CHAPTER I

INTRODUCTION AND DESIGN OF THE STUDY

1.1 INTRODUCTION

Improvement in health status is vital for the enhancement of human capabilities. Illness is an important source of deterioration to human health. Of all the risks facing poor households, health risks pose the greatest threat to their lives and livelihoods. A health shock adds health expenditures to the burden of the poor. Even a minor health shock can cause a major impact on poor persons' ability to work and curtail their earning capacity. Moreover, given the strong link between health and income at low income levels, a health shock usually affects the poor the most (Dror and Jacquier 1999\textsuperscript{1}; Cohen and Sebstad 2003\textsuperscript{2}).

Non-availability of necessary finance is a major obstacle in the health care attainment of people in many developing countries, including India. With the continuing resource constraints of the government and competing sectoral demands, the allocation needed in the health sector may not increase to the

\begin{itemize}
\end{itemize}
adequate level in the near future. Nonetheless, the present trend of cut in government subsidies as a part of the 'new economic reforms' is likely to put more pressure on this sector.

It is in this context that many countries are looking forward to the alternatives to the tax based resource mobilization for health care financing. Two broad methods such as cost containment and cost sharing can be proposed as alternatives to resource mobilization for health care (World Bank. 1987)\(^3\). Privatization and Community participation strategies are proposed for cost containment. Cost sharing methods include User Financing and Health Insurance. There is a growing awareness that access to healthcare cannot be free-of-charge, due to the low level of government spending on health, nor funded mainly out-of-pocket by care-seekers, due to the regressive effect of this financing mode (James et al., 2006\(^4\)). Health Insurance (HI) has emerged as part of the reform drive in many countries, both as a way of augmenting financial resources available for care, and as a means of better linking health demand to the provision of services.

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Health Insurance is becoming a major policy preoccupation as it can provide risk management that respects the complexity of the risks and is one of the best financial tools to prevent a situation whereby people with income above the poverty line would fall under it. Promoting Health Insurance is a rational and powerful response as it serves the insured well even when the insurance is a very humble local micro health scheme, as evidenced from some of the micro schemes’ increasing access to health care significantly (Dror et al., 2002). Health Insurance mechanism is getting more popularity even in developing countries, backed up by the evidence from the successful experience of the developed countries, where Health Insurance system is an integral part of the health care system. Notwithstanding the view that Health Insurance is a viable solution (Chaterjee and Anit, 2000). Health Insurance is nearly nonexistent among poor communities in rural India. The Health Insurance coverage (i.e. the number of people covered by Health Insurance) in India, in some form or the


other, i.e.. whether in public or private sphere, is abysmally low and is only around 3 per cent of the total Indian population (IRDA, 2004). At the same time, interest in taking steps to spread insurance coverage is growing. Private insurance companies are propagating marketing methods and products which would enhance access to insurance among the wealthier segments of the population. Commercial companies are also aiming at selling insurance to people living closer to the poverty line, in partial compliance with the regulations that impose a quota of ‘social’ and ‘rural’ contracts. Community organizations and other bodies have also contributed to the growth of health insurance, notably by supporting the development of India’s micro insurance market among the poorer. It can be seen that privatization, community participation and user fees involve a kind of out-of-pocket expenditure burden on the households which is perhaps minimized by the introduction of Health Insurance as a risk pooling mechanism in the segments of population. In this backdrop, the present study is an attempt to understand both the Private Health Insurance (PHI) and Micro Health Insurance (MHI) Schemes in India.

1.2 Relevance of Health Insurance for India

Several recent papers and reports have critically reviewed the Indian health care delivery and financing system. As indicated by the World Development

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8. IRDA, (2004), Study of Health Care Financing in India, conducted by a faculty team at the Indian Institute of Management, Ahmedabad, May.
Report 2003, the total world health expenditure is 9.0 per cent of the Gross World Income out of which the share of both public and private sector is 5.3 per cent and 3.7 per cent respectively. For developing countries as a whole, expenditure on health accounts for about 5 per cent of the total public expenditure and on an average 2 to 4 per cent of the GOP (WDR 2003\textsuperscript{9}). As against this, the total health expenditure in India is 5.2 per cent of the GOP, and out of this the public health spending accounts for less than 20 per cent and the rest is the contribution by the private sector (WDR 2002\textsuperscript{10}). In India, the per capita total expenditure on health at average exchange rate (US$) though increased from $ 22 in 1998 to $ 30 in 2002, the per capita government expenditure on health at average exchange rate (US$) was $ 6 through out the period (WHR 2005\textsuperscript{11}).

It has been reported that 40 per cent of the hospitalized Indians had to borrow money or sell assets during the decade 1986-96. There was a doubling in the number of persons who were unable to seek healthcare due to financial reasons (NSSO 1996), and almost 24 per cent of the hospitalized Indians fall below poverty line because they are hospitalized (Peters et al 2002). A recent World

\textsuperscript{9} World Development Report (2003), Moving towards sustainable development, The World Bank, Washington, DC.

\textsuperscript{10} World Development Report (2002), The world bank, Washington DC.

Bank (2001\textsuperscript{12}) study on India concludes that out-of pocket medical costs (estimated to be more than 80\% of the total medical expenditure) alone may push 2.2 per cent of the population below the poverty line each year. Many studies indicate that Indians tend to use health care services more frequently (Duggal and Amin 1989\textsuperscript{13}).

According to the NSS data (1996), the percentage of ailing persons treated during 15 days is 83 in rural areas and 91 in urban areas and among those who have not sought medical care in spite of their illness, around 24 percent in rural and 21 per cent in urban areas, have cited their lack of financial capacity as the reason for not seeking treatment.

Recent household-level studies carried out in India, both at national and regional levels have indicated that the proportion of patients that pay for services can be quite high, ranging from 64 to 90 per cent (George, 1997\textsuperscript{14}; Sundar. 1992\textsuperscript{15}). Out of the total health expenditure in India, the public health spending
accounts for less than 20 per cent and the remaining is the contribution by the private sector (WDR 2002\textsuperscript{16}). Peter Berman (1996) revealed that almost all of this private spending is on curative care – consultations, diagnostics and in-patient care. In contrast to this, a lion's share of public health expenditure is on preventive and promotive health care, which is at the expense of curative care (Phadke 1994). Moreover, a slight majority of people, who are ill or sick, seeks care from public providers for in-patient care, that is, the most common outpatient episodes are treated before the private provider. Furthermore, it is important to note that, as revealed by the recent household-level studies on utilization of health care, even public care is not all that free; after all, there are many incidental expenses that consumers have to bear on their own Uplekar and George 1994\textsuperscript{17}; Sundar 1995\textsuperscript{18} pointed out that average spending per out-patient episode on the public facilities is about 40 per cent of the average expenditure on visits to the private sector, while the public in-patient treatment expenditures average about a quarter of the private in-patient treatment costs. Dissatisfaction with the quality and quantity of curative services, under funding and lesser access are the limitations of India's public

\begin{itemize}
\item[16.]{World Development Report (2002), The World Bank, Washington, DC.}
\item[17.]{Uplekar, M. and A. George, “Access to Health Care in India, Present situation and Innovative Approaches”, Center for Development Studies, Discussion Paper, No.12, 1994.}
\item[18.]{Sundar, R., ‘Household survey of health care utilization and expenditure”, Margin, 26(4), 1994, p.865.}
\end{itemize}
health care system and the majority of the consumers of the public health system are the weaker sections of the society and there is a growing preference for health care services being provided by the private sector. In short, the treatment from both public and private facilities imposes considerable financial burden on individuals in the form of out-of-pocket expenses. However, approximately 65 per cent of all spending on curative and diagnostic care in India, consists of direct out-of-pocket expenses, which are not reimbursed. As already mentioned above, people used to approach both the public and private sector health care providers for treatment. As far as India's public health care system is concerned, dissatisfaction with the quality and quantity of curative services, under-funding and lesser access are the limitations pointed out by the studies.

The adoption of 'new economic policies' and the subsequent reforms, such as sector reforms, escalated the cost of health care further. The present trend of imposing user charges in the public hospitals in many states and reduction in public health subsidy may lead to an increase in the health care burden of the population. Making this issue more vulnerable, 80 per cent of the public health subsidy goes to the richer sections of the society (Mahal, A, et.al., 2000\textsuperscript{19}). The financial burden of health care is, however, unduly heavy for the households

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belonging to the informal sector, indicating a potential for voluntary comprehensive health insurance schemes for such sections of the society (Gumber and Kulkarni, 2000\textsuperscript{20}). The health care expenditure is on an increase in India; the annual rate of inflation in the health sector is estimated to be 31 per cent and 15 per cent for inpatient and outpatient care, respectively (cited in Sujatha Rao, 2004\textsuperscript{21}). As a result, the out of pocket expenditure of the people has increased more than proportionately during this period. Further, we are in an era of the rapid technological progress, which makes it possible to treat more diseases with new potential areas for treatment and prolong life expectancy with resulting increases in need and demand for health services, which will put more pressure on the healthcare financing front.

India is at the door front of the transition from the second to third stage of demographic transition, characterized by low birth rate and low death rate. The fact here is that the life expectancy of the people is increasing and, as a result, the number of ageing or elderly population too is proportionately increasing. The basic theory of the inverse relationship between age and health status states that as people get aged, their health status will deteriorate and has ample empirical


evidence to substantiate it giving a strong message of an overall increase in the health care burden of society due to high medical care consumption of these groups (Omram, 1971).

It can also be observed that India is moving towards an epidemiological transition, and some states like Kerala have already begun to experience such a transition. Major epidemiological studies (Jamison et al. 1993; Murray and Lopez 1996) have documented important changes in the burden of disease and mortality in developing countries. As a population undergoes a demographic transition, it also experiences a shift in its characteristic patterns of disease. Omram (1971) believed this pattern is unchanging and labeled it as epidemiological transition and described it as a shift away from diseases of famine and pestilence to receding pandemics to an age of generative and man made diseases. Epidemiological transition implies a change in the morbidity profile from acute infectious and parasitic diseases (e.g. Plague, Smallpox and Cholera) to non-communicable, degenerative and chronic diseases (e.g. Cardiovascular Diseases, Cancer, Diabetes, and Neoplasm). More specifically, three fundamental changes in the configuration of a population’s health profile take place during epidemiological transition: (i) mortality decline due to infectious diseases, injuries and mental

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illness (ii) shift of the burden of death and diseases from the younger to the older
groups and (iii) change in health profile from one dominated by death to one
dominated by morbidity. Differing epidemiological patterns between town and
country coexist and continue to widen. In such a situation of polarization, the
danger is that of the scarcity of resources for diagnostic and curative services
available to the rural and the urban poor. Thus, the demographic change in terms
of increase in the number and proportion of elderly people in the population and
epidemiological transition in the form of new types of diseases, are the actual and
potential sources of higher health expenditure for the people. For appropriate
societal responses to the requirements arising out of the epidemiological transition
is a concomitant health care transition (Caldwell. 1990\textsuperscript{23}).

Hence, one of the issues that emerges out of the above discussion is that the
cost of treatment poses severe constraints for both who are seeking health care and
those who are not. Largely the cost of treatment is significantly influencing the
health seeking behavior of Indians. Some sections of the society are able to afford
the health care services while others cannot. Certainly, this scenario calls for an
alternative cost sharing mechanism, where health insurance is considered as an
efficient mechanism through pooling of the health care burden between the rich

\textsuperscript{23} Caldwell, J.C., and P.Caldwell, “High Fertility in sub-saharan Africa”,
and the poor between healthy and unhealthy and between young and aged. Recently, there is a growing interest and consensus among policy makers, community organizations and researchers in India, on health insurance as an efficient and equitable social security mechanism to ensure universal access to high quality health care to all sections of the society.

1.3 Taxonomy of Health Insurance in India

The health insurance situation in India can be understood under the following headings:

1.3.1 Public (Social) Health Insurance Schemes

The most prominent among the protective schemes are the Employees' State Insurance Scheme (ESIS) for workers in the organized private industrial sector and the Central Government Health Scheme (CGHS) for its employees. The beneficiaries of the above schemes are the salaried class who belong to formal sectors. Some ‘Employer-managed health facilities’ and the ‘reimbursements of health facilities’ are also available in India which are limited to only a few. The 2003-04 Union budget proposed introduction of a universal health insurance (UHI) plan for people below the poverty line in tie-up with Insurance Companies.
1.3.2 Private Health Insurance (PHI) Schemes

The private health insurance (PHI) schemes, often called Private Voluntary Health Insurance schemes (PVHI), are the schemes offered by insurance companies in the open market, in which enrolment into the scheme is not determined by legislation. In India, the public and private sector companies provide the PHI (voluntary). The General Insurance Corporation (GIC), which comprises of four insurance companies namely NIC, NIAC, OIC and UIC, is the largest public sector organization providing the PHI in India. The various policies introduced by the GICs are Mediclaim Policy (group and individual), Jan Arogya Bima, Personal Accident Policy, Nagarik Suraksha Policy and Overseas Mediclaim Policies (employment and study/corporate frequent travel/business and holiday). Among these policies, the Mediclaim policy is relatively popular. After the establishment of Insurance Regulatory and Development Authority (IRDA), many private corporates also have entered the HI market. The Bajaj Allianz, Royal Sundaram, ICICI Lombard, Cholamandalam, Tata and Reliance are the prominent private insurance companies. An important peculiarity of these corporations is the tie-up with some health care provider having super specialty facilities. This is represented in Table 1.1.
### TABLE: 1.1
Private Health Insurance Sector in India

<table>
<thead>
<tr>
<th>Public / Private Sector</th>
<th>Name of the Insurance Companies</th>
<th>Title of the Health Insurance Policies</th>
</tr>
</thead>
</table>
| Public Sector Companies | The Oriental Insurance Company Ltd. | 1. Mediclaim Policy  
2. Jan Arogya Bima Policy |
| | The New India Assurance Company | 1. Mediclaim Policy  
2. Jan Arogya Bima Policy |
| | National Insurance Corporation | 1. Mediclaim Policy  
2. Jan Arogya Bima Policy |
| | United India Insurance Company Ltd., | 1. Mediclaim Policy  
2. Jan Arogya Bima Policy |
| Private Sector Companies | Royal Sundaram Alliance Insurance Company Ltd., | Health Shield |
| | Cholamandalam General Insurance Company Ltd., | Basic Health Cover |
| | TATA AIG General Insurance Company Ltd., | Tata AIG Health First |
| | Bajaj Allianz General Insurance Company Ltd., | Health Guard Critical Illness |
| | ICICI Lombard General Insurance Company Ltd., | |
| | HDFC Chubb General Insurance Company Ltd., | Group Accident Policy Hospital Cash (Accident only) |

The Life Insurance Corporation (LIC) of India introduced a special insurance programme called 'Ashadeep' which covers medical expenses for four dreaded diseases namely, Cancer (malignant), Paralytic stroke resulting in permanent disability, Renal failure of both kidneys or Coronary artery diseases requiring pass surgery. Another policy by the LIC, called Jeevan Asha Plan, covers many surgical procedures. But these policies are a kind of savings schemes and the premium is almost equal or more than the insurance amount and in short, they do not follow the principle of insurance (risk pooling) in strict sense of the term.

1.4 Health Insurance Coverage in India

In India, the coverage of HI in some form or the other, i.e., whether public or private, is abysmally low and is only around 3 per cent. Even though there is no data set to give an accurate figure on India's HI coverage, a rough estimate is given in the following Table 1.2.
### TABLE 1.2
Selected Health Insurance Coverage in India

<table>
<thead>
<tr>
<th>Sources of Coverage</th>
<th>Covered lives (in thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central government Health Scheme (CGHS)</td>
<td>4,276</td>
</tr>
<tr>
<td>Employees State Insurance Scheme (ESIS)</td>
<td>31,050</td>
</tr>
<tr>
<td>Mediclaim Policy (voluntary)</td>
<td>10,000</td>
</tr>
<tr>
<td>Universal Health Insurance Scheme</td>
<td>NA*</td>
</tr>
<tr>
<td>Government Non-Life Insurance Companies</td>
<td>56</td>
</tr>
<tr>
<td>Non-government Non-life Insurance Companies</td>
<td>13</td>
</tr>
<tr>
<td>Community Health Insurance</td>
<td>215</td>
</tr>
</tbody>
</table>

Sources: Insurance Regulatory and Development Authority Journal, October, 2004, and compiled by the author from different sources.

* Not available.

As mentioned before, the CGHS and ESIS cover the people of the formal sector only by just limiting the coverage to the central government employees and Industrial workers, respectively. A majority of Indian population belongs to the informal sector and do not have any formal social security measures against the illness episodes.

### 1.5 STATEMENT OF THE PROBLEM

The cost of medical treatment today is beyond the reach of the common man. Even for the healthy man, it is not possible to predict what may happen in the future. In case of medical emergency, doctors’ fees, medicines and related health
services are very huge. In such times, health insurance provides much needed financial relief. There are so many studies related to the service quality in banking industry, health care industry and transport industry. But the studies related to the service quality in health insurance industry is very limited. Previous studies had been focusing on the customers perception on service quality in health insurance market and overall customer satisfaction in the industry. There is no exclusive study made on the awareness, extent of coverage and service quality in health insurance and the customer satisfaction and loyalty in the health insurance market.

The relationship between customer perceived service quality, customer satisfaction, and the antecedents of customer satisfaction that are related to corporate image, customer loyalty and customer repurchase intention are thoroughly analysed.

1.6 RESEARCH GAP

There is no exclusive study on the awareness, extent of coverage and service quality in health insurance and the customer satisfaction and loyalty in the health insurance market. Hence, the present study has made an attempt to fill up the research gap with the proposed research model.

1.6.1 PROPOSED RESEARCH MODEL

The proposed research model of the study is presented in Figure 1
This research work analyses service quality issues by adopting the model of Parasuraman et al., (1991) relative to the health insurance industry, SERVQUAL measurement is used to determine service quality in the health insurance industry. The SERVQUAL model is a concise multi-item scale, which is widely used to identify expectations and perceptions of service delivery. In addition, the relationship between customer perceived service quality, customer satisfaction, and the antecedents of customer satisfaction that are related to corporate image, customer loyalty and customer repurchase intention are also analysed.

1.7 OBJECTIVES OF THE STUDY

The objectives of the study are:

i) To reveal the profile of the respondents along with their personality traits,

ii) To exhibit the level of awareness on health insurance among the respondents,
iii) To show the extent of coverage in the health insurance among the respondents,
iv) To identify the factors that influence to get the health insurance,
v) To evaluate the service qualities and service quality gap in health insurance market,
vi) To measure the customers’ satisfaction and loyalty towards the health insurance market, and
vii) To evaluate the impact of service quality on customers’ satisfaction and loyalty to health insurance market.

1.8 METHODOLOGY

The methodology of the study indicates the methods to be followed to realize the objectives of the study. It covers the research design, sampling procedure, collection of data, processing of data and limitations of the study.

1.9 RESEARCH DESIGN

The research design chosen for this study is descriptive. The prime objective is to examine the linkage between the service qualities in health insurance and the customer satisfaction and loyalty. The study has its own confined objectives and pre-determined methodology to realize the objectives.
1.10 POPULATION OF THE STUDY

The population of the study indicates the local number of population in Kanniyakumari District as per 2001 census. The population is divided into male and female. The areas in the district are classified into blocks and municipalities. The population in various blocks and municipalities is shown in Table 1.3.

**TABLE 1.3**
Population is Kanniyakumari District

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Block/ Municipality</th>
<th>Population</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>1</td>
<td>Agastheeswaram</td>
<td>73,260</td>
<td>75,159</td>
</tr>
<tr>
<td>2</td>
<td>Rajakkamangalam</td>
<td>68,119</td>
<td>69,135</td>
</tr>
<tr>
<td>3</td>
<td>Thovalai</td>
<td>55,057</td>
<td>55,662</td>
</tr>
<tr>
<td>4</td>
<td>Kurunthancode</td>
<td>81,823</td>
<td>83,247</td>
</tr>
<tr>
<td>5</td>
<td>Thuckalay</td>
<td>82,488</td>
<td>84,774</td>
</tr>
<tr>
<td>6</td>
<td>Thiruvattar</td>
<td>80,220</td>
<td>81,399</td>
</tr>
<tr>
<td>7</td>
<td>Killiyoor</td>
<td>78,663</td>
<td>77,724</td>
</tr>
<tr>
<td>8</td>
<td>Munchirai</td>
<td>88,578</td>
<td>90,957</td>
</tr>
<tr>
<td>9</td>
<td>Melpuram</td>
<td>88,578</td>
<td>90,957</td>
</tr>
<tr>
<td>10</td>
<td>Nagercoil Municipality</td>
<td>1,02,907</td>
<td>1,05,272</td>
</tr>
<tr>
<td>11</td>
<td>Padmanabapuram Municipality</td>
<td>9,967</td>
<td>10,108</td>
</tr>
<tr>
<td>12</td>
<td>Colachel Municipality</td>
<td>11,996</td>
<td>11,791</td>
</tr>
<tr>
<td>13</td>
<td>Kuzhithurai Municipality</td>
<td>10,069</td>
<td>10,434</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>8,31,725</strong></td>
<td><strong>8,46,619</strong></td>
</tr>
</tbody>
</table>

Source: Annual Credit Plan, Lead Bank Office, Kanyakumari District.
The total number of male and female people in the Kanyakumari district is 8,31,725 and 8,46,619 respectively. The total population is 16,78,344. A maximum of 12.40 per cent of the population is at Nagercoil town. It is followed by the population in Munichirai and Melpuram blocks which constitute 10.69 and 10.69 per cent of the total. The lowest population is identified in Padmanabapuram and Kuzhithurai municipalities which constitute 1.19 and 1.22 per cent of the total population respectively.

**1.11 SAMPLING FRAMEWORK OF THE STUDY**

The sample size of the study is determined by using the given formula.

\[
n = \left[ \frac{Z \sigma}{D} \right]^2
\]

where

- \(n\) – Number of sample size
- \(Z\) – ‘Z’ statistics at five per cent level = 1.96
- \(\sigma\) – Standard deviation level of awareness on health insurance at pilot study = 0.8018
- \(D\) – Error acceptance = .05.

\[
n = \left[ \frac{1.96 \times 0.8018}{.05} \right]^2 = 987.8 = 988
\]

The stratified proportionate random sampling was adopted to distribute the sample size among the population in various blocks and municipalities. The
population in various blocks is treated as the rural population whereas the population in the municipalities is treated as urban population. The sampled respondents are classified into insured and not insured after the data collection. The discriminant of sample size is given in Table. 1.4

### Table 1.4

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Blocks / Municipalities</th>
<th>Total Population</th>
<th>Sample Size</th>
<th>Nature of Insurance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Agastheeswaram</td>
<td>1,48,419</td>
<td>87</td>
<td>31</td>
</tr>
<tr>
<td>2</td>
<td>Rajakkamangalam</td>
<td>1,37,254</td>
<td>81</td>
<td>27</td>
</tr>
<tr>
<td>3</td>
<td>Thovalai</td>
<td>1,10,719</td>
<td>65</td>
<td>18</td>
</tr>
<tr>
<td>4</td>
<td>Kurunthancode</td>
<td>1,65,070</td>
<td>97</td>
<td>36</td>
</tr>
<tr>
<td>5</td>
<td>Thuckalay</td>
<td>1,67,262</td>
<td>98</td>
<td>37</td>
</tr>
<tr>
<td>6</td>
<td>Thiruvattar</td>
<td>1,61,619</td>
<td>95</td>
<td>32</td>
</tr>
<tr>
<td>7</td>
<td>Killiyoor</td>
<td>1,56,387</td>
<td>92</td>
<td>30</td>
</tr>
<tr>
<td>8</td>
<td>Munchirai</td>
<td>1,79,535</td>
<td>106</td>
<td>33</td>
</tr>
<tr>
<td>9</td>
<td>Melpuram</td>
<td>1,79,535</td>
<td>106</td>
<td>30</td>
</tr>
<tr>
<td>10</td>
<td>Nagercoil Municipality</td>
<td>2,08,179</td>
<td>123</td>
<td>61</td>
</tr>
<tr>
<td>11</td>
<td>Padmanabapuram Municipality</td>
<td>20,075</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>12</td>
<td>Colachel Municipality</td>
<td>23,787</td>
<td>14</td>
<td>5</td>
</tr>
<tr>
<td>13</td>
<td>Kuzhithurai Municipality</td>
<td>20,503</td>
<td>12</td>
<td>4</td>
</tr>
</tbody>
</table>

**Grant Total** 16,78,344 988 347 641

Out of the total 988 respondents, 641 are ‘not insured’ under the health insurance and only 347 are insured. Out of 347 ‘insured’ respondents 274 are from
rural and 73 from urban areas of the district. Similarly, out of the 641 ‘not insured’ respondents 553 and 88 constitute rural and urban population respectively.

1.11.1 COLLECTION OF DATA

The required data to realize the objectives of the study were collected from the respondents through a structured interview schedule. The schedule is divided into three important parts. The first part of the schedule includes the general profile of the respondents, their personality traits and factors leading to have health insurance. The second part of the schedule covers the level of awareness and extent of coverage in health insurance schemes among the respondents. The third part of the schedule covers the various service quality factors of health insurance namely core, value added and agents’ service quality, customers’ satisfaction and loyalty on health insurance or insurers. A pre-test was conducted among 50 respondents of health insurance at Nagercoil town. Accordingly, on the basis of the feedback, necessary modifications were made and a final draft of the questionnaire was prepared to collect the primary data from the policy holders and seven months were needed to collect the data.

1.12 Framework of Analysis

For processing the collected data, statistical tools have been selected according to the requirements of the study. The analysis is selected according to the scale of data and the objectives of the study. The included statistical analyses
and their application are presented below: i) T-test; ii) One-way Analysis of Variance (ANOVA) iii) Exploratory Factors Analysis (EFA) iv) Confirmatory Factor Analysis (CFA) v) Discriminant Analysis (Two group model) vi) Multiple Regression Analysis and vii) Casual Path Analysis.

1.12.1. T-test

The ‘t’ test is one of parametric tests to analyse the significant differences among the two groups of samples. It is applied when the criterion variable is in interval scale. The ‘t’ statistics are calculated by

\[
t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{(n_1 - 1)\sigma^2_{s1} + (n_2 - 1)\sigma^2_{s2}}{n_1 + n_2 - 2}} \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}
\]

which is compared with the degree of freedom of \((n_1 + n_2 - 2)\).

where 
- \(t\) = ‘t’ statistics
- \(\bar{X}_1\) = mean of the first group of samples
- \(\bar{X}_2\) = mean of the second group of samples
- \(n_1\) = number of samples in the first group
- \(n_2\) = number of samples in the second group
- \(\sigma^2_{s1}\) = variance in the first group samples
- \(\sigma^2_{s2}\) = variance in the second group samples
The ‘t’ test has been applied to test the significant difference among the rural and urban policy holders regarding the various aspects related to service qualities in insurance, customer satisfaction and customer loyalty and also among the insurers and non-insurers regarding their level of awareness on various health insurance schemes.

1.12.2. One way Analysis of Variance (ANOVA)

The One Way Analysis of Variance is applied when the criterion variable is in interval scale and the number of groups of samples included for the study is more than two. The ‘F’ statistics is calculated by

\[
F = \frac{Trss/dF}{Ess/dF} = \frac{\text{Greater variance}}{\text{Small variance}}
\]

Compared with the F(K-1;N-k) degree of freedom

where 
F = ‘F’ statistics
N = Number of samples
K = Number of groups included
Trss/df = Variance between groups and
Ess/df = Variance within groups.

The One Way ANOVA has been applied to examine the association between the profile of the respondents and their views on the various aspects related to awareness and extent of coverage in health insurance, service quality in health insurance, customers satisfaction and customer loyalty in health insurance.
1.12.3 Exploratory Factors Analysis (EFA)

The exploratory factor analysis is used to narrate the variable into influencing factors and to find the relationship between the variables and narrated factors. It is also called as narration analysis. Whenever the variables related to a particular event are unmanageable or plenty and in interval scale, the factor analysis has to be executed to narrate these variables into factors. Before applying the factor analysis, the validity of data for factor analysis has to be executed with the help of Kaiser-Mayer-Ohlin (KMO) Measure of Sampling Adequacy and Bartletts Test of Sphericity. The acceptable KMO measure of sampling adequacy is 0.5, whereas the acceptable level of significance of chi-square value is upto 0.05 per cent level. In the present study, the factor analysis has been executed to identify the important factors in service quality in health insurance companies.

1.12.4 Confirmatory Factor Analysis (CFA)

The Confirmatory Factor Analysis has been applied with the help of LISREL 8 software package to test the reliability and validity of the variables included in each construct. In this research work, the CFA has been applied to test the reliability and validity of variables in all concepts generated in the study related to the various service qualities in health insurance, customer satisfaction and customer loyalty.
1.12.5 Discriminant Analysis (Two-Group model)

The Discriminant Analysis is used when the dependent variable is in nominal scale and the independent variables are in interval scale and to identify the important discriminate variables between the two groups formulated. The unstandardized cannon discriminate function was estimated by

\[ Z = a + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + \ldots + b_nx_n \]

where

\[ Z \quad = \quad \text{Discriminant criterion} \]

\[ x_1, x_2, \ldots x_n \quad = \quad \text{Discriminant variables} \]

\[ b_1, b_2, \ldots b_n \quad = \quad \text{Discriminant coefficients} \]

The Wilk’s Lambda was calculated as a multi-variant measure of group difference over discriminating variables. The relative discriminating power of the variables was calculated by

\[ I_j = K_j \left( \bar{X}_{j1} - \bar{X}_{j2} \right) \]

where

\[ I_j \quad = \quad \text{the important value of } j^{\text{th}} \text{ variable} \]

\[ K_j \quad = \quad \text{unstandardized discriminant co-efficient for the } j^{\text{th}} \text{ variable} \]

\[ X_{jk} \quad = \quad \text{mean of the } j^{\text{th}} \text{ variable for } j^{\text{th}} \text{ group} \]

The relative importance of a variable \( R_j \) is given by

\[ R_j = \frac{I_j}{\sum_{j=1}^{n} I_j} \]
In the present study, the two group discriminant analysis has been administered to identify the important discriminant service quality factors among the rural and urban customers in public and regarding various aspects related to service quality in health insurance.

1.12.6 Multiple Regression Analysis

The Multiple Regression Analysis is applied to analyse the impact of the independent variables on dependent variable when both the variables are in interval scale. The linear regression model is fitted by

\[ Y = a + b_1x_1 + b_2x_2 + \ldots + b_nx_n + e \]

where

- \( Y \) = Dependent variables
- \( X_1, X_2, \ldots, X_n \) = Independent variables
- \( b_1, b_2, \ldots, b_n \) = Regression coefficient of independent variables
- \( a \) = intercept and
- \( e \) = error term

In this research work, the Multiple Regression Analysis is administered to find out the impact of the various service qualities on customer satisfaction and customer loyalty to health insurance among the rural and urban respondents and also for pooled data.
1.12.7 Causal Path Analysis

The causal path analysis has been applied to analyse various direct and indirect service qualities in health insurance and the policyholders’ loyalty to health insurance companies.

1.13 REFERENCE PERIOD

This study covers a period from 1st March 2012 to 15th February 2014 to collect the primary and secondary data.

1.14 LIMITATIONS OF THE STUDY

Although the underlying theme of the service quality instrument addresses the quality issues of the service sector as a whole, this research is restricted to the health insurance sector, especially at Kannyakumari district, Tamilnadu. The service quality measurement instrument used in this work focuses on SERVQUAL measurement. Arguably, it may not cover all dimensions of the insurance industry. Therefore, this research work is subjected to the following limitations.

i) Only the health insurance policyholders are included for the study.

ii) The included service qualities in health insurance are purposively classified into core, value added and agents’ service quality.
iii) The Likert five point scale is adopted to measure the descriptive items in each concept and

iv) The linear relationship between the independent and dependent variables is assumed in the application of Multiple Regression Analysis.

1.15 CHAPTER SCHEME

This research work is presented in eight Chapters.

Chapter-I introduces health insurance in India, and its coverage need for the study statement of the problem, research gap, proposed research model, objectives, methodology, limitations and chapter scheme.

Chapter-II explains the theoretical background and the conceptual framework of the study, review of literature, meaning, methods, measurements, variables and concepts generated for the study.

Chapter – III exhibits the health insurance coverage in India

Chapter-IV explains the profile and personality traits of the policyholders of health insurance products and the factors leading to choose the health insurance product.

Chapter-V exhibits the level of awareness and extent of coverage on various schemes and packages in health insurance among the respondents in the study area.
Chapter-VI examines the level of expectation, perception on various service quality factors in health insurance namely core, value added and agents, service quality, the association between the profile of customers and their view on various service quality factors and the service quality factors gap in various service quality of health insurance.

Chapter-VII analyses the customer satisfaction and loyalty on health insurance and the linkage between the service quality of health insurance, customer satisfaction and loyalty on health insurance.

Chapter-VIII summarises the findings, conclusions, recommendations and also scope for future research.