CHAPTER FOUR

FACTORS DETERMINING MICRO HEALTH INSURANCE COVERAGE

4.1. Introduction

In the previous chapter we have seen that in terms of HI coverage, MHI schemes are more equitable than the PHI schemes. However, we have also observed that some of the MHI schemes have not only excluded some low income households but also included high income households in their coverage. This chapter examines the factors determining HI coverage in MHI schemes. The significance of various factors such as Level of Education, Household Size, SHG membership status and Health Risk, on the probability to have HI coverage in each of the selected MHI schemes is being examined.

4.2. Factors Determining Health Insurance Coverage

An important issue emerging out of the previous discussion is that if the MHI schemes target the poor and thereby they are entitled to have HI coverage, why all the poor in their operational area are not covered by MHI schemes? Several possible reasons can be given to the question as:

1) The MHI units may be at the process of scaling up of HI and may perhaps take time to cover the entire lower income households in their operational area.

2) To attain a long term financial sustainability, MHI schemes would be aiming at achieving both income solidarity and risk solidarity to cross subsidize the health care expenditure of the poor from the rich people. In such a situation, HI schemes must be a sound pool with all income groups under risk solidarity. We could not observe any of the MHI units having an over representation of high income people in the risk pool.
Nonetheless, the 'Urban MHI' unit has relatively more low income people than of high income people.

3 Another reason may be that low income people remain non insured mainly because they do not have the motivation to buy HI even though they can afford the premium. It is true especially in the case of high income people who remain uninsured even though they have the enabling factor in the form of income to afford a premium. There are other enabling factors such as education and access to information on HI schemes, access to HI through the membership in Self Help Groups (SHGs) etc. Similar to the enabling factors, there may be some motivating factors in the form of household size and health risk. In summary, there may be several other factors affecting the health insurance coverage rather than the income factor alone, we will examine the significance of these factors by keeping in mind the following two questions.

1) How does the Low Income Insured population of the MHI locations differ from the Low Income Non Insured Population?

2) What are the significances of the other factors, which enabled the low income population to become members of the risk pool as compared to the Non Insured Low Income population and High Income Insured Population?

We classify the factors determining MHI coverage into push factors and pull factors for the households to buy HI. The push factors can be divided into 'Enabling Factors' and 'Motivating Factors' making the people to go for HI. The 'Enabling Factors' include income, regularity in income receipt, education and access to information on HI, and the 'Motivating Factors' include health risk, age, income irregularities, household size etc. On the other hand, the pull factors make the people eligible for enrollment into the HI schemes. For example, being in the category of 'Destitute' makes a household eligible for membership in a MHI scheme because many
schemes target mainly such groups. Similarly, being a member of Self Help Groups (SHGs) and Co-operative societies is another qualification to be a member of the community MHI schemes because they (MHI schemes) offer HI mainly through such institutions. Even though these schemes target the vulnerable sections, they also want to include the relatively better off and high income population from the coverage, as the sustainability of any HI schemes requires a risk pool of high income too.

Figure 4.1. Determinants of Micro Health Insurance Coverage

Likelihood to have Health insurance

Push factors

Enabling factors
1) Income,
2) Regularity in income receipt
3) Education

Motivating factors
1) Health risk
2) Age,
3) Income irregularities,
4) Household size

Pull factors

1) Low Income
2) SHG membership

---

19 Some MHI schemes give partial premium subsidy in the already subsidized premium. As these schemes target weaker sections of the society it can be expected that the volunteers of such schemes will be more interested to give more counseling to make the relatively very weakest with thin the weaker sections of the society.

20 Some of the MHI units are getting funding from some external agencies, but these funding can get stopped at any time, so attaining financial sustainability is one of the long term objectives of MHI units.
To distinguish the pull and push factor aspects of household income, the different income classes and their membership status of Self Help Groups/other community organizations (broadly termed as SHGs) are analyzed. First, a comparison of the SHGs membership status within the Insured across different income class is done, and secondly, comparisons of the SHGs membership between the Insured and the Non Insured within and across different income classes are performed. The role of education and household size on the decision to buy HI is examined after classifying SHG memberships for their education and household sizes under various income classes. Binary Probit models are used to estimate the significance of both the push and pull factors among the households on the probability to buy HI.

In the following section we examine the relevance of education of the households, household size on the likelihood to have HI, and the role Self Help Groups (SHGs). The health risk of the household as a motivating factor to buy HI will be discussed in detail in one of the next chapters.

4.3. Educational Profile

The level of Education of the people and awareness on the importance of health care has a positive relationship. An educated person will be more likely to know how to and where from to get HI and will be more motivated to go for HI. As the present study has used household as a unit of analysis, we assume that the highest level of education attained by any family member will have a positive externality on the decision making process of that family. So we will use the highest level of education attained by any household member in the family for the present analysis. Here, the level of education is measured in terms of the years of schooling. Similarly, the highest education attained by the head of the household is also taken; however, we will include this variable only in the econometric estimation.
Table 4.1 Highest educational qualification among the Insured and Non Insured households (%)

<table>
<thead>
<tr>
<th>Years of schooling</th>
<th>Rural MHI schemes</th>
<th>MHI schemes</th>
<th>Urban MHI schemes</th>
<th>MHI schemes</th>
<th>Private Voluntary Health Insurance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Insured</td>
<td>Non Insured</td>
<td>Insured</td>
<td>Non Insured</td>
<td>Insured</td>
</tr>
<tr>
<td>Illiterate</td>
<td>11.25</td>
<td>15.33</td>
<td>1.88</td>
<td>3.05</td>
<td>0.00</td>
</tr>
<tr>
<td>1st-4th year</td>
<td>6.52</td>
<td>8.18</td>
<td>2.89</td>
<td>4.94</td>
<td>0.00</td>
</tr>
<tr>
<td>5th-8th year</td>
<td>23.16</td>
<td>24.93</td>
<td>25.25</td>
<td>20.49</td>
<td>1.00</td>
</tr>
<tr>
<td>9th - 10th year</td>
<td>27.22</td>
<td>28.13</td>
<td>35.93</td>
<td>37.50</td>
<td>18.00</td>
</tr>
<tr>
<td>11-12th year</td>
<td>17.01</td>
<td>14.77</td>
<td>17.03</td>
<td>16.86</td>
<td>23.00</td>
</tr>
<tr>
<td>12th - 15th year</td>
<td>11.44</td>
<td>6.40</td>
<td>12.55</td>
<td>11.19</td>
<td>30.00</td>
</tr>
<tr>
<td>15th and above</td>
<td>3.40</td>
<td>2.26</td>
<td>4.47</td>
<td>5.96</td>
<td>28.00</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>(1058)</td>
<td>(1064)</td>
<td>(697)</td>
<td>(704)</td>
<td>(200)</td>
<td>(200)</td>
</tr>
</tbody>
</table>

Pearson Chi-Square: 29.748 (P<0.000) 18.511 (P<0.010) 32.324 (P<0.000)

Sources: Field survey and ECCP Data
Values in the parentheses refer to the number of households

It is noted that even though the Insured households hold relatively higher levels of education as compared to their Non Insured counterparts in each scheme, the differences are very low, based on such observations we can not make a conclusion that educational qualification of the households is really a highly significant 'enabling factor' for the households to go for HI. Therefore, we will consider the educational qualification of different income class and analyze in terms of each type of MHI schemes. For this purpose, the educational years are again merged into 3 categories; 1) Low level of education: Till 4th years of schooling, 2) Medium level of education: 5th years to 10th years of schooling, and 3) High level of education: 11th years and above schooling.
The major finding from the above figures is that the Insured households hold relatively higher levels of educational qualifications as compared to the Non Insured households irrespective of which Income class they belong to. For example, if we consider the 'Low level of education', the proportion of the Non Insured households falling under this category is very high. This is true for both the 'Rural MHI' and 'Urban MHI' schemes.
4.4. Household Size

The recent trend of the transformation of joint family system to nuclear family has increased the financial insecurity among families in case of uncertainties (Abel-Smith, 1992). The joint family system is a kind of informal insurance system for its members. In India a large number of families are converging into a nuclear family system. In this context, there is more scope for the increase in demand for HI. But in a situation where insurance awareness is very low among the Indian society, the validity of this kind of theoretical prediction is questionable. To make an empirical estimation, we do not have data on both joint family and nuclear family, and it is beyond the scope of the present study, but based on HH sizes, the existing data can be sorted into Macro and Micro families. From an angle of health care expenditure, higher household size means higher health care expenditure and hence high demand for HI. Considering the Micro and Macro families, higher household size means higher informal insurance among the family members and hence low demand for HI. In this context, it is very difficult to predict the impact of household size on the level of HI coverage. The empirical evidence presented in the table below also gives a mixed picture on the impact of household size on the HI coverage; that is, there is no impact of Household size in the case of 'Rural MHI' and a negative impact in the case of 'Urban MHI' schemes on HI coverage.

Table 4.2 Mean value of the household size

<table>
<thead>
<tr>
<th>MHI schemes</th>
<th>Non Insured</th>
<th>Insured</th>
<th>'t' value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural MHI</td>
<td>4.29</td>
<td>4.37</td>
<td>-1.075(P&lt;0.283)</td>
</tr>
<tr>
<td>Urban MHI</td>
<td>4.81</td>
<td>4.60</td>
<td>2.391(P&lt;0.017)</td>
</tr>
</tbody>
</table>

Source: ECCP data

In the subsequent sections we consider the household size of the various income classes to examine the correlation between the household size and the HI coverage. If we take the case of low income people, there are two aspects to be considered. One is, a low income household with lower and higher family size will be equally motivated to buy health insurance due to
the access value of health insurance. Similar is true for high income household also because higher family size will increase their degree of financial insecurity due to the uncertain illnesses. As we do not have any strong theoretical support to argue on the impact of household size on the HI coverage, let us see what the data speak. The household size is coded as a binary variable as household size with a maximum of 4 is coded as one category and household size 5 and above is coded as another category. The two figures below show the household size of both the Insured and Non Insured across different income classes in case of both the 'Rural MHI' and 'Urban MHI' schemes.

Figure 4.4. Household size across different income classes in the case of Rural MHI schemes

![Household size chart](chart.png)
We observe no correlation between the household size of the Insured and the Non Insured households within and between income classes across both types of MHI schemes. Whatever relationship we have observed here is just incidental, not at all consistent between both types of MHI schemes. One possible reason for this is the insurance awareness, especially on HI, is very low in India, so the decision to go for HI will be determined by many other structural factors within the system and society, and thus, will be least determined by the factors like household size.

### 4.5. Health Insurance Coverage and the role of Self Help Groups

The MHI units offer HI to clients through Self Help Groups directly. The SHGs may serve two purposes for the MHI units: first, to identify the low income people to sell the HI schemes, and second, to act as information dissemination channels for the HI schemes\(^\text{21}\). It is expected that SHGs have more role in information dissemination on MHI schemes, and, hence, the people who are members of these groups, are more probable to get information about MHI schemes than those of who are not members of the same.

\(^{21}\) The role of SHGs as an information dissemination channel is analyzed in the next chapter.
Hence, being a member of SHGs in the operational area of MHI units work as a pull factor for having HI coverage for the households. This inference has more relevance for the poorest households. Thus, a simple question that arises here is whether SHGs membership of the household members has any impact on distinguishing the low income insured from the low income Non Insured, the high income insured and the high income Non Insured? It is in this context, the following hypothesis is tested: “Being a member of SHGs does not increase the probability to have HI for the low income class population as compared to the high income class population”.

First of all, we will examine the membership status of the Insured and the Non Insured households across different income class in both the ‘Rural’ and ‘Urban’ MHI separately. Figures 7.a and 7.b present the membership status of the Insured and the Non Insured of Rural MHI schemes.
Figure 4.7-a: The SHGs membership status of the Insured households of the ‘Rural MHI’ schemes

Pearson Chi-Square: 8.52 (p<0.129)
Source: ECCP data

Figure 4.7-b: The SHGs membership status of the Non Insured households of the ‘Rural MHI’ schemes

Pearson Chi-Square: 23.89 (p<0.000)
Source: ECCP data
Let us consider the case of 'Rural MHI'. Looking at the lowest two income classes consisting of the 'Destitute' and 'Extreme Poor', it can be seen that among the Insured households that a majority of them are SHG members (67% and 68%, respectively). But when it comes to the Non Insured households of the same income strata, only 16% of the 'Destitute' and 21% of the 'Extreme Poor' are SHG members. Similar pattern is observed in the case of the 'Middle Income' class consisting of 'Moderate Poor' and 'Vulnerable Non-Poor' where 55% and 61% of the Insured households and only 22% and 21% of the Non Insured households are SHG members. In the case of the 'High Income' class, 58% of the 'Non Poor' and 61% of the 'Wealthy' among the Insured households are SHG members while 31% of the 'Non Poor' and 36% of the 'Wealthy' among the Non Insured households are SHG members.

The major observations from the above discussion can be summarized as follows: 1) The proportion of the households with SHG membership is higher among the Insured Households as compared to the Non Insured households; 2) Among the Insured households the proportion of households with SHG membership gradually declines when households...
move from the lowest income class to the highest income class whereas, among the Non Insured households the proportion of SHG membership gradually increases. The main inferences that stem from these observations are that the SHGs membership increases the likelihood to have HI, and the SHGs membership helps the relatively low income class to obtain HI. In other words, the income as a pull factor works mainly when the low income class has SHGs membership.

A similar analysis holds for the ‘Urban MHI’ schemes too, but with a little difference in the findings. As compared the ‘Rural MHI’ schemes, the proportion of SHGs membership among the Insured and Non Insured households are relatively low, may be because the presence of SHGs in urban slums might be very low. On the whole, the importance of SHGs membership in having HI for the households and working as a pull factor for the low income households are low as compared to the ‘Rural MHI’ schemes. But, as compared to the Non Insured households, the importance of SHGs membership on having HI is very high for the Insured households.

Figure 4.8-a: The SHGs membership status of the Insured households of the ‘Urban MHI’ schemes

![Bar Chart]

Pearson Chi-Square: 2.453 (p<0.783)
Source: ECCP data
From the above figures, it is obvious that SHG membership status and MHI coverage has a positive relationship. In other words, SHG membership enables the households to have HI coverage. The significance of SHG
membership to have HI coverage is calculated with a Probit model below. Results for each unit of MHI schemes are also presented.

### 4.6. Econometric Estimation

A maximum likelihood estimate of the binary Probit model is used to measure the impact of SHGs membership on the likelihood to have HI. The six income classes are further reduced in to three income classes to make the model simple and easy to interpret. The three income classes with SHG membership is coded in to six dummy variables. Other variables included in the model are the household size, the highest education by any family member in the household, education attained by the head of the household, health risk and the daily wage. The daily wage is a proxy to measure the irregularity in income as people who are earning daily wage will be having more uncertainty and irregularities in income receipt.

Table 4.3 Definition and measurement of variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Insurance</td>
<td>1 if the household has health insurance; 0 Otherwise</td>
</tr>
<tr>
<td>Hhsize</td>
<td>Household size</td>
</tr>
<tr>
<td>Lower_edu</td>
<td>Highest Educational qualification of the household is till 4th years of schooling =1; Otherwise=0</td>
</tr>
<tr>
<td>Medium_edu</td>
<td>Highest Educational qualification of the household is 5th to 10th years of schooling =1; Otherwise=0</td>
</tr>
<tr>
<td>Higher_edu (Reference category)</td>
<td>Highest Educational qualification of the household is 11th and above years of schooling =1; Otherwise=0</td>
</tr>
<tr>
<td>Headeducation</td>
<td>Highest education attained by the head of the family, measured in terms of years of schooling</td>
</tr>
<tr>
<td>Healthrisk</td>
<td>Health status of at least one member of the households is very poor=1; 0 otherwise</td>
</tr>
<tr>
<td>Dailywage</td>
<td>Main source of the household income is daily wage=1; Otherwise=0</td>
</tr>
</tbody>
</table>
In the table below, the Probit model results of three 'Rural MHI' schemes are presented in together and by unit wise.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lowinc_shg_memb</td>
<td>Low income household with SHG membership = 1; Otherwise=0</td>
</tr>
<tr>
<td>Lowinc_shg_nonmemb</td>
<td>Low income household with SHG non-membership = 1; Otherwise=0</td>
</tr>
<tr>
<td>Midinc_shg_memb</td>
<td>Middle income household with SHG membership =1; Otherwise=0</td>
</tr>
<tr>
<td>Midinc_shg_nonmemb</td>
<td>Middle income household with SHG non-membership =1; Otherwise=0</td>
</tr>
<tr>
<td>Higinc_shg_memb</td>
<td>High income household with SHG membership =1; Otherwise=0</td>
</tr>
<tr>
<td>Higinc_shg_nonmemb</td>
<td>High income household with SHG non-membership =1; Otherwise=0</td>
</tr>
</tbody>
</table>

Table 4.4 Probability to have health insurance coverage - Probit model results of Rural MHI schemes

<table>
<thead>
<tr>
<th>Rural MHI</th>
<th>Karuna Trust</th>
<th>Yeshaswini Trust</th>
<th>Dhan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variables</td>
<td>Marginal Effect</td>
<td>Marginal Effect</td>
<td>Marginal Effect</td>
</tr>
<tr>
<td>Hhsitye</td>
<td>-.00012 (-0.02)</td>
<td>-.01770 (-1.43)</td>
<td>.01322 (1.16)</td>
</tr>
<tr>
<td>Lower_edu</td>
<td>-.18094 (-5.17)*</td>
<td>-.15195 (-2.76)*</td>
<td>-.24542 (-3.66)*</td>
</tr>
<tr>
<td>Medium_edu</td>
<td>-.11364 (-4.05)*</td>
<td>-.11072 (-2.16)**</td>
<td>-.13891 (-3.12)*</td>
</tr>
<tr>
<td>Headeducation</td>
<td>-.00509 (-1.83)***</td>
<td>-.01442 (-2.95)*</td>
<td>.00581 (1.26)</td>
</tr>
<tr>
<td>Healthrisk</td>
<td>.10984 (3.11)*</td>
<td>.06482 (1.04)</td>
<td>.13603 (2.29)**</td>
</tr>
<tr>
<td>Dailywage</td>
<td>.01945 (0.50)</td>
<td>-.12843 (-1.19)</td>
<td>.09875 (1.72)***</td>
</tr>
<tr>
<td>Lowinc_shg_memb</td>
<td>.33321 (8.16)*</td>
<td>.15544 (2.21)***</td>
<td>-.01362 (-0.15)</td>
</tr>
<tr>
<td>Lowinc_shg_nonmemb</td>
<td>-.16621 (-4.23)*</td>
<td>.01205 (0.17)</td>
<td>-.38885 (-6.56)*</td>
</tr>
</tbody>
</table>
By considering the model of all the three 'Rural MHI' schemes together, household size does not seem to have any impact on the likelihood to have HI.

Higher the level of education higher will be the probability to have HI. As compared to the households with 'High level of education' (reference category), households with 'Lower level of education' and 'Medium level of education' are 18% and 11% respectively, less likely to go for HI. The highest education attained by any of the family member has a positive impact on the likelihood to have HI, and it is true especially in the case of the 'Karuna Trust' and the 'Yeshaswini trust'. When we consider the education of the head of the household we found a negative impact on the probability to have HI, which is against the theoretical expectation. One possible reason for this may be that these MHI work in the rural areas and the education level is very low (perhaps below some threshold level) among the old generation whereas the household head normally belongs to an old generation consisting of the middle aged.
As compared to the 'High income households without SHG membership' (reference category), the 'Low income households with SHG membership' are 33% more likely to have HI and the 'Low income households without SHG membership' are 17% less likely to have HI, which means that SHG membership is a pull factor for any household to have HI. Similarly, compared to the 'High income households without SHG membership' (reference category), being a 'Middle income household with SHG membership' increases the likelihood to have HI by 28%, and being a 'Middle income household without SHG membership' reduces the likelihood to have HI by 11%. The 'High income households with SHG membership' are 26% more likely to have HI as compared to the same income group without SHG membership. In summary, it can be seen that SHG membership is a positively significant factor to have HI for all income classes.

Among the 'Rural MHI' schemes, the Karuna Trust's health insurance coverage is not significantly determined by the SHG membership except for the 'Low Income Class'.

In the case of the 'Urban MHI' schemes, household size reduces the probability to have HI by 4%. As compared to the households with 'High level of education' (reference category), households with 'Lower level of education' are 23% less likely to go for HI, but 'Middle level of education' does not have any impact on the likelihood to have HI as compared to the 'Higher level of education'.

As compared to the 'High income households without SHG membership' (reference category), the 'Low income households with SHG membership' are 29% more to have HI and the 'Low income households without SHG membership' do not have a significant impact on the likelihood to have HI as compared to the reference category. Similarly, compared to the 'High income households without SHG membership' (reference category), being a 'Middle income household with SHG membership' increases the likelihood to have HI by 38%, and being a 'Middle income household with SHG membership'
Table 4.5. Probability to have health insurance coverage - Probit model results of Urban MHI schemes

Dependent variable: 1 if the household has health insurance; 0 Otherwise

<table>
<thead>
<tr>
<th>Urban MHI</th>
<th>Urban MHI (UPLIFT, VHS)</th>
<th>UPLIFT</th>
<th>VHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variables</td>
<td>Marginal Effect</td>
<td>Marginal Effect</td>
<td>Marginal Effect</td>
</tr>
<tr>
<td>Hhsize</td>
<td>-.03743 (-4.10)*</td>
<td>-.05062 (-3.43)*</td>
<td>-.01288 (-1.05)</td>
</tr>
<tr>
<td>Lower_edu</td>
<td>-.23233 (-3.88)*</td>
<td>-.29388 (-3.24)*</td>
<td>-.09514 (-0.97)</td>
</tr>
<tr>
<td>Medium_edu</td>
<td>-.02982 (-0.93)</td>
<td>-.00523 (-0.11)</td>
<td>-.04937 (-1.11)</td>
</tr>
<tr>
<td>Headeducation</td>
<td>-.00420 (-1.02)</td>
<td>.00696 (1.13)</td>
<td>-.01327 (-2.26)**</td>
</tr>
<tr>
<td>Healthrisk</td>
<td>.18430 (5.42)*</td>
<td>.16559 (2.82)*</td>
<td>.20640 (4.65)*</td>
</tr>
<tr>
<td>Dailywage</td>
<td>.04889 (1.57)</td>
<td>.02981 (0.54)</td>
<td>.06385 (1.56)</td>
</tr>
<tr>
<td>Lowinc_shg_memb</td>
<td>.29252 (5.12)*</td>
<td>.42395 (5.21)*</td>
<td>.12820 (1.54)</td>
</tr>
<tr>
<td>Lowinc_shg_nonmemb</td>
<td>.05025 (1.30)</td>
<td>-.09131 (-1.38)</td>
<td>.04108 (0.75)</td>
</tr>
<tr>
<td>Midinc_shg_memb</td>
<td>.42067 (7.22)*</td>
<td>.49826 (7.08)*</td>
<td>-.17374 (-1.04)</td>
</tr>
<tr>
<td>Midinc_shg_nonmemb</td>
<td>.05637 (1.43)</td>
<td>.07088 (1.31)</td>
<td>.01921 (0.32)</td>
</tr>
<tr>
<td>Higinc_shg_memb</td>
<td>.37404 (6.04)*</td>
<td>.44200 (6.48)*</td>
<td>-.23717 (-1.02)</td>
</tr>
<tr>
<td>( y = \Pr(\text{insured}) ) (predict)</td>
<td>.50327</td>
<td>.51270</td>
<td>.50320</td>
</tr>
<tr>
<td>Log likelihood</td>
<td>-886.58</td>
<td>-384.70</td>
<td>-459.69</td>
</tr>
<tr>
<td>LR chi2 (11)</td>
<td>162.07</td>
<td>189.85</td>
<td>41.31</td>
</tr>
<tr>
<td>Pseudo R2</td>
<td>0.0837</td>
<td>0.1979</td>
<td>0.0430</td>
</tr>
<tr>
<td>Number of observations</td>
<td>1396</td>
<td>692</td>
<td>693</td>
</tr>
</tbody>
</table>

Reference categories: 1) Higher income with no SHG membership, 2) Higher levels of education. Values in the parentheses refer to the 'Z' statistics; Level of statistical significance: * = 1%; ** = 5%; *** = 10%

without SHG membership' does not make any difference from the reference category. The 'High income households with SHG membership' are 37% more likely to have HI as compared to the same income group.
without SHG membership. The main inference that stems out of the above discussion is that in the case of 'Urban MHI' schemes, SHG membership is a pull factor not only for the 'Low Income class', but also for the 'High Income Class'. Among the 'Urban MHI' schemes, the HI membership in the 'VHS' is not significantly determined by the SHG membership status of the households.

Let us also discuss the significance of SHG membership for each income class as compared to same income class without SHG membership. The table below presents selected parameters after re-estimating (3 times) the above model by simply changing the reference categories. As mentioned before, the re-estimation of the model would not affect the properties of the model.

**Table 4.6. Probability to have health insurance coverage: Marginal effects of the probit model of the selected variables**

<table>
<thead>
<tr>
<th>Variable and Reference category</th>
<th>Rural MHI</th>
<th>Karuna Yeshaswini</th>
<th>DHAN</th>
<th>Urban MHI</th>
<th>UPLIFT</th>
<th>VHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lowinc_shg_memb</td>
<td>.442</td>
<td>.141</td>
<td>.371</td>
<td>.658</td>
<td>.254</td>
<td>.460</td>
</tr>
<tr>
<td>(Reference category: Lowinc_shg_ nonmemb)</td>
<td>(16.69)*</td>
<td>(2.11)**</td>
<td>(5.69)*</td>
<td>(17.59)*</td>
<td>(5.15)*</td>
<td>(11.26)*</td>
</tr>
<tr>
<td>Midinc_shg_memb</td>
<td>.364</td>
<td>.011</td>
<td>.165</td>
<td>.726</td>
<td>.387</td>
<td>.468</td>
</tr>
<tr>
<td>(Reference category: Midinc_shg_nonmemb)</td>
<td>(12.57)*</td>
<td>(0.18)</td>
<td>(2.16)**</td>
<td>(11.71)*</td>
<td>(9.01)*</td>
<td>(11.50)*</td>
</tr>
<tr>
<td>Higinc_shg_memb</td>
<td>.258</td>
<td>-.112</td>
<td>.039</td>
<td>.795</td>
<td>.370</td>
<td>.441</td>
</tr>
<tr>
<td>(Reference category: Higinc_ shg_nonmemb)</td>
<td>(7.95)*</td>
<td>(-1.68)***</td>
<td>(0.61)</td>
<td>(15.05)*</td>
<td>(8.43)*</td>
<td>(10.36)*</td>
</tr>
</tbody>
</table>

The above table is presented in the form of a histogram for a better interpretation of the results of the model.
It can be seen that as compared to the households without SHG membership of the same income class except the VHS, the households with SHG membership has significant influence on having HI for low income class. As compared to low income households without SHG membership, low income households with SHG membership in the locations of Karuna Trust, Yeshaswini Trust, DHAN and UPLIFT have 14%, 37%, 66% and 46% more probability to have HI coverage, respectively. Similarly, the SHG membership increases the probability to have HI for the high income households, especially in the MHI locations of Yeshaswini, DHAN and UPLIFT. Interestingly, in the locations of Karuna and VHS the high income class with SHG membership has less probability to have HI as compared to households without SHG membership. However, there is no statistical significance on such relationship; therefore, any further explanation of this result is meaningless.
4.7. Chapter Summary

We have found that there is a crucial role for Education and SHGs in giving access to health insurance for the low income households along with their counter parts. Nonetheless, these factors have significant impacts on increasing the size of the risk pool in the form of scaling up of MHI that will enhance the equity objectives of health insurance coverage in the form of giving access to large number of low-income people. It is an indication that the grassroots level organizations enable the outreach HI coverage among the poor communities. One implication of this finding is that in order to enhance the scale up process of HI it is important to ensure the role of these of organizations. The MHI units and other stakeholders also can make use of the Panchayati Raj Institutions (PRIs) that are widespread in India along with the SHGs.

So far in this chapter we confined our discussion to factors determining an equity based scale up process of HI. We are equally interested in knowing the factors adversely affecting equity based scale up process of PHI schemes, the next chapter addresses these issues.