

Conjoint Analysis of Informal Worker Preference on Health Care Insurance in the Northeastern Region of Thailand

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Abstract

This research aims to analyze the demand on health care insurance of informal worker in the northeastern region of Thailand. Research data collect from 772 informal workers, which can be classified into 466 female and 308 male. Research results identify that average ages of respondents are 39 years with the average income at 5,887 Baht per month. Average household income is at 30,114 Baht per month. They have average education degree at vocational education. They work on the average of 60.52 hours per weeks. Average health care expenditure is 7,614 Baht per year per person. They mostly works as wage-earner accounts for 28.63%, following by the workers who work at home, amounting for 19.56%; and self-employed or freelance about 19.3%. The analysis of demand on health care insurance applies conjoint analysis to find out the demand on health care insurance. The result shows that the coverage of health care that include accident and operation is most selected with 26%. For the payment of health insurance, research results indicate that annual payment is most popularly chosen with 28%. Refer to insurance plan; it is interesting that most of informal workers choose to buy health insurance together with life insurance with 48%. Note to the payment for hospital room, food and health care service, it concludes that coverage of both inpatient and outpatient costs are most selected with 32%. Lastly, the rights of choosing insured hospital, respondents express the result that they choose to insured with public hospital with high percentage of 27%.

Key Words: *Micro Insurance, Health Insurance, Informal Worker Preference, Informal Worker Welfare Arrangement, Health Care Protection, Health Care Treatment, Conjoint Analysis.*

Introduction

The informal sector is a pervasive and persistent economic feature of most developing economies, contributing significantly to employment creation, production, and income generation (World Bank, 2012). A recent estimate of the size of the informal sector in Thailand has a large share of population. When comparing data between the year 2007 and 2012, it found that the proportion of informal workers did not have much change. During 2008 to 2009, the numbers of informal workers were quite high, about 63.7% and 63.4% but its number declined to 62.3% in 2010. Two years later, its number increased to 62.6% and 62.7%, respectively (Fig 1).

National Statistical Office was conducted to collect data of informal worker in the 3rd quarter during July to September 2011. The survey in 2012 found that Thailand had 39.6 million employed populations, which could be classified into 24.8 million informal workers, accounted for 62.6% and the rest of the workforce was the formal workers about 14.8 million workers or 37.4%. Considering the informal worker by gender, it showed that there were 13.4 million male workers, about 54% and 11.4 million female or 46% of total

informal worker. The greatest number of informal worker worked in the northeast, accounted for 41.5%, following by the north with 21.7%, the central with 18.1%, the south with 13.6% and Bangkok with 5.1%. The informal workers were unsecured. They did not receive any employment collateral, protection and social welfare from working. They had an inequality in work (Table 1) (National Statistical Office, 2012).

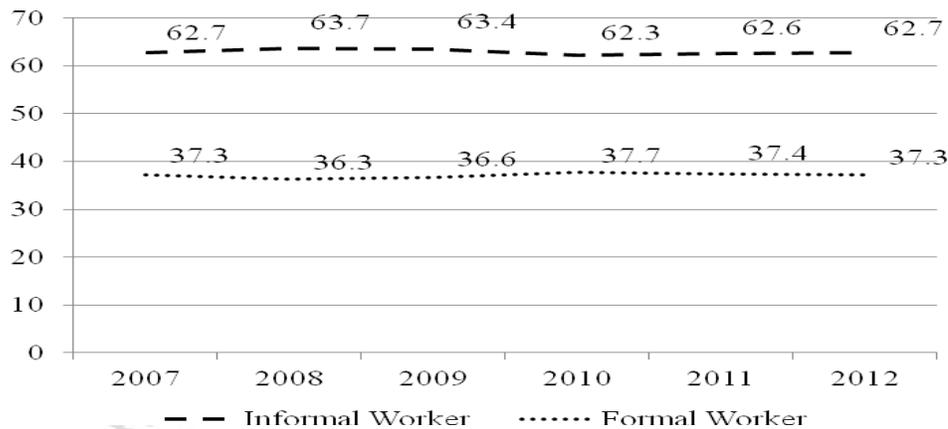


Fig. 1 Percentage of formal and informal worker in Thailand between 2007 and 2012

TABLE I NUMBER OF INFORMAL WORKER CLASSIFIED BY GENDER IN 2012

Unit: Million Persons

	Total	Percent	Male	Female
Total Workforce	39.6			
Formal Worker	14.8	37.4		
Informal Worker	24.8	62.6	13.4	11.4

Source: National Statistical Office, 2012.

There are various reasons why governments may be concerned about large informal sectors. These include potentially negative consequences for competitiveness and growth, incomplete coverage of formal social programs, undermining social cohesion and law and order, and fiscal losses due to undeclared economic activity. For most governments, these concerns outweigh any advantages that the informal sector offers as a source of job creation and as a safety net for the poor (World Bank, 2012). Therefore, the study of micro insurance in the case study of the demand on health insurance of informal sector in the northeast of Thailand is particularly important. It is significance to study the needs of informal workers on social welfare system, and the benefit of recipients accessing to welfare services.

Objectives, Data Collection and Research Area

This research has the purpose to describe the health care status of informal workers, for example, the illness rates, health care costs, health insurance cost, guidelines of health care protection; and to analyze demand on health insurance of informal workers in the northeast of Thailand. The arrangement of health insurance in this study offers the new options of various health insurance schemes. The insured have the right to choose according to their own needs. This health insurance model completes the needs of the insured with the best offer of new alternatives. In general, health insurance premiums are paid annually and leave. People can not receive accumulate or saving money as same as life insurance, which people can receive

money returning after the maturity date of contract. In addition, this study also adds the choice of the consumer or buyer of insurance by the choice desired coverage level. Data is collected of 772 informal workers. Research area is located in the northeastern region of Thailand.

Research Framework

According to figure 2, an analysis of demand on health care insurance in the first part was done by setting the four type of health care insurance for workers to select. These types of insurance scheme are the popularity scheme in the current market.

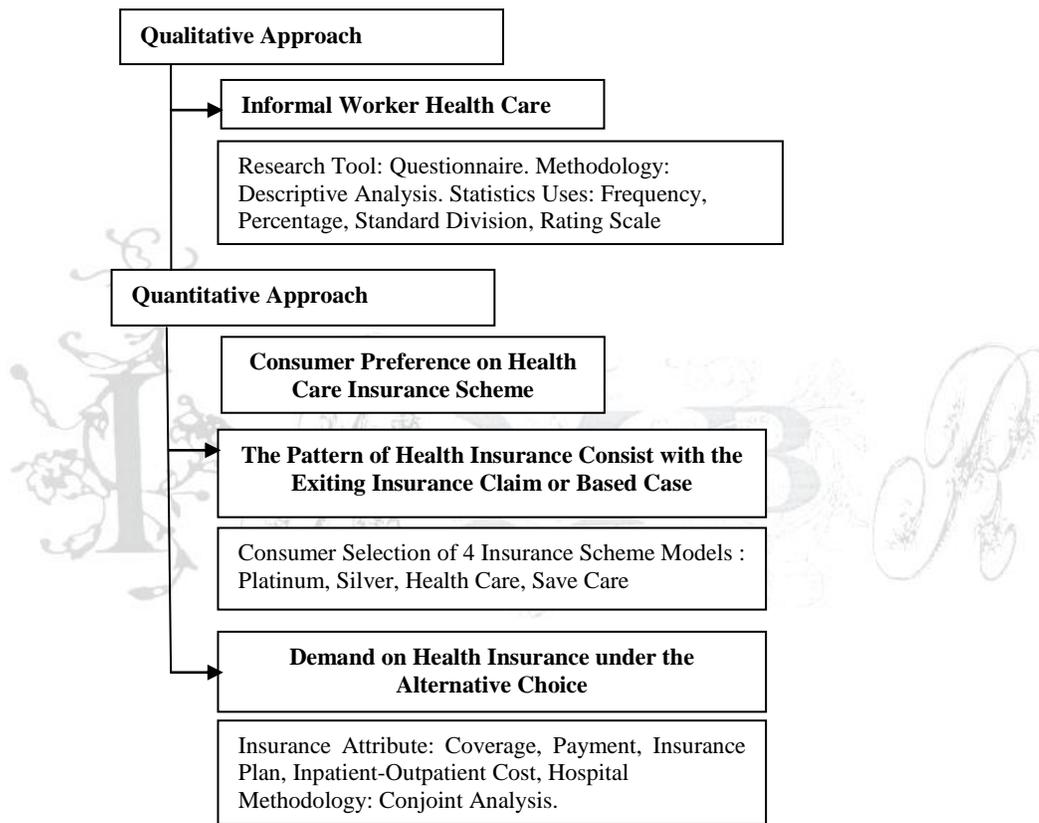


Fig. 2 Research Framework

Methodology

The analysis of second part of demand on health care insurance, the methodology applies the techniques of “conjoint analysis”, which is multivariate technique to evaluate the satisfactory of informal workers on health insurance products in different ways. The basic conjoint analysis (CA) model may be represented by following formula (Malhotra, 2004):

$$Y = \sum_{i=1}^n \sum_{j=1}^m \beta_{ij} X_{ij} \tag{1}$$

Conjoint analysis in this study is used to quantify and predict client preferences for various levels of attributes. For this purpose, CA frequently employs additive models. The cluster and the componential segmentation model and depicted below (Schrieder, 1994).

$$Y = \sum_{i=1}^n \sum_{j=1}^m \beta_{ij} X_{ij} + \sum_{i=1}^n \sum_{k=1}^m \gamma_{jk} Z_k + \varepsilon \quad (2)$$

Y denotes the clients' overall preference, respectively choice for the service alternatives under investigation. These alternatives are described in terms of j -levels for i -attributes ij . β_{ij} is the part-worth utility associated with the j^{th} -level of the i^{th} -attribute. The part-worth utility measures the relative importance of X_{ij} in estimating the dependent variable. X_{ij} is a control variable to flag either presence ($X_{ij}=1$) or absence ($X_{ij}=0$) of the j^{th} -level for the i^{th} -attribute.

The attribute of the health insurance profile analyzed here are:

Y = Informal worker health insurance profile choice. Y expressed the satisfaction of the workers to choose the form of insurance, which indicates the overall of the various alternatives choice. Alternative choices are show in level j for alternative i . Data may be metric (Interval, Ratio Scale) or Non-metric (Nominal, Ordinal Scale);

Assigned

β_{ij} = The utility measurement of the consumption on j of the alternative choice i by comparing the importance of the variables X_{ij} .

X_{ij} = Explanatory health insurance concept variable. X_{ij} is the control variable of j of the alternative choice i . Data is non metric variable.

Z = Respondent's explanatory background variable;

ε = Error term;

- X for $i = 1$ to 3: (1) Coverage,
(2) Payment,
(3) Insurance Plan,
(4) Inpatient-Outpatient Cost, and
(5) Hospital

The levels for each attribute are:

- X_{1j} for $j = 1$ to 2: (1) General Sickness Coverage
(2) Coverage include Accident and Operation
- X_{2j} for $j = 1$ to 2: (1) Annual Payment
(2) Half Year Payment
- X_{3j} for $j = 1$ to 2: (1) Buy Health Insurance Only
(2) Buy Health Insurance and Life Insurance
- X_{4j} for $j = 1$ to 3: (1) OPD
(2) IPD
(3) OPD and IPD
- X_{5j} for $j = 1$ to 3: (1) Public Hospital
(2) Private Hospital
(3) Public, Private Hospital and Clinic

The componential segmentation model emphasizes the interaction between service profile X , and the respondents' profile. This requires the extension of the additive model by a vector Z_k that describes the

respondents in terms of demographic, socioeconomic and health background variables. Interaction between a person's background variable and the attribute levels X_{ij} is represented by the parameter γ_{jk} . Z_k denotes the vector of background variables (Schrieder, 1994).

TABLE II HEALTH INSURANCE CONCEPTS AND THEIR
EMPIRICALLY RESEARCHED ATTRIBUTES, LEVELS AND DETAIL

Attribute	Attribute Levels	Detail of insurance
Coverage	General Sickness Coverage	The coverage of insurance covers only the treatment of common disease diagnosis.
	Coverage include Accident and Operation	The coverage of insurance cover the treatment of common disease diagnosis, serious case like accident and cover the operation cost. The operation cost relies on the insurance premium. Wider coverage but higher price.
Payment	Annual Payment	Pay the insurance premium once a year.
	Every Half Year Payment	Pay the insurance premium two time a year. More flexible for the one who has low income or uncertainty income.
Insurance Plan	Buy Health Insurance Only	The insurance plan that the insurer buys only health insurance. Money payment per year and money leave. No money return in the long run.
	Buy Health Insurance and Life Insurance	The insurance plan that the insurer buy health insurance together with life insurance. Benefit is the insurer receives the money saving return after the maturity date and has the life insurance protection. Cost is the payment for both insurance is higher.
Inpatient- Outpatient Cost	OPD	The insurance payment covers only out-patient service. A patient is any recipient of health care services. The illness person need of treatment by physician or health care provider. An outpatient (or out-patient) is a patient who is not hospitalized for 24 hours or more but who visits a hospital, clinic or associated facility for diagnosis or treatment.
	IPD	The insurance payment covers only in-patient service. An inpatient (or in-patient), on the other hand, is "admitted" to the hospital and stays overnight or for an indeterminate time, usually several days or weeks (though some cases, such as coma patients, have been in hospitals for years).
	OPD and IPD	The insurance payment cover both out-patient and in-patient service. It covers the cost of treatment
Hospital	Public Hospital	The insurance scheme that can use the service at public hospital only. A public hospital is a hospital which is owned by a government and receives government funding.
	Private Hospital	The insurance that cover only private hospital. A private hospital is a hospital owned by a profit company or a non-profit organization and privately funded through payment for medical services by patients themselves, insurers, governments through national health insurance schemes, or by foreign embassies.
	Any Hospital	The insurance scheme that cover public, private hospital and also clinic.

Source: Own Modification (2014).

The demand for health insurance design studies by applying choice-based conjoint analysis to determine the health insurance. In providing health insurance, this study considers five attributes of insurance that are, coverage level, payment, insurance plan, outpatient or inpatient cost, and client's institution option or hospital (Table 2).

Health insurance coverage (Coverage) has two levels, which are 1) general sickness coverage is the health insurance, which covers the treatment of common diseases diagnosis, 2) coverage include accident and operation is the wider health insurance coverage, which cover comprehensive treatment of common diseases, accident and surgery.

Terms of premiums paid (Payment) has two levels, which are 1) pay insurance premium once a year; 2) pay insurance premium half year a time or every six months payment.

Plans of Insurance (Insurance Plan) has two levels, which are 1) the purchase of health insurance alone, 2) the purchase of health insurance with life insurance.

Coverage for room, meals, and nursing services (Inpatient-Outpatient Cost) has three levels, which are 1) coverage for medical treatment as an outpatient (OPD), 2) coverage for medical treatment as an inpatient (IPD), and 3) coverage for medical treatment as an inpatient (IPD) and outpatients (OPD).

The reimbursement of actual medical hospitals (Hospital) has three levels, which are 1) public or government hospitals, 2) private hospitals, and 3) public, private hospitals and clinics.

Descriptive Analysis on Health Care Status of Informal Worker

The informal economy refers to activities and income that are partially or fully outside government regulation, taxation, and observation. The main attraction of the undeclared economy is financial. This type of activity allows employers, paid employees, and the self-employed to increase their take-home earnings or reduce their costs by evading taxation and social contributions.

On the one hand, informal employment can provide a cushion for workers who cannot find a job in the formal sector. But, on the other hand, it entails a loss in budget revenues by reducing taxes and social security contributions paid and therefore the availability of funds to improve infrastructure and other public goods and services. It invariably leads to a high tax burden on registered labor (World Bank, 2012).

Informal workers encounter many different problems. Firstly, the informal workers were not perceived by society or be the invisible group due to lack of systematically data collection of informal sector, which cause these workers be the "intangible" group. As a result, these workers are unfairly treated. They have a fluctuation income, lack of social security and labor protection. When comparing to the formal workers, the informal workers have more risk from the uncertainty of the economy and society than the formal workers. Secondly, the informal workers are openly ignoring. The laws, regulations and taxes can weaken. They are not protected by labor laws.

The major legal related to labor such as the 1998 labor protection act, the 1994 compensation act, the 1990 social security act, the secured workplace act, the labor relations act and all other available law, covered only workers in the formal system. Informal workers were not covered by these laws. Although in 2004, the ministry of Labor issued the regulations on the protection of the take-home workers but it still did not provide coverage in many other important principles. In particular, the compensation was still unfair. The essential law that the ministry issue was the health care protection but there were problems in the mechanism, performance measures and the law enforcement.

Thirdly, the informal workers mostly do not receive the minimum wage. Most of them receive the unfair wage rate and face the uncertainty income because these workers are not protected by the 1998 labor protection act and the lack of integration for bargaining their wages. Fourthly, the works of informal workers are discrete and unevenly depending on the sales, product marketing and social situations, which cause they can not set the production plan and work plan. So, the informal workers have no stability in the workplace. Fifthly, the informal workers are inaccessibility of the current social security act because the act is not cover informal workers. This lead the workers lack of the necessary collateral to life in case of death, disability, sickness, maternity, old age and unemployment.

Sixthly, the informal workers are inaccessibility of resources and support from the state. This lead them lack of opportunities for skill development, access the revolving fund and obtain appropriate health service. Seventhly, the informal workers do not have organization, no agents, and no bargaining power. Informal workers work scattered everywhere, so they lack of integration or even just a small group, they can not. In addition, they do not understand their rights as workers. Hence, they had no authority to negotiate with the employer and the state agency. Lastly, the informal workers have health problems and unsafe working conditions due to lack of knowledge and understanding of health care and safety workplace, including the risk of an unsafe work environment. Thus, most workers face with health problems and the risk of accidents in the workplace.

This research attempted to analyze the demand on health care insurance of informal worker in the northeastern region of Thailand. The total sample used for the analysis covered 772 informal workers, of which 386 came from Khon Kaen province, the rest come from Mahasarakham province. Within this number, it can be classified into 466 female and 308 male.

The research results identify that average ages of respondents are 39 years with the average income at 5,887 Baht per month. Average household income is at 30,114 Baht per month. Most of them have average education degree at vocational education. They work on the average of 60.52 hours per weeks.

According to health expenditure, the average health care expenditure are 7,614 Baht per year per person. Within this amount, it can be divided into the health care expenditure for treating his own health from sickness with the average 2,256 Baht per year; health insurance cost around 2,609 Baht per year; life insurance about 2,363 Baht per year; accident insurance around 239 Baht per year; the health treatment for chronically disease around 147 Baht per year. Other health care expenditure for other family members are around 8,669 Baht per year. Informal worker mostly works as wage-earner accounts for 28.63%, following by the workers who work at home, amounting for 19.56%; and self-employed or freelance about 19.3%.

Results on health insurance indicate that about 26.42% of the informal workers were between 21 to 30 years old. About 32.51% of respondents graduate secondary school. Most of them have income less than 10,000 Baht per month, according for 60.62% (Table 3).

Health risk factors of worker divided into health risk from poor working condition and personal habit. Working condition factors, firstly, workers whose work relate to chemical use are under risk of harmful health. Chemical use in production process can harm to worker. Chemical may be in the liquid, solid, smoke or gas. These chemical may dangerous on body by directly touch such as corrosive acids would break the skin.

A certain substances damage nervous system, and cause brain damage. Some harmful substances such as chlorine gas or ammonia can cause difficulty breathing, congestion, edema and dread. Secondly, physical factors that are working in very hot or cool condition, work with radiant, super bright, noisy, shaking, high pressure. Joining metal worker take a risk of infrared affect on eyes. Thirdly, biography factors that are

virus, bacteria, spore, yeast, dust and some animal like mouse has leptospirosis disease, which can harm to cleaner or garbage collected worker.

TABLE III DESCRIPTIVE OF INFORMAL WORKER HEALTH INSURANCE AGE, EDUCATION, INCOME AND PROVINCE BY GENDER IN PERCENT

	Gender				Total	
	Male (N = 308)		Female (N = 464)		(N = 772)	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Age						
Less than 20 Years Old	18	5.84	23	4.96	41	5.31
21-30 Years Old	70	22.73	134	28.88	204	26.42
31-40 Years Old	83	26.95	116	25.00	199	25.78
41-50 Years Old	76	24.68	106	22.84	182	23.58
51-60 Years Old	46	14.94	64	13.79	110	14.25
Above 60 Year s	15	4.87	21	4.53	36	4.66
Education						
Less than Primary School	10	3.25	16	3.45	26	3.37
Primary School	58	18.83	74	15.95	132	17.10
Secondary School	113	36.69	138	29.74	251	32.51
Vocational School	64	20.78	89	19.18	153	19.82
Bachelor Degree	56	18.18	136	29.31	192	24.87
Master Degree and Above	7	2.27	11	2.37	18	2.33
Income						
Less than 10,000 Baht per Month	190	61.69	278	59.91	468	60.62
10,001-20,000 Baht per Month	88	28.57	134	28.88	222	28.76
20,001-30,000 Baht per Month	18	5.84	32	6.90	50	6.48
30,001-40,000 Baht per Month	7	2.27	4	0.86	11	1.42
40,001-50,000 Baht per Month	4	1.30	12	2.59	16	2.07
More than 50,000 Baht per Month	1	0.32	4	0.86	5	0.65
Province						
Khon Kaen	132	42.86	254	54.74	386	50.00
Maharakam	176	57.14	210	45.26	386	50.00

Source: Own Survey, 2013.

Fourthly, working condition that is not suitable to body such as sit working too long, sit same position for long, lift too heavy thing, lift thing with wrong position, and stretch hand out working all the time. This cause worker backache, shoulder ache, skeleton, muscle disease, and so on.

Personal factor, firstly, some workers have high risk of living because of bad personal habit such as the selection of eating only meat, no vegetable or drive too fast. Secondly, the degeneration of organ because of not taking cares of health. Thirdly, the health problem that is as a result of genetic. The main risk factors of getting poor health are ranked as follow: degeneration of organ, working with wrong position and genetic risk to disease (Table 4).

TABLE IV RISK FACTORS OF GETTING POOR HEALTH

(X =772)	Total	Mean	S.D.	Level	Rank
Working Condition Factors					
Working nearby chemical substance harm to health.	772	1.87	1.18	Low	6
Working under condition of very hot, cool, ray, glare, noise, vibration.	772	2.05	1.24	Low	5
Working relate to disease such as virus, disease animal.	772	1.57	1.22	Low	7
Working with wrong position such as stretch hand out in wrong position, repetitive work, and work sitting same posture for long, lift heavy thing.	772	2.58	1.33	Meddle	2
Personal Factors					
Risk living life: eating only meat, no vegetable, fast driving	772	2.19	1.41	Low	4
Degeneration of organ with age	772	2.66	1.25	Meddle	1
Genetic risk to disease	772	2.41	1.17	Low	3

Source: Own Survey, 2013.

The main significance factors of supporting to have a good health are having warm family, adherence to religion and moral principles and regular exercise, respectively (Table 5).

TABLE V SUPPORTING OR COMPLEMENTARY FACTORS OF HAVING GOOD HEALTH

(X =772)	Total	Mean	S.D.	Level	Rank
1. Regular exercise cause of strong health	772	3.95	0.96	High	3
2. Good mental, having life satisfaction	772	3.87	0.92	High	4
3. Having suitable health habit: no smoking, no fast driving, eating vegetable	772	3.81	0.90	High	5
4. Adherence to religion and moral principals	772	4.16	0.95	High	2
5. Learning and studying information about how to get a good health	772	3.49	1.11	Middle	11
6. Having adequate and stable living factors	772	3.71	0.96	High	7
7. Having warm family	772	4.17	1.00	High	1
8. Having strong community	772	3.76	1.13	High	6
9. Having peaceful and secure society	772	3.63	0.95	High	8
10. Living in the suitable environment: Green location	772	3.56	0.92	High	9
11. Having appropriate media	772	3.43	0.95	Middle	12
12. The availability of adequate and appropriate health services	772	3.52	0.97	High	10
13. Reception of health information	772	3.40	1.00	Middle	13
14. Annual health checking	772	3.23	1.16	Middle	14

Source: Own Survey, 2013.

According to the main practice of being a good health, most worker give an important on having good relationship with family member and colleague and having food in the appropriate amount, at the high level (Table 6).

About the selection way of treatment when getting sick, most workers prefer to use the service of public hospital (Table 7).

Analysis of demand on purchasing health insurance indicates that most informal workers are not willing to purchase health insurance, amount for 59.2% (Table 8).

TABLE VI THE PARTICIPATION IN BEHAVIOR ADJUSTMENT OF HAVING GOOD HEALTH

(X =772)	Total	Mean	S.D.	Level	Rank
1.Having food in the appropriate amount, not too much eating	772	3.78	1.05	High	2
2.Excercise	772	3.11	1.16	Middle	5
3.Annual health check	772	3.21	1.19	Middle	4
4.Stress control and management	772	3.44	1.00	Middle	3
5.Good relationship with family member and colleague	772	3.84	0.96	High	1
6. Adjust to deal with violent behavior, depression, psychosis	772	2.99	1.33	Middle	7
7.Demand on traditional Thai medicine, Traditional Chinese Medicine	772	2.39	1.23	Low	8
8.Having social network in health protection	772	3.08	1.16	Middle	6

Source: Own Survey, 2013.

TABLE VII WAY OF TREATMENT WHEN GETTING SICK

Way of Treatment When Getting Sick	Total	Mean	S.D.	Level	Rank
1.Not cure	772	2.77	1.30	Medium	3
2.Treatment by Self Purchasing Medicine from Pharmacy Shop	772	3.33	1.24	Medium	2
3.Treatment by Traditional Medicine	772	2.03	1.09	Low	6
4.Treatment at Public Hospital	772	3.67	1.26	High	1
5.Treatment at Private Hospital	772	2.47	1.40	Low	5
6.Treatment at Clinic	772	2.61	1.29	Medium	4

Source: Own Survey, 2013.

TABLE VIII DEMAND ON PURCHASING HEALTH INSURANCE

	Khon Kaen	Percent	Maharakham	Percent	Total
1. Purchase	155	49.21	160	50.79	315
Percent					40.8
2.Not Purchase	231	50.55	226	49.45	457
Percent					59.2
Total	386		386		772

Source: Own Survey, 2013.

Coverage of health insurance design covers wider from cover common disease to serious disease treatment. Insurance types are classified into 5 types as follow:

1. Insurance that covers treatment of common disease.
2. Insurance that covers treatment of common disease, accident, operation, inpatient room not more than 7 days.
3. Insurance that covers treatment of common disease, serious accident, operation, inpatient room not more than 90 days.
4. Insurance that covers treatment of common disease, and chronic disease such as diabetes.
5. Insurance that covers treatment of common disease and serious disease such as cancer.

Results show that worker mostly prefer to pay at the lowest price less than 5,000 Baht/year of all type of insurance. Insurance that cover treatment of common disease, and chronic disease and serious disease, the workers have higher willingness to pay at a higher at the price 5,001-10,000 Baht/year (Table 9).

TABLE IX WILLINGNESS TO PAY ON DIFFERENCE TYPE OF HEALTH INSURANCE

Price of Health Insurance and Willingness to Pay	Total (N=772)	Percent
1. Coverage Treatment of Common Disease		
Less than 5,000 Baht/Year	506	65.54
5,001-10,000 Baht/Year	186	24.09
10,001-15,000 Baht/Year	29	3.76
15,000-20,000 Baht/Year	51	6.61
Above 20,001 Baht/Year	18	2.33
2. Coverage Treatment of Common Disease, Accident, Operation, Inpatient Room not more than 7 Days (Baht/Year)		
Less than 5,000 Baht/Year	460	59.59
5,001-10,000 Baht/Year	178	23.06
10,001-15,000 Baht/Year	58	7.51
15,000-20,000 Baht/Year	42	5.44
Above 20,001 Baht/Year	34	4.40
3. Coverage Treatment of Common Disease, Serious Accident, Operation, Inpatient Room not more than 90 Days (Baht/Year)		
Less than 5,000 Baht/Year	420	54.40
5,001-10,000 Baht/Year	187	24.22
10,001-15,000 Baht/Year	58	7.51
15,000-20,000 Baht/Year	72	9.33
Above 20,001 Baht/Year	35	4.53
4. Coverage Treatment of Common Disease, and Chronic Disease such as Diabetes (Baht/Year)		
Less than 5,000 Baht/Year	379	49.09
5,001-10,000 Baht/Year	203	26.30
10,001-15,000 Baht/Year	67	8.68
15,000-20,000 Baht/Year	76	9.84
Above 20,001 Baht/Year	47	6.09
5. Coverage Treatment of Common Disease and Serious Disease such as Cancer (Baht/Year)		
Less than 5,000 Baht/Year	362	46.89
5,001-10,000 Baht/Year	183	23.70
10,001-15,000 Baht/Year	75	9.72
15,000-20,000 Baht/Year	74	9.59
Above 20,001 Baht/Year	78	10.10

Source: Own Survey, 2013.

Informal Workers Preference on Health Care Insurance

The first part of the study on pattern of health insurance selection indicates that “Silver” health insurance plan is most popular. The next biggest category is “Health Care” pattern.

TABLE X HEALTH CARE INSURANCE COVERAGE OF FOUR TYPES FOR INFORMAL WORKER

Coverage agreement by type of insurance	Beneficial Amount of Money (Baht)			
	Platinum	Silver	Health Care	Save Care
1. The highest coverage in case of not curing in hospital (outpatient) covering overall period of insurance per year.	600,000	250,000	300,000	100,000
	Baht/Year	Baht/Year	Baht/Year	Baht/Year
1.1 -Room payment for common illness, maximum not more than 90 days.	3,500	1,500	Pay actual cost	800
-Room payment for serious illness (ICU), maximum not more than 15 days.	7,000	5,000		2,500
Coverage of room payment for common and serious illness totally not more than 90 days.				
1.2 -Coverage cost of common illness excluding continuous treatment within 30 days.	100,000	50,000	Pay actual cost	25,000
- Coverage cost of consulting doctor case of no surgical. The cost included in general treatment cost.	10,000	5,000	Pay actual cost	2,500
- Coverage cost of ambulance service included in general treatment cost.	2,000	2,000	Pay actual cost	1,000
- Coverage cost of emergency treatment within 24 hours after accident.	10,000	3,000	Pay actual cost	1,500
			3,000	
1.3 -Coverage cost of operation and doctor	100,000	50,000	Pay actual cost	25,000
- Cost of consulting doctor case of surgical	10,000	5,000	Pay actual cost	2,500
			Pay actual cost	
2. Maximum benefit of insured per year for medical treatment that is not admitted in the hospital or outpatient (Cost of outpatients 1 times per day, and 30 times a year, pay per time)	75,000	30,000	No	15,000
	2,500	1,000	No	500
3. Benefit in case of death, dismemberment, sight or permanent disability.	1,000,000	500,000	300,000	200,000
Health care insurance premium included tax	Baht/Year	Baht/Year	Baht/Year	Baht/Year
Age 15-45 years old	24,200	11,000	3,800	5,000
Age 46-60 years old	28,500	14,000	5,700	7,000
Age 61-65 years old	37,400	17,000	9,800	8,500
Percentage of consumer selection	17.68	37.42	28.65	16.26

Source: Own Survey, 2013.

Pattern of health insurance under 4 patterns, which are designed consist with the market circumspect and living cost. The calculation of insurance premium consists with the demand of insurer and the supply of the insurance company. These insurance patterns are presented in the reality market, which has the list of public and private hospital accept these offers of insurance company. These types of insurance are popular, which has many insurance holders. Result indicate that consumer prefer the type of insurance “Silver” and “Health Care” with 37.42% and 28.65% respectively (Table 10).

Main Effects and Two-Way Effects of Multi-Attributes of Health Care Insurance Concepts

The analysis of demand on health care insurance of informal workers applies conjoint analysis to find out the demand on health care insurance. The results present the coverage of health insurance classifies into general sickness coverage and the coverage of health care that include accident and operation. The result shows that the coverage of health care that include accident and operation is most selected with 26% of all occurrence situation from the total of all choice of 0.48.

For the payment of health insurance, this separates into annual payment and every half year payment. Research results shows that annual payment is most popularly choose with 28%. Refer to insurance plan that can be classifies into buy health insurance only and buy health insurance with life insurance. It is interesting that most of informal workers choose to buy health insurance together with life insurance with 48%. Note to the payment for hospital room service, food and health care service, which are the coverage for outpatient cost, inpatient cost and the coverage of both inpatient and outpatient cost.

It concludes that the coverage of both inpatient and outpatient cost are most selected with 32%. Lastly, the rights of choosing insured hospital, that are, public hospital, private hospital and any hospital. Respondents express the result that they choose to insured with public hospital with high percentage of 27% (Table 11).

The analysis of two-way effects regarding health insurance attributes can be attained by orthogonal design. The two-way effects analyzed in this section are:

- (1) Coverage x Insurance Plan,
- (2) Coverage x Inpatient-Outpatient Cost,
- (3) Coverage x Hospital,
- (4) Payment x Insurance Plan,
- (5) Payment x Inpatient-Outpatient Cost,
- (6) Payment x Hospital,
- (7) Insurance Plan x Inpatient-Outpatient Cost,
- (8) Insurance Plan x Hospital,
- (9) Inpatient-Outpatient Cost, and
- (10) None option.

A large Chi Square value suggests a significant interaction effect between the two attributes. The result of the two-way effect contingency table clearly indicates that interaction effect between the attribute of coverage level, payment, insurance plan, Inpatient-Outpatient Cost, and hospital are significant. Results of the two-way effects between the attributes by gender regarding the total sample (N=772) will be discussed first. Thereafter, the sample will be analyzed with respect to gender to determine the possible difference in the preference of health insurance concept between genders.

TABLE XI ATTRIBUTE MAIN EFFECTS IN PERCENT
SIGNIFICANCE LEVELS OF ATTRIBUTES, BY GENDER

Attribute Levels & Chi-square Significance	Gender		
	Total (N=772)	Male (N=308)	Female (N=464)
Coverage			
General Sickness Coverage	0.22	0.22	0.22
Coverage include Accident and Operation	0.26	0.25	0.26
Within Att. Chi-Square	13.78	4.77	9.05
D.F.	1	1	1
Significance	p < .01	p < .05	p < .01
Payment			
Annual Payment	0.28	0.27	0.28
Every Half Year Payment	0.16	0.16	0.16
Within Att. Chi-Square	195.54	73.77	121.84
D.F.	1	1	1
Significance	p < .01	p < .01	p < .01
Insurance Plan			
Buy Health Insurance Only	0.22	0.22	0.22
Buy Health Insurance and Life Insurance	0.26	0.25	0.26
Within Att. Chi-Square	27.79	8.92	19.05
D.F.	1	1	1
Significance	p < .01	p < .01	p < .01
Inpatient-Outpatient Cost			
OPD	0.16	0.16	0.16
IPD	0.21	0.21	0.21
IPD and OPD	0.32	0.31	0.32
Within Att. Chi-Square	277.33	98.48	179.34
D.F.	2	2	2
Significance	p < .01	p < .01	p < .01
Hospital			
Public Hospital	0.27	0.26	0.27
Private Hospital	0.22	0.21	0.22
Public, Private Hospital and Clinic	0.20	0.21	0.20
Within Att. Chi-Square	46.09	17.89	28.35
D.F.	2	2	2
Significance	p < .01	p < .01	p < .01

Source: Own Survey, 2013.

At the first sight, the high preference for “coverage include accident and operation and annual payment”, account for 33%. The next attribute of coverage and insurance plan, it becomes evident that the availability of “coverage include accident and operation and buy health insurance and life insurance” prompts a highest share of the respondents, account for 33%. According to the attribute of coverage and inpatient-outpatient cost, it is the high preference for “General Sickness Coverage and IPD and OPD”, amount for 32%. Next, the attribute of coverage and hospital can explain the higher acceptance rate of “coverage includes accident and operation and public hospital, account 31%. Note to the attribute of payment and insurance plan, “annual payment and buy health insurance and life insurance contain high percentage of 32%. Refer to the attribute of payment and inpatient-outpatient cost, the popular selection are “annual payment and IPD and OPD” with 36%.

For the attribute of payment and hospital, it presents the high rate of 31% on “annual payment and public hospital” attribute. Concerning to the insurance plan and inpatient-outpatient cost attribute, the “buy health insurance and life insurance attribute and IPD and OPD” attribute is most choose with 39%. Notice to the attribute of insurance plan and hospital, it is the highest percentage of 32% on “buy health insurance and life insurance and public hospital”. Finally, the attribute of inpatient-outpatient cost and Hospital identifies that the attribute of “IPD and OPD and public hospital” has very high percentage of 36% (Table 12).

TABLE XII TWO-WAY EFFECTS OF ATTRIBUTE IN PERCENT
OF ALL RESPONDENTS, SIGNIFICANCE LEVELS OF ATTRIBUTES, BY GENDER

Attribute Levels & Chi-square Significance	Gender		
	Total (N=772)	Male (N=308)	Female (N=464)
Coverage x Payment			
General Sickness Coverage x Annual Payment	0.26	0.26	0.27
General Sickness Coverage x Half Year Payment	0.14	0.14	0.14
Coverage include Accident and Operation x Annual Payment	0.33	0.33	0.34
Coverage include Accident and Operation x Half Year Payment	0.2	0.2	0.2
Interaction Chi-Square	3.03	1.04	2.01
D.F.	1	1	1
Significance	not sig	not sig	not sig
Coverage x Insurance Plan			
General Sickness Coverage x Buy Health Insurance Only	0.22	0.22	0.22
General Sickness Coverage x Buy Health Insurance and Life Insurance	0.23	0.22	0.23
Coverage include Accident and Operation x Buy Health Insurance Only	0.2	0.2	0.2
Coverage include Accident and Operation x Buy Health Insurance and Life Insurance	0.33	0.33	0.34
Interaction Chi-Square	53.31	21.71	31.59
D.F.	1	1	1
Significance	p < .01	p < .01	p < .01

Source: Own Survey, 2013.

TABLE XII TWO-WAY EFFECTS OF ATTRIBUTE IN PERCENT OF ALL RESPONDENTS, SIGNIFICANCE LEVELS OF ATTRIBUTES, BY GENDER (CONTINUE)

Attribute Levels & Chi-square Significance	Gender		
	Total (N=772)	Male (N=308)	Female (N=464)
Coverage x Inpatient-Outpatient Cost			
General Sickness Coverage x OPD	0.16	0.16	0.16
General Sickness Coverage x IPD	0.19	0.19	0.19
General Sickness Coverage x IPD and OPD	0.32	0.31	0.32
Coverage include Accident and Operation x OPD	0.18	0.19	0.18
Coverage include Accident and Operation x IPD	0.24	0.24	0.24
Coverage include Accident and Operation x IPD and OPD	0.31	0.3	0.31
Interaction Chi-Square	13.6	5	8.65
D.F.	2	2	2
Significance	p < .01	not sig	p < .05
Coverage x Hospital			
General Sickness Coverage x Public Hospital	0.25	0.25	0.25
General Sickness Coverage x Private Hospital	0.21	0.2	0.21
General Sickness Coverage x Public, Private Hospital and Clinic	0.21	0.21	0.21
Coverage include Accident and Operation x Public Hospital	0.31	0.3	0.31
Coverage include Accident and Operation x Private Hospital	0.24	0.24	0.24
Coverage include Accident and Operation x Public, Private Hospital and Clinic	0.18	0.19	0.18
Interaction Chi-Square	15.48	5.43	10.2
D.F.	2	2	2
Significance	p < .01	not sig	p < .01
Payment x Insurance Plan			
Annual Payment x Buy Health Insurance Only	0.24	0.24	0.24
Annual Payment x Buy Health Insurance and Life Insurance	0.32	0.31	0.32
Half Year Payment x Buy Health Insurance Only	0.18	0.18	0.18
Half Year Payment x Buy Health Insurance and Life Insurance	0.11	0.11	0.11
Interaction Chi-Square	98.83	33.83	65.32
D.F.	1	1	1
Significance	p < .01	p < .01	p < .01
Payment x Inpatient-Outpatient Cost			
Annual Payment x OPD	0.2	0.2	0.2
Annual Payment x IPD	0.23	0.23	0.23
Annual Payment x IPD and OPD	0.36	0.35	0.36
Every Half Year Payment x OPD	0.12	0.12	0.12
Every Half Year Payment x IPD	0.18	0.18	0.17
Every Half Year Payment x IPD and OPD	0.21	0.21	0.22
Interaction Chi-Square	11.29	5.37	5.98
D.F.	2	2	2
Significance	p < .01	not sig	not sig

Source: Own Survey, 2013.

TABLE XII TWO-WAY EFFECTS OF ATTRIBUTE IN PERCENT OF ALL RESPONDENTS, SIGNIFICANCE LEVELS OF ATTRIBUTES, BY GENDER (CONTINUE)

Attribute Levels & Chi-square Significance	Gender		
	Total (N=772)	Male (N=308)	Female (N=464)
Payment x Hospital			
Annual Payment x Public Hospital	0.31	0.31	0.31
Annual Payment x Private Hospital	0.26	0.26	0.27
Annual Payment x Public, Private Hospital and Clinic	0.22	0.22	0.22
Every Half Year Payment x Public Hospital	0.16	0.15	0.17
Every Half Year Payment x Private Hospital	0.15	0.16	0.15
Every Half Year Payment x Public, Private Hospital and Clinic	0.19	0.19	0.19
Interaction Chi-Square	26.66	14.83	13.14
D.F.	2	2	2
Significance	p < .01	p < .01	p < .01
Insurance Plan x Inpatient-Outpatient Cost			
Buy Health Insurance Only x OPD	0.17	0.17	0.17
Buy Health Insurance Only x IPD	0.22	0.23	0.22
Buy Health Insurance Only x IPD and OPD	0.26	0.26	0.27
Buy Health Insurance and Life Insurance x OPD	0.11	0.12	0.1
Buy Health Insurance and Life Insurance x IPD	0.19	0.18	0.19
Buy Health Insurance and Life Insurance x IPD and OPD	0.38	0.37	0.39
Interaction Chi-Square	101.37	35.53	67.7
D.F.	2	2	2
Significance	p < .01	p < .01	p < .01
Insurance Plan x Hospital			
Buy Health Insurance Only x Public Hospital	0.22	0.22	0.22
Buy Health Insurance Only x Private Hospital	0.21	0.21	0.21
Buy Health Insurance Only x Public, Private Hospital and Clinic	0.21	0.22	0.21
Buy Health Insurance and Life Insurance x Public Hospital	0.32	0.32	0.33
Buy Health Insurance and Life Insurance x Private Hospital	0.22	0.22	0.22
Buy Health Insurance and Life Insurance x Public, Private Hospital and Clinic	0.18	0.18	0.18
Interaction Chi-Square	40.98	14.86	26.16
D.F.	2	2	2
Significance	p < .01	p < .01	p < .01
Inpatient-Outpatient Cost x Hospital			
OPD x Public Hospital	0.21	0.23	0.2
OPD x Private Hospital	0.14	0.14	0.15
OPD x Public, Private Hospital and Clinic	0.18	0.19	0.18
IPD x Public Hospital	0.2	0.19	0.2
IPD x Private Hospital	0.24	0.24	0.24
IPD x Public, Private Hospital and Clinic	0.19	0.19	0.18
IPD and OPD x Public Hospital	0.36	0.35	0.36
IPD and OPD x Private Hospital	0.29	0.29	0.3
IPD and OPD x Public, Private Hospital and Clinic	0.26	0.26	0.27
Interaction Chi-Square	46.95	21.46	26.18
D.F.	4	4	4
Significance	p < .01	p < .01	p < .01
None	0.08	0.08	0.07

Source: Own Survey, 2013.

Multinomial Logit Estimation of Average Utility Values for Health Insurance Attributes

Table 13 presents the multinomial logit estimation of average utility value of all informal workers. The highest total effect of attribute level is the coverage of insurance on inpatient (IPD) and outpatient (OPD) cost.

Considering to the coverage of health care insurance, most informal workers select coverage of insurance not only on general sickness but also accident and operation, with a part-worth value at 0.1157. Within level, coverage of general sickness only decrease demand on health insurance of informal worker.

The insurance payment present that informal workers mostly prefer annual insurance premium payment with a part-worth value at 0.29312. The period of premium payment, which pays insurance every half year, has the minus utility effect. This means that informal worker feel time loss, must remember the due date of payment and inpatient on paying premium many times a year.

TABLE XIII MULTINOMIAL LOGIT ESTIMATION OF AVERAGE UTILITY OF HEALTH CARE INSURANCE ATTRIBUTE AND ITS RELATIVE IMPORTANCE

	Total Effect	Std Err	t Ratio
Coverage			
1 Coverage of General Sickness	-0.1157	0.02578	-4.48883
2 Coverage include Accident and Operation	0.1157	0.02578	4.48883
Relative importance in %	16.55%		
Payment			
1 Annual Payment	0.29312	0.02383	12.29875
2 Every Half Year Payment	-0.29312	0.02383	-12.29875
Relative importance in %	29.43%		
Insurance Plan			
1 Buy Health Insurance Only	0.02232	0.02193	1.01755
2 Buy Health Insurance and Life Insurance	-0.02232	0.02193	-1.01755
Relative importance in %	30.05%		
Inpatient-Outpatient Cost			
1 Outpatient Cost (OPD)	-0.24007	0.03087	-7.77616
2 Inpatient Cost (IPD)	-0.05879	0.02713	-2.16665
3 Inpatient-Outpatient Cost (IPD and OPD)	0.29886	0.02554	11.69986
Relative importance in %	16.40%		
Hospital Claim			
1 Public Hospital	0.01953	0.03274	0.59646
2 Private Hospital	-0.04516	0.02681	-1.68414
3 Public, Private Hospital and Clinic	0.02563	0.03838	0.66778
Relative importance in %	7.56%		
NONE			
Relative importance in %	0.01%		
Chi Square	941.98562		

Source: Own Survey, 2013.

Insurance plan that create the highest incentive is buy health insurance only with a part-worth value at 0.02232. Insurance choice of buying health insurance together with life insurance indeed the insurer gets the benefit of money return.

This case is differently from buying health insurance solely that money loss yearly if consumer not claims insurance. However, this insurance plan has low response. The coverage on the cost of hospital room, food and health care expense in the case of inpatient (IPD) and outpatient (OPD) cost is most popular with a part-worth value at 0.29886.

On the other hand, the coverage of cost scope only on inpatient or outpatient that have negative utility. The claim of health care cost from hospital that informal workers most preferred is the cost claim from public and private hospital including clinic with a part-worth value at 0.02563.

Going into the detail, the limitation of health care insurance on private hospital contain the lowest total effect account for -0.04516. Informal worker feel familiar with public hospital and feel flexible if insurance can use and claim from public, private hospital and clinic. Relative importance of health care insurance of informal worker present that which attribute level influenced on the decision of them on health care insurance.

Analytical results indicate that informal worker pay attention on the attribute of insurance plan with the highest percentage at 30.05%. The next biggest categories are the payment attribute, amounting for 29.43%.

The third rank is the coverage attribute, accounting for 16.55%. The following is the inpatient-outpatient cost attribute, with 16.4%. Lastly, the claim of insurance from hospital attribute is at 7.56%. According to none option has relative importance at 0.01%.

Market Simulation Analysis of Health Insurance Concepts

The analysis of health care insurance plans is different from model to model. The share of preference (SP) model can be applied to use in term of aggregate data. Share of preference is the sum of utility in difference choice. The utility value is exponential value that will be transform into percentage that the summation of total is 100. It is susceptible to the independence of irrelevant alternatives (IIA) property which is related with aggregate logit model.

This part presents the estimation of utility value. It applied to estimate value and rank relative important in the selection of consumer on the attribute level. Informal worker has satisfaction on different choice of competitive health insurance. Result of model at the aggregate scale will be use to understand the important of choice that has incorporating heterogeneity.

Next step of analyzing health care insurance model will set the base case scenario that will reflect current market choice or future market competition. Assuming that health insurance model 1 is base case scenario of alternative choice in market. Next, assuming that the new offer of health care insurance model may be the potential choice and aim to find out that whether this alternative choice has potential or not. Each level of health care insurance model 1 contains the highest satisfaction.

When compare health care insurance in different models, it shows that health care insurance that informal worker has highest share of preference in the first ranking is health insurance model 7, account for 19.47%. The next ranking is health insurance model 4 and 6, respectively (Table 14).

TABLE XIV MARKET SHARE OF INSURANCE SPECIFICATION

Insurance Concepts	Attribute					Shares of Preference	Rank
	Coverage	Payment	Insurance Plan	Inpatient-Outpatient Cost	Hospital		
1	2 Coverage include Accident and Operation	1 Annual Payment	2 Buy Health Insurance and Life Insurance	3 Inpatient-Outpatient Cost (IPD and OPD)	1 Public Hospital	10.84	5
2	2 Coverage include Accident and Operation	1 Annual Payment	1 Buy Health Insurance Only	2 Inpatient Cost (IPD)	1 Public Hospital	8.91	7
3	2 Coverage include Accident and Operation	2 Every Half Year Payment	2 Buy Health Insurance and Life Insurance	2 Inpatient Cost (IPD)	3 Public Private Hospital and Clinic	5.43	8
4	1 Coverage of General Sickness	1 Annual Payment	2 Buy Health Insurance and Life Insurance	3 Inpatient-Outpatient Cost (IPD and OPD)	1 Public Hospital	13.9	2
5	2 Coverage include Accident and Operation	1 Annual Payment	2 Buy Health Insurance and Life Insurance	2 Inpatient Cost (IPD)	1 Public Hospital	5.03	9
6	2 Coverage include Accident and Operation	1 Annual Payment	2 Buy Health Insurance and Life Insurance	2 Inpatient Cost (IPD)	2 Private Hospital	13.49	3
7	2 Coverage include Accident and Operation	1 Annual Payment	1 Buy Health Insurance Only	3 Inpatient-Outpatient Cost (IPD and OPD)	1 Public Hospital	19.47	1
8	1 Coverage of General Sickness	1 Annual Payment	1 Buy Health Insurance Only	1 Outpatient Cost (OPD)	1 Public Hospital	10.39	6
9	2 Coverage include Accident and Operation	2 Every Half Year Payment	2 Buy Health Insurance and Life Insurance	3 Inpatient-Outpatient Cost (IPD and OPD)	3 Public, Private Hospital and Clinic	12.53	4

Source: Own Survey, 2013.

The highest share of preference of the insurance plans from table 10 is selected to rank share of preference again. At the end, it finds out that model 7 and 6 are most popular (Table 15).

TABLE XV MARKET SHARE OF PREFERENCE OF THE BEST INSURANCE SPECIFICATION

Insurance Concepts	Attribute					Shares of Preference	Rank
	Coverage	Payment	Insurance Plan	Inpatient-Outpatient Cost	Hospital		
1	2 Coverage include Accident and Operation	1 Annual Payment	2 Buy Health Insurance and Life Insurance	3 Inpatient-Outpatient Cost (IPD and OPD)	1 Public Hospital	13.33	5
4	1 Coverage of General Sickness	1 Annual Payment	2 Buy Health Insurance and Life Insurance	3 Inpatient-Outpatient Cost (IPD and OPD)	1 Public Hospital	15.43	4
6	2 Coverage include Accident and Operation	1 Annual Payment	2 Buy Health Insurance and Life Insurance	2 Inpatient Cost (IPD)	2 Private Hospital	19.18	2
7	2 Coverage include Accident and Operation	1 Annual Payment	1 Buy Health Insurance Only	3 Inpatient-Outpatient Cost (IPD and OPD)	1 Public Hospital	25.09	1
8	1 Coverage of General Sickness	1 Annual Payment	1 Buy Health Insurance Only	1 Outpatient Cost (OPD)	1 Public Hospital	11.41	6
9	2 Coverage include Accident and Operation	2 Every Half Year Payment	2 Buy Health Insurance and Life Insurance	3 Inpatient-Outpatient Cost (IPD and OPD)	3 Public, Private Hospital and Clinic	15.57	3

Source: Own Survey, 2013.

Policy Recommendation

The providing health care insurance for informal worker, firstly the policymaker should recognize about the insurer income, expenditure and household burden. Informal workers in Thailand are very different status between region and occupation. The arrangement of health care insurance should consider the ability to pay. Moreover, the work of informal workers are not stable and they have unfluated income flow. According to this research, most workers have average income 5,887 Baht/month and average household income at 30,114 Baht/month. After deducting expenditure, workers mostly have very small amount of saving. Therefore, the setting social welfare system about informal worker insurance should notice about income. Furthermore, the analysis of the health care expenditure present that each workers have high health care expenditure. Most wokers have average health expenditure 7,614 Baht/year. Health care expenditure of other family members are average at 8,669 Baht/year. After deducting their health care expenditure from their income, they have less money to pay insurance premium. If the insurance premium is too high, it may not have any response even the insurance sheme is interesting. Refer to the household burden, most workers are hired workers, who have average family member 4 persons per household. The expenditure for burden group in family is very high. So, the caring of self health care is in the middle to low level. That is why health insurance premium should not too high beyond their ability to pay.

Secondly, factors affecting on getting sick consist of chemical, physical, biological, organomic factors, past experience way of living, the degeneration of organ and the genetic risk to disease factors. The severity of these factors are ranked in the middle to low level. The average rank of factor affecting to getting good health are ranked in the high level. The negative factors to health are middle to low level while the positive factors to health are in high level. They have quite good health factors. The setting of coverage of insurance should incentive them to purchase it.

Thirdly, price of insurance should classifies according to the coverage of treatment in order to reduce the budget that government must pay to support the insurance system. The insurers can estimate to select the insurance response to their need and consist with their own health and mental. For example, the one who encounter with serious illness such as chronic disease, may want to purchase the wider scope of insurance to cover their health risk and they must to pay more.

Fourthly, from survey most respondents receive information about health care insurance, about 96.24%. Most of them have 30 Baht or universal health care insurance card, account for 64.77%. The rest do not have any health care card. The thing to improve about health care system is the distribution of universal health care insurance card, service and the wider coverage reach to target group.

Fifthly, the development of health care system of Thailand should invest about the computer technology related to the recording database of patient that will help the operation system faster. The development of the service quality by developing the service standard of medical staffs up to international standard. Note to the research result, most workers accept knowledge about the benefit of health care insurance. Most of them have experience on using universal health care card and very satisfied on using this card. Problem of using this card quite low. Hence, government should develop more on the existing health care system. Research result suggest that insurance premium cover common disease and outpatient should be at 2,001-3,000 Baht per year. Insurance premium cover common disease, accident, operation and stay in hospital within 7 days should be at 3,001-4,000 Baht per year. Insurance premium cover common sickness, serious accident, operation, hospital room within 90 days should be at 3,001-4,000 Baht per year. Insurance premium cover chronic disease such as diabete should be at 3,001-4,000 Baht per year. Insurance premium cover serious disease such as cancer should be at 4,001-5,000 Baht per year. The existing government health care insurance is free. So, the new insurance pattern price should not offer too expensive because customers always compare the benefit with the original insurance scheme.

Sixthly, the arrangement of health care insurance should think about demand on health care insurance. Analytical part finds that coverage of health insurance separate into ggeneral sickness coverage, and coverage include accident and operation. It presents that coverage of accident and operation is selected for 26%. Payment of insurance premium divides into annual payment and every half year payment. It shows that annual payment is most popular with 28% Insurance plan classifies into buy health insurance only and buy health insurance and life insurance. Buying health insurance together with life insurance is highest selection. The coverage of hospital room price and medical service are cover medical cost as out-patient, in-patient and in-patient and out-patient cost. It concludes that the coverage of in-patient and out-patient cost is mostly choose for 32%. The medical service use range into public hospital, private hospital and all hospital. Survey indicate that the unlimited use of hospitals are popular with 27%. Therefore, the providing health care insurance should think about the need of insurer. From this research, insurers want insurance that cover common disease, accident and operation, annual payment, buying health insurance together with life insurance, the coverage of inpatient and outpatient cost and the rights to claim medical cost from public hospital

Therefore, the providing of health care insurance, the policymakers should consider about the demand side of the insurer, that are, income, ability to pay, coverage of insurance that meet the need of insurer. The

supply side of the insurance provider that should be consider is the budget and benefit level. Good arrangement of health care insurance, both side of the relevance of insurance system should match the need together.

Conclusion

Informal workers are large number and have an important role in driving the economy of the country. Thailand consists of a numerous informal workers who lack of social security. When population gets sick whether heavy or serious illness, they should be protected and treated in accordance with international standards. The welfare arrangements for the informal workers are under paying attention. This welfare system has been continuous improvement from the past to the present. At present, the ministry of labor let the labor to apply social security to get the benefits for two choices in case of sickness. However, the implementation of this project requires huge amounts of public funds to subsidize the project.

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