical practitioners, K-means cluster is used.



**Table 5**  
**Final Cluster Centers**

Factors	Cluster		
	1	2	3
Scope	3.82	3.92	2.74
Need	2.48	4.12	2.91
System	3.88	3.74	2.57
Average	3.39	3.93	2.74
Rank	II	I	III

[Sources: Primary Data]

The final cluster centers table 5 shows the mean values for the three clusters which reflect the attributes of each cluster. For instance, the highest mean value for the scope, need and system are 3.92, 4.12 and 3.88 respectively. This means that the first cluster people have medium impact and the second cluster people (private medical practitioners) have high impact on health services. The rank of the clusters on each factor is also given in the above table. The average score of the first cluster is 3.39. The second cluster is ranked first with the average mean value of 3.93. As far as the third cluster is concerned these segments of people have low impact on private health care system and its quality. The third cluster is ranked third with the average perceptual score of 2.74. The following table reveals the cluster mean square, error mean square and F-value.

**Table 6**  
**ANOVA**

Criteria	Cluster		Error		F	Sig.
	Mean Square	df	Mean Square	df		
Scope	48.224	2	0.243	332	198.591	0.000
Need	79.361	2	0.315	332	251.575	0.000
System	51.917	2	0.281	332	184.694	0.000

[Sources: Primary Data]

The ANOVA table 6 indicates that the differences existing among the three clusters in the mean values are significantly different. The significant value for all the three criteria is 0.000. This means that all the three factors have significant contribution on dividing people into three segments based on choice criteria.

**Table 7**  
**Number of Cases in each Cluster**

Cluster	Value	Percentage
1	53.000	15.8%
2	179.000	53.4%
3	103.000	30.8%
Valid	335.000	100%
Missing	.000	0%

[Sources: Primary Data]

The table 7 reveals that out of 335, 53(15.8%) practitioner's socio-economic profiles have medium impact and 179(53.4%) practitioner's socio-economic profiles have high impact on health services. About 103(30.8%) practitioner's socio-economic profiles have low impact on health services.

### Discriminant Analysis

The next primary question is whether the identified clusters are genuine and whether each cluster differs from the other significantly. For this purpose, reliability of the cluster classification and its stability across the samples have to be verified. Several authors have recommended the use of discriminant analysis for cross validation (Field & Schoenfeldt 1975; Rogers & Linden 1973).

**Table 8**  
Tests of Equality of Group Means

	<i>Wilks' Lambda</i>	<i>F</i>	<i>df1</i>	<i>df2</i>	<i>Sig.</i>
Scope	0.455	198.591	2	332	0.000
Need	0.473	184.694	2	332	0.000
System	0.398	251.575	2	332	0.000

[Sources: Primary Data]

Table 8 consists of Wilks' Lambda, the F statistic, its degrees of freedom and level of significance. Wilks' lambda is the ratio of the within-groups sum of squares to the total sum of squares. Wilks' lambda in this case ranges from 0.398 to 0.455. The small values of Wilks' lambda indicate that there is a strong group differences among mean values of three factors. The F statistic is a ratio of between-groups variability to the within-groups variability. The significance value is 0.000 for all the three factors which indicates that the group differences are significant.

**Table 9**  
Eigen Values

<i>Function</i>	<i>Eigen value</i>	<i>% of Variance</i>	<i>Cumulative %</i>	<i>Canonical Correlation</i>
1	2.147	69.0	69.0	0.826
2	0.963	31.0	100.0	0.700

[Sources: Primary Data]

The Eigen value is the ratio of the between-groups sum of squares to the within-groups sum of squares. The highest Eigen value corresponds to the maximum spread of the groups' means. The small Eigen value accounts for very little of the total dispersion. Two discriminant functions are formed when there are three clusters. The Eigen value for the function 1 is 2.147 and for the function 2 is 0.963. The Eigen value is high for both the functions which means that there is a good variability between two functions. The canonical correlation measures the association between two functions and three factors namely scope, need and system. The co-efficient of canonical

correlation is very high for both the functions i.e., 0.826 and 0.700 for function 1 and function 2 respectively. Hence, there exists high relation between two functions and the three factors.

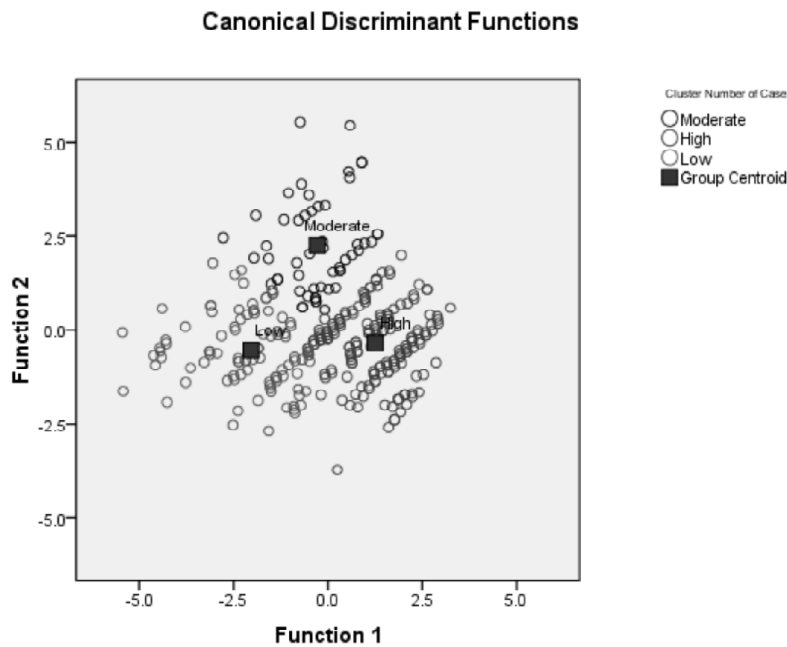
**Table 10**  
**Structure Matrix**

	Function	
	1	2
Scope	0.711*	0.339
Need	0.644*	0.480
System	0.692	0.712*

[Sources: Primary Data]

The structure matrix provides another way to study the usefulness of each variable in the discriminant function. For each variable, an asterisk indicates its largest absolute correlation with one of the canonical functions. The marked values of the factors are then ordered according to the size of the correlation. The strongest correlations for scope and need are with function 1. The factor/variable system has strong correlation with function 2. Hence, two functions maybe  $Z_1 = 0.711 * \text{Scope} + 0.644 * \text{need}$  and  $Z_2 = 0.712 * \text{system}$ . These two functions are significant discriminant functions which will explain the impact of private medical practitioners towards health care services.

**Figure 1: Canonical Discriminant functions**



It is stated that private medical practitioners use three criteria namely scope, need and system to assess the private medical practices and its quality. By using these criteria, medical practitioners are segmented into three categories namely, scope based, need based and system based medical practitioners on the extent to which they consider each criterion. The scope and need based medical practitioners have perceived that there is a greater scope and need for medical practices respectively. In the case of system based medical practitioners, they have concentrated more on system rather than scope and need of the private medical practices and its quality. The study of canonical discriminant plot is useful to segment the practitioners and their different perception.

### Chi-Square Analysis

The chi-square analysis is done to find out whether the socio-economic variables have impact on health care services.

**Table 11**  
**Chi-Square Value for Socio-Economic Variables**

<i>Sl.No</i>	<i>Socio-Economic Variables</i>	<i>Chi square value</i>	<i>Significant Value</i>	<i>Significant or Not Significant</i>
1	Age	17.103	0.029	Significant
2	Gender	0.663	0.718	Not Significant
3	Marital Status	0.679	0.712	Not Significant
4	Monthly Income	38.737	0.000	Significant
5	Experience	16.950	0.031	Significant
6	Nature of Practice	6.435	0.040	Significant
7	Bed Facility	22.354	0.013	Significant
8	Average Number of Patients	30.207	0.001	Significant
9	Type of Medical Practice (Inpatient & Outpatient)	1.746	0.418	Not Significant
10	Nature of Clinical Building	0.595	0.742	Not Significant
11	Clinic Attached with House	5.291	0.071	Not Significant
12	Government Subsidy	1.020	0.601	Not Significant
13	Potential to Enhance Practice	6.661	0.155	Not Significant
14	Basis for Selecting Present Profession	34.688	0.000	Significant
15	Future Goal	7.096	0.312	Not Significant
16	Cost Factor	27.740	0.001	Significant
17	Financial Assistance	10.686	0.005	Significant
18	Bank Loan	32.156	0.000	Significant
19	Amount Reinvested	10.348	0.241	Not Significant

[Sources: Primary Data]

From the above table 11 it is clear that only ten socio - economic variables such as age, monthly income, experience, nature of practice, bed facility, average number of patients, basis for selection of present profession, cost factors, financial assistance and

bank loan which have significant association with health care services. The remaining parts of the socio-economic variables have no significant association with health care system and its quality.

## CONCLUSION

It is found from the cluster analysis that 15.8 per cent of practitioner's socio-economic profiles have medium impact and 53.4 per cent of practitioner's socio-economic profiles have high impact. The remaining 30.8 per cent of practitioner's socio-economic profiles have low impact on private health services. It is found from the discriminant analysis that the co-efficient of canonical correlation is very high for both the functions i.e., function1 (0.826) and function 2 (0.700). Hence, there is a high relationship between two functions and the three factors. From the chi-square analysis, it is found that only ten socio-economic variables out of 19, namely age, monthly income, experience, nature of practice, bed facility, average number of patients, basis for choosing present profession, cost factor, bank loan and financial assistance have significant association with health care services. The remaining nine socio-economic variables such as gender, marital status, type of medical practice (inpatient and outpatient services), nature of clinical building, clinics attached with house, government subsidies, potential to enhance practice, future goals and reinvestment do not have significant association with health care services. The private medical practitioners should take necessary steps to modify their practice method to group practice from individual practice, increase bed facility, attend and take care of more number of patients per day, incur cost in a balanced way to cover all the necessary aspects, make adequate reinvestment, know the procedure from time to time for obtaining bank loan and subsidy in right time and realign their goals. They must come forward to undergo necessary training programmes, enrich the administrative ability, mobilise adequate resources, increase the level of commitment, and install good maintenance system and to maintain good interpersonal relations with other medical practitioners and support staff, to enhance quality health services to the public.

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