ปัจจัยทางเศรษฐกิจและสังคมที่มีผลต่อการใช้การคุมกำเนิดในสตรีกำลังสมรสในประเทศภูฏาน

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วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาศิลปศาสตรมหาบัณฑิต
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SOCIO-ECONOMIC DETERMINANTS OF CONTRACEPTIVE USE AMONG MARRIED
WOMEN IN BHUTAN

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ซี ท ริ ม ซั ง โ ป :
ปัจจัยทางเศรษฐกิจและสังคมที่มีผลต่อการใช้การคุมกำเนิดในสตรีกำลังสมรสในประเทศภูฏาน. (SOCIO-ECONOMIC DETERMINANTS OF CONTRACEPTIVE USE AMONG MARRIED WOMEN IN BHUTAN) อ.ที่ปรึกษาวิทยานิพนธ์หลัก: รศ. ดร. วิพรรณ ประจวบเหมาะ, 68 หน้า.

การศึกษาครั้งนี้มีวัตถุประสงค์เพื่อพิจารณาความแตกต่างของการใช้การคุมกำเนิดในสตรีที่สมรสอายุ 15-49 ปี ในประเทศภูฏาน และพิจารณาว่าทางเศรษฐกิจสังคมส่งผลอย่างไรบ้างต่อการใช้การคุมกำเนิด โดยใช้ข้อมูลการสำรวจ Bhutan Multiple Indicator Survey ปีค.ศ. 2010 ซึ่งประชากรตัวอย่างในการศึกษาครั้งนี้มีจำนวนทั้งสิ้น 9,419 ราย

ผลการศึกษาแสดงให้เห็นว่าอัตราการใช้การคุมกำเนิดในสตรีที่สมรสในปีค.ศ. 2010-ของภูฏาน สูงถึงร้อยละ 69.9 สะท้อนถึงความสำเร็จอย่างเด่นชัดของโครงการวางแผนครอบครัว วิธีการคุมกำเนิดที่สตรีสมรสนิยมใช้ในสัดส่วนที่สูงสุดคือ การใช้ยาฉีดคุมกำเนิด (ร้อยละ 44.1) ผลการวิเคราะห์โดยใช้ลอจิสติกพบว่า อายุของสตรี จำนวนบุตรที่มีชีวิต ความต้องการมีบุตรเพิ่ม การศึกษาของสตรี เขตและภาคที่อยู่อาศัย และความมั่งคั่งของครัวเรือน มีผลต่อการใช้การคุมกำเนิดอย่างมีนัยสำคัญทางสถิติที่ระดับ ≤.05 อย่างไรก็ตามเป็นที่น่าแปลกใจที่พบว่าสตรีที่ไม่มีการศึกษา อยู่ในชนบท และอยู่ในครัวเรือนที่ยากจนมีแนวโน้มที่จะใช้การคุมกำเนิดมากกว่าสตรีที่มีการศึกษาสูงกว่า อยู่ในเขตเมือง และอยู่ในครัวเรือนที่มีฐานะทางเศรษฐกิจดีกว่า ซึ่งผลการศึกษานี้แตกต่างไปจากงานวิจัยส่วนใหญ่ในอดีต ที่เป็นเช่นนี้อาจเนื่องมาจากการรณรงค์และการขยายบริการการวางแผนครอบครัวของรัฐบาลไปยังกลุ่มสตรีที่ยากจนหรืออยู่ในชนบท

สาขาวิชา ประชากรศาสตร์	ลายมือชื่อนิสิต ....
ปีการศึกษา 2556	ลายมือชื่อ อ.ที่ปรึกษาวิทยานิพนธ์หลัก ....

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TSHETRIM ZANGPO: SOCIO-ECONOMIC DETERMINANTS OF CONTRACEPTIVE USE AMONG MARRIED WOMEN IN BHUTAN. ADVISOR: ASSOC. PROF. VIPAN PRACHUABMOH, Ph.D., 68 pp.

This study aims to look at differentials of contraception use of the currently married Bhutanese women of age group 15 – 49 years and to examine how the socio-economic factor affecting the contraception use in Bhutan. The data from the Bhutan Multiple Indicator Survey 2010 has been employed. The total sample in this study are 9,419.cases. Bivariate and Multivariate logistic regression analysis are used to explore the probability of using contraception.

The result reveals that the contraceptive prevalence rate of currently married women in 2010 is 69.9 percent, reflecting very remarkable achievement of the family planning program. The most popular contraceptive methods used by the currently married of all age groups are injectable (44.1%). Multiple logistic regression result shows that women's age, number of living children, desire for more child and the region have statistically significant effect on contraception use (p=. 000). However, one surprising finding is that uneducated women are more likely to use contraception compared with educated women. Similarly, women residing in rural parts of country and in poor quintile or lowest quintile are more likely to use contraception methods, so as to prevent pregnancy than urban and women of rich quintile. This may due to the campaign and expansion of the family planning program in reaching the poor women or rural women.

Field of Study: Demography	Student's Signature	....
Academic Year: 2013	Advisor's Signature	....

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CHAPTER I
INTRODUCTION

Bhutan is a small landlocked nation in South Asia, nestled high in the foothills of the eastern part of the Himalayan mountain range, and never been colonized by any powerful nations. It is sandwiched between the two giants of Asia, China to the north, while the south, east and west are surrounded by the Republic of India. Further west, the Kingdom of Bhutan is being separated from Nepal by the Indian state called Sikkim. And farther to the south, the two Indian nations, namely Assam and West Bengal separate the country from Bangladesh.

Bhutan is a Buddhist Kingdom, inhabited by about 7, 34, 854 people, according to the Labor Force Survey of Bhutan 2012 (LFSB 2012). Nearly 90% of the Bhutan population are predominantly Buddhist and practice Mahayana Buddhism, brought in by an Indian Saint Guru Padmasambhava or Guru Rinpoche, popularly known as the Second Buddha. Hinduism is the second largest religion, while fractions of the population do practice Christianity. (LFSB, 2012)

Even though, Bhutan has a very small population with less population density, however, several parts of the country remain extremely difficult to access the social welfare services due to the scattered and sparsely settlement pattern. The population increase has been mainly led by high fertility which increased population density in the nation. The difficult, rugged terrain and the nature of geographical position have been acknowledged as the roadblocks to delivering uniform social services across the state. Furthermore, the unmet need of the family planning programs remained standstill mainly hindered by the lack of availability and inadequate infrastructures.

Thus, the government set up a family planning program in an attempt to address growing concern about high fertility in the late 1960s. The Ministry of Health reported during the midterm review that the total fertility rate in Bhutan was about 2.7 children per a woman. In addition, it was also reported that Bhutan's population growth rate at 1.7 percent, adolescent fertility rate was about 38.0 per 1000 women. Percentage of births to women under age 20 years at 7 and the percentage of births to women aged 35 or above was 20 (UNDESA, 2009). Despite the decline in the fertility rate over the past few years from 3.6 per women in 2000 to 2.7 per women in 2009, the contraceptive prevalence rate was still in the moderate level (Ministry of Health, 2011)

Very few studies have been focused on contraception use in the past years beside Sonam Phuntsho in 2006 and Jamyang and Nidup in 2012. Therefore, motivation to conduct research on socio-economic determinants of contraception use among married women in Bhutan was finally conceived. The findings from this study is anticipated to be useful for policy makers to reposition effective interventions wherever deemed necessary that will be beneficial to the country as a whole.

1.1 Background and Justification

Family planning policy in Bhutan was introduced in 1961 with the start of the first Five - Year Plan development, aimed at reducing high fertility rates (Reproductive Health, 2004). On this subject, concerns were expressed by the Honorable members of the National Assembly of Bhutan for the need of a separate organization or institution to combat the ever increasing growth rate and to scale down high infant mortality and maternal mortality rates in the country. Therefore, in 1967, during the 31st session of the National Assembly, the resolution to introduce family planning services in the health care delivery system were unanimously adopted (WHO, 2003).

In compliance with the resolution passed by the National Assembly, formal family planning program was launched in 1971. At that time, when considering the population size of Bhutan is rather small (less than a million), however, the government was concerned about the issue of

imbalance between the population size and the limited arable land for cultivation. Bhutan is a mountainous country; only about 7.8 % of the land area can be used for agriculture, while 70% of its population depending on agro-based economy (Jamyang, 2012). The Bhutan government believed that the rapid increase of the population has a detrimental effect on economic growth, as it increases the level of poverty both by slowing down of economic growth, which eventually led to inequalities of income distribution. Further, with rapid population growth, it may create social unrest, political turmoil, and disturbs peace and harmony of the society. These were the main reason why the government accepted the family planning program in the early 1970s, even though, Bhutan had a small number of population and moderate population growth rate as compared to neighboring countries such as like India and Bangladesh.

During the initial stage of the family planning program, the services are limited in both geographical coverage and the availability types of contraception (Jamyang, 2012). In order to enhance the efficient family planning services and in promoting maternal and child health, royal government had integrated family planning program into the responsibilities of the National Institute of Family Health in 1981.

At 1994, Bhutan's fertility level has reached its peak. The total fertility rate was about 5.6 children per women of childbearing age, while the contraceptive prevalence rate is only less than 20% (Ministry of Health, 2011). Moreover the annual population growth rate was around 3.1 percent and Infant Mortality rate was about 70.7 per 1,000 live births in 1994. Therefore, adoption of the ICPD program of action 1994 has become one of the factors that have significant influence on more intensifying of family planning policy and program in Bhutan. In 1995, His Majesty the 4th King issued Royal Decree on population planning:

"For the Royal Government of Bhutan, where the spiritual and temporal system exist in harmony; To ensure continuing peace, prosperity and happiness for our people, to ensure successful implementation of the Government's policies and development plans, and to avoid complications of the population explosion faced by other countries in the near future, it is very important for every Bhutanese high and low, to understand and support the population planning activities initiated by the health services". (DNPP, 2012)

Since early 1990s, Bhutan government has put great effort in expanding the family planning program, and considered the contraceptive services not merely a mean for fertility reduction but also a tool for improving family

well-being, especially in terms of reproductive health and reproductive rights (Ministry of Health, 2011).   In addition, Primary Health Care (PHC) and Maternal and Child Health (MCH) were considered a strategic thrust for family planning. Several information, education, and advocacy campaigns to promote awareness and use of the family planning were initiated. (Ministry of Health, 2011).

The proportion of women aged 15-49 who had knowledge on contraception has increased from 74.7% in 1994 to 95% in 2010.(Ministry of Health, 2011)   However, the increasing in the knowledge did not lead to the increasing in the level of contraceptive usage. The Contraceptive Prevalence Rate (CPR) in Bhutan in 2000 was only 30.7 percent.

As per the midterm review report released in 2010 – 2011 by the Ministry of Health, almost 60 percent of the women in the childbearing age are adolescent and almost 55 percent of those women get married before 18 years. The teenage fertility is considerably high which accounted 11 percent of all births in 2005(Ministry of Health, 2011). As explained in the introduction part, UNDESA (2009) reported that Bhutan's population growth rate at 1.7 percent, adolescent fertility rate (per 1,000 women, aged 15 – 19) was about 38.0. Percentage of births to women under 20 was 7 and percentage of births to women aged 35 or over was 20.

Unwanted pregnancy is likely to relate to maternal death, low birth weight and infant death. According to the key reproductive health indicators of Bhutan in 2008 (table 1), the maternal mortality rate (MMR), infant mortality rate (IMR) and under five mortality rate are still a pretty high level. The maternal mortality rate was about 255 per 100,000 live births in 2000, infant mortality rate was about 40.1 per 1,000 live births and under five mortality rate was about 60.6 per 1,000 live births in 2000. Such disparities about contraceptive knowledge, contraceptive use, and unwanted pregnancy reflect the problem of unmet need.

Table 1 **Key Reproductive Health Indicators of Bhutan in 2008**

Key Indicators	1984	1994	2000	2005
Annual Population Growth rate (%)	4.6	3.1	2.5	1.8
Infant Mortality Rate (per 1,000 live births)	102.8	70.7	60.5	40.1
Maternal Mortality Rate (per 100,000 live births)	770	380	255	NA
Under5 Mortality rate (per 1,000 live births)	162.4	96.9	84.0	60.6
Contraceptive Prevalence Rates	NA	18.8	30.7	NA

Source: Ministry of Health (2008)

Although the family planning program has been implemented for more than five decades and become one of the core measures for promoting the reproductive health and reproductive rights, however, the annual health report, WHO (2003) and

UNDESA (2009) still show a pretty low level of contraception used by the Bhutanese women aged group (15 – 49 years old). In order to follow-up the trends of contraceptive prevalence and provide appropriate policy implications whether, the information on what and how socio-economic characteristic of women influencing the contraceptive use is needed. Therefore, the study on socio-economic determinants on contraceptive use among married women in Bhutan was undertaken. Nevertheless, there were very few studies on the factors that determined contraceptive use in Bhutan. Some of the previous studies conducted in the past concentrated only on the influence of women's education on contraceptive use. Therefore, this study attempts to examine how the socio-economic characteristics affect the contraceptive use in Bhutan. Such research findings can assist in identifying the target groups not yet covered or accessing contraceptive service delivery, which would be useful information for adjusting family planning policy and service in Bhutan.

1.2 Research Questions

The main research question of this study is "what are the underlying socio-economic characteristics of an individual woman that determines the contraceptive use?"

1.3 Objectives of Study

This study has two main objectives as follows:

i. To examine the level in the contraceptive prevalence rate among the currently married women in the reproductive or childbearing age.

ii. To investigate the impact of socio-economic determinants of the contraceptive use among these currently married women.

CHAPTER II
LITERATURE REVIEW

Family planning policy and programs were adopted by many developing countries during the 1970s and 1980s as a mean for reducing the fertility level and slow down the rapid population growth rate. Most governments have attempted to promote the knowledge, attitude and practice on contraception as a mean of birth control and birth spacing. Later on, after the ICPD in Cairo in 1994, the family planning or contraceptive use has become the main core mechanisms of reproductive health services. According to ICPD Program of Action in 1994, it gave the main importance and funding for voluntary family planning to reduce the unmet need and avoid undesirable pregnancies so as to eliminate recourse to abortion. It attempts to support governments to strengthen and reinforce their national health systems to deal effectively with those underlying family planning problems, thereby saving women and children's lives.

Hermalin (1983) synthesized the research findings from developing country and concluded that there are two sets of variables that have an influence on the use of fertility regulation:

1. **Socioeconomic-structural factors**, which are the factors in the Macro level. These factors are such as level of development, family planning policy and program, and social community organization.

2. **Individual characteristics**, which can be considered from the socio-economic status and demographic characteristics of the individual. These factors are such as age, marital status, education, fecundity, etc.

This basic model of the determinants of fertility regulation can be summarized by the following figures. These individual characteristics determine demand and supply for children, which bring about the motivation to control fertility. Then such motivation will lead to the use of fertility regulations.

Figure 1 Basic Model of Factors Determining Use of Fertility Regulation
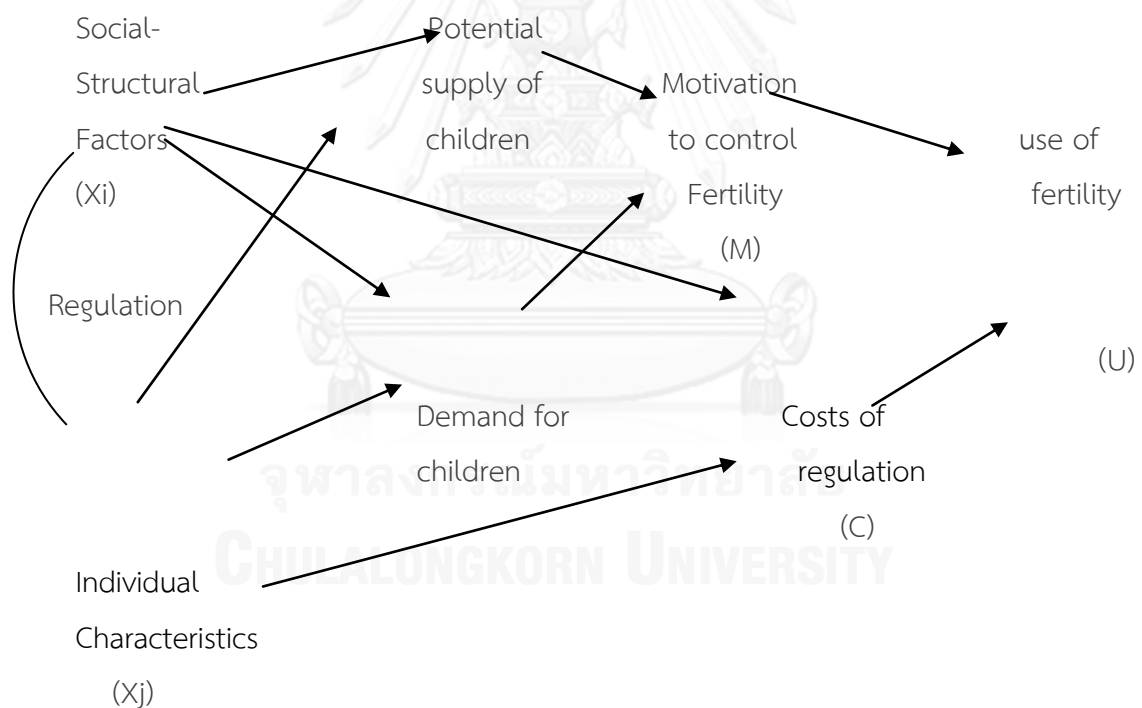
Source: Adapted from Albert Hermalin .1983.

2.1 Demographic Determinants of Contraceptive Use.

Most of the previous research indicated that a demographic factor such as women's age, desire for more child and the number of living children has significant influence for the demand for children and the use of contraception.

2.1.1 Women's Age

Woman's age is one of the most important determinants of the use of contraceptive methods through their willingness and acceptance to have children. Previous studies found that contraceptive choice depended on the women's age. Studies showed that there was higher demand for contraception practice by women, who were in their mid-thirties to mid-forties, who had already completed their childbearing compared with women who had not finished their families. (Nair 1997, Visara 1998, and Syria 2002). A study undertaken in Indonesia regarding contraceptive use by Fathonah (2000), showed that older women tended to have a longer period of contraceptive use (lower discontinuation) than did younger women.

Several studies conducted so far, indicated that the use of contraception methods is relatively low among adolescents 15-19 years, though it is widely available (Alauddin, 1999) and (Kinaro, 2010). Blanc, Tsui, Croft, and Trevitt (2009), found that the use of contraceptive methods among the adolescent women in the developing nations, regardless of their marital status, encounters several trials and is inconsistent. Moreover, adolescent women surface numerous obstacles in the use of contraceptive methods owing to fear, humiliation, social stigma, cost, lack of information and awareness on family planning services (Blanc et al., 2009).

A research conducted in Ghana by the National Research Council (1993), reveal that woman's age plays a significantly influential role both in preventive measures and as well as for the promotion of contraceptive use. The higher the women's age shortens the reproductive span which in turn reduces the use of contraceptive. (Bertrand et al., 1993), in his analysis on the surveys carried out in Africa, observed the uses of any family planning methods generally increase, then declines with the growing age. Generally, older women after crossing certain age believes they are not anymore at risk of getting pregnant and thus stop using any methods of contraception (Robey, Rustein, Morris, & Blackburn, 1992).

According to Population Reference Bureau (PRB, 2004) women over age 20 were likely to use more contraception method than teenage woman. The reasons given for the low use of contraception by the teenage women include lack of access to information, misinformation fed by the service providers and with fear of side effect, which are associated with geographic, social, cultural and economic barriers to access and use contraceptives (Georgis, 2006). In addition, most of the teenage women are sexually inactive and thus they do not need contraceptives.

From the above literature reviews, we can summarize that the women's age has a significant association with the contraceptive use. The women's age plays an instrumental role in decision-taking for the use of any contraception methods to avoid early or late child bearings.. This study assumes that the women of reproductive age who are very young and very old are less likely to use contraception than those in the middle age groups.

2.1.2 Number of living children

The number of living children may consider as a potential supply of children. According to Hermalin's framework the supply of children is one of the factors influencing the fertility regulation or contraceptive use. The previous studies conducted by Alemayehu, Getu., and Degu. (2008), found that as the number of surviving child increases, the level of contraception used by the individual women also correspondingly increases. A study done by (Sajid, M, & Franklin, 2005)) and Pasha (2008) also noticed that the prevalence of contraception methods correspondingly proliferates with the increase in the number of living children as well as education level of the respondent.

Ojakaa (2008) found that total family planning services or use of contraceptive methods increases with the number of living children. Schoemaker (2005) also found that the number of living children had a strong relationship with contraceptive in Indonesia and women were more likely to use more contraceptives with increased number of living children. This similar relationship was also observed in the rural Tanzania where number of living children and education were the main determinants in any contraception method use (Marchant et al., 2004).

On the contrary, Fantahun et al. (2001), and Samson (2009) observed that ever use of and current use of contraception were not significantly associated with the level of fertility. Several studies conducted by Korra (2002) in Ethiopia found that, desire

for having more number of children and having more number of surviving children were the main factors in any methods in contraceptive use.

Using data from 1988 Vietnam Demographic and Health Survey, Dang (1995) has conducted a study and also found that women with three or more children were more likely to use a modern contraception methods then woman with lesser children. Likewise, a study undertaken in Pakistan showed that women who already had large number of children than their ideal number of children and those who did not wish to have some more number of children were four times more likely to have implemented contraceptive methods compared with women who had lesser number of children than their ideal and who desired to have some more number of children (Shah, 1979).

The study done by Koc (2000) confirms that, to a certain degree, family planning services and the readiness to accept the adoption of modern methods of contraceptive entirely depends on the couple's number of living children. Okech, Dr. Wawire, and Dr.Mburu (2011), observed that the satisfaction of women's wish for having more children has been certainly influenced by the number of living children on the likelihood of using family planning services.

Using Ghana Demographic and Health Survey data, Ezeth (1993) stated that the acceptance of the use of contraceptive methods was determined by the couple's attitude which positively relate with the demand for living children not with the number of live births. Larger the number of living children, women either attempt to control or maintain desired family size through the acceptance of family planning

services and avoid pregnancy and future births (Dessie, 2012). In Vanuatu, Jayaraman (1995) found that the number of surviving children and women's occupation were key determinants which affect the current use of contraception.

2.1.3 Desire for More Children

According to Hermalin (1983), the question on "whether respondent want another child or want more children" can be used for measuring motivation to control fertility. Such question can reflect future demand for children and also capture whether supply has reached or exceeded the demand.

Concepcion (1981), utilizing world fertility survey data of 18 countries found that current user of contraception are higher amongst women who want no more children than women who believe to have more children. Hermalin (1983) synthesized previous research on fertility regulation and indicated that those who want no more children have higher probability of motivation to control birth and have higher chances of using any modern contraception methods.

According to Robey et al. (1992), the use of contraceptive methods depends on desire for additional children, because those women who aspire to reproduce more children will use only interim preventive measure to prolong next birth, while those women who do not want to have any more children probably may opt for permanent contraception methods in order to prevent future birth. Baker (1960), observed that when the level of families and individual economic status increases, couples decided to have some more children, because they can afford to support and at the same time, they can avail the contraception methods available.

Women wanting to have a child within two years period tend to implement lowest level of family planning services. In contrary, those women who don't wish to have any more children tend to be the highest contraceptive users (Asiimwe, Ndugga, & Mushomi, 2013). Lasse (1996) have reanalyzed the data of classic Princeton Fertility Survey in USA, and indicated that women who had realized their expected number of children are more likely to use more contraception to stop reproduction than those women who desire some more number of children. Women who anticipated to have some more children had greater likelihoods to use a modern family planning services, however, less chances to practice long-term family planning methods than those who actually don't expect to have any more children (Rahayu, Utomo, & McDonald, 2009).

Several empirical studies suggest that the likelihood of having more children is being influenced with an anticipation of deriving economic benefits from the large number of children. It is also found that those women who do not need any more children have a higher possibility of using more contraception methods. Moreover, the preferred method of contraception also depends on women's age and women's desire to have some child or not. Women who wish to have more children are more likely to use temporary methods to prolong or space next childbearing, while those women who do not want any more children possibly may choose permanent contraceptive methods.

2.2 Social Determinants of Contraceptive use.

Reviewing previous research, it also suggests that various social factors, such as education, place of residence, and region determine the effect on contraceptive use.

2.2.1 Education

Education is regarded as single most fundamental factors influencing decision-making and behavior related to reproductive health (Josipovic, 2007). Education also creates awareness of and a demand for family planning services, and become an important tool of the government for promoting family planning program and fertility reduction (Caldwell, Reddy, & Caldwell, 1983)

(Caldwell, 1982) recognizes education as a medium for people to acquire more western ideas concerning family planning to resort to more child-centric parenting approach. Hence, it may result in a demand for lesser children and also the use of contraceptives to avoid or postpone next reproduction. Education also affects the decision making process within households, whereby women may have a greater autonomy with their husbands, resulting in greater use of contraceptive methods for family planning (Bertrand, 1993)

Women's schooling really facilitate in improving living condition and enhance potentials of access to economical beneficial and other financial resources (Schultz, 1984). According to Patnaik (1985), Arora (1990) and Vashisht (1991), with increased education, women tend to remain in the labour force and are more likely to accept norms of small family size as well as sensitizing on the use of contraceptive methods.

K. Singh (1989), and Vashisht (1991) in their studies asserted that education lowers fecundity by raising the age at first marriage and enhances positive attitude towards a

small family culture and also creating further awareness of adopting family planning choices. Education is strongly associated with the utilization of contraception and more educated women have more tendency of accepting any methods of contraception for family planning (Kasarda, Billy, & West, 1986) and (Robey et al., 1992).

Previous studies reveal that literate women have better outlook towards reproductive control since they have better abilities to understand and seek professional advice, use most reliable family planning techniques (Bhrolchain, 1988). It was affirmed by Nag (1984) and Panikar (1979) that the spread of education among women is a key determining factor contributing to the higher degree of awareness on health associated issues and their optimum utilization of available methods. Women with higher levels of education are more likely to postpone and space their birth and seek health care and support (UNESCO, 2011). Most import ant is that education greatly impact on women's reproductive role by gaining more knowledge on fertility, by raising their socio-economic status, and by changing the mindset or attitude towards fertility control (Castro, 1994). Besides an individual's educational level, the overall environment or general educational level where one resides is also very essential factor (Kravdal, 2002).

A study conducted by the United Nations in rural Maharashtra in 1993 strongly supported the position and responsibilities of women's education as a determinant of family planning and use of contraceptives to minimize family size. Several studies undertaken in Bangladesh have found that with the increased level of women's education, her contraceptive use also increases (Cleland, 1994). Educated women

have better knowledge of contraceptive methods and due to their literacy; they are better familiarized with modern institutions, and possesses higher sense of declining a undesirable attitude towards life compared to illiterate women (Cochrane, 1979).

In sum, most of the studies indicate that women's education has a positively significant impact on the contraceptive use. Those who have higher education are more likely to use family planning methods compared to women with no education. Education immensely enables to improve an individual's knowledge and ability to process information regarding the option of using contraception according to their preferences.

2.2.2. Place of Residence

Place of residence is another factors that relates to contraceptive use. A study conducted in Morocco concluded that residence is the strongest predictor of the use of family planning and maternal health care. (Obermeyer, 1993). Women residing in urban area had greater chance to practice contraception, especially modern contraceptive methods than those in rural area. (Rahayu et al., 2009). The reason for such differentiation may due to urban lifestyles, facilitated by easy availability and access to various contraceptive methods (S. Singh, Casterline, & Cleland, 1985)

A study in the Philippines by Wong, Popkin, Guilkey, and Akin (1987) also found that there was a significant difference between urban and rural women in relations to the contraceptive use. The reason for this is that urban women tend to be more educated and thus, they have greater knowledge about the benefits of contraceptive methods and can easily access to them (Wong et al., 1987).

Korra (2002), observed that more educated women have higher interest to reside in urban areas, which are better served by family planning services and where various contraception methods are readily available. Kasarda et al. (1986), commented that education has been an effective tool in reducing fertility for urban women as compared to women of rural counterparts. Urban educated women use more modern contraceptives than rural women because of greater accessibility, availability and affordability (Bertrand et al., 1993).

Among educated urban couples, they aspire to have fewer children in the family (Hamill, Tsui, & Thapa, 1990) and lower educational attainment levels in the rural uneducated women (Gajanayake, 1989). Rutstein (2005) and Conde-Agudelo (2006) also added that women who resides in the rural parts normally have lower chance in utilizing contraception and therefore, have more children than their urban counterpart. A major reason might be that the costs of children are higher in more developed and urban areas than in rural areas (Smith, 2010).

It is pretty clear from that previous findings that women residing in the urban are fairly well off and more likely to use any methods of contraceptive than women who are residing in the rural area. The urban population can easily access to any methods of contraceptive, can afford, are more educated and have better information for advocacy through various social media such as TV, newspaper, and internet.

2.2.3 Region

According to the findings from the Kenyan Demographic Health Survey (KDHS) conducted by KNBS (2010) suggest that the difference in the contraceptive use between the various regions of the country are mainly influenced by disparities in

women's educational attainment, women's wealth status, depending on the accessibility of contraceptive methods, and prevalence of polygamy marriages.

Significant differences still exist between various regions in terms of the use of contraceptive methods, and this finding was substantiated by Carr (2006) who observed the contraceptive use differentials that accounted for by occupational and educational characteristics including the rural and urban residents of different regions. WHO (2013) reported that the significant variations in terms of the contraceptive prevalence among the regions is fueled by both a growing population and a shortage of family planning services.

A case study undertaken in Indonesia in 2006 covering ten districts of its five provinces, unfolds that support readily extended by the regional government for the family planning programs varied depending on their perceived importance prioritized for their districts (Herartri, 2008). Asiimwe et al. (2013), found that in Uganda regional variation in contraceptive use is significantly high particularly in age group 15 – 24 years.

A consecutive Demographic and Health Surveys carried out by Navrongo Health Research Centre in northern Ghana found that acquiring knowledge of methods, consciousness of contraceptive services, and purposes for embracing contraception reflects a situation of less encouraging program success compared to the corresponding similar indicators accorded in the regions of southern Ghana.

2.3 Economic Determinants on Contraceptive use.

Studies in various countries indicate that use of contraception is exceptionally influenced by some economic factors like women's economic status and wealth. The economic argument focuses on the trade-off between times spent in education, and therefore employment and the time spent raising children (Becker, 1960) and Willis (1974). Economic status of the family in many societies is significant in determining the age at which people marry (Bracher, 1998) and Garenne (2004).

2.3.1 Wealth Index

It is evident from the study elsewhere that the reproductive behavior of the women is to highest degree influenced by the individual wealth status, family wealth, and community wealth in which they live. A number of studies conducted by Eastwood (2001) and Adeoti (2009), specify that families that use contraceptive methods have more assets, live in higher standard houses and have better educated children. In other words, reducing fertility can enable to alleviate poverty and stimulate economic growth.

Hamill et al. (1990), assert that wealth of the household may also be essential because of its correlation with education. Wealth may also have effects on desired family size and the effective use of contraceptive methods. Dharmalingam and Philip Morgan (1996), observed that families with higher income or more wealth were more likely to use contraception because they could hopefully afford better access to contraception services. In addition, it is likely that they might have already experienced a higher opportunity cost of the value of their time spent in leisure,

which reduced their demand for children and increased the contraceptive use to prevent childbearing and reduce fertility.

In Uganda, women who are educated and richer have higher chances of using more contraception compared with uneducated and women belonging to lesser economic status (UBOS, 2007). Schoemaker (2005), observed that wealthier women were more likely to accept family planning services and have higher likelihoods to practice modern contraceptives than poor women. A similar finding was also observed by Rahayu et al. (2009) that wealthier women were slightly more likely to use contraception and to use a modern method than those who were in the middle and lower classes.

In conclusion, women from higher affluent families are more likely to implement the use of contraception because they can have better access to contraceptive services. The wealthy women might have already had higher opportunity cost of the value of their leisure time that eventually increased the use of contraceptive methods and minimized demand for having more children.

2.4 Conceptual Framework and Hypothesis

The conceptual framework for this study, which derived from synthesizing literature review, is that the use of contraception is influenced by demographic, social and economic characteristics of women in reproductive age.

Figure 2 **Conceptual Framework**

Independent Variables   Dependent Variables

```
┌─────────────────────────────┐
│ Demographic Factors         │
│                             │
│   ➢ Women's Age             │
│   ➢ No. of living Children  │
│   ➢ Desire for More Child   │
└─────────────────────────────┘

┌─────────────────────────────┐
│ Social Factors              │            ┌────────────────────────────┐
│   ➢    Education            │            │                            │
│   ➢    Place of Residence   │ ────────▶  │ Current use of contraception│
│   ➢    Region               │            │   ● Yes                    │
└─────────────────────────────┘            │   ● No                     │
┌─────────────────────────────┐            │                            │
│ Economic factors            │            └────────────────────────────┘
│   ➢    Wealth               │
└─────────────────────────────┘
```
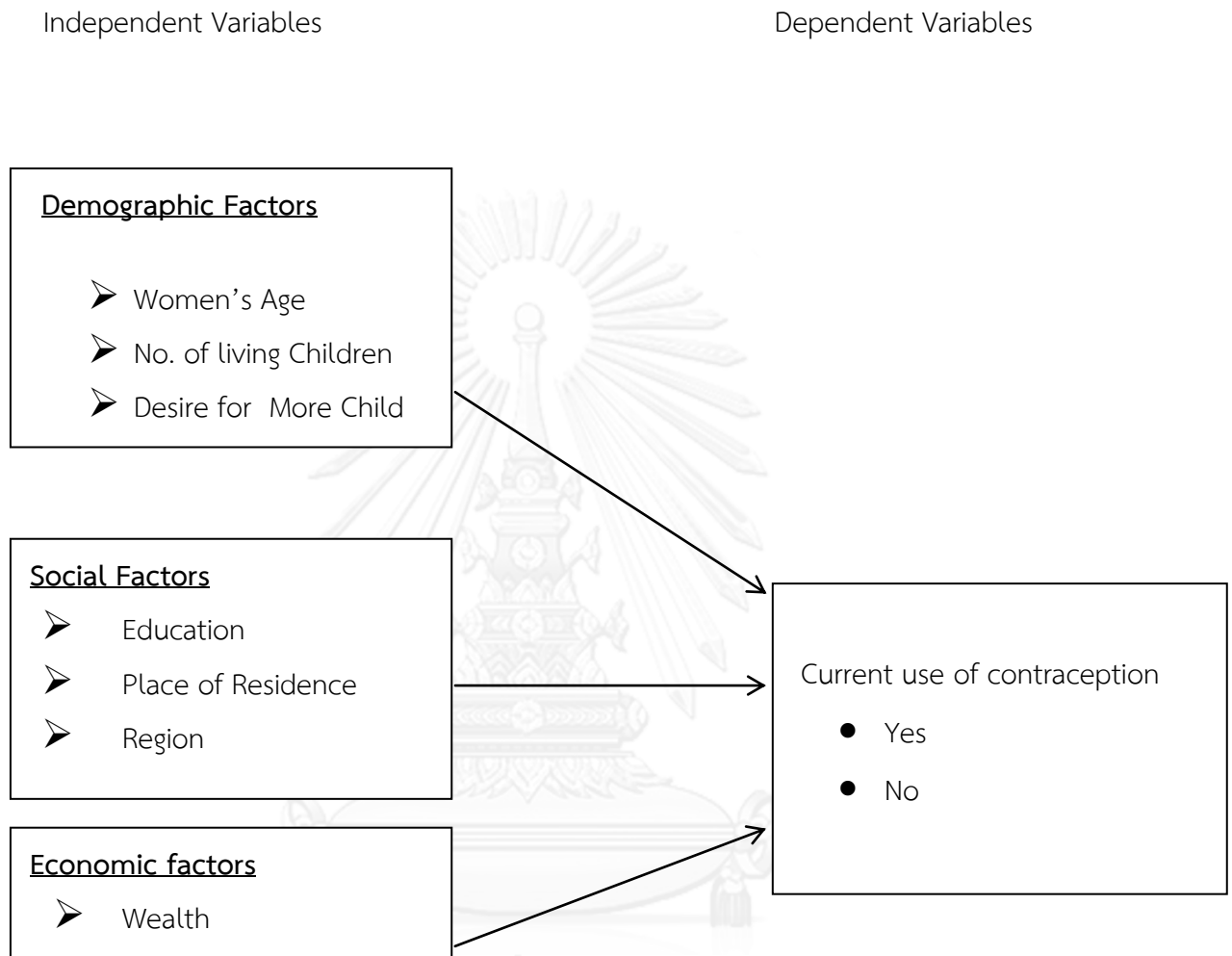
2.4.1 Main Hypothesis

"The differentials in demographic, social and economic characteristic of women have

an effect on the contraceptive use".

2.4.2 Minor Hypothesis:

- Married women are more likely to use contraception than unmarried

  women.

- The more educated women are more likely to use contraception than the women with no education.

- Women with more number of living children will be more likely to use contraception than those who have no children.

- Those women who wish to have more children are less likely to use contraception.

- The young Bhutanese women are more likely to use contraception than the older Bhutanese women.

- Women residing in the urban areas are more likely to use contraception than those rural counterparts.

- The probability of women using contraception is likely to vary by region.

- The probability of women using contraception is likely to increase with the wealth.

CHAPTER III

RESEARCH METHOD

3.1 Data and Sample

The current study used the Bhutan Multiple Indicator Survey (BMIS) conducted in 2010 by the National Statistical Bureau (NSB). The information for this study was obtained from a representative sample of 16,823 women aged 15 – 49 years old. This study is based on household primary data collected from all 20 Dzongkhags (District) of Bhutan. The sample for the Bhutan Multiple Indicator Survey (BMIS) was devised to provide estimates for a large number of indicators on the situation of women and children, for both rural and urban areas covering all the 20 Dzongkhag (District).

In this BMIS 2010 survey, National Statistical Bureau of Bhutan has used three different sets of questionnaires which are provided as below:

1) A household questionnaire was designed in order to collect information on all de jure (usual residents) household members, the households, and the dwelling.

2) A women's questionnaire was administered in each household to all women aged 15 – 49 years old.

3) Under-five children questionnaire was administered to mothers or caretakers in the household.

As per BMIS 2010 report, 14,676 households were successfully interviewed, and 16,823 women (aged 15 – 49) were identified. Of these 16,823 identified women,

14,018 were successfully interviewed. Since our study concentrates on the currently use of contraception methods amongst currently married Bhutanese women, our sample excludes the women with the following characteristics:

1. Women who reported that they were currently pregnant and unsure.

2. Women who were single, separated, divorced, and widowed.

3. Women who did not have valid responses to all the questions.

In order to make this data represent the national sampling, the weight value provided by NSB were normalized and applied. As a result, the final sample in this study is 9,419.

3.2 Description of Variables

The descriptions of both the dependent variable and independent variables are provided in table 2 and table 3. The detailed information of measurement scales and question numbers are provided for all the dependent and independent variables.

3.2.1 Dependent Variable

In this study the dependent variable is the current use of contraceptive. BMIS 2010, asked questions about currently use of contraception to currently married Bhutanese women aged 15 – 49 years old. The dependent variable is a dichotomous response variable and it is coded with two values, one (1) and zero (0). The code one represents the current use of contraception, while code zero doesn't use of contraception.

Table 2: Dependent Variable

Variable	Description	Measurement Scale	Question Number
Contraception Use	Whether women of reproductive age are currently using any contraception method (natural and modern methods) or not. This is limited to currently married Bhutanese women aged 15 – 49 years who are not currently pregnant.	Not Use = 0 Use = 1	CP2

3.2.2 Independent Variables

The explanatory (independent) variables included in this study are women's age, desire for more child, number of living children, education, and place of residence, region and wealth, which are described in table 3.

Table 3: Independent Variables

Variables	Definition	Measurement Scale	Question Numbers
Women's Age	The age of a woman at last birth date	15 – 19 = 0 20 – 29 = 1 30 – 39 = 2 40 – 49 = 3	WAGE
Number of Living	Number of children who are still surviving. during the	0 = 0, 1 = 1, 2 = 2, 3 = 3, 4 = 4,	CSURV

Children	time of interview	5 = 5, 6= 6, 7=7, 8=8, 9=9, 10 = 10, 11=11, 12=12.	
Desire for More Child	Whether a woman like to have a/another child or not	No More = 0 Want (Yes) = 1 Undecided = 2	UN6
Education	The highest level of school a woman had completed	No education = 0 Primary education = 1 Secondary education+= 2.	WB4
Place of Residence	An area where a woman resides	Rural = 0 Urban = 1	HH6
Region	A region where a woman resides.	Eastern = 0 Western = 1 Central = 2	region
Wealth Index	Wealth index quintiles or possession of assets of the household	Poorest = 0 Second=1 Middle = 2 Fourth = 3 Richest = 4	Windex5

3.3 Methods of Analysis

In order to examine whether there are any significant association or relationship between the dependent and independent variables, both bivariate and multiple logistic regressions were employed. Since the dependent variable is a dichotomous response or categorical variable, binary logistic regression was carried out to examine the significance of the relationship between determinant factors and current

contraceptive use. Binary logistic regression was used for considering the relationship between each independent variable and dependent variable. While the multiple logistic regressions were employed to observe the relative importance of association or correlation between each independent variable on the dependent variable by controlling other variables. The probability of current use of a contraceptive method is presented by the odd ratios

3.4 Limitation of the study

This study has some limitations due to using the secondary data, which has different objectives from the current study. Therefore, some variables that may have influence on contraception use do not include. For example, the work status or occupation of the women, religion and individual household income are not included in the BMIS 2010 data. It also doesn't collect data about how currently married women access information on contraceptive methods. With the fact that independent variables employed in this study have been limited in number, therefore, the results may not be precise as expected. The result might differ if the number of independent variables such as age at first marriage, sex preference for children, specific sources of communication, and sources of contraception information, woman's work status, husband's education, and woman's wealth are added in the study.

CHAPTER IV

RESULTS OF THE ANALYSES

In this chapter, the first parts of the analysis present the percent distribution of currently married women (15 – 49 years old) according to the background characteristics. The second part of the analysis presents the contraceptive prevalence rate and methods currently using among married women in reproductive age in Bhutan. The third part of the analysis concentrates on classification of current use of contraception by women's background characteristics Fourth part of the analysis focuses on examining the relationship between socioeconomic determinants of contraceptive use. Since the dependent variable is a categorical variable, the binary logistic regression has been used. Thus the results from the analyses can determine the effects of each socio-economic characteristic of currently married women aged 15 – 49 years old on currently using of contraception. Fifth parts of the analysis use a multiple logistic regression to observe that relative importance of association or relationship between all the independent variables on currently using any contraceptive among currently married women age group 15 – 49 years old. The likelihood of using contraception in multiple logistic regression analysis is presented as odds ratios (OR).

4.1 General Characteristics of study of population

Table 4 presents the percentage distributions of the weighted sample of 9,419 currently married women who are not currently pregnant.

Women's Age

The result reveals that the largest proportion of the married women in the current study are in the age group 25 – 29 years old with 21.8 percent, followed by those

aged 30 – 34 years old (19.2%), aged 34 – 39 years old (17.2%), aged 20 – 24 years old (14.5%), and aged 40 – 44 years old (14.4%), respectively. The smallest proportion of women in this study is found in the age group 15 – 19 years old (2.7%), while age group 45 – 49 years old comprise of 10.1 percent.

Number of living Children

The mean number of living children of the currently married women in 2010 is 2.64 children per women, with the range of 0-12 living children. About 6.6 percent of the currently married women have no living children. About one-fifth of these women has two living children, followed by those having three living children (22.8%), one living child (17.9%) and four living children (14.4%) respectively. Another 5.0 percent of them in this study have five or more living children.

Desire for More Child

Table 4 shows that among the currently married women in this study, 73.0 percent of them do not desire for more children, while 23.2 percent of these women want to have more children. It is noteworthy that 3.8 percent of the currently married women remain undecided whether wanting for another child or not.

Education

With regard to education, 71.6 percent of the currently married women have never been to school (no education), while 11.5 percent of the currently married women respondents have received primary education (PP – VI grade), followed by the middle - secondary education (grade IX – X) with 7.5 percent and lower secondary (grade VII – VIII) with 4.4 percent. Another 2.9 percent and 2.1 percent of the

currently married women respondents in this study have completed higher secondary (grade XI – XII) and college education (grade XIII – XV) respectively.

Place of Residence

Only about 29.5 percent of the currently married women are residing in urban areas, while most of the currently married women are living in rural areas (70.5 percent)

Region

With regard to the region of residence, most of the currently married women are residing in the western region (46.1%), followed by eastern region (29.2%) and central region (24.7%) respectively.

Household Wealth Index

In this study, the wealth index was constructed by using information on the ownership of consumer goods, dwelling characteristics, water and sanitation and other characteristics that are related to the household's wealth. The assets used for the calculation of the wealth were: source of drinking water, type of sanitation facility available, sleeping room per person, type of floor, type of roofing, type of wall, type of cooking fuel and utensils, household member assets (mobile phone, watch, bike, motorcycle/scooter, car/truck, computer, camera, VCR/VCD/DVD players, sersho gho/kira (expensive cloth made from silk materials), ownership of bank accounts. Then weights scores (factor scores) were assigned to each of the household assets. The ranking of the household wealth was based on the assets owned by an individual household and finally divided into five groups (or quintiles) (BMIS, 2010).

For the wealth index in table 4, the result indicates that 21.6 percent of the currently married women are ranked in the fourth quintile, followed by the richest or those in the fifth quintile (21.5 percent), middle quintile (19.3 percent) and second quintile (19.0 percent). Another 18.6 percent of the currently married women respondents in this study belong to first wealth quintile or poorest group.

Table 4 **Percentage distributions of currently married women aged 15 – 49 years old, according to background characteristics respondent in Bhutan.**

Characteristic	Weight Percent	No. of women
<u>Independent Variables</u>		
Women's age		
15 – 19	2.7	251
20 – 24	14.5	1369
25 – 29	21.8	2055
30 – 34	19.2	1811
35 – 39	17.2	1622
40 – 44	14.4	1356
45 – 49	10.1	955
Total	100.0	9419
No. of living children		
0	6.6	619
1	17.9	1689
2	26.7	2511
3	22.8	2151
4	14.4	1352
5	6.6	622
6	2.8	266
7	1.4	127
8	.5	49
9	.2	21
10+	.1	11

| **Total** | 100.0 | 9419 |

Mean number of children = 2.64

Range 0 – 12 children

Desire for more child

No more	73.0	6352
Want (Yes)	23.2	2019
Undecided	3.8	333
Total	**100.0**	**8704**

Education

No education	71.6	6741
Primary education	11.5	1085
Lower secondary	4.4	411
Middle secondary	7.5	706
Higher secondary	2.9	274
College	2.1	202
Total	**100.0**	**9419**

Place of Residence

Rural	70.5	6643
Urban	29.5	2776
Total	**100.0**	**9419**

Region

Western	46.1	4347
Central	24.7	2329
Eastern	29.2	2743
Total	**100.0**	**9419**

Wealth Index (quintile)

Poorest	18.6	1756
Second	19.0	1786
Middle	19.3	1817
Fourth	21.6	2034
Richest	21.5	2026
Total	100.0	9419

4.2 Current Use and Methods Currently Using

The level of current use of contraception amongst the currently married women in Bhutan is 69.9 percent. The CPR in this study is found to be somewhat higher than the one reported in the BMIS 2010 (65.6%). The difference in CPR was found due to the inclusion of currently pregnant women in the BMIS 2010 while it has been excluded from this study.

The contraceptive method of current use in this study is a multi-response variable, which respondents were asked to reply for each listing method. Therefore, the woman can give more than one answer.

Table 5 presents the percent distribution of different contraception methods used by currently married Bhutanese women aged 15 – 49 years. The most common and popular method of contraception used by currently married women of Bhutan is injectable (44.1 percent). The next second most popular methods used is male sterilization (19.3 percent), followed by oral contraceptive pills (11.7percent), female sterilization (10.8 percent), male condom (8.8 percent), IUD/Loop/Copper T (5.7 percent) and other methods account 0.7 percent. The other methods include implant, the Lactational amenorrhea methods, withdrawal, female condom, and

periodic abstinence. Compared to the male condom and pills which requires to be used on a daily basis, injection is found to be more convenient as it is required to use only after a three month period. Thus, currently married Bhutanese women choose or desire to use injectable.

It is noteworthy that none of the currently married women in reproductive age in Bhutan are using foam/jelly. The Bhutan government doesn't encourage the use of foam/jelly because it is found to be less effective in preventing pregnancy. The majority of the currently married women uses modern contraceptive methods, and very few uses natural contraception methods like periodic abstinence, Lactational amenorrhea methods, and withdrawal.

Table 5 Percentage distributions of different contraceptive methods currently used by currently married women aged 15 – 49 years.

Current Use/Methods	Percent	No. of women
Currently use any methods	69.9	6580
Methods currently use (n=6580)		
Female Sterilization	10.8	713
Male Sterilization (Vasectomy)	19.3	1267
IUD/Loop/Copper T	5.7	373
Injectables	44.1	2904
Oral Contraceptive Pills	11.7	772
Male Condoms	8.8	578
Others	.7	46

4.3 Percentage of Current Use of Contraception Methods

Table 6 shows the percentage distributions of currently married Bhutanese women aged 15 – 49 currently using any contraception method according to demographic, social, and economic characteristics in Bhutan.

Women's Age

Woman's age is associated with the dependent variable (contraceptive use). The result reveals that there is a curvilinear relationship between woman's age and proportion of currently using of contraception. The proportion of using of contraception is at the peak among women aged 30 – 34 years (78.1 percent), followed by those aged 35 – 39 year (76.2 percent). It is apparent from the result that the proportion of using of contraceptive decreases with the increasing age as evidence from women aged 40 – 44 years old (71.3%) and those aged 45 – 49 years old (59.2%). The proportion of currently using contraception is lowest among women aged 15 – 19 years old (37.5%).

Number of living children

The result from table 6 reveals that there is a curvilinear relationship among currently using contraception and number of living children. The highest proportions of the currently using of any contraceptive methods are among the currently married women who have four living children (80.0%), followed by those women having three living children (78.1%) and those having two living children (76.5%)

respectively. The lowest proportion of the currently using of contraceptive methods is 16.5 percent among the currently married women who have no living children.

Desire for More Child

Table 6 shows that there is a great variation in terms of the percentage distribution of the current using contraceptive methods according to women's desire or want more children. The highest proportion of the currently using of contraceptive methods is 72.5 percent among the currently married women who doesn't desire any more children. The proportion of current using of contraception is followed by those women who remain undecided whether to have any more children or not. (61.3%) and those women who want to have more children (52.3 percent).

Education

The result shows that the highest proportion of the currently using of any contraceptive methods is 70.9 percent among the currently married women who have no education, followed by the women who have attained the primary education level (70.8 percent). The lowest proportion of the current use of contraceptive methods is 62.4 percent among those received secondary education or more. It is noteworthy that this finding contradicts with most of previous research in the literature review that those who have no education have a higher proportion of currently using contraception. Therefore, this issue is needed to explore further with the multivariate analysis.

Place of Residence

The result reveals that there is not much significant difference in terms of a proportion of currently using contraception among women residing in rural and urban areas. The proportion of currently using of any contraception methods is 70.3 percent among the currently married women residing in the rural area while the currently married women who are living in the urban area is 68.8 percent. Such trends differs from most all the previous research findings, which indicated the higher proportion of currently using contraception among women residing in the urban area than in rural counterpart. Therefore, this relationship need further investigating by using multivariate analysis in the next section.

Region

There is some small regional variation in terms of the use of any methods of contraceptive by the currently married Bhutanese women. The result shows that the highest proportion of currently using any contraception methods is 72.1 percent among the currently married women of central region followed by the currently married women of western and eastern regions with 71.2 percent and 65.7 percent respectively.

Household Wealth Index

The highest proportion of the currently using of any contraceptive methods is 72.9 percent among the currently married women who belongs to poorest economic status followed by the women of the fourth quintile with 71.4 percent, second and middle quintile (69.4 percent each) According to the result from the table 6, the lowest proportion of currently using of contraception is the married women

belonging to richest group (66.4 percent). The relationship between household wealth and the contraceptive use will be further examined by multivariate analysis.

Table 6 Percentage distributions of currently married Bhutanese women aged 15 – 49 years currently using any contraceptive methods.

Characteristics	% Currently using Contraceptives	
	Use	Total Cases
Women's Age		
15 – 19	37.5	94
20 – 24	64.7	886
25 – 29	69.0	1418
30 – 34	78.1	1414
35 – 39	76.2	1236
40 – 44	71.3	967
45 – 49	59.2	565
Number of living Children		
0	16.5	102
1	61.6	1040
2	76.5	1921
3	78.1	1681
4	80.0	1081
5	73.8	459
6+	62.1	295

Desire for more Child		
No More	72.5	4604
Want (Yes)	52.3	1056
Undecided	61.3	204
Education		
No education	70.9	4782
Primary education	70.8	1059
Secondary	62.4	738
Education+		
Place of Residence	70.3	4669
Rural	68.8	1910
Urban		
Region	65.7	1804
Eastern	71.2	3096
Western	72.1	1680
Central		
Wealth	72.9	1281
Poorest	69.4	1239
Second	69.4	1261
Middle	71.4	1454
Fourth	66.4	1345
Richest		

4.4 Socio-Economic Determinants of Contraceptive Use

Table 7 examines the relationship between a dependent variable (use of contraceptive) and each independent variable (women's age, number of living children, place of residence, desire for more children, education, region and wealth index) by means of using bivariate logistic regression. It is evident that almost all the independent variables considered in the bivariate logistic regression model have statistically significant association with the current use of contraception (p-value ≤.05), except education and place of residence.

The current uses of contraception among married women seem to be varied by women age. Comparing with women age 15 – 19 years old, those women of older age group are more likely to use contraception. The number of living children is also has statistically significant relationship with the chance of using contraception. The result reveals that the probability of current use of contraception by currently married women is likely to increase with the increasing number of living children. Comparing with those currently married women who want none/no more child, currently married women who desire to have more children are less likely to use contraception. Similarly, those currently married women who remain undecided whether to have some more children or not are also less likely to use any methods of contraception.

Those currently married women residing in urban areas are 0.933 times less likely to use any methods of contraception than those in their rural counterparts. In addition,

those currently married women, who are residing in central and western region, are 1.349 and 1.290 times more likely to use any methods of contraception than those living in the eastern region.

Table 7 **Bivariate Logistic Regression of the currently married women aged 15 – 49 years old according to selected demographic, social and economic factors in Bhutan.**

Variables	Logistic Coefficient	Odd Ratio (OR)	P - Value
Women's age			
15 – 19	RC	1.00	
20 – 29	1.234	3.433***	.000
30 – 39	1.731	5.646***	.000
40 – 49	1.190	3.285***	.000
Number of living children	.238	1.268***	.000
Desire for more child			
No more	RC	1.00	
Want (Yes)	-1.022	.360***	.000
Undecided	-.650	.522***	.000
Education			
No education	RC	1.00	
Primary	-.008	.992	.894
Secondary edu+	-.385	.681***	.000
Place of Residence			
Rural	RC	1.00	
Urban	-.070	.933	.154

Region			
Eastern	RC	1.00	
Western	.255	1.290***	.000
Central	.299	1.349***	.000
Wealth Index-	.052	.949***	.001

*$p \le .05$ **$p \le .01$ ***$p \le .001$

Table 8 presents the result of multiple logistic regressions. The multivariate logistic regression was carried out to identify the relative significance of independent variables in explaining the dependent variable (Use of Contraception). Before the variables were employed in the multivariate regression model, multicollinearity was assessed or tested in order to see whether two or more independent variables have high correlation or not. One of the simplest ways to detect multicollinearity is to use bivariate correlations coefficient. In order to further assess multicollinearity, it was examined by tolerance and Variance Inflation Factor (VIF). The result does not show any strong multicollinearity relationship between independent variables. Therefore, we can assume that there is no multicollinearity, and can put all the independent variable on the multivariate regression model.

Accordingly, all the seven predictors/ independent variables were included in the multiple logistic regression model to examine the influence of each independent variable on the explained/dependent variable after controlling for the other independent variable. The independent variables considered in the multiple logistic regression model are women's age, number of living children, desire for more child, education, place of residence, region, and household wealth index. Those variables

that are in categorical level were recoded into dummy variable and assigning appropriate reference category for each variable.

The multiple logistic regression analysis result shows that women age has statistically significant relationship with the probability of current use of contraception, even after including and keeping other independent variables constant. Comparing with currently married women aged 15-19 years old, women aged 20-29 and 30-39 years old are more likely to use contraception, as the odd ratios revealing the chance of using contraception 2.511 times, and 2.251 times respectively. On the contrary, women aged 40-49 years old are less likely to use contraception than women aged 15-19 (about .994 times less). This may be because the women aged 40-49 are in the latest stage of reproductive age and may perceive that they are becoming less fertile. Therefore, the result of this study does not support the hypothesis that, "The young Bhutanese women are more likely to use contraception than the older Bhutanese women". The result seems to indicate the curvilinear relationship between women age and the use of contraception.

It's evident from the table 8 indicating that the more number of living children the women have, the more likely that they use contraception (1.210 times higher). Such relationship may due to the increasing demand for fertility regulation due to high supply of children. Ojakaa (2008), Dang (1995) and Shah (1979) all observed that when number of survival or living children increased, the use of contraception level correspondingly increased. This result confirms the findings from previous research and literatures and also confirms the hypothesis of this study.

Whether women desire for more children or not, also has a statistically significant impact on the current use of contraception. Those women who want or desire more children are .413 times less likely to use any contraception methods as compared to those who do not want any more children. Similarly, those women who remain undecided about this issue is also 0.549 times less likely to use any methods of contraception compared with those in the reference category.

Education is recoded into a dummy variable with three categories, namely no education (reference category), primary education, and secondary education and above. The result of the analysis indicates that currently married women with secondary education and above are .971 times less likely to use any methods of contraception comparing to those with no education. Currently married women with primary educational level are 1.125 times more likely to use any methods of contraception than those with no education. However, such relationship does not show statistically significant after controlling for other independent variables. Most of the previous literatures pointed out that educated women are more likely to use contraceptive methods, since they have better knowledge on family planning, know how to seek professional advice, and have positive attitude towards family planning services. Cleland (1994), Patnaik (1985), Arora (1990), Vashisht (1991), UNESCO (2011), Robey et al. (1992) and Castro (1994) strongly support that through increased access to education, women inculcate favorable attitude towards the desired small family, improve the awareness and use of more contraception methods.

However, it is surprising that in this study, education does not have any significant impact on contraceptive use. Even the study done by Jamyang and Nidup (2012) using BLSS 2007 data have also found the similar result. This may be because of the government's interventions and proactive sensitization education on contraception use in the low educated and uneducated groups. Furthermore, the involvement of HRH Ashi Sangay Choedn Wangchuk as the UNFPA goodwill ambassador, intensified the program focusing the rural unreached population and armed forces (Reproductive Health, 2004). In addition, it may be due to some reforms initiated by the government such as increasing the number of health staff at the community health centres, expansion of services from quantity to quality, and evolvement of strategies to reach the unreached through decentralization of planning and management systems, and by intensifying human resource development for health & establishing a system of continuing education (WHO, 2003). This result is striking, however, due to the limitation on the women's background characteristics in the data that is being used, therefore the future research should re-investigate on this relationship.

From the result (table 8), although the odds suggest that the uses of any contraception methods by the currently married women who resides in urban area are 1.050 times more likely to use contraceptive methods compared to the reference category (rural area), however, while controlling for other variables, this relationship does not yield a statistically significant relationship. This may be due to the fact that the government provides more proactive campaign to increase the awareness of contraception to women in the rural than in urban areas. The

advocacy for family planning and contraceptive use via the establishment of the village health workers (VHW) may be the main reason for such remarkable increase of CPR from 30.7% in 2000 to 69.9% in 2010. VHW was basically created to supplement the work of the rural health facilities since early 1980s and currently more than 1,200 VHWs are actively functioning (Ministry of Health, 2013). Despite free supply of various contraceptive methods to both rural and urban areas from both government and non-governmental organization, the proportion of the use of contraceptive by the urban women are less compared to rural women.

The region is categorized into three groups, namely eastern, western and central region, while the eastern region is labeled as the reference category. The nature of the place of residence also has a significant impact on current use of contraception. The result (table 8) shows that in Bhutan, currently married women who live in the western and central region are 1.399 and 1.398 times higher and more likely to use contraception compared to their counterpart eastern Bhutan.

These differences in contraception use may, due to the geographical and cultural differences, and different level of socioeconomic development. The eastern region is less developed as compared to other two regions. For eastern region, it is one of the most populous areas and lacks proper road connectivity, having a poor infrastructure and lack a reliable communication network. Further, eastern region is vulnerable because the majority of the population is illiterate

The other independent variable which was expected to have a greater significant association when all of the independent variables were considered in the logistic regression is household wealth. But the result shows that currently married women from the richer quintiles are 0.921 times less likely to use contraception than the poorest quintile. This result also contradicts with the literature review. However, this is beyond the scope of this study. The future research should include more independent variable and consider possible interactions between wealth index and other independent variables.

Table 8 Multiple Logistic Regression of the currently married women aged 15 – 49 years old currently using contraceptive methods according to selected demographic, social and economic factors in Bhutan.

Variables	Logistic Coefficient	Odd Ratio (OR)	P - Value
Women's age			
15 – 19	RC	1.00	
20 – 29	.921	2.511***	.000
30 – 39	.811	2.251***	.000
40 – 49	-.006	.994	.972
Number of living children	.190	1.210***	.000
Desire for more child			
No More	RC	1.00	
Want (Yes)	-.883	.413***	.000
Undecided	-.600	.549***	.000
Education			
No education	RC	1.00	
Primary	.118	1.125	.091
Secondary+	-.029	.971	.718

Place of Residence

Rural	RC	1.00	
Urban	.049	1.050	.448

Region

Eastern	RC	1.00	
Western	.336	1.399***	.000
Central	.335	1.398***	.000

Wealth Index -.083 .921*** .000

-2Log Likelihood = 10820.608

CHAPTER V

CONCLUSION AND RECOMMENDATION

Any contraception methods use is an important tool for family planning policy. It also helps in promoting quality of life of mother and child as well as fulfills the women wish in term of the desire number of children. Through family planning programs or contraception use, it can primarily help to reduce the total fertility rate and population growth rate. In addition, it will also mainly help to reduce infant mortality rate, under5 mortality rate and maternal mortality rate in the country. However the success of family planning program depends largely on the level of contraception use, which seems to vary by socio-economic status of the currently married women. This last conclusion chapter presents the overview or summary of the major findings, some suggestions for future research and policy implications needed for the improvement of the utilization of the contraception methods available by the currently married women of Bhutan.

Though the Contraceptive Prevalence Rate in Bhutan in 2000 was reported at 30.7 percent, however, the result of this research study reveals remarkable increase of Contraceptive Prevalence Rate at 69.9 percent. Such achievement may be attributable to the timely government intervention such as issue of Royal decree by His Majesty the 4th King on population planning in 1995 and appointment of Her Majesty the Queen Ashi Sangay Choden Wangchuk as a goodwill ambassador of UNFPA in 1999. Under the patronage of Her Majesty the Queen Ashi Sangay Choden Wangchuk, in her capacity as a goodwill ambassador of UNFPA has been providing aggressive advocacy education on reproductive health and family planning to the

underserved population in the far-flung areas. Due importance are given to adolescent health, family planning and teenage pregnancies, at the same time focusing special attention to armed forces and un-reached population (Primary Health Care, 2008).

Despite, so many daunting challenges due to lack of human resources, lack of technical expertise and because of financial resource constraint, Bhutan government is endeavoring continuously with several strategies to improve the situation of the mother and a child. (Reproductive Health, 2004).

5.1 A Brief Overview of the study

The present study attempts to investigate the relationship between socio-economic characteristics and the current contraception use among currently married women in Bhutan. The secondary data from the Bhutan Multiple Indicator Survey 2010 (BMIS 2010) has been utilized. The data included 16, 823 women aged 15 – 49 years old representing the 20 Dzongkhags identified from the 14,676 households interviewed. However, the sample for the current study was based only on 9,419 currently married women of the reproductive age population (15 – 49 years old) who were not pregnant during the time of interview.

As elucidated in Chapter One, this study has two main objectives. The first objective is to examine the level of contraceptive prevalence rate among the currently married women aged 15 – 49 years old. The second objective is to investigate the impact of socio-economic factors on the contraceptive use among those currently married women. In order to analyze these two objectives, bivariate and multivariate

logistic regression models have been used to examine the relationship between a dependent variable (use of contraceptive) and independent variables.

5.2 The Major Findings

As stated in Chapter Four of the table 4, the result reveals that the largest proportion of the currently married respondents in this study is in the age group of 25 – 29 years old, while the smallest proportion of the currently married women respondents are in the age group 15 – 19 years. The proportion of the use of contraception increases with increasing number of living children. When considering the type of contraception methods, it is found that the most common and popular methods of modern contraception used by the currently married Bhutanese women are the injectable (44.1) as shown in the table 5, followed by male sterilization. The use of other contraceptive methods such as female condom, Lactational amenorrhea method and withdrawal accounts just 0.7 percent.

WHO (2003) report revealed that the most popular methods of contraception used in Bhutan in 2003 was male sterilization (13.6%) and injectable (5.9%). Conversely, in this study, the most common and popular methods of contraception used by the currently married women is injectable.

The major findings of the research results are provided in the Table 7 and Table 8 of Chapter Four which can be summarized by Table 9. The positive (+) and negative (–) signs provided under both bivariate and multivariate analysis indicates the relationship between each independent variable and contraceptive use. The positive sign reflects the more probability of using contraception by the currently married women, while the negative sign shows less probability of using contraception. The

correct symbol (√) means the result supports the hypothesis of the study and the cross symbol (x) demonstrates the result yield different direction of the relationship between dependent and independent variable from the hypothesis of the study.

Although, several researchers have found that women who reside in urban parts of the country are more likely to use more contraception then those in rural area, however, in this study, the result reveals that currently married Bhutanese women residing in the rural parts are more likely to use contraception then their urban counterparts. The proportion of the use of contraceptive is slightly higher in the rural areas (70.3%) as compared to urban areas (68.8%). The reason may attribute to an aggressive awareness education on contraception use which is concentrated in the rural areas by royal government. Moreover, as compared to the currently married women of urban area, rural residents are economically disadvantaged and may not be able to afford to have more children. Therefore, it is likely that the rural women are using more contraception to prevent unwanted or undesirable pregnancies.

Table 9 **Summary Results of the Logistic Regressions.**

Independent Variables	Bivariate Analysis	Multivariate Analysis	Hypothesis
Women's age			
15 – 19	RC	RC	
20 – 29	+ ***	+ ***	X
30 – 39	+ ***	+ ***	X
40 – 49	+ ***	+	X
Number of living children	+ ***	+ ***	√
Desire for more child			
No more	RC	RC	
Want (Yes)	– ***	– ***	√
Undecided	– ***	– ***	x

Education			
No education	RC	RC	
Primary	−	+	x
Secondary+	− ***	−	x
Place of Residence			
Rural	RC	RC	
Urban	−	+	x
Region			
Eastern	RC	RC	
Western	+ ***	+ ***	√
Central	+ ***	+ ***	√
Wealth	+***	− ***	x

Significant: *=P≤ .05,   Log odd ratio > 1= (+),   Log odd ratio < 1= (−).
***P≤ .001

Note: (+) = More likely to use contraception, (-) = Less likely to use contraception. (√) = supports the hypothesis of this study. (x) = show different direction from the hypothesis of this study

5.3 Suggestions for Future Research

So far the results of the current study suggest that further research on the socio-economic determinants on the use of contraception in Bhutan is still needed. Particularly, the future research should explore on the interactive effects of education, place of residence, and health status. The findings of this study indicate that the women in urban area are less likely to use contraceptive methods which are inconsistent with most of the studies done elsewhere. Furthermore, this study also

found that uneducated women are using more contraceptive methods than educated women. All the above findings invite further investigation and analysis on the similar topic of interest to prove the hypothesis and draw a conclusion for such relation.

In addition, future research should consider collecting detailed information on women's employment, women's income, religion, the channels of receiving information related to family planning etc. Such detailed information would help improve the explanations for the factors affecting contraceptive use.

Since this study reveals a pretty high level among currently married women in Bhutan, one of the issues that future research should explore is the unmet need and its determinants.

5.4 Policy Implications

According to the findings of this study, the contraceptive prevalence rate in Bhutan has drastically increased. It also reflects that the use of contraception is high among the currently married women residing in the rural parts of the country, uneducated, and poor. This may due the governmental proactive endeavors to outreach the women in lower socio-economic groups. The government should also provide the family planning program for which, considering the need and preference of women in higher socioeconomic status, such as those women with higher education, residing in urban area, and in higher economic status. The family planning program should stress on both quality and quantity of services. In addition, the government should monitor the success of the family planning program not only in terms of the

contraceptive prevalence rate but should consider the failure rate of contraceptive use and unmet need as well.

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APPENDIX

Appendix A: List of the Region

Eastern Region

1) Lhuentse

2) Monggar

3) Pemagatshel

4) Trashigang

5) Trashi Yangtse

6) Samdrup Jongkhar

Western Region

1) Chukha

2) Gasa

3) Haa

4) Paro

5) Punakha

6) Samtse

7) Thimphu

8) Wangdue Phodrang

Central Region

1) Bumthang

2) Dagana

3) Sarpang

4) Tsirang

5) Trongsa

6) Zhemgang

Appendix B: Multicollinearity Test, Variance Inflation Factors (VIF).

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.049	.026		40.884	.000		
	windex5 Wealth index quintiles	-.020	.004	-.061	-4.413	.000	.500	1.998
	age15-19	-.219	.029	-.077	-7.525	.000	.916	1.091
	age30-39	-.038	.012	-.040	-3.136	.002	.590	1.695
	age40-49	-.197	.015	-.185	-13.421	.000	.503	1.989
	No more	-.288	.017	-.294	-16.561	.000	.302	3.306
	Want (Yes)	-.462	.021	-.413	-21.657	.000	.262	3.812
	Undecided	-.388	.030	-.156	-12.981	.000	.659	1.518
	Urban	.005	.013	.005	.387	.698	.615	1.627
	Central	.012	.012	.011	1.050	.294	.797	1.254
	East	-.055	.011	-.054	-4.810	.000	.750	1.333
	Primary	.018	.013	.014	1.367	.172	.861	1.162
	Secondary	-.003	.016	-.002	-.173	.862	.701	1.427
	CSURV Children surviving	.036	.004	.126	9.448	.000	.536	1.867

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Appendix C: List of Questionnaires

Appendix G. Questionnaires

Bhutan Multiple Indicator Survey (BMIS)
HOUSEHOLD QUESTIONNAIRE

HOUSEHOLD INFORMATION PANEL	HH

HH1. BLOCK/CHIWOG NAME & CODE: _____ __ __   HH1A. GEWOG/TOWN NAME & CODE: _____ __ __

HH2. Household serial number: __ __

HH3. Interviewer name and number: HH4. Supervisor name and number:

Name_____ __ __   Name_____

HH5. Day / Month / Year of interview: __ __ / __ __ / __ __ __ __

HH6. AREA: HH7. DZONGKHAG NAME & CODE:*
   Urban 1   _____ __ __
   Rural 2

HH7: Code for Dzongkhags:

11 Bumthang	16 Lhuntse	21 Samdrup Jongkhar	26 Trashiyangtse
12 Chukha	17 Monggar	22 Samtse	27 Trongsa
13 Dagana	18 Paro	23 Sarpang	28 Tsirang
14 Gasa	19 Pemagatshel	24 Thimphu	29 Wangdue
15 Haa	20 Punakha	25 Trashigang	30 Zhemgang

WE ARE FROM NATIONAL STATISTICS BUREAU. WE ARE CONDUCTING A SURVEY ON THE SITUATION OF HOUSEHOLD, WOMEN AND CHILDREN. I WOULD LIKE TO TALK TO YOU ABOUT THESE SUBJECTS. THE INTERVIEW MIGHT TAKE ABOUT 30 MINUTES. ALL THE INFORMATION WE OBTAIN WILL REMAIN STRICTLY **CONFIDENTIAL**. WHILE YOUR PARTICIPATION IS VOLUNTARY IT IS OF UTMOST IMPORTANCE THAT YOU RESPOND TO THE SURVEY AS THE RESULTS WILL HELP THE GOVERNMENT IN PLANNING AND DECISION MAKING.

IF YOU HAVE NO OBJECTION, MAY I START NOW?

☐   YES, PERMISSION IS GIVEN ⇒ GO TO HH18 TO RECORD THE TIME AND THEN BEGIN THE INTERVIEW.

☐   NO, PERMISSION IS NOT GIVEN ⇒ COMPLETE HH9. DISCUSS THIS RESULT WITH YOUR SUPERVISOR.

AFTER ALL QUESTIONNAIRES FOR THE HOUSEHOLD HAVE BEEN COMPLETED, FILL IN THE FOLLOWING INFORMATION:

HH8. Name of head of household:

HH9. Status of household questionnaire:	HH10. Respondent to household questionnaire:
Completed 01	
No household member or no competent	Name:_____
respondent at home at time of visit.................................. 02	
Entire household absent for extended...............................	Serial Number:
period of time.. 03	__ __
Refused 04	
Dwelling vacant / Address not a dwelling 05	HH11. Total number of household
Dwelling destroyed.. 06	
Dwelling not found.. 07	members: ------
Other (specify).. **96**	
HH12. Number of women	HH13. Number of woman's
age 15-49 years: __ __	questionnaires completed:
HH14. Number of children	HH15. Number of under-5 questionnaires
under age 5: __ __	completed:
HH16. Field edited by (Name and number):	HH17. Data entry keyer (Name and number):
Name... __ __	Name... __ __

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Bhutan Multiple Indicator Survey (BMIS)

QUESTIONNAIRE FOR INDIVIDUAL WOMEN

WOMAN'S INFORMATION PANEL
WM

This questionnaire is to be administered to all women age 15 through 49 (see column HL7 of Household Listing Form). Fill in one form for each eligible woman

WM1. Block/Chiwog name and code: _____ __ __ __	WM1A. Gewog/Town name and code: __ __
WM1B. Dzongkhag Name & Code: _____ __ __ __	WM2. Household serial number: __ __
WM3. Woman's name: Name_____	WM4. Woman's serial number: __ __
WM5. Interviewer name and number: Name_____	WM6. Day / Month / Year of interview: __ __ / __ __ / __ __ __ __

REPEAT GREETING IF NOT ALREADY READ TO THIS WOMAN:

WE ARE FROM NATIONAL STATISTICS BUREAU. WE ARE CONDUCTING A SURVEY ON THE SITUATION OF HOUSEHOLD, WOMEN AND CHILDREN. I WOULD LIKE TO TALK TO YOU ABOUT THESE SUBJECTS. THE INTERVIEW MIGHT TAKE ABOUT 30 MINUTES. ALL THE INFORMATION WE OBTAIN WILL REMAIN STRICTLY CONFIDENTIAL. WHILE YOUR PARTICIPATION IS VOLUNTARY IT IS OF UTMOST IMPORTANCE THAT YOU RESPOND TO THE SURVEY AS THE RESULTS WILL HELP THE GOVERNMENT IN PLANNING AND DECISION MAKING.

IF YOU HAVE NO OBJECTION, MAY I START NOW?

IF GREETING AT THE BEGINNING OF THE HOUSEHOLD QUESTIONNAIRE HAS ALREADY BEEN READ TO THIS WOMAN, THEN READ THE FOLLOWING:

NOW I WOULD LIKE TO TALK TO YOU MORE ABOUT YOUR HEALTH AND OTHER TOPICS. THIS INTERVIEW WILL TAKE ABOUT 30 MINUTES. AGAIN, ALL THE INFORMATION WE OBTAIN WILL REMAIN STRICTLY CONFIDENTIAL

☐ YES, PERMISSION IS GIVEN ⇒ *GO TO WM10 TO RECORD THE TIME AND THEN BEGIN THE INTERVIEW.*

☐ NO, PERMISSION IS NOT GIVEN ⇒ COMPLETE WM7. DISCUSS THIS RESULT WITH YOUR SUPERVISOR

WM7. Status of woman's questionnaire *(handwritten)* ✗ missing ~~number~~ system	Completed .... 1 Not at home .... 2 Refused .... 3 Partly completed .... 4 Incapacitated .... 5 **Other** (specify)_____ 6
WM8. Field edited by (Name and number): Name_____ __ __	WM9. Data entry keyer (Name and number): Name_____ __ __
WM10. Record the starting time.(24 hours)	Hours and minutes.............. __ __ : __ __

WOMAN'S BACKGROUND		WB
WB1. IN WHAT MONTH AND YEAR WERE YOU BORN?	Date of birth Month... __ __ DK month .... 98 Year .... __ __ __ __ DK year...9998	
WB2. HOW OLD ARE YOU? PROBE: HOW OLD WERE YOU AT YOUR LAST BIRTHDAY? COMPARE AND CORRECT WB1 AND/OR WB2 IF INCONSISTENT	Age (in completed years)........................ __ __	
WB3. HAVE YOU EVER ATTENDED SCHOOL OR PRESCHOOL?	Yes 1 No 2	2⇒WB7
WB4. WHAT IS THE HIGHEST LEVEL OF SCHOOL YOU ATTENDED?	PRESCHOOL………………………………0 PRIMARY(PP-6)…………………….............1 LOWER SECONDARY(7-8).............…………..2 MIDDLE SECONDARY(9-10)………………….3 HIGHER SECONDARY(11-12)……………….4 COLLEGE/UNIVERSITY………………………5 DK…………………………………………8	0⇒WB7
WB5. WHAT IS THE HIGHEST GRADE YOU COMPLETED AT THAT LEVEL? IF LESS THAN A FULL GRADE THEN ENTER 17.	Grade PP-00 .... __ __ Grade 01-12 .... __ __ Diploma-13 .... __ __ Degree-14.. __ __ Masters-15.. __ __ >Masters-16 .... __ __ No grade-17 .... __ __ DK(write98)..	
WB6. Check WB4: ☐ Lower Secondary or higher. ⇒ Go to Next Module (Primary(Continue with WB7		
WB7. NOW I WOULD LIKE YOU TO READ THIS SENTENCE TO ME. Show sentence on the card to the respondent. If respondent cannot read whole sentence, probe: CAN YOU READ PART OF THE SENTENCE TO ME? EXAMPLES OF SENTENCES FOR LITERACY TEST: 1. THE CHILD IS READING A BOOK 2. TODAY IS LOSAR, WE ARE GOING TO THE DZONG 3. PARENTS MUST CARE FOR THEIR CHILDREN 4. FARMING IS HARD WORK	Cannot read at all ....1 Able to read only parts of sentence...............................2 Able to read whole sentence ....3 **No sentence in** **required language** _____ 4 (specify language) Blind / mute, visually / speech impaired...........................5	

CHILD MORTALITY		CM

All questions refer only to LIVE births.

CM1. Now I would like to ask about all the births you have had during your life. Have you ever given birth?	Yes...1	
	No 2	⇒CM8
CM2. What was the date of your first birth?	Date of first birth	
I mean the very first time you gave birth, even if the child is no longer living, or whose father is not your current partner.	Day..__ __ DK day...98	
CM4CM3.	Month..__ __ DK moth...98	
	Year...__ __ __ __ DK year..9998	⇒CM4
CM3. How many years ago did you have your first birth	Completed years since first birth... __ __	
CM4. Do you have any sons or daughters to whom you have given birth who are now living with you?	Yes...1	
	No 2	2⇒CM6
CM5. How many sons live with you?	Sons at home...__ __	
How many daughters live with you?	Daughters at home..__ __	
If none, record '00'.		
CM6. Do you have any sons or daughters to whom you have given birth who are alive but do not live with you?	Yes...1	
	No 2	2⇒CM8
CM7. How many sons are alive but do not live with you?	Sons elsewhere... __ __	
How many daughters are alive but do not live with you?		
If none, record '00'.	Daughters elsewhere.. __ __	
CM8. Have you ever given birth to a boy or girl who was born alive but later died?	Yes...1	
	No 2	2⇒CM10
If "No" probe by asking:		
I mean, to a child who ever breathed or cried or showed other signs of life – even if he or she lived only a few minutes or hours?		
CM9. How many boys have died?	Boys dead...__ __	
How many girls have died?	Girls dead..__ __	
If none, record '00'.		
CM10. Sum answers to CM5, CM7, and CM9.	Sum...__ __	

DESIRE FOR LAST BIRTH   **DB**

This module is to be administered to all women with a live birth in the 2 years preceding date of interview.

Check child mortality module CM13 and record name of last-born child here _____.

Use this child's name in the following questions, where indicated.

DB1. WHEN YOU GOT PREGNANT WITH (NAME), DID YOU WANT TO GET PREGNANT AT THAT TIME?	Yes 1	1⇒NEXT
	No 2	MODULE
DB2. DID YOU WANT TO HAVE A BABY LATER ON, OR DID YOU NOT WANT ANY (MORE) CHILDREN?	Later 1	
	No more 2	2⇒NEXT
		MODULE
DB3. HOW MUCH LONGER DID YOU WANT TO WAIT?	Months .... 1 __ __	
	Years... 2 __ __	
	DK(Write 98)... 9__ __	

MN18. WHERE DID YOU GIVE BIRTH TO (NAME)?	Home	
	Your home...11	11⇒MN20
	Other home..12	12⇒MN20
Probe to identify the type of place	Public sector	
	Hospital..21	
If unable to determine whether public or private, write the name of the place.	BHU...24	
	Satellite clinic...34	
	Private Medical Sector	
	Private hospital..31	
_____		
(Name of place)	**Other** (specify)..**96**	96⇒MN20
MN19. WAS (NAME) DELIVERED BY CAESEREAN SECTION? THAT IS, DID THEY CUT YOUR BELLY OPEN TO TAKE THE BABY OUT?	Yes..1	
	No...2	
MN20. WHEN (NAME) WAS BORN, WAS HE/SHE VERY LARGE, LARGER THAN AVERAGE, AVERAGE, SMALLER THAN AVERAGE, OR VERY SMALL?	Very large...1	
	Larger than average.......................................2	
	Average...3	
	Smaller than average......................................4	
	Very small..5	
	DK..8	
MN21. WAS (NAME) WEIGHED AT BIRTH?	Yes..1	
	No...2	2⇒MN22A
MN22. HOW MUCH DID (NAME) WEIGH?	DK..8	8⇒MN22A
	From card..........................1 (kg) __ . __ __ __	
Record weight from mother and child handbook or health card, if available.	From recall........................2 (kg) __ . __ __ __	
	DK(Write 9.998).........9	
MN22A AFTER YOU GAVE BIRTH TO (NAME), DID ANYONE CHECK ON YOUR HEALTH?	Yes..1	
	No...2	2⇒MN22D
MN22B HOW LONG AFTER DELIVERY DID THE FIRST CHECK TAKE PLACE?	Hours..1 __ __	
If less than one hour,circle 1 and record 00.		
If less than one day, record hours.	Days...2 __ __	
If less than one week, record days.		
	Weeks..3 __ __	
	DK(Write 98)..9	

CONTRACEPTION		CP
CP1. I WOULD LIKE TO TALK WITH YOU ABOUT ANOTHER SUBJECT – FAMILY PLANNING. ARE YOU PREGNANT NOW?	Yes, currently pregnant .... 1 No .... 2 Unsure or DK 8	1⇒CP4
CP2. COUPLES USE VARIOUS WAYS OR METHODS TO DELAY OR AVOID A PREGNANCY. ARE YOU CURRENTLY DOING SOMETHING OR USING ANY METHOD TO DELAY OR AVOID GETTING PREGNANT?	Yes .... 1 No 2	2⇒CP4
CP3. WHAT ARE YOU DOING TO DELAY OR AVOID A PREGNANCY? Do not prompt. If more than one method is mentioned, circle each one.	Female sterilization .... A Male sterilization .... B IUD (Loop/Copper T) .... C Injectables .... D Implants .... E Oral Contraceptive Pill .... F Male condom .... G Female condom .... H Foam / Jelly .... J Lactational amenorrhoea method (LAM) .... K Periodic abstinence/Rhythm .... L Withdrawal .... M Other (specify) _____ X	
CP4. IN THE LAST 12 MONTHS HAVE YOU VISITED A HEALTH FACILITY FOR CARE FOR YOURSELF OR YOUR CHILDREN?	Yes .... 1 No 2	2⇒NEXT MODULE
CP5. DID ANY STAFF MEMBER AT THE HEALTH FACILITY SPEAK TO YOU ABOUT FAMILY PLANNING?	Yes .... 1 No 2	

UNMET NEED | **UN**

UN1. CHECK CP1. CURRENTLY PREGNANT?

☐ Yes, currently pregnant ⇒ Continue with UN2

☐ No, unsure or DK ⇒ Go to UN5

UN2. NOW I WOULD LIKE TO TALK TO YOU ABOUT YOUR CURRENT PREGNANCY. WHEN YOU GOT PREGNANT, DID YOU WANT TO GET PREGNANT AT THAT TIME?	Yes .... 1 No 2	1⇒UN4
UN3. DID YOU WANT TO HAVE A BABY LATER ON OR DID YOU NOT WANT ANY (MORE) CHILDREN?	Later .... 1 No more 2	
UN4. NOW I WOULD LIKE TO ASK SOME QUESTIONS ABOUT THE FU-TURE. AFTER THE CHILD YOU ARE NOW EXPECTING, WOULD YOU LIKE TO HAVE ANOTHER CHILD, OR WOULD YOU PREFER NOT TO HAVE ANY MORE CHILDREN?	Have another child .... 1 No more / None.. 2 Undecided / Don't know 8	1⇒UN7 2⇒UN13 8⇒UN13

UN5. CHECK CP3. CURRENTLY USING "FEMALE STERILIZATION"?

☐ Yes.⇒ Go to UN13

☐ No. ⇒ Continue with UN6

UN6. NOW I WOULD LIKE TO ASK YOU SOME QUESTIONS ABOUT THE FUTURE. WOULD YOU LIKE TO HAVE (A/ANOTHER) CHILD, OR WOULD YOU PREFER NOT TO HAVE ANY (MORE) CHILDREN?	Have (a/another) child.. 1 No more / None.. 2 Says she cannot get pregnant .... 3 Undecided / Don't know 8	 2⇒UN9 3⇒UN11 8⇒UN9
UN7. HOW LONG WOULD YOU LIKE TO WAIT BEFORE THE BIRTH OF (A/ANOTHER) CHILD?	Months .... 1 _ _ Years.. 2 _ _ Soon / Now .... 993 Says she cannot get pregnant .... 994 After marriage... 995 Other .... 996 Don't know 998	 994⇒UN11

UN8. CHECK CP1. CURRENTLY PREGNANT?

☐ Yes, currently pregnant ⇒ Go to UN13

☐ No, unsure or DK ⇒ Continue with UN9

VITA

BIOGRAPHY (VITA)

Name: Tshetrim Zangpo

Date of Birth: 19.9.1970

Place of Birth: Thrizor, Martshala

Citizen: Bhutanese

Sex: Male

E-mail id: tshetrim2003@yahoo.com

Education:

Higher Secondary: Jigme Sherubling Higher Secondary

Stream: Arts

Year of Completion: 2001

Degree:

Samtse College of Education

Year of Completion: 2007

Job Description:

1.   Served as teacher from 1992 – 1996

2.   Served as Head Teacher from March 1996 till 2001 December

3.   Assistant District Education Officer from 2002 till 2006 March

4.   Principal of Lower Secondary School from March 2006 until end of August 2006

5.   From September 2006 onward to till date District Electoral Officer

Current Designation:

Sr. District Electoral Officer

Election Commission

Dzongkhag Administration

Pemagatshel, Bhutan.