

**THE STUDY OF HEALTH SECURITY AMONG THAI
POPULATION**



**A THESIS SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR
THE DEGREE OF DOCTOR OF PHILOSOPHY
(DEMOGRAPHY)
FACULTY OF GRADUATE STUDIES
MAHIDOL UNIVERSITY**

2008

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Thesis
Entitled

**THE STUDY OF HEALTH SECURITY AMONG THAI
POPULATION**



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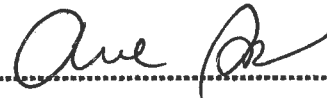
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ACKNOWLEDGEMENT

I would like to express my gratitude to all those who gave me the possibility to complete this thesis. I am deeply indebted to my major advisor Prof. Dr. Pramote Prasartkul whose help, stimulating suggestions and encouragement helped me in all the time of research for and writing of this thesis. My appreciation goes to Assoc. Prof. Dr. Varachai Thongthai and Asst. Prof. Dr. Aree Jampaklay, my co-advisors, for their constructive comments, supervision and encouragement. The criticism and advice received from Assoc. Dr. Arnat Leemakdej, my external member of the thesis committees, was very useful and contributed very much to the improvement of this thesis. Many thanks are expressed to him.

I am deeply grateful to the Wellcome Trust and also thankful to Faculty of Graduate Studies, Mahidol University for the scholarship that enabled me to undertake studying this program and this thesis.

I wish to thank all staffs of the Institute for Population and Social Research, Mahidol University for their welcome. I wish to extend my sincere appreciation to all of my friends for their help, support, interest, and their valuable hints.

Finally, I am gratefully indebted and most thankful to my family for their waiting, encouragement and comfort. Especially, I would like to give my special thanks to my wife Anni whose patient love enabled me to complete this work. My life is really complete because of her.

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THE STUDY OF HEALTH SECURITY AMONG THAI POPULATION

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Ph.D. (DEMOGRAPHY)

THESIS ADVISORS: PRAMOTE PRASARTKUL, Ph.D.,
VARACHAI THONGTHAI, Ph.D., AREE JAMPAKLAY, Ph.D.**ABSTRACT**

This dissertation studies the health security among Thai people, which covers four major schemes; Universal Coverage, Social Security, Civil Servant Medical Benefits and Private Insurance. The background, benefits and service utilization of each health insurance scheme are explored. This study also examines the effects of demographic factors on having secondary health insurance. The data are obtained from the Kanchanaburi Demographic Surveillance System (KDSS) conducted by the Institute for Population and Social Research, Mahidol University, Round 3 (2002) and Round 4 (2003). The logistic regression technique is employed to analyze the data.

It is found that age, nationality, marital status, education, occupation, wealth, living place, health status, health behavior, risk behavior and having primary health insurance are statistically significantly associated with having secondary health insurance. While controlling the socio-economic factors and health factors, the chance of having secondary health insurance in each category increases with age and males are more likely to have only private health insurance than females.

It can be suggested that having secondary health insurance for the present and the future, beginning from an early working age, and particularly for females, should be promoted. The government should encourage people to have secondary health insurance instead of depending upon only the primary health insurance provided by the government. This is a way to reduce burden on the government budget to manage health security of the people.

KEY WORDS: HEALTH SECURITY/ SECONDARY HEALTH INSURANCE/
UNIVERSAL COVERAGE/ SOCIAL SECURITY/ CIVIL
SERVANT/ MEDICAL BENEFITS

74 pp.

การศึกษาหลักประกันสุขภาพของคนไทย
(THE STUDY OF HEALTH SECURITY AMONG THAI POPULATION)

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บทคัดย่อ

วิทยานิพนธ์นี้ศึกษาหลักประกันสุขภาพของคนไทย ซึ่งประกอบไปด้วย 4 ระบบหลักในปัจจุบัน ได้แก่ หลักประกันสุขภาพถ้วนหน้า ระบบการประกันสังคม ระบบสวัสดิการการรักษาพยาบาลของข้าราชการ และการประกันภาคเอกชน ในเนื้อหาจะกล่าวถึงความเป็นมา สิทธิประโยชน์ และการให้บริการของแต่ละระบบ การศึกษานี้ยังตรวจสอบผลกระทบของปัจจัยทางด้านประชากรต่อการมีหลักประกันสุขภาพรอง ข้อมูลที่ใช้ได้จากข้อมูลการเฝ้าระวังทางประชากร จังหวัดกาญจนบุรีของสถาบันวิจัยประชากรและสังคม มหาวิทยาลัยมหิดล รอบที่ 3 ปี พ.ศ. 2542 และ รอบที่ 4 ปี พ.ศ. 2543 การวิเคราะห์ข้อมูลอาศัยเทคนิคการวิเคราะห์การถดถอยแบบลอจิสติก

ผลการวิเคราะห์ข้อมูล พบว่า อายุ สัญชาติ สถานภาพสมรส การศึกษา อาชีพ ความมั่งคั่ง ถิ่นที่อยู่ สถานะทางสุขภาพ พฤติกรรมทางด้านสุขภาพ พฤติกรรมเสี่ยงทางด้านสุขภาพ และการมีหลักประกันสุขภาพหลักมีความสัมพันธ์อย่างมีนัยสำคัญทางสถิติต่อการมีหลักประกันสุขภาพรอง เมื่อทำการควบคุมปัจจัยทางด้านเศรษฐกิจสังคมและปัจจัยทางด้านสุขภาพแล้ว พบว่า โอกาสของการมีหลักประกันสุขภาพรอง ไม่ว่าจะเป็นการออม การเป็นสมาชิกสหกรณ์ การมีประกันชีวิต และการมีประกันสุขภาพเอกชนจะเพิ่มขึ้นตามอายุ แต่ผู้ชายมีโอกาสที่จะซื้อประกันสุขภาพเอกชนมากกว่าผู้หญิงอย่างมีนัยสำคัญ

จากข้อค้นพบมีข้อเสนอแนะว่า การมีหลักประกันสุขภาพรองสำหรับปัจจุบันและอนาคต ตั้งแต่วัยที่เริ่มต้นทำงาน และ โดยเฉพาะผู้หญิงควรจะได้รับส่งเสริม รัฐควรสนับสนุนให้คนในสังคมตระหนักถึงการมีหลักประกันสุขภาพรองมากยิ่งขึ้นแทนที่จะพึ่งพาหลักประกันสุขภาพหลักซึ่งจัดโดยภาครัฐเพียงอย่างเดียว การส่งเสริมให้คนมีหลักประกันสุขภาพรองเป็นวิธีหนึ่งที่จะลดภาระด้านงบประมาณในการจัดการเกี่ยวกับสุขภาพอนามัยของประชาชน

74 หน้า

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CHAPTER I

INTRODUCTION

1.1 Background and Rationale

Every people cannot avoid the sickness whether they are the rich or the poor. It is considered as a burden of not only each individual but also their family and social. Health insurance, therefore, is the most importance financial mechanism in order to construct the health security which is a minimum guarantee to let people can access the health care services without the obstacle of financial problem when their illness occurred.

Health insurance can be provided by the government or private sector. But, public provision health insurance is able to cover every people equally and equitably than private health insurance which usually are the rich can use their service only because of financial condition of the poor. Also, it can be enforced by law and managed in sense of unprofitable target.

In Thailand, the public provision health insurance was firstly happened in 1963 for civil servants and their family under condition to compensate their minimum wage paid by the government. The health insurance for civil servants and their family was called “Civil Servant Medical Benefits”.

In 1972, the Government by the Revolutionary Party decided that employees who sustained injuries or illness or who died as a result of working for the employer should be secured that they would receive compensation money. As a result, a compensation fund was established in the Department of Labor with the intention to protection security to employees who were ill or injured in relation to performance of work. Under Social Security Act in 1990, the employees would receive protection in the capacity as the insured under a total of 7 circumstances, namely: illness or accident; physical disability; death not related to performance of work; child delivery; old age, child assistance and unemployment.

For the people who work in the informal sector which is the biggest group, the health insurance was provided for those who are the poor in the first group in 1975. Then, the coverage of this project had extended to other group of people such as elderly, child who aged 0-12 years old, disable person, etc. Until 2001, the Government by the Thai Rak Thai Party, had proposed the health care policy in order to let all Thai citizens who did not have any kinds of health insurance provided by the government yet would be received the public provision health insurance, known as “30 baht program” or “Universal Coverage”.

In present, there are three major health insurance schemes provided by the government, namely, Universal Coverage (UC), Social Security (SS) and Civil Service Medical Benefits (CSMB). These health insurance schemes in this study are called as primary health insurance.

Actually, to construct the health security should not be the responsibility of the government only but also the health security should be come from individual by having the additional health insurance in term of financial guarantee such as savings, cooperative shares, life and health insurance from private company etc. These kinds of health insurance are called as secondary health insurance in this study. Some people decided to use the secondary health insurance because they do not have confident and do not receive convenience in health care services from primary health insurance.

Many research focused to study the accessibility, equity, and quality of service utilization in primary health insurance (e.g. Santiyanont et al, 2007; Sridhamrongsawat, 2006; ABAC, 2006) but there were a few of research that talking about secondary health insurance in term of savings, cooperative shares, life and health insurance from private company to encourage people have more secondary health insurance in whatever types is the way to reduce the burden of government budget.

Therefore, this dissertation aims to study the primary health insurance in Thailand and to find what factors determining people to have secondary health insurance i.e. savings, cooperative shares, life insurance and private health insurance. How are the health securities in Thailand and which groups of people should be encouraged to have secondary health insurance are the main questions leading to find the answers and suggest something based on findings to improve health security system in Thailand.

1.2 Research Questions

1. How are the health securities in Thailand?
2. What factors determining people to have secondary health insurance?

1.3 Research Objectives

1. To study the health securities among Thai population.
2. To determine factors affecting the secondary health insurance.

CHAPTER II

CONCEPTS RELATED TO HEALTH SECURITY

Four main sections are used to discuss the concepts related to health security for this dissertation. Firstly, the concept of human security is proposed in order to be relevant with the health security. The second section deals with theories of factors determining people to have secondary health insurance in terms of saving and investment. The third one is to clarify what is the life cycle hypothesis as the root of classical economic theory. Finally, risk aversion concept is required to explain personal behavior with investment under risk. This study applied these concepts to construct the conceptual framework, data analysis, and discussion of results.

2.1 Human Security

Actually, the core of all security is human so it is necessary to perceive the concepts of human security officially proposed first time in Human Development Report of United Nation Development Program in 1994. Human security concept refers to an emerging paradigm for understanding global vulnerabilities, which is challenging the traditional notion of national security. It is arguing that the security should concentrate on the individual level rather than the state level. Human security based on a people-centered concept of security is necessary for national, regional and global stability (UNDP, 1994).

Following the definition of human security, UNDP (1994) has mentioned the scope of global security should be expanded to include threats in seven areas:

2.1.1 Economic security

Economic security requires an assured basic income for individuals, usually from productive and remunerative work or, as a last resort, from a publicly financed safety net. In this sense, only about a quarter of the world's people are presently economically secure. While the economic security problem may be more serious in developing countries, concern also arises in developed countries as well. Unemployment problems constitute an important factor underlying political tensions and ethnic violence.

2.1.2 Food security

Food security requires that all people at all times have both physical and economic access to basic food. According to the United Nations, the overall availability of food is not a problem; rather the problem often is the poor distribution of food and a lack of purchasing power. In the past, food security problems have been dealt with at both national and global levels. However, their impacts are limited. According to UN, the key is to tackle the problems relating to access to assets, work and assured income (related to economic security).

2.1.3 Health security

Health Security aims to guarantee a minimum protection from diseases and unhealthy lifestyles. In developing countries, the major causes of death are infectious and parasitic diseases, which kill 17 million people annually. In industrialized countries, the major killers are diseases of the circulatory system, killing 5.5 million every year. According to the United Nations, in both developing and industrial countries, threats to health security are usually greater for poor people in rural areas, particularly children. This is mainly due to malnutrition and insufficient supply of medicine, clean water or other necessity for healthcare.

2.1.4 Environmental security

Environmental security aims to protect people from the short- and long-term ravages of nature, man-made threats in nature, and deterioration of the natural environment. In developing countries, lack of access to clean water resources is one of the greatest environmental threats. In industrial countries, one of the major threats is air pollution. Global warming, caused by the emission of greenhouse gases, is another environmental security issue.

2.1.5 Personal security

Personal security aims to protect people from physical violence, whether from the state or external states, from violent individuals and sub-state actors, from domestic abuse, or from predatory adults. For many people, the greatest source of anxiety is crime, particularly violent crime.

2.1.6 Community security

Community security aims to protect people from the loss of traditional relationships and values and from sectarian and ethnic violence. Traditional communities, particularly minority ethnic groups are often threatened. About half of the world's states have experienced some inter-ethnic strife. The United Nations declared 1993 the Year of Indigenous People to highlight the continuing vulnerability of the 300 million aboriginal people in 70 countries as they face a widening spiral of violence.

2.1.7 Political security

Political security is concerned with whether people live in a society that honors their basic human rights. According to a survey conducted by Amnesty International, political repression, systematic torture, ill treatment or disappearance was still practiced in 110 countries. Human rights violations are most frequent during periods of political unrest. Along with repressing individuals and groups, governments may try to exercise control over ideas and information.

Achievement to make the target of human security has to apply two main approaches, namely “Freedom from Want” and “Freedom from Fear”. According to UNDP 1994, "Freedom from Want" focuses on the basic idea that violence, poverty, inequality, diseases, and environmental degradation are inseparable concepts in addressing the root of human insecurity. Different from "Freedom from Fear", it expands the focus beyond violence with emphasis on development and security goals (UNDP, 1994). Those concepts developed human security have been applied in Thailand also. The definition of human security based on the concept of “Freedom from Want” and “Freedom from Fear”, which is including in Thai context and knowledge, is consist of respect to human rights, enduring development, sufficiency economics philosophy, self-reliance, happiness life, mind security, peace and help each other is an example (BSDHSS, 2006).

Bureau of Social Development and Human Security Standards (2006) has reported that the situation of human security in Thailand is now good situation according to the report of human security situation in Thailand collected the data from many government offices. There are ten dimensions related with human security such as house, health, education, employment and income, personal security, family, social support, culture, rights and equity, and politics and good governance. There are 56 indicators with score range 0 - 1. The score in overall of Thailand is 0.7. Culture dimension is the highest score but politics and good governance is the lowest score. For the health dimension, they state that Thai population has healthy status, which considered from number of bed, physician, dentist, nurse and proportion between HIV/AIDS patient and total population.

2.2 Theories of the Determinants of Savings and Asset Accumulation

Berverly et al. (2008) have mentioned the existing theories of the determinants of saving and asset accumulation may be classified into three categories: (1) neoclassical economic, (2) psychological and sociological, and (3) behavioral economic. (See Figure 2.1)

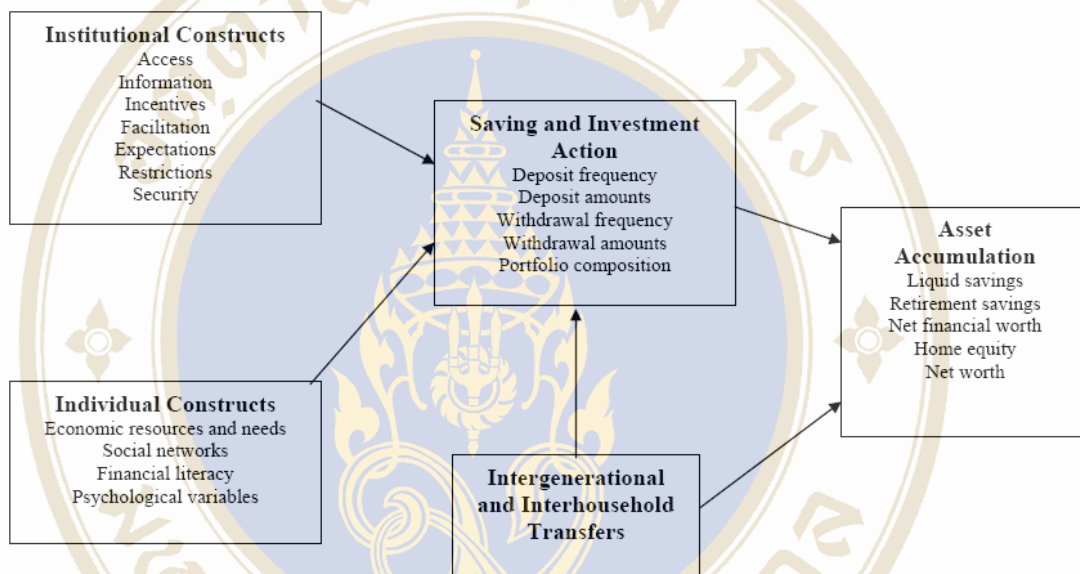


Figure 2.1 Determinants of Saving and Investment Action and Asset Accumulation

Sources: Berverly et al. (2008)

Neoclassical economic models assume that individuals are rational beings who respond in predictable ways to changes in incentives. Many economic models also assume that individuals have perfect knowledge and access to perfect markets. Early models put primary emphasis on income and age (or stage in the life cycle) as predictors of saving and asset accumulation. More recent models have emphasized the desire to leave a bequest, the desire for precautionary savings, and, most recently, the effects of public policy on precautionary saving. The most recent models are an important advance because they are more explicitly policy-oriented and because they suggest a possible policy pathway for increasing wealth.

Psychological and sociological theories consider personal determinants of saving, including personality characteristics, aspirations, expectations, and peer and family influences. Although these factors may help explain low levels of wealth in the low-income population, they offer few clear policy recommendations for increasing wealth.

The behavioral economic theory of saving is rooted in neoclassical economic theory but rejects the assumption that people are rational and all-knowing. Behavioral theorists have identified a number of common human characteristics that shape financial behavior, including lack of self-control, limited cognitive abilities, inertia, the tendency to interpret default options as “advice,” and the tendency to use mental accounting techniques.

None of the existing theories provides a suitable explanation for saving and asset accumulation in low-income households. Neoclassical economic models tend to be specified clearly and tested rigorously, and there is an extensive body of scholarly work. But these models tend to make unrealistic assumptions, such as the assumptions that individuals have near-perfect knowledge and are forward-thinking and rational. In reality, the decisions required to optimize consumption (and other financial goals) over the life course are “extraordinarily complex” (Bernheim and Scholz, 1993), and empirical studies suggest that the majority of Americans lack the financial sophistication and information to make even basic economic calculations (Bernheim, 1994). Since low-income individuals may also have limited financial sophistication, they may have trouble making optimal long-term decisions regarding saving and consumption.

Neoclassical models also assume that saving-related preferences are fixed. The lack of discussion about origins of preferences suggests that preferences are the product of stable personality characteristics. Thus, neoclassical economic models may implicitly “blame” individuals for low rates of saving and asset accumulation, and they may offer no policy pathway for improvement.

Psychological propositions that emphasize personality characteristics also “blame” individuals and have little to offer in the way of policy implications. Some of the propositions offered by psychologists and sociologists attend to the origins of preferences and aspirations and so are less likely to imply that individuals are solely responsible for limited asset accumulation. Relatively few of these propositions have been tested, however.

Behavioral theory is an important advance. It makes more realistic assumptions about individuals. Thus, behavioral theory complements and advances psychological as well as economic theories of saving. The number of empirical studies examining behavioral propositions is growing rapidly. Although behavioral theory appears to describe most individuals quite accurately, it sometimes emphasizes individual deficiencies. Theory could move beyond this focus on individuals to emphasize institutions that can encourage saving and asset accumulation by accounting for, and perhaps even taking advantage of, individual tendencies. The behavioral literature seems to be moving in this direction, and a merging of behavioral and institutional theory seems likely in the future (Berverly et al, 2008).

These existing theories related to find what factors determining people to have secondary health insurance (i.e. savings, cooperative share, life and health insurance) can be used to construct the conceptual framework. And, the results from data analysis can be explained through these theories whether consistent with the independent variables in the model or not.

2.3 Life Cycle Hypothesis

The life cycle hypothesis makes use of the interaction between income, consumption, saving, wealth and age. Early articles are by Modigliani and Brumberg (1954), Modigliani and Ando (1957), and Ando and Modigliani (1963). A review of the life cycle hypothesis is given by Modigliani (1986) in his Nobel Prize lecture (Heertje, 1993).

Figure 2.2 shows that people will have low income when they were young and then their income will continuously increase until they get old, their income will back to decline again. Income distribution through their life span has the characteristic following income line. Whereas the consumption will increase when they were young and then their consumption will rapidly increase because they do not need to work and they can get the money from their parent when they were young. But when they are working, they can earn money by themselves so their consumption in this early period may be lower than their income.

Debt may be incurred to finance education or to generate a flow of services from house, automobile, and other durables. The middle period of life is characterized by positive saving as previously incurred debts are paid back and the family accumulates resources for retirement and possibly to make bequests. The later stage of life, after retirement, may have some dissaving as some of the accumulated wealth is spent, but the average elderly family still saves (Gapinski, 1993). This idea can be applied to find what factors determine people to have secondary health insurance through their lifetime.

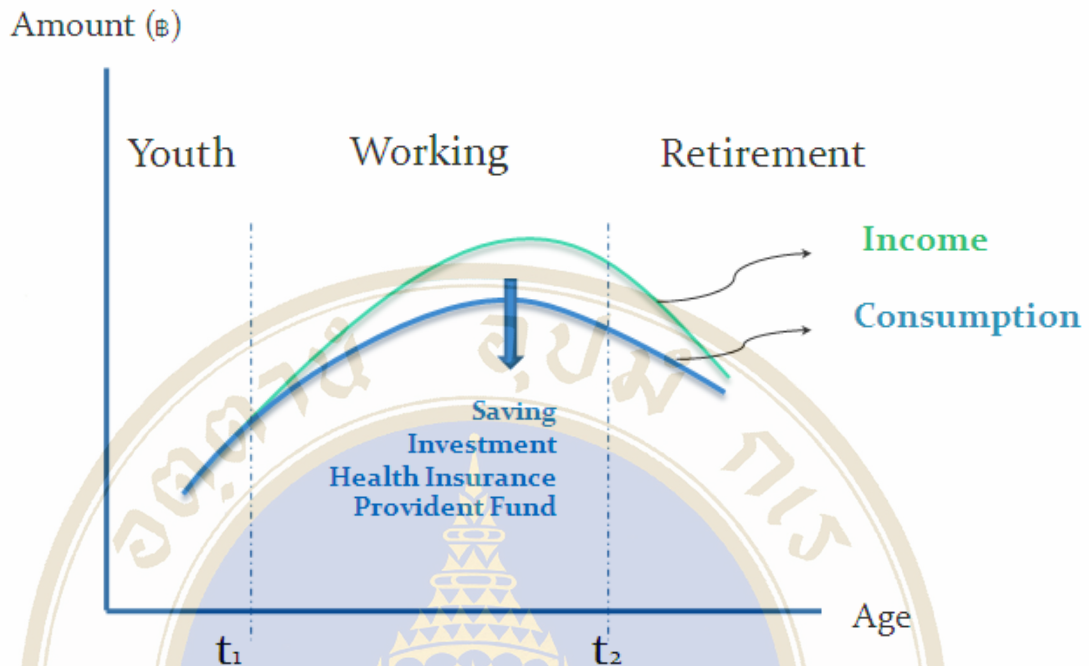


Figure 2.2 Incomes and Consumption through Lifetime

Source: Adapted from the Economics of Saving (Gapinski, 1993)

Examples of studying saving and investment as response variable with independent variables, it was founded that the results of the econometric model suggest that the country's population dynamics play as important role in the aggregate household's saving rate. A higher proportion of young dependents (ages 0 to 14 years) creates hindrance to the aggregate household saving, supporting the life-cycle hypothesis on saving in Philippines (Bersales and Mapa, 2008).

Life cycle savings is proposed as one explanation for much of the increase in savings and economic growth in Asia. The association between the age composition of a nation's population and its savings rate, observed within 16 Asian countries from 1952 to 1992, is estimated again here to be less than a quarter the size reported in a seminal study, which assumed lagged savings is exogenous (Schultz, 2004).

Different factors influenced cooperative farmers' saving and investment patterns. Income, loan repayment and amount of money borrowed were significant variables that influenced saving patterns while the fund borrowed significantly influenced investment patterns in Nigeria (Adeyemo and Bamire, 2005).

In Sri Lanka an affluent family has only one or two children; the tendency in the middle class is generally to have a smaller family. In the long run large families create problems especially about inheritance of land and property (De Silva, 2007) Logistic regression indicated that life cycle variables, such as household head's age, marital status, employment status, and child's presence, influenced ownership of 11 financial assets. (Xiao, 1996).

In India, it is found that the saving rate rises with both the level and the rate of growth of disposable income and the magnitude of the impact of the former is smaller than that of the latter (Athukorala and Sen, 2004). Moreover, it was founded that educational attainment, banking sector development, and inflation is the most robust predictors of life insurance consumption, while income is only a weak predictor (Beck and Webb, 2002).

These results indicate that there are significantly associations between saving and investment with the different factors from difference concepts, especially age, income, saving and investment.

2.4 Risk Aversion Concepts

Risk aversion is a concept in economics, finance, and psychology related to the behavior of consumers and investors under uncertainty. Risk aversion is the reluctance of a person to accept a bargain with an uncertain payoff rather than another bargain with more certain, but possibly lower, expected payoff. The inverse of a person's risk aversion is sometimes called their risk tolerance (Wikipedia, 2008).

Person who is risk averse can be explained by investment behavior. Certainly, risk averse person don't want to use his or her money to any investment or he or she will choose the type of investment that have minimum risk if he or she has to invest such as saving money in the bank, investment in bond. While person likes risk, he or she will expect the maximum benefit returning from his or her investment such as investment in stock market. A way to reduce risk of investor is to invest in many assets, called "risk diversification".

In general, the investment behavior of investors can be classified into three characteristics under risk as follows:

1. High risk averse
2. Middle risk averse
3. Low risk averse

Each types of investment can be allocated following investment behavior under risk as shown in Table 2.1.

Table 2.1 Types of Investment by Investment Behavior of Investors under Risk

Risk	Benefit	Risk Attitude	Type
High	High	Low risk averse	Stock market
Middle	Middle	Middle risk averse	Buying health and/or life insurance, Investing in real estate, Cooperative and Bond
Low	Low	High risk averse	Saving

The risk aversion concept will be employed to explain what factors determining people to have secondary health insurance as the investment under risk. With regard to the financial risk tolerance literature, there is considerable interest in the demographic determinants and attention is particularly focused on age, gender, education, income and wealth, and marital status. First, financial risk tolerance decreases with age (Morin and Suarez, 1983). Second, females have a lower preference for risk than males (Grable, 2000). Third, financial risk tolerance increases with education (Haliassos and Bertaut, 1995). Fourth, financial risk tolerance increases with income and wealth (Cohn et al., 1975; Bernheim, Skinner, and Weinberg, 2001). Fifth, single investors are more risk tolerant (Roszkowski, Snelbecker, and Leimberg, 1993). These concepts are applied as conceptual framework to study what factors determining people to have secondary health insurance. To decide which kind of secondary health insurance reflects the investment behavior under risk aversion based on the at least these factors i.e. age, gender, education, income and wealth, and marital status.

2.5 Conceptual Framework

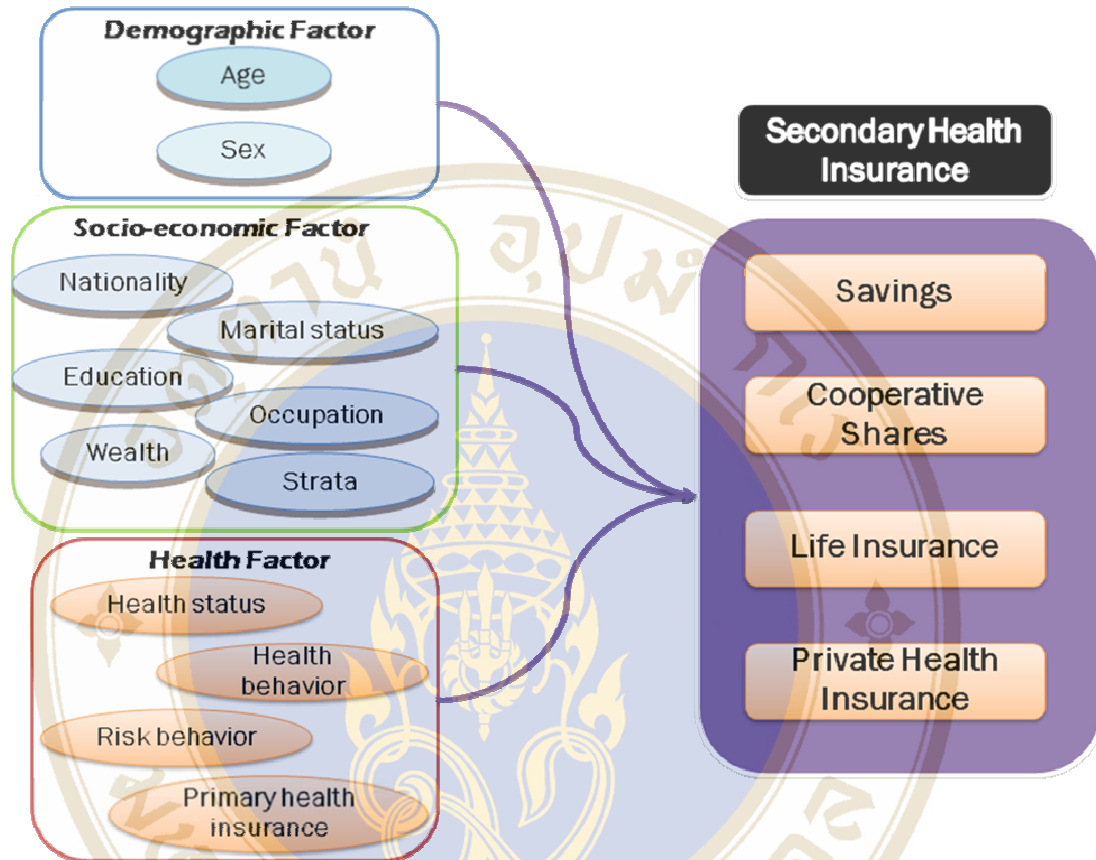


Figure 2.3 Conceptual Framework

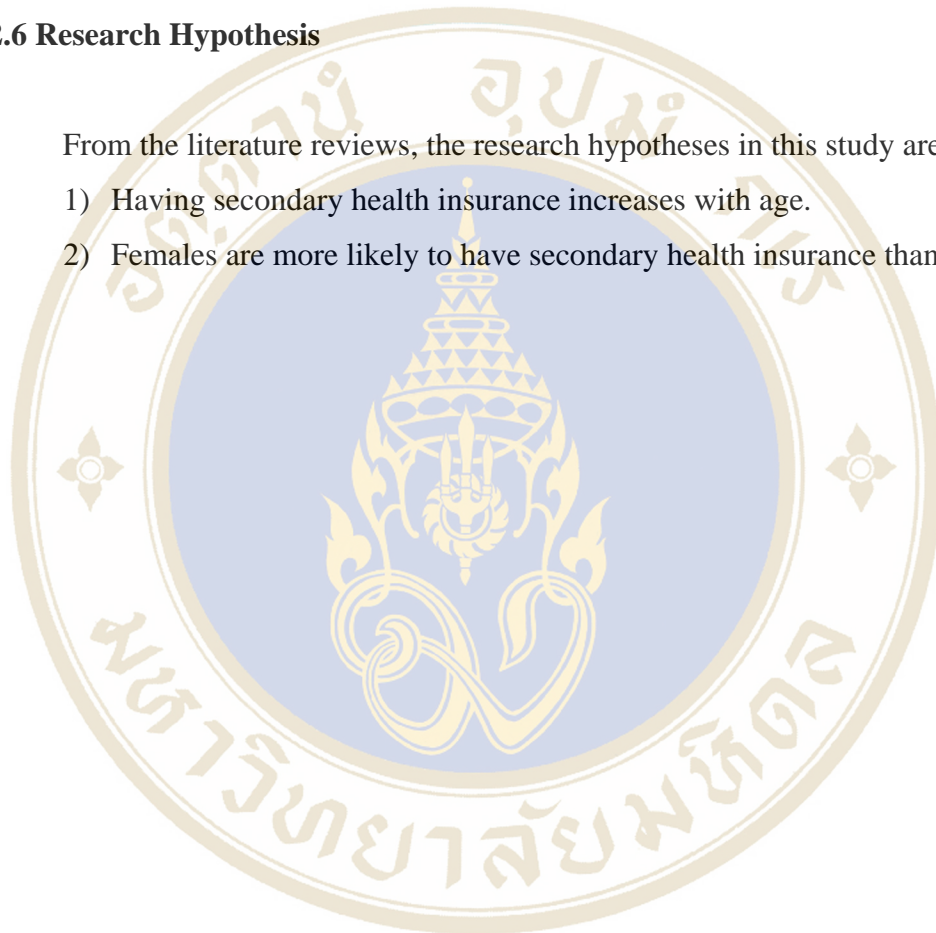
Figure 2.3 graphically summarizes the structure of this study to clarify its content and data analysis to answer the second of research question. According to the availability of data, this study utilized the Kanchanaburi Demographic Surveillance System (KDSS) to examine the association between the possession of secondary health insurance i.e. savings, cooperative shares, life and health insurance with selective three main factors, which are demographic factor (age and sex), socio-economic factor (nationality, marital status, education, occupation, wealth, strata) and health factor (health status, health behavior, risk behavior and primary health insurance)

This conceptual framework extracts from the concepts of three existing theories: classical economic theory, psychological and sociological theories, and behavior theory. The life cycle hypothesis and risk aversion concept are also used to construct this conceptual framework.

2.6 Research Hypothesis

From the literature reviews, the research hypotheses in this study are:

- 1) Having secondary health insurance increases with age.
- 2) Females are more likely to have secondary health insurance than males.



CHAPTER III

METHODOLOGY

This chapter discusses the research methodology used for this study. The methodology will be described here in five sections. Firstly, it is identified the operational definition of technical term used in this study. The second section mentions about sources of data in Kanchanaburi Demographic Surveillance System (KDSS). The third section is defined what is the population and sample used in this study. The fourth section reveals how to measure all variables used in the model to determine what factors affecting the secondary health insurance. Finally, this section explains how the data is analyzed in order to answer the second research question and to prove the research hypothesis under the conceptual framework presented in the previous chapter.

3.1 Operational Definition

Human security refers to protecting people from critical and pervasive threats or situations based on the people-centered concept by creating systems that give people the building blocks of survival, dignity and livelihood.

Health security or health insurance refers to a form of risk management that pays for medical expenses.

Primary health insurance refers to any form of health insurance provided by the government in order to guarantees a minimum protection from diseases and unhealthy lifestyles.

Secondary health insurance refers to other form of health insurance as the possession of assets for the use in case of emergency in present or in the future i.e. savings, cooperative shares, life and health insurance.

Universal coverage (UC) refers to a health insurance scheme provided by the government, which aims to protect people who do not have Social Security and Civil Servant Medical Benefits.

Social security (SS) refers to a health insurance scheme contributed by employer, employee and government in order to cover not only sickness, but also maternity, invalidity, death, child allowance, old-age and unemployment for the employee who work in the places of business.

Civil servant medical benefits (CSMB) refers to a health insurance scheme provided by the government to looks after the government officer and their family in case of illness.

Private insurance (PI) refers to a voluntary insurance scheme, which depends on conditions and benefit determined by private company based on governmental monitoring.

3.2 Source of Data

The data employed for this study are obtained from the Kanchanaburi Demographic Surveillance System (KDSS) in 2002 and 2003, conducted in selected areas of Kanchanaburi province, Thailand, by the Institute for Population and Social Research (IPSR), Mahidol University and supported by the Wellcome Trust, United Kingdom. The Kanchanaburi project is a longitudinal study that has monitored population changed in a designed study area since 2000.

Kanchanaburi is a large province located in the western part of Thailand. The province shares a long border with Myanmar and contains a variety of ethnic groups and migrants, both documented and undocumented, from Myanmar. The province is also close to Bangkok and is the location of many industries. In addition, the province is an important producer of plantation crops and is one of the major tourist destinations in Thailand. The selection of the 100 field site communities was structured to reflect this diversity in social, economic and ecological conditions found in the province (See Appendix A).

The study villages and census blocks for KDSS are selected using a stratified systematic sample design. As Kanchanaburi is a mixture of both rural and urban areas, the primary selection units for rural areas are villages and for urban areas are census blocks. First, Kanchanaburi area is divided into five strata according to the main occupation of the population and land use patterns. They are: (1) urban/semi urban (industrialized) area (2) rice producing area (3) plantation area (4) upland areas and (5) mixed economy area. From all village/ census blocks of these strata, 100 villages/ census blocks are selected systematically as study villages/ census blocks.

For data collection, three sets of questionnaires are used: village, household and individuals. The Village questionnaire provides basic background information on villages. The Household data questionnaire provides basic information on households' members, their background characteristics, occupation, land use, agricultural products, and over. It consists of personal data, occupation and income, migration, health, childbearing, contraception, marriage, women's role in community development, etc. which differences in each round depend on what is interesting in that time.

The method used for data collection was structured interviews and entailed the use of three sets of questionnaires: village, household and individual. The enumeration consists of two main components. In the first component, data on fertility, mortality, and migration is collected. This data is collected annually. The second component includes questions related to social, economic, health and environmental issues. The issues included in the enumeration in this component may change each year in order to maintain the survey instrument at an acceptable size and to respond to the changing social and policy context.

This study utilizes the KDSS data in round 3 (2002) as independent variables and use dependent variable from round 4 (2003) in the sixth part asking about “guarantees future” (See Appendix B).

3.3 Population and Data

The target population in this study is the whole population, especially the working age population (15 years old and above). There were 42,816 persons in the study area included in the round 4 (2003) census, 20,350 males and 22,466 females. They are from 12,356 households. The population size had decreased compared to previous censuses, especially in urban/ semi-urban and uplands strata. The population distribution among strata was as follows: 27 percent in the Upland, 21 percent in the mixed economy stratum, 20 percent in the urban/ semi-urban communities, 16 percent in the rice stratum, and 16 percent in the plantation stratum (Jampaklay, 2005).

There were 21,829 cases were interviewed both of round 3 (2002) and round 4 (2003) without missing data in primary health insurance which occurred from those who had more than one primary health insurance, especially Universal Coverage and Social Security was found the most one.

3.4 Measurement

3.4.1 Dependent Variable

The index of having secondary health insurance is constructed by using Principal Component Analysis (PCA) to assign the indicator weights in each item from the questions that asked “Do they have savings/ cooperative shares/ life insurance/ health insurance or not?” in KDSS round 4 (2003). To construct the index of having secondary health insurance, it has to standardize the indicator variables first (calculating zscores); then the factor coefficient scores (factor loadings) are calculated; and finally, for each household, the indicator values are multiplied by the loadings and summed to produce the household’s index value. In this process, only the first of the factors produced is used to represent the index of having secondary health insurance. The resulting sum is itself a standardized score with a mean of zero and a standard deviation of one. (applied from Filmer and Pritchett, 2001)

For analysis with the index of having secondary health insurance, quintiles are used. However, the index of having secondary health insurance can be categorized into only three groups, because of the granularity in the data. Moreover, the link function is negative log-log function due to lower categories more probable.

3.4.2 Independent Variables

Age, sex, nationality, marital status, education, occupation, strata, health status and primary health insurance are measured as categorical variable. While wealth, health behavior and risk behavior are measured as index (same way with constructing the index of having secondary health insurance as mentioned) and then categorized by using quintile.

Wealth index are measured by having water supply, own toilet, electricity, stereo, television, mobile phone, base phone, refrigerator, bicycle, motorcycle, car and pick-up car (applied from Rutstein and Johnson, 2004).

Health behavior is measured by using ten behaviors reflecting whether good or bad health behavior. It was asked about consumption behavior and lifestyle behavior including usual exercise such as eating spicy food, raw or half cooked food, fast food, supplementary food, taking some vitamins, reading the book at night time, etc.

Risk behavior is measured by using seven behaviors reflecting whether high or low risk to have unhealthy. It was asked regarding addict consumption behavior such as cigarettes, beer, liquor, vine, etc.

All of these independent variables come from round 3 (2002), except health status that come from round 4 (2003) because there was no question asking about health status in round 3. However, the health status collected in round 4 was the status in round 3 because it is measured from the questions were asked on July 2003 as follow; “Do you have any chronic diseases? (Doctor diagnosed and has this symptom for more than 6 month)” and “Do you have a personal disease now and then with physical and mental, or handicapped for more than 6 month? (Doctor do not diagnose, respondent comprehends by themselves).

3.5 Data Analysis

The multivariate analysis is used to investigate what factors determining people to have secondary health insurance. In case of the index of having secondary health insurance is used as dependent variable, the ordered logistic regression is employed to analyze. In case of each item of having secondary health insurance (i.e. savings, cooperative shares, life and health insurance), the binary logistic regression is employed to analyze because they are measured as a binary response. (Tabachnick and Fidell, 1996; Agresti, 1996).

The general logit model is:

$$P(Y = 1 | X) = \frac{e^{b_0 + b_1 x_1 + \dots + b_k x_k}}{1 + e^{b_0 + b_1 x_1 + \dots + b_k x_k}}$$

Where:

Y: having personal future security

P: the probability that Y equals 1 (or $P = P(Y=1)$)

X_k : independent variable

b_k : parameter/ coefficients of independent variables, $i = 1, 2, \dots, k$

The ordered logistic regression is employed to analyze the index of having secondary health insurance with each independent variable.

The ordered logit model is:

$$\text{logit}(p_1) \equiv \log \frac{p_1}{1 - p_1} = \alpha_1 + \beta'x$$

$$\text{logit}(p_1 + p_2) \equiv \log \frac{p_1 + p_2}{1 - p_1 - p_2} = \alpha_2 + \beta'x$$

.

$$\text{logit}(p_1 + p_2 + \dots + p_k) \equiv \log \frac{p_1 + p_2 + \dots + p_k}{1 - p_1 - p_2 - \dots - p_k} = \alpha_k + \beta'x$$

$$\text{and } p_1 + p_2 + \dots + p_{k+1} = 1$$

CHAPTER IV

HEALTH INSURANCE SCHEME IN THAILAND

This chapter starts to present the history and evolution of health insurance in Thailand, which are categorized into four major systems i.e. Universal Coverage (UC), Social Security (SS), Civil Servant Medical Benefits (CSMB), and Private Insurance (PI). Each scheme is discussed with background, benefits, and service utilization.

4.1 History and Evolution of Health Insurance

The concept of health insurance as a part of health insurance was proposed in 1694 by Hugh the Elder Chamberlen from the Peter Chamberlen family. In the late 19th century, "accident insurance" began to be available, which operated much like modern disability insurance. Early forms of health insurance mainly offered coverage against accidents arising from travel, especially by rail and steamboat. The success of accident insurance paved the way for the first insurance plans covering illness and injury. The first insurance against sickness was offered by Massachusetts Health Insurance of Boston in 1847. Insurance companies issued the first individual policies offering disability insurance in 1890 (Wikipedia, 2008).

The first modern group health insurance policy was issued in 1929, when a group of teachers in Dallas, Texas, contracted with Baylor Hospital for room, board, and medical services as needed in exchange for a monthly fee. Many life insurance companies entered the health insurance field in the 1930s and 1940s, and the popularity of health insurance grew quickly. In 1932 nonprofit organizations called Blue Cross or Blue Shield first began to offer policies of group health insurance. Blue Cross and Blue Shield were the first programs that established contracts directly with healthcare providers, who would then offer services to subscribers at reduced rates. Originally, Blue Cross plans covered the cost of hospital care, whereas Blue Shield plans covered doctors' bills. Eventually, however, both Blue Cross and Blue Shield plans began covering all healthcare services. This is the history of health insurance and then it widely applies in another country including Thailand.

In Thailand, health insurance began first time in 1963 for the government officer in form of Civil Service Medical Benefits Scheme (CSMBS). So, the government officer is the first group that received health insurance provided by government in Thailand (TDRI, 2002).

Then, Workmen's Compensation Fund (WCF) has been established in 1972 in order to look after employee who works in the private enterprise in case of sickness from working. In the initial period, WCF had covered only employee who worked in the enterprise having 20 employees and up. Then, in 1990, WCF had expanded to cover private employee who worked in the enterprise having 10 employees and up whereas Social Security Fund (SSF) has been established in the same year in order to cover health insurance not only in case of working. In 2002, WCF and SSF have expanded to cover private employee who worked in the enterprise having at least one employee (SSO, 2007).

People who work in the informal sector such as farmer, occupations in private sector are the majority of Thai population. There was health insurance scheme provided by state first time in 1975 under “People Assistance Project for people who have low income” which aims to protect them receiving the medical care from government care center with free of charge. Then, in 1994, elderly, child who was born until 12 years old, disabled person, soldier and family, monk and religion leader were also included in the program and changed the name to “People Assistance Project for people who have low income and social should assist. In 2001, the government had pushed “Universal Coverage”, well known as ‘30 baht program’ which aims to cover all population who did not have any health insurance scheme yet. This project was run by Ministry of Public Health and then transfer to Universal Coverage Office in 2002 following the Act of Social Security which forced on November 19, 2002 (TDRI, 2004).

Universal Coverage (UC) or 30 baht program has made most of Thai citizen can access the medical health care service without obstacle of financial problem. Table 4.1 shows the findings from Health and Welfare Survey by National Statistical Office in 2007 which found that the number of population who has primary health insurance provided by the government has continuously increased from 59.1 million persons (95.1%) in 2005 to 60.5 million people (96.3%) in 2007. From the data of registered person in September 2008 of the National Health Security Office, in addition, they report that UC covered 47.0 million persons (73.4%), SS covered 9.6 million persons (15.0%) and CSMB covered 5.0 million persons (12.7%).

Table 4.1 Number of Population by Health Insurance Scheme 2005 - 2007

Unit: 1,000

Number and Percentage of Population (who have health insurance)	2005	2006	2007
Total Population ¹	62,163	62,520	62,829
Population who have health insurance	59,117	60,019	60,504
Percentage of population who have health insurance ²	95.1	96.0	96.3
Type of Health Insurance ²			
Universal Coverage (UC)	76.4	77.8	76.6
Social Security (SS)	11.9	12.2	12.7
Civil Servant Medical Benefits (CSMB)	10.6	9.5	9.5
Private Health Insurance (PHI)	2.8	2.3	2.3

Sources: 1. Population Projection of Thailand 2005 – 2025, Institute of Population and Social Research, Mahidol University.

2. Health and Welfare Survey, National Statistical Office.

In present, however, there are some people who has more than one health insurance scheme such as in SS and UC because of incomplete in the registered data. Moreover, some people still have private health insurance (PHI) besides UC, SS and CB (Rattanavijittrasil, 2005).

Apart of health security mentioned, Social Security (SS) and Civil Servant Medical Benefits (CSMB) are two schemes that give the economic security to protect the insured persons and civil servants, respectively, can survive, dignity and livelihood when they face the financial problem i.e. unemployment, old age, death, etc. These two schemes cover only formal employee in Thailand but not covered informal employees who are the majority in labor force market.

4.2 Universal Coverage

4.2.1 Background

Since 2001, the project called ‘Universal Coverage’, also known as ‘30 baht project’ has been initiated by the government. With the six provinces, Pratumthani, Samuthsakorn, Nakornsawan, Yasothorn, Payao and Yala, as a pilot. And then, the project has been completed in April 2002. In November 2002, the National Health Insurance has been executed, and the Universal Coverage Office has been established. This scheme is covered for all Thai citizens who do not have another health insurance provided by the government. Universal Coverage scheme was operated by National Health Security Office (NHSO, 2008).

4.2.2 Benefits

UC is covered for health support, prevent, control and diagnostic of the disease that may occurred. Including for pregnancy women, child health care, health check for people and risk group, family planning, AIDS vaccination in case of infection from pregnancy mother to child, house calling, educating in health care for individual persons and their family, counseling and promoting for public health care, examination, diagnostic and curing, maternity, room and board, dental, medicine according to Nation list of Essential Medicine, and medical evacuation.

4.2.3 Service Utilization

In conclusion, the process of this project for nine months in 2007 fiscal year has found that it has 46.74 million registered and 1,194 service facilities, with 82.61 million visits for 27.50 million out-patients. Average 2.59 visit per person per nine months. For the in-patient, it has 3.05 million persons board in total of 11.77 million days. Average 0.14 visit per person per nine months (According to the report of Universal Coverage Office for the Cabinet dated 4 September 2007). The budget per capita in 2007 is 2,100 baht and overall budget for this program is 97,600 million baths.

4.3 Social Security

4.3.1 Background

In 1954, the Social Security Act was enacted. However, the then Government considered that the economic condition of the country at that time was not favorable for enforcement of the Social Security Act 1954. As a result, the Royal decree was enacted in lieu of the said Act (SSO, 2008).

In 1972, the government decided that employees who sustained injuries or illness or who died as a result of working for the employer should be secured that they would receive compensation money. As a result, the government then issued a Notification No 103 dated 16 March 1972 under which a compensation fund was established in the Department of Labor with the intention to protection security to employees who were ill or injured in relation to performance of work. This Notification requires the employers to make contributions to the Compensation Fund to pay for compensation for employees in lieu of the employer; to pay for medical treatment expenses, to payment compensation for loss of monthly income; to pay the cost of physical rehabilitation of working capability; and to pay for funeral expense. However, the employer shall be required unilaterally to make contribution to the fund according to the risk of such category of business at the rate of 0.2 - 2.0 percent. The Compensation Fund has started its management of the fund since 1 January 1974 under the supervision of the Department of Labor. This was the first step of actual social security.

Efforts to push for full realization of social security have been made continually consistently through the appointment of several committees to review the matter. Until 1981, the Committee charged with the preparation of social security scheme under the chairmanship of the Permanent-secretary of Interior, finally completed the draft of the Social Security Act in which the operation of the Act, the establishment of an administrative organization and the Contributions Fund; but unfortunately, this draft of the Social Security Act was not successful.

Until 1990, the Draft of the Social Security Act 1990 was approved by the National Assembly and went into force on 2 September 1990. Under this Social Security Act, the employees would receive protection in the capacity as the insured under a total of 7 circumstances, namely: illness or accident; physical disability; death not related to performance of work; child delivery; old age, child assistance and unemployment. In the initial stage tentative protection coverage shall be provided to places of business with over 20 employees and afterwards in 1993, it was extended to places of business with over 10 employees; and provides protection particularly in the case of illness, disability, and death which is not resulted from work performance and to child delivery on tentative basis. For this purpose, the employer, and employee and the Government have made contributions at equal rate: at 1.5 percent for old age and child assistance was covered in 1996 and the coverage of unemployment shall be provided protection coverage by means of enacting a Royal Decree when the operation was ready.

The Office of Social Security is attached to the Ministry of Interior and was established on 3 September 1990. The work related to social security was transferred from the Department of Public Welfare; and the work of the Office of Compensation Fund, the Department of Labor, was then transferred to be under the management of the Office of Social Security.

4.3.2 Benefits

1) Injury or Sickness Benefit

- a) Sickness, critical or emergency sickness and relocation of the place of hospitalization
- b) Compensation money for loss income
- c) Kidney treatment
- d) Transplant of bone marrow
- e) Dental inspection
- f) Disorders and services which shall not be entitled to medical service entitlement benefits
- g) Services that will receive from the hospital

2) Maternity Benefit

- a) Childbirth can be given anywhere; the conclusion for paying medical service cost shall be on a lump sum basis, for instance, in child delivery, at the rate of 12,000 Baht per childbirth.
- b) In the case of being admitted for child delivery in the hospital according to the Certified Entitlements Card before 1 January 2007; but the childbirth was delivered on 1 January 2007 from 00.00 hours onward, the hospital according to the Certified Entitlements Card shall be responsible until the end of the child delivery process; and the insured shall not be required to pay for the hospitalization expense and the insured can further present a birth certificate for collection of the entitlement benefit in case of childbirth. The conclusion to pay for medical service cost is made on a lump sum basis to the insured at the rate of 12,000 Baht per childbirth.

3) Invalidity Benefit

- a) Cost of medical treatment can be collected as actually incurred but not more than 2000 Baht per month;
- b) Compensation benefit for loss of income: The benefit can be collected at the rate of 50 percent of monthly wage throughout life; the cost of artificial organs/equipment/therapeutic equipment.
- c) Cost of funeral: In the event of the death of the disabled insured person, the funeral manager shall be entitled to collect the funeral benefit of 30,000 Baht; the death benefit of the deceased disabled insured person can be collected as follows: 1) For the insured person who having made contributions for upward of 3 years but less than 10 years, the assistance benefit is equal to the averaged 5 months of wage. 2) For the insured person who having made contributions for upward of 10 years, the assistance benefit is equal to the averaged 5 months of wage.

4) Death Benefit

- a) Is entitled to receive the funeral benefit of 30,000 Baht.
- b) Is entitled to assistance benefit in the event of death as follows: 1) The Insured having made contributions for upward of 3 years but less than 10 years shall be entitled to assistance benefit equal to the average 1.5 months of wage. 2) The Insured having made contributions for upward of 10 years shall be entitled to assistance benefit equal to the average 5 months of wage.

5) Child Allowance Benefit

The child assistance benefit is paid on a lump sum basis at the rate of 350 Baht per month per 1 child. The child assistance benefit for legitimate child aged not more than 6 years old shall be limited to not more than 2 children for the entitlement; (the said legitimate child shall exclude an adopted child or the child being adopted by other person).

6) Old-Age Benefit

- a) Terms and conditions which give rise to the Entitlement Old Age Pension: 1) Having made contributions to not less than 180 months whether or not a period of 180 days will be consecutive; 2) The applicant reaches the age of full 55 years old; 3) The status of being an insured has terminated.
- b) Terms and conditions which give rise to the Entitlement Old Age Pension: 1) Having made contributions for less than 180 months; 2) The status of being an insured has terminated; 3) The applicant reaches full 55 years of age or has become a disabled person or has died.

- c) Old Age Pension Benefit: 1) Having made contributions for not less than 180 months and is entitled to old age pension benefit on monthly basis at the rate of 15 percent of last 60 months of average wage which is used as a basis for calculation of the contribution before the status of being the insured terminates; 2) In the case of making contributions for over 180 months, the rate of old age pension benefit pursuant to Clause 1 shall be increased at the rate of 1 percent per every 12 months of making the contributions for a period of making contributions exceeding 180 months. 3) In the event of making contributions to be less than 12 months, the old age pension benefit shall be paid equal to the amount of the contribution made by the Insured in the interest of paying child assistance benefit and old age benefit; 4) In the event of making contributions from upward of 12 months, the old age pension benefit shall be paid equal to the amount of the contribution made by both the Insured and the employer in the interest of paying child assistance benefit and old age benefit together with other marginal benefits as may be announced by the Zone Office of the Social Security; 5) In the event of death of the recipient of the old age pension benefit within 60 months from the month of entitlement to the old age pension benefit, the old age pension benefit shall be paid at 10 times the amount of monthly old age pension benefit last received before death.

7) Unemployment Benefit

- a) In case of termination of employment: Unemployment benefit for not more 180 days per year at the rate of 50 % of the wage calculated on the basis of maximum contributions of 15,000 Baht.
- b) In case of resignation: Unemployment benefit for not more than 90 days per year at the rate of 30 percent of the wage calculated on the basis of maximum amount of contributions but not more than 15,000 Baht shall be payable. If in the duration of 1 year, there was more than 1 application for the unemployment benefit, the counting of the unemployment benefit receiving period in total shall not exceed 180 days; the compensation benefit for loss of income shall be paid on monthly installment basis by crediting to the Bank Account as notified by the Insured.

4.3.3 Service Utilization

In 2006, the main contracted under the social security scheme which provided service to insured persons throughout the country were 2,731. Among all main contracted hospitals, 150 were public hospitals, 119 were private hospitals and 2,462 were network hospitals. The total medical service utilization was 23.36 million visits. These visits included 22.89 million of out-patients visits and 0.47 million of in-patients visits. The utilization rates were 2.51 visits per person per year for out-patients and 0.052 visits per person per year for in-patients. The benefits paid are 16 million baths.

4.4 Civil Servant Medical Benefits

4.4.1 Background

Civil Servant Medical Benefits (CSMB) is a public provision health insurance scheme to be social welfare in health care for individual and their family member to compensate minimum wage in civil services system.

In 1979, it has been a government announcement to adjust equally benefit for all level of government officers instead of only high level one. The CSMB scheme is covered for government officer including their parent, spouse and child. Further than the CSMB, there is a superannuation which to be pay for the officer who leaves the civil system with retirement, invalidity, long-term working and layoff without penalty cause. The office that responsible for this matter is the Comptroller General's Department. (CGD, 2008)

4.4.2 Benefits

- 1) Civil Benefits
 - a) Medicine and medical service
 - b) Artificial organs
 - c) Physician service
 - d) Room and board
- 2) Superannuation Benefit

Superannuation benefit for the government office will be received depends on causes of leaving and their working experiences which are as follow:

Table 4.2 Types of Pension Benefits by Causes and Experiences

Causes	Experiences	Benefits
Retirement	Less than one year	-
Old-age	One year to ten years	Gratuity
Invalidity	At least 10 years	Gratuity or pension
Replacement		
Long-term working	At least 25 years	Gratuity or pension
Resignation, termination or layoff	Less than 10 years	-
	10 years to 25 years	Gratuity
	At least 25 years	Gratuity or pension

The calculations for pension benefits are as follow:

Gratuity: The last wage per month x the number of year in working experience

Pension: (The average of wage in last 60 months x the number of year in working experience)/ 50

(Note: Pension is not over 70 percent of the average of wage in last 60 months and this calculation is used for the government officer who is a member of the Government Pension Fund (GPF) only but the last wage per month will be used to calculate pension in case of who is not a member of GPF.)

4.4.3 Service Utilization

In 2006, the total medical service utilization was 3.17 million visits. These visits included 2.71 million of out-patients visits and 0.46 million of in-patients visits. The utilization rates were 5.91 visits per person per year for out-patients and 1.49 visits per person per year for in-patients. The benefits paid are 29.5 million baths.

4.5 Private Insurance

4.5.1 Background

Private insurance business started in the international shipping transportation in Krung Sri Ayudhya era (since 1531) which ran their business among foreigners. Thai government did not play role to control until Thai people had proceed and join competing in this business. Thai government had enforced the law for this kind of business in order to prevent people did not receive the problems for service utilization. The condition of controlling has concerned the security of those companies as the most important key. With regard to this condition, the private insurance business is closed business and limited for those who have much secure finance and capital to invest in this business. There were only four types of insurance in that time i.e. life insurance, fire insurance, marine and transportation, and other type of insurance, which started in 1946. (OIC, 2008)

In 2006, there were 25 life insurance companies with the license of life insurance to operate in Thailand, consisting of 23 life insurance companies registered in domestic, one foreign branch company and one professional reinsurance company. And, there were 75 non-life insurance companies with the license of non-life insurance to operate in Thailand.

4.5.2 Benefits

The Office of Insurance Commission (OIC) or Department of Insurance in the past has divided types of private insurance into two categories i.e. life and non-life insurance. Life insurance had covered Ordinary life insurance (which are whole life, endowment, and term ordinary life insurance), Industrial insurance and Group insurance). Non-life insurance had covered Fire insurance, Marine and transportation insurance (Hull and Cargo insurance), Automobile insurance (Compulsory and Involuntary insurance) and Miscellaneous insurance (Engineering insurance, Aviation insurance, Personal accident insurance, Health insurance, Crop insurance and Other insurance).

4.5.3 Service Utilization

In 2006, insurance business received total direct premiums amounted to 268,995 million baht, an increase of 5.4 percent over the previous year. Total direct premiums consisted of life insurance business for 173,708 million baht, an increase of 4.1 percent and non-life insurance business for 95,287 million baht, an increase of 7.7 percent over the previous year. Total assets of insurance companies in 2006 increased by 12.3 percent to 836,331 million baht, which consisted of life insurance business for 703,638 million baht and non-life insurance business for 132,693 million baht, the increase of 13.4 and 6.8 percent respectively. The total investment assets of insurance business amounted to 759,628 million baht or 90.8 percent of the total assets, an increase of 13.6 percent over the previous year. This amount consisted of life insurance business for 666,244 million baht and non-life insurance business for 93,384 million baht, the increase of 14.1 and 10.2 percent respectively. (See Table 4.3 and 4.4)

Table 4.3 Total Policies by Type, Net Written Premium, Benefit Payment and Loss Ratio for Life Insurance 1997 - 2006

year	New Policies	Policies in force	Total policies	Net written premiums	Benefit payment	Loss ratio
1997	1,250,412	7,215,160	8,465,572	57,213	4,616	8.07
1998	1,045,208	7,198,576	8,243,784	54,813	4,766	8.70
1999	1,029,720	7,375,980	8,405,700	60,752	4,657	7.67
2000	1,161,987	7,759,468	8,921,455	73,352	4,720	6.43
2001	1,360,325	8,306,277	9,666,602	91,626	5,256	5.74
2002	1,442,543	8,913,885	10,356,428	112,101	5,419	4.83
2003	2,710,578	10,777,188	13,487,766	129,977	6,141	4.72
2004	2,984,548	11,724,342	14,708,890	147,198	6,622	4.50
2005	3,247,326	12,663,667	15,910,993	163,137	7,142	4.38
2006	3,746,137	13,825,556	17,571,693	169,360	7,907	4.67

Source: Annual report year 2006, Office of Insurance Commission.

Note: unit of net written premiums and benefit payment is for 1,000,000 baht

Table 4.4 Earned Premiums, Losses Incurred and Loss Ratio 1997 - 2006

	Earned premiums	Losses incurred	Loss ratio
1997	45,564	28,465	62.47
1998	38,946	24,785	63.64
1999	34,784	20,734	59.61
2000	36,635	19,480	53.17
2001	38,052	20,796	54.65
2002	40,426	22,872	56.58
2003	45,993	25,682	55.84
2004	53,761	29,652	55.16
2005	61,384	33,555	54.66
2006	69,659	38,568	55.37

Source: Annual report year 2006, Office of Insurance Commission.

Note: unit of net written premiums and benefit payment is for 1,000,000 baht

Although these primary health insurance have covered almost Thai population in sense of health security but there are about 1.7 million persons do not receive these benefits yet and some of them have more than one primary health security to use. Economic security is worse than health securities in Thailand because there are about 49.4 million persons have no economic security provided by the government.

CHAPTER V

SECONDARY HEALTH INSURANCE IN KDSS

This chapter presents the research findings of having secondary health insurance. Data from Kanchanaburi Demographic Surveillance System (KDSS) Round 3 and Round 4 was used for examining the impact of demographic factor and socio-economic factor on having secondary health insurance i.e. savings, cooperative shares, life and health insurance. There are four sections discussed in this chapter. Firstly, both of dependent and independent variables are described by exploring characteristics of the data before analyzing. The second section shows the multivariate analysis of index of having secondary health insurance with independent variable. The results of examining the relationship between the secondary health insurance in each item and those independent variables by using multivariate analysis are shown in the third section. Finally, all of findings in each previous section are discussed in the last section.

5.1 General Characteristics of the Study Population

There were 21,829 persons who responded the individual questionnaire in the study area included in the round 3 (2002) and round 4 (2003). Table 5.1 shows the percentage distribution of independent variables and secondary health insurance of population aged 15 and over. The middle working age had the highest proportion (35.7 percent), followed by those in the late working age, early working age and elderly, respectively. There were more females than males. Nearly 90 percent were Thai and nearly 85 percent of them were ever married. About 90 percent of them were educated in grade 6 and under. Agricultural had the highest proportion (51.3 percent), followed by those in not working, sales, crafts and labor, professional, services, business and administrative, transportation and communication and others, respectively. The highest proportion of them lived in the uplands (24 percent), followed by mixed economy, urban/semi-urban, rice field and plantation, respectively. About 80 percent of them were healthy. More than 30 of them had bad health behavior but nearly 50 percent were lowest risk behavior. About 77 percent of them had UC while 17 percent did not have any primary health insurance.

Table 5.1 Percentage Distribution of Population aged 15 and over in KDSS with Secondary Health Insurance by Demographic, Socio-economic and Health Characteristic

Characteristics	Savings	Cooperative shares	Life insurance	Health insurance	(Cases)
Age					
Early working age	38.50	11.30	16.04	10.75	(5,044)
Middle working age	44.57	24.61	23.18	9.52	(7,797)
Late working age	44.29	29.59	29.18	9.72	(5,525)
Elderly	36.96	18.05	22.29	7.31	(3,463)
Sex					
Male	39.58	24.15	24.51	10.31	(9,532)
Female	43.68	19.90	21.66	8.87	(12,297)
Nationality					
Thai	44.17	23.75	25.23	10.34	(19,589)
Burmese/twai	19.10	1.19	0.60	0.60	(335)
Mon	17.83	0.81	0.65	2.59	(617)
Karen	21.36	7.01	1.73	0.76	(927)
Others	33.24	6.09	9.70	6.65	(361)
Marital status					
Single	42.80	13.25	24.20	14.82	(3,306)
Married	42.28	24.14	22.87	8.79	(16,140)
Divorced	58.87	33.87	32.26	12.10	(124)
Separated	35.09	15.79	15.64	5.26	(684)
Widowed	37.59	16.83	22.98	7.30	(1,575)
Education					
Under grade 6	36.84	20.59	20.10	6.74	(13,142)
Grade 6	41.84	17.64	21.21	11.44	(5,526)
Secondary school	61.18	24.82	33.19	16.67	(1,422)
Bachelors degree and over	81.10	54.93	59.73	25.21	(730)
Occupation					
Not working	39.36	12.74	20.60	9.78	(4,970)
Professional	78.87	68.87	60.16	23.87	(620)
Business and administrative	61.03	32.66	40.97	18.62	(349)
Sales	55.98	15.48	29.86	14.55	(1,815)
Services	52.43	36.19	28.36	9.51	(536)
Agricultural	37.46	23.35	20.19	7.52	(11,200)
Transportation and communication	40.17	29.48	28.90	11.27	(346)
Crafts and labor	41.53	17.87	18.81	8.49	(1,813)
Others	55.93	32.77	34.46	13.56	(177)

Table 5.1 Percentage Distribution of Population aged 15 and over in KDSS with Secondary Health Insurance by Demographic, Socio-economic and Health Characteristic (Continued)

Characteristics	Savings	Cooperative shares	Life insurance	Health insurance	(Cases)
Wealth					
1st quintile	23.71	10.43	5.74	3.19	(1,725)
2nd quintile	34.82	21.86	16.54	5.73	(1,953)
3rd quintile	40.92	28.42	23.90	9.30	(2,280)
4th quintile	48.27	32.79	31.57	10.95	(1,964)
5th quintile	62.04	36.23	45.94	16.71	(2,131)
Strata					
Urban/semi-urban	52.59	18.14	32.00	12.78	(4,250)
Rice field	54.04	28.11	30.04	9.94	(3,945)
Plantation	32.39	23.58	24.57	10.97	(3,520)
Uplands	34.42	20.04	8.99	4.95	(5,230)
Mixed economy	37.61	20.29	22.93	10.11	(4,884)
Health status					
Unhealthy	43.25	25.42	25.89	9.04	(4,280)
Healthy	41.56	20.86	22.18	9.61	(17,549)
Health behavior					
Bad	39.99	21.23	22.22	8.23	(7,620)
Mild	38.05	21.66	20.11	7.49	(6,116)
Middle	42.43	20.28	21.48	10.12	(4,329)
Good	51.37	24.73	30.51	14.70	(3,749)
Risk behavior					
Lowest	45.57	20.40	23.91	10.30	(10,476)
Mild	37.47	19.41	19.04	8.25	(3,272)
Middle	39.77	23.52	24.26	9.46	(3,772)
Highest	38.14	25.33	22.16	8.51	(4,300)
Primary health insurance					
Having none	41.33	19.22	22.81	8.33	(3,709)
UC	40.23	20.59	21.19	9.05	(16,812)
SS	56.43	19.98	32.33	15.73	(801)
CSMB	77.91	81.85	65.48	23.27	(507)
Total	41.90	21.80	22.90	9.50	(21,829)

As mentioned, secondary health insurance in this study refers to the possession of assets for the use in present or in the future i.e. savings, cooperative shares, life insurance and private health insurance in the case of emergency which different from primary health insurance which refers to the health insurance provided by the government i.e. Universal Coverage (UC), Social Security (SS) and Civil Servant Medical Benefits (CSMB). Among secondary health insurance reported, savings is the largest proportion (41.9%), followed by life insurance (22.9%), cooperative shares (21.8%), and private health insurance (9.8%), respectively (See Table 5.1).

Having secondary health insurance increased with age, except private health insurance. But when they get old, the percentage of having secondary health insurance would be declined (See Figure 5.1 and Table 5.1).



Figure 5.1 Percentage Distribution of KDSS Population with Secondary Health Insurance by Age

Males have lower saving than females but higher in all other categories (See Figure 5.2 and Table 5.1).

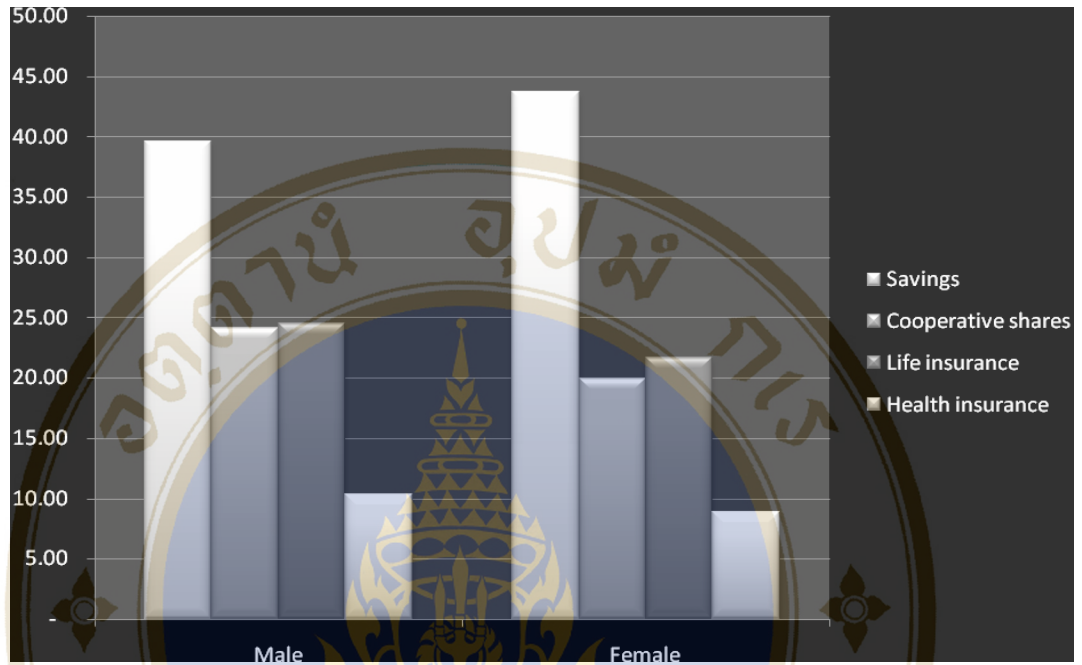


Figure 5.2 Percentage Distribution of KDSS Population with Secondary Health Insurance by Sex

Thai have a higher proportion of having secondary health insurance than non-Thai in all categories. While among non-Thai, saving is the most popular form of secondary health insurance (See Figure 5.3 and Table 5.1).

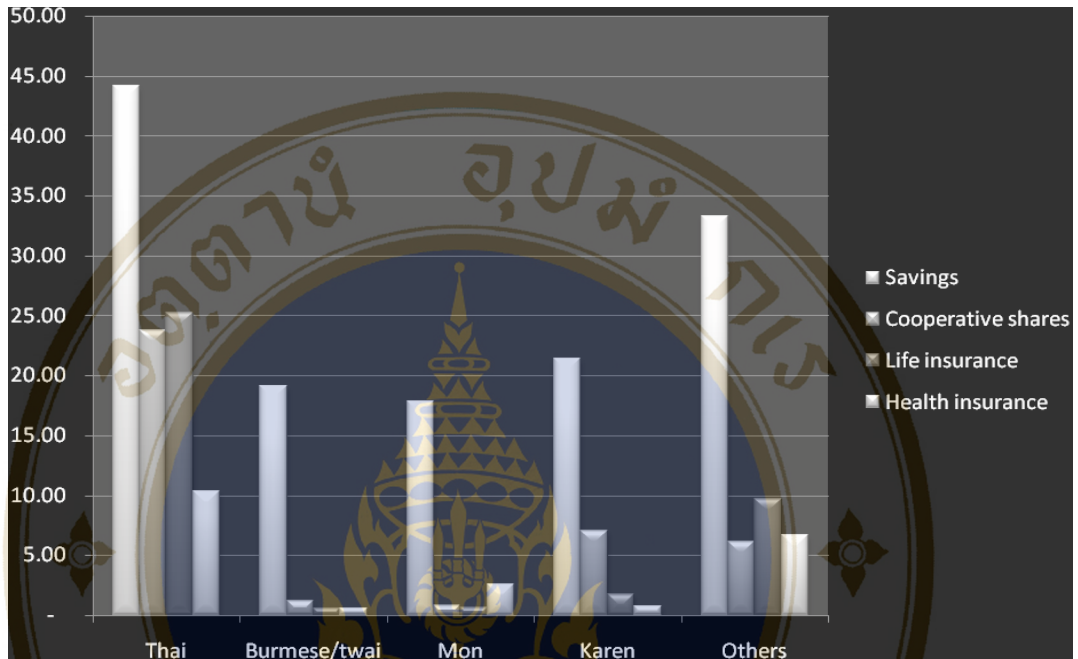


Figure 5.3 Percentage Distribution of KDSS Population with Secondary Health Insurance by Nationality

The proportion of having secondary health insurance in every category was higher among those who were divorced, except private health insurance that highest for those who was single (See Figure 5.4 and Table 5.1).

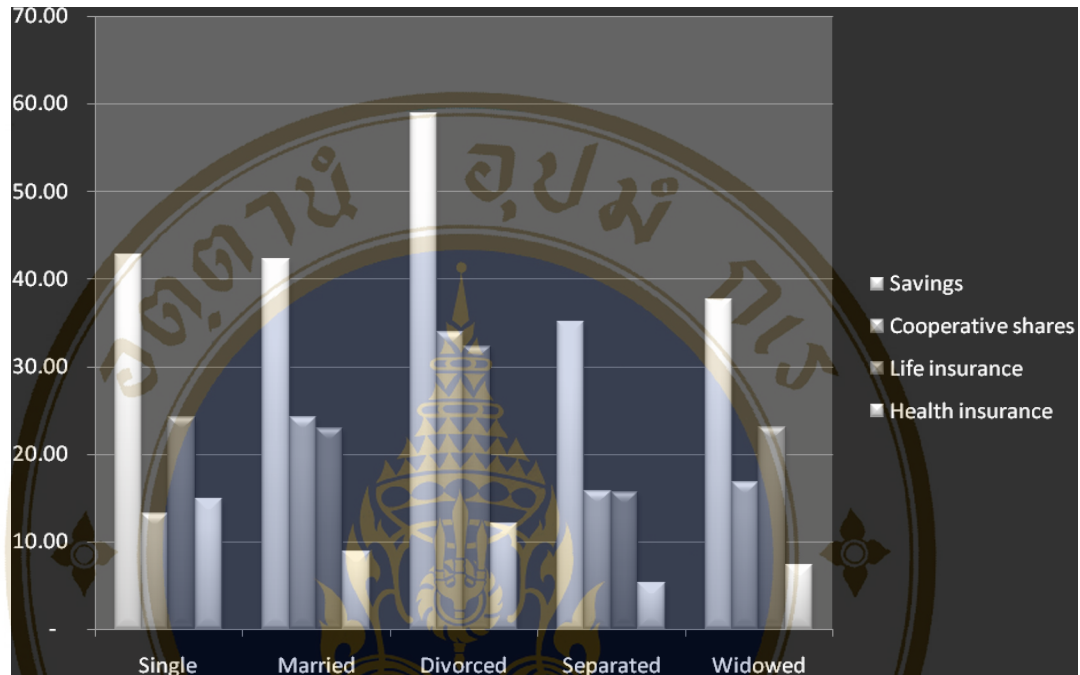


Figure 5.4 Percentage Distribution of KDSS Population with Secondary Health Insurance by Marital Status

Higher levels of education were associated with higher proportions with savings, life and health insurance. The most proportion of having secondary health insurance among levels of education was savings (See Figure 5.5 and Table 5.1).

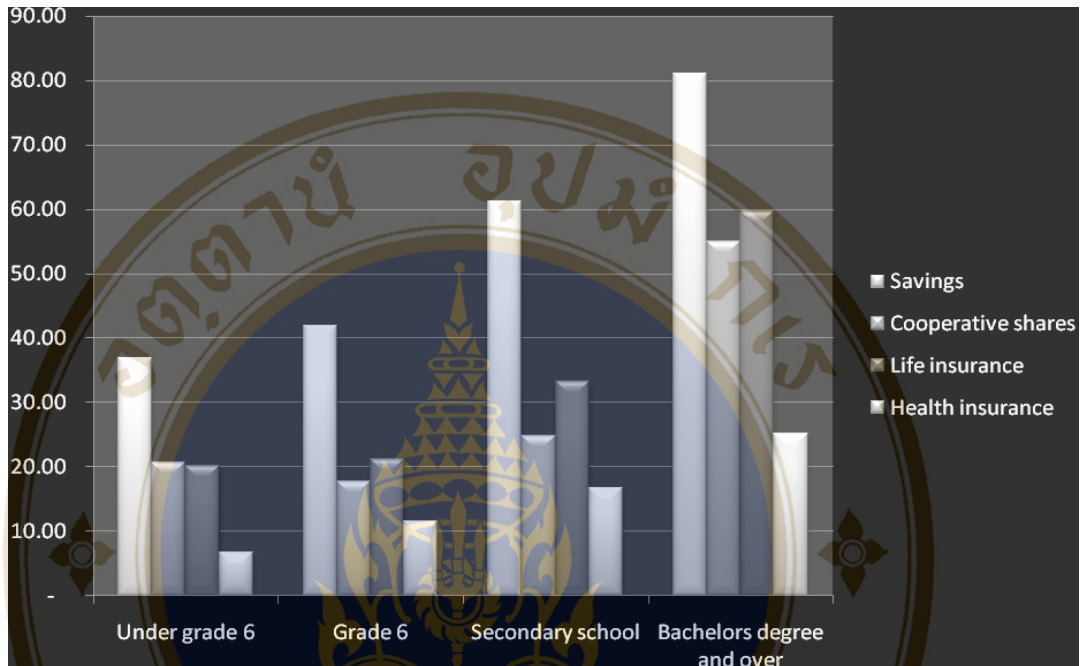


Figure 5.5 Percentage Distribution of KDSS Population with Secondary Health Insurance by Education

Those people who worked as professional were the highest proportion of having secondary health insurance in every category. And, those who were not working and who worked in agricultural sector were the lowest group of having secondary health insurance (See Figure 5.6 and Table 5.1).

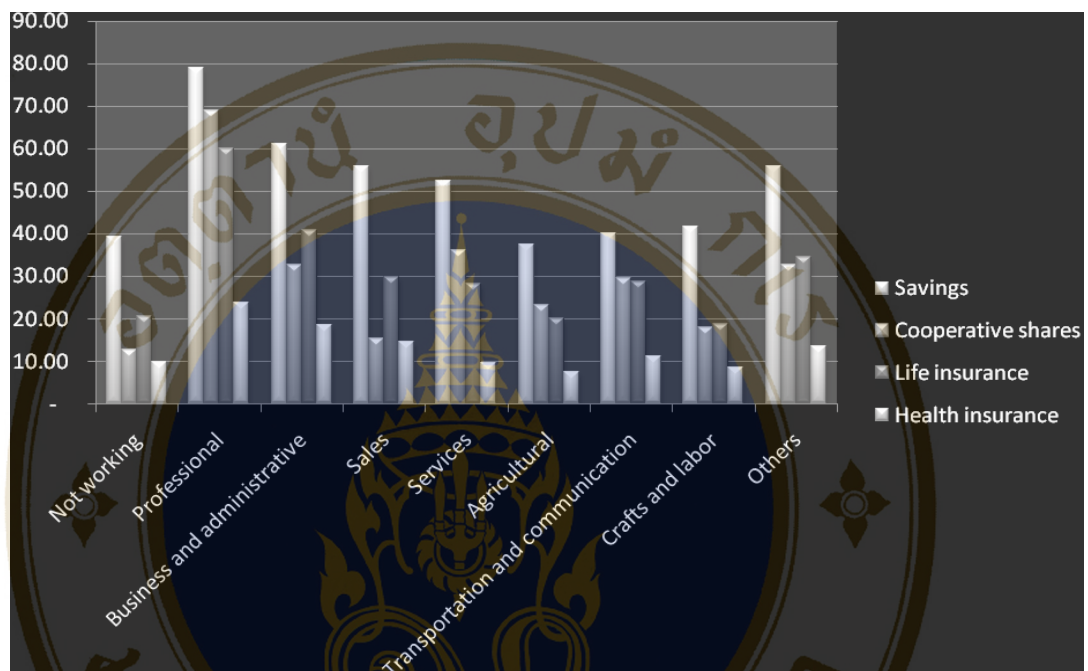


Figure 5.6 Percentage Distribution of KDSS Population with Secondary Health Insurance by Occupation

The proportion of person having secondary health insurance in all categories increase with wealth, especially life insurance has the highest rate of increase (See Figure 5.7 and Table 5.1).

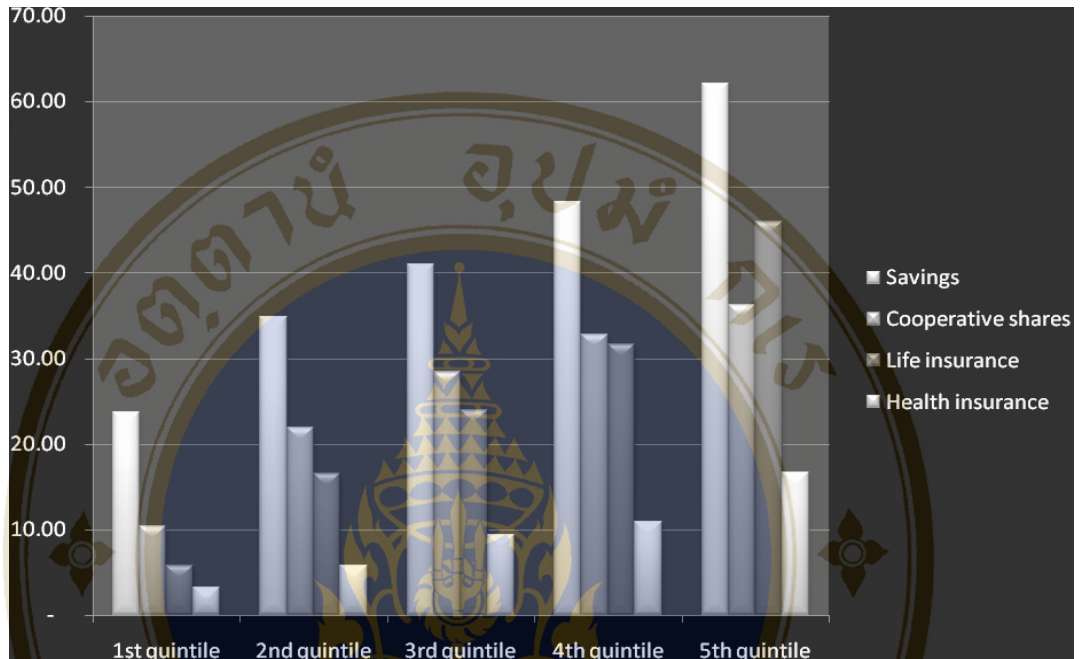


Figure 5.7 Percentage Distribution of KDSS Population with Secondary Health Insurance by Wealth

The proportion with savings was more than half with the Urban/semi-urban and Rice field strata. Life insurance was most common in the Urban/semi-urban area and Rice areas. The study population in the Uplands had the lowest level of private health insurance (See Figure 5.8 and Table 5.1).

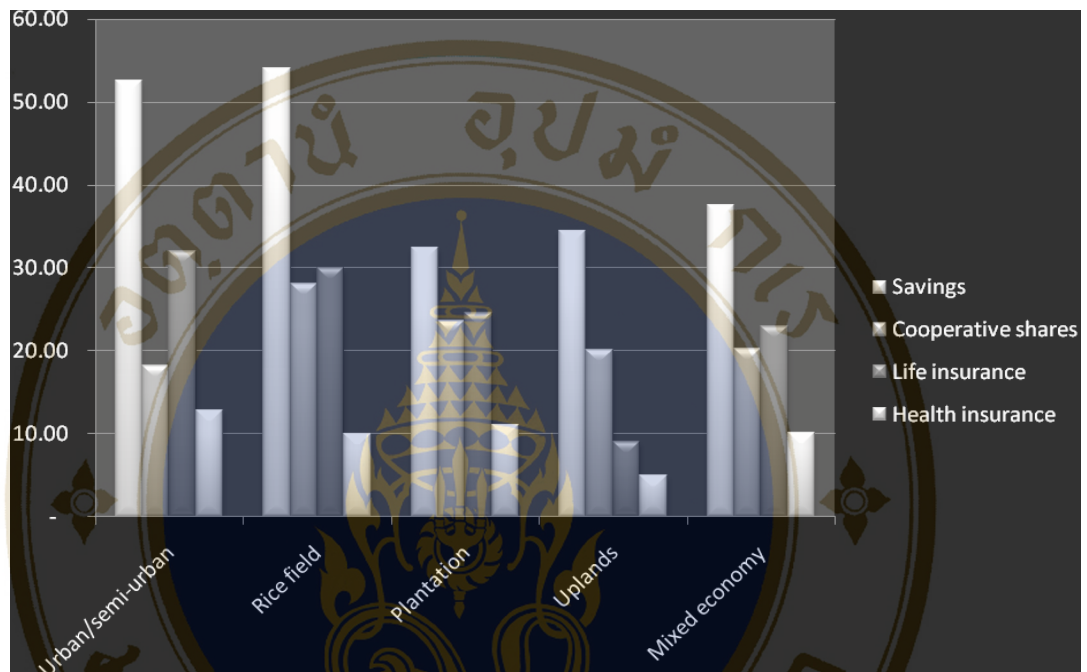


Figure 5.8 Percentage Distribution of KDSS Population with Secondary Health Insurance by Strata

It was found that the proportion of having secondary health insurance in every category for civil servants was distinctly higher than those who had UC, SS and having none. Private health insurance was lowest for those who had any primary health insurance scheme including those who did not get yet. The proportion with have cooperative shares and life insurance was low in every group, except the civil servant who more than three times and two times when compared with other group, respectively (See Figure 5.9 and Table 5.1).

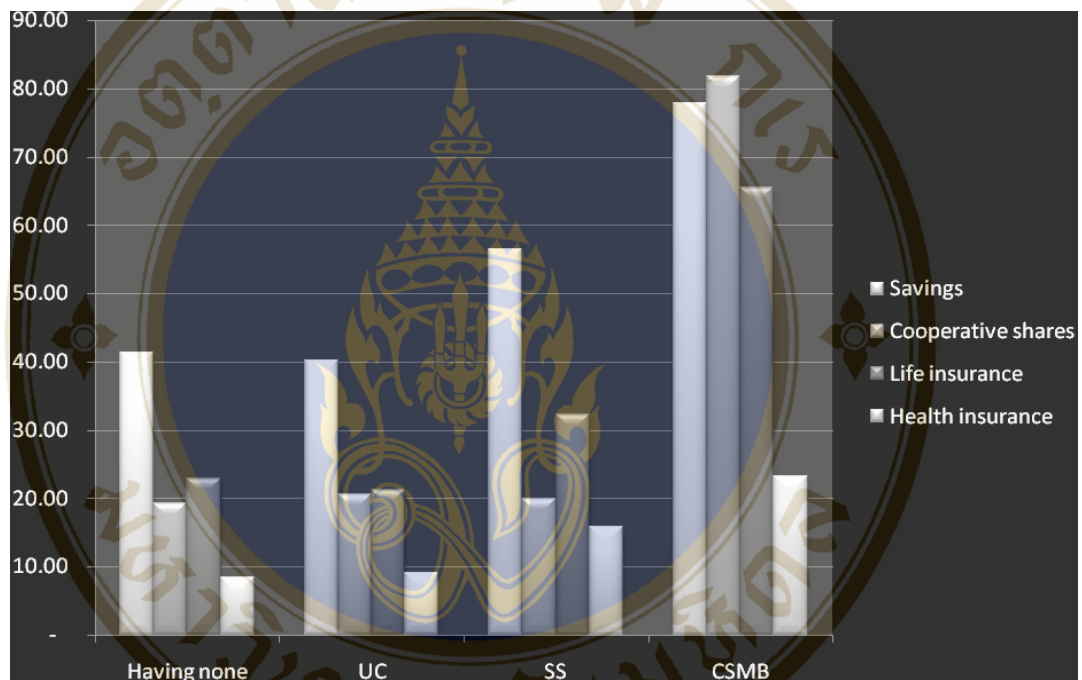


Figure 5.9 Percentage Distribution of KDSS Population with Secondary Health Insurance by Having Primary Health Insurance

In conclusion, it was found that the highest proportion of having secondary health insurance is savings, followed by life insurance, cooperative shares, and private health insurance, respectively. Most of general characteristic of study population was likely affecting with having secondary health insurance in each category. The next section will analyze whether they has statistically significance affected with the dependent variable or not by using the multivariate technique to find the answer.

5.2 Index of Having Secondary Health Insurance

The results from the previous section portrayed the general characteristics and some relationship between interested variable and having secondary health insurance in each category. Savings, cooperative shares, life insurance and private health insurance were shown as each category of having secondary health. Thus, these response variables from the respondent in the study population are used to calculate the index of having secondary health insurance as mentioned in chapter three and examine which factors determining the acceptance of secondary health insurance. After controlling the socio-economic factor (i.e. nationality, marital status, education, occupation, wealth, strata) and health factor (i.e. health status, health behavior, risk behavior and having primary health insurance), the findings in ordinal logistic regression analysis are as follow:

- 1) It was found that the index of having secondary health insurance increases with age. (Accept the first research hypothesis)
- 2) There was no association between sex and the index of having secondary health insurance. (Do not accept the second research hypothesis)

The chance to have secondary health insurance did not depend on those who had UC compared with having none of primary health insurance. Higher levels of education and wealth had strongly influenced on higher opportunity to have secondary health insurance. It was also found that those who are Thai, working and lived in rural area (except mixed economy) were more likely to have secondary health insurance. In addition, those who had SS or CSMB, good health behavior, low risk behavior and unhealthy were much likelihood to have secondary health insurance than those who did not receive primary health insurance yet (See Table 5.2).

Therefore, the factors determining people to have secondary health insurance were age, nationality, marital status, education, occupation, wealth, strata, health status, health behavior, risk behavior and having primary health insurance provided by the government.

Table 5.2 Ordinal Logistic Regression on Having Secondary Health Insurance with Independent Variables, KDSS (N = 9,585)

	Estimate (B)	Estimate (B)	
Demographic factors		Socio-economic factors	
Age (Ref: Early working age)		Nationality (Ref: Thai)	
Middle working age	0.390***	Burmese/twai	-0.678***
Late working age	0.601***	Mon	-0.840***
Elderly	0.435***	Karen	-0.528***
Sex (Ref: Male)		Others	-0.287**
Female	-0.074	Marital Status (Ref: Single)	
Health factors		Married	-0.121
Health status (Ref: Unhealthy)		Divorced	0.147
Healthy	-0.080*	Separated	-0.284***
Health behavior (Ref: Low)		Widowed	-0.074
Mild	-0.022	Education (Ref: Under grade 6)	
Middle	0.014	Grade 6	0.162***
High	0.154***	Secondary school	0.505***
Risk behavior (Ref: Low)		Bachelors degree and higher	0.692***
Mild	-0.091*	Occupation (Ref: Not working)	
Middle	-0.182***	Professional	0.600***
High	-0.120**	Business and administrative	0.422***
Primary health insurance (Ref: Having none)		Sales	0.465***
Universal Coverage	0.047	Service	0.375***
Social Security	0.319***	Agricultural	0.407***
Civil Servant Medical Benefits	0.648***	Transportation and communication	0.215*
		Crafts and labor	0.201**
		Others	0.499**
		Wealth (Ref: 1st quintile)	
		2nd quintile	0.363***
		3rd quintile	0.615***
		4th quintile	0.798***
		5th quintile	1.127***
		Strata (Ref: Urban/semi-urban)	
		Rice	0.450***
		Plantation	0.139**
		Uplands	0.121*
		Mixed economy	-0.087*

Note: *** = p < 0.001; ** = p < 0.01; * = p < 0.05;

5.3 Having Each Category of Secondary Health Insurance

It was found that every independent variable was associated with the index of having secondary health insurance as mentioned in the previous section by using ordinal logistic regression analysis technique. Interestingly, which category of having secondary health insurance was affected by those independent variables? The statistics value used to measure and test significance was the probability of possession of each category, called 'odds ratio'. So, values greater than one indicated greater probability of having secondary health insurance in each category. Then, to determine which factors determining people to have secondary health insurance was presented by using the binary logistic regression analysis technique.

It was found that the opportunity of having secondary health insurance in all category i.e. savings (SA), cooperative share (CS), life insurance (LI) and health insurance (HI) increases with ages, except savings between early working age and elderly found no difference. Females were less likely to have private health insurance than males, while other having secondary health insurance no difference between males and females. These findings found after controlling socio-economic factor and health factor as mentioned before (See Table 5.3).

Table 5.3 Binary Logistic Regression on Having Secondary Health Insurance in Each Category with Independent Variables, KDSS

	SA	CS	LI	HI
Cases	9585	9589	9589	9589
R square (Nakelkerke)	0.153	0.222	0.238	0.099
Demographic factors				
Age (Ref: Early working age)				
Middle working age	1.269*	1.795***	2.617***	1.648**
Late working age	1.336**	2.723***	3.672***	1.980***
Elderly	1.160	2.095***	3.157***	1.736**
Sex (Ref: Male)				
Female	0.964	0.881	0.869	0.772*
Socio-economic factors				
Nationality (Ref: Thai)				
Burmese/twai	0.630*	0.054***	0.094*	0.171
Mon	0.504***	0.041***	0.000	0.804
Karen	0.636**	0.300***	0.251***	0.160**
Others	0.858	0.256***	0.612	0.613
Marital Status (Ref: Single)				
Married	0.757*	1.687***	0.771*	0.626**
Divorced	1.096	2.265**	0.946	0.750
Separated	0.651**	1.234	0.653*	0.488**
Widowed	0.737*	1.532*	1.021	0.708
Education (Ref: Under grade 6)				
Grade 6	1.234**	1.071	1.157	1.342**
Secondary school	1.850***	1.537**	1.860***	1.934***
Bachelors degree and higher	2.397***	2.192***	2.709***	2.485***
Occupation (Ref: Not working)				
Professional	1.873**	5.184***	2.696***	2.286**
Business and administrative	1.204	2.418***	1.726**	1.890*
Sales	1.775***	1.229	1.826***	1.679**
Service	1.368*	3.603***	1.782**	1.011
Agricultural	1.329***	2.179***	1.958***	1.29
Transportation and communication	1.006	2.393***	1.567*	1.229
Crafts and labor	1.223*	1.568***	1.242	1.084
Others	1.003	2.895***	2.561**	1.662

Note: *** = $p < 0.001$; ** = $p < 0.01$; * = $p < 0.05$;

Table 5.3 Binary Logistic Regression on Having Secondary Health Insurance in Each Category with Independent Variables, KDSS (Continued)

	SA	CS	LI	HI
Socio-economic factors (Continued)				
Wealth (Ref: 1st quintile)				
2nd quintile	1.400***	1.961***	1.795***	1.252
3rd quintile	1.822***	2.711***	2.468***	1.920***
4th quintile	2.198***	3.095***	3.196***	2.021***
5th quintile	3.541***	3.471***	5.447***	3.034***
Strata (Ref: Urban/semi-urban)				
Rice	1.763***	2.707***	1.662***	1.544***
Plantation	0.829*	2.308***	1.344**	1.798***
Uplands	1.264**	3.210***	0.502***	1.080
Mixed economy	0.747***	1.672***	0.950	1.090
Health factors				
Health status (Ref: Unhealthy)				
Healthy	0.947	0.792***	0.918	1.082
Health behavior (Ref: Low)				
Mild	0.936	1.029	0.955	0.891
Middle	1.036	1.096	0.907	1.065
High	1.274**	1.429***	1.129	1.107
Risk behavior (Ref: Low)				
Mild	0.768***	1.017	0.997	1.016
Middle	0.698***	1.023	0.911	0.891
High	0.729***	1.092	1.040	0.917
Primary health insurance (Ref: Having none)				
Universal Coverage	0.971	0.868	1.113	1.339*
Social Security	1.311	0.898	1.756***	1.626*
Civil Servant Medical Benefits	1.128	4.004***	1.938***	1.080
Constant	0.364***	0.013***	0.029***	0.022***

Note: *** = $p < 0.001$; ** = $p < 0.01$; * = $p < 0.05$;

After considering the variables in socio-economic factor and health factor, it was found that Karen were less likely to have all category of having secondary health insurance compared with Thai but the chance of having private health insurance was no difference among nationality. Married person were more likely to have cooperative shares but they were less likely to have savings, life and health insurance than single person.

Higher level of education and wealth was more likely to have all category of secondary health insurance. Those who worked as professional, sales, services, agriculture, crafts and labor were more likely to savings than those who had not working but for those who worked as business and administrative, transportation and communication and others were not difference when compared with those who had not working. Those who lived in rural area were more likely to have cooperative shares than those who lived in urban area.

However, those who lived in rice field and uplands were more likely to savings than those who lived in urban/semi-urban but those who lived in plantation and mixed economy were less likely to savings than those who lived in urban/semi-urban. Having life and health insurance from private company, those who lived in rice field and plantation were more likely to have both than those who lived in urban/semi-urban but those who lived in uplands were more likely to have only life insurance than those who lived in urban/semi-urban.

It was also found that those who had unhealthy and good health behavior were more likely to have cooperative shares than those who had healthy and bad health behavior. In addition, those who had bad health behavior and high risk behavior were less likely to saving than those who had good health behavior and low risk behavior.

Moreover, those who had UC were more likely to have only private health insurance than those who did not have any primary health insurance provided by the government. But, those who had SS were much likelihood to have life and private health insurance than those who did not receive any primary health insurance yet. For civil servants, they were more likely to have cooperative shares and life insurance than those who did not get any primary health insurance yet.

5.4 Discussion

To examine what factors determining people to have secondary health insurance (i.e. savings, cooperative shares, life and health insurance), most of the previous study provided in term of saving and investment explained by theory of economics both macro and micro level but none of the existing theories provides a suitable explanation for saving and asset accumulation in low-income households (Berverly et al., 2008). This study, therefore, tried to explain the relationship between savings and investment called in this study as secondary health insurance both in term of index and in each category with the independent variables categorized into three factors i.e. demographic factor (age and sex), socio-economic factor (nationality, marital status, education, occupation, wealth, strata) and health factor (health status, health behavior, risk behavior and having primary health insurance).

The results showed percentage distribution of having primary health insurance including those who did not have and having secondary health insurance in each category, which the percentage of people who had UC was not much different from the recent of Health and Welfare Survey (NSO, 2007). It was also found that about 2.7 percent had more than one primary health insurance scheme, particularly having both UC and SS because of the incomplete in the registered data (Rattanavijittrasil, 2005).

However, there were 17.0 percent who did not receive any primary health insurance yet despite all citizens should be covered with UC if they were not employee in the places of business and civil servants. It was also found that three fourth of them were Thai and lived in rural area which the highest proportion was in Mixed economy, followed by Rice field, Uplands and Plantation, respectively (See Table 5.4).

Table 5.4 Percentage Distribution of Those having None of Primary Health Insurance by Nationality and Strata, KDSS

	Urban/Semi-urban	Rice fields	Plantation	Uplands	Mixed Economy	Total
Thai	96.2	99.8	95.6	34.9	94.0	78.1
Burmese/Twai	0.6	0.2	3.6	15.3	1.3	5.3
Mon	0.6	0.0	0.5	21.0	3.7	7.2
Karen	0.5	0.0	0.3	20.4	0.4	6.3
Others	2.0	0.0	0.0	8.4	0.5	3.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
(N)	(945)	(548)	(366)	(1,068)	(754)	(3,709)

Therefore, the problem of accessibility and lacking of public relations might be caused registering of UC. However, there were about 1.7 million persons who did not have any primary health insurance in Thailand nowadays and the percent of those who did not have any primary health insurance in Kanchanaburi DSS had decreased to 3.3 percent nowadays (NHSO, 2008).

In addition, the results indicated that the proportion possessing of all categories except private health insurance had increased with age since early working age until late working age. But the proportion of all categories decreased when they get old. It supported the life cycle hypothesis that mentioned people had low the possession of savings and investment when they was young and then their savings and investment would continuously increase until they get old, their saving and investment would back to decline again, followed by their income (Modigliani and Brumberg, 1954; Modigliani and Ando, 1957; Ando and Modigliani, 1963).

However, the results supported risk aversion concept with females had higher proportion of savings than males due to risk averse while having cooperative shares, life and health insurance were no clear distinction between sexes because these investments were explained by risk neutral of investors under risk (Grable, 2000). Those who were married found clearly different to have cooperative shares and private health insurance than single because of single investor were more risk tolerant than married investor (Roszkowski, Snelbecker, and Leimberg, 1993).

In addition, higher levels of education and wealth were associated with higher proportions with savings, life and health insurance which also could be explained by risk aversion concept (Haliassos and Bertaut, 1995; Cohn et al., 1975; Bernheim, Skinner, and Weinberg, 2001).

Multivariate analysis provided the important results in this study. To answer the research hypotheses in this study, it was found that the opportunity to have secondary health insurance in each category increases with age, followed the accumulation of their lifetime earnings since young to old. There was less intention with having secondary health insurance during the time that they could make the money or seeking additional health security through cooperative shares, life and health insurance which possibly to be a social problem in the future when they get old.

Females were less likely to have only private health insurance than males, but for other secondary health insurance found no different between sexes. It might be because females and males, in Thai context, has parity to play role as household head in order to take care of their family, so having additional health security had no different between sexes. However, males were more likely to have private health insurance than females. It might be that males usually had higher income and less consumes than females and they were more health risk or health risk behavior than females so they seek additional health security than females (Grover, 1999).

CHAPTER VI

CONCLUSION AND RECOMMENDATIONS

This chapter summarizes the major findings in light of the research objectives of this study given in chapter one. The whole study has revolved around the questions: (1) How are the health insurance schemes in Thailand? and (2) What factors determining people to have secondary health insurance? In order to answer these questions, the study takes advantage of the longitudinal data of the Kanchanaburi Demographic Surveillance System (KDSS), which were conducted by the Institution for Population and Social Research, Mahidol University. This chapter also contributes recommendations from the present study and recommendations for future research.

6.1 Conclusion

6.1.1 Objective 1: To Study the Future Security in Thailand

There are four major future security schemes in Thailand. Three of them are public provision i.e. Civil Servant Medical Benefits (CSMB) for civil servants, Social Security (SS) for insured persons who work in the places of business, and Universal Coverage (UC), also known as '30 baht program' for Thai citizen who are not civil servants and insured person under SS. These schemes are called primary health security in this study. Another one is Private Insurance (PI) which is an additional health security by voluntariness according to individual purchasing power.

Although these primary health insurance schemes have covered almost Thai population (97.4 percent) in sense of health security but there are about 1.7 million persons (2.6 percent) do not receive these benefits yet. Some of them have more than one primary health security to use. Economic security is worse than health securities in Thailand because there are about 49.4 million persons (77.2 percent) have no economic security provided by the government. These indicate that what related persons or office have to rectify urgently in order to provide complete and effective primary insurance both economic and health insurance for our Thai population.

According to benefits in each scheme of primary insurance which are the basic need, only SS and CSMB have covered both health and economic security while UC covered only health security. On the other hand, there is only few number of private insurance companies in Thailand due to strict regulation controlled by the government. Therefore, the most important problems of Thai people regarding the social security are to provide economic security in the present and in the future in case of emergency or when they get old, to maintain the stability of those fund which can pay back for pension in the future, to improve the quality of service to let people have confidence to use their benefits and to reduce some limitations in order to open more choices for those who would like to have additional health insurance from the private sector.

6.1.2 Objective 2: To Find what Factors Determining People to have Secondary Health Insurance in the Kanchanaburi DSS

Kanchanaburi Demographic Surveillance System in round 4 (2003) conducted by the Institute for Population and Social Research, Mahidol University, are used to examine the association between the possession of secondary health insurance i.e. savings, cooperative shares, life insurance and private health insurance and the independent variables from round 3 (2002) consisting demographic factor, socio-economic factor and health factor. The secondary health insurance refers to other form of health insurance as the possession of assets for the use in case of emergency in present or in the future.

According to the findings, age, nationality, marital status, education, occupation, wealth, living place, health status, health behavior, risk behavior and having primary health insurance are statistical significance associated with having secondary health insurance, calculated by using the index of having secondary health insurance. Only sex is not significance. Persons who tend to have secondary health insurance are those who fall in the following categories; older, Thai nationality, separated, higher levels of education, wealthy, employed, living in the rice field, plantation and uplands, unhealthy, good health behavior, lower risk behavior and owning SS or CSMB.

When each category is considered, it is found that the chance to have savings, cooperative shares, life insurance and private health insurance increases with age with the except of the opportunity of savings. It is also found that females are less likely to have private health insurance than males after controlled by socio-economic factor and health factor.

6.2 Recommendations

From the results, it can be suggested that having secondary health insurance for the present and the future since their early working age, particularly females should be promoted. The government should encourage people to have secondary health insurance instead of depending upon only the primary health insurance provided by the government. This is a way to reduce burden on the government budget to manage health security of the people.

6.3 Recommendations for Further Study

The further study should be concerned on what factors inspiring people to have secondary health insurance, what incentives should be given people to have more secondary health insurance, and how to stimulate people to think of future security in term of economic security as well as health security.

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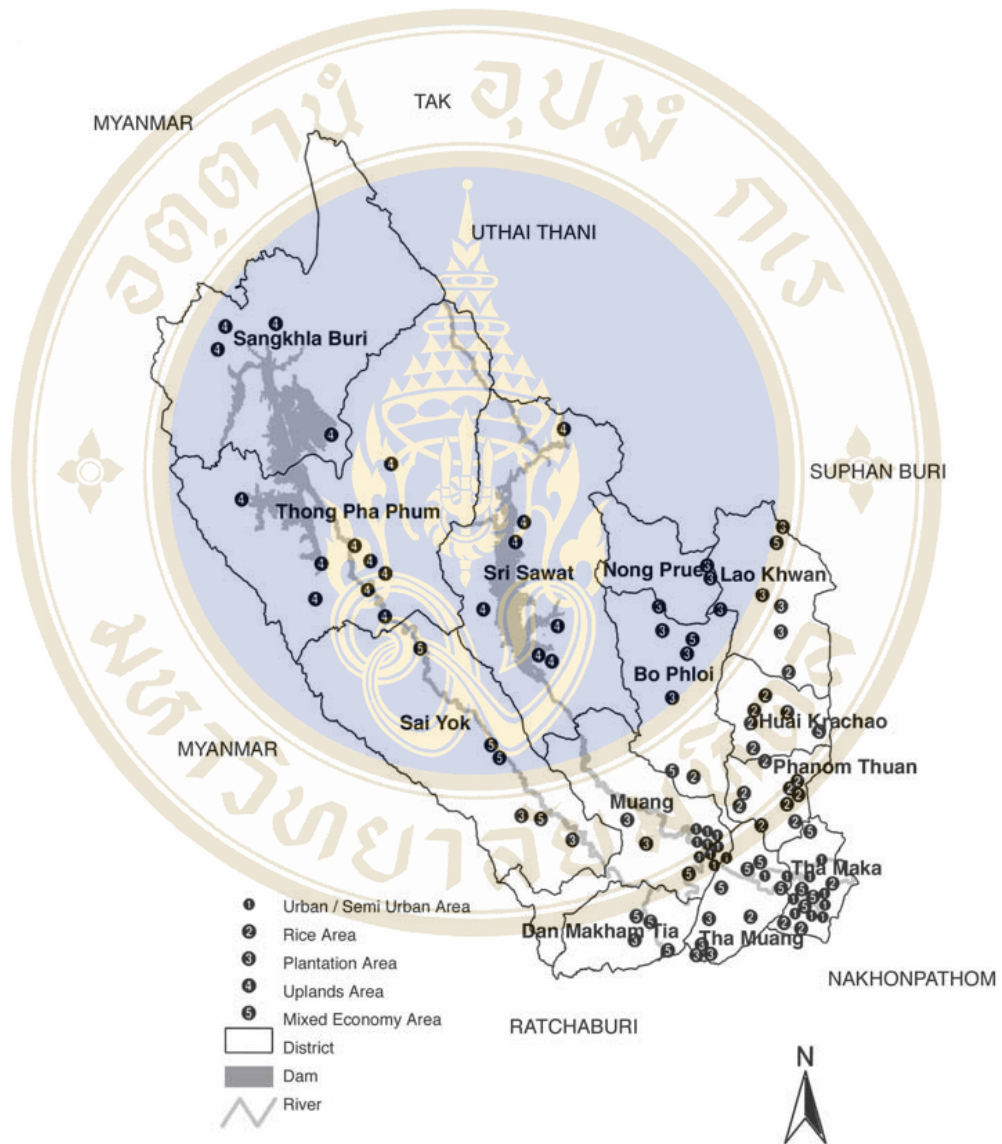
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APPENDIX A MAP OF KANCHANABURI



APPENDIX B
INDIVIDUAL QUESTIONNAIRE IN KDSS, ROUND 4 (2003):
PART 6 GUARANTEES FOR FUTURE

6.1 Do you know / have "Guarantee for future" for yourself?
 1. Yes 2. No 3. Do not know "Guarantee for future"

6.2 Do you have this matter? (Please read all items to respondent)

Guarantee	6.2.1 Do you have...? 1. Yes (Skip to part 7) 2. No (continue to 6.2.2)	6.2.2 Do you think to have....? 1. Yes (Skip to part 7) 2. No (continue to 6.2.3)	6.2.3 Reason why you do not think to have (see codes)
a. Private property			
b. House / Build a house			
c. Life insurance			
d. Health insurance			
e. Superannuation			
f. Social security (for employee)			
g. Superannuation fund for government official			
h. Living reserve fund (for state enterprise employee)			
i. Saving deposit (in bank/ financial institution/ self)			
j. Welfare funeral (of community or financial institution)			
k. Stock / cooperative member			
l. Government bond			
m. Others (Specify).....			

Codes for 6.2.3 Reason why you do not think:

- 1. Do not have enough money
- 2. Have no income / unemployed
- 3. Depend on children / grandchildren
- 4. Stay with extended family / other family
- 5. Others (Specify).....

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