

CHAPTER V

RESULTS AND DISCUSSIONS



According to the methodology outlined in the previous chapter, 309 of people, who were in Takmau district, were interviewed based on questionnaire. The information of the questionnaire covered the age, sex marital status, family size, education, health education and the perception of people of the health insurance program. A research team including 10 health workers in the communes had been chosen to be interviewers. The data were collected from February, 14 to March, 8 2005 in Takmau district. This chapter will show the results of the data and discuss about results with aim to study the situation of health insurance participation in Takmau district, to identify the determinant that affecting health insurance and the main determinants that motivate people to participate health insurance program.

5.1 The Characteristics of the People Participate in Health Insurance

From the Table 5.1, this survey 309 people have been interviewed to determine the rate of participation in health insurance, according to the survey result. It was revealed that the average age of participation of health insurance is 35. The minimum age is 20 whereas the maximum is 58. Regarding the family size, the average family size of those taking part in health insurance is 4, the minimum is 1, and the maximum is 8.

With respect of years of schooling, the average number of school-years is 4, the minimum is 0, and the maximum is 16. Considering of the income level, the mean income level of respondents is 84,417.48, whereas the minimum is 10,000 riel and the maximum is 180,000 riel.

From this statistics it could be revealed that the middle-aged people tend to take more part in health insurance. Moreover it could be seen that at the higher level of income there is a high rate of participation in health insurance. From the statistics, the number of school-

years does not appear to be important factor in participation in health insurance. This is mainly due to the fact that this district is a rural area, where the great majority of the people are not well educated. Many of them are farmers, workers, laborers or involved in business.

Table 5.1 Age, Family Size, Education Level, Income (Riel) of Respondents (N=309)

Characteristics	Mean	Standard Deviation	Minimum	Maximum
Age	35.5	9.03	20	58
Family size	4	1.23	1	8
Education level	3.2	2.6	0	16
Income (Riel)	84,417	11,1193	10,000	18,0000

As can be seen from the table 5.3 out of the total of 309 people who were interviewed, there are 132 female and 177 males. In other words, 42.72 % of the sample is females and 57.28 % are males. Among them 248 people are married which is 80.26%, whereas 61 are single which is 20%. When inquiring about health education, 232 respondents were found to have taken part in health education, whereas 77 people did not.

This implies that the majority of the people living in this district – 75.0% - have taken part in a health education program. As for the perception of health insurance, 98 respondents perceive that health insurance is important, contrary to 211 people - 68 % of the sample - who feel that health insurance is not important. With respect to the location 89 of interviewees live in municipalities whereas 220 respondents are non- municipal.

In examining the characteristics, it could be revealed that the majority of respondents have participated in the health education program. When it comes to the perception of health insurance, however, the majority of respondents - 68% of the sample - responded that they will not buy health insurance. From this it can be concluded that even though people received health education, they are still not willing to buy a health insurance policy. This due to the fact that the health education program did not explain to the people about the importance of health insurance. Therefore the majority of respondents were not aware of the importance of health insurance in spite of the fact that they did take part in the health education program.

From the Table 5.2 illustrates the frequency- different type of occupation of respondents. From the data it could be seen that majority of respondents are farmers which is 46.75% of the sample, there are 60 workers and the same number of labor. This sample does not include any academicians, and only 4.55 % are professionals.

Table 5.2 Frequency and Percentage of Occupation

Occupation	Frequency	Percentage
1. Professional*	14	4.5
2. Business	30	9.8
3. Farmer	144	46.9
4. Academician	0	0.0
5. Labor	60	19.4
6. Worker	60	19.4
Total	309	100%

Note: * Teacher, Doctor and Lawyer

Table 5.3 Frequency of Sex, Marital Status, Health Education, Perception and Location of Respondents

Characteristics	Frequency	Percentage (%)
Sex		
Female	132	42.7
Male	177	57.3
Total	309	100.0
Marital Status		
Single	61	19.7
Married	248	80.3
Total	309	100.0
Health Education		
Join	77	24.9
Not Join	232	75.1
Total	309	100.0
Perception of Health Insurance		
Will buy	97	31.4
will not buy	212	68.6
Total	309	100.0
Location		
Municipal	89	28.8
Non municipal	220	71.2
Total	309	100.0

Table 5.4 shows the level of education of respondents. As we can see, 65% of the people have only primary education. Out of the total sample 13.1% received secondary education, 3.2% attended high-school, and only 0.32 % continued to higher educational institutions. From the survey findings it could be seen that 17.80% of the respondents did not receive any education at all.

Table 5.4 Frequency and Percentage of Education

Level of Education	Frequency	Percentage (%)
1.No Education	55	17.8
2.Primary School	201	65.3
3.Secondary School	42	13.5
4.High School	10	3.2
5.Higher	1	0.2
Total	309	100%

Table 5.5 shows that the mean of age the mean for people who participated health insurance is higher. The mean of the people who did not join health insurance program is 30.8 and the mean for the people who participated is 40.2. The mean of educational level for the people who participate health insurance is higher. The mean of the people who did not join health insurance program is 2.1 and the mean for the people who participated is 4.3. Concerning with the mean of income of the people who did not participate in health insurance is 63658.3 Riel, and the mean of income for the people who joined in health insurance is 105175.7 Riel. It shows that the mean of income for the people who participated in health insurance program is higher than other. Respected with the mean of health education for the people who participated health insurance is 2.8. But the people who did not join, the mean of health education is 3.2. That means they did not take part with health education as the people who joined health insurance. The mean of family size of the people who join health insurance is lower. It shows that the mean of family size of

means they did not take part with health education as the people who joined health insurance. The mean of family size of the people who join health insurance is lower. It shows that the mean of family size of the people who participated in health insurance is 3.4, but the mean for the people who did not participate is 4.6.

Table 5.5 Mean of Age, Education, Income, Health Education and Family Size in Health Insurance Participation and Non participation

Characteristics	Non Health insurance Participation		Health Insurance Participation	
	Mean	Standard Deviation	Mean	Standard Deviation
Age	30.8	8.3	40.2	5.6
Education	2.1	1.6	4.3	2.1
Income	63658.3	44328.7	105175.7	52889.2
Health Education	3.2	1.3	2.8	1.6
Family Size	4.6	1.2	3.4	1.1

Table 5.6 indicates that the male participated in health insurance is lower than female. Among 75 people who participated health insurance, the male is 15.8%. But the female is 84.2 %.It shows that the female joined more than male. The male who did not participate in health insurance is higher than the female. From 234 people who did not join health insurance, the male is 70.8% and female is 29.2%.

Table 5.6 Sex in Health Insurance Participation and Non Participation

Health Insurance	Sex		Total
	Male	Female	
Health Insurance Participation			
Number	12	63	75
% within Health Insurance Participation	15.8%	84.2%	100.0%
Non Health Insurance Participation			
Number	166	68	234
% within Health Insurance Participation	70.8%	29.2 %	100.0%
Total			
Number	178	131	309

Table 5.7 shows that the perception of the people who joined health insurance is higher. Among 75 people who participated in health insurance, they will continue to buy. The perception of the people who did not join, they will buy health insurance is 9.0%.

Table 5.7 Perception in Health Insurance Participation and Non Participation

Health Insurance	Perception		Total
	will buy	will not buy	
Health Insurance Participation			
Number	75	0	75
%within Health Insurance Participation	100.0 %	0%	100.0%
Non Health Insurance Participation			
Number	22	212	234
% within Health Insurance Participation	9.0 %	91.0 %	100.0%
Total			
Number	97	212	309

Table 5.8 shows that the people who are married participated in health insurance participation is higher than single. The married people is 76.3% and the single is 23.7%. The single people who did not join in health insurance is 18.5% and the married is 81.5%.

Table 5.8 Marital Status in Health Insurance Participation and Non participation

Health Insurance	Marital Status		Total
	Single	Married	
Health Insurance Participation			
Number	17	58	75
%within Health Insurance Participation	23.7 %	76.3 %	100.0 %.
Non Health Insurance Participation			
Number	44	190	234
% within Health Insurance Participation	18.5 %	81.5%	100.0 %
Total			
Number	61	248	309

Table 5.9 illustrates that the occupation in health insurance participation, the farmer is higher than others .The farmer is 52.6% and others is 47.4%.But the occupation in non health participation ,the others is higher than farmer. The others are 55.4% and the farmer is 44.

Table 5.9 Occupation in Health Insurance Participation and Non participation

Health Insurance	Occupation		Total
	Farmer	Others	
Health Insurance			
Participation			
Number	41	34	75
%within Health			
Insurance Participation	52.6 %	47.4 %	100.0 %
Non Health Insurance			
Participation			
Number	105	129	234
% within Health			
Insurance Participation	44.6 %	55.4 %	100.0 %
Total			
Number	146	163	309

5.2 Determinants Affecting Health Insurance Participation.

Understanding the determinants affecting the probability of health insurance participation is important for policy-makers in order to pursue appropriate health insurance policies. This study also tried to identify the determinants that can influence the people to participate in a health insurance program. Determinants that had been chosen in this study were sex, perception, educational level, health education, income, age and occupation of those taking part in health insurance. The data were collected from 309 respondents.

Table 5.10 Logit Estimate for Health Insurance Participation as Dependent Variable

Variable	Coefficient	Prob	Marginal Effect ($\Delta P / \Delta X_i$)
C	-52.27766	0.0152	
SEX	-1.952033	0.1476	-5.477E-10
AGE	0.453800**	0.0180	1.274E-10
EDUC	2.520075*	0.0440	7.07E-10
INC	5.62E-05*	0.0444	1.577E-12
OCCU	5.302493**	0.0136	1.4877E-09
PERC	17.60455	0.1022	4.94E-09
HED	-0.352310	0.5547	-9.877E-11
MARITAL	-0.148978	0.9315	-4.153E-11
FAMISIZE	0.059157	0.9267	1.65555E-11
Log likelihood	-172.37		
N	309		

Note: * Level of significant is 5%

** Level of significant is 1%

Table 5.10 showed the sex (Male) of health insurance participation was negative and insignificant ($p=0.147$). That means the male have the tendency to decrease to take part in health insurance program. This also implies that the health insurance is not so very important for them. Further, the health insurance the implemented in this district was not

useful for them. Other word, the male who live in this area, they always to work outside from their family in order to earn their benefit for the family. So they will not tend to join the health insurance program.

Age of people is also plays an important role in health insurance with the positive sign (0.312) and strongly significant ($p=0.0180$). It means that if the people get one year old more, keeping other independent variables constant, the probability of health insurance participation will increase 0.0180. So for the people who get older, they should participate more in health insurance program.

The table also showed that the main important determinant that affected the health insurance participation was the education of the people. The coefficient was 2.520 and significant ($p=0.044$). It means that if the people get one more year of schooling, keeping other independent variables constant, the probability of health insurance participation will get 2.520 more. In other word the people will join better in health insurance program if they get more education.

The income of people is the important determinant that effect the health insurance was positive and significant ($p=0.044$). That means, if income increase, the probability of the people participating health insurance will increase. It implies the health insurance program in Takmau district can attract more people to join. Hence, when people get higher income, they might participate health insurance program. These results imply that, in the future, when socio-economic situations increases, the people will take part health insurance program more.

The relationship between occupations (farmer) is the main determinant that effect the health insurance with positive sign (5.302). It means that if the occupation, keeping other independent variables constant, the health insurance participation will increase 5.302. It was indicated that the health insurance program implement in the rural area the farmers will participate more. For the result of the perception of the people was positive and but insignificant ($p= 0.102$). That means the people will not tend to join health insurance in the

future.

It can be seen that the health insurance will not be get the benefit for them after they participate the health insurance program. More over, they think that if they will join health insurance.

In other word, the health insurance that implemented is not so good or suits the people for health care and makes them confident their services . That is why some of them will not be changed their behavior for looking from this program.

The result of health education was negative and insignificant ($p=0.554$). That means, when health education increases, people have tendency to decrease to participate health insurance program. This also implies the quality of service of health insurance is still not interesting from the people. Further, the health education program does not include some part of the health insurance information when they educated the people. So the people know how to live, to eat and drink well .That is why the people don't understand clearly about health insurance further, the health education program was not involved with health insurance policy.

For the result of marital (single) was negative and insignificant ($p=0.931$). That means, the single person will decrease to participate health insurance program. This is implies that the single persons don't take care tend to join with health insurance.

From the result of family size was negative and insignificant ($p=0.926$). That means, the family size will become more members, they will not join in the health insurance program. That is indicated that when the family with a lot members they difficult to buy the health insurance for all members. Sometimes they will face with the budget to pay for health insurance card.

The probability of participation in health insurance, p is calculate from the mean of the independent variable, then use p and the coefficient of independent variable to calculate the marginal effect of each independent variable. X_i is dependent variables as SEX, AGE, EDUC, INC, OCCU, PERC, HED, MARITAL and FAMISIZE.

The means of SEX,AGE,EDUC,INC,OCCU,PERC,HED,MARITAL and FAMISIZE are 0.573, 35.5, 3.2, 84.417, 0.466, 0.314, 3, 0.197 and respectively.

The marginal effect is very small for sex, so there is not different between male and female in term of the probability of health insurance participation.

For age, if the age increases 1 year, the probability of health insurance participation would increase $1.274E-10$.

For education, if the education increases 1 year, the probability of health insurance participation would increase $7.07E-10$.

When the income increase 100 Riel, the probability of health insurance participation would increase $1.577E-12$.

For occupation, the probability of health insurance participation for farmer would be more $1.4877E-09$ than occupations with statistic significance.

The marginal effect is small for perception, so there is not different between the perception of willing to buy and not willing to buy health insurance.

For health education, if the health education increases 1 time, the probability of health insurance participation would be $-9.877E-11$.

The marginal effect is small, so there is not different between single and married in term of the probability of health insurance participation.

For family size, if the size of family has one more people the probability of that family to participate health insurance would increase $1.6555E-11$ with statistic insignificance.

5.3 Comparison between the Expected Sign and the Logit Estimated Results

For the sign of income variable that we expected was positive. According to some theory it is often found that families or person with higher income spend more on medical care,

although the percentage of income spend on medical care declines as the income increases.

In the theory, a good is normal good if people consuming it increase with increasing income and inferior good if the number of people using it decreases with decreasing income. Based on the survey data, it found that health insurance participation was related with the income of the people, if their income increases highly or lowly they tend to join the health insurance program. The result that we found it was the same as we expected.

With respect the age, the sign that we expected was positive. The youngsters did not participate in the health care and also health insurance program. Because they think that they do not fall sick frequently. Base on the survey indicated that the sign of age was positive as we expected. It means that when they become older and older they will take care their health, they will participate health insurance program more.

From the expected sign of education was positive. That means higher levels of education may lead to increase efficiency in a family's purchase and use medical services and also tend to join health insurance program. Years of education in household or individual may serve as an approximate measure of a greater awareness of the need for medical care, health insurance and of greater efficiency in its purchase and production. Base on the survey, it shows that health insurance was positive as we expected. It has seen that health insurance participation is closely link with the educational level of the people.

As the sign of sex (male) that we expected was negative. That means the male will join health insurance less than female. Base on the survey, it indicated that the result of expectation and the survey was not the same as we thought.

From the expected sign of perception that we expected also was positive .That means the perception of the people participating heath insurance program was affected .According to the survey results was different sign as we expected.

With the sign of health education that we expected was positive. That means the people who joined in the health education program; they tend to take part in health insurance. In contrary, and the results showed that the sign of health education was positive and insignificant. So the sign what we expected was different. That means even if they joined in health education, they did not more participate in health insurance. The reason that the health education program is not educate the people involve with health insurance. That is why they still don't understand the health insurance policy.

The sign of marital status (single) that we expected was negative. The means the people were single tend to join health insurance less than the people who get married. When we compare from the result sign was the same as we expected.

According to the expected sign of family size was negative. The means if the families have a lot of members in the family they decreased to take part in health insurance program. From the survey result and the expected sign was the same as we expect.

Table 5.11 present the primary school level of the probability of the male in health insurance participation that when the age is 35.5, education level is primary school, the income is 84417 Riel, they are farmer, for perception of health insurance is yes, the health education is 3 times, they are single and the family size is 4. So the probability of health insurance participation is 0.9753. In this case the changing of probability for age is 0.0109, education is 0.0134, income is 1.28E-08 and health education is - 0.00846.

It is indicated that the age is 35.5, education level is primary school, the income is 84417 Riel, and they are farmer, for perception of health insurance is yes, the health education is 3 times, they are married and the family size is 4. So the probability of health insurance participation is 0.9786. In this case the changing of probability for age is 0.0094, education is 0.0164, income is 0.0001 and health education is - 0.00734

It showed that the age is 35.5, education level is primary school, the income is 84417 Riel, and they are farmer, for perception of health insurance is yes, the health education is 3

times, they are single and the family size is 4. So the probability of health insurance participation is $9.438E-07$. In this case the changing of probability for age is $4.285E-07$, education is $2.378E-06$, income is $5.304E-09$ and health education is $-3.3E-07$.

When the male age is 35.5, education level is primary school, the income is 84417 Riel, and they are farmer, for perception of health insurance is no, the health education is 3 times, they are married and the family size is 4. So the probability of health insurance participation is $1.095E-06$. In this case the changing of probability for age is $4.971E-07$, education is $2.759E-06$, income is $6.154E-11$ and health education is $-3.9E-07$

It is also showed that the age is 35.5, education level is primary school, the income is 84417 Riel, and they are not farmer, for perception of health insurance is yes, the health education is 3 times, they are single and the family size is 4. So the probability of health insurance participation is 0.16688. In this case the changing of probability for age is 0.06312, education is 0.3503, income is 0.0007 and health education is -0.04894

With the age is 35.5, education level is primary school, the income is 84417 Riel, and they are not farmer, for perception of health insurance is yes, the health education is 3 times, they are married and the family size is 4. So the probability of health insurance participation is 0.1885. In this case the changing of probability for age is 0.0694, education is 0.3855, income is 0.0008 and health education is -0.0538

It is showed that the age is 35.5, education level is primary school, the income is 84417 Riel, and they are not farmer, for perception of health insurance is no, the health education is 3 times, they are single and the family size is 4. So the probability of health insurance participation is $4.7786E-09$. In this case the changing of probability for age is $2.169E-08$, education is $1.204E-08$, income is $2.69E-11$ and health education is $-1.7E-09$

When the age is 35.5, education level is primary school, the income is 84417 Riel, and they are not farmer, for perception of health insurance is no, the health education is 3 times, they are married and the family size is 4. So the probability of health insurance

participation is $5.5438E-09$. In this case the changing of probability for age is $2.517E-09$, education is $1.397E-08$, income is $3.12E-11$ and health education is $-2E-09$.

Predict the probability of people participating health insurance when each variable is changing. We know that the probability will change when the changing of age is

$\Delta p \approx \beta_i[p(1-p)] \Delta AGE$, the change of education is $\Delta p \approx \beta_i[p(1-p)] \Delta EDUCATION$ and the change of income is $\Delta p \approx \beta_i[p(1-p)] \Delta INCOME$. The change of the probability when age increase 1 year, education increases 1 year and income increase 100 Riel.

Based on the survey result, Table 5.11 show the probability and the change of the probability when changing age, education, income at the age on average is 35.5, education is 6,9,12 and 16 years, the mean of income is 84,417, occupation: 1 for the farmer, 0 for other, the perception 1 is will buy health insurance, 0 otherwise, marital status 1 is single and 0 is married.

For example, we calculate the change of the probability when age is changed. The sex is male with 6 years of schooling, occupation is the farmer, health education is 3 times, the perception is will buy health insurance, and the marital status is single and keeps other variables on average. If age increase 1 year old the probability is $p=0.9753$ and the change of the probability of age is 0.0109. The probability will increase 0.0109, that means

$$p = 0.0109 + 0.9753 = 0.9862. \text{ (see Table 5.11)}$$

Table 5.12 indicated the high school level of the probability of the male in health insurance participation that when the age is 35.5, education level is high school level, the income is 84417 Riel, and they are farmer, for perception of health insurance is yes, the health education is 3 times, they are single and the family size is 4. So the probability of health insurance participation is 9.999. In this case the changing of probability for age is $3.26E-09$, education is $1.00E-12$, income is $4.04E-11$ and health education is $-2.5E-09$

With the age is 35.5, education level is university, the income is 84417 Riel, they are farmer, for perception of health insurance is yes, the health education is 3 times, they are

single and the family size is 4. So the probability of health insurance participation is 0.9475. In this case the changing of probability for age is $1.409E-13$, education is $1.02E-13$, income is $1.744E-15$ and health education is $-1.1E-13$. Predict the probability of people participating health insurance when each variable is changing.

We know that the probability will change when the changing of age is $\Delta p \approx \beta_i[p(1-p)] \Delta \text{AGE}$, the change of education is $\Delta p \approx \beta_i[p(1-p)] \Delta \text{EDUCATION}$ and the change of income is $\Delta p \approx \beta_i[p(1-p)] \Delta \text{INCOME}$. The change of the probability when age increase 1 year, education increases 1 year and income increase 100 Riel.

Based on the survey result, Table 5.8 indicated that the probability and the change of the probability when changing age, education, income at the age on average is 35.5, education is 6,9,12 and 16 years, the mean of income is 84,417, occupation: 1 for the farmer, 0 for other, the perception 1 is will buy health insurance, 0 otherwise, marital status 1 is single and 0 is married.

For example, we calculate the change of the probability when education is changed. The sex is male with 12 years of schooling, occupation is the farmer, health education is 3 times, the perception is will buy health insurance, and the marital status is single and keeps other variables on average. If education increase 1 year the probability is $p=0.999$ and the change of the probability of age is $0.1.00E-12$. The probability will increase $1.00E-12$, that means $p = 1.00E-12 + 0.9999 = 0.9999$. (see Table 5.12)

Table 5.13 showed that the primary school level of the probability of the female in health insurance participation that when the age is 35.5, education level is primary school level, the income is 84417 Riel, and they are farmer, for perception of health insurance is yes, the health education is 3 times, they are single and the family size is 4. So the probability of health insurance participation is 9.9964. In this case the changing of probability for age is 0.0016, education is $1.12E-09$, income is $2.01E-05$ and health education is -0.0012

With the age is 35.5, education level is secondary school, the income is 84417 Riel, they

are farmer, for perception of health insurance is yes, the health education is 3 times, they are single and the family size is 4. So the probability of health insurance participation is 0.9999. In this case the changing of probability for age is $8.73E-07$, education is $1.27E-08$, income is $1.08E-08$ and health education is $-6.8E-07$. Predict the probability of people participating health insurance when each variable is changing. We know that the probability will change when the changing of age is $\Delta p \approx \beta_i[p(1-p)] \Delta AGE$, the change of education is $\Delta p \approx \beta_i[p(1-p)] \Delta EDUCATION$ and the change of income is $\Delta p \approx \beta_i[p(1-p)] \Delta INCOME$. The change of the probability when age increase 1 year, education increases 1 year and income increase 100 Riel.

According to the survey result, Table 5.9 indicated that the probability and the change of the probability when changing age, education, income at the age on average is 35.5, education is 6,9,12 and 16 years, the mean of income is 84,417, occupation: 1 for the farmer, 0 for other, the perception 1 is will buy health insurance, 0 otherwise, marital status 1 is single and 0 is married.

For example, we calculate the change of the probability when income is changed. The sex is female with 6 years of schooling, occupation is the farmer, health education is 3 times, the perception is will buy health insurance, and the marital status is single and keeps other variables on average. If education increase 1 year the probability is $p=0.9964$ and the change of the probability of income is $2.01E-05$. The probability will increase $2.01E-05$, that means $p=2.01E-05+0.9964=0.99642$. (see Table 5.13)

Table 5.14 showed that the high school and university level of the probability of the female in health insurance participation that when the age is 35.5, education level is high school level, the income is 84417 Riel, and they are farmer, for perception of health insurance is yes, the health education is 3 times, they are single and the family size is 4. So the probability of health insurance participation is 9.999. In this case the changing of probability for age is $4.657E-10$, education is $1.23E-10$, income is $5.76E-12$ and health education is $-3.6E-10$

When the age is 35.5, education level is university level, the income is 84417 Riel, and they are farmer, for perception of health insurance is yes, the health education is 3 times, they are single and the family size is 4. So the probability of health insurance participation is 0.9875. In this case the changing of probability for age is $2.011E-14$, education is $1.12E-13$, income is $2.49E-16$ and health education is $-1.6E-14$. Predict the probability of people participating health insurance when each variable is changing. We know that the probability will change when the changing of age is $\Delta p \approx \beta_i[p(1-p)] \Delta AGE$, the change of education is $\Delta p \approx \beta_i[p(1-p)] \Delta EDUCATION$ and the change of income is $\Delta p \approx \beta_i[p(1-p)] \Delta INCOME$. The change of the probability when age increase 1 year, education increases 1 year and income increase 100 Riel.

According to the survey result, Table 5.10 indicated that the probability and the change of the probability when changing age, education, income at the age on average is 35.5, education is 6,9,12 and 16 years, the mean of income is 84,417, occupation: 1 for the farmer, 0 for other, the perception 1 is will buy health insurance, 0 otherwise, marital status 1 is single and 0 is married.

For example, we calculate the change of the probability when income is changed. The sex

is female with 12 years of schooling, occupation is the farmer, health education is 3 times, the perception is will buy health insurance, and the marital status is single and keeps other variables on average. If education increase 1 year the probability is $p=0.9999$ and the change of the probability of income is $5.76E-12$. The probability will increase $5.76E-12$, that means $p=5.76E-12+0.9999=0.9999$. (see Table 5.14)

Table 5.11 The Probability of Health Insurance Participation for Male at the Primary and Secondary School Level

SEX	AGE	EDUC	INC	OCCU	PERC	HED	MARITAL	FAMISIZE	P	$\Delta P/\Delta$ AGE	$\Delta P/\Delta$ EDUC	$\Delta P/\Delta$ INC	$\Delta P/\Delta$ HED
Male	35.5	6	84,417	Farmer	Yes	3	Single	4	0.975349007	0.0109157	0.013458	1.28E-08	-0.00846
	35.5	6	84,417	Farmer	Yes	3	Married	4	0.978679258	0.0094732	0.016439	0.000117	-0.00734
	35.5	6	84,417	Farmer	No	3	Single	4	9.438E-07	4.285E-07	2.378E-06	5.304E-09	-3.3E-07
	35.5	6	84,417	Farmer	No	3	Married	4	1.095E-06	4.971E-07	2.759E-06	6.15E-09	-3.9E-07
	35.5	6	84,417	Other	Yes	3	Single	4	0.166888235	0.0631226	0.3503721	0.000781	-0.04894
	35.5	6	84,417	Other	Yes	3	Married	4	0.188574699	0.0694685	0.385596	0.00086	-0.05386
	35.5	6	84,417	Other	No	3	Single	4	4.77857E-09	2.169E-09	1.204E-08	2.69E-11	-1.7E-09
	35.5	6	84,417	Other	No	3	Married	4	5.54384E-09	2.517E-09	1.397E-08	3.12E-11	-2E-09
	35.5	9	84,417	Farmer	Yes	3	Single	4	0.999986528	6.116E-06	1.32E-06	7.57E-08	-4.7E-06
	35.5	9	84,417	Farmer	Yes	3	Married	4	0.999988388	5.272E-06	3.10E-08	6.53E-08	-4.1E-06
	35.5	9	84,417	Farmer	No	3	Single	4	0.001767587	0.0008011	0.0044464	9.92E-06	-0.00062
	35.5	9	84,417	Farmer	No	3	Married	4	0.002050078	0.0009288	0.0051556	1.15E-05	-0.00072
	35.5	9	84,417	Other	Yes	3	Single	4	0.997346155	0.0012016	0.001547	1.49E-05	-0.00093
	35.5	9	84,417	Other	Yes	3	Married	4	0.997711651	0.0010365	0.001653	1.28E-05	-0.0008
	35.5	9	84,417	Other	No	3	Single	4	8.96483E-06	4.07E-06	2.259E-05	5.04E-08	-3.2E-06
	35.5	9	84,417	Other	No	3	Married	4	1.04005E-05	4.722E-06	2.621E-05	5.85E-08	-3.7E-06

Table 5.12 The Probability of Health Insurance Participation for Male at the High School and University Level

SEX	AGE	EDUC	INC	OCCU	PERC	HED	MARITAL	FAMISIZE	P	Δ P/Δ AGE	Δ P/Δ EDUC	Δ P/Δ INC	Δ P/Δ HED
Male	35.5	12	84,417	Farmer	Yes	3	Single	4	0.999998993	3.26E-09	1.00E-12	4.04E-11	-2.5E-09
	35.5	12	84,417	Farmer	Yes	3	Married	4	0.999999994	2.81E-09	1.01E-10	3.48E-11	-2.2E-09
	35.5	12	84,417	Farmer	No	3	Single	4	0.768624538	0.0807397	0.13208	0.000999	-0.0626
	35.5	12	84,417	Farmer	No	3	Married	4	0.793983462	0.0742625	0.11354	0.000919	-0.05758
	35.5	12	84,417	Other	Yes	3	Single	4	0.999998582	6.439E-07	1.00E-07	7.97E-09	-5E-07
	35.5	12	84,417	Other	Yes	3	Married	4	0.999998777	5.55E-07	1.02E-08	6.87E-09	-4.3E-07
	35.5	12	84,417	Other	No	3	Single	4	0.01654056	0.0073852	0.0409928	9.14E-05	-0.00573
	35.5	12	84,417	Other	No	3	Married	4	0.019138759	0.0085227	0.0473066	0.000106	-0.00661
	35.5	16	84,417	Farmer	Yes	3	Single	4	0.94754432	1.409E-13	1.02E-12	1.74E-15	-1.1E-13
	35.5	16	84,417	Farmer	Yes	3	Married	4	0.98543298	1.214E-13	6.74E-13	1.5E-15	-9.4E-14
	35.5	16	84,417	Farmer	No	3	Single	4	0.99998699	5.906E-06	1.12E-12	7.31E-08	-4.6E-06
	35.5	16	84,417	Farmer	No	3	Married	4	0.999988786	5.091E-06	1.23E-10	6.3E-08	-3.9E-06
	35.5	16	84,417	Other	Yes	3	Single	4	0.98645387	2.783E-11	1.05E-10	3.44E-13	-2.2E-11
	35.5	16	84,417	Other	Yes	3	Married	4	0.99884632	2.399E-11	1.331E-10	2.97E-13	-1.9E-11
	35.5	16	84,417	Other	No	3	Single	4	0.997436926	0.0011607	1.03E-12	1.44E-05	-0.0009
	35.5	16	84,417	Other	No	3	Married	4	0.997789948	0.0010011	1.12E-10	1.24E-05	-0.00078

Table 5.13 The Probability of Health Insurance Participation for Female at the Primary and Secondary School Level

SEX	AGE	EDUC	INC	OCCU	PERC	HED	MARITAL	FAMISIZE	P	$\Delta P/\Delta$ AGE	$\Delta P/\Delta$ EDUC	$\Delta P/\Delta$ INC	$\Delta P/\Delta$ HED
Female	35.5	6	84,417	Farmer	Yes	3	Single	4	0.996402894	0.0016272	1.12E-09	2.01E-05	-0.00126
	35.5	6	84,417	Farmer	Yes	3	Married	4	0.996897895	0.001404	1.23E-08	1.74E-05	-0.00109
	35.5	6	84,417	Farmer	No	3	Single	4	6.60776E-06	3E-06	1.665E-05	3.71E-08	-2.3E-06
	35.5	6	84,417	Farmer	No	3	Married	4	7.66596E-06	3.48E-06	1.932E-05	4.31E-08	-2.7E-06
	35.5	6	84,417	Other	Yes	3	Single	4	0.583753281	0.1103154	1.12E-06	0.001366	-0.08553
	35.5	6	84,417	Other	Yes	3	Married	4	0.619339483	1.23E-08	1.23E-07	0.001325	-0.08299
	35.5	6	84,417	Other	No	3	Single	4	3.34545E-08	1.519E-08	8.431E-08	1.88E-10	-1.2E-08
	35.5	6	84,417	Other	No	3	Married	4	3.8812E-08	1.762E-08	9.781E-08	2.18E-10	-1.4E-08
	35.5	9	84,417	Farmer	Yes	3	Single	4	0.999998076	8.736E-07	1.27E-08	1.08E-08	-6.8E-07
	35.5	9	84,417	Farmer	Yes	3	Married	4	0.999998341	7.53E-07	1.32E-08	9.32E-09	-5.8E-07
	35.5	9	84,417	Farmer	No	3	Single	4	0.012244878	0.0054911	0.0304793	6.8E-05	-0.00426
	35.5	9	84,417	Farmer	No	3	Married	4	0.014178036	0.0063456	0.0352221	7.86E-05	-0.00492
	35.5	9	84,417	Other	Yes	3	Single	4	0.999620066	0.0001724	1.34E-06	2.13E-06	-0.00013
	35.5	9	84,417	Other	Yes	3	Married	4	0.999672494	0.0001486	1.23E-07	1.84E-06	-0.00012
	35.5	9	84,417	Other	No	3	Single	4	6.27588E-05	2.849E-05	0.0001581	3.53E-07	-2.2E-05
	35.5	9	84,417	Other	No	3	Married	4	7.28086E-05	3.305E-05	0.0001835	4.09E-07	-2.6E-05

Table 5.14 The Probability of Health Insurance Participation for Female at the High School and University Level

SEX	AGE	EDUC	INC	OCCU	PERC	HED	MARITAL	FAMISIZE	P	Δ P/Δ AGE	Δ P/Δ EDUC	Δ P/Δ INC	Δ P/Δ HED
Female	35.5	12	84,417	Farmer	Yes	3	Single	4	0.999999999	4.657E-10	1.23E-10	5.76E-12	-3.6E-10
	35.5	12	84,417	Farmer	Yes	3	Married	4	0.999999999	4.014E-10	1.32E-10	4.97E-12	-3.1E-10
	35.5	12	84,417	Farmer	No	3	Single	4	0.958774724	0.0179447	1.43E-10	0.000222	-0.01391
	35.5	12	84,417	Farmer	No	3	Married	4	0.964262049	0.0156452	1.23E-09	0.000194	-0.01213
	35.5	12	84,417	Other	Yes	3	Single	4	0.999999797	9.198E-08	3.11E-09	1.14E-09	-7.1E-08
	35.5	12	84,417	Other	Yes	3	Married	4	0.99999825	7.928E-08	2.32E-08	9.81E-10	-6.1E-08
	35.5	12	84,417	Other	No	3	Single	4	0.105343153	0.0427877	0.2374999	0.00053	-0.03317
	35.5	12	84,417	Other	No	3	Married	4	0.120185814	0.0480065	0.2664678	0.000594	-0.03722
	35.5	16	84,417	Farmer	Yes	3	Single	4	0.98754321	2.011E-14	1.12E-13	2.49E-16	-1.6E-14
	35.5	16	84,417	Farmer	Yes	3	Married	4	0.99565432	1.734E-14	9.624E-14	2.15E-16	-1.3E-14
	35.5	16	84,417	Farmer	No	3	Single	4	0.999998142	8.437E-07	2.12E-13	1.04E-08	-6.5E-07
	35.5	16	84,417	Farmer	No	3	Married	4	0.999998398	7.272E-07	2.43E-12	9E-09	-5.6E-07
	35.5	16	84,417	Other	Yes	3	Single	4	0.98234657	3.975E-12	2.206E-11	4.92E-14	-3.1E-12
	35.5	16	84,417	Other	Yes	3	Married	4	0.98675433	3.426E-12	1.902E-11	4.24E-14	-2.7E-12
	35.5	16	84,417	Other	No	3	Single	4	0.999633089	0.0001665	1.21E-12	2.06E-06	-0.00013
	35.5	16	84,417	Other	No	3	Married	4	0.999683721	0.0001435	1.32E-11	1.78E-06	-0.00011