# ETHNICITY AND CONTRACEPTIVE USE AMONG CURRENTLY MARRIED WOMEN OF REPRODUCTIVE AGE IN LAO PDR

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ABSTRACT

This study examined the relationship between ethnicity and contraceptive use of currently married women aged 15-49 in Lao PDR. Data analyzed for this study is from 9,685 married women surveyed in the Lao Reproductive Health Survey conducted in 2005. It was found that overall, 38.4 percent of currently married women were using contraceptive method. The Lao women were using contraceptives at the highest rate, followed by the Tai/Phoutay, and then the Khmou. The Hmong were using contraceptives at the lowest rate.

The results from binary logistic regression analysis demonstrated that after controlling for socio-economic and demographic factors, ethnicity has a significant relationship with contraceptive use. The other significant factors that have effects on chance of using contraception are age, education, region of residence, number of living children, and knowledge of family planning methods. The results implicate the disparity in access to education and health care services for minority groups who live in remote and mountainous areas in Lao PDR.

It is suggested in this study that the ethnic minority group should be given more attention regarding family planning programs. A strategy for increasing their access to knowledge of family planning and services is necessary for ethnic minorities who have a low education level and live in remote areas should be designed appropriately for each group.

KEY WORDS: ETHNICITY/CONTRACEPTIVE USE/CURRENTLY MARRIED WOMEN/ LAO PDR

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# CHAPTER I
# INTRODUCTION

## 1.1. Background of Lao PDR

Lao People's Democratic Republic (Lao PDR) is a landlocked developing country in South East Asia. It shares borders with China, Cambodia, Vietnam, Thailand and Myanmar, with a total land area of 236.800 square kilometers. A large part, approximately 80%, is covered by mountain and plateau. Lao PDR is divided administratively grouped into three regions: northern, central and southern. The country 17 provinces, 141 districts 10,552 villages and 959,595 households.

Lao PDR is one of the least developed countries, and has been facing a serious problem with the rapidly growing population in recent years. Lao's population was around 5.6 million inhabitants, which is an increase of 1.04 million from the last census conducted in 1995 (4.5 million) with more female (57%) than male (56%). The growth rate between the census conducted in 1995 and 2005 has been about 2.4 percent per year. Furthermore, 80 per cent of the population resides in rural areas, and 34% of populations live in below the poverty line (NSC, 2003). By 2005, the GDP per capita reached 491 US$, and 73 per cent of the population live on less than US $2 a day, and 25% live on less than US $1 a day. Poverty is lower in cities than in villages, on area with road versus those without and in the lowlands versus uplands (World Bank 2007).

According to the 2005 census, Lao PDR is one of the world's most ethnically diverse countries, with 49 separate ethnic group classifications. These ethnic groups are commonly grouped into 4 main ethnic linguistic groups. The majority is the Tai-kadai linguistic group (65%). The other 3 major groups are Mon-khmer ethnic linguistic group, Hmong-Mien linguistic group and Sino-Tibetan linguistic group (24%, 8% and 3% representatively).

The Lao Reproductive Health Survey conducted by the National Statistics Center in 2000, found that life expectancy at birth had increased to 59 years (57 for

males and 61 for females). Additional demographic data provided by the survey included: total fertility rate (TFR per woman) was 5.6 in 1995 and decreased to 4.9; the infant mortality rate (IMR) was 82 per 1000 live births; the child under five mortality rate (U5MR) was 102 per 1000 live births; and a maternal mortality rate (MMR) of 530 per 100,000 live births. Around 53 percent of currently married women aged 15-19 have given birth to at least one child and this has increased to 85 percent among women aged 20-24. By the end of the reproductive period (ages 45-49), nearly 97% of all married women have given birth to at least one child (RHS, 2000, Health status of Laos 2001).

In term of fertility of Lao PDR, it slightly declined in the total fertility rate (TFR) from the last decade, but still faces a high fertility rate like Cambodia. Comparing with other countries in South-East Asia region, the current total fertility rate (TFR) level in Lao PDR same as Cambodia (4.9 births per woman) but is relatively higher than other countries such as Singapore at 1.7 and 2 for Thailand. See figure 1: Fertility rate in South-East Asia.

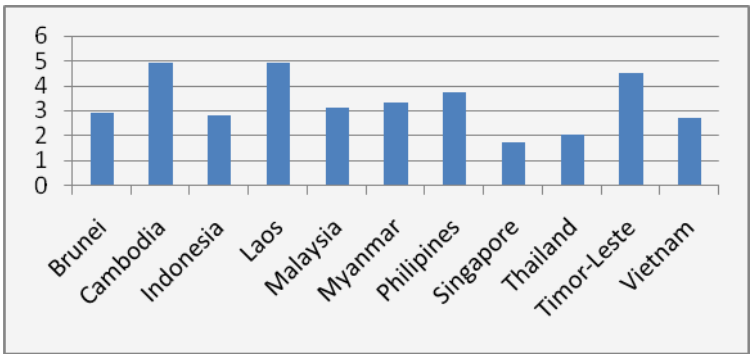


**Figure 1.1 Fertility rate in South-East Asia**

*Source: 1997 Indonesia DHS, 1998 Philippine National DHS, Lao Reproductive Health 2000*

Differentials in fertility by residence, region and provincial level are found in the 2005 national survey. The high TFR is 5.4 in rural areas and a low of 2.8 in the urban areas. Regarding regional differentials, within the country, it is divided into 3 regions. The more developed central region has TFR slightly lower than the southern and northern regions (LRHS, 2000). According to Lao Population Census 2005, the estimated TFR by province show that there are large differences among provinces in

central region. TFR in Vientiane, the capital is at 2.3 which is lowest among other provinces, whereas the highest total fertility rate which is 6.4 is in Huaphanh province in northern region.

Contraceptive prevalence rate in Lao PDR is considered to be at the lowest level. It is only 32.2% (29% modern method and 3% traditional method). More than half (61%) of ever-married women mentioned that they never used any contraceptive method (LRHS 2000). This rate is relatively low when compared with other countries in South-East Asia. The rate is a little lower than contraceptive use of other countries in the ASEAN region such as Cambodia is 40% and Myanmar (37%) but it is much lower than Thailand (71.5%) and Vietnam (78.5%).

Regarding knowledge about family planning, the Lao Reproductive Health Survey indicated that around 78% of all women and 79% of married women know at least one contraceptive method. Knowledge of modern methods is much higher than knowledge of traditional methods. The most popular modern method is the pill followed by injection, IUD, condom and sterilization.

Concerning with the continuing rapid population growth, the Lao government adopted the National Birth Spacing Policy which is the result of the International Conference on Population and Development in Cairo, 1994. It recognized the importance of population growth and economic development. To improve maternal and child health and the quality of family size, the policy recommended that the number of children born to a woman should not be so large as to impair the health of the mother and place her at risk for adverse outcomes.

Hence, findings of this study are expected to guide family planning programs and policy makers to understand various factors influencing the use of contraception among different ethnicities. It will also assist in the implementation of programs, that aim to increase the contraceptive prevalence and reduce the risk of early childbirth that affects the mother' as well as the child's health.

## 1.2 Research question:

Does ethnicity have effect on contraceptive use of currently married women of reproductive age in Lao PDR?

## 1.3 Objectives

1. To investigate the relationship between contraceptive use and ethnicity among in Lao PDR
2. To identify the factors influencing use of contraception among currently married women of reproductive age in Lao PDR

# CHAPTER II
# LITERATURE REVIEW

There are many factors that continue to affect an individual's use and non use of contraceptives. Factors such as demographic and socio-economic variables are known to be associated with the selection, use and continuation of contraceptive methods. Desired family size and child spacing also influences contraceptive prevalence at the individual level, regulations and cultural mores are important factors at the macro level that determine access to contraception. Selected factors are reviewed here to formulate the framework and hypothesis of this study.

## 2.1. Relationship between ethnicity and contraceptive use

### 2.1.1. Ethnicity

Lao is one country that comprises of multiethnic population. Ethnic minority is one of the main limitations for fertility control in the country because most of the minorities are mainly living in the remote and mountainous areas. In Lao PDR, research about contraceptive use among minorities is very rare. Regarding to Lao census 2005, it is reported the highest fertility rate is among the Hmong population. Moreover, fertility of other ethnic minorities is more likely to be higher when comparing to the fertility of Lao ethnic women. Viphongxay (2007) found that ethnicity is one important factor that supports the high fertility in Lao PDR.

The high fertility among minority group when compare to the majority group of the country is also found in Thailand where a study in South of Thailand found that fertility of Muslim mothers is higher than non-Mothers (Pattama et. al, 2009). Moreover, Hmong ethnic women have higher fertility than the Thais which is mainly due to the lower level of socioeconomic development, and lower use of contraception (Gray et al 2005 and Teankeaw, 2003).

The various ethnic groups are different in terms of demographic and pace of fertility transition. A study in Malaysia shows that changing marital structure and contraceptive use effects the fertility level of the different social groups (Tey Nai Peng, 2002). A study conducted in Britain shows that sexually active women from all four minority ethnic groups were less likely than white women to use reliable methods of contraception (Saxena et al, 2006). A study in Thailand shows that minority groups' fertility is different with majority group of population and there is different level of contraceptive practicing among region in Thailand (Teawkeaw, 2003)

## 2.2. Demographic factors

The demographic characteristics such as the age of a woman, number of living children, place of residence, region and ethnicity play an important role in determining the use of contraception.

### 2.2.1. Age of women:

Studies have shown that a woman's age is significantly associated with pregnancy intention. Some literature shows this contraceptive use is different in each age group. Studies in Lao show distribution of married women in reproductive age they are different age among age groups. A younger age groups were less likely to use contraceptive than older age groups. In rural area, women in middle age are more likely to have more children to desire family size to replace or working in the paddy rice. (MOH and NSC, 2001 and BSA 2002)

However, in previous studies, women in younger age groups were more likely to use contraceptives than older age groups (DeGraff et al. (1997) and Magnani et al. (1999). On the other hand, in Japan, age of women was not significantly associated with pregnancy intention (Goto, et al., 2002). One possible reason could be the mothers who are too young may not yet be ready to bear children and the mothers who are too old may not want more additional children.

### 2.2.2. Number of living children

Number of living children can affect contraceptive use because it is found to be influenced to a large extent by number of living children in family. Numerous past studies had found the percentage of women practicing contraception increases with the family size. A study in Nepal found that the numbers of children ever born (CEB) among married Nepali women of reproductive age and among women aged 40-49 were three and five children.

A study in India found that number of living children was one of the most important factors in determining contraceptive use. (Chaoco, 2001). There are strong positive relationship between the number of living children and use contraception. (Malhotra and Thapa, 1991; Chaoco, 2001)

### 2.2.3. History of child death

The infant and child mortality is the one of main health indicator, it can effect on fertility and contraception use, although contraceptive availability is an important in reducing the birth rate, reduction in the level of child mortality is also important, the affect such background characteristics as mother's education, ecological-developmental region, or certainly ethnicity, which are the next strongest predictors of infant and child mortality.

The replacement effect refers to the couple’s attempt to replace their lost child in order to fulfill the targeted family size by the end of their reproductive lives. The insurance effect relates to the practice of bearing more children than the desired family size in an anticipation that some children might die.

A study in rural Iran show that both of the cumulative fertility level and contraceptive use were found to be strongly influenced by the individual women’s child loss experience (Aghajannian et al., 1979). A study in Kenya suggested, women in Kenya had adopted various ways such as decreased the duration of breastfeeding, increased the frequency of sexual intercourse and lowered the use of contraception in order to replace infant or children who died or ensure against those who are likely to die (Kimani, 2001).

### 2.2.4. Places of residence

Place of residence also has significant effect on use of contraception. In many studies the acceptance and use of contraception was higher among those who reside in urban than in rural areas (United Nations, 1988). A study in Ghana showed that differential in contraceptive use in among ethnicity groups: The odds of contraceptive use were lower among women from rural areas and those with no education. Husband's education, number of living children (3-4), and urban residence increased the odds of contraceptive use. Significant explanatory factors were region of residence and number of living children (Addai l. 1999). Similarly a study conducted in Pakistan revealed that urban and literate women were more likely to use contraceptives (Sultana, Haque, & Thaver, 2001). Women living in urban areas demonstrated higher odds of using contraceptives than rural women (Schoemaker, 2005).

## 2.3. Relationship between socio-economic factors and contraceptive use

### 2.3.1. Education

Education is a powerful tool that can influence women's lives and shape an individual's behavior. Past studies document the relationship of female education to a decline in fertility (Singh and Casterline, 1995). According to Castro and Juarez (1994), education can influence women's reproduction in several ways: by increasing knowledge of fertility, increasing socio-economic status, and changing attitudes about fertility control. Education many also effect the distribution of authority with households, whereby women may increase their authority with husbands, and affect fertility and use of family planning (Bertand et al., 1993).

Many researchers found that educated women use family planning. It is assumed that better educated couples, being more exposed to family planning information are more likely to practice contraception. Moreover better educated women tend to have fewer children and try to give better education to their children than do their lesser educated counterparts. Therefore, some studies show education closely linked to the use of contraception and state that more educated women are more likely to use family planning (Kasarda et al., 1986, Robey et al., 1992). As

formal education has become more available in developing countries, it has become a factor in delaying marriage. Women who complete at least primary education tend to marry later. For example, in every sub-Saharan country, among women aged 20 to 24, the percentage who completed primary school is much higher among those who married after age 20 than among those who married earlier (Bledsoe, C.H. and Cohen, B, eds, 1993).

On the other hand, some studies have shown that there is no significant association or inverse relationship between mother's education and unintended pregnancies. For example, in Japan, there was no significant association between the experience of unintended pregnancy and women's education (Goto, et al., 2002). Similarly, in Nigeria, women with a university education reported three times more likely to experience unintended pregnancy compared to those with no education (Okonofua, et al., 1999). One possible explanation is that better educated women have a stronger motivation than other women to space their children or to delay the onset of first birth.

### 2.3.2. Occupation

Employment is another factor that is an important predictor of contraceptive behavior, as it is thought to increase the status of women and give her a higher sense of independence. Many studies found that women's employment influences their contraceptive behavior and also it was a significant positive association between women's employment and contraception use (Shapiro and Tabashe, 1994). Some studied show employed women have higher level of interaction with the environment outside the home, which leads not just to increased knowledge about the availability and accessibility of health services, but also increased confidence in seeking and interacting with service providers (Basu, 1990). Women involve in agricultural work, not only have less interaction outside the home, they also want more children compared to the people involved in other occupation so that children can help in working on their farm (Amin, et al., 1993).

### 2.3.3. Wealth Index

The wealth index is one contain to play role for the identification of problem particular to the poor people such as unequal access to health care. Ensuring all women can access lifesaving treatment in the event of a complication in childbirth is vital in efforts to reduce maternal mortality. A study in Bangladesh found the poorest women are least likely to seek care in the event of a complication.

Little good quality evidence exists. The average number of children ever born to families in the poorest quintile is more than two children higher than the average number of children ever born to families in the richest quintile. The use of modern contraception is also lower among the poor. (Aniceto C. Orbeta, Jr, 2006)

It is also known that poorer households have poorer access to public services, including family planning services. This is reflected in lower contraceptive prevalence rates and higher unmet need for family planning. The data also indicate that the desired family size is higher among the poor (Orbeta 2004). Moreover, some studies show that youth who have higher income will know family planning better than lower income youths. It is the same for young women and young men at all wealth index levels. In other word, youths from the lowest wealth index are the least likely to know of a place to get contraception such as condoms (VPAIS 2005). The pattern is similar for Cambodian youth (both women and men) who have a higher wealth index also have higher knowledge of sources for contraception (condoms) (CDHS 2007).

### 2.3.4. Knowledge of contraception methods

Contraceptive knowledge is the one an importance factor is considered to use contraceptive. Many previous studies have shown that women with high knowledge of modern contraceptive were more likely to use contraceptive methods. Knowledge measured in term of the contraceptive methods respondents knows; seem to have a positive relationship with contraceptive use (Yethenpa (1999) Narshingh, Nepal (1997) Avleayern (1993). Also studies show that women who are knowledgeable about contraceptive use are more likely to use contraception (Hogan et al, 1999; DeGraff, 1991). Therefore, knowledge on contraceptive methods can play an important role in the acceptance and use of contraceptives, except for whose women

knows about the different kind methods of contraceptives it is likely that their will practice contraceptive use.

A study in the South of Lao has shown that more than half of married women and their husbands of reproductive age, who lacked knowledge of contraceptive methods are less likely to use contraceptives, and it is a strong relationship between knowledge of methods and use of contraception (TBAs, 2002).

## 2.4. Conceptual framework

This study aims to investigate effect of ethnicity on the use of contraception among currently married women in reproductive age in Lao PDR. However, from the review of previous studies, there are several factors that also influence family planning use. These factors were also included in the study. They are grouped in four factors namely is demographic, socio-economic, and place of residence. The conceptual framework of this study is shown in the figure 2.1.

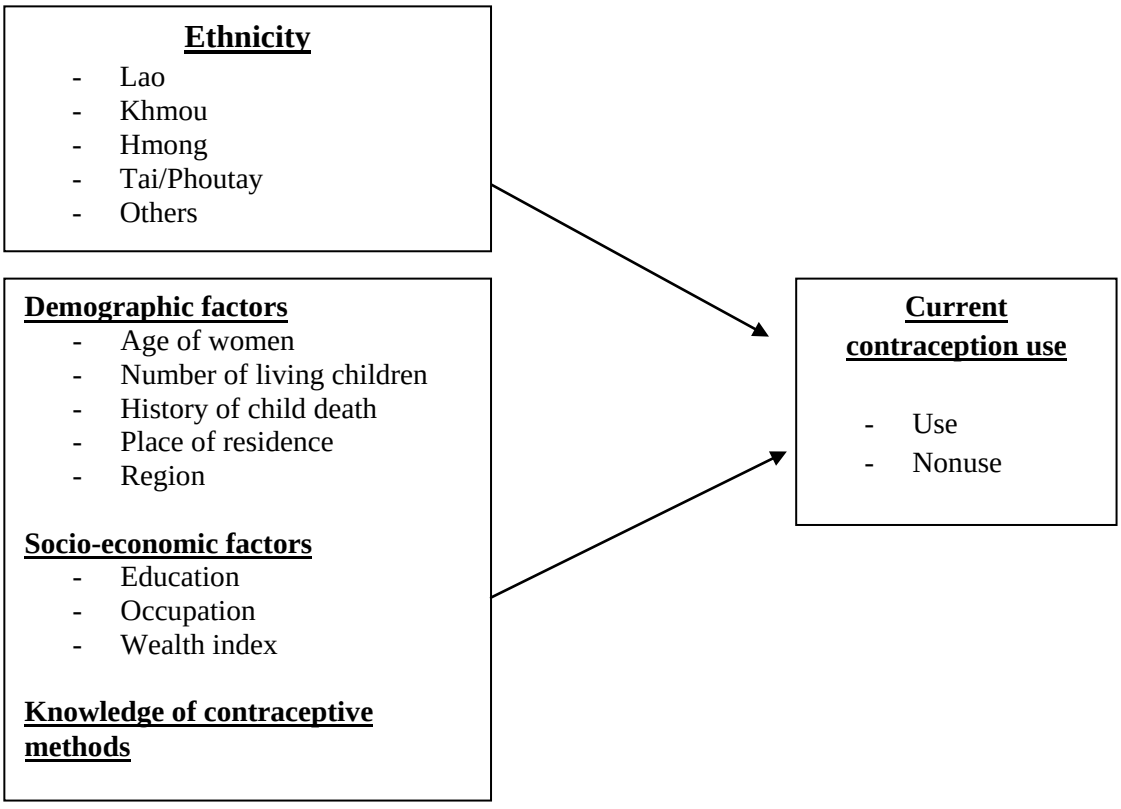


**Figure 2.1 Structure of conceptual framework**

## 2.5. Hypothesis:

The hypothesis for this study focus on the ethnicity of the population. It is hypothesized that currently married women from ethnic minority groups are less likely to use contraception than women from Lao ethnic group.

# CHAPTER III
# RESEARCH METHODOLOGY

## 3.1 Source of data

Data used in this study is secondary data derived from the Lao Reproductive Health Survey 2005 conducted by the National Statistics Centre (NSC) and Ministry of Health (MOH). This survey was supported by The United Nation Population Fund (UNFPA).

The LRHS 2005 is nationally representative survey. The sample of this survey covered in 16 provinces, included the capital and special Zone of Lao PDR. The population was covered 21,600 households, of with 21,368 households are interviewed. The total number of population involved in this survey is 120,324 persons, within the 59,584 are men, and 60,740 are women. Among the population there are 13,107 women and 3,327 men who are aged 15-49 years old. However, after data processing, cleaning and editing, the total number of eligible women in this survey is reduced to 13,074 persons**.**

## 3.2 Samples of the study

This study aims to study contraceptive use of currently married women at the time of interview. Out of 13,107 interviewed women. 2,846 (21.8 %) were never married women, 514 (3.9%) were divorce or widow and 9,713 (74.3%) were currently married women at that time of survey. Therefore, after cleaning data and cut off the number missing cases, the total number of eligible women included in this study is 9,685 persons.

### 3.2.1. Data collection

Data collection has been started in September 2005, by conducted training for both supervisors and enumerators. The data collection implemented at the same

time throughout the country. The duration of data collection is around one week. Before data collection start, the training for supervisors and enumerators was done at both center and local levels. The supervisors are assigned in each area of data collection for provide an assist and follow up the implementation of the activities, such as provided the information, preparation and organization and supervision and monitoring of fields work of enumerators. The target of respondents is head of household. The senior, eldest children or the one who can provide the information of household member will be response in the case of household's head is not available.

### 3.2.2. Limitations of the Study

This study uses secondary data source: the Lao Reproductive Health Survey, which have had its own objectives different from this current research. The analysis will be confined to the data available in the sources undertaken. Some important data cannot get information on this survey such as the family income is one factor may influence to determine contraceptive prevalence.

## 3.3 Operational definition of variables

The dependent variable for this study is contraceptive use. The independent variables are socio-economic and demographic factors. The intervening variable is knowledge of contraceptive method. The following are the operational definitions of each variable.

### 3.3.1 The dependent variable

**Current contraceptive use**

The dependent variable used in this study is current contraception use. The contraception use was range from 1 to 12 of family planning methods including permanent and temporary methods. This variable is a dichotomous variable measuring use and non use of modern contraceptive method of currently married women in reproductive age. The use of contraception by the eligible woman is coded as 1 and non-use of contraception is coded as 0.

### 3.3.2. The independent variables

**Demographic characteristics**

***Age of women***

The variable refers the respondents' completed age at the time of survey. This variable is categorized into 3 categories for analysis: 15-24 years, 25-34 years and 35 – 49 years.

***Number of living children***

This variable refers to the number of children ever born of respondents who are alive at the time of the survey. This variable is categorized into three categories one, two and three & more.

***History of child death***

This variable refers to whether or not a respondent has experience of a child death.

***Place of residence***

The respondents' place of residence divided into two categories, urban and rural: For all respondents, they are identified as residence of village, district and province and whether the village is located in urban and rural areas. Women who live in the municipal areas are defined as urban women and those who live in rural area are defined as the rural women.

***Region***

The Lao PDR is divided into four regions in this study: 1= Vientiane Capital, 2 = North, 3 = Central, 4 = South

1) ***Vientiane*** is separated from the central region due to the fact that it is the Capital City and it is the most developed area of the country.
2) ***Northern region has 7 provinces***: Phongsaly, Luangnamtha, Oudomxay, Bokeo, Luangprabang, Huaphanh, and Sayaboury
3) ***Central region has 6 provinces***: Xiengkhuang, Vientiane Province, Borikhamxay, Khammuane, Savannakhet, and Xaysomboon Special Region (SR).
4) ***Southern region has 4 provinces***: Saravane, Sekong, Champasack, and Attapeu.

This variable refers to different ethnic groups of in Lao PDR. This variable is categorized into five categories of ethnicity namely Lao, Khmou, Hmong, Tai/Phoutay and Others.

**Social- economic factors**

***Educational level:***

Educational attainment of respondents is classified according to school grade completed as follow:

1) None (no level completed)
2) Primary school (grades 1-6)
3) Lower secondary school (grades 1-3)
4) Upper secondary school (grades 4-6)

***Women's Occupation***

Women's occupation variable measures whether the woman is employed any main job in last 12 months. Their occupation has been categorized into two broad groups: agriculture and non agriculture. Respondents who work as government employee, private employee, employer, and own account worker are classified into employed women and working in non-agricultural, for those who are unpaid family worker, unemployed, household duties, retired or sick or too old, student, and other are classified into unemployed women and working in agricultural.

***Wealth Index***

Wealth index is used to represent household economic status. It was constructed by combining household characteristics and possessions of households measured to the income level of respondents. The household characteristics included roof, wall, floor, electricity, source of energy use for coking, type of toilet and main source of drinking water. It was combining the categories into five groups: poorest, second, middle, fourth and richest.

***Knowledge about contraceptive methods***

The knowledge of contraceptive methods refers sum of scores of number of contraceptive methods that a respondent knows. The respondents were asked

whether they knew about each contraceptive method. The variable is constructed by summing up the scores of knowledge about the methods (0 score for not knowing the method 1 score for knowing a method).

**Table 3.1 Operational definitions of variables and their measurements**

| Variables | | Description | Measurement scale |
|---|---|---|---|
| **Dependent Variable** | Current contraceptive use | Use of any contraceptive methods any methods | ***Nominal***<br>1= Use<br>0= Non-use |
| **Independent Variables**<br><br>***Demographic factors*** | Age of women | Respondent's current age at time of survey | ***Ordinal***<br>0 = 15-24 years<br>1 = 25-34 years<br>2 = 35-49 years |
| | Number of living children | Number of children given by the respondents | ***Ordinal for bivariate analysis***<br>0= none<br>1= One<br>2= Two<br>3= Three and more<br><br>***Ratio scale for multivariate*** |
| | History of child death | Experience of children by the respondents | ***Ordinal***<br>0= None<br>1= one or more<br><br>***Ratio scale for multivariate*** |
| | Ethnicity | Classification of ethnic groups | ***Nominal***<br>1= Lao 0= Other<br>1= Khmou 0= Other<br>1= Hmong 0= Other<br>1= Tai/phoutay 0= Other<br>1= Other 0 = Lao/ Khmou/ Hmong/Tai-phoutay |

| | | | |
|---|---|---|---|
| | Place of residence | Type of place of residence and region of the respondents | ***Nominal***<br>0= Urban<br>1=Rural |
| | Region | Region of residence | ***Nominal***<br>1=Vientiane capita 0= Other<br>1= Northern 0= Other<br>1= Central 0= Other<br>1= Southern 0= Other |
| ***Socio-economic factor*** | Education | Level of education completed | ***Ordinal***<br>0= No education/illiterate<br>1= Primary school<br>2= Lower Secondary school<br>3 = Upper secondary school |
| | Occupation | Types of respondent's working(work with agriculture and non agriculture) | ***Nominal***<br>0= Non- agriculture<br>1= Agriculture |
| | Wealth index | Household economic status that constructed combining household characteristics and possessions of households | ***Ordinal scale***<br>1= poorest<br>2= second<br>3= middle<br>4= fourth<br>5= richest |

| | | | |
|---|---|---|---|
| | Knowledge about contraceptive methods | Sum of scores of knowledge about modern contraceptive methods.<br>The respondents were asked whether they knew about each contraceptive method. The variable is constructed by summing up the scores of knowledge about the methods (0 score for not knowing the method 1 score for knowing a method). | ***Ordinal scale***<br>0= No knowledge of FP<br>1= Low knowledge of FP<br>2= High knowledge of FP<br><br>***Ratio scale for multivariate*** |

## 3.4 Method of analysis

Firstly, the univariate analysis using percentage is used to present socio-demographic characteristics of respondents. The statistical method for analyzing the relationships between independent variables and contraceptive use is cross-tabulation. For this bivariate analysis, chi-square test is used for testing statistical significance. Lastly, since the dependent variable is current contraceptive use which is a dichotomous variable and measured as nominal scale, binary logistic regression is used to assess the effect of ethnicity and other factors on the current use of contraception.

# CHAPTER IV
# RESEARCH FINDINGS AND DISCUSSION

This chapter describes the results of the study and discussion. It is divided into three sections. The first part describes respondent's characteristics and contraceptive use. The second part presents the bivariate analysis where the association of the independent variables with the dependent variable is examined, and lastly the binary logistic regression analysis of factors affecting contraceptive use are presented and discussed.

## 4.1. Demographic characteristics of women

The percentage distribution of respondents by their socio-demographic characteristic of the respondents is presented in Table1. The characteristics include age group, number of living children, history of child death, place of residence and region. There are 9,685 currently married women aged 15 to 49 included in this study. Among these 9,685 currently married women in reproductive ages, almost one-fourth (22.1%) of them were in young age group (15-24 years). This may be because Lao PDR has a long tradition of early marriage among females (Boupha, 1995).

As mentioned earlier that Lao PDR is a multi-ethnic group country, the major ethnicity are Lao, Khmou, Hmong, Tai/phoutay and other small 40 ethnics. In this study, respondents are classified into 4 major ethnicities and the rest were grouped as others. The Lao ethnic was the largest group (40%), followed by 13.3 of Khmou, Hmong (7%), and Tai/phoutay (7%) percent. For other small ethnic groups, they made up to 33 percent of the respondents.

Regarding distribution of respondents by place of residence and region, the majority of respondents (80%) lived in rural area. A small proportion of respondents (5%) lived in Vientiane capital city while the largest proportion of respondents (41%)

lived in the North, and the rest lived in central and southern regions (32 and 22 percent respectively).

It was found that there were about 21.4 percent of the currently married women had experience child death in their family. It may be a cause of high fertility in Lao PDR. The preference for large number of children seems to be existed in Lao PDR. Number of living children of currently married women ranges from 1 to 12 children. Approximately 52% of respondents already had 3 or more children. When looking at desire number of children, it ranges from one to seven children. More than half (60%) of respondents wanted to have five or more children, while only a quarter (25%) desired 1-2 children.

**Table 4.1 Demographic characteristics of sample population**

| **Demographic factors** | | **Percent** | **Number of women** |
|---|---|---|---|
| Age group | 15-24 | 22.1 | 2144 |
| | 25-34 | 38.4 | 3719 |
| | 35-49 | 39.5 | 3822 |
| Ethnicity | Lao | 40.2 | 3898 |
| | Khmou | 13.3 | 1287 |
| | Hmong | 7.2 | 695 |
| | Tai/Phoutay | 6.7 | 652 |
| | Others | 32.6 | 3153 |
| Place of residence | Urban | 20.6 | 1991 |
| | Rural | 79.4 | 7694 |
| Region | Vientiane capital | 5.2 | 507 |
| | Northern | 40.5 | 3920 |
| | Central | 32.3 | 3130 |
| | Southern | 22.0 | 2128 |
| Number of living children | None | 9.1 | 885 |
| | 1 Child | 16.0 | 1554 |
| | 2 Children | 22.4 | 2167 |
| | 3 or more children | 52.4 | 5079 |
| History of child death | None | 78.6 | 7608 |
| | One or more children | 21.4 | 2077 |
| **Total** | | **100.0** | **9685** |

## 4.2. Socio-economic characteristics of women

Table 4.2 shows the percentage distribution of the respondents by socio-economic characteristics. About one-thirds of the women (32%) were illiterate. Almost half of respondents (47%) had education at primary school level. A small percentage attended lower secondary school (15%) and upper secondary school and above (6%).

The distribution of respondents by place of residence also reflected in occupation of currently married women in this study. The majority of respondents (92%) were working in agriculture.

The wealth index is used to determine economic status of a family based on household assets and utility services. The distribution of respondents by wealth index shows that when combine the first (poorest) and second (poor) groups, percentage of households that were considered to be poor is a little higher than those who were relatively rich (41% vs. 39%).

**Table 4.2 Socio- economic characteristics of sample population**

| Socio- economic factors | | Percent | Number |
|---|---|---|---|
| Level of education | Illiterate | 32.1 | 3108 |
| | Primary | 47.1 | 4565 |
| | Lower secondary | 14.6 | 1416 |
| | Upper secondary and above | 6.2 | 596 |
| Occupation | Agriculture | 91.7 | 8884 |
| | Non-agriculture | 8.3 | 801 |
| Wealth index quintiles | Poorest | 20.4 | 1829 |
| | Second | 20.6 | 1844 |
| | Middle | 19.7 | 1762 |
| | Fourth | 19.9 | 1783 |
| | Richest | 19.4 | 1740 |
| **Total** | | **100.0** | **9685** |

## 4.3. Knowledge and current use of contraception

The knowledge of contraceptive methods was measured by asking whether respondents know any contraceptive method. For each known method, it was given score 1 and 0 for never heard of the method. The range of number of methods known is 0 to 12 and the average is 5.6 methods. The respondents who have heard less than average score (1-5 methods) considered as having low level of knowledge and those who have heard more than average score (6 and over) is considered as having high level of knowledge.

Results of this study show that knowledge and use of contraception among currently married women in reproductive age is still at low level. Approximately 43 percent of the respondents had high level of knowledge about contraception and 41 percent had low knowledge 43 percent. It should be noted here that 16 percent of respondents never heard of any contraceptive method.

The percentage of currently married respondents reported that they were using a method of contraception was only 38.4 percent.

Among those who were using any method of contraception, the most popular contraceptive method currently using was pills (49%) followed by injectables (24%). There were about 7 percent of them who were using natural methods such as rhythm and withdrawal.

**Table 4.3 Knowledge and use of contraception of currently married women**

| Knowledge and use of contraceptive | | Percent | Number |
|---|---|---|---|
| **Level of knowledge about contraceptive methods** | | | |
| | No knowledge | 16.3 | 1580 |
| | Low knowledge | 40.7 | 3937 |
| | High knowledge | 43.0 | 4168 |
| Total | | 100.0 | 9685 |
| **Current use of contraceptive method** | | | |
| | Yes | 38.4 | 3715 |
| | No | 61.6 | 5970 |
| Total | | 100.0 | 9685 |
| **Contraceptive method currently using** | | | |
| Pill | | 49.4 | 2340 |
| IUD | | 7.9 | 373 |
| Injection | | 23.8 | 1127 |
| Diapharm | | 0.0 | 2 |
| Condom | | 2.3 | 109 |
| Male Sterilization | | 7.3 | 347 |
| Female Sterilization | | 0.1 | 3 |
| Rhythm, Periodic Abstinence | | 4.4 | 210 |
| Withdrawal | | 2.7 | 126 |
| Norplant | | 0.2 | 8 |
| Traditional medicine | | 1.9 | 90 |
| Emergency method | | 0.0 | 1 |
| Other | | 0.1 | 4 |
| **Total** | | **100.0** | **4740** |

## 4.4. Bivariate analysis

In this section, the examination of association of contraceptive use of currently married women in reproductive age and socio-economic and demographic characteristics of respondents is performed using cross-tabulations and chi-square test of significance.

### 4.4.1. Relationship between demographic characteristic of women and contraceptive use

Table 4 presents results of bivariate analysis of relationship between current use of contraceptive methods and demographic characteristics of currently married women. It was found that women in older age groups (25-34 and 35-49 years) were using contraceptives more than women in the younger age group (15-24 years).

The proportion of currently married women who were using contraceptive methods was higher among those who lived in urban area than those who lived in rural area. Moreover, differential in using contraception is al so found among respondents in living in different regions. Currently married women who lived in Vientiane capital were using contraceptives at the highest proportion (51%) than other regions. Among other regions, women in the northern part (44%), central part (37.3%) and southern part (27%) were using contraceptive method.

The respondents were more likely to use contraceptives when they already had one or more living children. The percentage of those who had 2 or more living children who were using contraceptives was higher than those who had only one child. There were only 7% of those who had no living children who were using contraceptives.

Respondents who had experience of child death were using contraceptives less than those who never had a child dead (40% vs. 60%), however, this relationship is not statistically significant at $p<.05$.

**Table 4.4 Percentage distribution of women by contraceptive use**

| **Demographic characteristics** | Currently Using | Not using | **χ2** |
|---|---|---|---|
| **Age group** | | | **270.1*** ** |
| 15-24 | 23.2 | 76.8 | |
| 25-34 | 41.9 | 58.1 | |
| 35-49 | 43.4 | 56.6 | |
| **Place of residence** | | | **182.5*** ** |
| Urban | 51.5 | 48.5 | |
| Rural | 35.0 | 65.0 | |
| **Region** | | | **214.1*** ** |
| Vientiane capital | 50.9 | 49.1 | |
| Northern | 44.0 | 56.0 | |
| Central | 37.3 | 62.7 | |
| Southern | 26.6 | 73.4 | |
| **Number of living children** | | | **552.6*** ** |
| None | 6.7 | 93.3 | |
| 1 Child | 28.4 | 71.6 | |
| 2 Children | 45.5 | 54.5 | |
| 3 or more children | 43.8 | 56.2 | |
| **History of child death** | | | **3.6** |
| No | 62.1 | 37.9 | |
| Yes | 59.8 | 40.2 | |
| **Total** | 38.4 | 61.6 | |

Significant at *p < 0.05; ** p < 0.01**;** ***p < 0.001

### 4.4.2 Relationship between socio-economic characteristic of women and contraceptive use

When look at the current use of contraceptives of currently married women by socio-economic characteristic, it is found that women in higher socio-economic status were more likely to be using contraceptives than those in lower status. Approximately half of currently married women who had attained formal education were using contraceptives while only less than a quarter of illiterate women were using contraceptives. Percentage of respondents who worked in agriculture who were currently using contraceptives was less than those who were in other sectors. However, there is no difference in current use among respondents in different wealth index quintiles.

**Table 4.5 Socio-economic characteristic of women by contraceptive use**

| Socio-economic factors | Contraceptive use | | |
|---|---|---|---|
| | Currently Using | Not using | $\chi 2$ |
| **Level of education** | | | **507.8*** ** |
| Illiterate | 22.6 | 77.4 | |
| Primary school | 43.9 | 56.1 | |
| Lower secondary school | 51.0 | 49.0 | |
| Upper secondary school and above | 48.2 | 51.8 | |
| **Occupation** | | | **32.2*** ** |
| Agriculture | 37.5 | 62.5 | |
| Non-agriculture | 47.7 | 52.3 | |
| **Wealth index quintiles** | | | **9.2** |
| Poorest | 38.5 | 61.5 | |
| Second | 39.8 | 60.2 | |
| Middle | 37.7 | 62.3 | |
| Fourth | 36.0 | 64.0 | |
| Richest | 40.3 | 59.7 | |
| Total | 38.4 | 61.6 | |

Significant at *p < 0.05; ** p < 0.01**;** ***p < 0.001

### 4.4.3 Relationship between ethnicity and knowledge and current use of contraceptive methods of respondents

The bivariate analysis of relationship between ethnicity and knowledge and current use of contraceptive methods of respondents shows that there were difference in knowledge and practice of family planning among different ethnic groups. These relationships are statistically significant at $p<0.001$ level.

The Figure 1 show the Hmomg (56%) and the Lao (46%) women had the higher level of knowledge on family planning than other ethnic groups while the Khmou (36%) had the lowest level of knowledge.

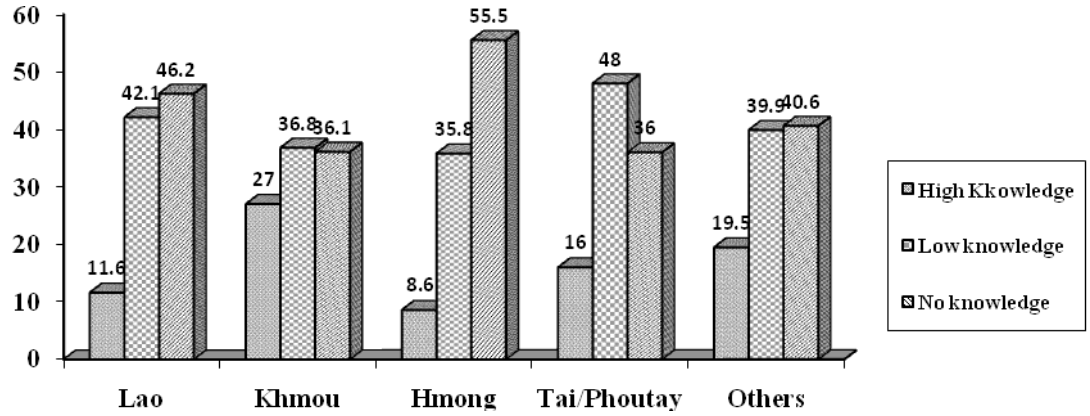


**Figure 4.1 Percentage distribution of knowledge of FP by Ethnicity**

However, when looking at current contraceptive use, the Lao women were using contraceptives at the highest rate (53%), followed by the Tai/Phoutay (46%), and Khmou (36%). The Hmong were using contraceptives at the lowest rate (15%).

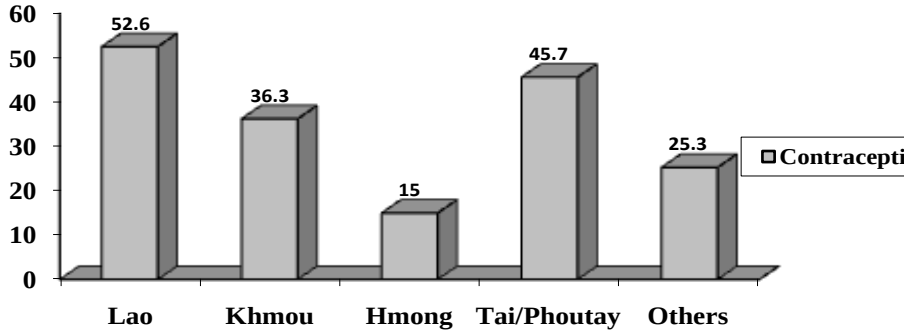


**Figure 4.2 Percentage distribution of Contraceptive use by Ethnicity**

## 4.5 Multivariate analysis of factors affecting current contraceptive use

In order to see the net effect of ethnicity of currently married women on current use of contraceptive methods in Lao PDR, the binary logistic regression was used to analyze controlling for socio-economic and demographic factors.

The result of the multivariate analysis is shown in Table 7. The overall model is statistically significant at $p<.001$ and could explain 25 percent of the variation of use of contraception among currently married women in Lao PDR.

The model tested in this study shows that after controlling for socio-economic and demographic characteristics, ethnicity has statistically significant relationship at $p<0.001$ level with current use of contraceptive among currently married women in Lao PDR. The respondents from Lao ethnic group are used as a reference group in this analysis. The coefficients for relationship of every ethnic group and use of contraception are negative when compared to Lao ethnic group. In another word, in can be said that all other ethnic groups were less likely than the Lao ethnic to use contraception. Therefore, currently married women of the Lao ethnic group were the most likely group to use contraceptive method. From the analysis, the Tai/Phoutay ethnic group was the second highest group who were using contraceptives. They were 33% less likely to use contraception compared to those who were Lao. The Khmou women were 47 % less likely than Lao women to use contraception. The lowest rate of current use of family planning methods was found

among the Hmong women. They were 72% less likely to use contraception when compare with Lao.

For other factors, even they were treated as controlled variables; it is worth to investigate their relationship with current use of contraception.

The results presented in Table 7 show that women in older age group (25-34 years and 35 above) were nearly 2 times more likely to use contraception than the women aged 15-24 years. In term of number of living children result shows that as number of living children increase for one child, the odd of using contraception increases for 1.13 times. The results implicate that the women in Lao PDR were more likely to use contraceptives when they already have a number of children.

The odds of contraceptive use among women who lived in northern region was 2.21 times more likely to use contraception than those live in Vientiane capital, while those who live in southern region were 38% less likely to use of contraceptive if compare with Vientiane capital.

In addition, level of education of respondents also had significant relationship with use of contraception. Those who had primary level of education are 1.82 times more likely to use contraception than the illiterate, while among women who had lower secondary and upper secondary school were approximately 2 times more likely to use contraception when compared with women who had no education.

The knowledge of family planning was found to have positive relationship with use of contraceptives. As a number of knowledge about family increase for one unit, a woman would be 1.16 times more likely to use contraceptives.

**Table 4.6 Logistic regression analysis of factors affecting contraceptive use**

| | | Beta | Odds ratio |
|---|---|---|---|
| **Age group** | 15-24 (ref.) | | 1.00 |
| | 25-34 | 0.563 | 1.76*** |
| | 35-49 | 0.417 | 1.51*** |
| **Number of living children** | | 0.120 | 1.13*** |
| **History of child death** | None (ref.) | | 1.00 |
| | Yes | -0.036 | 0.97 |
| **Place of residence** | Urban (ref.) | | 1.00 |
| | Rural | -0.122 | 0.89 |
| **Region** | Vientiane capital (ref.) | | 1.00 |
| | Northern | 0.79 | 2.21*** |
| | Central | -0.077 | 0.95 |
| | Southern | -0.485 | 0.62*** |
| **Level of education** | Illiterate (ref.) | | 1.00 |
| | Primary | 0.600 | 1.82*** |
| | Lower secondary | 0.755 | 2.13*** |
| | Upper secondary and above | 0.580 | 1.79*** |
| **Occupation** | Agriculture | | 1.00 |
| | Non-agriculture | -0.120 | 0.90 |
| **Wealth index quintiles** | Poorest (ref.) | | 1.00 |
| | Second | 0.089 | 1.10 |
| | Middle | 0.033 | 1.03 |
| | Fourth | -0.029 | 0.98 |
| | Richest | 0.110 | 1.12 |
| **Knowledge about FP (number of method known)** | | 0.150 | 1.16*** |
| **Ethnicity** | Lao (ref.) | | 1.00 |
| | Khmou | -0.672 | 0.51*** |
| | Hmong | -1.342 | 0.26*** |
| | Tai/Phoutay | -0.444 | 0.64*** |
| | Others | -0.581 | 0.56*** |
| **Intercept** | | -2.362 | 0.94*** |
| **-2 Log likelihood** | | | 10105.671 |
| **Cox & Snell R Square** | | | 0.251 |

Significant at *p < 0.05; ** p < 0.01**;** ***p < 0.001

## 4.6 Discussion

The major aim of this study is to investigate the relationship between ethnicity and the use of contraception among currently married women in Lao PDR. However, socio-economic and demographic factors as well as knowledge of family planning that are likely to influence the use of contraception are also investigated.

The bivariate analysis shows that differential in use of family planning method is significant among different ethnic groups. Other factors that significantly related to current use of contraception were age of women, number of living children, experience of child death, educational level, occupation, region of residence, and knowledge of family planning methods. The multivariate analysis supported some of the findings of bivariate analysis. It was clearly seen from the multivariate analysis that the hypothesis of this study that the Lao women are more likely o use contraception is confirmed.

As for ethnicity, according to the 2005 Lao census, the country is composed of approximately 49 ethnic groups, and they are classified into 5 groups namely; Lao, Khamu, Hmong, Tai/Phouytai and others. Among all groups, Lao are the majority which covered around 40 percent of the population. The fertility was found to be different among ethnic groups. The Laos were found to have the lowest fertility than other groups (Lao census, 2005).

In this study, results from the bivariate analysis showed a strong relationship of ethnicity and contraceptive use. Moreover, the result from multivariate analysis shows strong significant effect of ethnic groups on use of family planning method. All other ethnics were less likely to practice contraceptive use compared with Lao, especially among Hmong and others. The results are similar to the hill tribes in Thailand (Leamsuwan, 2003 and Saxena et al, 2006).

The significance of ethnicity on the use of contraception has shown that there are some constraints for fertility control among these minority groups. The women who belong to ethnic minority are usually living in remote areas, have limited education and are burdened by overwork, frequent pregnancies, and poor health. Each ethnic group has their own culture, belief, religion and language that might be obstacle for using contraceptives. Moreover, Lao language is an official language and used for IEC materials. Some ethnic minorities who live in remote or mountainous areas

cannot communicate in Lao language. Thus, the use of fertility control of ethnic minority is more likely to be lower when compared to the fertility of Lao ethnic women.

Other factors such as age of women, number of living children, education level, and knowledge of Family planning and regions of residence were also found to have statistically significant effects on contraceptive use.

This study has found that a higher the age of women has a significant positive effect on contraceptive use in last reproductive age, which is opposite the middle age group that had a positive effect on contraceptive use. Similarly, previous studies showed that women in older age groups were more likely to use contraceptives than those of younger age groups (DeGraff et al. (1997) and Magnani et al. (1999). All women of reproductive age in Nigeria (Okonofua et al., 1999), one possible reason could be the mothers who are too young may not yet be ready to bear the child and the mothers who are too old may not want more additional children.

The results show that the number of living children was positively associated with contraceptive use indicating that those women who had children are 1.13 times more likely use of contraceptives than those who have no children. Similarly with many studies in previous like Malhotra and Thapa,(1991); Chaoco, (2001).

In this study, there was significant association between the experience of contraceptive use and women's education. Similar to the results found in several previous studies (Bertand et al., 1993, Kasarda et al., 1986, Robey et al., 1992, BLEDSOE, C.H. and COHEN, B, eds, 1993), women's educational levels as well as the place of residence were negatively affected fertility. Women who completed higher educational levels and lived in urban areas were likely to have lower fertility than those who completed lower educational levels and lived in rural areas. Also those who are educated are more likely to practice family planning than those who have no or low education. In the case of Laos, the education level of women is very low with large numbers having not more than primary education, which makes them less likely to practice family planning.

The region of residence was also found to be significant, but different among region. The residents who are living in the Northern regions are more likely to use contraception, and also those women who are living in the Southern region are less likely to use of contraception if we compare both regions with the Vientiane capital region. Regional difference may reflect accessibility to health care facilities that would limit an access to contraception. Vientiane is the capital city where accessibility to health care services is easy to their population. Some major and developed provinces are in the North, while most of provinces of the South located in mountainous areas.

# CHAPTER V
# CONCLUSIONS AND RECOMMENDATIONS

## 5.1. Conclusions

This chapter summarizes and presents the major findings related to the research questions, objectives, and hypothesis of this study. The data for this study was taken from the Lao Reproductive Health Survey from 2005. A total sample of 13,074 women of reproductive age were collected, out of which 9685 currently married female were selected for the analysis. Univeriate, bivariate and multivariate analyses were performed for this study.

The overall objectives of this study are to investigate the influencing factors of contraceptive use of currently married women of reproductive age within different ethnic groups. Factors include demographic characteristic, socio-economic and ethnicity. The background and cross- tabulation show that large proportion of the sample is from the Lao group. Twenty two percent of residents number of living children to be 2, while more than half of those who had 3 or more number of living children, almost they work agriculture, while four fife they lived in rural area.

The result of multiple regression analysis describes and explores the composition of the proximate determinants of contraceptive use and factors affecting the most important proximate determinants in Laos. The study devises five hypotheses, and is as follows:

First hypothesis is to focus on different ethnic groups and contraceptive use regarding bivariate analysis found that ethnicity was significant on contraceptive use. Multivariate analysis of the relationship among socioeconomic variables and contraception use by applying logistic regression model analysis was performed. The results presented those currently married women ethnic groups are associated significantly with contraceptive use. Moreover, it show that those married women who are Khmou and Hmong ethnic groups are less likely to use contraception if when compared to women from the Lao grouping, thus the hypothesis was accepted.

Education is another important factor and is the second hypothesis among currently married women. Results show that education of women is associated significantly with contraception use. Women with lower secondary school and upper secondary school levels are 2.5 times more likely to use contraception than women with no school or primary school.

From the results of the logistic regression analysis, it appears that place of residence is the most important factor affecting the use of contraception among currently married women. Large and statistically significant differences in contraceptive use by region of residence are found. This shows that type of residence has a significant effect on use of contraceptive method at 10% level. But for place of residence is not significant hypotheses is not accepted.

Contraceptive knowledge is one factor considered important to the use of contraception. This study found that knowledge about family planning is significant, so the knowledge of family planning methods on use of contraception is accepted.

## 5.2. Recommendations

1. The women who belong to ethnic minority live in remote and mountainous areas where accessing to information and services are limited. To increase contraceptive use among these women, the family planning program should have specific program for the ethnic groups.

2. The education of ethnic minority women is very limited. This limitation is a major obstacle to exposure to knowledge of family planning which usually disseminated in official language. Therefore, it is necessary to increase their exposure to information using media that appropriate for each group.

3. Different ethnic groups have diverse cultural norms and practices. The program should take into consideration cultural sensitivity.

## 5.3. Recommendations for further study

For further study, it is necessary to have more understanding of cultural norm and practices regarding fertility preferences and family planning among each ethnic group. In-depth study using qualitative approach should be performed.

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