

**FACTORS ASSOCIATING WITH CURRENT NON-USE OF  
CONTRACEPTIVE AMONG MARRIED WOMEN IN  
KANCHANABURI DEMOGRAPHIC SURVEILLANCE SYSTEM  
AREAS, THAILAND.**



**A THESIS SUBMITTED IN PARTIAL FULFILLMENT  
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Thesis  
entitled

**FACTORS ASSOCIATING WITH CURRENT NON-USE OF  
CONTRACEPTIVES AMONG MARRIED WOMEN IN  
KANCHANABURI DEMOGRAPHIC SURVEILLANCE  
SYSTEM AREAS, THAILAND**



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for the degree of Master of Arts (Population and Reproductive Health Research).

on

August 27, 2003



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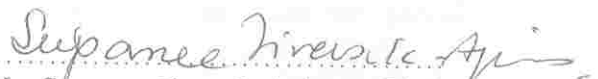
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FACTORS ASSOCIATING WITH CURRENT NON-USE OF CONTRACEPTIVES AMONG MARRIED WOMEN IN KANCHANABURI DEMOGRAPHIC SURVEILLANCE SYSTEM AREAS, THAILAND.

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**ABSTRACT**

Since the initiation of the National Family Planning Program (NFPP) of Thailand in 1971, the widespread use of contraceptives has led to a sustainable decline of fertility within a few decades. It had been assumed that favorable cultural settings, a latent demand for fertility control and considerable advancement in socioeconomic developments were also the responsible factors. Even though many studies have revealed the effects of factors influencing contraceptive behaviors, there have been few explicit or direct and local oriented considerations of current non-use of contraceptives of married women.

This study was undertaken to investigate factors associated with current non-use of contraceptives of married women in reproductive age in Kanchanaburi Demographic Surveillance System (KDSS) areas. It was a cross-sectional study that employed quantitative instrument in the survey data. The data were obtained from the Kanchanaburi Demographic Surveillance System, baseline survey of 2001, Institute for Population and Social Research and Mahidol University. To examine the effects of the demographic and socioeconomic factors on the non-use of contraceptives, a sample of 3741 currently married women of reproductive age was analyzed using descriptive analysis and logistic regression model.

The study revealed that the relationships between explanatory variables and non-use of contraceptives were negative except in the cases of geographical rural areas and educational attainment below secondary level. The effects of women's age, desires for additional children, secondary educational level and above, and living in rural geographical areas of the Rice and Plantation economy were found statistically significant on contraceptive non-use of women in the project areas. As their age increases, their desire for more children increases, and as their educational level increases until secondary and above, women are less likely to be non-users of contraceptives. However, the effects of other explanatory variables such as number of living children, occupational activities and income were found to be statistically insignificant. The positive relationships that were found between current contraceptive non-use and educational levels below secondary and geographical rural setting needs due attention.

The findings suggest that some of the demographic and socioeconomic characteristics of married women mentioned above have an effect on non-use of contraceptives in the project areas. In this regard, there is a need to strengthen the existing programs in spheres of educational and family planning programs to increase the proportion of users through close assessment of intervention programs.

KEY WORDS: NON-USE / CONTRACEPTIVES / DEMOGRAPHIC FACTORS  
/SOCIOECONOMIC FACTORS/MARRIED WOMEN  
/REPRODUCTIVE AGE /KANCHANABURI/ THAILAND

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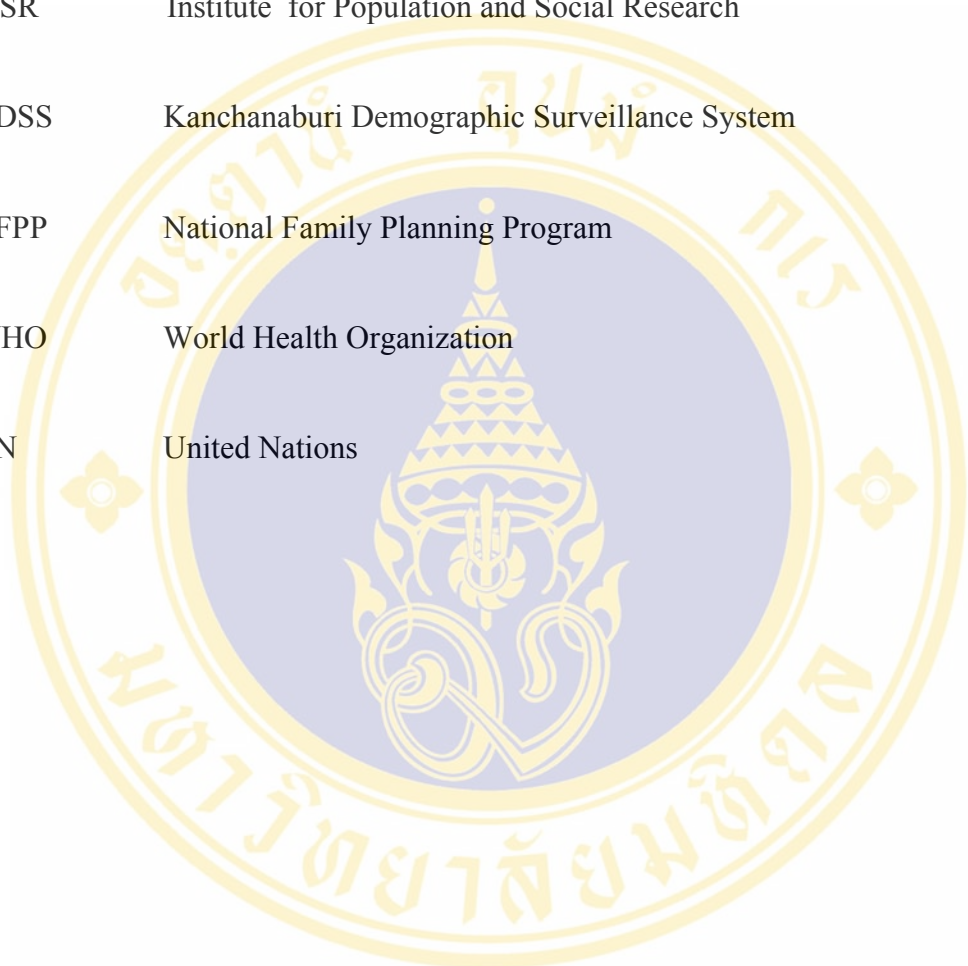
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## LIST OF ABBERVATION

|      |  |
|------|--|
| IPSR | Institute for Population and Social Research |
| KDSS | Kanchanaburi Demographic Surveillance System |
| NFPP | National Family Planning Program             |
| WHO  | World Health Organization                    |
| UN   | United Nations                               |



## CHAPTER I

### INTRODUCTION

Various interrelated factors are responsible for the practices of contraceptive use in different parts of the world. Hence, women's contraceptive uses have been noticed being influenced by such factors across regions and within countries. In spite of these, the practices of contraceptives are widely promoted as effective approaches of fertility reduction among reproductive age population in both developed and developing countries (Bongaarts, 1982). Even though the National Family Planning Program (NFPP) of Thailand that laid its foundation in 1971 it has resulted in substantial increase of contraceptive prevalence rate and decline of fertility rate (IPSR, 1996; Leoprapai and ThongThai, 1989; Chamrathirong and Stephen, 1986; Knodel et al, 1982) over few decades, there are still variations in use or non-use of contraceptive among married women across the country (Kanjapan, 1985). Some women might not use contraceptive due to various reasons such as accessibility, availability, lack of knowledge of family planning information and services, socioeconomic factors, socio-cultural pressures, individual characteristics of women, etc.

Among these diverse factors, a few studies have directly looked into the demographic and socioeconomic factors affecting non-users of contraceptives at a local level (Htay, 1993; Saifi, 2000; Rahman, 2002). Studies of factors related to non-use of contraceptives have considerable importance from different perspectives. The major significance are related to maintaining balance of the population growth with available scarce resources, identifying the socio-demographic factors that have an effect on contraceptive non-use a manageable family size and reducing health risk problems of women especially during the period of pregnancy.

Hence, this study investigates the effect of demographic and socioeconomic characteristics that are responsible for contraceptive non-use among married women in Kanchanaburi Demographic Surveillance System (KDSS) areas. Since these

factors have effects, some of the characteristics of married women aged 15-49 years that are associated with non-users of contraceptive methods are considered in this study.

### **1.1 Rationale**

One of the most effective ways of reducing rapid population growth is through the expansion of family planning programs with better provisions of contraceptive information and services. The underlying purpose of these programs are to help people to have appropriate number of children given their resources capacities. The goal is to increase the proportion of contraceptive users and to reduce the proportion of nonusers. In this regard, using contraceptives will assist women in regulating their childbearing time and increase their participation in other socioeconomic dimensions of life. If women use contraceptives, they can delay, space or limit birth properly. However, if they do not use contraceptives, they may be exposed to the chance of raising a large number of children. This fact might lead to the problems of handling and managing properly the needs of large family size with respect to different perspectives. Consequently, they face different problems with respect to health, participation in labor force, and cost of childbearing such as investment in schooling. Since childbearing and bringing up children needs time, it might prevent women from participating in productive activities and minimize the expected working time on economic activities (Podhisita et al, 1990).

In addition, women who do not use of contraceptives may face difficulties with respect to child health and in keeping appropriate childbearing time. The chances of a newborn being premature, being low birth weight and dying are more prevalent among women who are not using contraceptives. This also shows that the practices of contraception could help to keep the health status of newborn infants. If women properly use contraception, it is estimated to prevent 850,000 deaths per year among children under the age of five (WHO, 1995b). It could also help to maintain the health status of women by reducing unwanted pregnancies, frequent use of abortion, and early birth to very young and old women (National Research Council, 1993).

Secondly, women who do not use contraceptives might face different pregnancy and related complication such as unplanned pregnancy, unsafe abortion, and risks of STD's and HIV infections. The proportion of pregnancy related risks of married women who are not using contraceptives is less prevalent in developed than in developing world. The estimated maternal death due to pregnancy and childbirth is 500,000 women each year in the world. The prevalence ranges from 5-30 and 180 or more per 100,000 live births in the two worlds respectively (WHO, 1995a). The effects of foreseeable large family size are also inevitable as mentioned above. Since the HIV epidemic, however, the chance of condom nonusers being contracting STD's and HIV infection are greater. This puts the family at risks of future health problems. In due time, understanding and intervening such problems could save the life of many people in the communities.

In Thailand, some meager data show the occurrence of pregnancy related complication due to contraceptive non-use. Even though the provision of contraceptives information and services are readily available in sufficient supply, several studies have demonstrated that the considerable proportion of women who underwent abortion and faced pregnancy related problems were found to be non-users of contraceptives (United Nations, 1995: 125). Studies carried out in 1981 in hospitals in Bangkok revealed that one-fourth of maternal deaths are due to pregnancy-related complications. A study in Chayapoom province in Northeastern region in 1979 also found the prevalence of abortion reaching 207 per 1000 among reproductive age women and estimated the abortion rate as 25 percent. The same rate of abortion is similarly reported among young women aged 15 – 20 years (cited in United Nations, 2002). Therefore, under any circumstances using contraceptives has more advantages than not using it.

Thirdly, even though there are several studies on contraceptive use in Thailand, there are few studies on contraceptive nonuse in Kanchanaburi province at a local level. In addition to the aforementioned reasons, the study of contraceptive nonuse of women in Kanchanaburi province at KDSS areas is very important since it gives background characteristics of married women who are not using contraceptives. Moreover, findings from this study would assist health practitioners and policy makers in identifying the target populations for developing appropriate program

strategies. Most policy and program decisions require essential information; otherwise, they may not be effective. As the efforts of the Royal Thai Government are directed towards promotion of widespread contraceptive use, investigating factors associated with non-use of contraceptive is very important. In the meantime, it serves as a point of departure for better intervention programs.

Therefore, it is necessary to carry out this study in order to have better understanding of the related factors responsible for non-use of contraceptives among married women in KDSS areas.

### **1.2 Research Question**

Who are women who do not use contraceptive methods in Kanchanaburi Demographic Surveillance System (KDSS) areas?

### **1.3. Objectives.**

The overall objective of the study is to identify the effects of demographic and socioeconomic factors on contraceptives non-use among currently married women aged 15-49 years in KDSS areas.

## CHAPTER II

### LITERATURE REVIEW

The query of investigating influencing factors of contraceptive practices can be dated back to the time when rapid population growth became the concern of scholars and societies. Factors that are responsible for the non-use of contraceptives are various and range from individual characteristics to behavioural factors (Leoprapai and Thongthai, 1989). To this effect, to give an overview of the related issues, this chapter devoted to such tasks comprising four sub-sections: theories of fertility decline, factors affecting contraceptive non-use, conceptual framework and hypotheses of the study.

#### **2.1. Contraceptions and Theories of fertility decline**

There are a number of theories and arguments regarding what could determine the practice of contraceptives and fertility decline. The forerunner theory of fertility is the demographic transitional theory. This argues that because of improvements of the socioeconomic development, first mortality declines while fertility remains the same. These results in high population increase and put pressures on the population to control their fertility (Lucas and Meyer, 1994; Hirschman and Young, 1998).

Here, brief overviews of four prominent fertility theories and/or models are presented. These include economic theories, modernization theory (including Bulatao's (1983) socioeconomic views), flow of intergenerational wealth (Caldwell, 1987), and Proximate determinants of fertility (Bongaart, 1982).

#### **Economic Theory**

During the early time of the demographic theory, the argument that was based on economics was highly used in explaining fertility regulation. For a long period, it was one of the prominent theories in demography. It states that the desire to regulate fertility is determined by the pendulum of changes between cost and benefit

of childbearing (Long and Lubben-Dinkelaar, 1992). If the cost of bearing children becomes high, the demand for children will gradually reduce. The parents, in the mean time, would learn the disadvantages of bearing a large family size. As a result, they will start using contraceptives to control their fertility deliberately. This trend, it is argued leads to the decline of the fertility rate in the societies.

In spite of this, however, some studies have found that the assumptions of economic theories do not become a plausible explanation of the practices of contraceptive and fertility regulation. For instance, Coale (1973) has reviewed the European transition of fertility and come out with three propositions under which parents or married women could determine either to use or not to use contraceptives. It is argued that, fertility declines when parental awareness of small family size increases, when couples understood the benefits and consequently start deliberately using modern contraceptives.

### **Modernization Theory**

The main point of this theory is that as society moves gradually from traditional to modern life, the advantages of having a large number of children will be gradually decreased as a result of the improvements of the socioeconomic development. Mostly in traditional societies, children are the source of every thing such as for labor, area of investment in later age or guarantee at time of difficulties and symbols of parental strength in their lifetime. Due to these, the social norm of the society puts pressure in every family to bear many children deliberately (Cited in Long and Lubben-Dinkelaar, 1992).

However, it is argued that the gradual processes of modernization will diminish the desire for the above-mentioned benefits resulting from having a large number of children. At this time, parents may use contraceptive methods as a rationale in order to accommodate and live in a highly competitive economic life. The introductions of industrial and advanced technologies negatively affect the traditional value of having a large number of children (Notestein, 1945). It is stated that the impact of improved socioeconomic development consequently will lead to decreasing demand for children among parents.

Moreover, Bulatao (1984) conceptualizes a broader of view of modernization approach of fertility decline due to the improvements in socioeconomic perspectives. He argued that fertility decline could happen as a result of the improvement of the socioeconomic conditions. This view is related with underlying assumptions of demographic transitional theory. The decline of fertility occurs as the result of the interrelated array of social, economic, cultural, and religious issues that often influence the roles of proximate variables and fertility behaviors. He further states that the proximate determinants of fertility intentions are influenced and inhibited by the couple's age and childbearing experiences, socioeconomic characteristics, and values and dis-values of children (Bulatao, 1983). It is argued that the effects of these socioeconomic factors, such as improvement in education, female employment, etc increase women's access to family planning information and services. Consequently, it led to fertility decline in any given nations. A good example of this explanation or model is the decline of fertility, which occurred in countries such as Japan, England and Kerala State in India.

### **Flow of Intergenerational Wealth Theory**

This theory makes basic reference net flow of wealth from children to family and vice versa. In the societies, where the net flow of wealth is from children to wards the family, the fertility is high. On the other hand, where net flow of wealth is from the family to wards children, the fertility of family could be limited. The former is related to traditional societies whereas the latter refer to modern ones. The changes of the flow of goods and services from children to older generation will lead to the situation when fertility starts to decline. In the mean time, the intention of having a small family size will replace the former extended family system in the aforementioned societies. As a result, it is stated, this phase becomes the landmark of changes of the pre-transitional societies from a large family size to the small family preference societies (Rostow, 1960; Cited in Long and Lubben-Dinkelaar, 1992).

### **Proximate Determinant of Fertility**

This model explains that decline of fertility is determined by interrelated factors being functional during the time of reproductive age. Bongaarts (1988) states that there are eight proximate determinants that could determine the decline of fertility. These include “marital union, contraceptives use, induced abortion, duration of lactational infecundability, pattern of sexual activity, foetal loss, natural infertility and pathological infertility” (cited in Lucas and Meyer, 1994:47). During the reproductive period, number of live births, rates of childbearing and birth interval are influenced by occurrence of these proximate determinants. Among these determinants, the key ones that are more likely to determine fertility decline are the proportion of women in marital union, using abortion, breastfeeding, and practice of contraception (cited in Lucas and Meyer, 1994:46). It is argued that if women in reproductive age could use contraceptives, they could have smaller family sizes and the overall fertility rate could decline in the societies. Due to this, among major determinants, it is stated that the widespread practice of contraceptive uses is largely considered as responsible factors for the fertility decline.

### **2.2. Factors Influencing Contraceptive Non-Use.**

There are different factors that might have an effect on the non-use of contraceptives among married women, such as individual characteristics, socioeconomic factors, etc. In this study, however, in order to offers insight into what could possibly influence contraceptives non-use, some of the demographic (age, number of living children and desire for additional child) and socioeconomic (education, occupation, places of residence-strata, and level of income) factors are selected and related literatures are reviewed. They are considered to have an effect on the practice of contraceptive non-use of women.

#### **2.2.1. Demographic Factors**

The demographic factors are believed to play a significant role in influencing the non-use of contraceptive methods. These include women’s age, desire for additional children and number of living children.

### **Age of Women**

The practices of contraceptives are varies with the age of women. The age at which women exposed to using contraceptive methods may depend upon their socio-cultural milieu. In most societies, the date of first marriage marks the beginning of sexual relationships. It is an important factor in influencing contraceptive use and determines whether women will decide to use them or not. Several studies have shown that women's age has an effect on the use of modern contraceptive methods. These findings were not consistent at different places and over time. In addition, they vary considerably within the span of women's age (Kamnuansilpa et al,1982).

One of the prominent factors of age of women regarding the practice of contraceptive is the age at which women got married for the first time. Women who marry early have longer time of exposure to the risk of contraception than women who are married in later life do, such as beyond 20 years of age. The earlier they get marry, the more frequent sexual encounters through their fecund years. Younger women also face higher health risk during pregnancy and delivery as compared to their older counterparts. Hence, it concurrently leads to the start of early childbearing with wider time of exposure for conception. Besides, since younger women prefer giving birth to stabilize marriage, and gain adult status, mostly they did not use contraceptives. However, older women are more likely to use contraceptive as compared to younger women (Foreit and Foreit,1978). McDevitt et al (1996) showed that since young women aged 15-49 years mostly under social pressure to have children once they have married their contraceptive use are lower than older women. The former incidences are mostly a rural phenomenon where the accessibility and availability of contraceptives are highly limited. Hence, in most rural areas of developing countries, rural women face twofold problems, marrying at an early age and at the same time do not have better chances of access to modern contraceptives (Dang, 1995).

Nevertheless, the above mentioned problems are less likely to occur in Thailand due to two major reasons. Firstly, the mean age of first marriage has increased to more than 24 years (NSO, 2002). Secondly, the availability of modern contraceptive is also relatively better as compared to most developing countries even

far in rural areas. At any rate, the problems that early age married women face may be found in more rural areas, such as Kanchanburi province than in urban settings.

A study in China (Dudley and Poston, 1986) showed that the variation among women's contraceptive behaviors, however, was considerably high with respect to women's age. In Thailand, the proportion of women using modern contraceptive has been found to increase with age (Leoprapai and Thongthai, 1989). But Davanzo and Othman (1989) showed that the relationships between age and contraceptive use has an inverted -U shape, peaking at age 29. Among these women about 19 percent of married women aged 15-49 years were found not using contraceptive because they still want additional children, were pregnant or had given birth and were breastfeeding (Adioetomo & Rani, 1997). This shows that during early-marriage women prefer giving birth than using contraceptives. This practice is largely encouraged due the wish for family stability through having children that has roots and value in the cultural context. On the other hand, in Sri Lanka, Gajanayake (1989) found curvilinear relationships between age and current contraceptive use among all married women peaking at 35-39. Dang (1995) revealed that age has no effect on whether couples use contraceptives or not. These studies largely show that women are more likely to be non-users in their early or older age years. Thus, this issue may be important if it is investigated at a local level.

### **Number of Living Children.**

The existing number of living children has a significant effect on the nonuse of contraceptives. Mostly it is related with the ideal family size, gender preference, and level of development of the societies (Bairagi, 2001). These societal variations have been noticed well between traditional and more of modern societies. In traditional societies, the existing numbers of children have their own contribution toward the non-use of contraceptives. Particularly, a large number of living children is considered as an important assets to the family. Since children are considered as a support for older age security, the demands for children have meaningful role in most societies especially in developing countries. Hence, the number of children might play determining roles in whether women are more likely to use contraceptives or not.

Different findings have shown various results about the relationships of the number of children and the use of contraceptives. At times, when women have reached their ideal family size, they could have positive attitude toward contraceptive use. In Vietnam, for instance, couples with three or more children were found to be more likely to use contraceptive method than women with fewer children (Dang, 1995). If ideal family size is reached, their trends of using contraceptives increase. Dang (1995) further explained that there is no difference in contraceptive use among couples until the third child is born. But after they reached this level, they are more likely to choose contraceptive methods. This implies that woman with no or few children may not use contraceptive as compared to women with more children. As a result, contraceptive behaviours were found to be positively link to existing number of children and determine chance of women's to be using or not using contraceptives (Bogue et al, 1978). Hence, investigation of this variable is important at local level.

#### **Desire for additional child**

The desire for having more children is more complex and interrelated with various cultural norms particularly in communities with gender preferences particularly where sons' preferences are highly prevalent (De Seliva, 1993; Bairagi, 2001). It highly influences women's contraceptive behaviours having its root in the traditional system. Subsequently, it makes women non-users of contraceptive encouraging the potential demand for more children. As a result, families need to have additional children, and the possibilities of using modern contraceptive are very low. Moreover, in societies where there are cultural-oriented influences such as strong sex preferences, the desire for additional children is high even until the wanted sex has been achieved (Bairagi 2001; De Seliva,1993). Some studies have revealed that, for instance, in the Philippines, the decisions of women for not using contraceptives were found to be associated with the desire for more children (Syed, 2000). A longitudinal study in India revealed that about 36 percent of women were found to be not using contraceptive because they wanted additional children. Two-thirds of these women were found to either have no child or had one child in India (Roy et al, 2003). This shows that women may become non-users of contraceptives when they have a desire for additional children. However, some women become non-users even though

they do not desire additional children (Chamartrithirong and Stephen, 1986). Therefore, the desire for additional children or similar reasons may lead women to non-use of contraceptives.

In summary, one can say that the demographic characteristics of married women play a considerable role in determining their contraceptive nonuse. However, even though they have effects on contraceptive nonuse, they are not the only ones influencing contraceptive behaviors of married women (Pebley and Brackett, 1987). In addition, some socio-economic factors such as, education, income, occupation, places of residence, etc also have effects on nonuse of contraceptives of married women (Shah et al, 1998; Kritz and Gurak, 1991; Retherford et al, 1989).

### **2.2.2 Socioeconomic Factors**

The relationships between socioeconomic factors and contraceptive behaviours of women are complex. As a result, several research findings could not draw a uniform conclusion regarding its effects on contraceptive nonuse. Hence, these factors are considered in order to examine whether they could influence the extent to which women become non-user of contraceptives in different perspectives.

#### **Women's Education.**

Education is a formal system of gaining knowledge by which people could have better understanding of their perspectives in life. Education also increases access to basic knowledge, information, services and new innovations. Consequently it reduces the barriers of using contraceptives interns of increasing awareness and willingness to practices contraceptives (McDevitt et al 1996). Due to these functions, women with a higher educational level are considered to have better empowerment as compared to those women without education. The more education women have, the more likely are they to delay marriage and to use more modern contraceptives (Dang, 1995; Retherford et al, 1989; Shah et al, 1998).

As a result, education is one of the best means to improve women's power to use family planning information and services. The values, aspirations and skills that can be developed through the processes of education would encourage and facilitate women's societal roles beyond parental responsibilities (Rindfuss et al, 1980). It

could change the attitudes and perception of women about their fertility regulation and increase the usage of contraceptives and consequently lead to fertility decline. Even though the role of education is still debatable as to whether it has a significant roles in the decline of fertility (Singh and Casterline, 1985; Jejeebhoy,1996) and in encouraging the widespread contraception, the effects have been found to be multidimensional and influence women's reproduction in different perspectives. For instance, Donaldson and Jsui (1990) revealed that about 10 percent of couples in developing countries and 30 percent in developed countries with higher education were found to use traditional methods. Bulatao and Fawcett (1983) explained these relationships, however, as attributable to better information about or greater sensitivity to side effects of modern contraceptive methods of the more educated women. Similarly, in Brazil, the relationships between education and use of sterilization was found to be reversed, a large proportion of women with less education (46 percent) had been sterilized as compared to women with more education (36 percent). And most young women of Brazil had sterilization before the age of 25. Besides, in Taiwan, Chowa (1992) revealed that contraceptive use of more educated women was lower than among less educated women. Similarly, in the Philippines contraceptive use was found to be higher among women without education than educated women.

In contrast, as women's years of education increase, the usage of modern contraceptive is found markedly to increase. This fact is confirmed with women with a higher level of education. For instance, Dang (1995) showed that education has effects on contraceptive use when the educational levels of wife and the husband increase. Confirming this argument, Retherford et al (1989) underlined that women with six or more years of education have markedly higher rate of contraceptive use than those with five or fewer years of education. Besides, Shah et al (1998) and Jejeebhoy(1996) have demonstrated direct relationships between women's education and contraceptive use. Shah et al (1998) presented supporting evidences that show illiterate women are less likely to use contraceptive methods whereas Jejeebhoy(1996) revealed that the proportions of women using contraceptives increases consequently from lower to higher educational levels within different income levels of various countries. On the other hand, Jones et al (2002) revealed that women with less than a

college degree (37 percent) were more likely to be non-users of modern contraceptives than college graduates (54 percent).

In Thailand, however, the relationship between education and contraceptive use has been strongly observed and found positive for many years. As the educational levels of the women increases, their practices of contraceptives are found to be steadily going up. A significant difference, however, was found between women with no education and women with primary educational level in 1987 (Leopapai and Thongthai, 1989). Women with no education were found to be more of users of contraceptives than women with high level of education. This shows that more women with primary education become non-users than women who had no education.

Generally, there are more supportive and less opposing research findings across different countries about the relationships of education and contraceptive use throughout the world. This means women with lower educational level were found more likely to be nonusers than users in most societies. However, the role of education is still debatable, even if its effects were found to be increasing women's use of contraceptive. Nevertheless, there are limited findings that directly describe the educational differentials of non-user of contraceptives at a local level.

### **Women's Occupation.**

One of the socioeconomic factors that influence contraceptive behaviors is women's occupational activity. The overall assumption is that engaging in some occupation may give women life skills and experiences favorable for contraceptives use. The participation of women in certain occupations have some effect in changing the motivation and actual use of contraceptives and reduces the chance of being contraceptives nonuse (McDevitt et al 1996). The relationship between women's occupational activities and non-use of contraceptives were found to be mix across different studies. For instance, women who work outside home and earn income have greater control over family as well as family planning decisions (Berhanu and Hgan, 1997). Women with a higher level of occupation who are working in professional and administrative positions are more likely to choose modern contraceptive methods than those with lower occupation levels such as working in agricultural sectors (Lloyd, 1991; Kritz and Gurak, 1991). Similarly, in the Philippines, some studies

showed that women with a higher status of occupation were found using modern contraceptives more than women working in less occupational activity (Degraff et al, 1997). The effects of occupation on contraceptive use were also observed in Korea (Chowa et al, 1992).

However, studies on the effects of occupation on contraceptive non-use are not consistent in Thailand. For instance, women working in agriculture had a large number of children ever born than women in professional occupation (Kamnuansilpa and Chamrathirong, 1985). In Roi Et Province, women who were working in professional sector were found to have more family planning experiences than those working in other sectors such as, in commercial and unemployed. The reverse was found in Chiangrai province in which women who were engaged in commerce had more experience of contraceptive use than those engaged in agricultural sectors, housewives and unemployed women (Kamnuansilpa and Chamrathirong, 1985). However, in 1989 the highest percentage of married women using contraceptives was found in the professionals and in sales and business occupations. The lowest contraceptive practice was found among married women who were homemakers and not working (Leoprapai and Thong Thai, 1989). Another study in Thailand found no statistically significant effects of working status on contraceptive use among farm and non-farm occupations (cited in Leoprapai and Thong Thai, 1989). This means that there were no marked difference whether women are working in the farm and non-farm occupation as far as their contraceptive behaviours are concerned. This describes the fact that whether women are working or not, it has no significant effects on contraceptive practices.

### **Geographical residence**

By their virtue, some places are better furnished with health and other services than others. Mostly cities or urban areas have more of such chances than other places in many countries. Due to these factors, place of residence could affect the practices of contraceptive non-use of women. Women who are living in rural areas have less chances and access to contraceptive services than urban women.

These variations are attributed to locational factors that affect the aspirations, family preferences and the cost of fertility regulations (McDevitt et al, 1996). The availability and accessibility of basic services such as educational services, maternal health services including family planning information and services are more prevalent in urban settings than distant rural areas. McDevitt et al (1996) further showed that urban women have better access to educational, job opportunities, health facilities, contraceptives information and services, and also face lower social and financial costs of getting contraceptives. This shows that the geographical distance of women's residences may influence their access to contraceptive information and services. The place where women live could exacerbate the variation and has significant role particularly in developing countries. Due to this, geographical residence is considered as one of the influencing factors of contraceptive non-use (Islam and Mahmud, 1995).

Many studies have demonstrated the effects of residences on contraceptive practice in different countries. For instance, Dang (1995) described that rural women in Vietnam are less likely to use contraceptives than their urban counterparts due to variation in availability and accessibility of contraceptive supplies in rural areas. As a result, urban women were found more likely to practice contraception than their rural counterparts. Similarly, urban and educated women were found to be slightly higher contraceptive use and were less likely to be non-user of contraceptive than in other places (Malhotra and Thap, 1991).

In Nepal, however, urban women who were close to family planning service had not been using contraceptive due to negative perceptions that are associated with socio-cultural situation of the community (Schuler and Goldstein, 1986). In Iran, Aghajain and Merhyar (1999) showed that about 66 percent of rural women practice contraception as compared to 77 percent of urban women in 1997. He further explained that the percentage of current users of contraceptive in rural areas (64 percent) was higher than in urban areas (43 percent).

There are also similar trends in Thailand with respect to residential differences in contraceptive use across regions and provinces. For instance, the proportion of women aged 15-44 years using contraceptives (Kanjapan,1985) in Chiangrai province (73.7 percent) was greater (58 percent) than in Roi Et province. Besides, Chamrathirong and Stephen (1986) revealed that women in rural areas

were more likely to use no methods as compared to women living in Bangkok. DaVanzo and Othman (1989) showed that urban-rural differentials in modern contraceptive use are primarily attributable to the lack of family planning service in rural areas. Institute for Population and Social Research (1996) revealed that variation of contraceptive use across and within the regions and place of residences were found to relate to the accessibility and availability of contraceptive use in Thailand. This means that less accessibility and availability of contraceptive services and related factors in rural settings may influence women's contraceptive non-use as compared to women who live in urban settings. Hence, women who lived in rural areas mostly to have a lower probability of using contraceptives than women in urban areas (Oni and McCarthy, 1996). This shows that there is a difference in using contraceptives among women with respect to residential areas that might be responsible for variation in Thailand. Therefore, the geographical areas where women are living may have an effect on their contraceptive behaviours.

#### **Level of income.**

The importance of income is that it is not only directly enable women in purchasing contraceptives, but also encourages them to obtain contraceptives with wider perspectives particularly in societies where social norms and pressure put them in question. Different socioeconomic factors, such as gender roles also determine the available income to use for purchasing desirable commodities. From socioeconomic perspectives, even though women may want to buy contraceptives, mostly, they do not have better access to income in households. These practices have effects particularly in traditional-oriented developing countries. Women either do not have income or on what they have, they could not have the right to make a decision. This is the underlying issue with respect to women's income and contraceptive nonuse. Due to these diverse situations, there are different explanations and findings with respect to women's income and contraceptive nonuse.

The Easterlin synthesis framework states that the intention to employ deliberate fertility regulation and cost of contraceptive influences the decision to use contraceptive (Hashmi , 1993). This shows that the motivation to control fertility is determined by the affordable financial expenditure necessary in purchasing

contraceptive (Easterlin and Crimmins, 1985). If the foreseen cost of contraceptive use is higher, women can not buy and practice contraception even though they have the desire to avoid pregnancies. They may prefer to remain being non-users of contraceptives.

Moreover, many studies have revealed that low income is associated with increased contraceptive non-use. For instance, Jones et al (2002) showed that more women with family incomes below 300 percent of the federal poverty line found not using contraceptive more than those with higher incomes in USA. On the other hand, Freedman (1982) revealed that high-income couples have greater ability to plan effectively for lower fertility than lower income people. Survey data from developing countries in Asia, Africa, and Latin America have also consistently showed that rural women with low-income resources have low level of contraceptive use (Nazar et al, 1999). In addition, socio-cultural norms have an adverse effect even though women have sufficient income to obtain and use contraception. In China, Wang (1997) revealed that the leading reasons of non-use of contraceptives were fear or embarrassment of social pressures that inhibit women from seeking contraceptives.

There are some studies that show the relationship between of women's income and contraceptive use in relation with free availabilities of contraceptives and sociocultural pressures in Thailand. Most contraceptive methods are available freely without cost in public health institutions in Thailand. But a survey on student and factory worker has revealed that the sources of contraceptives were found to be pharmacies and Drug department stores due to the social pressures related to the privacy and anonymity contraceptive use (Soonthorndhada, 1994). In addition, Napaporn et al (2000) revealed that the highest proportion of rural women who spend travel cost in order to get contraceptives are considered the overall expenses for family planning services as a burden. This may show that woman perhaps face difficulties in using their income for contraceptive use due a combination of socio-cultural pressures and location particularly for young women. Thus, one can say that income might have effect on contraceptive nouse.

Therefore, the lower accessibility and ownership of sufficient income of married women might lead to nonuse of contraceptives in addition to interrelated cultural environment. This implies that married women may become non-users due to

sociocultural constraints. In Thailand cultural environment, women could keep their separate income for different expenditures other than the household income. However, how far this affects contraceptive use has not been addressed particularly with respect to women who could have separate income in Thai settings. Hence, to find the relationship between women's separate income and non-use of contraceptives, it is considered in this study.

In summary, even though the relationships of the demographic and socioeconomic characteristics of married women with non-use of contraceptive have been mostly traced at national levels over time, such associations have been rarely investigated at a local or individual level. As shown above, findings associated with non-use of contraceptives seem to be mixed, and scarce; some showing unclear relationship where others found no or little relationships across different demographic and socioeconomic factors. Hence, consideration of these factors here seems important to examine the effects further in this study. Moreover, the study of reasons why women did not use contraceptives, perhaps, gives supportive evidence for the major aforementioned results of research endeavors.

### **2.3. Reasons of Contraceptive Non-Use**

Every event has a cause. Something, not nothing, is responsible for some incident to happen. Similarly, women who are not using contraceptives may mention some reasons why they did not use contraceptive. The reasons why women are not using contraceptive also vary from one place to another (Nair and Smith, 1984; Malhotra and Thap, 1987). Studies on family planning research have consistently found an inverse relationship between practices of contraceptive and some fertility preferences (Shapiro and Jambashe, 1994). Among these, a substantial proportion of non-users of reported that they did not want any more children. In fact, women who are non-users might not need contraception, as they may be pregnant, infecund, health issues and other reasons.

However, there are women who do not want to use contraceptives due to the side effect, health problems, and anxieties resulting from using contraceptives. A study carried out in the Philippines revealed that the decisions not to use contraceptives were found to be associated with inconvenience, side effects, and

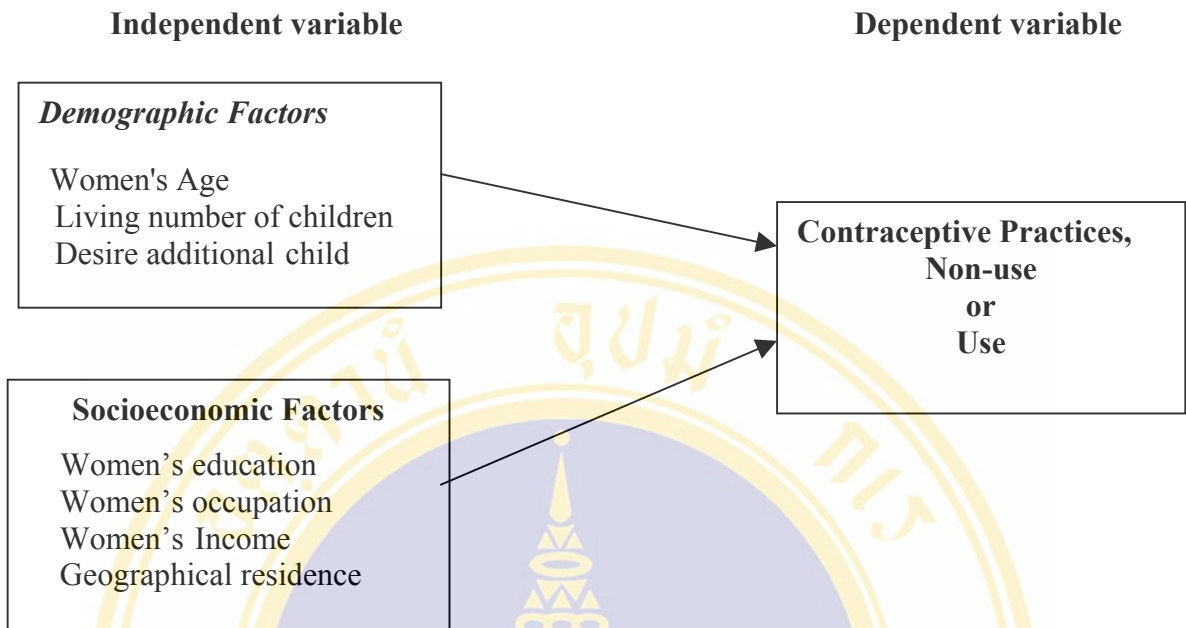
anxieties related to contraceptive methods (Syed, 2000). Similarly, in Sri-lanka, for instance, women who were not practicing contraceptives have mentioned the following reasons, such as desire for a child, menopause/hysterectomy, family opposition, religious reasons, inconvenience and dislike of contraceptives (Malhotra and Thap, 1991). Nevertheless, few women in the Sri Lanka study reported lack of knowledge and side effects of contraceptives. In Thailand, some of the common reasons for non-use of contraceptive were found to be desire for additional child and side effect and /or health concerns. While temporary infecundity (26.5 percent) was cited as most common reason in Korea, and disapproval of partners (2.3 percent) of contraceptive found to be the next common reasons in Thailand (Nair et al, 1984).

However, the common reasons mentioned by women for being non-use of contraceptives are mostly mixed and not uniform over time. Hence, it needs further considerations.

#### **2.4: Conceptual Framework**

This study investigates the effects of demographic and socioeconomic factors on nonuse of contraceptives at individual level. Based on the review of the literature, the framework of the study is developed with two domains, demographic and socioeconomic factors. The former component consists of three independent variables, such as age, desire of additional child and number of living children. The second one, socioeconomic domain comprises four independent variables. These are women's education, women's occupation, women's income and geographical residence. The independent variable is contraceptive practices, comprising use and nonuse of contraceptives.

This conceptual framework (Figure 2.1) assumes that these domains could have an effect on married women to be user or non-users of contraceptives. The arrows within the conceptual framework show the relationships between independent and dependent variables. As shown in Figure 2.1, seven different independent variables are identified to examine their effects on the current contraceptive practices (dependent variable) of married women in accordance with following formed relationships.



**Figure 2.1** Conceptual framework

## 2.5 Hypotheses of the Study

To achieve the objective of the study, the following hypotheses are formulated considering the demographic and socioeconomic variables that may influence women to be non-users of contraceptives. Generally, the hypothesis states that there are relationships between the demographic and socioeconomic characteristics of married women. More specifically, the hypotheses are as follows.

1. Women in younger age are more likely to be nonusers of contraceptives than older women.
2. The relationships between numbers of living children and contraceptive nonuse is negative
3. Women who desire for additional children are more likely to be non-users of contraceptive.
4. Women with higher educational levels are less likely to be nonusers of contraceptive than their lower level counterparts.
5. The relationship between income and contraceptive nonuse is negative
6. Women who live in more urban areas are less likely to be non-users of contraceptives than women who live in geographical rural setting
7. Women in agricultural sector are less likely use contraceptives than women working in non-agricultural sectors

## **CHAPTER III**

### **METHODOLOGY**

This study is cross-sectional and concerned with the investigation of the association between contraceptive non-use, and the demographic and socioeconomic characteristics of women in reproductive age (15-49 years) in Kanchanaburi DSS areas, Thailand. The data on contraceptive practices were obtained from the questionnaire of the pregnancy history of the Kanchanaburi Demographic Surveillance System (KDSS). The survey data used in this study comes from the baseline survey of KDSS's, Second Round, 2001

#### **3.1. Study Area**

This study was carried out in Kanchanaburi Province in KDSS areas, Thailand. The province is located in the western part of Thailand; close to Bangkok, 130 Km. It is the fourth largest of the 76 provinces in Thailand. The population of the study area consists of a variety of ethnic groups, largely rural, urban people and migrants. Nearly all of the populations are followers of Buddhism in religion. The economic activity of the population is mainly agriculture and other activities such as industry, and mixed economy.

In the province, the family planning program of Thailand promotes different types of contraceptive methods such as female and male sterilization, Norplant, injectable, IUD, the pills, condom, withdrawal, etc. Since most married women in these areas are using contraceptives, it is interesting to investigate the characteristics of non-user of contraceptives. The contraceptive Prevalence Rate (CPR) is 77 percent. The geographical differentials of married women who live in Urban/semi-urban, rice, uplands, plantation and mixed economy of five strata made the study more appropriate as far as non-use of contraceptives is concerned. The

largest proportion of married women, 27 percent, lived in Upland Strata while the lowest, 15 percent was found in rice areas (IPSR, 2001).

### **3.2. Source Of Data**

The source of data is one of the Kanchanaburi Demographic Surveillance System (KDSS) survey data set. Institute for Population and Social Research (IPSR), Mahidol University carried out the survey with financial support of the Wellcome Trust of the United Kingdom. It is a five-year project starting from January 2000. The objectives of the Kanchanaburi project are to monitor population changes related to the social, economic, and other important condition. In addition, it evaluates the effects of government and NGO's intervention programs within the areas over time. The survey data set used for this study were collected from 1st July to 30 July 2001. Since the objective of this study is investigation of factors associating with non-use of contraceptives, it selected the second round survey data that had detailed information about contraceptive practices.

### **3.3. Sampling and Data Collection**

The Baseline Survey employed stratified systematic sampling to draw the sample unit from Kanchanaburi province. The study units were 100 village and/or census blocks. In both urban and rural areas, the primary sampling units were census blocks and villages respectively. All the study units of 86 villages and 14 census blocks were divided into five strata; Urban/Semi-urban, Rice, Plantation, Uplands, and Mixed economy. Through multi-stage sampling approaches, an overall sample of respondents were drawn from every villages and/or blocks. Among all 32,224 eligible individuals, 29,024 respondents were interviewed. The response rate was 90 percent (IPSR, 2001).

The instrument of the survey was a structured interview that has three sets of questionnaires: village, household, and individual. These tools were used to collect the data. This study uses data collected through the individual questionnaire. The questionnaire of the individual asked only respondents aged 15 and over. It has eight

parts that is concerned with individual's personal characteristics, occupation and income, migration, health and sanitation, childbearing, contraception, marriage, and women's roles in the development community. Among these, one of the components of the questionnaires that asked about the pregnancy history has comprised a question about contraceptive practices of married women. This questionnaire asked women about their contraceptives stating did you use any contraceptives this month. Consequently, the response women were recorded using Laing's calendars.

### **3.4. Unit of Analysis**

The target population of the study was currently married women of reproductive age. The sample of women was selected from the data set. Accordingly, the unit of analysis was individual married women who were currently users and non-users of contraceptive and who were exposed to the risk of contraception at the time of the survey. Preliminary information was derived from 8388 married women's contraceptive behaviors of KDSS data set. However, after running the logistic regression analysis excluding the missing cases, detailed information about contraceptive behaviors of married women has been obtained only from individual women of 3,741 cases. These selected cases are sufficient to run the logistic regression analysis as compared to similar international investigations that have been carried out with less than half of this sample size (Matsumura and Gubhaju, 2001: 28; Teeroworn, 2002:32). Hence, the sample size of this study is 3741 currently married women aged 15-49 years in KDSS areas.

### **3.5. Operational Definitions**

Several factors could influence non-use of contraceptives among married women. In this study, women's characteristics are classified into two domains, demographic and socioeconomic. Seven explanatory variables are considered to examine their effects on non-use of contraceptives. The effects of these variables are investigated on contraceptive nonuse of married women. The dependent variable is contraceptive behavior measured as current non-user or user of any contraceptive

methods, either traditional or modern. Definition and categories of each variable are described below. In addition to giving definitions of each variable separately, a comprehensive description of the nature of the variables and the scale of measurement of each variable are presented in tabular form. Table 3.1 provides details of the type of concepts and variables with appropriate scale of measurement employed both in the descriptive analysis and logistic regression analysis respectively.

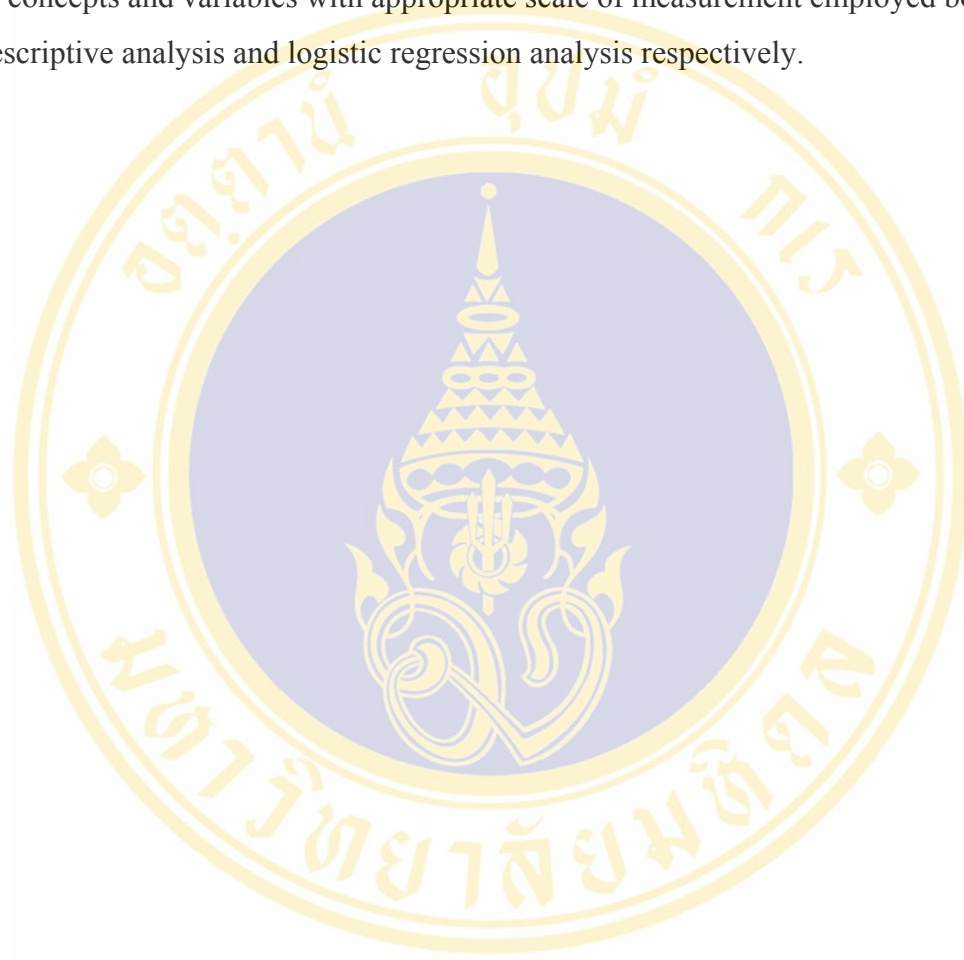


Table 3.1 Description of independent and dependent variables

| Variable                       | Description   | Scale of Measurement<br>(Descriptive analysis)  | Scale of Measurement<br>Logistic regression Analysis                                 |
|--------------------------------|---|---|--|
| <b>Contraceptive practices</b> | Currently using or not using contraceptive methods          | Interval scale<br>1=Not-use, 0= use   | Interval scale<br>1=Not-use, 0= use  |
| Age                            | 15-49 years   | <b>Categorical</b><br>1=15—19, 2=20-24, 3= 25-29,<br>4=30-34, 5=35-39, 6=40-44,<br>7=45-49                  | Categorical<br>1=15—24, 2=25-34<br>3=35-44, 4=45-49.                                 |
| Desire for additional child    | Numbers of wanted child or children, or not want (or Zero). | <b>Categorical</b><br><i>1=Do not want more child</i><br>2= want 1-2 children<br>3=want 3 and more children | Categorical<br><i>1=Want more child</i><br>0=Do not want more                        |
| Number of living children      | All children currently alive or no child, or Zero           | <b>Categorical</b><br>1=No child, 2=1-2 children,<br>3= 3 and more children                                 | Categorical<br>1=No child, 0=One or more children                                    |
| Women's Education level        | Highest Completed years of schooling (0 years on wards)     | Categorical<br>1=no education,<br>2=Primary (1-6 yr)<br>3=Secondary &above (7+years).                       | 1=no education,<br>2=Primary (1-6 yr)<br>3=Secondary &above (7+years).               |
| Women's Occupation             | Kinds of work that women had engaged in                     | Nominal<br>1=agriculture, 2= Labor/craft<br>3=Services/related<br>4= Profession/administrative              | Nominal<br>1=agriculture,<br>0= Non-agriculture                                      |
| Geographical Residence         | Resident of the women in KDSS areas                         | Nominal<br>1=Uplands, 2=Rice. 3=Plantation<br>4=Urban/Semi-urban,<br>5=Mixed Economy                        | Nominal<br>1= Uplands 2=Rice. 3=Plantation<br>4=Urban/Semi-urban,<br>5=Mixed Economy |
| Women's Income                 | Annual earning of married women in Bahts.                   | Interval scale<br>Grouped into six categories( See Table 4.2)   | Ratio scale<br>Entered as continuous data (0+)                                       |

## **Dependent Variable**

**Contraceptive behavior:** Refer to a deliberate pregnancy prevention method (or protection of unplanned conception) employed in order to postpone or space birth such as the pill, injectable, withdrawal, etc (Seltzer, 2002) at the time of the survey.

### **Non-use of contraceptives**

A contraceptive behavior of women who did not use any methods at the time of survey. These include currently married women who had reported that they were not using contraceptive during the time of collection of data of KDSS.

## **Independent variables**

### **Women's Age**

Refer to a complete years at the individual last birthday at time of the survey. In order to incorporate age at first marriage of Thailand that moved beyond 20 years, the age of married women classified into 10-year interval of four age groups in logistic regression analysis. The purpose of considering the variable in the analysis is to see whether there is age difference in not using contraceptive. In bivariate analysis, women's ages are grouped into seven categories. These age groups considered as categorical scale (Table 3.1).

### **Number of living Children**

Refer to number of currently living children; both male and female who belong to the married women biologically, this does not include adopted children, Stepchildren, stillbirths, etc. Living numbers of children classified as categorical, no child, and one or more children in the logistic regression analysis. The purpose of including number of living children is to examine its effects on nonusers of contraceptive methods. According to living number of children, however, in bivariate analysis, women categorized into three groups including women who had no child (Table 3.1).

**Desired additional children**

This refers to the wish of married women to have or not to have additional children at the time of the survey. Since the concern of the study is nonuse of contraceptive, the desire of additional children of women classified into two categories as want or do not want more children. The purpose of such approach is to investigate the effects of women's desire for additional child on their nonuser of contraceptive behaviors. Nevertheless, in bivariate analysis, the desire of women for additional child categorized into three groups including women who have no desire for additional child (Table 3.1).

**Educational Level**

Women's educational levels are considered as completed years of schooling. Depending upon the educational levels of married women in the sample, it classified into three levels, no education, primary, and secondary and above educational levels in logistic analysis. The same categories have used in bivariate analysis (Table 3.1). The level of education measured as categorical variable. The idea behind this consideration is to examine how far educational levels of married women is related with nonuse of contraceptive methods.

**Women's Occupation**

The occupations considered in this study refer to the main job in which married women engaged at time of interview. If women were participating in more than one job, only the major job or the job on which she mostly spent time is considered. The assumption in considering occupational activities is since it is a proxy measure of women's status; it has effects on contraceptive nonuse of married women. Four occupational activities of women identified and grouped such as agricultural sectors, labor/craft, services/related, and professional and administrative in descriptive analysis. In logistic analysis, however, the occupational activities of married women categorized into two groups as women working in agriculture or non-agricultural sectors (Table 3.1). The variable considered as nominal

**Geographical residence**

This variable classified into five geographical strata. It refers to the place where the women live at the time of interview in Kanchanaburi Provinces of KDSS areas. These five areas include Urban/semi-urban, Rice growing areas, Plantation area, Upland, and Mixed economy. The urban/semi-urban areas cover the populations who live in industrialized and municipal places. The rest places covers the population where women live such as in rice cultivation, sugar cane or cassava plantations, three highland districts and other villages (as Mixed economy) respectively (IPSR, 2001). The purpose of considering these residences into five broad areas are that it may give the trend and effects of living in more rural or urban setting on the non-use of contraceptives of women within wider areas of setting than the dichotomous rural and urban places. In both descriptive and logistic regression analyses, the same groups are used (Table 3.1). The variable is considered as nominal data.

**Women's Income**

This is the amount women's of annual income separate from the household. The idea of considering separate women's income is that women who have such income could have more decision power to use contraceptives than those who do not have it. Attempts are made to see the trend and effects of income on nonuse of contraceptives through both analyses. In bivariate analysis, women's annual incomes grouped into six categories. However, in logistic regression analysis, it treated as continuous variable (Table 3.1).

### **3.6. Data Analysis**

The study used both descriptive and multivariate analysis in order to investigate the association between explanatory variables and non-use of contraceptive behaviors of married women.

#### **Descriptive Analysis**

To examine the association of each independent variable with dependent variable, measure of central tendencies (mean, percentages, and frequencies) and bivariate analyses are employed. The analysis enable to examine the relations of the proportion of current users or non-users of contraceptive of married women within each explanatory variable.

#### **Multivariate Analysis**

The dependent variable of this study is dichotomous. To examine whether independent variables have significant effects on use or non-use of contraceptive, a logistic regression is used. In the analysis, the dependent variable is assigned a value of 1 if the currently married woman were non-user of contraceptive and a value of zero (or 0) for user of contraceptives. The reference group in each explanatory variable also identified and arranged as the first category of the variables. This analysis uses SPSS for Windows.

Accordingly, depending upon relative importance of each explanatory variable, the less or more likelihood of being non-user of contraceptive method of married women is assessed in terms of log of odds. More specifically, by this analysis, the effects of the demographic and socioeconomic variables on current non-use of contraceptive (dependant variable) of married women are investigated. The analyses have helped to examine independent relationship between women's characteristics and current non-use of contraceptive, controlling for effects of other independent variables. Besides, the relative importance of each category of independent variable is expressed in comparison with reference group in percentage.

### 3.7. Limitation of the Study

Some of the limitations of the study include the following.

1. The majority of women in the sample (73 percent) were contraceptive users in the sample. Hence, since the data are skewed to one direction, investigating the variation or the effects of explanatory variables on contraceptive non-use might be not sufficient or influenced by larger sample size.
2. The current nonusers of women who are considered in this study were perhaps ever-users of contraceptives sometimes before of the time of the survey. In this study, however, they are considered as current non-users of contraceptives, which might not show that they are completely contraceptive non-users.
3. Most important explanatory variables that may have effects are not considered in this study since it is focused on the data that are accessible and available in the Round Two Kanchanaburi Demographic Surveillance System, 2001. These may include such as age at first marriage, duration of marriage, husbands characteristics, religious, mass media, accessibility, availability and acceptability of family planning services, sources of modern contraceptive, etc (Frankenberg et al, 2001; Knodel et al, 1999). For instance, the religious perspective of attitude and behavior may have a significant role on contraceptive non-use particularly with respect to Muslims and Buddhist in Thailand (Knodel et al, 1999), this study could not addressed such issues since nearly all married women covered in KDSS data set were Buddhist.

## CHAPTER IV

### RESULTS

This section deals with the results of the study and it comprises four parts, general characteristics of the sample, results of bi-variate analysis, reasons of non-use of contraceptives and results of logistic regression analysis.

#### 4.1. General characteristics of the sample

This sub-section gives an overview of some of the background characteristics of the sample. The contraceptive prevalence rate of currently married women of the sample is 73 percent. The proportion of non-users of contraceptives is slightly more than one-fourth (26.9 percent) of the total women in the sample (Table 4.2).

Tables 4.1 show that the majority of married women (22 percent) are in age group of 40-44 years. Youngest women constitute the lowest proportion in the sample, only 4.5 percent. The rest of the samples are in middle age groups. The average age of the sample of women was 35.1 years. About 75 percent of these married women did not want to have additional children and only one-fourth (25 percent) wanted to have either 1-2 or three or more additional children. The average desired additional number of children is 1. About half (50.7 percent) of women have three and more children whereas women who have no children consist of the second largest proportion, about 37.2 percent. Smallest proportions of women (12.1 percent) have one or two children. The average number of living children is approximately two. This shows that family size of the sample of women is small. Nearly two-third of the sample of women (63 percent) had formal education up to primary level, about one-fifth (20.1 percent) had no education and a smaller proportion (16.9 percent) of women had reached secondary educational levels or higher. On the average, most of them had 4.9 years of schooling. The largest of proportion (66.6 percent) women were engaged in agricultural jobs. Women who have engaged in service and related occupation consist of the next second largest

proportion (16.9 percent). A small proportion (12.1 percent) of married women is engaged in labor and crafts activities. Women who engaged in professional and administrative works constitute the smallest proportion, 5 percent. More than three-fourth of women (76.8 percent) had either low income or no separate income at all. A substantial number of women (42.2 percent) had no individual/separate income. Women who have higher annual income of 36,001 bahts and more constitute the lowest (23 percent). On averages, the annual personal income of women in the sample is 30,916.13 Bahts. This shows that annual separate income of women per year is relatively low. The majorities (28.1 percent) of women live in the Uplands areas that largely characterized as rural settings. The remaining of the sample of women live in the mixed economy zones (22.6 percent), in the plantation areas (17.6 percent), in the urban/semi-urban areas (16.5 percent), and in the rice growing zones (15.1 percent).

**Table 4.1 Percentage distribution of currently married women aged 15-49 years  
In Kanchanaburi DSS Areas by Demographic and Socioeconomic  
Characteristics, 2001**

| <b>Characteristics</b>           | <b>Percent</b>      |
|----------------------------------|---------------------|
| <b>Age group</b>                 |                     |
| 15- 19                           | 4.5 (170)           |
| 20-24                            | 11.1 (416)          |
| 25-29                            | 14.0 (522)          |
| 30-34                            | 14.8 (552)          |
| 35-39                            | 16.7 (625)          |
| 40-44                            | 21.9 (820)          |
| 45-49                            | 17.0 (636)          |
| Total                            | 100 ( <b>3741</b> ) |
| Mean age                         | 35.1 years          |
| Median                           | 36.0 years          |
| Standard deviation               | 8.9 years           |
| <b>Desired additional child</b>  |                     |
| Do not want more                 | 75.1 (2808)         |
| 1-2 children                     | 23.3 (870)          |
| 3 and above children             | 1.7 (63)            |
| Total                            | 100 ( <b>3741</b> ) |
| Mean desired additional children | 1.0 child           |
| Median                           | 0.0 child           |
| Standard deviation               | 0.75 child          |
| <b>Number of Living children</b> |                     |
| Have No child                    | 37.2 (1391)         |
| 1-2 children                     | 12.1 (453)          |
| 3 and above children             | 50.7 (1897)         |
| Total                            | 100 ( <b>3741</b> ) |
| Mean number of living children   | 1.6 children        |
| Median                           | 1.0 children        |
| Standard deviation               | 1.1 children        |

**Table 4.1 Percentage distribution of currently married women aged 15-49 years  
In Kanchanaburi DSS Areas by Demographic and Socioeconomic  
Characteristics, 2001 (Continued...)**

| <b>Characteristics</b>              | <b>Percent</b>         |
|-------------------------------------|------------------------|
| <b>Women's Educational levels</b>   |                        |
| No education                        | 20.12 (753)            |
| Primary education (1-6 yrs)         | 62.94 (2354)           |
| Secondary edu. & Above (7+ yrs)     | 16.94 (634)            |
| Total                               | 100 ( <b>3741</b> )    |
| Mean years in education             | 4.9 years              |
| Median                              | 4.0 years              |
| Standard deviation                  | 4.0 years              |
| <b>Women's Occupation</b>           |                        |
| Agricultural Sector                 | 66.5 (2491)            |
| Labor /Craftsman                    | 12.1 (451)             |
| Services workers                    | 16.9 (632)             |
| Professional/Administrative         | 4.5 (167)              |
| Total                               | 100 ( <b>3741</b> )    |
| <b>Women's Individual Income</b>    |                        |
| No income                           | 42.2 (1580)            |
| Low income (100-36,000 Bahts)       | 34.6 (1295)            |
| High income (36001 and above Bahts) | 23.2 (866)             |
| Total                               | 100 ( <b>3741</b> )    |
| Annual mean income per year         | <b>30,916.13 Baht</b>  |
| Median                              | <b>10,000.00 Bahts</b> |
| Standard deviation                  | <b>66,901.2</b>        |
| <b>Geographical reside/Strata</b>   |                        |
| Uplands                             | 28.1 (1051)            |
| Rice                                | 15.1 (565)             |
| Plantation                          | 17.6 (660)             |
| Urban/Semi-urban                    | 16.6 (618)             |
| Mixed Economy                       | 22.6 (847)             |
| Total                               | 100 ( <b>3741</b> )    |

## 4.2. Results of Bivariate Analysis

Table 4.2 presents detailed descriptions of the results of cross tabulation of currently married women's contraceptive behaviors by different demographic and socioeconomic characteristics. The analyses focus on contraceptive non-users and are based upon the operational definitions of variables given in Table 3.1. In entire sample, the proportion of non-user of contraceptives slightly more than one-fourth (26.9 percent) whereas users comprises the largest proportion (73.1 percent) of the sample.

### Women's Age

Non-users of contraceptives is the highest among the very young (31.2 percent) and very old women (31.8 percent). This may relate to the fact that young women probable do not reach their desirable family size whereas older women may have already reached menopause and do not need to use contraceptives any more. The lower proportions of non-users are found in all other age groups. Hence, the association between women's age and contraceptive nonuse is difficult to determine

### Desire for additional children

The association between non-use of contraceptive and desired additional children seems consistent and positive. As the number of desired additional children increases, the proportions of nonusers also increase. The proportion of nonusers is highest among women who want to have three children and more (73.0 percent) whereas women who want to have one or two additional children account for 41.4 percent. The proportion of non-users (21.4 percent) is the smallest among those who want no more additional children.

### Living Number of Children

The pattern of association between number living of children and women's contraceptive nonuse is not consistent. The first and second highest proportions of nonusers (28.7 percent and 27.8 percent) are among women who have no child and three or more children respectively. The lowest proportions are women who have one-two living children (17 percent).

**Women's Education**

There is no consistent distribution in the sample with regard to women's educational levels and their contraceptive non-use. The highest proportions of nonuser are found among women who have no education (33.3 percent) and among those who had secondary educational level and above (32.20 percent). The smallest proportion of nonuser (23.4 percent) is found among women with educational level up to primary level.

**Women's Occupation**

The pattern of association of the proportions of non-user of women with respect to their occupational activities is not consistent. The largest proportions of non-users found among women in professional and administrative work, 35.3 percent, whereas the proportion of non-users who are engaged in labor/craft activities account for 26.6 percent. The relation between the proportions of nonusers of contraceptives and their occupational activities seems difficult to determine.

**Women's income**

There is no uniform patterns of variation of contraceptive nonuse among women with respect their income. Contraceptive non-use seems to be lower proportion among women with middle level of income (21.3 percent) compared to those with the lowest (27.5 percent) and the highest income groups (33.2 percent).

**Geographical Residence**

The pattern of association of the proportion of nonusers and place of residences in wider areas of rural settings seems consistent and positive. The majority of non-users are found in Upland areas (30.7 percent) and from urban/Semi-urban areas (29.9 percent). The proportion of non-user of among women, who live in rice, Plantation and mixed economy areas are relatively lower, 28 percent, 3 21.5 percent and 23.1 percent respectively. Like in most other characteristics described above there is no evidence to conclude that non-use of contraceptives varies with areas of residences, which is proxy of modernization.

In summary, most the association between the proportions of contraceptive non-use and explanatory variables are inconsistent and difficult to determine. But there are consistent associations between contraceptive non-use and desire with additional children and geographically rural settings



**Table 4.3 Percentage distribution of currently married women aged 15-49 years by of contraceptive behaviors in KDSS areas, 2001.**

| <b>Characteristics</b>            | <b>Non-users<br/>(1006)</b> | <b>Users<br/>(2735)</b> | <b>Total</b> |
|-----------------------------------|-----------------------------|-------------------------|--------------|
| <b>Total sample</b>               | <b>26.9</b>                 | <b>73.1</b>             | <b>3741</b>  |
| <b>Age group</b>                  |                             |                         |              |
| 15- 19                            | 31.2                        | 68.8                    | 170          |
| 20-24                             | 27.6                        | 72.4                    | 416          |
| 25-29                             | 28.9                        | 71.1                    | 522          |
| 30-34                             | 28.1                        | 71.9                    | 552          |
| 35-39                             | 22.1                        | 77.9                    | 625          |
| 40-44                             | 23.4                        | 76.6                    | 820          |
| 45-49                             | 31.8                        | 68.2                    | 636          |
| <b>Desired additional child</b>   |                             |                         |              |
| <b>Do not want more</b>           | 21.4                        | 78.6                    | 2808         |
| Want 1-2 children                 | 41.4                        | 58.6                    | 870          |
| Want 3 and more children          | 73.0                        | 27.0                    | 63           |
| <b>Living Number children</b>     |                             |                         |              |
| No child                          | 28.7                        | 71.3                    | 1391         |
| Had 1-2 children                  | 17.7                        | 82.3                    | 453          |
| Had 3 and above children          | 27.8                        | 72.2                    | 1897         |
| <b>Women's Educational levels</b> |                             |                         |              |
| No education                      | 33.3                        | 66.7                    | 753          |
| Primary education (1-6 yrs)       | 23.4                        | 76.6                    | 2354         |
| Secondary edu. & Above (7+ yrs)   | 32.2                        | 67.8                    | 634          |

**Table 4.3 Percentage distribution of currently married women aged 15-49 years by of contraceptive behaviors in KDSS areas, 2001.**  
(Continued...)

| <b>Characteristics</b>            | <b>Non- users<br/>(1006)</b> | <b>Users<br/>(2735)</b> | <b>Total</b> |
|-----------------------------------|------------------------------|-------------------------|--------------|
| <b>Total sample</b>               | <b>26.9</b>                  | <b>73.1</b>             | <b>3741</b>  |
| <b>Women's Occupation</b>         |                              |                         |              |
| Agriculture                       | 25.8                         | 74.2                    | 2491         |
| Labor /Craftsman                  | 26.6                         | 73.4                    | 451          |
| Services/related                  | 29.1                         | 70.9                    | 632          |
| Professional/Administrative       | 35.3                         | 64.7                    | 706          |
| <b>Women's Income</b>             |                              |                         |              |
| 0000-----4,999                    | 27.5                         | 72.5                    | 1693         |
| 5,000-----9,999                   | 30.3                         | 69.7                    | 152          |
| 10,000----19,999                  | 21.3                         | 78.7                    | 356          |
| 20,000----39,999                  | 25.1                         | 74.9                    | 697          |
| 40,000-----99,999                 | 26.6                         | 73.4                    | 563          |
| 100,000--- and over               | 33.2                         | 66.8                    | 280          |
| <b>Geographical reside/Strata</b> |                              |                         |              |
| Uplands                           |                              |                         |              |
| Rice                              | 30.7                         | 69.3                    | 1051         |
| Plantation                        | 28.3                         | 71.7                    | 565          |
| Mixed Economy                     | 21.5                         | 78.5                    | 660          |
| Urban/Semi-urban                  | 23.1                         | 76.9                    | 847          |
|                                   | 29.9                         | 70.1                    | 618          |

### 4.3. Reasons for non-use of contraceptives

In the baseline survey of Kanchanburi project, among currently married women, those who were not using contraceptive were asked their reasons for not using contraceptives. These reasons of women grouped into five major categories (Table 4.3). It is found that the prominent reason of non-use of contraceptive (37.9 percent) was health issues/problems that comprises of side effects, dislike, and infecundity. The next common reason of nonuse, exclusively, was the desire for additional child, about 31.8 percent. About 18.6 percent of women mentioned pregnancy related issues such as, amenorheo, breastfeeding, gestation, etc. Other reasons of nonusers consist of the fourth largest proportion, about 6.1 percent. Yet, it comprises important determinants of contraceptive use such as lack of knowledge of contraceptive methods, enough money, sufficient time, not being convenient, etc. Partner issues (e.g. Temporary leave of husband such as moving to some place, etc) consist of the lowest proportion, only 5.6 percent.

The two most common reasons of nonusers' mentioned in this study are health issues and desire for additional child. Surprisingly, however, no married women gave reasons of partner's disapproval of using contraceptives. This may be attributed to the sustainable acceptance of widespread practices of contraceptives among the communities in particular and in Thailand as whole. In the mean time, one can say that the commons of reason nonuse of contraceptives are related to health problems and fertility preferences. Even though, the category of other reasons consist of lower proportion, it comprises factors such as lack of knowledge, access to family planning, etc which it might have some implications in family planning perspectives.

**Table 4.3 Percentage Distributions of Married Women aged 15-49 years in Kanchanaburi DSS areas by Reasons of Non-use of Contraceptives, 2001.**

| Reasons of Non-use  | Percent    |
|---|------------|
| Health Issues/Problems (Side effects, Dislike, infecundity)             | 37.9 (382) |
| Desire for additional child   | 31.8 (320) |
| Pregnancy and related<br>(Amenorheo, breastfeeding, gestation)          | 18.6 (187) |
| Other reasons (No money, time, Do not know, Not convenient to get, etc) | 6.1 (61)   |
| Partners' Issues (Temporary absence of husband, etc)                    | 5.6 (56)   |
| Total   | 100 (1006) |

#### 4.4. Results of Logistic Regression Analysis

This section presents the results of the logistic regression analysis showing the effects of each demographic and socio-economic characteristic of married women on their practices of non-use of contraceptives while controlling other variables. The analyses are based upon the operational definitions of variables given in Table 3.1. The objectives are to examine the effects of explanatory variables on contraceptive non-users. The explanatory variables comprise such as women's age, desired additional children, number of living children, education, occupation, women's separate income and geographical residences. The dependent variable is contraceptive practices, non-use or use of contraception. The results of the logistic regression analysis, its coefficients and odds ratios are presented in Table 4.4.

##### Women's Age

The reference category is younger women aged 15-24 years. The coefficient of the model of all age groups is negative. This means that the effects of women's age on contraceptive nonuse are in the opposite direction. The odds of being nonuser are much reduced among women in all other age groups when compared to reference group. Therefore, older women are less likely to be non-users. Compared to younger women aged 15-24 years, women in age group 25-34 years and 35-44 years are 58 percent and 49 percent less likely to be nonuser of contraceptives respectively. However, women in older ages, 45-49 years, are 43 percent less likely to be nonuser of contraceptives as compared to the younger women. The effects of women's age on their nonuse of contraceptive are statistically significant and decrease as the age of women increases. This is consistent with the hypothesis of the study. Women's age have statistically significant effect on contraceptive nonuse. Hence, the relationship between women's age and contraceptive nonuse is negative.

**Desire for additional child**

The reference group is married women who want more children. As shown in Table 6, the coefficient of the model is negative. This means that the odds of women who want no more children to be become nonuser reduced when compared to the women who want to have additional children. In other words, women who want to have more children would be less likely to use contraceptives. They prefer to be nonusers of contraceptives. Women who do not want more children are 73 percent less likely to be nonusers of contraceptives compared to women who want more children. The effect of desire for additional children on contraceptive nonuse is statistically significant. This is consistent with the hypothesis that states women who have desire for additional children are more likely to be non-users of contraceptives. Hence, the relationship between women's desire for additional child and nonuse of contraceptive is negative.

**Table 4. 4. Results of Logistic regression, coefficients and odds ratios**

| Characteristics                             | Beta     | Standard Error | Odds ratio |
|---|----------|----------------|------------|
| <b>Age group in years</b>                   |          |                |            |
| 15-24 (Ref.)                                |          |                |            |
| 25-34                                       | -0.8675  | 0.1510         | 0.42*      |
| 35-44                                       | -0.6740  | 0.1250         | 0.51*      |
| 45-49                                       | -0.5656  | 0.1112         | 0.57*      |
| <b>Desired Additional children (number)</b> |          |                |            |
| Want more children (Ref.)                   |          |                |            |
| Do not want more children                   | -1.3146  | 0.0991         | 0.27*      |
| <b>Number of living children (number)</b>   |          |                |            |
| No child (Ref.)                             |          |                |            |
| One or more children                        | -0.0491  | 0.0894         | 0.95       |
| <b>Women's Educational level</b>            |          |                |            |
| No education (Ref.)                         |          |                |            |
| Primary education (1-6 yrs)                 | 0.2420   | 0.1430         | 1.27       |
| Secondary and above (7+)                    | -0.2592  | 0.1166         | 0.77*      |
| <b>Women's Occupation</b>                   |          |                |            |
| Agriculture (Ref.)                          |          |                |            |
| Non-agriculture                             | -0.0977  | 0.0984         | 0.91       |
| <b>Women income (Exact number entered)</b>  |          |                |            |
|   | -0.0000  | 0.0000         | 1.00       |
| <b>Geographical residences (Strata)</b>     |          |                |            |
| Uplands (Ref.)                              |          |                |            |
| Rice  | 0.2807   | 0.1146         | 1.32*      |
| Plantation                                  | 0.2672   | 0.1286         | 1.31*      |
| Urban/semi urban                            | -0.0559  | 0.1300         | 0.95       |
| Mixed Economy                               | 0.2194   | 0.1349         | 1.25       |
| <b>Constant</b>                             |          |                |            |
|   | 0.4760   | 0.1923         |            |
| -2x log likelihood                          | 4084.122 |                |            |
| X 2   | 271.702  |                |            |
| Df  | 13       |                |            |
| N   | 3741     |                |            |

\*A Coefficient statistically Significant at the 0.05 level (Ref)= Reference group

**Number of living children.**

In this case, the reference group is married women who had no living children. Table 4.4 shows that a negative coefficient. Women who had any number of living children are 5 percent less likely to be nonusers of contraceptives as compared to women who had no living child. Nevertheless, the effect is not statistically significant. This means that number of living children has no effect on being non-user of contraceptive. However, the coefficient of the model shows that as the number of living children of women increases the likelihood to be non-users decreases. This association supports the hypothesis of the study. Therefore, the relationship between women's number of living children and non-use of contraceptive is negative.

**Women's Education**

The reference group is married women who had no education. The coefficient for the group with the primary educational level is positive. This means that compared to the reference groups the odds of women who had primary education level to be non-use of contraceptive increase. Women who had primary level of education are 27 percent more likely to be non-users of contraceptives compared to women with no education. However, the effect of this education level on non-use of contraceptive is statistically insignificant. This implies that whether women have primary level of education or not, it has no effect on being contraceptive non-use. The coefficient for secondary educational level is negative indicating that the odds of contraceptive non-use of contraceptives decrease with this level of education.

In other words, when educational level of women becomes secondary and above, they will be less likely to become non-users (or more likely to be users as mostly expected). Married women with such educational level are 23 percent less likely to be nonusers of contraceptives compared to women who had no education. The effect of education at secondary level and above is statistically significant. Hence, the more women's educational level increases up to secondary and above, the less likely that they become nonusers of contraceptives. This finding supports the stated hypothesis in this study. Overall, it is possible to say that educational levels

have mixed effects on contraceptives nonuse of women. The relationships, hence, between women's educational level and contraceptive nonuse are either negative or positive.

### **Women's Occupation.**

The reference group in this case is married women who have engaged in agricultural works. The coefficient is negative suggesting that the odds of women in non-agricultural to be nonuser of contraceptives is reduced compared to those in agriculture. Women who were working in non-agricultural sectors are 9 percent less likely to be nonusers of contraceptives as compared to women who are working in agricultural sector. However, the effects of engaging in certain occupational activities are not statistically significant. This means whether women working in agriculture or nonagricultural sectors, occupation levels has no significant role on contraceptive nonuse of women. Nevertheless, as the model shows the relationships between contraceptive non-use and occupational activities is negative. Hence, the hypothesis that states women in agricultural sector is more likely non-user than non- agricultural sector is not accepted.

### **Women's income**

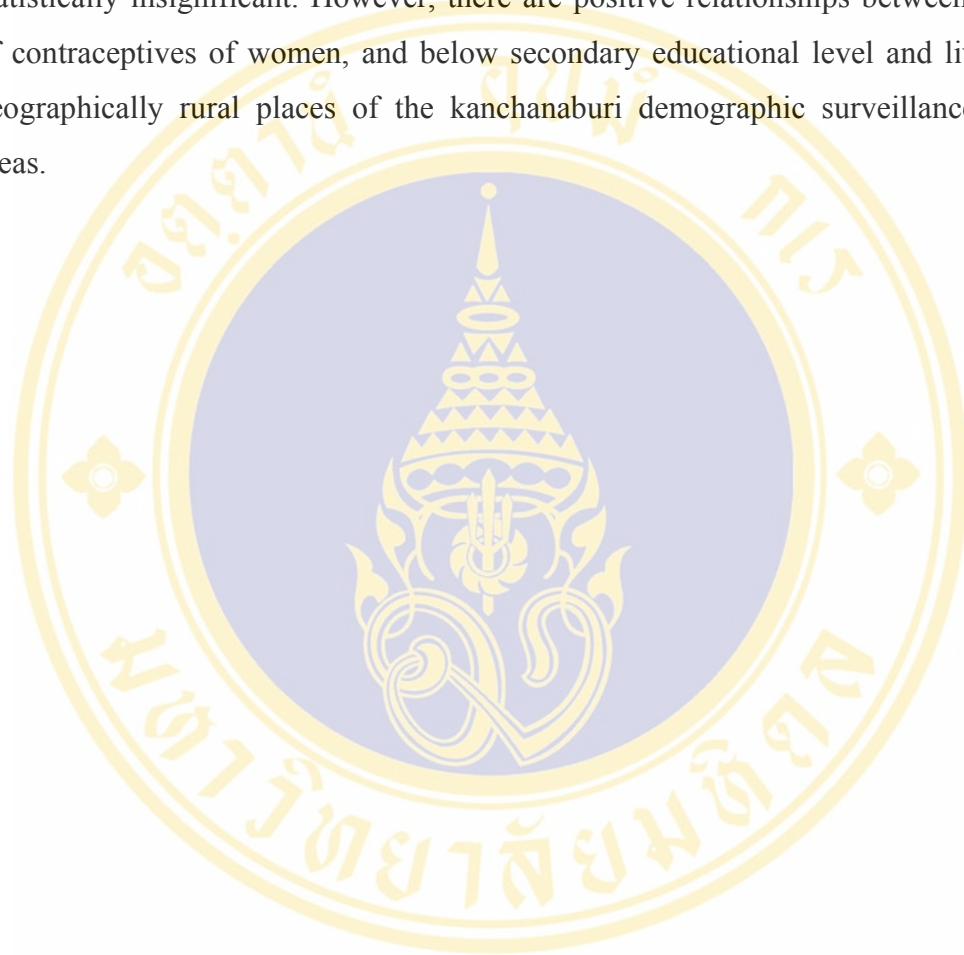
The annual incomes of married women are entered into the analysis as a continuous variable. The coefficient for women's separate income is negative. This means that an increase in the women's income will lower the odds of being non-users of contraceptive. In other words, as the income of women increases, they are more likely to be users than non-users of contraceptives. However, the effect of women's income is not statistically significant. This indicates that whether women's separate income is lower or higher, it has no significant effect on contraceptive nonuse. Even though the effects of women's separate income is not statistically significant, it is consistent with the hypothesis of the study that states the relationship between women's income and contraceptive non-use is negative.

### **Geographical residences**

The reference group in this explanatory variable is women living in Upland geographical areas. In the model, the coefficients for most geographical areas are positive except for Urban/Semi-urban areas. These positive coefficients show that the odds of women who live in Rice, Plantation, and Mixed economy to be nonuser of contraceptive increase compared to the reference group. Living in Mixed economy, plantation and Rice areas are 25 percent, 31 percent, and 32 percent respectively more likely to be nonusers of contraceptives compared to women who live in the Upland areas.

As compared to women who live in the Uplands, women who live in these areas are more likely to be nonusers of contraceptives. The effects of living in plantation and Rice areas are statistically significant. However, the effect of living in Mixed economy is not statistically significant. The coefficient for women living in Urban/Semi-urban areas is negative. This means that the odds of for these women to be nonuser are reduced compared to the reference group. They are 5 percent less likely to be non-users of contraceptives compared to women live in Uplands areas. However, the effect of living in Urban/Semi-urban areas is not statistically significant. In other words, women who live this area are less likely than other geographical places to be non-users. This means whether women live in Urban/Semi-Urban areas or not, it has no significant effect on their contraceptives nonuse. Nevertheless, the relationship between living in urban/semi-urban areas and contraceptive nonuse is negative. On the other hand, the relationships between contraceptive nonuse and most other geographical rural areas, such as in Rice, plantation and Mixed economy are positive. In general, one can say that the association between women's residences and contraceptives nonuse is mixed being positive in more of rural areas and negative in more of urban settings of KDSS areas.

In summary, four explanatory variables are found to have statistically significant effects on contraceptive non-use. These include women's age, desire for additional children, women's secondary and above educational level, and living in geographically rural areas. The effects of the remaining variables are found to be statistically insignificant. However, there are positive relationships between non-use of contraceptives of women, and below secondary educational level and living into geographically rural places of the kanchanaburi demographic surveillance system areas.



## CHAPTER V

### CONCLUSIONS AND RECOMMENDATIONS

#### 5.1. Discussion

Generally, the core concern of family planning programs is consistently increasing the proportions of users of contraceptives. The services in addition to assisting people to have small family size, gives paramount advantages in maintaining the primary health of women and overall family's welfare. As a result, the issues of contraception and child bearing are left to be the central thematic area of concern and investigation for a long time since they are determined by complex needs and interrelate factors. The attempts to increase the provision of family planning information and services are influenced by a number of factors of among which the demographic and socioeconomic factors are investigated in this study. It was assumed that the demographical and socioeconomic characteristics of women might have relationships with the contraceptive nonuse. To this effect, to investigate the relationships between explanatory variables and non-use of contraceptive behaviors, some hypotheses have been formulated and relevant data are analyzed.

In descriptive analysis, the association between non-use of contraceptives and some of explanatory variables are found complex, difficult to determined, and seems positive. For instance, the association between the proportions of contraceptive non-users, and women' age, educational levels, living number of children, occupational activities, and women's income are difficult to determine. However, the association with regard to the desired for additional children and geographically rural residences looks negative.

Nevertheless, the result from logistic regression analysis suggests the relationships between contraceptive non-use and most explanatory variables found negative. Positive relationships are found positive with respect to below secondary educational level and all geographically rural areas. Moreover, four explanatory variables have statistically significant effects on non-use of contraceptive of women

as hypothesized when the effects of other variables are controlled. These include women's age, desire for additional child, secondary and above educational level and two geographical rural settings such as living plantation and Rice growing areas.

One of the prominent factors often cited in contraceptive use is the age of women. Women who marry early have considered being non-user of contraceptives since they prefer to give birth compared to older age group. They had preferred giving birth due to reasons such as to stabilize marriage through having children with their partners and hence were not using contraceptives. On the other hand, older women mostly found using contraceptives (Foreit and Foreit, 1978). The association between women's age and contraceptive non-use is found negative and it is statistically significant in logistic regression analysis. In this study, the stated hypothesis is accepted since older women aged 45-49 are found less likely to be non-users of contraceptives compared to younger women aged 15-24 years. This finding is consistent with Adioetomo and Rani (1997) that revealed younger women are found to be non-users of contraceptive because they still want children, were pregnant or breastfeeding. However, this finding is contrary with Dang (1995) that found age has no effect on contraceptive behaviors in Vietnam.

The desire to have more children is also another influencing factor that encourages married women to be non-users of contraceptives. On different perspectives, it seems more natural because every person has the desire and right, too, to give birth. The desires to have additional children may also depend on many factors and may affect the well being of family health. The result of logistic regression analysis shows that women who do not want more children are less likely to be non-user of contraceptives as compared to women who want to have more children. The hypothesis of the study states that women who desire for additional children are more likely to be non-users of contraceptives is accepted. This finding also supports previous studies in the Philippines, which found that women become non-user of contraceptives because of their desire for additional children (Syed, 2000).

Women's educational level considered influencing non-use of contraceptives negatively. Under this view, it was assumed that women who have higher levels of education are less likely to be non-users of contraceptives. In descriptive analysis,

since more than fifty percent of both user and nonuser had until primary and lower levels of education, it was difficult to determine the relationship. However, the result of logistic regression analysis shows that the relationship between contraceptive non-use and educational levels of women are either positive or negative. When educational levels of women become secondary and above, they are less likely to be nonusers of contraceptives. In this study, it is found that women with less educational level, primary and below are found to be more likely to be non-users in the KDSS areas. Hence, women are less likely to be non-users when their educational level is secondary and beyond in KDSS areas. Contrary to this finding, in Philippines and Taiwan, women with no education were found more using contraceptive than educated women and vice versa (Chowa, 1992). In Thailand, even though the relationships of education and contraceptive behaviors have been found to be continuously positive, a significant difference was observed between women with no education and women with primary educational levels in 1987 (Leoprapai and Thongthai, 1989). This shows that the effect of education on contraceptive behaviors is not consistent and varies from place to place and even among different educational levels.

The effects of residences on contraceptive non-use with respect to rural and urban area variations have been observed for long time. Similarly, in this study, the hypothesis states that women who live in more urban setting are less likely to be non-users of contraceptives than others are who live in wider five strata. The effects of places of living in more of rural areas have statistically significant on contraceptive non-use of women in three geographical residences except in Mixed economy and Urban/semi-Urban Mixed economy areas. Similar this, Dang (1995) revealed that urban women in Vietnam were found to be more likely to use contraceptives than women who live in rural areas due to variation in geographical location. In Thailand, similar result found in some Province. For instance, the proportion of non-users in Chiangrai province (26.3 percent) is less than the Roi Et province (42 percent) areas (Kanjapan, 1985). This shows that the place where women live is also an important factor in influencing whether they become nonuser or not.

The effects of three explanatory variables, number of living children, occupational activities, and separate women's income are found to have statistically insignificant on non-use of contraceptives. Even though different findings have demonstrated that these proxy estimates of women status were found to have influence on the non-use of contraceptive behaviors, the relationships with contraceptive non-use in this study are found negative. The coefficient of the model of these explanatory variables shows, however, the relationships of these variables are consistent with the outlined hypotheses in the study. In other words, though the effects of these explanatory variables are not statistically significant, it supports the ideas proposed in the study

The existing number of children considered as encouraging factor for contraceptive non-use in the study. Women who have many and/or satisfied with ideal family size are more likely to stop giving birth and use contraceptives. They do not prefer giving birth again. Nevertheless, in traditional societies, where women have more number of children, they are more likely to be non-users of contraceptives. Generally, in Thailand having small family size is largely an acceptable standard of life. Depending on this idea as the number of living children increase in family, women become users than non-users of contraceptives is hypothesized in this study. The coefficient of the model shows that the relationship between the number of living children and nonuse of contraceptive is negative and hence, hypothesis is accepted. This finding is also consistent with studies carried out at the same area that comes out with evidence that women who were using contraceptives were found having more number of children ever born as compared to those who did not use any contraceptive (Rahman, 2002). One can say that as the number of living children increases, married women mostly prefer using contraceptive in KDSS areas.

The occupational activities of married women is hypothesized that married women who are engaged in occupational activities such as in agricultural sector are more likely to be non-users than women in non-agricultural sectors. Even though in descriptive analysis the relationship between occupational activities and contraceptive behaviors difficult to determine, in logistic regression analysis, the effects of occupational activities on non-use of contraceptives are statistically insignificant. The result of logistic analysis demonstrated that whether married women are working in

agricultural sectors or non-agricultural sectors, their occupational activities have no effects on their practices of contraceptive non-use. A study of determinants of contraceptive in Thailand come out with similar conclusion revealed that the effects occupation activities were found to be no significant on their nonuse of contraceptives whether women are working in a farm or non-farm activities (Leoprapai and Thonthai, 1989). Hence, one can say that occupational activities have no effects on non-use of contraceptive of among married women in KDSS areas.

The association between women's income and nonuse of contraceptives in descriptive analysis is difficult to determine. In logistic regression analysis, however, the relationship is found negative. However, the effect of women's income on contraceptive nonuse is found statistically insignificant. As the separate income of women increases, married women become less likely to be non-user of contraceptives is hypothesized. This is because women in Thai culture could keep their individual income separately and may have better chances in deciding to use contraceptives. However, whether women have separate higher income or no income, it has no significant effect to be non-users of contraceptive in the project areas. Hence, this result is consistent with the hypothesis of the study though it is insignificant. Confirming to this, several studies found out that the relationships of income and contraceptives non-use is reverse ( Jone et al, 2002; Freedman and Thornton, 1982 and Nazar and Smith, 1999).

More over, the common reasons why women do use contraceptives appeared in this study have some implications. Particularly the prominent one such as health issues and desire for additional children need due attention with care considerations due to various reasons. Primarily, the categories of reasons might not explain better why women are not using contraceptive. It may just provide very little knowledge about the problem why they were not using contraceptives. For instance, women might not have consistent or same reasons why they do not use contraceptives. Confirming to this, Nair and Smith (1984) showed that women have covert reasons other than what they respond when they are asked for nonuse of contraceptives. Nair and his colleague further stated that women who said that their reasons of nonuse were side effects might have other reasons such as partner disapproval, desire for additional children, etc. Therefore, since information obtained from such patterns of

situation probable affects sought conclusions, great caution should be given in the process of designing intervention programs.

## 5.2. Conclusions

The objective of this study is to investigate factors associated with current non-use of contraceptives among married women aged 15-49 years in Kanchanaburi Demographic Surveillance System (KDSS) areas, Thailand. The data set is obtained from baseline survey of the Second Round of Kanchanaburi DSS, 2001. The effects of explanatory variables on contraceptive non-use were analyzed using logistic regression analysis. In this country, the provision of health in general and family planning information and services in particular are relatively well established as compared to most developing countries. Despite the availability and accessibility of family planning programs, some proportions of married women are still non-users of contraceptives due to various reasons in KDSS areas.

The results of the study have demonstrated that married women become non-user of contraceptive because they had low educational levels and most of them had education not more than primary level. Moreover, the effects of women's age, desire for additional children, women's secondary and above and living in more rural areas such as Rice and Plantation are found to have significant effects on women's contraceptive non-use. However, the relationships between contraceptive nonuse and women's age, desire for additional children and women with secondary and above educational levels are found negative. Among these, the desire for additional children is also found to be the second most common reasons of non-use among women who were not using contraceptive in the study. Since younger women may be preferred to stabilize family and gain adult status through having children, they are less likely to use contraceptive than older women. On average, the desire for additional children of women is one child and the effect of desire could be attributed to prolonged spacing of births of women

In addition, the association between contraceptive non-use of women and living in geographically rural area settings are positive. Hence, one can conclude that the effects of being young in age, being below secondary educational levels, living geographically rural areas and fertility preferences of women have effects on being

non-users of contraceptive in KDSS areas. Among these, there are positive relationships between contraceptive non-use and women's below secondary educational level and living in geographically rural setting of KDSS areas. The effects of living in the rural areas perhaps related to lack of accessibility and availability of contraceptive information and services in the areas. These conclusions are consistent with related studies that have revealed the effects of some of the demographic and socioeconomic characteristics on contraceptive non-uses of currently married women (Dang, 1995; Leoprapi and Thongai, 1989)

Hence, the findings demonstrate that there may be a need of intervention program with respect to strengthening the provisions of continual of women's education beyond the primary levels and concurrently the provisions of the existing family planning information and services. The participations of women enrollment seem very important in order to encourage further the widespread practice of contraceptive behaviors in the area. Besides, introduction of informal education with content of Family Life Education (FLE) for women probably a possible forum that could assist better understanding better family size within already established small family standard of life in Thailand. However, designing such intervention program and providing the aforementioned services exclusively within KDSS areas may be a great challenge given the practical implications.

### **5.3. Recommendations**

Depending upon the result of this study, the following suggestions may have paramount importance regarding married women in question in KDSS areas.

#### **5.3.1. Policy Recommendations**

1. There is a need to encourage women participation in formal educational system. This may require encouraging women to enroll in formal education and even beyond primary level as well.
2. There may be need of an expansions health service including family planning services in the areas. In the health package, integrating education issues with respect to family life education in order to

increase women's widespread practice of contraceptives in study areas may give great contribution.

3. The wide geographical areas are also required due attention and provision of more effective family planning information and services including overall socioeconomic improvement. These measure particularly important for married women who are living in far distant areas such as Uplands, Rice, and Plantation.

### **5.3.2. Future Research Perspectives**

1. This study has assessed only some explanatory variables that have effects on non-use of contraceptive behaviors. Further studies need to design alternative approaches to have comprehensive picture in addition to the important explanatory variables investigated covered in this study.
2. This study has only considered currently married women's non-users of contraceptives perspectives. However, it would be better and more attractive if further studies could also embraces the men's side of nonuse of contraceptive behaviors.

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