ปัจจัยทางด้านเศรษฐกิจและสังคมที่มีผลต่อความสุขของผู้สูงอายุในประเทศภูฏาน

นายทาชิ ดูบา

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาศิลปศาสตรมหาบัณฑิต
สาขาวิชาประชากรศาสตร์
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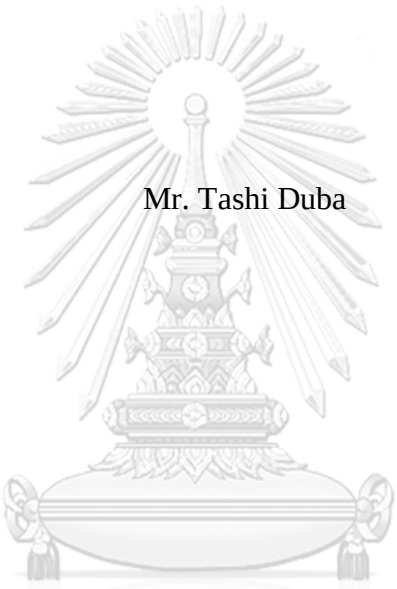
ปีการศึกษา 2560

Socioeconomic Determinants of Happiness of the Elderly in Bhutan

Mr. Tashi Duba



A Thesis Submitted in Partial Fulfillment of the Requirements
for the Degree of Master of Arts Program in Demography
College of Population Studies
Chulalongkorn University
Academic Year 2017

Thesis Title	Socioeconomic Determinants of Happiness of the Elderly in Bhutan
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Field of Study	Demography
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ทาชิ ดูบา : ปัจจัยทางด้านเศรษฐกิจและสังคมที่มีผลต่อความสุขของผู้สูงอายุในประเทศภูฏาน (Socioeconomic Determinants of Happiness of the Elderly in Bhutan) อ. ที่ปรึกษาวิทยานิพนธ์หลัก: ดร. รัตติยา ภูละออ, หน้า.

ผู้สูงอายุในภูฏานเพิ่มขึ้นอย่างต่อเนื่องเป็นสัดส่วนของประชากรทั้งหมด ในปี พ. ศ. 2558 ประชากรที่มีอายุมากกว่า 60 ปีขึ้นไปมีสัดส่วนประมาณ 7.3% ของประชากรทั้งหมดเทียบกับ 6.9% ในปี พ.ศ. 2553 และคาดว่าในปี พ. ศ. 2573 ประชากรสูงอายุจะมีจำนวนประมาณ 10.1% ของประชากรทั้งหมด

ในขณะที่จำนวนผู้สูงอายุในภูฏานเพิ่มขึ้นอย่างรวดเร็ว สถานการณ์ทางเศรษฐกิจและสังคมก็มีการเปลี่ยนแปลงอย่างรวดเร็วเช่นกัน แต่ผลจากการสำรวจพบว่าระดับความสุขของแต่ละบุคคลลดลงตามอายุ และในหมู่ผู้สูงอายุมีระดับความสุขต่ำที่สุด (การสำรวจดัชนีความสุขมวลรวมในปี 2553 และ 2558 และการสำรวจมาตรฐานการครองชีพของภูฏาน ปีพ. ศ. 2555) ถึงกระนั้นเอกสารและการศึกษาที่เกี่ยวข้องกับปัจจัยที่ส่งผลต่อความสุขให้กับผู้สูงอายุยังมีจำกัด

การศึกษาครั้งนี้จึงมุ่งหมายที่จะศึกษาสถานการณ์และวิเคราะห์ปัจจัยกำหนดความสุขในกลุ่มผู้สูงอายุที่มีอายุมากกว่า 60 ปี โดยใช้การสำรวจมาตรฐานการครองชีพของภูฏานปี 2555 ซึ่งมีตัวอย่างที่เป็นตัวแทนของผู้สูงอายุ 3,211 รายทั่วประเทศ การศึกษานี้แสดงให้เห็นว่าในปี พ. ศ. 2555 เพียงประมาณ 85% ของผู้สูงอายุชาวภูฏานมีความสุข และจากการวิเคราะห์ถดถอยโลจิสติกส์แบบไบนารีเพื่อตรวจสอบความสัมพันธ์ระหว่างความสุขและตัวแปรต่าง ๆ ซึ่งประกอบด้วยลักษณะเฉพาะบุคคล ลักษณะทางประชากร รูปแบบการอยู่อาศัย ทุนทางสังคมและปัจจัยทางเศรษฐกิจ ผลการวิจัยแสดงให้เห็นว่าถิ่นที่ออยู่อาศัย รูปแบบการอยู่อาศัย ทุนทางสังคม มุมมองสถานการณ์ทางเศรษฐกิจ และความนับถือศาสนามีความเกี่ยวข้องอย่างมากกับความสุขของผู้สูงอายุ

ผลของการศึกษาครั้งนี้เน้นบทบาทของรัฐบาล ในการสร้างความมั่นคงด้านรายได้ให้แก่ผู้สูงอายุชาวภูฏานโดยการส่งเสริมการสร้างรายได้ที่เหมาะสมกับผู้สูงอายุชาวภูฏาน โครงการสร้างรายได้ในบ้าน พัฒนานโยบายเกี่ยวกับวัยชราในระยะยาวทำระบบบำเหน็จบำนาญสาธารณะ และปรับปรุงสภาพแวดล้อมทางสังคมและเงื่อนไขที่เสริมสร้างความสัมพันธ์ในครอบครัวตามความเหมาะสมต่อพื้นที่และภูมิภาค โดยนโยบายดังกล่าวจะยกระดับชีวิต ศักดิ์ศรี และที่สำคัญที่สุดคือความสุขของผู้สูงอายุชาวภูฏานได้ต่อไป

สาขาวิชา ประชากรศาสตร์ ลายมือชื่อนิสิต .....

ปีการศึกษา 2560 ลายมือชื่อ อ.ที่ปรึกษาหลัก .....

5986902551 : MAJOR DEMOGRAPHY
KEYWORDS: BHUTANESE ELDERLY, ELDERLY HAPPINESS, SOCIAL STATUS, INCOME, TRUST, CHILDREN, RELIGIOSITY

TASHI DUBA: Socioeconomic Determinants of Happiness of the Elderly in Bhutan. ADVISOR: RUTTIYA BHULA-OR, Ph.D., pp.

Elderly in Bhutan are rising steadily as a proportion of total population. In 2015, population older than 60 constituted about 7.3% of the total population compared to 6.9% in 2010. By 2030, the elderly population is estimated to reach 10.1% of total population. Along with growing numbers of elderly in Bhutan and rapid socioeconomic transformations, the individual-level of happiness decreases with age, the lowest being among the elderly (the Gross National Happiness Index surveys of 2010 and 2015 and Bhutan Living Standard Survey 2012). Nevertheless, there is limited literature exploring factors that are associated with happiness of the elderly.

This study examined the happiness status and analyzed the determinants of happiness among the elderly population aged 60 years old and over. The Bhutan Living Standard Survey 2012 was used because it provides a nationwide representative sample of 3,211 elderly population. This study showed that in 2012 only about 85% of the Bhutanese elderly were happy. Binary logistics regression was employed to examine the association between outcome variable happiness and a set of variables, including individual and demographic characteristics, living arrangement, social capital and economic factors. Findings showed that region, living arrangement, social capital, absolute and relative economic situations in the elderly's view, and their religiosity are strongly associated with elderly happiness.

The results of this study emphasize roles for government – to develop income security for Bhutanese elderly by introducing home-based income generating programs; develop a long-term old-age policy, introduce a public pension system; and improve social environment and conditions that strengthen family relationship, based on area and region. Those policies will uplift the life, dignity and, most of all, the happiness of the entire Bhutanese elderly population.

Field of Study: Demography Student's Signature .....

Academic Year: 2017 Advisor's Signature .....

ACKNOWLEDGEMENTS

I owe my sincere gratitude to several individuals. Without them this thesis would not have been possible. First and foremost, I would like to express my special and sincere gratitude to my advisor Dr. Ruttiya Bhula-or, for her unwavering motivation, guidance and advice all the way through this final thesis. I could not have wished having a better adviser and mentor for my thesis.

Besides, my thanks go to esteemed thesis committee members – Associate Professor Dr. Pungpond Rukumnuaykit (Chairperson); Dr. Sauwalak Kittiprapas (External Examiner), Rangsit University; and Assistant Professor Dr. Pataporn Sukontamarn – for their constructive critique and insightful feedback that helped shape and broaden scope of this thesis in its present form. My separate thanks also go to Dr. Elke Loichinger, for being a committee member and particularly in providing me a technical guidance.

My appreciation and thanks go to Associate Professor Dr. Vipan Prachuabmoh, Dean; Ms. Wanwadee Chanwangpong; Mr. Visanu Yanneat; lecturers, librarian, administrative staff, and all student-colleagues of CPS, who have made CPS a great temple of learning and rendering their assistance whenever I needed.

I would like to thank the National Statistics Bureau (NSB) for granting permission to use their data for this thesis. Particularly, I would like to thank Mr. Cheku Dorji, NSB and Mr. Mongol Singh Gurung, Ministry of Health (MOH) for supporting me in asset and social capital indices; and Mr. John Kane for proof-reading this thesis; Mr. Thananon Buathong, (PhD student) and Ms. Pakamat Leangthanarerk (Master student) for formatting the final thesis. .

My sincere thanks go to the Thailand International Cooperation Agency for providing scholarship; the MOH and the Royal Civil Service Commission for granting study leave to pursue my dream of becoming a demographer.

Finally, my heartiest appreciation and love to my dearest mother, brothers and sisters, wife, mother-in-law and my beloved son and daughter, for their encouragement, patience, and moral support in my pursuit of higher learning.

I dedicate this thesis to all those who seek happiness in their life.

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Abbreviations

AHB	Annual Health Bulletin
BDBL	Bhutan Development Bank Limited
BLSS	Bhutan Living Standard Survey
CBSGNHR	Center for Bhutan Studies and Gross National Happiness Research
GNH	Gross National Happiness
GNHC	Gross National Happiness Commission,
GNHCB	Gross National Happiness Centre of Bhutan
GNP	Gross National Product
GDP	Gross Domestic Product
MDG	Millennium Development Goal
NPPF	National Pension and Provident Fund
OECD	Organization for Economic Cooperation and Development
PHCB	Population and Housing Census of Bhutan
NSB	National Statistics Bureau
RICBL	Royal Insurance Corporation Limited
RGOB	Royal Government of Bhutan
RSSC	Royal Society for Senior Citizens
UNDP	United Nations Development Programme
UNGA	United Nations General Assembly
WHO	World Health Organization

CHAPTER I
INTRODUCTION

1.1 Background

Bhutan is a small South Asian country with an area of 38,394 sq. km situated in the Himalayas sandwiched between China in the north and India in the south. As of January 2017, about 785,395 people are living in Bhutan and most of the people reside in its capital Thimphu (National Statistics Bureau (NSB, 2017).

Although Bhutan started its modern development works with the introduction of five-year plans in 1960s, it remained isolated. Agricultural activities predominated the country's economy. Rural areas constitute 69.1% and urban area make 30.9% (Office of the Census Commissioner (OCC, 2006). It was not until 1999, when the former King, His Majesty Jigme Singye Wangchuck, officially decided to open up to the outside world by introducing modern day telecommunication system and television. Much of the culture, tradition and people's lives remained unaffected by outside forces in preceding years.

However, over the past decade and a half, modern influences have been truly remarkable. The changes are both visible and tangible by the way of skyrocketing political development, demographic changes, and economic progress. In 2008, a major political shift took place with the establishment of Democratic Constitutional Monarchy on command of His Majesty the Fourth King Jigme Singye Wangchuck. The first multi-

party-political system was instituted in the country and had its first people elected government. Introduction of such a government system developed a sense of competition among political parties and ensured check and balance for country's socioeconomic growth and development. Bhutan is developing rapidly. As of December 2016, the Gross Domestic Product (GDP) annual growth rate was 6.49% and the per capita income was USD 2,719 compared to USD 1,614.67 in 2006. This was an increase of nearly 70% making Bhutan one of the fastest growing economy in the South Asia region and slowly graduating into lower middle-income country (NSB, 2017).

1.1.1 Elderly Situation in Bhutan

In Bhutan, it is typical to find people living in an extended family founded on the traditional and religious beliefs of interdependence. In such a family unit, elderly people receive high respect and regard for their wisdom, their role as head of the family, and source of inspiration and guidance for the family. Young children are taught to respect their parents and elderly. It is customary that children provide protection and support to parents and elderly in the family in the later part of their life.

However, the age-old tradition of living in an extended family, narrating short stories and imparting Bhutanese values and culture to grand-children are dwindling quickly due to rapid development and globalization. The records from the past Bhutan Living Standard Surveys (BLSS) show that, the average household size decreased from 5.12 in 2003 to 4.5 in 2012. In 2012, only 22% in the household were member of the extended families, household members other than spouse and off-spring of the household head. This accounts for only 15% of household members in the urban areas

compared with 25% in the rural areas (NSB, 2013, n.d.). As per the BLSS report, 78% of households were nuclear families with only spouse and off-springs of the head of the household. At least 5% of all households are single-person households (NSB, 2013). Moreover, there is no social security system for elderly population except for the formal government and corporate employees, which is covered by provident fund and gratuity schemes that are either paid in lump sum or pension benefits. Study on old age security in Bhutan by (Schmähl, 2002) indicated that even these existing lump-sum benefits in Bhutan as source of income in old age are an insufficient instrument owing to an economic environment with increasing real income and rising prices. Thus, the family seems to be the last major "safety net" for old age population. There are few organizations like His Majesty's 'kidu[1]' support and Tarayana Foundation, which in some ways look after welfare of the needy people including old age. But such support systems become even more uncertain especially in case of a rising number of elderly without adequate income in old age and without adequate support by family members (Schmähl, 2002). The most favorable and reliable income to lead a decent way of livelihood would be a distant dream for most of the elderly population. This would be an impediment to their well-being.

As the country develops and modern economic systems replace a traditional economy, a growing number of school going children graduate and migrate to both urban areas and abroad in search of better opportunities. They leave behind their parents and

[1] The word "*kidu*" is a Bhutanese term, which literarily means "joy and sorrow" (Shaw, 2015/2016) and it is often used to mean a person who is in dire need of help. More or less, it depends on context it is used for. For example, a person requiring help is called "*kidu phomi*" and a person who provides assistance is called "*kidu nangmi*". Usually, the power or autonomy of providing welfare or assistance to a destitute is vested especially in the King.

grandparents and thus some households have become empty in some parts of the country. The incidences of such movement of young children that leave behind parents and grandparents in the households are reported in some literature including media wherein as high as 50% of population from some rural communities leave for urban areas (Gosai & Sulewski, 2014; Ueda, 2016; Wangmo, 2013). There is a growing concern of elderly people becoming increasingly vulnerable in such rapidly changing Bhutanese society due to the rapid socioeconomic transformation. According to the 2013 baseline study conducted by the Royal Society for Senior Citizens (RSSC), 23.9% of the retired senior citizens (N=200)[2] have reported that they are not treated well by juniors and the general public after retirement. Close to 30% of the senior citizens reported that they felt disrespected followed by 24.3% who felt people are self-centered and individualistic (RSSC, 2013).

Some literature indicates that level of education (Ramachandran & Radhika, 2012; Rukumnuaykit, 2015; Yiwei Zhou, 2013; Yicheng Zhou et al., 2015) is associated with elderly happiness. Majority of Bhutanese elderly people belong to an age group that either did not get an opportunity to go to school or lived in an underdeveloped economy. According to BLSS 2012, 6 out of 10 household heads have never attended a school or institute and the proportion in the rural areas is double that of the urban areas. Persons older than 65 years who attended school in the past constitute only 4.1% of total population (NSB, 2013).

[2] The sample of 200 was representative of 101,563 senior populations older than 55 years of age as of 2012. Senior citizens comprised 14% of the total population of 734,854, estimated from the Labour Force Survey 2012.

A study on inequality and happiness among Europeans and Americans involving large samples of 123,668 by Alesina, Di Tella, and MacCulloch (2004) show that those with high inequality are less likely to report themselves happy, even after controlling for income, personal characteristics, and year. It was more so for Europeans than for Americans. In case of Bhutan, inequality – which is defined as "a measure that highlights the gap between different individuals' or households' disposable income in a particular year" and is measured by Gini coefficient – has widened since 2007 (Nidup, 2016). The Gini Inequality Index increased from 0.35 in 2007 to 0.36 in 2012 and likewise, the real per capita consumption for the lowest quintile decreased from 9.6% in 2007 to 7.1% in 2012 compared to the richest quintile that increased from 38.5% in 2007 to 43.7% in 2012 (Nidup, 2016). There are also large income differences by areas of residence and gender of the heads of the households. In 2012, as per BLSS report, the mean per capita annual household income for entire country was Nu 45,538 (USD 690). In the urban areas, it was Nu 79,905 (USD 1,210), which is nearly three times the rural mean per capita income of Nu 27,824 (USD 420) (NSB, 2013).

The absolute number of population older than 60 years is rising in the country. In 2005, there were 634,982 people, out of which about 44,319 were persons older than 60 years constituting 7% of the total population (NSB, 2006). As of 2015, this number increased to 55,005 constituting about 7.3% of the total projected population of 757,042 with an increase by more than 24% in one decade. This proportion of elderly population over 60 years is projected to increase further as shown in Table 1 (NSB, 2006). By 2020, the proportion of elderly is estimated at 64,864, making it about 8% and by 2030, it is projected to reach 89,724 constituting about 10.1% out of the total projected population

of 886,523 (NSB, 2006, 2017). This means that every tenth person will be an elderly showing that old age dependency ratio is continuously rising[3] (NSB, 2006; RSSC, 2013). According to BLSS, in 2012 the overall dependency ratio was 56% meaning for every 10 economically productive persons, there were about six dependent persons (below 15 years and over 65 years). The dependency ratio is higher in the rural areas (59%) than in the urban areas (50%) because of the higher proportion of persons older than 65 years in rural areas. These concerns suggest that appropriate and necessary policies actions are put in place for the growing elderly population in the country.

The increase in the share of older population is mainly attributed to increase in life expectancy and rapid change of population structure due to declining fertility. The average life expectancy at birth in 2015 was 70.94 years compared to 66.3 in 2005 and 66.1 years in 1994 respectively (NSB, 2006). Similarly, in 2014 total fertility rate dropped to 2.1 compared to 3.6 in 2005 and 5.6 in 1994 respectively (MOH, 2015; NSB, 2017). Although the improvement in life expectancy and fertility decline over the past decades are laudable, it is fair to presume that any benefits arising out of this would be offset by rising elderly population. In a small nation like Bhutan, like in many societies, such consistent growth of elderly population is a major concern as the country is still developing, where national revenue is barely sufficient to meet its current expenditures for state functionaries, let alone providing an expensive security for the old age (RSSC, 2013; Schmähl, 2002).

[3] According to the recent baseline survey conducted by the Royal Society for Senior Citizens (RSSC) and United Nations Development Programme (UNDP), in 2012, there were 101,563 population aged 55 years and older in the country.

Table 1: Elderly (60 years & older) as Percent of Total Population (2005-2030)

Year	Population Age >60	Total Population	Percent of Total Population
2005	44,319	634,982	7.0
2010	48,092	695,822	6.9
2015	55,005	757,042	7.3
2020	64,864	809,397	8.0
2025	74,667	850,976	8.8
2030	89,724	886,523	10.1

Source: Own compilation based on National Statistics Bureau (2006). Population projection 2006-2030.

1.1.2 Linkage between Happiness and Development

An across country study on economic growth and subjective well-being in Japan, Europe and the United States by Stevenson and Wolfers (2008) showed that the well-to-do societies have greater subjective well-being than poor societies, and likewise, wealthy people of a society are likely to be happier than their poorer colleagues. Coyne and Boettke (2006) suggest that increasing wealth enhances people's choice available to them, which allows them to attain increasing levels of happiness and satisfaction. Similarly, a study involving large nationally representative samples from 32 nations at various degree of economic development by (Zagorski, Kelley, & Evans, 2010) suggests that nation's economic growth or development has strong and positive effect on well-being and this is especially true for poor people, and more prominent in poor nations than in rich nations. A recent study in China using the Chinese General Social

Survey data also show that a large income inequality is associated with increasing unhappiness and lower income inequality raises happiness among individuals (Wang, Pan, & Luo, 2015).

On the other hand, there are some literature that prove that higher levels of developments do not necessarily lead to increase in the level of individual subjective well-being or happiness (Easterlin, 1974, 1995; Schimmel, 2009) Such studies that claim that the economic development does not make people happier are often accompanied by suggestions for ways to improve other alternatives like anti-materialistic spirituality, social development and community (Veenhoven, 2012).

In the recent years, Bhutan has experienced a rapid economic development marked by an increase in gross domestic product (GDP). According to recent statistics, the GDP per capita from rose from USD 1,614 in 2006 to USD 2,719 in 2016 (NSB, 2017). Consequently, this seems to have been accompanied by the improvement in the level of happiness. The 2010 and 2015 gross national happiness index surveys, showed that the overall happiness index level of the Bhutanese in 2015 was 0.76 compared to 0.74 in 2010, indicating a slight increase over the period of five years (Centre for Bhutan Studies & GNH Research (CBS&GNHR, 2015). This data show that the development and happiness runs parallel in Bhutan, which means that development do bring about happiness among general Bhutanese population. However, a recent study on inequality in Bhutan by Nidup (2016) showed that the inequality has widened with the Gini Inequality Index rising from 0.35 in 2007 to 0.36 in 2012, whereas, the real per capita consumption for the lowest quintile decreased from 9.6% in 2007 to 7.1% in 2012

compared to the richest quintile that increased from 38.5% in 2007 to 43.7% in 2012. It is fair to assume that despite rapid development and reduction in poverty by the government, inequality issues could challenge the efforts on improving well-being of the Bhutanese elderly population.

1.1.3 Happiness and its National Importance

In Bhutan, the term gross national happiness first emerged in 1972 when His Majesty the Fourth King Jigme Singye Wangchuck declared that "Gross National Happiness is more important than Gross National Product" (Adler, 2009; Ura, Alkire, & Zangmo, 2012). His Majesty challenged such conventional measurement of human progress, which is often measured in terms of Gross National Product (GNP). According to him such methods are neither capable of providing comprehensive and a meaningful measurement of human happiness nor should it be the governance tool for socio-economic development of a country or nation.

Hence, His Majesty's pursuit of new paradigm shift in the yardstick for progress and development gave birth to Gross National Happiness, which has ever since become widely renown in the international forums (GNHCB, n.d.). Similarly, experiences from the developed countries have shown that mere increase in gross domestic product (GDP) or economic growth does not bring happiness for the people. The famous Easterlin paradox is one such study which reminds us that increase in income does not necessarily increase people's happiness or subjective wellbeing (Easterlin, 1974). Therefore, happiness as a yardstick to measure human progress and socioeconomic development is increasingly becoming an important subject.

However, GNH was not formalized in any of Bhutan's official document mentioning of it as guiding development philosophy, despite pioneering in the development of a new model. According to (Munro, 2016), the 1996–97 National Budget mentioned GNH for the first time ever in any Bhutanese government publication marking the start of implementation of GNH philosophy officially. (Munro, 2016) in his quest for finding the true origin and source of literature on GNH, concluded that the year 1996 was the point where the tradition of GNH as Bhutan's established national development policy was conceived. Since then gross national happiness evolved as Bhutan's guiding development philosophy to this very day. It is a simple philosophy founded on "middle path approach" in which socio-economic development is equitable and integrated with environmental conservation, and augment soft components such as promotion of culture and enhanced good governance (GNHCB, n.d.).

The concept of gross national happiness was further expanded beyond the horizons of Bhutan's development paradigms. In 2011, the United Nations adopted Bhutan's proposal to include "happiness: towards a holistic approach to development" as the ninth Millennium Development Goal (MDG) at the 65th session of the United Nations General Assembly in New York (GNHC, 2011; Helliwell, Layard, & Sachs, 2015). This demonstrates one of Bhutan's commendable achievements and contributions at the international level in an effort to improve global wellbeing and happiness in recent years. Due to Bhutan's increasing and consistent involvement with the global community, substantial efforts were made to define and quantify GNH as a development tool. As a consequence, measurement indices and tools were developed,

so that it can be implemented practically in government policies and the country's socioeconomic development (GNHCB, n.d.).

Today, Royal Government of Bhutan accords high priority to GNH and the Gross National Happiness Commission ensures that all plans and programs are strictly implemented based on the GNH policy and screening tools. The plan, program and project proposals are screened through a GNH screening tool and those that do not qualify either requires change or remain unimplemented. Thus, different ministries and departments of the government are very serious in the implementation of programs and projects that are geared towards achieving gross national happiness.

1.1.4 Happiness Status of the Elderly in Bhutan

In Bhutan, the 2012 BLSS survey was first of its kind to formally include happiness question in general surveys The BLSS survey used subjective self-rated happiness ratings in which the question asks "In general, how happy do you consider yourself to be? The answers are given in the Likert scale of one to five from being "very happy" to "very unhappy".

According to the BLSS 2012 survey, in general about 84.9% of the Bhutanese population were at least moderately happy and 15.1% of the populations were either unhappy or unsure about their state of happiness (NSB, 2013) as shown in Figure 1.

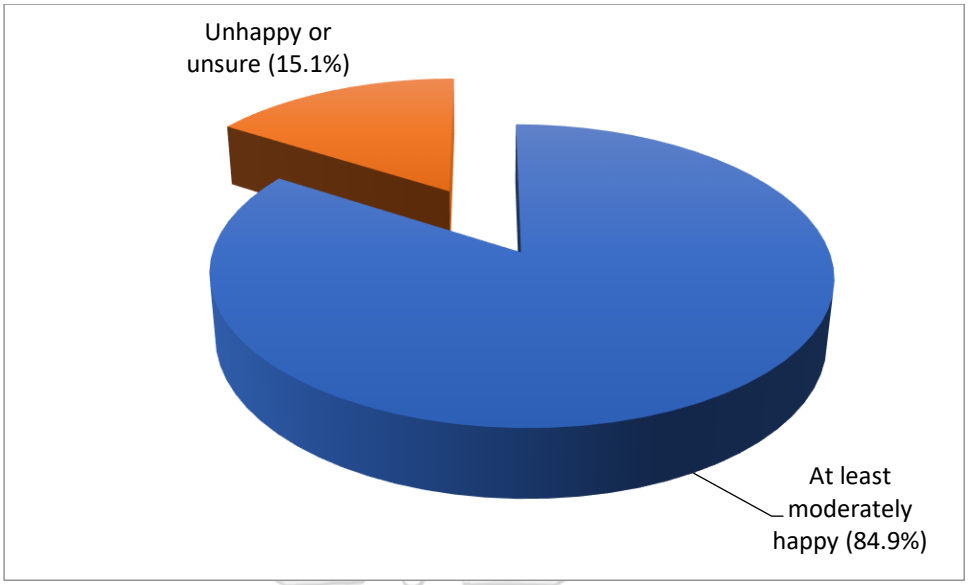


Figure 1: Happiness of Bhutanese Population in 2012 (Source:(NSB, 2013). BLSS 2012 Report)

An analysis shows that the proportion of happy people is highest among age group of 20-39 years (86.1%) and lowest among age group of 40-59 years (84.3%) and older than 60 years (84.4%) as shown in Figure 2[4]. These figures indicate some interesting facts about happiness in general and particularly among middle age and elderly population groups. Although figures between the two age groups do not show huge difference, relatively the middle age group reported similar level of happiness as elderly despite their workloads and midlife crisis situation that they undergo as reported in most literature. This merits further analysis, which is beyond the scope of this study.

[4] Note: Out of the five options from Likert scale of happiness, I have summed up respondents for 'moderately happy' and 'very happy' and weighted against each age group to arrive at the figure shown above. After weighting data, there were total observations of 578,145 excluding age below 19 years – 209,928 observations for age group 20-39 years; 255,915 for age group of 40-59 years; 112,302 for age group of 60 and older.

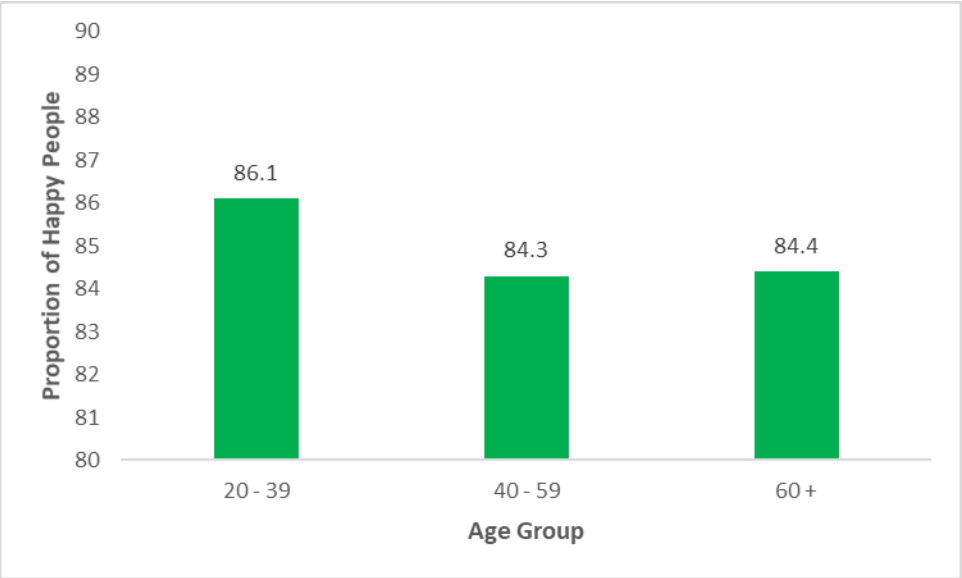


Figure 2: Proportion of Happy People by Age Group (Source: Own Analysis based on BLSS, 2012).

1.2 Benefit of the Study

Bhutan is one of the countries in the world where cultural and traditional values are preserved and promoted vis-à-vis modern development. However, it is not without challenge. Age-old traditions such as respect to senior citizens and care for the old parents are deteriorating as revealed through the baseline study for senior citizens, where it was found that the retired citizens are not respected by the society (RSSC, 2013). As mentioned earlier, old age population is rising steadily in Bhutan and it is imperative to explore factors that influence their wellbeing and happiness. There is a gap in a detail study on happiness of elderly population especially in the context of unprecedented socioeconomic transformation and rising elderly population in the country. Thus, it becomes pertinent to understand the level of happiness of those elderly people. This study critically investigates socioeconomic determinants associated with their happiness.

This study fills a gap in the understanding of elderly population and their happiness in Bhutan. Firstly, the result from this study provides broad understanding about the level of happiness among Bhutanese elderly population. Secondly, the factors are explored and their association with happiness are analyzed. Based on the research result and empirical evidence, the study provides suggestions and recommendations for the policy makers and planners of the Royal Government of Bhutan in formulating strategies that are appropriate to improve lives of Bhutanese elderly population where necessary. In addition, this study also points the direction to additional research.

1.3 Research Objectives

In general, this study explores determinants of happiness of Bhutanese elderly population and their associations in the context of rapid socioeconomic development and transformation in the country. The specific objectives of this study include:

1. To investigate level of happiness among Bhutanese elderly populations in 2012.
2. To examine the socioeconomic determinants of happiness of elderly in Bhutan.
3. To provide policy recommendations to facilitate government in improving quality of life or happiness of the Bhutanese elderly.

1.4 Research Question

Based on the above research objectives, this study was aimed at answering the following key questions:

1. What is the status of happiness of Bhutanese elderly population?

2. What are the socioeconomic factors that influence elderly happiness in the context of Bhutan?
3. What are the policy implications to enhance happiness levels of the Bhutanese elderly?

1.5 Terminologies

1.5.1 Happiness

Researchers involved in happiness studies have not agreed-upon definition of happiness. Some definitions of happiness are related with emotional states, while others are related to evaluation of one's overall experiences. According to N. P. White (2008), happiness is "what one aims at, desires, aspires, believes as worthwhile or good, enjoys, and so on". Ruut Veenhoven defines happiness as "the degree to which an individual judges the overall quality of his/her life-as-a-whole favorably" (Veenhoven 1988, p.22). Layard (2005) emphasizes that happiness is achieved when we enjoy things as they are, without comparing ourselves to others and discover what truly makes us happy such as being content with what we have. In certain cases, happiness is a collective term for good fortune, and as having, showing some pleasant mood or experience. Some authors equate happiness to subjective wellbeing. Ed Diener, Lucas, and Scollon (2006) define subjective well-being as an experience of pleasant emotions, which is often a result of combination of both low levels of negative attitudes and greater life satisfaction. Happiness can be also derived from leading a virtuous, cognitive evaluation of life as a whole and reducing negative mood (Lyubomirsky, 2006; Sheldon & Lyubomirsky, 2007). According to (Seligman, 2004), happiness and well-being means positive feelings and activities that bring satisfaction and optimism from past

and present emotions. The literature show that the terms “happiness”, “general satisfaction”, “life satisfaction” and “subjective well-being” are used interchangeably by researchers who study individual happiness based on subjective questions.

Most researchers acknowledge a certain degree of similarities of various definitions of happiness in their studies especially in social research. Therefore, in this study I refer to terms as follows: happiness, life satisfaction, and wellbeing. The key dependent variable was based on the answer to a question that was asked in the Bhutan Living Standards Survey (BLSS) 2012: “In general, how happy do you consider yourself to be?” And the answers were given in the scale of one to five from being “Very happy”, “moderately happy”, “neither happy nor unhappy”, “unhappy” and “very unhappy”. A substantial methodological literature was developed on the reliability, validity, and comparability of answers in the form of scales to report happiness by the individuals (NSB, 2013). Although responses to such a scale of happiness has its intrinsic problems, they are found to have meaningful and reasonable comparability among individuals or groups of individuals (Easterlin, 2003).

1.5.2 Elderly

Generally, there is no common consensus on the definition of “the elderly” or the “older population”. Most often the age limit is the one that constitutes the right to old age pension, which differs between context and countries (Snaedal, 2011). The old age is sometimes associated with transition from middle age to senior citizens (Erford, 2015). From my viewpoint, the word “old age” gives a negative connotation as frail or weak and dysfunctional of capability. The elderly, however, is plural and synonymous with

senior and at advanced stage in their life often indicating an expression of respect and dignity.

Defining elderly, on the other hand, by exact age limit is yet another difficult task as it differs across contexts. People have tried to define old age ever since 1875 in Britain as "any age after 50", although pension schemes mostly preferred to use age of 60 or 65 years and older as eligible age to claim such benefits (Roebuck, 1979). The term old age or elderly have been in use for very long time, but still today there is no general agreement on the age at which a person becomes old across societies. According to (WHO, 2002), becoming old or ageing is a dynamic biological process, which is beyond human control. The definition of and age threshold of old age or elderly varies across societies and it depends largely on social and cultural construct.

Several terms are used to describe old people such as “older people” referring to those who are in their fifties; “elders” to those 60 or older; and “the elderly” to those 65 or older (Barkan, 2012). In the developed world, chronological age of 60 or 65 and older is considered to be the beginning of old age. Snaedal (2011) reveals that this age limit was set at a time when the life expectancy in the Western world was much less than today and only a small portion of the society could reach retirement age. In developing countries, chronological age seems to have less meaning or no importance in the meaning of old age because of low life expectancy (Gormon cited in (WHO, 2002). Moreover, there is no standard age threshold developed either by the United Nations, but their usual agreed limit is 60 years and older to refer to the elderly (WHO, 2002).

In the context of Bhutan, the elderly usually borrows the definition set by the pension schemes. Generally, the working age of the formal public sector for the highest position is 60 years of age. By pension definition, this means that until age 60, all people are of active working age in the formal sector. Therefore, in this study I refer “the elderly” to that section of population who are 60 years and older on the day of survey.

1.6 Scope of the Study

This study investigates the level of happiness among Bhutanese elderly population and factors that are associated with their happiness are explored. As defined above, the elderly population of 60 years and older were included in this study. The most recent secondary data from the Bhutan Living Standard Survey (BLSS), which was conducted in the year 2012 was used. It is a cross-sectional dataset and represent the whole population in Bhutan.

1.7 Structure of the Thesis

The next chapter explores literature relevant to elderly happiness and reviews and identifies factors associated with their happiness. The third chapter explains major theories relevant to the happiness and, accordingly, builds conceptual framework. Moreover, this chapter also explains methodology and the choice of study model, data source and sample, and explains measurement and operationalization of variables used in this study. The fourth chapter analyses the result and provides findings. Lastly, the fifth chapter provides the summary, policy implications and direction for future research.

CHAPTER II
LITERATURE REVIEW

In this section, we explore determinants of happiness that are relevant for the elderly population. Happiness is what every individual human being seeks and it is the ultimate goal of the humankind. Happiness becomes even more meaningful for the elderly population as the transition to old age would mean decreased health, decline in sexuality, and energy, changes in daily activities and so forth (Rohwedder, 2010; Shukla & Kiran, 2013; WHO, 2015). Therefore, there might be several factors that play a crucial role and influence on elderly happiness.

In the past, several studies have been conducted on happiness. In fact, the fruition of happiness or subjective wellbeing or satisfaction described above are not natural. They are results of combinations of many socioeconomic dynamics and environmental factors influencing an individual experience of happiness. Nitnitiphrut (2007) remarks that "happiness is born from not only 'self' but also 'environmental' elements, which influence the human feeling of happiness". Frolova and Malanina (2016) underscore that the "human wellbeing is closely connected to people's preferences and social environment."

Therefore, taking environment and socioeconomic dimensions into account, I explore and review literature on different factors that are associated with happiness are explored and reviewed. Firstly, literature related to demographic characteristics is reviewed and

variables are identified. Secondly, social capital is defined and factors that are relevant for happiness are explored. Thirdly, literature related to economic factors are reviewed and suitable variables are identified. Fourthly, literature on health effects on happiness are explored. Fifthly, studies relevant to religious effect on happiness are reviewed. Lastly, summary of the chapter is presented.

2.1 Demographic Characteristics and Happiness

2.1.1 Age

Age is a fundamental factor studied in happiness studies in determining happiness across one's life span. Some researchers have found a U-shape pattern of age in relation to happiness (Blanchflower & Oswald, 2008; Graham & Pozuelo, 2016; Kolosnitsyna, Khorkina, & Dorzhiev, 2014; Rukumnuaykit, 2015; Yiwei Zhou, 2013). According to the U-shape, happiness constantly decreases as age increases, until turning point of age in mid-forties, which is often called as age at mid-life crisis where it is mostly hard working and stressful middle age, and after this point happiness increases with increasing age. On studying urbanization, poverty and subjective-wellbeing in Thailand, (Rukumnuaykit, 2015) found out that specifically people between 31 to 40-year-old are the least satisfied with life whereas life satisfaction increases after that.

However, Blanchflower and Oswald (2008) contests to this idea. According to (Blanchflower & Oswald, 2008), such affects could be a result of omitted cohort effects wherein different generations may have been born in different times - good or bad times. However, their estimation separately for 72 countries, mostly in developed counties of America, Australia, Europe, and Japan and South Korea confirmed a U-

shape pattern in age in relation to happiness. Remarkably, the U-shape pattern has been found to be similar for both males and females (Blanchflower & Oswald, 2008).

Besides, the findings from the researches on the correlation between happiness and age showed varying results. A study on life satisfaction among older Europeans by Angelini et al. (2012) showed that controlling for all other variables, the own-perceived level of life satisfaction increases with age. However, keeping the level of life satisfaction constant, older respondents are more likely to report unhappy with their life compared to their younger counterparts.

On the contrary, the study of population aged 50 and older from the English Longitudinal Study of Ageing (2002 to 2011) by Jivraj, Nazroo, Vanhoutte, and Chandola (2014) found that in each subjective well-being measure, the older cohorts are reported to have either equivalent or better subjective well-being than younger cohorts. Nevertheless, upon studying the individual aging effects for each well-being measure, the well-being was observed to be deteriorating with age, showing a largest deterioration among the older cohorts. A similar finding was also noted from the Norwegian panel study of people aged 40–85, although the definition and age group of young-old and old-old is different across studies (Hansen, Slagsvold, & Moum, 2008; Jivraj et al., 2014). On the contrary, the study on inner happiness of elderly in Thailand by Gray, Rukumnuaykit, Kittisuksathit, and Thongthai (2008) showed that age is not a significant predictor of happiness among elderly population.

2.1.2 Gender

Gender[5] is one of the variables widely studied to predict variation in happiness between male and female. While some researchers found no gender variations of elderly happiness (McNeil, Stones, & Kozma, 1986), there are studies that showed moderate variations of happiness between male and female elderly population (D. Diener, Lucas, & Oishi, 2002). Yiwei Zhou (2013) studied Chinese population and the analytical results indicate that males are less happy than females. Similarly, a study in Thailand shows that male elderly are happier than their female counterparts (Gray et al., 2008). A study in India by Shukla and Kiran (2013) show that, while there was no significant difference of subjective happiness between male and female staying in urban areas, in rural areas male elderly comparatively enjoyed happiness more than female elderly in rural areas. Some studies suggest that the gender effect is itself not a significant predictor, but it is, more or less, affected by other factors. For example, the study on Russian elderly above 55 years by (Kolosnitsyna et al., 2014) using Russian Longitudinal Monitoring Survey found that the existence of children has a remarkably negative influence on female life satisfaction, but no such effect was found on male life satisfaction.

2.1.3 Marital Status

There are varying results regarding the influence of marital status on elderly happiness. A study among adults in China by (Liu & Guo, 2008; Yiwei Zhou, 2013; Yicheng Zhou et al., 2015) found that being single, having no partner or being widowed are all

5 Gender usually refers to the biological aspects of maleness or femaleness, whereas gender implies the psychological, behavioral, social, and cultural aspects of being male or female (i.e., masculinity or femininity) (American Psychological Association, 2015).

significantly less likely to be happy compared to those who have partner. The marital status has positive effect on happiness: those married are happier than those whom are not married, and those who re-enter marriage are happier than those who chose not to do so (Easterlin, 2003). A study by Angelini, Cavapozzi, Corazzini, and Paccagnella (2012) in Europe showed that being married is strongly associated with life satisfaction. A comparative study of 17 nations by Stack and Eshleman (1998) showed that association between marriage and happiness is positive and strong for 16 nations and that it was better than cohabitation. Marital satisfaction was equal among men and women. A study in Thailand also show a positive association between marital status and happiness (Rukumnuaykit, 2015, 2016). On the other hand, a study in rural Thai elderly by (Rojpaisarnkit, 2016) found no association between marital status and elderly happiness.

2.1.4 Region

Comparative studies on happiness among different countries were carried out by some researchers. A Comparative study of subjective well-being of Chinese elderly among Urban China, Hong Kong, and Taiwan by (Wu, 2016) reveal that the elderly in Hong Kong, which is the most developed region, are found to be least happy compared to Urban China and Taiwan. Marked differences were also found among various factors, for example, living with children is associated with being less happy among elderly in the developed society. The study on urbanization and poverty in relation to happiness in Thailand by Rukumnuaykit (2015) shows that the people living in Bangkok and neighboring provinces are the least satisfied compared to those in other regions.

2.1.5 Areas of Residence

Area of residence, namely rural and urban, varies largely in terms of socioeconomic status and lifestyles, thus there are differences in the level of happiness or life satisfaction between the two. A study on Chinese adults by (Yiwei Zhou, 2013) found that people residing in rural areas are more likely to be happy than their urban counterparts. On the other hand, a study among Thais by (Rukumnuaykit, 2015, 2016) shows that there is no significant association between area of residence and happiness, or simply put being in urban settings do not effect level of happiness.

2.1.6 Children

Studies rather show ambiguous conclusions regarding the role of children and/or grandchildren in the level of happiness and wellbeing of the elderly (Chyi & Mao, 2012; Kolosnitsyna et al., 2014). A study on Chinese elderly population showed that "elderly Chinese who live with grandchildren are associated with a much higher degree of happiness than their counterparts" (Chyi & Mao, 2012). Similarly, Meggiolaro and Ongaro (2013) found that for senior Italians, "physical closeness with adult children increases the life satisfaction of older men and women compared to those who do not have such closeness". Rojpaisarnkit (2016) also confirm that there is important relationship between family and the well-being of the elderly.

On the contrary, a study in Thailand shows that controlling for demographic, socioeconomic and the internal factors, living with children does not make difference to level of happiness in elderly's life (Gray et al., 2008). A study on happiness among adult Chinese by Yiwei Zhou (2013) found no significant evidence of association

between children and happiness. Similarly, a study of elderly Japanese shows that living together with son is negatively associated with life satisfaction, but living with a married son increases it considerably, whereas living with a daughter increases women's satisfaction, but not for men (Takashi, 2011).

2.1.7 Education

Although education plays a crucial role in the early part of life, its impact on elderly's happiness is questionable because after becoming old they would have limited opportunity to maximize utilization of their knowledge. Findings from studies are mixed and there is no definite relations between education and happiness (Cid, Ferrés, & Rossi, 2008; Kolosnitsyna et al., 2014; Rojpaisarnkit, 2016). As early as 1970s, Shin and Johnson (1978) in their work found out that education had little influence on happiness. Some researchers, however, found that educational level is positively related to life satisfaction among the elderly. A comparative study between India and Japan by Ramachandran and Radhika (2012) shows that education is associated with elderly happiness in both the countries irrespective of socio-economic development status. The study in Thailand revealed that there is a marked increase in life satisfaction with increasing level of education from higher secondary and above (Rukumnuaykit, 2015). A study in China also found that low education is associated with low level of elderly happiness (Yiwei Zhou, 2013; Yicheng Zhou et al., 2015). In some studies, level of education is associated with life satisfaction for men (Chyi & Mao, 2012; Meggiolaro & Ongaro, 2013).

On the other hand, McNeil et al. (1986) concluded that it is not education itself that is important to the elderly's subjective well-being, but what the elderly person obtains as the result of being better educated (e.g., higher income, better housing, etc.). Probably, it is true because at a later part of one's life (mostly after retirement) the best way to utilize education is to help communities and people in solving communal problems, which also depends on motivation and role of the individual elderly.

2.2 Social Capital and Happiness

The concept of social capital is an emerging topic of academic interest. It may be interpreted differently in diverse cultures and nations. Coleman (1988) who first introduced the term defines "social capital" as a variety of different entities, with two elements in common: they all consist of some aspect of social structure, and they facilitate certain actions of actors-whether personal or corporate actors-within the structure." Putnam (1995) views social capital as "features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit". On the other hand, Grootaert and Van Bastelaer (2002) provides a similar definition. According to them social capital is "networks, groups or relationships between people based on mutual trust, set of norms and understanding, and formed to facilitate collective action for common benefits". (Serageldin & Grootaert, 1998) refer social capital to as "glue that holds societies together", along with a certain degree of common cultural identifications, a sense of belonging, and shared behavioral norms, without which, society at large would collapse.

O. Levy, Peiperl, and Bouquet (2013) defined social capital as those abilities of the individual which are necessary to satisfy the need for inclusion and affection through communication with the members of the community. According to Rukumnuaykit and Pholphirul (2016), social capital refers to the institutions, relationships, and norms that shape the quality and quantity of a society's social interactions. Further, close relationship and trust in the society including family enables individuals to work more efficiently and foster cooperation, therefore, the more networks within the society, the better, peaceful and happier society becomes. The variables studied in social capital at the individual and social level by Rukumnuaykit and Pholphirul (2016) include, knowing other people well in the same community, sacrificing time/ energy to help others, trusting other people when lending things, having no anxiety concerning security problems in a community, participating in a public meeting, not experiencing any crime in the previous month, and engaging in activities that are beneficial to the public.

A study among Thai elderly revealed that elderly who perceived better social environment in their neighborhood such as knowing each other well, people providing helping hand to each other, existence of trust for each other and felt secure about their lives and property are associated with higher level of happiness than those with a less positive social environment (Rukumnuaykit & Pholphirul, 2016).

Conversely, willingness to contribute time, energy or money also is associated with greater satisfaction among elderly. This is due mainly to altruism theory which postulates that providing support is not a just a cost, but also brings rewards. Moreover,

the act of giving is respected and esteemed by the people, and, thus, it accrues benefits (Batson cited in (Gierveld, Dykstra, & Schenk, 2012).

A comparative study of urban China, Taiwan and Hong Kong by (Wu, 2016) found a significant association between happiness for those who participated in social organizations among Chinese elderly in Hong Kong and Taiwan. The association is stronger female elderly than male counterparts.

2.3 Economic Factor and Happiness

Economic factors relate to those who have association with pecuniary benefits and physical ownership of wealth. Several researchers have studied the relationship between economic factors and life satisfaction and well-being (D. Diener et al., 2002; Edward Diener & Oishi, 2000; Easterlin, 1974, 1995; Kapteyn, Smith, & Van Soest, 2013; McNeil et al., 1986; Yiwei Zhou, 2013). Income, work status, ownership of house, possessions of assets, debt situation, employment, and perceived social status are some of the most commonly studied variables.

2.3.1 Income

Relationship between income and happiness has been studied for quite a long time by many past researchers. Studies on relationship between income and happiness has peaked ever since the Easterlin paradox who stated that average happiness remains, more or less, the same over time despite significant increases in per capita income because, as per his argument such increase is compensated by negative effect of high standard of living and soaring expectation of higher wants (Easterlin, 1974, 1995).

Both the past and recent studies show that the effect of income on happiness was very minimal. A closer analysis revealed that income effect on happiness is said to stay constant at a certain threshold, after which real effect diminishes (Ed Diener & Biswas-Diener, 2002; Easterlin, 2001; Easterlin & Schaeffer, 1999; Shin & Johnson, 1978; Stutz & Mintzer, 2006). Studies on cross-country differences among Europe and the United States (US) found that the latter appears to rank lower in satisfaction than many former countries with lower per capita incomes (Alesina et al., 2004; Blanchflower & Oswald, 2004).

Some studies, however, show that the self-reported income of the elderly was the largest predictor of subjective well-being compared to a variety of other predictors. Kolosnitsyna et al. (2014) found that income level had an unequivocal positive and significant influence on the life satisfaction of Russian elderly with females more satisfied than males. Ball and Chernova (2008) have studied relationship among absolute income, relative income, and happiness involving large cross-countries data, and they found that both absolute and relative income are positively and significantly correlated with happiness. It was also found that changes in relative income have much larger effects on happiness than do changes in absolute income. They attribute this to people's changing behavior in which after basic needs are fulfilled people tend to compare with others' status.

Studies among Chinese elderly also showed that, both relative and absolute incomes is positively and significantly associated with happiness which is partly attributed to

peoples' standard of making comparison among themselves (Cheung & Ngan, 2012; Chyi & Mao, 2012; Yiwei Zhou, 2013; Yicheng Zhou et al., 2015). Similarly, in Thailand, the income was found to have significant effect on the level of happiness of Thai elderly (Gray et al., 2008).

A comparative study among the Indian elderly and the Japanese elderly by Ramachandran and Radhika (2012) found that financially independent Japanese elderly were more satisfied with life than those who were dependent, whereas, it was opposite for the Indian elderly. They suggest that such observation as indicative of the impact of economic status on the life satisfaction among the Japanese, unlike for the Indians. A possible explanation is that, India is still developing and the family network play bigger role in which supporting each other are integral compared to Japan.

2.3.2 Employment

Being employed or actively engaged in work might bring income thereby easing stress, but it might also bring about negative effect to the wellbeing, especially to the elderly as being in active labor could hamper their health. Most studies suggest that work status is strongly associated with level of happiness of the people (Ball & Chernova, 2008; Chan, Ofstedal, & Hermalin, 2002; Deeming, 2013; Easterlin, 2004; Kolosnitsyna et al., 2014; Ramachandran & Radhika, 2012; Rojpaisarnkit, 2016; Shukla & Kiran, 2013; Wu, 2016; Yiwei Zhou, 2013). The unemployed or those who are not actively working, especially among the elderly, are more likely to be happier than those who are actively engaged in works (Ramachandran & Radhika, 2012; Rojpaisarnkit, 2016), more so for female elderly than male (Kolosnitsyna et al., 2014; Shukla & Kiran, 2013). Whereas,

a transition from working to not working contributes to less satisfaction among Singaporean elderly (Chan et al., 2002).

2.3.3 Housing Ownership

Housing is fundamental to a decent and improved standard of life especially for old age people as they retire from work. “A roof over a head” to protect from sun and rain and other harm is an old popular adage. The housing provides security and safety from natural and social harms. According to study, improvements in objective housing among the elderly have been found to be positively associated with stable improvements in subjective well-being (McNeil et al., 1986). A study among Chinese elderly show that those who own a house are more likely to be happier than those do not own (Yiwei Zhou, 2013). A study in Turkey and Mexico also show that owning a good house is significantly associated with subjective wellbeing (Cattaneo, Galiani, Gertler, Martinez, & Titiunik, 2009; Eren, 2015). Healy (2003) studied 14 European Union countries and showed that housing was positive and strong predictor of happiness, especially for elderly populations.

2.3.4 Household Possessions

There is enough evidence from literature that possessions of household items have positive effect on happiness or wellbeing of elderly population. A study among Thai elderly reveals that ownership of household possessions has a positive and strong effect on happiness (Gray et al., 2008). As elderly people owned more items, they become happier debunking some literature that claimed increasing wealth beyond ones’ poverty brings no change in life satisfaction or wellbeing. On the other hand, A. Levy (2009)

proposed an inverted U-shaped relationship between wealth and happiness, wherein, when the material possessions exceed an optimal level, the happiness diminishes, which he attributes this to an inadequate level of social communication.

2.3.5 Perceived Social Status or Relative Poverty

Perceived social status or relative poverty “feeling of poor” has been studied widely in the past studies. Yiwei Zhou (2013) claims that assessment of one’s social status in that society may be assessed in comparison with other neighborhoods in that society he or she lives. This resounds the comparison theory which states that happiness or satisfaction is not determined just by absolute object one owns but the relative situation by comparing either with their own past or other the people around (Easterlin, 2001; Yiwei Zhou, 2013). The study in Thailand found that the elderly who perceived that they were not poor or not as poor as their neighbors are significantly happier compared to those who perceived that they were poorer than their neighbors (Gray et al., 2008). It is also further confirmed by study in China using Chinese General Social Survey (CGSS) 2008, that if people perceived that they were better than others or if people’s current conditions were better than the past, they were significantly more likely to be happier (Yiwei Zhou, 2013). A study among Russian elderly show that social status is significantly associated with life satisfaction – those who are of poorer social status are less satisfied compared to those that are better. A comparative study between Indian and Japanese elderly showed that former reported to be happier than the latter despite large difference in their socioeconomic status (Ramachandran & Radhika, 2012).

2.3.6 Saving and Debt Burden

Saving and debt situations provide a means to test the theory of hedonism in which people tend to seek pleasure over pain. In this case, one's savings indicate a way of maintaining financial stability and security, whereas debt situation indicates the pain that elderly might undergo. This might well explain elderly people's wellbeing is relation to their financial security. A study among Thai elderly by Gray et al. (2008) show that those Thai elderly who have no debt or had non-burdensome debt are likely to be happier than those with burdensome debt. On the other hand, Yiwei Zhou (2013) suggests that possessing large amount of money, probably through savings, effect the wellbeing of Chinese elderly. Zhou presumes that such savings help elderly in building a better reputation in a society or get into certain kind of social club that can boast their status.

2.4 Health and Happiness

Many studies show that the correlation between health and subjective wellbeing of the elderly, are positive, significant and explains significant amount of variance making self-reported health status one of the most important factors determining elderly subjective well-being especially taking into account the deterioration of health in their old ages (McNeil et al., 1986). A study among Russian elderly found that poor self-rated health status was significantly and negatively associated with individual's subjective wellbeing (Kolosnitsyna et al., 2014). Cid et al. (2008), in their study on elderly of Uruguay, analyzed the impact of health in both absolute (self-reported) and relative (opinions about individual health in comparison with others) and their analyses showed that both absolute and relative health conditions had significantly negative

effect on happiness and concluded that bad health is clearly related to low levels of satisfaction with life. On the other hand, being healthy is positively correlated with happiness yet the direction of the causality between is still debated among researchers (Eren, 2015; Veenhoven, 1988). Angelini et al. (2012), however, suggests that detrimental health conditions and physical limitations play a crucial role in explaining scale biases in the reporting style of older individuals.

2.5 Religiosity and Happiness

Being religious as compared to belonging to any religion is often viewed as the key to a happy life in old age, which is said to provide emotional security, a firm spiritual foundation, cope with physical and social losses and thus a satisfied life (Ardelt, 2003; Rojpaisarnkit, 2016; Steinitz, 1980). Steinitz (1980) and Blanchflower and Oswald (2004) suggest that affiliation with religious activities, belief in life-after-death, and faith in organized religion are positively associated with well-being among the elderly. (McNeil et al., 1986) underscore that the self-reported frequency of church attendance, prayer, and religious behavior is positively and significantly contributes to the subjective well-being of the elderly. A recent study in Thailand by Rojpaisarnkit (2016) also established that scores of social and religious activities were positively associated with elderly well-being. A Longitudinal Analysis in Germany showed that religiosity is strongly associated with life satisfaction, and it was more so for women than men (Headey, Schupp, Tucci, & Wagner, 2008). However, a study in China showed no significant association between religion and happiness (Yiwei Zhou, 2013).

2.6 Summary of the Chapter

The extensive literature above show that there are various factors that influence elderly happiness in varying degree and magnitude of significance and direction. Most of the factors related to demographic characteristics such as age, gender, marital status, area of residence, region, children and education and their association with elderly happiness are mixed. Social capital such as membership of groups, knowing each other well, willingness to contribute time or financial, existence of trust for each other and feeling secure about their lives and property are associated with higher level of happiness among elderly. The economic factors such as income, housing ownership, household possessions or assets, having savings account, perceived social status of feeling better than others are positively associated with elderly happiness, while employment and debt situation are negatively associated.

CHAPTER III
THEORETICAL FRAMEWORK AND RESEARC METHODOLOGY

This section presents the theoretical framework and methodology used to carry out this study. It highlights major theories of happiness, conceptual framework, study model, research hypotheses, data source, sample design and coverage, and operationalization of variables for the study.

3.1 Major Theories of Happiness

There are several theories of happiness. Theories described in this section explains factors affecting happiness. In recent times, these theories are further backed with empirical studies and few have emerged in stark contrast to philosophical ideas. Happiness theories can be classified into two main domains: (1) theories which argue that happiness is a relatively stable situation and cannot be changed (such as a set-point theory); 2) theories which argue that happiness is influenced by some factors or environmental conditions (such as objective list theory). These different theories are empirically tested through researches and have been discussed by various researchers and experts.

The *Set-point theory* is one of the dominant or at least most widely accepted theories in research on subjective well-being (Headey, 2006). The theory opines that an individual is thought to have their own equilibrium level or set point of subjective well-being or happiness predetermined by genetics and personality (Headey, 2006; Lykken & Tellegen, 1996). According to the theory, any life events, such as adversities like loss

of a job or serious injury and enjoyable moments like marriage or getting a job may deflect a person above or below this set point, but over the period of time this feeling returns to the initial level due to hedonic adaptation qualities of a person (Headey, 2006). This implies that extreme condition of neither unhappiness caused by undesirable circumstance such as becoming disabled due to accidents nor happiness caused by winning a lottery will stay long enough to deter one's happiness.

Lykken and Tellegen (1996) find that happiness is a stable characteristic and any shift in the level of happiness are due to coincidence and they further concluded from their findings that none of the factors such as social status, education, and income, etc. contributed significantly to people's happiness. On the contrary, the set-point theory is still debated because of its overstatement that nothing can be done to improve one's satisfaction or well-being (Ed Diener et al., 2006; Easterlin, 2003). (Easterlin, 2003) challenged the set point theory with argument that, even if this holds true, then the public policy on social and economic development is meaningless and there is nothing an individual can do to alter their well-being. However, there are studies that show that individuals have different level of set-point and suggested that creating a goal in life can promote happiness (Ed Diener et al., 2006; Headey, 2006). On a similar note, Kittiprapas, Sawangfa, Fisher, Powdthavee, and Nitnitiphrut (2009) argue that happiness can be altered due to internal hedonic adaptation characteristic of an individual such as external resources like wealth and social network.

Hedonism is another theory that is similar to the set-point in which people have intrinsic hedonic adaptive nature to a certain action. The word '*hedonism'* comes from the Greek

word "*hedone*" meaning pleasure (Weijers, 2012). According to Veenhoven (2009) when people assess how well they feel, they usually estimate the pleasantness in feelings, in emotions, and in moods, which he calls it as "hedonic level of affect". Weijers (2012) plainly states that "all hedonistic theories identify pleasure and pain as the only important elements of whatever phenomena they are designed to describe". Thus, proponents of *hedonistic theory*, opines that the dominance of pleasure over pain is the recipe for happiness (Seligman, 2004; Yiwei Zhou, 2013). Veenhoven (2009) proposes that a person's average hedonic level of affect can be assessed over different periods in time, including from an hour to over lifetime. Thus, hedonistic happiness is the sum of net pleasantness. People tend to optimize their happiness by improving their inner pleasures and reduce pain through appreciating what one has rather than seeking for what one would like to have (Lyubomirsky, 2010). Therefore, people's hedonic adaptive nature tends to limit desires and be content with what one has. This in a way determine how people assesses their subjective well-being or level of happiness. However, according to Schimmack, hedonism theory suffers from unresolved questions related to the assumption that (i) all experiences have a similar feeling tone, (ii) all individuals have a common standard, and (iii) that there is a tendency to choose less pleasant experience over a more pleasant one (Schimmack, 2006). Schimmack's study show evidences that life satisfaction is partially determined by internal factors that is difficult to change, but external factors do strongly affect well-being, even in societies where people's basic needs are fulfilled.

On the other hand, the *objective list theory* (Rice, 2013; Seligman, 2004; Yiwei Zhou, 2013) holds that all instances of a variety of basic objective goods directly benefit

people in improving their living conditions and thus contributes to well-being of the people. For example, objective goods such as loving relationships, meaningful knowledge, achievement, income, education, and health are important to meet the basic needs of people and thus influence their wellbeing and happiness (Rice, 2013). Rojas (2005), in his investigation on conceptual-referent theory of happiness, found that socioeconomic and demographic factors such as age, gender, income and education do have an influence in the way in which people evaluate their level of happiness. However, the study also showed some issues about direction and causality, for example, whether or not education and income influence happiness or happiness influence his/her behavior thereby affecting the levels of education and income she/he wants to achieve. Despite this issue, this theory provides fundamental ideas and understanding about the empirical studies of influences of demographic and socioeconomic characteristics on happiness, which I am interested to examine.

Lastly, *comparison theory* states that people tend to evaluate their status by comparing the self and others after assessing them (Collins, 1996; Michalos, 1985) and social comparison is said to be fundamental to psychological instrument in manipulating people's judgments, experiences and behavior (Corcoran, Crusius, & Mussweiler, 2011). People's satisfaction and happiness can be achieved through two basic comparisons, between one's past and current, and between self and others in the neighborhood in terms of socio-economic parameters (Michalos, 1985; Yiwei Zhou, 2013). Previous researches have shown significant association between social comparison and subjective well-being such as being higher social status or not feeling

poor are happier than those who are not (Gray et al., 2008; Rukumnuaykit, 2015; Yiwei Zhou, 2013).

The four major happiness theories introduced above give us an understanding of happiness in two broad ways that is, that happiness is unchangeable and happiness is changeable. Specifically, set-point theory and hedonistic theory are associated with economics of happiness and persons' intrinsic nature, while objective list theory and comparison theory explain the combination of social and economic conditions. The main aim of this study is to provide a more comprehensive understanding of these various explanations of happiness. Each of these theories provides connection through which happiness is linked to certain factors. Specifically, objective list theory explains the relationship between happiness and objective socioeconomic factors, while hedonism theory provides understanding of how subjective feelings influence happiness. Through the lenses of these theories, I have constructed a broader view of the determinants of happiness, shown in the form of conceptual framework.

From the above literature and theories, the predictors of happiness that are congruent to the four theories explained above can be summarized and grouped into three main broad categories namely, (i) individual and demographic characteristics including living arrangements, (ii) social capital and (iii) economic factors. Additionally, the effect of religiosity and health status of persons on their happiness are studied. The relationship of all these factors and happiness is shown in the conceptual framework.

3.2 Conceptual Framework

Based on the literature above and the data available for this study, various factors are explored and the relationship between these factors and happiness is established as presented in Figure 3.

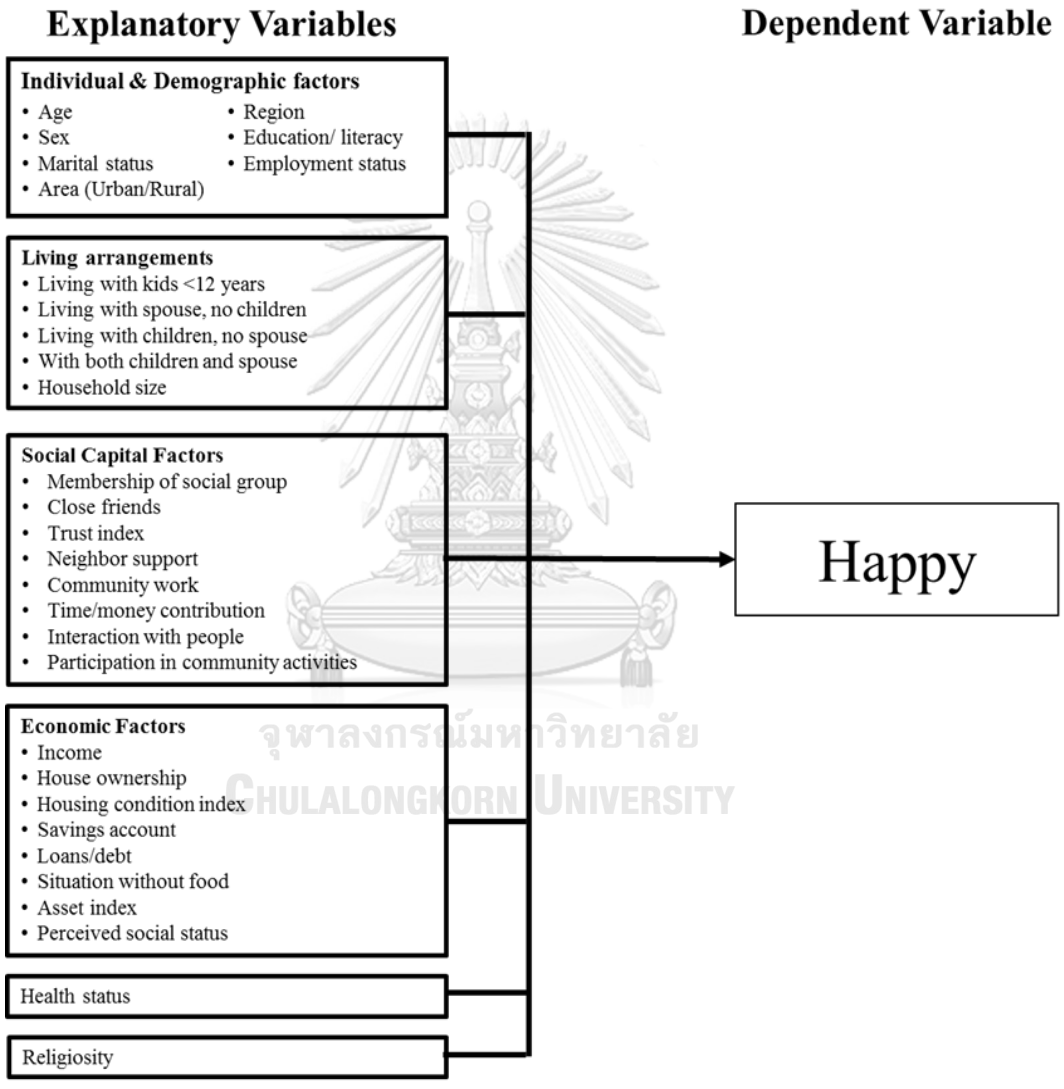


Figure 3: Conceptual Framework Showing the Relationship between Dependent and Explanatory Variables
Source: Own conceptualization

The model shows the core ideas of how the four happiness theories explain the relationship between explanatory variables and happiness. The objective list theory is explained by the living arrangements, social capital, economic factors, health status and religiosity mentioned above whereas the hedonism is explained by the individual and demographic characteristics.

As the number of elderly population are growing gradually in Bhutan, this study is one of the important steps to provide baseline information on Bhutanese elderly population and about what makes them happy in the supposed land of gross national happiness

3.3 Model of the Study

In this study, the dependent variable is "happy" which is measured on the Likert scale of five in which 1 is being "very happy" through 5 being "very unhappy". Happiness is the function of individual and socioeconomic characteristics of the elderly persons. The measurement though not without problems, does reflect respondents' overall level of feelings and capture a substantial amount of variance which makes it valid and comparable (Easterlin, 2001; Gundelach & Kreiner, 2004; Wu, 2016). On the other hand, researchers have found that the factors that determine people's subjective happiness such as age, gender, health status, income, etc are similar across various societies (Wu, 2016).

Although it is desirable to use ordered logit or probit model to analyze the relationship between determinants and happiness as in most literature (Eren, 2015; Yiwei Zhou, 2013), the response in the dependent variable is not normally distributed across the five

scales, wherein some cells are small compared to others which is plausible for the model to be unstable and lead to invalid results ((IDRE), n.d.; Hosmer, Lemeshow, & Sturdivant, 2013). Therefore, in this study, the binary logistic regression is utilized to estimate the effects of demographic and socioeconomic characteristics on happiness of Bhutanese elderly. The dependent variable is a dummy or binary in which, 1 represents "very happy" and "moderately happy" and 0 represents "neither happy nor unhappy", "moderately unhappy" and "very unhappy". Such transformation was carried out by few researchers to determine the effect of the explanatory variables on explained variable, which was validated (Wu, 2016).

Since the variables employed in the analysis are not continuous, logistic regression analysis does not directly estimate dependent variable but uses independent variables to estimate a latent variable to explain the dependent variable (Eren, 2015; Hosmer et al., 2013). The estimation model is given below based on the dichotomous dependent variable which is estimated 1 if the estimation of latent variable is above the threshold, 0 otherwise.

$$(Y_n = 1 \mid X_n) = P_n = \frac{1}{1 + e^{-(\beta_0 + \beta_1 X_1 + \beta_2 X_2 \ldots \beta_n X_n)}} \quad \ldots\ldots\ldots\ldots\ldots\ldots(1)$$

$$\ln\left(\frac{P_n}{1 - P_n}\right) = \beta_0 + \sum_{i=1}^{n} \beta_1 X_1 + \beta_2 X_2 \ldots \beta_n X_n \quad \ldots\ldots\ldots\ldots\ldots\ldots(2)$$

In the equations above, Y_n, P_n and X_n respectively represent the dependent variable showing the probability of Y happening given the independent variables. Calculation of logistic regression estimations are, basically, carried out using maximum likelihood

method and are analyzed by using R^2 values for logit analysis (Chyi & Mao, 2012; Eren, 2015). Moreover, logistic regression can be operated based on binary variables, multinomial and ordered scales (Eren, 2015). Further, Graham (cited in (Eren, 2015) states that within the logit or probit regression unobserved characteristics are stored within the error term.

Based on the different group of independent variables defined in the conceptual framework, five models used to analyze their differential effect on happiness. In the first model, a logistic regression of happiness using only demographic variables is run to test if they are significant in order to validate the hedonic theory of adaptation to pleasure or happiness. In the second model, the living arrangements are controlled. In the third and fourth models, variables related to social capital and economic are controlled respectively to find out how this affect happiness in order to test the theories of objective list and comparison. In the fifth model, health status and religiosity are controlled and full set of variables are run to find out their joint effect and significance on happiness of the elderly. Moreover, in order to cope with heteroscekasticity issues, robust standard errors were used to estimate the model during the analysis (IDRE, n.d.).

Basically, the model used in this study takes the following form:

$$f(y|x) = \frac{e^{(\beta_0+\beta_1 X_1+\beta_2 X_2 \ldots \beta_n X_n)}}{1+e^{-(\beta_0+\beta_1 X_1+\beta_2 X_2 \ldots \beta_n X_n)}} \quad \ldots\ldots(1)$$

$$logit(f(x)) = \ln\left(\frac{f(x)}{1-f(x)}\right) \quad \ldots\ldots(2)$$

$$= \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots\ldots \beta_n X_n + \mathcal{E}_i \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(3)$$

Where,

Y is a dependent variable representing happiness, wherein happy equals 1, 0 otherwise;

β_0 is a coefficient of the constant;

β_n is the coefficient of independent variables;

X_n is the independent variables including age, gender, marital status, children, spouse, urban/rural, region, education, health, social activity, religiosity, family income and housing ownership, etc;

ε_i is the error term for the unobserved variables.

3.4 Research Hypotheses

With various demographic and socioeconomic factors reflected above in the model, the following hypotheses were tested, but not limited to:

1. The elderly with better socioeconomic characteristics have different level of happiness than those who are not.
2. The elderly whose living arrangements are tied with their children and spouse have different level of happiness than those who are without children and spouse.
3. The religious elderly has different level of happiness than those who are not religious.
4. The healthy elderly has different level of happiness than those who are not healthy.

3.5 Data Source

The prime source of data for this study is the Bhutan Living Standard Survey (BLSS) 2012 conducted by the National Statistics Bureau (NSB). The BLSS 2012 is a large cross-sectional survey and the samples are representative of the whole population of Bhutan. The primary objective of the BLSS was to study the living standards and livelihood of the Bhutanese people and see the trends in terms of socioeconomic development and prospects. Unlike the previous surveys, the BLSS 2012 has collected new information on happiness, which provided a scope for this study. The main source of information is based on the social capital section (Block 12; SC35), which asks, "in general, how happy you consider yourself to be? And the answers are given on the scale of five from 1 being "very happy" to 5 being "very unhappy". Moreover, demographic and socioeconomic data were collected such as age, gender, marital status, children, education, income, wealth, etc. which were very useful for this study (Questionnaires Appendix 4).

The BLSS 2012 survey was conducted in the month of March and April of 2012 and was funded by the Asian Development Bank. Bhutan conducted its first ever living standard survey in 2003 and since then it is collected on the basis of every four to five years by the National Statistics Bureau (NSB).

The dataset for this study was obtained after submission of a formal application to the NSB office. The NSB has generously granted permission for use of the BLSS 2012 datasets for this study.

3.6 Study Sample

In the BLSS 2012, a sample of 8,968 households consisting of 39,825 persons was collected representing 127,942 households and 581,257 population of Bhutan respectively. Out of 8,968 households interviewed 4,350 are in rural and 4,618 in urban areas. The total number of women and men interviewed during this survey were 20,191 and 19,634 respectively.

Out of total sample population of 39,825, respondents or population aged older than 60 completed years on the day of the survey have been taken into account for the purpose of this study. Accordingly, the survey has enumerated a total of 3244 elderly population. However, thirty-two of them have been found to be visiting member of the household and thus have been excluded from the analysis as did in survey report as well. Moreover, one respondent has no information on work status and thus has been excluded from the actual analysis. The final sample of 3,211 elderly population older than 60 years has been employed for final analysis in this study.

3.7 Operationalization and Measurement of Variables

The main purpose of this study was to examine determinants of happiness of Bhutanese elderly population. The dependent variable is happiness and independent variables include demographic, living arrangement and socio-economic characteristics, religiosity and health status, which are measured in the following for analyses.

3.7.1 Dependent Variable

In this study, dependent variable is "happy (ness)" of elderly, and the main objective is to find out what makes Bhutanese elderly population happy. The main source of information for happy comes from the 2012 BLSS survey, where the question asks "in general, how happy you consider yourself to be?" and the answer is on the scale of one to five; one representing very happy and five representing very unhappy. This study focuses on binary logistics outcome on account of small cell count (very low percentage of elderly population) in unhappy categories in order to avoid invalid results and conclusion[6] ((IDRE), n.d.; Hosmer et al., 2013). Therefore, the dependent variable "happy" is a dummy variable which is recoded as 1 if the respondents are "very happy" and "moderately happy" and 0 if the respondents are "neither happy nor unhappy", "moderately unhappy" and "very unhappy". This categorization is in accordance with the study by Wu (2016), in which they have carried out a comparative study on subjective wellbeing of Chinese elderly living in Hong Kong, Urban China and Taiwan in 2016 using the surveys of 2010 and 2011 and their results were proven valid (Wu, 2016).

3.7.2 Independent Variables

The independent variables are identified based on the relevant literature on the factors associated with the elderly happiness and some additional relevant explanatory variables on data availability in the context of Bhutan as summarized in Table 2. In

[6] The BLSS 2012 data depicts a high level of self-rated happiness among elderly Bhutanese populations. Out of total sample of 3211 elderly population, 34.99% are very happy and 49.55% are moderately happy, 11.68% are neither happy nor unhappy, whereas, moderately unhappy and very unhappy make up 2.2% & 1.59% respectively. They are all weighted.

order to understand the association of elderly's happiness with their individual characteristics, variables including age, gender, marital status, area of residence (urban/rural), region, education, literacy, and employment are identified. In addition, to account for elderly's living arrangements, the three variables were identified including the elderly living with children below 12 years old, living with children, living with spouse and household size. According to literature, social capital variables that are found to be strong predictors of elderly's happiness include membership of association/social group, having close friends, trust in the community, neighbors helping each other, work contribution to the community, participation in community social activities, willingness to contribute time and money, and interaction with people.

Similarly, the economic factors that were reported in the literature as important in predicting or determining happiness of elderly population include, income, ownership of house or dwelling, housing condition index, having savings account, having debt or loans, a situation without food, possession of assets/items (asset index), and perceived social status or feeling of relative poor. Lastly, self-reported health status and religiosity or spirituality are also explored as variables. The operational definition of the variables and measurement of each is described as follows.

- **Individual and Demographic characteristics**

Age: Age of persons in years at the time of survey. In this study, the age is a categorical variable and dummy namely, (i) 60-69 years as young-old; (ii) 70-79 years as middle-old; and (iii) 80 years and above as older-old. Such age classification was carried out by many researchers (Gray et al., 2008; Yicheng Zhou et al., 2015) and allows us to

compare the differentials in happiness among three major different age groups as they are distinct in their age from each other. Age group of 60-69 will be considered as reference.

Gender: Gender is birth mark of a person at the time of birth. These are male and female which takes the form of dummy variable of 1 if male, 0 if female.

Marital status: Marital status of elderly at the time of survey. As per survey, there are five categories such as never married, married, divorced, separated, and widowed/widower. I re-categorized them into a dummy variable which equals 1 if the respondents are married, divorced, and widowed/widower and 0 if they are never married.

Area of residence: It refers to the place or area where the elderly person resided at the time of survey and it is a dummy variable which equals 1 if the elderlies resided in urban and 0 if they resided in rural.

Region: It refers to the region where the elderly persons lived at the time of survey. It is a categorical variable and dummy. Basically, the country is divided into three regions based on the regional classification used for most of the surveys and reports by the Royal Government of Bhutan (Dechen, 2013). The three regions are eastern which is constituted of 6 eastern districts, central and western regions which are constituted of 7 districts each (See Appendix 1). The eastern region was treated as reference as the region is considered least developed among the three regions.

Education: Education is defined as those who attended a formal education system. Survey question asks “what is the grade/level of school currently attended by...?” The education level include pre-primary, grade 1 through 12, VTI certificate, Diploma, Bachelor’s degree, master’s degree, above masters, and others. However, in this study, in order to suit the older persons, education is re-categorized into a dummy variable which equals 1 if the respondents have attended any formal education starting grade 1 through above masters and others, and equals 0 if they have pre-primary education and who have not attended any formal education.

Literacy: Besides formal education, there are traditional, self-learning and other forms of learning opportunities in the past as it is today that contributed to improved general literacy of population in Bhutan. Quite a good number of Bhutanese elderly population in those times availed of this opportunity. The traditional learning basically involved those teachings developed by indigenous scholars and offered in religious centers such as monasteries and temples in the villages where vernacular languages of Bhutan are used (NSB, 2013). Such learnings are diverse including Dzongkha (national language), Lhotshamkha (one of the dialects in Bhutan) and other languages. In this study, for the purpose of analysis of active engagement through utilization of such knowledge by the elderly population, reading and writing (literacy) has been included as one of the important variables. If the individual elderly person can read or write in any of the three or more languages mentioned above, they are considered as “literate”. Thus, literacy is dummy variable which equals 1 if the elderlies are literate and 0 if they are not able to read or write any language.

Employment Status: Employment status is defined as whether respondent is actively working or not. There are three questions that pertains to this; one question asks if the respondent did any farming, fishing, hunting or gather of fruits, etc. at least one hour in the last 7 days? Another asks if respondent worked for money for at least one hour in the last 7 days? And the third question asks if the respondent did any unpaid work in the friends or relatives' enterprise or farm for at least one hour in the last 7 days? If the respondents answered yes to any of these three questions, then the elderlies were considered actively working. Thus, the work status dummy equals 1 if the elderlies are working, 0 otherwise.

- **Living arrangement and household size**

According to (Palloni, 2011) the term "living arrangements" refers to the household structure of the elderly where they live and it influences their status and well-being in a society. According to Velkoff, living arrangements are influenced by a variety of factors and this in turn affect life satisfaction, health, and most importantly for those elderly living in the community (Velkoff, 2001). For example, in China, patriarchal extended family is typical due to the traditional Confucian doctrine, where adult child or usually the eldest son is obligated to live with his parents and take care of them, even after getting married and having children of his own (L. K. White, 1983; Wu, 2016).

In the context of Bhutan, there are no studies being carried out on living arrangements as such. However, living arrangement in Bhutan is, more or less, similar to that in China, where the traditional way of living together either through consanguineous and

conjugal basis of kinship without preference exists. Generally, people living in large family or extended family is typical in Bhutan, although on decline. As per survey report of 2012, on average about one in every five persons in the household is a member of extended family or is someone other than the spouse or offspring of the household head (NSB, 2013).

In this study, three categories of household sizes and five types of living arrangements were used to examine their association with elderly happiness. The household size is defined as the number of persons in the household including those who have lived less than 6 months and servants or paid domestic employees. The three-household size is a categorical variable, namely (i) household with one to two members, (ii) three to five members, and (iii) more than six members. They are dummy variables and household of one to two members was treated as reference.

Regarding living arrangements, five types were identified to find out their association with happiness. The elderly who live with children below twelve years was taken as a separate variable in order to find out the association between young children and their association with the elderly's happiness. Another type of living arrangement considered for this study is to find out association of spouse and children with the elderly's level of happiness. It is a categorical variable, namely, (i) the elderly living without spouse and children (alone), (ii) living with spouse but without children, (iii) living with children but without spouse, and (iv) living with both children and spouse. They are all dummy variables and living without children or spouse or alone is considered as reference.

- **Social capital**

Based on the literature (Coleman, 1988; Grootaert & Van Bastelaer, 2002; Putnam, 1995; Rukumnuaykit & Pholphirul, 2016) and data available in the survey, the factors identified for social capital include membership of associations or social groups, close friends, trust and feeling of closeness, neighbor helping each other, work contribution including volunteerism, participation in community/social activities, willingness to contribute time and money, and interaction with people.

Membership of association/social group: There are data on various kind of associations or social groups collected by the survey. Some of the associations include farmers' group, spiritual, business, charity, sports, etc. The elderly individuals who are engaged in any one of those social groups were classified as "members" and those who are not are classified as "not member". Membership of the association is a dummy variable which equals 1 if the respondents belonged to any of the associations, and 0 if they do not belong to any of the associations.

Close friends: The survey question asked how many close friends the respondents currently have. It was categorized as dummy variable which equals 1 if the respondents have one or more close friends, and 0 if they do not have any close friend.

Social trust: The trust and adherence to norms of community is important factor of social capital. There are several questions that are relevant to trust including direct question on people's trust on neighbors that they live in, support in times of death or

emergencies, feeling of closeness in the community, etc. The trust index was generated involving these factors using polychoric principal component analysis technique in Stata software. Accordingly, three trust indices were generated, namely (i) low trust, (ii) moderate trust, and (iii) high trust in the community. They are all dummy variables and low trust was treated as reference.

Neighbor help: The survey question asks how well neighbors helped each other these days. This variable is relevant in part as an outcome (action) of trust and adherence in the social capital literature (Putnam, 1995; Rukumnuaykit & Pholphirul, 2016). The answers are (i) always helping, (ii) helping most of the time, (iii) helping sometimes, (iv) rarely helping, and (v) never helping. These are recoded as 1 if elderly felt that neighbors are always helping, helping most of the time, and helping sometimes, and 0 if rarely helping and never helping each other.

Community work contribution: Collective action that results from trust and adherence to norms is an important outcome of better social capital. The survey captured an important question on whether or not respondents have worked in others' neighborhood to do something for the benefit of the community in the 12 months prior to the survey. The responses were in the form of (i) required and (ii) voluntary. The work contribution to community was categorized into three namely, (i) not contributed if respondents have not worked at all, (ii) contributed but required by the community, and (iii) voluntary work contribution to the community. They are all dummy variables and the variable "not contributed to community work" was treated as reference.

Participation in social activity: Besides, the survey has question on how many days the respondents or members of household have participated in any community/social activities apart from work contribution in the 12 months prior to the survey. The respondents who have contributed more than one day was categorized as 1, and 0 if they have not participated a single day.

Willingness to contribute time/money to the community: The survey also asked about perceptions on prospective commitment or willingness to contribute in terms of time or money to the community even if it does not have any benefit to them directly. There are answers for both time and money separately. The respondents who are willing to contribute either of the two was considered as willing to contribute. They are dummy variables which equals 1 if the respondents said yes, and 0 if the elderly said no.

Interaction with people: There are three questions that are related to interaction. They are related to frequency of contact between elderly individual and people around them for the purpose of talking or having food or drinks together; visiting their neighbors or friends; and neighbors or friends visiting them in return. The respondents who have had more than one contact are considered "having interaction" which equals 1, and 0 if they had no such contact.

- **Economic characteristics**

The economic variables include income, ownership of house or dwelling, housing condition index, having saving account, owing loans or debts, a situation without food, perceived social status (feeling of poor), and ownership of assets.

Income: Income is an aggregate of revenue in terms of cash and in kind from various sources, including but not limited to wages/salaries including religious fees, sale of agricultural products such as cereals, fruits, vegetables, etc. and non-agricultural products such as weaving, pottering, pensions, businesses, etc. The income is a continuous number and for analysis income is transformed into log in order to avoid heteroscedasticity.

Housing ownership: Housing is one of the important measures of economic wellbeing and standard of living and is predictor of happiness (McNeil et al., 1986). The survey question pertains to whether or not elderly population in a particular household owned a dwelling or house. The answer is in the form of dummy variable which equals 1 if respondents said yes and 0 if the respondents said no.

Housing condition index: There are various variables related to housing conditions collected by the survey. According to the definition provided by the Organization for Economic Cooperation and Development (OECD, 2011) “housing is essential to meet basic needs and housing conditions may affect a wide range of outcomes including the tenure status of households and the impact of this on psychological and material wellbeing.” In this study, OECD (2011) recommendations are followed. Although an ideal set of indicators to measure housing conditions may vary across countries due to availability of data, it includes only the physical characteristics of the dwelling (e.g. availability of electricity, water supply, toilet type, the quality of materials and construction).

This study makes best use of available data including type of house elderly are residing (both a rented or own house), overcrowding, materials used, safe drinking water, proper sanitation facility, electricity, fuel for heating, etc. The principal component analysis was used to generate housing condition index in the Stata software. The housing condition index has been classified into three types, namely, (i) poor housing condition, (ii) mediocre housing condition, and (iii) good housing condition. They are dummy variables and poor housing condition was treated as reference.

Savings account: The variable savings account is used to determine whether the elderly are practicing savings as a proxy for income security. In this study, whether or not respondents have savings account in any of the banking institutions in the country are considered for analysis. The survey question states "do you or anyone in your household have savings/deposit account?" The answer given are a) No, b) Yes, savings, c) Yes, current savings, d) debit/credit/ATM card, e) others. These were recoded as 0 if the elderly responded no, and as 1 if the elderly responded yes to any of the four.

Loans or debt: The variable loan or debt is aimed at determining the pain aspect of elderly population that would influence happiness. The survey question states "did you or anyone in your household ever availed loan in the past 12 months?" The answers are a) No, b) Yes, bank, c) Yes, BDBL, d) Yes, RICBL, e) Yes, NPPF, f) relatives/friends, g) supplier/shop, h) money lender, i) NGO, and j) others. The response were recoded as 1 if the elderly have borrowed or availed loans from various banking institutions including relatives, money lenders, etc. and 0 if the elderly have not availed any loan.

Situation without food: The other variable that relates to pain aspect of elderly population that would have effect on happiness is situation without food that the Bhutanese elderly person would have ever faced in the one year prior to the survey. The survey question states "in the past 12 months, has a situation been faced when there was not enough food to feed all members of the household?" The response is dummy which equals 1 if the elderly said yes (faced a situation) and 0 if the elderly said no.

Perceived social status: The survey has collected information on perceived social status or 'feeling of poor' of the individual respondents. The question pertains to whether or not the respondents believed that their household is poor. This question basically seeks to find out relative poverty compared to their neighborhoods instead of poverty or poorness in absolute terms based on the comparison theory. Studies have shown that feeling of poor have negative effect on elderly happiness (Gray et al., 2008; Rukumnuaykit, 2015; Yiwei Zhou, 2013). There are five categories including "not poor", "neither poor nor not poor", "poor", "very poor" and "don't know". These five categories were re-categorized into three, namely, (i) poor (includes poor and very poor), (ii) neither poor nor non-poor (includes neither poor nor non-poor and don't know), and (iii) not poor. The variables are dummy and the not poor was treated as reference.

Asset index: The evidences from previous literature show that possessions of household items have positive effect on happiness or wellbeing of elderly population (Gray et al., 2008; Yiwei Zhou, 2013). The survey data show several factors related to possession

of assets such as durable goods like sofa, car, washing machine, computer, etc. biological asset like animals, and fixed assets like land or orchards. The principal component analysis was employed using these variables to generate asset index in the Stata software and it is further classified into three categories namely, household with (i) poor asset possession, (ii) medium asset possession, and (iii) rich asset possession. They are dummy variables and poor asset possession was treated as reference.

- **Health status**

According to literature, the health status is key predictor of happiness for the elderly population. In this study, the survey question pertains to whether or not the respondents suffered from sickness or injury in the four weeks prior to the survey. It is a dummy variable which equals 1 if the respondents were either sick or injured and 0 if they were not sick or injured.

- **Religiosity/spirituality**

Although there is no direct question related to religious or spiritual practices in the survey, expenditure on rituals was explored as proxy variable for religiosity. In this study, the elderly persons who had contributed some amount was considered as religious or spiritual and otherwise. Generally, most of the Bhutanese population are Buddhists and it is typical that Bhutanese people perform rituals once a year or generous contribution to any religious activities is not uncommon. It is a dummy variable which equals 1 if the respondents had contributed some amount and 0 if the elderly have not contributed any amount. The BLSS 2012 survey questionnaire is given in Appendix 4.

Table 2: Brief Description and Measurement Scale of Variables.

Variable	Description	Measurement scale/ binary		
		Dummy	Yes	No
Age	Age of persons in years	60-69 (reference) 70-79 >80	1 1 1	0 0 0
Gender	Birth mark of elderly – male and female	If Male (Female as reference)	1	0
Marital status	Marital status of elderly	Married (Never married as reference)	1	0
Area of residence	Rural and urban	If urban (Rural as reference)	1	0
Region	Three regions usually used by government	Eastern (reference) Central Western	1 1 1	0 0 0
Education	Whether or not attended education	If attended formal education (Not attended as reference)	1	0
Literacy	Knowing how to read and write any of the languages (English, Dzongkha, Lhotshamkha, etc)	Literate (Illiterate as reference)	1	0
Employment status	Whether or not employed or actively working	Working (Not working as reference)	1	0
Health	Sickness or injury in the last four weeks	If sick/injured (Not sick/injured as reference)	1	0
Living with children below 12 years with/without others	Whether or not living with children below 12 years in a household	Children below 12 years (Living without children below 12 years as reference)	1	0
Other type of living arrangement (Living with children & spouse)	Whether living with children and/or spouse in a household	Living without children and spouse (reference) Living with spouse, but without children Living with children, but without spouse Living with both children and spouse	1 1 1 1	0 0 0 0

Variable	Description	Measurement scale/ binary		
		Dummy	Yes	No
Household size	Number of members in the a household	1-2 members (reference) 3-5 members 6 or more members	1 1 1	0 0 0
Membership of association/ social group	Membership in different association/ groups	If a member (If not a member as reference)	1	0
Close friends	Whether or not having close friends	Have close friends (Without close friend as reference)	1	0
Trust index	Trust, closeness, and reliance on people in the community during times of emergencies and death	Low trust (reference) Moderate trust High trust	1 1 1	0 0 0
Neighbors helping each other	Whether or not neighbors provide helping hand currently	Helpful neighbor (Not helpful neighbor as reference)	1	0
Work contribution to community	Work (labor) contribution by elderly persons for the benefit of the community in the last 12 months	Not working (reference) Worked as required Worked as volunteer	1 1 1	0 0 0
Participation in community activities	Whether or not participated in community activities	Participated in community activity (Those non-participant as reference)	1	0
Willingness to contribute time/ money	Contribution that benefits community in terms of time/ money	If yes (No as reference)	1	0
Interaction with people	Whether or not interacted in the past one month	If interacted (Not interacted as reference)	1	0
Religiosity	Contribution of some on rimdro/ religious rituals as proxy	If contributed some amount (Not contributed as reference)	1	0
Income	Aggregate annual household income of kind and cash	Log of income	NA	NA
Housing ownership	Ownership of dwelling or housing by household in which elderly persons live	If own dwelling/ housing (If not owning a housing as reference)	1	0

Variable	Description	Measurement scale/ binary		
		Dummy	Yes	No
Housing condition index	Conditions and quality of housing based on materials used, toilet facilities, source of water, etc.	Low housing condition (reference) Medium housing condition Good housing condition	1 1 1	0 0 0
Savings account	Whether or not elderly person owns savings account	If yes (No as reference)	1	0
Loans or debt	Whether or not the elderly availed loans	If availed (If not availed as reference)	1	0
Situation without food	Situation no food was available for the family in the past 12 months	If faced a situation (Not faced a situation as reference)	1	0
Perceived social status	The feeling of whether they are poor or not	Not poor (reference) Neither poor nor non-poor Poor	1 1 1	0 0 0
Asset index	Ownership of durable goods, biological asset and fixed asset (index)	Poor asset (reference) Medium asset Rich asset	1 1 1	0 0 0

Source: Author's compilation based on BLSS 2012, NSB

3.8 Statistical Tools for Analysis

The STATA for windows was employed to analyze the data. Similarly, Microsoft Excel was utilized to produce desired diagrams and figures to support the results. The analyses include descriptive statistics to examine the levels, and determinants of happiness of elderly population. The binary logistics regression was employed to determine or predict the degree of likelihood of elderly's happiness.

3.9 Limitation of the Study

Key limitations emerge from the source of data. Firstly, there could have been issues regarding the subjective self-reported happiness in which there is possibility that the

respondents might have a biased response due to problems related to comprehension of the words “in general”, although it was validated to some extent through a cross country studies (Edward Diener & Oishi, 2000). The respondents may have been biased towards few things that made them happy as compared to the collective majority of matters that relates to them in life. Angelini et al. (2012) and D. Diener et al. (2002) point out that the main issue with self-reported happiness is that individuals adopt a different reference point or evaluation criteria and thus the validity of such assessment of feelings. Edward Diener and Oishi (2000) also noted that the existence of scale biases might be caused by various differences such as demographic profiles, socio-economic conditions and cultural background. As such there could be biases among individuals in evaluating their feelings of happiness.

Secondly, due to the nature of cross-sectional data, the association between two variables are unable to demonstrate any causal relationships. Thus, there could be possibility that the happiness might also influence some of the explanatory variables, for example, physical health (Veenhoven, 2008) or work productivity and career success (Boehm & Lyubomirsky, 2008), which is beyond the scope of this study.

Thirdly, some of the factors were household based and not individual such as income and ownership of assets and housing. In such cases, there are chances that duplicating such information to the elderly would conceal the true story that are specifically relevant for the elderly.

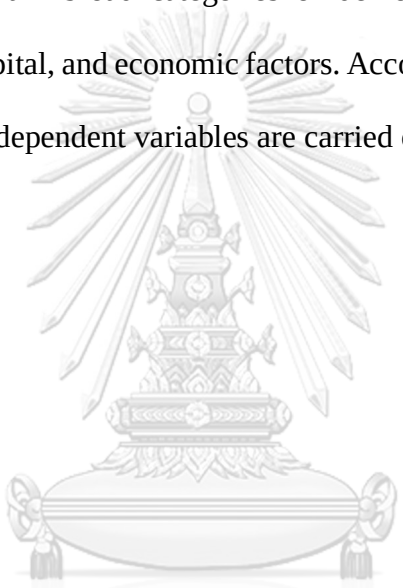
Similarly, the question on health status includes only injuries and sickness that had occurred to the elderly individuals four weeks prior to the survey and lacks crucial amount of information on actual health conditions of an individual elderly. For example, chronic health conditions or prolonged disability might have negative implications on the way Bhutanese elderly report their happiness status as do many literature suggest. Thus, in this study, we cannot make any definite conclusion about the implication of health status on the happiness of the Bhutanese elderly based on the available data.

This study has found that variable volunteerism has unexpectedly negative association with happiness of the elderly. Possibly, this negative association could be due to frequency and type of volunteer works. But this study has not considered these aspect for analyses. Therefore, the findings of this study can be debatable requiring further analysis.

Additionally, there is also no direct question on religiosity. The proxy variable used for religiosity in this survey, although the findings are as expected, might as well cover much of the actual status of religiosity among the elderly population. Because it is typical in Bhutan that, as a Buddhist, the Bhutanese elderly tend to embrace religious and spiritual practices after retirement. Future research must explore variables related to religious practices, including perception on religion.

3.10 Summary of the Chapter

The four theories of comparative, objective, set-point and hedonism explains how the factors influence and are linked to the happiness. The Bhutan living standard survey data 2012, which is a large cross-sectional survey representative of the whole population was used for this study. The binary logistic regression is employed to analyze and estimate the dependent variable “happiness” based on several independent variables under four main broad categories of demographic characteristics, living arrangements, social capital, and economic factors. Accordingly, measurements of each of the dependent and independent variables are carried out for easy analyses.



CHAPTER IV
RESEARCH RESULTS

This chapter presents the analyses of 3211 Bhutanese elderly population older than 60 years old using the BLSS 2012 data with the goal of understanding the level of happiness among them and examination of their determinants. Based on the literature discussed in chapter II of this study, various factors were identified that are associated with the elderly's happiness and they are broadly covered under demographic, living arrangement, social capital and economic categories. The results of the association between dependent variable and explanatory variables are presented using multivariate analyses.

The first section provides descriptive statistics in the form of mean and percentages of dependent and various independent variables in the five sub-sections including happiness of elderly, demographic characteristics, living arrangement, social capital, and economic characteristics. The second section explains multicollinearity issues and goodness of fit test carried out including selection of final independent variables for multivariate analyses. The third section illustrates and analyses the logistic regression results. The fourth section provides discussion of the results with necessary analyses and interpretations. The fifth section elaborates on the assessment of robustness of the model and data analyses and the final section provides the summary of this chapter.

4.1 Descriptive Statistics

4.1.1 Happiness of the Elderly

The mean happiness is .84 with standard error of .36 or about 84% of elderly population are happy, showing a high level of self-rated happiness among Bhutanese elderly population (Figure 4). Among the independent variables, mean happiness is greater for those elderly who perceive that they are not poor and the least for those that faced a situation without food. The mean happiness of most of the other independent variables are more than 80%.

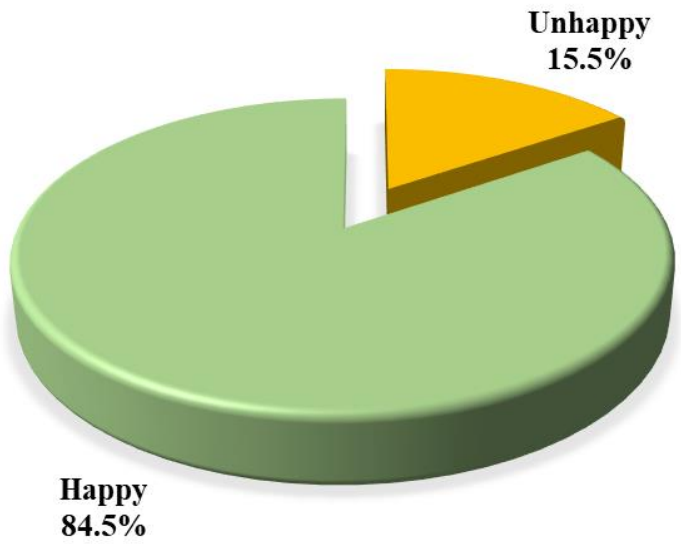


Figure 4: Distribution of Happiness among the Bhutanese Elderly Population (Source: Author's own based on BLSS 2012)

4.1.2 Demographic Characteristics

The mean age of the elderly population is close to 70 years with minimum age of 60 years and maximum age of 105 years. More than half (53%) of the Bhutanese elderly population are in the age group 60-69 years and another 33% are in the age group of 70-79 years, manifesting a large representation of young elderly compared to older-old

elderly population. The older-old of 80 years and above represent 14% only, indicating high mortality in this age group. More than half (52%) of the Bhutanese elderly population are males and 48% are females, showing a slightly more representation of males than females. The majority of the elderly persons are married, separated or widowed (96%) and never married constitute over 4% only. The elderly population mostly live in rural areas (87%) while only small portion (13%) reside in urban areas. This high representation of elderly in rural area indicates Bhutan's predominant agrarian society and slow developmental progress before the modern development was first started in 1960s. More than one-third (37%) of elderly population are from western region, 33% are from central and 30% are from eastern region, showing a fair representation of population in each region. Only about 6% of elderly have attended grade one or more. This is attributed to modern education system. Bhutan started its modern education system only in the 1960s. About 17% of elderly population can read or write (literate) at least one language, which shows that there were other learning in Bhutan prior to or apart from modern education system. Less than half (44%) of the elderly are actively working indicating either their active engagement in activities or working. About one-third of the elderly population (33%) were sick or injured four weeks before the survey showing that the elderly population are more vulnerable to sickness or injury. The percentage, mean, standard deviation and other details of elderly population are shown in Table 3.

Table 3: Percent Distribution of Demographic Characteristics, Mean Happiness and Standard Deviation of Bhutanese Elderly Population Older than 60 Years

		Percent	Happiness	
Variables	**N**		**Mean**	**SD**
Happy	3211	-	.84	.36
Age group (Av. 69.76, SD=8.01)				
60-69 years (young-old)	1710	53.25	.85	.35
70-79 years (middle-old)	1054	32.83	.84	.37
80+ years (older-old)	447	13.92	.82	.38
Gender				
Female	1539	47.93	.85	.36
Male	1672	52.07	.84	.35
Marital status				
Married	3068	95.56	.85	.36
Not married	143	4.44	.83	.38
Area of residence				
Urban Area	400	12.45	.87	.33
Rural area	2811	87.55	.84	.36
Region				
Eastern region	960	29.90	.80	.40
Central region	1066	33.19	.88	.32
Western region	1185	36.91	.85	.36
Education				
Yes	193	6.00	.89	.31
No	3018	94.00	.84	.36
Literacy				
Literate	536	16.70	.88	.32
Illiterate	2675	83.30	.84	.37
Employment status				
Working	1418	44.16	.85	.35
Not working	1793	55.84	.84	.36
Health status (sick/injured)				
Sick	1056	32.88	.84	.36
Not sick	2155	67.12	.85	.36

Source: Own calculation based on BLSS 2012.

4.1.3 Living Arrangement

The elderly who live with children below twelve years and with/without others make up a large proportion of the elderly population (69%), indicating a reasonable degree of extended type of living arrangements among the elderly population. Another type of living arrangement identified for this study is to find out the association of spouse and/or children on the elderly's level of happiness. It is a categorical variable and among the four categories, more than half (58.5%) of the elderly live with both children and their spouse, followed very distantly by those who live with children but without spouse (23%). About 13% of the elderly population live with spouse but without children and very small proportion (5%) live without spouse and children. Regarding household size, a majority of the elderly (62%) live in a household with more than six members, showing another reasonable degree of evidence of extended family and multi-generational family. The proportion of the elderly that live with three to five members represent about 33%. Only small proportion (5%) of the elderly population live in a household with less than two members, which according to literature can be equated to living alone. The mean, standard deviation and other details of elderly population is shown in Table 4.

Table 4: Percent Distribution of Living Arrangement Type, Mean Happiness and Standard Deviation of Bhutanese Elderly Population Older than 60 Years.

Variables	Distribution		Happiness	
	N	Percent	Mean	SD
Living with children below 12 years/with/ without others	2229	69.41	.85	.35
Living without children below 12 years/with/ without others	982	30.59	.83	.37
Other type of Living Arrangement (categorical)				
Living without children and spouse (or alone)	162	5.03	.75	.43
Living with spouse but without children	430	13.39	.77	.42
Living with children but without spouse	741	23.08	.86	.35
Living with both children and spouse	1878	58.50	.87	.34
Household size				
1-2 members	166	5.16	.75	.43
3-5 members	1045	32.57	.84	.37
More than 6 members	2000	62.27	.86	.35

Source: Own calculation based on BLSS 2012.

4.1.4 Social Capital Characteristics

The vast majority (89%) of elderly population are not members of any association/social groups, while very few (11%) are actually active members. Nearly nine out of ten (88%) of the elderly have close friends and 12% do not have any close friends. This indicates, in subtle ways, how Bhutanese are still closely knit. Regarding the three trust indices, the proportion of elderly in each index is fairly distributed, however, with slightly higher proportion of elderly who feel that there is trust (medium trust – 34%) in the community compared to 33% each in low and high trust indices. A majority of (94%) of elderly reported that neighbors are helping each other compared to only 6% of elderly who reported that neighbors never help each other in times of need such as death or emergencies. More than two-thirds of elderly (79%) have not

worked for the benefit of the community, whereas only slightly more than 10% each have actually worked either because it was required by community or they volunteered themselves. Another one-third (33%) of elderly have participated in community activities, while about 77% have not participated in any community activities. The statistics reveals that majority of elderly population (93%) have reported that they would contribute either time or money for the benefit of the community as opposed to only 7% of elderly population who reported they would not contribute. A majority of (84%) of the elderly persons have interacted with other people one month before the survey. Average frequency of interaction taken place was 3.2 times for the entire elderly population. Only about 8% of elderly population have spent some amount on religious/ritual activities as opposed to large majority (92%) who have not spent any amount to rituals. The mean, standard deviation and other details of elderly population is shown in Table 5.

Table 5: Percent Distribution of Social Capital Factors, Mean Happiness and Standard Deviation of Bhutanese Elderly Population Older than 60 Years.

	Distribution		Happiness	
Variables	**N**	**Percent**	**Mean**	**SD**
Membership status of social group				
Member	340	10.58	.88	.33
Not member	2871	89.42	.84	.36
Close friends status				
Yes	2813	87.59	.85	.35
No	398	12.41	.80	.40
Trust index				
Low trust	1070	33.31	.80	.39
Moderate trust	1077	33.57	.84	.37
High trust	1063	33.12	.89	.31
Status of neighbors helping each other				
Yes	3014	93.87	.85	.36
No	197	6.13	.82	.39
Worked with others to benefit community (type of work)				
Not worked	2528	78.73	.85	.36
Worked as required	351	10.93	.86	.35
Work volunteered	332	10.34	.79	.41
Participation in community activities				
Yes	1044	32.50	.81	.39
No	2167	67.50	.86	.35
Willingness to contribute time/ money				
Yes	2990	93.12	.85	.35
No	221	6.88	.78	.41
Interaction with people				
Yes	2701	84.13	.84	.36
No	510	15.87	.85	.36
Religiosity (amount spent for rituals as proxy)				
Yes	244	4.60	.87	.34
No	2967	92.40	.84	.36

Source: Own calculation based on BLSS 2012.

4.1.5 Economic Characteristics

The average income for Bhutanese elderly population is ngultrum 142,125 (USD 2,100). The median income is ngultrum 60,000 (USD 900) meaning that half of the elderly population has income less than ngultrum 60,000, while the other half of the elderly population has income more than ngultrum 60,000. This means that half of the elderly population are surviving on meager sum of Nu 5,000 (USD 76) per month. Nine out of ten elderly population (90%) own dwelling/house. The proportion of elderly population that live in poor and mediocre housing conditions account for about 37% each, while 25% represent elderly that live in a good housing condition. About 37% of elderly population have savings account, indicating that there is low level of saving habits among the Bhutanese elderly population. One in five elderly population (20%) have availed loans or have debts. About 7% of the elderly have faced food shortages in the 12 months before the survey, which is more or less, a rural phenomenon. The statistics reveal that about 8% of the elderly population perceive that they are not poor compared to about 66% of the elderly that perceive they are neither poor nor non-poor. Another 26% of elderly perceive that they are relatively poor. The statistics show that a larger proportion (43%) of elderly population (household where elderly live) possess rich assets compared to elderly that possess mediocre assets (41%). A small proportion of elderly population (16%) possess poor assets. The mean, standard deviation and other details of elderly population is shown in Table 6.

Table 6: Percent Distribution of Economic Factors, Mean Happiness and Standard Deviation of Bhutanese Elderly Population Older than 60 Years

	Distribution		Happiness	
Variables	**N**	**Percent**	**Mean**	**SD**
Income (Av.=142125, SD=724871, Min=0, Max=3.00e+07)				
Housing ownership				
Own a house	2903	90.42	.84	.36
Not own a house	308	9.58	.85	.36
Housing condition index				
Poor condition	1219	37.96	.84	.37
Mediocre condition	1196	37.25	.83	.37
Good condition	796	24.79	.88	.33
Status of savings account				
Yes	1190	37.07	.90	.30
No	2021	62.93	.81	.39
Loan/debt status				
Yes	633	19.71	.86	.35
No	2578	80.29	.84	.36
Situation without food				
Yes	220	6.85	.61	.49
No	2991	93.15	.86	.34
Social status (feeling of poor)				
Not poor	256	7.96	.94	.24
Neither/nor poor	2108	65.66	.89	.31
Poor	847	26.38	.70	.46
Asset Index				
Poor	522	16.26	.87	.33
Mediocre	1316	40.98	.82	.39
Rich	1373	42.77	.86	.34

Source: Own calculation based on BLSS 2012.

4.2 Multi-collinearity and Goodness of fit Tests

Multi-collinearity test was conducted involving all the explanatory variables identified for this study using correlation and variance inflation factor (VIF). The pair-wise correlation among the explanatory variables was conducted. The result is given in

Appendix 2. The correlation result shows that there are few variables that are moderately (0.4 to 0.6) to strongly (0.6 to 0.8) correlated. The explanatory variables that are moderately correlated are literacy with education, housing with urban, and asset index with urban. The explanatory variables that are strongly correlated are household size with children below 12 years old, and participation in community activities with type of community work contribution for the benefit of the community.

For further scrutiny, explanatory variables are tested using VIF. The VIF test was done after running normal regression of dependable variable on explanatory variables. Applying the rule of thumb of VIF more than 2 (University of California, Los Angeles (UCLA), n.d. online), variable household size has been detected to have collinearity with children below 12 years old (See Appendix 3). Thus, the variable household size is dropped from the explanatory variables. Similarly, the variable education is also dropped, but replaced by literacy (who can read or write any single language) for final analysis. Further, variable participation in community activities has also been dropped as it has strong correlation with types of work contribution for the benefit of the community according to correlation result matrix. Midi, Sarkar, and Rana (2010) studied collinearity diagnostics and concluded that, without increasing sample size, excluding or omitting one of the correlated variables reduces multicollinearity to a great extent.

After dropping explanatory variables of household size, education, and participation in community activities, a goodness of fit test was conducted using Hosmer-Lemeshow goodness-of-fit test. As a standard rule of thumb, a large chi square value is considered

as goodness of fit in the model. The test was done after running logistic regression of dependent variable on explanatory variables. The Hosmer-Lemeshow goodness-of-fit test result showed that the model was fit for final analyses (chi square=6.34 and probability chi square of 0.61, n=3211).

4.3 Logistics Regression Results

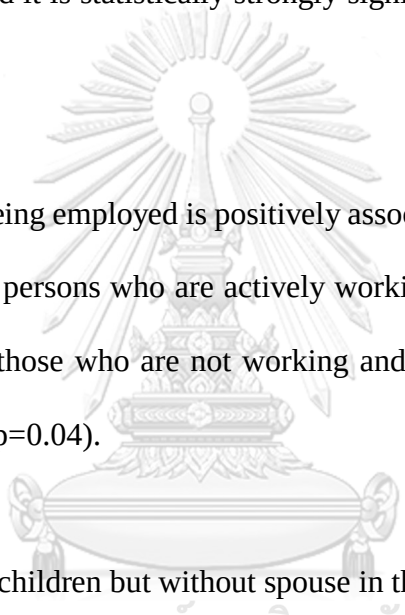
In this section, result of the logistics regression analyses is presented. The result of the logistic regression describes the likelihood or odds of Bhutanese elderly being happy based on carefully selected explanatory variables. The Table 7 illustrates the results of the logistics regression based on five models. In the first model, the dependent variable "happy" was regressed on demographic characteristics of elderly population. In the second model, factors related to living arrangement was controlled. In the third model, social capital variables were added. In the fourth model, economic variables were controlled. Finally, in the fifth model self-reported health status and religiosity were controlled to examine their combined effect on elderly happiness.

The fifth regression model, which is a full model, shows that variables like being in central region, being employed, living with children but without spouse, living with both children and spouse, perceived moderate and high trust, income, having savings account and religiosity are strongly positively associated with elderly's happiness, whereas, community work contribution, volunteerism, a situation without food, and social status or feeling of neither poor nor non-poor and feeling of poor are strongly negatively associated with the elderly's happiness. Having close friends and willingness to contribute time or money for the benefit of the community have slight

positive association with elderly happiness, while on the other hand, the area of residence (being in urban) have slight negative association with elderly happiness.

The result shows that controlling for other factors, there is greater likelihood of being happy for elderly population in central region. Specifically, for the elderly persons in the central region the odds of being happy is 1.6 times the odds for the elderly persons in the eastern region and it is statistically strongly significant at 95% confidence level (p=0.001).

This study found that being employed is positively associated with the happiness of the elderly. For the elderly persons who are actively working, the odds of being happy is 1.3 times the odds for those who are not working and it is statistically significant at 95% confidence level (p=0.04).



The elderly living with children but without spouse in the household are more likely to report being happy. Specifically, for the elderly living with children, the odds of being happy is 2 times that of the odds for the elderly who live without children and spouse, and it is statistically strongly significant at 99% confidence level (p=0.0001). Similarly, those elderly who live with both spouse & children are happier than those who live without them and it is statistically at 95% confidence level (p=0.002).

Those elderly that believe that there is strong trust in the community are positively associated with higher degree of happiness than the ones who perceive that there is low trust in the community. Particularly, for elderly who believe that there is moderate trust

and high trust, the odds of being happy are 1.4 times and twice respectively that of the odds for those elderly who believe that there is low trust. Both these show statistically high significance at 95 and 99% confidence level (p=0.008 and p=0.0001 respectively).

The elderly who earn one unit higher income are more likely to make them happy. For one percent increase in income of elderly persons, the log odds of being happy is 1.1 times than the odds for those who do not earn and it is statistically strongly significant at 95% confidence level (p=0.001).

On a similar note, those elderly who have a savings account are more likely to be happy than those who do not have one. By having savings account, the odds of the elderly being happy is 1.5 times the odds for those who do not have account and it is statistically significant at 95% confidence level (p=0.002).

This study shows that being religious has positive and significant association with the elderly's happiness. Particularly, being religious or contributing/spending money on rituals in this case, will lead to 1.6 times greater in the odds of being happy than the odds for those who are not religious or do not contribute/spend on rituals and it is statistically significant at 90% confidence level (p=0.033).

Likewise, those elderly who have close friends are more likely to be happier than those who do not have, but it is only marginally significant (p=0.061).

Similarly, the odds of the elderly who are willing to contribute time or money for the benefit of the community is 31% higher than the odds for those who are not willing to contribute, but it is also only marginally significant (p=0.084).

On the other hand, surprisingly those elderly who are actively involved in voluntary community work are less likely to be happy than those who do not. Specifically, the odds for the elderly who are involved in voluntary community work is 31% less than the odds for those that do not work at all and it is statistically significant at 90% confidence level (p=0.076).

From the pain aspect of the hedonism theory, this study shows that the elderly who faced a situation without food in the past 12 months before the survey are less likely to be happy. Particularly, the odds for elderly who faced a situation without food is 66% less than the odds for those who have not faced such situations and it is statistically strongly significant (p=.0001).

The study shows that the comparison of one's status in the society also influences on happiness substantially. The comparison which is measured in terms of feeling of neither poor nor non-poor and feeling of being poor are less likely to be happy compared to those who do not feel poor. Particularly, the odds for the elderly who feel neither poor nor non-poor and feeling of being poor are 58% and 84% less than the odds for those who do not feel poor and they are statistically strongly significant (p=0.002 and p=.0001 respectively).

Surprisingly, the study shows that living in urban areas, the elderly are less likely to be happy compared to their counterpart in rural areas. Particularly, the odds for the elderly residing in an urban area is 28% less than the odds for those residing in rural area, but it is only marginally significant (p=0.092).

In contrast to other literature, this study shows that the factors such as age, gender, marital status, literacy, living with children below 12 years, living with spouse but without children, membership of association, neighborhood helping each other, interaction with people, ownership of house, housing conditions, having loans or debts, and possession of assets do not have any clear association with elderly happiness.

The Nagelkerke's R^2 shows that about 19% of the variance of dependent variable is being explained by the independent variables in the model, which is more than the R^2 produced by the ordinary least square of 13%. Comparatively the fifth model explains better than the other four models.

Table 7: Summary of Binary Logistic Regression Analysis for Variables Predicting Happiness of the Bhutanese Elderly Aged 60 Years and Older.

VARIABLES	(Model 1) odds ratio	(Model 2) odds ratio	(Model 3) odds ratio	(Model 4) odds ratio	(Model 5) odds ratio
Constant	2.978***	1.796†	0.581	1.513	1.605
	(0.754)	(0.579)	(0.229)	(0.883)	(0.946)
Age70-79	0.981	0.985	1.005	1.037	1.033
	(0.110)	(0.111)	(0.114)	(0.122)	(0.122)
Age80+	0.781	0.789	0.776	0.786	0.791
	(0.119)	(0.124)	(0.123)	(0.131)	(0.132)
Male=1	0.946	0.937	0.924	0.985	0.983
	(0.099)	(0.099)	(0.099)	(0.111)	(0.111)
Married=1	1.175	0.939	0.939	1.121	1.093
	(0.271)	(0.229)	(0.237)	(0.296)	(0.289)
Urban=1	1.077	1.085	1.176	0.729†	0.724†
	(0.137)	(0.138)	(0.155)	(0.137)	(0.136)
Central=1	1.871***	1.809***	1.776***	1.538**	1.572**
	(0.234)	(0.229)	(0.233)	(0.218)	(0.224)
Western=1	1.576***	1.520***	1.458**	0.988	1.014
	(0.184)	(0.180)	(0.179)	(0.143)	(0.148)
Literate=1	1.563**	1.607**	1.642**	1.156	1.147
	(0.235)	(0.243)	(0.254)	(0.187)	(0.187)
Employed=1	1.080	1.141	1.120	1.267*	1.275*
	(0.120)	(0.127)	(0.126)	(0.150)	(0.151)
Living with children below 12 yrs=1		1.118	1.083	0.949	0.952
		(0.118)	(0.117)	(0.109)	(0.110)
Other type of living arrangement (Reference = Living without children and spouse)					
Living with spouse but without children		1.433†	1.433†	1.415†	1.399
		(0.275)	(0.275)	(0.291)	(0.289)
Living with children but without spouse		2.479***	2.326***	2.082***	2.090***
		(0.471)	(0.439)	(0.422)	(0.426)
Living with both spouse & children		2.215***	2.100***	1.784**	1.799**
		(0.384)	(0.362)	(0.338)	(0.344)
Member of association=1			1.230	1.016	1.017
			(0.240)	(0.209)	(0.211)
Having close friend=1			1.369*	1.314*	1.295†
			(0.182)	(0.181)	(0.179)
Moderate trust=1			1.402**	1.393**	1.389**

VARIABLES	(Model 1) odds ratio	(Model 2) odds ratio	(Model 3) odds ratio	(Model 4) odds ratio	(Model 5) odds ratio
			(0.165)	(0.172)	(0.172)
High trust=1			2.027***	1.994***	2.000***
			(0.271)	(0.278)	(0.279)
Neighbor helping each other=1			1.214	1.238	1.221
			(0.227)	(0.246)	(0.243)
Community work (required=1)			1.130	1.067	1.065
			(0.210)	(0.208)	(0.208)
Community work (volunteered=1)			0.740†	0.694*	0.689*
			(0.125)	(0.122)	(0.122)
Willingness to contribute time/ money=1			1.551**	1.311†	1.315†
			(0.239)	(0.209)	(0.209)
Interaction with people=1			1.063	1.005	0.989
			(0.146)	(0.145)	(0.143)
Income (log of income)				1.074**	1.074**
				(0.0237)	(0.0237)
Having housing=1				0.983	0.981
				(0.199)	(0.199)
Medium housing condition index=1				0.942	0.936
				(0.118)	(0.117)
Good housing condition index=1				0.947	0.920
				(0.170)	(0.166)
Having saving account=1				1.514**	1.518**
				(0.208)	(0.209)
Having loan or debt=1				1.003	1.002
				(0.145)	(0.145)
Situation without food=1				0.339***	0.338***
				(0.0569)	(0.0574)
Neither poor nor non-poor social status=1				0.423**	0.415**
				(0.117)	(0.115)
Poor social status=1				0.160***	0.156***
				(0.0463)	(0.0451)
Medium asset=1				0.858	0.845
				(0.161)	(0.159)
Rich asset=1				1.175	1.169
				(0.249)	(0.247)
Health status (Sick/injured=1)					0.956
					(0.109)
Religiosity (Spent on rituals=1)					1.560*
					(0.326)
Observations	3,211	3,211	3,211	3,211	3,211

VARIABLES	(Model 1) odds ratio	(Model 2) odds ratio	(Model 3) odds ratio	(Model 4) odds ratio	(Model 5) odds ratio
Log likelihood	-1396.68	-1377.55	-1343.78	-1232.31	-1229.82
LR Chi^2	47.07	83.23	142.40	323.12	327.75
Nagelkerke R^2	.025	.045	.079	.188	.191

*Note: Robust standard errors are in parentheses and the asterisks ***, **, * denote significance level at the 1% (p<0.001), 5% (p<0.01), 10% (p<0.05) levels, respectively and the symbol † denote significance level at 15% (p<0.1).*

** Nagelkerke's R^2 was used to investigate the explanatory or predictive power of independent variables on the variance of the dependent variable in each regression model.*

4.4 Discussion

The analyses of the levels of happiness of Bhutanese elderly population using the BLSS 2012 data showed that there are several determinants that have significant association with the elderly's happiness. The positive and significant precursors of elderly happiness include region (central), working elderly, living with children, perception of moderate and high trust in the community, income, having savings account, and being religious. Having close friends and willingness to contribute time or money are moderately, yet positively associated with the level of happiness of the elderly. The factors that are negatively and significantly associated with elderly's happiness include volunteering for a community work, a situation without food, and perceived social status (feeling of neither poor nor non-poor and feeling poor). The area of residence (being in urban area) is moderately but negatively associated with the level of elderly happiness.

This study showed that the elderly in the central region are significantly more likely to be happy than the eastern and western regions even after controlling for social capital, economic factors and self-reported health status of elderly. This could be because the

central region is experiencing a significant improvement in socio-economic development and living standard. It is in the early phase of booming tourism industry; hydropower projects and agricultural development and thus elderly people are experiencing the fruits of such developmental activities through improved income and living standard. This supported the hypothesis of an association of better demographic characteristics with elderly happiness in which the elderly in central region are likely to be happy than their eastern counterpart. This was partly explained by the hedonic adaptation of people living in the central region as well as the objective list theory wherein the fulfillment of one's objective desire lead to life satisfaction and thus make them happy.

Besides, the study showed that the working elderly are likely to be happy than non-working counterpart. It is attributable to their active engagement and contribution to society while earning an income for their own sustenance. They also derive satisfaction from being able to provide material support in terms of money to family members and relatives, especially non-working and school going children. These findings supported the hypothesis of an association of better demographic characteristics in which the elderly in central region are happy.

The study found that the elderly who live with children but without spouse and those that live with both children and spouse had positive and strong association with the elderly's happiness compared to those that live without children and spouse. The strong association between living with both children and spouse and the elderly's happiness could be mainly due to strong influence of children than spouse as was evident from

the latter's unclear statistical significance in the result. Possibly, the strong association of children could be due to material and instrumental support to the elderly from their children as reciprocity strongly pervades Bhutanese society due to its religious belief of cause and effect. Moreover, when their children perform better in life, it elevates their status in society, thus resulting in emotional and psychological fulfilment of the elderly. However, further study is required to find out children's influence on the elderly's happiness, including children's education and their socio-economic status. This contradicts the findings of study on Thai elderly in which it showed that living with children does not make a difference to level of happiness in elderly's life (Gray et al., 2008). The findings of this study supported the hypothesis of positive association of living arrangements on the level of elderly happiness.

The perception of trust in the community was positively associated with elderly's happiness. It could be because the feeling that people can be trusted in the community where they live make elderly feel secure and reliant on the community when needed especially during the time of emergencies. In the similar lines, having close friends is also positively associated with elderly happiness. According to Gray et al. (2008), "close relationship and trust in the society including family enable individuals to work more efficiently and foster cooperation, therefore, the more closely-knit society is, the better, peaceful and happier society becomes".

The willingness to contribute time or money was moderately associated with the elderly happiness and its significance drops drastically when economic variables, health status and religiosity were controlled. This could be because as the country develops the value

of time and money shifts its importance towards performing more valuable economic related activities. This indicates that the social capital is dwindling in general in the wake of modern development and changing lifestyles in Bhutan. This partially supported the hypothesis of positive association of better social capital like contribution to community with elderly's happiness.

Many studies showed that income has unequivocally positive and significant effect on elderly happiness (Ball & Chernova, 2008; Kolosnitsyna et al., 2014; Ramachandran & Radhika, 2012; Yiwei Zhou, 2013). This study also showed that income has unambiguous positive and significant effect on the Bhutanese elderly population. The reason could be because, as the living standards improve and start earning more, consumption also increases. Moreover, the elderly who earn income are able to provide material support to their children and relatives, thus increasing their satisfaction and happiness. This strongly supported the hypothesis of positive association of better economic situation in which having more income brings about happiness among the elderly.

Similarly, this study showed that having a savings account is more likely to make elderly happy. It is mainly because elderly's livelihood and sustenance are partially maintained by the incomes earned through pension benefits and remittances transferred through the saving account. Thus, by maintaining a saving account, they feel secured in terms of income and livelihood. This also goes to support the hypothesis of positive association of better economic situation with the level of elderly happiness.

Literature showed that religiosity or being spiritual is positively associated with elderly happiness (McNeil et al., 1986; Rojpaisarnkit, 2016). This is coherent to the findings of this study and that religiosity, contributing or spending on rituals in this case, enhances the level of elderly's happiness. This could be because the spirituality or religiosity, by contributing money for religious activities like rituals in this case, provides emotional fulfillment and life satisfaction for the elderly. Generally, Bhutanese are a Buddhist society and giving is one of the ten pious acts enshrined in Buddhist doctrine. This religious belief-induced monetary contribution to performing rituals are thought to avert ill health or demerits and generate merits, which is believed to have future bearings such as generating positive or good life at present life and life-after-death like being born as better person or in a higher realm.

On the contrary, this study suggested that elderly in urban areas are less likely to be happy than their counterpart in rural areas. This finding is in line with what McNeil et al. (1986) have found in their studies. This could be attributed to a changing lifestyles and cultural shift among the urban elites where the age-old tradition of respect and care for the elderly are dwindling due to development and modern influence. This finding echoes the findings of the baseline study conducted by the RSSC on senior citizens of Bhutan aged 55 and above in 2013, where 29.7% of senior citizens reported that they felt disrespected and not treated well by the general public (RSSC, 2013). Moreover, the other interesting finding that converges well with this is the disappearance of evidence of happiness of elderly living in western region after controlling for social and economic factors. It could be because the western region is more developed and possibly due to overcrowding and changing lifestyles that make elderly unhappy. This

suggests that there are other significant factors that can explain this ambiguity of association between urban or development and the elderly happiness, which deserve detail study.

In contrast to previous literature (McNeil et al., 1986; Ramachandran & Radhika, 2012; Rukumnuaykit & Pholphirul, 2016), this study showed that volunteering in a community work has negative association with the elderly's happiness, although it is marginally significant ($p<0.1$). It may be presumed that unlike young age, the elderly become disinterested in standing out and volunteering to work for community because of their old age as the tendency to take risk, health and energy level decreases in old ages. Moreover, such voluntary works are over and above the several works normally required of a household by the local authority such as to carry out water services, temple renovation, road maintenance, etc. Such volunteer works could in some ways compromise their time and effort for their own works such as business in urban area and farm works in rural areas. Thus, it is possible that the benefits of the volunteer community works might have been offset by the frequency of such volunteer work.

Similarly, elderly persons are highly likely to be unhappy when they face situations without food. This is mainly because food is necessary commodity for survival and such situations are undesirable. It indicates sign of absolute poverty and inequality. According to the Bhutan Poverty Assessment Report 2014 (NSB, 2014), 12% of the population live below the national poverty line in Bhutan and this study suggests relevant sectors in the government to come up with measures to alleviate poverty and improve the lives of the elderly people.

The perceived social status or feeling of being poor, which is a relative assessment of one's own conditions or socioeconomic status with that of another neighbor in the community has strong evidence of unhappiness among elderly. This finding relates to study by (Yiwei Zhou, 2013) on subjective wellbeing among Chinese elderly population, which showed relative poverty as strong predictor of subjective wellbeing of Chinese elderly and a study in Thailand by (Gray et al., 2008) who found that "those who felt that they are not poor are significantly happier than those who feel as poor as or poorer than their neighbors".

However, factor such as age group, gender, marital status, literacy, living with children below 12 years and spouse, membership of social group or association, neighbor helping each other, interaction with people, having house or dwelling, housing conditions, ownership of assets and health status did not have clear indication of association with elderly's happiness.

Age is not associated with elderly happiness in the logistics regression model. However, a separate chi square test statistic conducted for each age group showed that elderly over age 80 years are strongly associated with happiness and it is statistically significant at 95% confidence interval (χ^2=4.1(1), p<0.05). The bivariate logistic regression results showed that the elderly of 80 years and older are 24% less likely to be happy (se~.10, z=-2.01, p<.05) compared to their younger age groups. This may be attributable to their deteriorating health condition and reduced energy levels that affects their overall life condition and thus happiness. On a general note, the turning point of happiness or the

U-shape pattern of age in relation to happiness of general Bhutanese is 45 years with same for men, while for women it is slightly higher at 46 years. It is slightly higher than what Zhou found among Chinese elderly with 41.5 years (Yiwei Zhou, 2013).

Living with children below 12 years and spouse do not make any difference to the elderly's happiness. It could be because children below 12 years and spouse also provide the similar support as their children who stay in the same household and this does not make any difference to elderly's happiness. This contradicts the finding of the study on Chinese elderly population which showed that "elderly Chinese who live with grandchildren are associated with a much higher degree of happiness" (Chyi & Mao, 2012).

In some studies membership in social groups, community participation and contact with people have been found to be significantly associated with elderly happiness (Gray et al., 2008; Kolosnitsyna et al., 2014; Yiwei Zhou, 2013). However, this study showed otherwise. The reason could be because the Bhutanese community is generally a closely-knit society and labor contribution or being a member of any social groups such as farmers group and interaction with people usually occurs on a daily basis. Therefore, there is no marked variation in whether or not such factors would bring any change in level of happiness of the elderly.

The other economic factors such as having housing or dwelling does not have any clear association with the level of elderly's happiness. This could be mainly due to the fact

that dwelling is a basic necessity and almost all elderly have their own dwelling or even if they don't, they can stay in an affordable rental house or apartment.

Although having debt could be stressful and bring unhappiness among the elderly, the unclear association could be because those who have larger loans are either for construction of house or for business purpose which have returns through rentals and profits and those who have smaller loans feel less of a burden as they could be paid up easily either by themselves or with the help of their family members or children.

Ownership of assets do not make any difference to the elderly's life and thus happiness as most elderly households fairly own one or the other item. This finding contradicts the findings of study among Thai elderly in Thailand which showed that ownership of household possessions has a strong positive effect on happiness (Gray et al., 2008).

Many researchers found health status as one of the main factors determining an individual's subjective wellbeing in older age especially owing to the fact that health is directly proportional to aging (Angelini et al., 2012; Kolosnitsyna et al., 2014; Ross, 2005; Yiwei Zhou, 2013). However, this study showed that health status is not associated with the elderly's happiness. There are two possible reasons. The first reason could be due to limitation in question in which there is insufficient period in which the health status could be reported. This question does not consider for those who have disability previously or occurred recently more than four weeks prior to the survey period thus losing crucial amount of information health status. Inference from the findings of this study is not comprehensive and inconclusive. Thus, further study is

required to find out true association between health status and happiness among the elderly. Second reason could possibly be due to inherent Buddhist doctrine of cause and effect (karma). The Bhutanese generally believe that the existing deterioration of health is because of bad life or behavior in their past lives and thus accepts sickness or injury as part of their life.

Although individual factors themselves portrayed a different association with varying magnitude and significance, a regression run on separate characteristics[7] showed that they are jointly significantly associated with the level of elderly happiness. Therefore, it is fair to conclude that our hypotheses of elderly being in better demographic characteristics, living with children, social capital, economic and health status and religiosity are supported.

Mostly the four theories of objective list, set point, hedonism, and comparison explained association between the elderly determinants and elderly happiness. For example, in the health status, the level of happiness among the elderly are more or less explained by theories of hedonic and set point. The association of social and economic characteristics are explained mostly by the objective list theory meaning the elderly tends to be happy when they achieve what they desire most such as income, actively working, etc.

[7] Constants of each model showed a significant association with the elderly happiness: for demographic characteristics OR=2.978, RSE=0.754, p<.0001; for living arrangement OR=2.418, RSE=0.381, p<.0001; for social capital factors OR=1.529, RSE=0.338, p<.1; for economic factors OR=4.728, RSE=1.907, p<.0001; and for health status & religiosity OR=5.526, RSE=0.332, p<.0001; N=3211.

4.5 Policies Promoting Happiness

Bhutan accords high priority in ensuring happiness of its people through several policies. One of the most important policies or laws that ensures that happiness is reverberated at all times to come for its people is the country's sacred Constitution. The Article 9 of the Constitution of the Kingdom of Bhutan states that "the State shall strive to promote those conditions that will enable the pursuit of Gross National Happiness"; and further the Article 20 states that "the Government shall protect and strengthen the sovereignty of the Kingdom, provide good governance, and ensure peace, security, well-being and happiness of the people." (The Constitution of the Kingdom of Bhutan, 2008). In line with this Constitution, the gross national happiness screening tool was developed by the Royal Government of Bhutan, in order to ensure that all development policies and projects of Bhutan are carefully chosen under GNH lens and that the conditions are conducive to the happiness and wellbeing of the people, and country as a whole (GNH Screening Tool, p.1, online, n.d.). (Musikanski, 2014) in his review work on happiness in public policy highlights that, "happiness in public policy is at early stages in all countries except Bhutan, where it reaches from foreign direct investment to mindfulness training in primary schools." The government through its central planning commission, the Gross National Happiness Commission, makes sure that all the developmental policies and projects are screened before they are approved and implemented. Thus, the findings of this study offer as a baseline for the policy makers to develop policies and strategies that are geared towards improving lives of the Bhutanese elderly population and thus promote their well-being and happiness.

4.6 Assessment of Robustness

For completeness, various analysis techniques and regressions were carried out using the five models used for the interpretation of results in chapter 4. Firstly, robust command in the Stata software was used in order to correctly fit the model by avoiding heteroskedastic standard errors or to have same variance of standard errors across observation points. Because there are several factors affecting happiness, the robustness was used to overcome biasness of the omitted variables in the model.

Secondly, probit regression was run using the same five models to find out their differences in the results. The results of the probit regression showed that the magnitude, direction and significance of the determinants remained the same with the results produced by the logistic regression, except in model 1, 3, and 4 of the probit regression, where the age group older than 80 years become slightly significant. This means that the elderly being older than 80 years, increases the probability of being unhappy.

Thirdly, ordered logistics regression was also run based on the five models for easy comparison of results with that of binary logistics regression results. The results showed that the magnitude, direction and significance of almost all the determinants across five different models remained same, except few. Specifically, the income became strongly significant in ordered logistics regression (increases from $p<0.01$ to $p<0.001$). The constants for all the five models became significant indicating that all the models explain the much of the variants of the outcome variable.

Finally, the results were further compared using weighted and un-weighted data in binary logistics regression. When the weight was used, significance for the urban, employment and religiosity disappears. The significant for the literacy, living with children, and having savings account reduces. However, most literature used un-weighted data for logistics regression as using weighted data did not make significant difference.

Thus, it is fair to say that the binary logistic regression model used for analyses in this study is valid and thus the interpretations are correct.

4.7 Summary of the Chapter

The statistics showed that about 84% of the Bhutanese elderly population are happy, which is comparatively high than any literature have provided. Among the independent variables, mean happiness is greater for those elderly who perceive that they are not poor and the least for those that faced a situation without food. After the multicollinearity tests variables like education, household size, and community activity were removed from final analyses. The multivariate analyses results show that, factors like living in central region, working elderly, living with children but without spouse and living with both children and spouse, perception of moderate and high trust in the community, having close friends and willingness to contribute time or money for the benefit of the community, income, having savings account, and being religious are positive and significant predictors of elderly happiness. On the other hand, the factors like volunteering for a community work, a situation without food, and perceived social status (feeling of neither poor nor non-poor and feeling of poor) and being in urban area

are negative and significant predictors of the elderly's happiness. The robustness test results suggest that the results provided above are valid and reliable.

CHAPTER V
SUMMARY AND CONCLUSION

This chapter summarizes the thesis and concludes with policy recommendations and future research directions accordingly. The first section describes the summary of the thesis. The second section provides policy implications of the study and recommendations. The third section provides future research directions.

5.1 Summary of the Thesis

The main objectives of this study were to understand the status of happiness among the Bhutanese elderly population over 60 years of age, to examine the factors that influence their happiness and provide evidences for making appropriate policy choices for the Bhutanese elderly in general and their happiness in particular. Bhutan has claimed to be the happiest country and was in the international limelight ever since the 1970s when His Majesty the Fourth King Jigme Singye Wangchuck announced that "gross national happiness is better than gross domestic product". Moreover, the country has gained wider international attention in the recent past since Bhutan's success in bargaining to include happiness as the ninth goal of the Millennium Development Goal (MDG) in 2011 (GNHC, 2011; Helliwell et al., 2015). The gross national happiness index (GNHI) survey 2015 showed that happiness is highest for those under 30 years of age and lowest for the elderly (CBS&GNHR, 2015), while the BLSS 2012 report also reported same

result. With growing number of elderly persons in the country, there is lack of detailed study about their happiness and their associated factors, which lead to this study.

The results of this study showed that about 84% of the Bhutanese elderly population are happy, which is relatively high compared to many countries reported in the literature. Among the demographic factors, the multivariate analyses showed that area of residence, region and employment are significant predictors of the elderly happiness. The elderly in urban areas are less likely to be happy compared to their rural counterparts. On the other hand, the elderly in the central region are more likely to be happy compared to their counterpart in the eastern region. Similarly, the employed elderly are more likely to be happy compared to unemployed and it is statistically significant.

The logistics regression analyses revealed that the older-old elderly are 20% less likely to be happy than the young-old, but there is no evidence of statistical significance to show that the difference exists. However, a separate chi square test statistic conducted for each age group showed that the elderly over age 80 years is strongly associated with unhappiness. The association of other demographic factors like gender and marital status are not clear.

The analyses showed that living arrangement also do matter for the elderly's happiness. The elderly living with children are more likely to be happy than those who do not. This clearly indicates that the role of children for the old age is still strong in Bhutan through the provision of material support like money and instrumental support such as

emotional and psychological benefits. However, the elderly living with spouse and children below 12 years are not associated with their happiness.

The social capital factors like having close friends, trust in the community, community work contribution, and willingness to contribute time or money are strongly associated with the elderly happiness. The elderly who have close friends are more likely to be happy compared to those that do not have close friends. The belief that there is high trust in the community are more likely to be happy compared to those who believe that there is no trust in the community and trust make one of the most important predictors of the elderly's happiness. Those elderly who are willing to contribute their time or money for the benefit of the community are more likely to be happy compared to those who do not have such willingness. Surprisingly, the elderly who provided voluntary community work are less likely to be happy than those who do not volunteer. This could be attributed to their declining energy, but more so because they have to provide more work contributions over and above many labor contributions that usually happens almost throughout the year for one reason or the other. In contrast to previous literature, this study found that membership of social groups or associations, neighbor helping each other and interaction with people do not have any clear associations with the elderly's happiness.

The economic factors such as income, having savings account, facing a situation without food, and social status are strongly associated with the elderly's happiness. Those elderly who earn more income have greater likelihood to report to be happy compared to those who earn less income or no income. Similarly, having a savings

account can also contribute to the elderly happiness because the elderly depend on pension and remittances for their survival and livelihood. Those elderly who had faced a situation without food are less likely to be happy, which was expected. Regarding perceived social status, those elderly who felt that they are *neither poor nor non-poor* and *poor* are less likely to be happy compared to those who felt that they are *not poor*. This resounds the findings of many previous literature.

The elderly who are religious, through contribution of money for rituals in this case, are more likely to be happy than those who are not religious. Bhutanese are generally Buddhists and contributions for rituals are part of many religious activities they perform. Statistics showed that there is no association between health status of the elderly and their happiness. There are two possible reasons. Firstly, it could be because the survey question lack crucial information on health status of the elderly. The survey accounts for the sickness and injury in the past four weeks prior to the survey and does not include those who had health problems such as chronic diseases and prolonged disability. This could possibly distort whole gamut of health status of the elderly and thus their relationship with well-being. Thus, future research should explore more variables related to health status of the elderly to ascertain these findings. Secondly, it is fair to presume that this could be associated with religious belief of "cause and effect". Most Bhutanese believe that the present life is the result of their previous life and whatever they undergo in the present life including sickness is due to their past actions and there is fair level of acceptance of such a pain.

5.2 Policy Implications

This study underscores a few important key messages that might be useful to help improve lives in general and happiness in particular for the Bhutanese elderly population. This study is in line with the Royal Government of Bhutan's goal in improving wellbeing and happiness of its people through provisions of gross national happiness as driving policy in its pursuit of socioeconomic development. The important key messages are stated in the following for consideration as mentioned in chapter IV.

First of all, reiterating some of the significant factors that pose as an impediment to making Bhutanese elderly population happy. These factors include the area of residence, a situation without food, and perceived poverty or feeling of being poor. Although economic development is found as a solution to improvement the living standard and income of the people in general, the findings from this study suggest otherwise. The elderly population living in urban areas are not as happy as their rural counterparts. This indicates that modern development not only brings about improvement in living standard and income, it also has development footprints that are detrimental to wellbeing of the elderly population.

The BLSS 2012 report showed that the household size is small in urban areas compared with rural areas. The average household size is smallest (3.2) in the higher per capita consumption quintiles compared with largest (6.1) in the poorest consumption quintiles. Moreover, within each quintile, the average household size is higher in rural than in urban areas (NSB, 2013). This suggests that despite a government policy of preservation and promotion of culture and traditions through gross national happiness

policy, family structures and living arrangements are changing from extended family to nuclear family in urban areas due to change in lifestyle, influx of modern cultures, and partly due to rising inequalities.

Moreover, this study suggests that a conducive social environment like having close friends, trust in the community, and living with children or both with children and spouse are strongly associated with the elderly's happiness. The current policies of the government offer ample opportunity that can help improve or maintain social environment and extended family structures. In view of the rapid changes in social environment and family structure, it is paramount for the Government to devise detail programs and strategies that are specific to elderly persons based on regions. These must cater to their needs and foster conducive social environment for the elderly to live in.

As expected, this study found that a bad economic situation, including a situation without food is likely to make the elderly persons unhappy. Thus, in order to solve such situation, the government must identify those group of elderly population and develop food support programs as an immediate measure and develop long-term strategies and condition for them to earn a living and overcome such a situation.

On the other hand, perceived poverty or feeling poor as compared to absolute poverty can speak a lot about the mental state of elderly population. Such feeling of being poor comes only from comparison with another individual or group in a society where he or she lives in (Veenhoven, 2012; Yiwei Zhou, 2013). This is often a consequence of

inequitable development. Once the basic necessities are fulfilled, people tend to seek higher level of need for deriving happiness or satisfaction. This leads to comparison of their status with others and creates a sense of competition and desire for more.

Improving income and economic situation as this study suggest would elevate their status and contribute to economic well-being. Equitable socioeconomic development is one of the pillars of gross national happiness policy. There are rooms where the government can focus specifically on elderly population in order to improve their living standard through improved income and old age securities by creating home-based economic activities suitable to a targeted elderly people. Moreover, providing old age allowances could be an immediate solution to those elderly who do not earn an income that could enhance their living standard. Such allowance can be slowly instituted as a universal program as part of the social security system in the country. The long-term strategy could be focused on introducing government sponsored pension system including for those who do not earn. As the results suggest, the policy for ageing or old age people should be focused on area of residence and region of the country.

5.3 Contribution in Elderly Research and Directions for Future Research

Besides the baseline study conducted by the Royal Society for Senior Citizens (RSSC) in 2013, there are no other studies conducted specifically on happiness of the Bhutanese elderly population and their determinants. This study is the first of its kind, which is a small contribution towards study of happiness of Bhutanese elderly population in general.

Most of the previous literature has used demographic and socio-economic survey data to study the determinants of wellbeing and happiness of elderly population and their use have been validated. Thus, this study is unique in its own way especially in the context of Bhutan, which provides a gateway for many such studies and researches in the future especially in view of growing elderly population and importance of their happiness and well-being. Since this study used secondary data from BLSS 2012, it lacked information on individual elderly and socio-economic characteristics specific to them. Therefore, in order to adequately account for the Bhutanese elderly population and their happiness, few important research areas are suggested.

Firstly, the survey does not capture information related to living arrangement of the elderly persons. Many literature revealed that there is a change in living arrangement among the elderly in many societies (Velkoff, 2001). Literature also points out impacts of such changes on the elderly's living conditions and well-being (Palloni, 2011; Velkoff, 2001). This study attempted to find out the association between the living arrangement and their happiness, and the results show that living with children is significantly associated with their happiness. However, it is not clear what causes this strong association, although it is presumed that children's socioeconomic status might have played a role. Thus, future research must focus on the relationship between children's socioeconomic status and the level of elderly happiness.

Secondly, there are differences in the level of happiness of the elderly based on region and area of residence. This study is limited to the level of happiness among the elderly

population in general. In this respect, future research should focus on the elderly happiness based on area and region, including ethnicity and religion.

Thirdly, it was found that employment is positively associated with the elderly happiness. However, it is not clear what type of occupation among the employed elderly was associated with their level of happiness. Therefore, it is suggested that the future research should focus on association between occupational status and the elderly happiness.

Fourthly, many literature reported that health status is strongly associated with the elderly happiness – poor health condition leads to lower level of happiness among the elderly and vice versa (Cid et al., 2008; Kolosnitsyna et al., 2014). However, this study found no clear association with the level of elderly happiness. This could be owing to limited information in the survey question related to health conditions of the elderly persons. Therefore, further data is required to ascertain the findings of this study.

Fifthly, this study found that volunteering for community work is likely to make the elderly unhappy, which is surprising. The previous literature show a mixed result. One literature suggest that volunteering contributes to well-being of the older persons (Willigen, 2000), while another literature points out that volunteer has upper bound and lower bound, beyond which it diminishes well-being among the elderly (Windsor, Anstey, & Rodgers, 2008). In this respect, future research must include frequency of volunteerism and type of volunteer works that the elderly perform.

Sixthly, many previous literature showed that income in unequivocally significantly associated with the elderly happiness. However, the survey question pertains to only household income and does not include an individual income of the elderly. Such duplication of household income to individual elderly for analysis might conceal true story of the elderly well-being. Thus, it is paramount to include personal level income in future research.

Finally, this study found that religiosity is associated with the elderly happiness. Owing to the lack of information, this study used contribution of money for rituals as proxy variable for religiosity. However, this does not account much of the information related to religious activities that typical Bhutanese elderly persons are used to practicing and it play significant role on their everyday life. Thus, it is suggested that future research should take into account information related to religious activities and their perception of life.

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APPENDIX

Appendix 1: Classification of Region

Table 8: Classification of Region in Bhutan

Region	Dzongkhags (Districts)
Western	Thimphu
	Paro
	Haa
	Samtse
	Chhukha
	Punakha
	Gasa
Central	Wangdue Phodrang
	Dagana
	Tsirang
	Sarpang
	Zhemgang
	Trongsa
	Bumthang
Eastern	Lhuntse
	Mongar
	Pemagatshel
	Samdrup Jonkhar
	Trashigang
	Trashiyangtse

Source: Adapted from Dechen, P. (2013).

Appendix 2: Multicollinearity Test 1

Table 9: Multicollinearity Test 1: Results of Pair-Wise Correlation among the Explanatory Variables Used in the Logistics Regression Analysis

	Age	Male	Married	Urban	Region	Literacy	Employment	Kid12yrs	Other type of LA
Age	1								
Male	-0.0003	1							
Married	-0.005	-0.0357	1						
Urban	0.0046	-0.0181	0.0222	1					
Region	0.0237	0.0164	-0.0074	0.2514	1				
Literacy	-0.1014	0.3326	0.0066	0.1651	0.0742	1			
Employment	-0.333	0.2059	0.0102	-0.1913	-0.0774	0.1084	1		
Kid12yrs	0.0017	-0.0387	0.0148	0.0002	0.0061	-0.0696	-0.1106	1	
Other type of LA	-0.0792	0.0762	0.1510	0.0097	0.0523	0.0432	0.0135	0.2493	1
Membership	-0.0238	-0.0029	-0.0135	-0.0784	-0.0233	0.0365	0.0214	0.0609	0.0426
Close friend	-0.0089	0.0016	0.0254	0.0615	0.0072	-0.0148	-0.0246	0.0860	0.1201
Trust index	0.0033	-0.0037	0.0086	-0.1456	0.0158	-0.0344	0.0480	-0.0033	0.0197
Neighbor help	-0.0123	0.009	-0.0039	-0.1066	-0.0765	-0.0621	0.0272	-0.0216	0.0038
Com work	0.0126	0.0028	0.0011	-0.0814	0.0483	0.0117	-0.0416	0.0383	0.0493
Time/money contribution	-0.0128	0.0385	-0.0073	0.0311	0.0742	0.0452	-0.0197	0.0614	0.0837
Interaction	-0.0091	-0.0027	0.0053	0.0141	0.0515	-0.0102	-0.012	0.0179	0.0691
Income	0.0126	0.0079	-0.0149	0.2926	0.2733	0.1259	-0.0463	0.1253	0.1202
Housing	0.0185	0.0183	-0.0145	-0.5282	-0.224	-0.0905	0.1288	-0.0331	-0.017
H. condition index	0.0062	-0.0361	0.0248	0.4620	0.253	0.1684	-0.1451	0.0051	0.0525
Saving	-0.0255	0.0009	0.0169	0.3734	0.1515	0.2070	-0.1197	0.0933	0.1033
Loan or debt	0.0229	-0.0243	0.004	0.1247	0.0081	0.0379	-0.0661	0.1092	0.0696
Without food	0.0264	-0.0176	0.0005	-0.1184	-0.0534	-0.0671	0.0287	-0.0347	-0.0346
Poor status	0.0015	0.0033	0.0153	-0.2614	-0.2452	-0.1719	0.0953	-0.0449	-0.0712
Asset index	0.0225	0.0275	-0.0245	-0.5852	-0.1482	-0.1509	0.1619	0.0513	0.0498
Health status (sick/injured)	0.0668	-0.0903	0.0208	-0.015	-0.0619	-0.0478	-0.1008	-0.0073	-0.0356
Religiosity	-0.0024	-0.02	0.0315	-0.0172	-0.1158	0.003	-0.0123	-0.0221	-0.0411

Pair-wise correlation continued…

	Membership	Close friend	Trust index	Neighbor help	Community work	Time/ money cont	Interaction	Income	Housing
Membership	1								
Close friend	0.0402	1							
Trust index	0.0946	0.1453	1						
Neighbor help	0.0304	0.1249	0.2513	1					
Community work	0.2206	0.0313	0.0489	0.0325	1				
Time/money contribution	0.0431	0.1687	0.1259	0.1335	0.095	1			
Interaction	0.0393	0.1545	0.0705	0.1654	0.0693	0.1008	1		
Income	0.0405	0.0538	0.0356	-0.0455	0.0147	0.073	0.0296	1	
Housing	0.0598	-0.0725	0.1218	0.0674	0.0528	-0.016	-0.015	-0.2058	1
HC index	0.0027	-0.0082	-0.099	-0.0951	-0.003	0.0663	0.0291	0.2921	-0.3385
Saving	0.0659	0.069	-0.0279	-0.0553	0.0272	0.0789	0.066	0.3201	-0.2602
Loan	0.0609	0.03	0.0099	0.0009	0.0511	0.0824	0.0527	0.116	-0.049
Without food	-0.0082	-0.0477	-0.0257	-0.0522	0.0254	-0.0315	-0.0109	-0.1826	0.0845
Poor status	-0.0363	-0.047	0.0258	0.0594	-0.0556	-0.115	-0.0445	-0.2769	0.1522
Asset index	0.0719	0.0092	0.1784	0.1078	0.0687	-0.0008	-0.011	-0.1869	0.4283
Health status	-0.0088	-0.0419	-0.0207	-0.0385	0.0401	-0.0795	-0.0271	-0.0572	0.0162
Religiosity	0.0106	0.0307	-0.0073	0.0361	0.0148	-0.0217	0.0413	-0.0394	0.0243

Pair-wise correlation continued…

	HC index	Saving	Loan or debt	Without food	Poor status	Asset index	Health status	Religiosity
HC index	1							
Saving	0.3908	1						
Loan	0.1501	0.2066	1					
Without food	-0.1512	-0.1604	0.0204	1				
Poor status	-0.3427	-0.2998	-0.1226	0.1732	1			
Asset index	-0.5093	-0.3521	-0.1342	0.0756	0.2236	1		
Health status	0.0026	-0.0438	0.0402	0.0598	0.0729	-0.0357	1	
Religiosity	0.0253	-0.0159	0.0009	0.0109	0.0692	-0.0305	0.2741	1

Appendix 3: Multicollinearity Test 2

Table 10: Multicollinearity Test 2: Variance Inflation Factor for Independent Variables

Variable	VIF	Tolerance (1/VIF)
Area (Urban=1)	2.00	0.500679
Asset index	1.89	0.528499
Housing condition index	1.67	0.598790
Housing	1.47	0.678212
Saving	1.43	0.700721
Income	1.29	0.772345
Employment status	1.28	0.780586
Social status (feeling of poor)	1.28	0.779912
Literacy	1.25	0.799868
Other type of living arrangement	1.15	0.870463
Male	1.20	0.832812
Region	1.21	0.825246
Age group	1.16	0.859121
Living with children below 12yrs	1.14	0.879591
Trust index	1.15	0.870893
Neighbor helping each other	1.14	0.879456
Health status (sick/injured=1)	1.12	0.888936
Religiosity (amount spent on rituals)	1.11	0.900427
Close friends	1.10	0.907780
Willingness to contribute time/money	1.10	0.912327
Loan or debt	1.09	0.917016
Marital status (married=1)	1.03	0.968200
Community work type	1.08	0.921935
Membership of association	1.08	0.923310
Situation without food	1.08	0.925000
Interaction with people	1.07	0.936135
Mean VIF	1.25	

Appendix 4: Bhutan Living Standard Survey 2012 Questionnaires

དཔལ་ལྡན་འབྲུག་གཞུང་།
རྒྱལ་ཡོངས་སྐྱེས་དཔྱད་བཀོད་འཛིན།
National Statistics Bureau
Royal Government of Bhutan

འབྲུག་འཚེ་བའི་གནས་ཚད་བརྟག་ཞིབ་ ༢༠༡༢ །

Bhutan Living Standards Survey 2012

HOUSEHOLD IDENTIFICATION

HH1. Dzongkhag : ____ — ☐☐

HH2. Town / Gewog: ____ — ☐☐

HH3. Block / Chiwog Number: — ☐☐

HH4. Chiwog / Block: ____

HH5. Structure Number (urban only): — ☐☐

HH6. Household Serial Number: — ☐☐

HH7. Name of the head of household: ____

HH8. Phone/Mobile No. ____

HH9. Interviewer's name and signature | Name | Signature

HH10. Supervisor's name and signature : | Name | Signature

HH11. Date of interview (day/month): ☐☐ / ☐☐ / 2012

HH12. Date of control by supervisor (day/month): ☐☐ / ☐☐ / 2012

HH13. Status of questionnaire:

1. Completed
2. Not completed due to refusal
3. Not completed, household not found
4. Incomplete

☐

HOUSEHOLD ROSTER

Write down the names of all persons who normally live and eat together in this household. Include arm force personnel living in dekha, in-country students staying as boarders, monks/nuns inside Bhutan and students/monks/nuns outside Bhutan. Also include visitors who are currently staying in the household .

Start with the head of the household (**there should be only one head per household**)

HL.1 Sl. No.	**HL.2** Name	**HL.3** Relationship to the head	**HL.4** Sex *1. Male 2. Female*	**HL.5** Age in completed years
0 1		0 1		

Codes for relationship to the head:

1. Self (head)
2. Husband/Wife/ Partner
3. Son/Daughter
4. Father/Mother
5. Sister/Brother
6. Grandfather/ Grandmother
7. Grandchild
8. Niece/nephew
9. Son-in-law/ Daughter-in-law
10. Brother-in-law/ Sister-in-law
11. Father-in-law/ Mother-in-law
12. Other family relative
13. Live-in-servant
14. Other non-relative

BLOCK 1.1 - DEMOGRAPHICS (ALL MEMBERS)

Sl. No.	Name
D1.	Sex 1. Male 2. Female
D2.	Relationship to the head (Copy from household roster)
D3.	Age in completed years (Copy from household roster) *(If less than 1year, write 000)*
D4.	Marital status 1. Never Married (>>D6) 2. Living together (>>D6) 3. Married 4. Divorced 5. Seperated 6. Widow/ widower
D5.	How old was [NAME] at first marriage?
D6.	Nationality 1. Bhutanese 2. Non-Bhutanese
D7.	Member status 1. Usual member (>>D9) 2. Visiting member
D8.	Duration of the stay in the household? After replying to question D8,>> next member M onths Days
D9.	Is [NAME] currently present in the household? 1. Yes (>> Block 1.2) 2. No
D10.	For how long has [NAME] been away from the household? Months

BLOCK 1.2 - EDUCATION (IF AGE BELOW 3, >> BLOCK 1.3)

ED1.	Can [NAME] read and write a short text in: 1. Yes 2. No Dzongkha Lotsham English Other Language
ED2.	Has [NAME] attended school /institute? 1. Now 2. Past (>>ED11) 3. Never (ED12)
ED3.	What is the grade/level currently attended by [NAME] ? (00) Pre-primary (01) Grade 1 ..... (12) Grade 12 (13) VTI certificate (14) Diploma (15) Bachelors degree (16) Masters degree (17) Above Masters (18) ECCD/Day Care (19) Other(specify)_____
ED4.	What type of school/institute is [NAME] attending ? 1. Public 2. Private
ED5.	Where does the [NAME] currently attending school/ institute? 1. Bhutan 2. Outside Bhutan (>> next member)
ED6.	How do [NAME] usually go to school/institute? 1. Boarding (>>ED8A) 2. On foot 3. Family vehicle 4. Public transport 5. Other(specify)_____
ED7.	How long does it usually take for [NAME] to >> school/ institute (one-way)? Hours Minutes
ED8A.	How much do you have to pay for this academic year for (Nu.):(**New entrant only**) 1. Token Fee/School Dev fund 2. Boarding Fees 3. Books, supplies 4. Private tutoring 5. Public transport from/to school 6. Other edu. exp. (uniform, etc)
ED8B.	How much did you pay for the last academic year (**Other than new entrant**): 1. Token Fee/School Dev fund 2. Boarding Fees 3. Books, supplies 4. Private tutoring 5. Public transport from/to school 6. Other edu. exp. (uniform, etc)
ED9.	Did [NAME] receive any kind of scholarship? 1. Yes 2. No (>>Block 1.3)
ED10.	What kind of scholarship did [Name] receive? 1. Govt Scholarship 2. NGO 3. Private 4. Other (specify) _____ After replying to question ED10, >> BLOCK 1.3
ED11.	What is the highest grade/level completed by [NAME]? *(Use name codes as question ED3)*

ED12.	Did [NAME] ever receive other type of learning (traditional, non-formal, self learning, other)?	
	a. Yes, traditional b. Yes, non-formal BLC c. Yes, non-formal PLC d. Yes, self learning e. Yes, other (specify)_____ f. No (>> ED17)	☐ ☐ ☐
ED13.	Where did [NAME] attend or is attending? 1. Public 2. Private	☐
ED14.	How many years of this learning did [NAME] complete?	☐☐
ED15.	Is [NAME] attending this learning this year? 1. Yes 2. No (>>BLOCK 1.3)	☐
ED16.	Where does the [NAME] currently attending? 1. Bhutan (>>BLOCK 1.3) 2. Outside Bhutan (>> next member)	☐
ED17.	Ask only if [NAME] is aged 6 to 16 and is not attending school/institute. What is the main reason why [NAME] is not attending school/institute? 1. Not interested 2. Cannot afford 3. Needs to work at home 4. Needs to do economic work 5. Did not qualify 6. School is too far 7. Illness 8. Poor teaching 9. Too young / old 10. Problems in home 11. Caring sick relative 12. Pregnancy 13. Disability (specity)_____ 14. Other (specify)_____	☐☐

BLOCK 1.3 - HEALTH (ALL MEMBERS)

H1.	Did [NAME] suffer from sickness or injury in the last four weeks? 1. Yes 2. No (>> H7)	☐
H2.	Did [NAME] visit/consult a health provider without staying overnight in the health facility (referral hospital/hospital/BHU)? 1. Yes 2. No (>>H7)	☐
H3.	How many visits did [NAME] make? ☐ Visits	

H4.	What type of health provider did [NAME] visit? 1. JDWNRH 2. Govt. Regional Referral Hospital 3. Govt. District Hospital 4. Govt. BHU/ORC 5. Indigenious centres(Sowa Rigpa) 6. Chemist/Pharmacy 7. Other private hospital/ clinic 8. Retail shop 9. Lama/Pandit/Preist (Rimdo/ Puja) 10. Traditional practitioner (Pow/Pam, Shaman,Tsip, Terda, etc) 11. Indian Hospital paid by Govt. 12. Indian Hospital paid by self 13. Thai Hospital paid by Govt. 14. Thai Hospital paid by self 15. Relative/Friend 16. Self 17. Other (specify) _____	*First Visit* ☐☐ *Second Visit* ☐☐ *Third Visit* ☐☐ *Fourth Visit* ☐☐ *Fifth Visit* ☐☐ *Sixth Visit* ☐☐
H5.	How much did [NAME] spend on treatment and/service received (Nu.)?	
	Hospital Charges (consultation fees, etc)	☐☐☐☐☐
	Purchase of medicines and health accessories	☐☐☐☐☐
	Transportation (in-country)	☐☐☐☐☐
	Transportation (ex-country)	☐☐☐☐☐
	Rimdo/puja	☐☐☐☐☐
	Traditional practitioner (Pow/pam, shaman, Tsip, Terda)	☐☐☐☐☐
	Other health expenditure _____	☐☐☐☐☐

H6. What was the MAIN health reason for [NAME] seeking care?

1. Malaria or fever
2. Diseases of respiratory system including pneumonia
3. Skin diseases (eg. boils, lesions,etc)
4. TB
5. HIV/AIDS
6. Diabetes
7. Diahhroea
8. Intestinal worms
9. Accidents and injuries
10. STD (syphillies, etc)
11. Eye infection
12. Other (specify)____
13. Physical check up (prevention)
14. Immunizations (prevention)
15. Family planning (prevention)
16. Prenatal/Antenatal care
17. Dental
18. Circumcision
19. VCT
20. Other forms of counselling
21. Physiotherapy
22. Other services (specify)_____

First Visit ☐☐ *Second Visit* ☐☐ *Third Visit* ☐☐ *Fourth Visit* ☐☐ *Fifth Visit* ☐☐ *Sixth Visit* ☐☐

H7. Apart from the above expenses, how much did [NAME] spend on health-related commodities: routine medication, family planning(eg. condoms, pills), ORS, vitamin supplements (eg.cold liver, oil).

☐☐☐☐☐

H8. Was [NAME] admitted to stay overnight at a medical facility (referral hospital/hospital/BHU) in the last 12 months?

1. Yes
2. No (>>H13)

☐

H9. What was the type of health provider did [NAME] visit?

1. JDWNRH
2. Govt. Regional Referral Hospital
3. Govt. District Hospital
4. Govt. BHU/ORC
5. Indigenious centres(Sowa Rigpa)
6. Chemist/Pharmacy
7. Other private hospital/clinic
8. Retail shop
9. Lama/Pandit/Priest (Rimdo/Puja)
10. Traditional practitioner (Pow/Pam, Shaman,Tsip, Terda, etc)
11. Indian Hospital paid by Govt.
12. Indian Hospital paid by self
13. Thai Hospital paid by Govt.
14. Thai Hospital paid by self
15. Relative/Friend
16. Self
17. Other (specify) _____

First Visit ☐☐ *Second Visit* ☐☐ *Third Visit* ☐☐ *Fourth Visit* ☐☐ *Fifth Visit* ☐☐ *Sixth Visit* ☐☐

H10. How much did [NAME] spend on treatment and/service received (Nu.)?

Hospital Charges (consultation fees, cabin) ☐☐☐☐☐

Purchase of medicines and health accessories ☐☐☐☐☐

Transportation (in-country) ☐☐☐☐☐

Transportation (ex-country) ☐☐☐☐☐

Rimdo/puja ☐☐☐☐☐

Traditional practitioner (Pow/pam, shaman, Tsip, Terda) ☐☐☐☐☐

Other health expenditure ☐☐☐☐☐

_____

H11 What was the MAIN health reason for [NAME] seeking care?

1. Malaria or fever
2. Diseases of respiratory system including pneumonia
3. Skin diseases (eg. boils, lesions,etc)
4. TB
5. HIV/AIDS
6. Diabetes
7. Diahhroea
8. Intestinal worms
9. Accidents and injuries
10. STD (syphillies, etc)
11. Eye infection
12. Other (specify)____
13. Physical check up (prevention)
14. Immunizations (prevention)
15. Family planning (prevention)
16. Prenatal/Antenatal care
17. Dental
18. Circumcision
19. VCT
20. Other forms of counselling
21. Physiotherapy
22. Other services (specify)_____

First Visit ☐☐ *Second Visit* ☐☐ *Third Visit* ☐☐ *Fourth Visit* ☐☐ *Fifth Visit* ☐☐ *Sixth Visit* ☐☐

H12. Who decided for [NAME] to consult during first visit?

1. Self
2. Parents
3. Grand parents
4. Spouse
5. Children
6. Other Relatives
7. Friends
8. Neighbours
9. Other (specify) _____

☐

After replying to question H12 >> BLOCK 1.4, if woman aged 15-49 years otherwise >> BLOCK 1.5

H13 Why didn't [NAME] consult any one? (multilpe answers possible)

a. No need ☐
b. No time ☐
c. No money ☐
d. No transport/ too far ☐
e. Doesn't trust ☐
f. Other (specity)____ ☐

BLOCK 1.4 - FERTILITY (WOMEN AGED 15-49 YEARS)
(All questions refer only to live births)

F1.	Has [NAME] ever given birth? 1. Yes 2. No (>> BLOCK 1.5) ☐
F2.	How old was [NAME] when she gave birth to first child? ☐☐ years
F3.	How many children did [NAME] give birth? 1. Male ☐☐ 2. Female ☐☐
F4	How many of them are living? 1. Male ☐☐ 2. Female ☐☐
F5	Has [NAME] given birth in the last 12 months? (including non-surviving) 1. Yes 2. No (>> BLOCK 1.5) ☐
F6	How many children did [NAME] give birth in the last 12 months? 1. Male ☐ 2. Female ☐
F7	During her pregnancy, did [NAME] receive pre-natal care from a doctor or qualified nurse? 1. Yes 2. No ☐
F8	Where did [NAME] give birth? ☐ 1. Hospital / Polyclinic / Maternity 2. At home, with medical assistance 3. At home, with midwife 4. At home, without specialized assistance 5. Other (specify) _____
F9	Within 42 days of birth, did [NAME] receive any post-natal care from a doctor or a qualified nurse? 1. Yes 2. No ☐
F10	How much did you spend for the deliveries in the last 12 months? *Hospital Charges (consultation fees, cabin)* ☐☐☐☐☐ *Purchase of medicines and health accessories* ☐☐☐☐☐ *Transportation (in-country)* ☐☐☐☐☐ *Transportation (ex-country)* ☐☐☐☐☐ *Rimdo/puja* ☐☐☐☐☐ *Traditional practitioner (Pow/pam, shaman, Tsip, Terda)* ☐☐☐☐☐ *Other health expenditure* ☐☐☐☐☐ _____

BLOCK 1.5 - EMPLOYMENT (IF AGE BELOW 15, >> NEXT MEMBER)

E1.	Did [NAME] do any farming, fishing, hunting, or gathering of fruits, etc. atleast one hour in the last 7 days? : 1. Yes 2. No ☐
E2.	Did [NAME] work for money for atleast one hour in the last 7 days or have profitable business? 1. Yes 2. No ☐
E3.	Did [NAME] do any unpaid work in friends or relatives' enterprise or farm for atleast one hour in the last 7 days? 1. Yes 2. No ☐
	If there is an answer "YES" to any of the questions E1 to E3 , >> to question E6
E4.	Did [NAME] actively look for a job or try to start a new business during the last 7 days? 1. Yes (>> BLOCK 2) 2. No ☐
E5.	Why didn't [NAME] look for a job or try to start his own business in the last 7 days? 1. Believed no work available 2. Temporary illness 3. Off season 4. No approrpiate work available 5. Waiting for result 6. Waiting previous work recall 7. House/family duties 8. Studying 9. Too young /old or retired 10. Permanent disabled 11. Other (specify) _____ ☐☐ After replying to question E5, >> BLOCK 2
E6.	What is [NAME]'s status in his/her main occupation? 1. Regular paid employee 2. Casual paid employee 3. Unpaid family worker 4. Own account worker 5. Employer 6. Other (specify) _____ ☐
E7.	What is [NAME]'s main occupation? (Describe precisely; coding by NSB) ..... ☐☐☐☐
E8.	Specify [NAME]'s place of work. (Eg. Internet café, Private Nursery School, Own house, Department of Trade, etc.)(Describe precisely; coding by NSB) ..... ☐☐☐☐

BLOCK 2 - HOUSING

HS1. Type of dwelling

1. House
2. Part of house
3. Seperate Apartment
4. Shared apartment
5. other (Specify) _____

HS2. Does the household own the dwelling?

1. Yes (>>HS7)
2. No

HS3. Do you pay a rent for the dwelling (in cash or in kind)?

1. Yes, in cash
2. Yes, in kind
3. No (>>HS7)

HS4. From whom do you rent / obtain the dwelling?

1. Goverment
2. Public corporation
3. Employer
4. Private person
5. Other (specify) _____

HS5. How often does your rent increase?

1. Once a year
2. Twice a year
3. Once in every two years
4. Once in every three years
5. Other (specify) _____

HS6. How much do you pay per month? (if payment is in kind, assess the value)

After replying to question HS6, >> HS8

HS7. How much do you think you would pay if you had to rent this dwelling?

HS8. How many rooms does your household occupy, including bedrooms, living rooms and rooms used for family enterprise, but NOT counting toilets, kitchens and balconies?

HS9. What is the main construction material of the external walls?

1. Mud-bonded bricks/stones
2. Cement-bonded bricks/stone
3. Concrete
4. Mud
5. Wood / Branches
6. Other (specify) _____

HS10. What is the main construction material of the roof?

1. Metal sheets
2. Concrete / Cement
3. Tiles / Slate
4. Thatch
5. Plank / Shingles
6. Other (specify) _____

HS11. What is the main material of the floor?

1. Wood
2. Cement / Tile
3. Concrete
4. Clay / Earthen floor
5. Plank / Shingles
6. Other (specify) _____

HS12. How are the windows fitted ?

1. Glass
2. Wooden Shutters
3. Other (specify) _____

HS13. Do you or other members of your household have mobile phone?

1. Yes
2. No

HS14. Does your household have internet connection?

a. No
b. Yes, broadband
c. Yes, mobile internet
d. Yes, lease line
e. Yes, dial up
f. Yes, data card

HS15. Does your household have TV connection?

1. No
2. Yes, Cable TV
3. Yes, Direct-to-Home Satellite Antenna

HS16. What is your main source of drinking water?

1. Pipe in dwelling / compound (>> HS19)
2. Neighbours' pipe
3. Public outdoor tap
4. Protected well
5. Unprotected well
6. Protected Spring
7. Unprotected Spring
8. Rain water collection
9. Tanker truck
10. Cart with small tank/drum
11. Surface water (river, stream, dam, lake, pond ,canal, irrgation channel)
12. Bottled water
13. Other (specify) _____

HS17. How far is the source of water from your dwelling?

Indicate either the distance or the time it takes to walk to the source of water

Km m

minutes

HS18. How much time do household members usually spend per day fetching water (total)?

minutes

HS19. In a year, how many months do you have reliable water supply from the main source?

months

HS20. To treat your drinking water, do you:

1. Yes … *boil it ?* ☐
2. No …*add bleach/chlorine?* ☐
… *Strain it through a cloth?* ☐
…*Use water filter (ceramic, sand, composite, etc)* ☐
…*Solar disinfection?* ☐
…*Let it stand and settle?* ☐
…*Other(spectiy)_____?* ☐
…*Don't Know* ☐

HS21. What is the type of toilet that is used in your household?

1. Flush to piped sewer system
2. Flush to septic tank (without soak pit)
3. Flush to septic tank (with soak pit)
4. Flush to pit (latrine)
5. Flush to somwhere else
6. Flush to unknown place/Not sure/ Don't know
7. Vantilated Improved Pit
8. Pit latrine with slab
9. Pit latrine without slab/open pit
10. Long drop latrine
11. Composting toilet
12. Bucket
13. No facility/Bush/Field (>> HS25)

☐☐

HS22. Is this toilet shared with another household ?

1. Yes 2. No (>>HS25) ☐

HS23. Do you share this facility with other than your household members or open to general public?

1. Other houesholds only
2. Public facility (>>HS25) ☐

HS24. How many households in total use this toilet facility, including your own household?

1. Less than 10 households
2. Ten or more households
3. Don't know ☐

HS25. Do you have electricity?

1. No
2. Yes, from the grid (>> HS27)
3. Yes, from own generator (>> HS27)
4. Yes, solar(>>HS27) ☐

HS26. Why don't you have electricity? (multiple selection recommended)

a. No need ☐☐
b. Too expensive
c. Not available ☐☐
d. Other reason

HS27. What is the main source of lighting in your dwelling?

1. Electricity
2. Kerosene or gas lamps
3. Candles
4. Others ☐

HS28. What fuel do you use most often for cooking?

a. Gas (LPG)
b. Electricity
c. Wood ☐
d. Coal
e. Kerosene ☐
f. Dung cake
g. Bio-gas
h. Other (specify)_____

HS29. How do you usually heat your dwelling?

1. Doesn't heat the dwelling
2. Bukhari (wood/coal stove)
3. Electric heater ☐
4. Kerosene heater
5. Gas heater
6. Straw/brush/manure stove

HS30. On average, how much do you pay per month (Nu.) for:

… *water ?* ☐☐☐☐☐
… *cooking gas ?* ☐☐☐☐☐
… *electricity, in summer ?* ☐☐☐☐☐
… *electricity, in winter ?* ☐☐☐☐☐
… *kerosene for home use ?* ☐☐☐☐☐
… *candles ?* ☐☐☐☐☐

HS31. Do you use firewood?

1. Yes 2. No (>>HS34) ☐

HS32. How many backloads of firewood do you usually use per month?
How much do you pay on average for one backload (Nu.)?

☐☐

If the response is in truck load, ask the next question HS33

☐☐☐

HS33. How many truckloads of firewood do you usually use per year?
How much do you pay on average for one truckload (Nu.)?

☐

☐☐☐☐☐

HS34. Has your household constructed a house or any structure during the past 12 months?

1. Yes 2. No (>>HS36) ☐

HS35.	How much did your household spend (Nu.) for:	
	... sand ?	
	... stone/blocks ?	
	... cement ?	
	... rod (iron, etc) ?	
	... wood materials ?	
	... labour charge ?	
	... Others ?	
HS36.	How much did you spend on house maintenance, improvement and repairs (materials and associated labour wages) in the past 12 months (Nu.)?	
HS37.	Ask in urban areas only: Is there a kitchen garden?	
	1. Yes 2. No	

BLOCK 3 - ASSETS OWNERSHIP

AS1. Does your household own the following items? (Consider only items which are in working condition and if the household owns the item more than one, consider the latest)

1. Yes, acquired in the last 12 months
2. Yes, acquired more than a year ago
3. No

Sofa Set		*Bukhari*		*Motor-bike, scooter*	
Heater		*Rice cooker*		*Seshu Cjo/Kira*	
Fan		*Curry cooker*		*Family Car*	
Computer/ laptop		*Refrigera-tor*		*Other vehicle*	
Fixed tele-phone (other than mobiles)		*Modern stove*		*Washing machine*	
Choesham		*Water boiler*		*Sewing machine*	
Camera		*Micro-wave oven*		*Televi-sion*	
Foreign Bow		*Bicycle*		*VCR/ VCD/ DVD*	
Radio		*Tractor*		*Grinding machine*	
Electric iron		*Power-tiller*		*Wrist watch*	
Power chain		*Jewelry*		*Weaving tool*	

AS2. Livestock and Poultry (Indicate number of head. Write 000 if none)

Pigs		Horses	
Cattle		Sheep	
Yaks		Goats	
Buffaloes		Poultry	

AS3. Land (Write 0 if none) (local measurement, eg: 2langdo)

Wet land	Total owned		Acres
	Own operated		Acres
	Leased out		Acres
	Leased in		Acres
Dry land	Total owned		Acres
	Own operated		Acres
	Leased out		Acres
	Leased in		Acres
	Orchards		Acres

BLOCK 4 - ACCESS AND DISTANCE TO SERVICES

SR1. How do you usually go to the [SERVICE]?

1. Foot
2. Bicycle
3. Motorcycle
4. Bus
5. Car
6. Foot+vehicle
7. Other
8. Not Applicable (>> next)

SR2. How long does it take to get to the nearest [SERVICE]? (hours/minutes)

01 - Post office		h min
02 - Nearest phone (if at home, skip)		h min
03 - Police station		h min
04 - Hospital / BHU /ORC		h min
05 - Drugstore, pharmacy		h min
06 - Dzongkhag headquarters		h min
07 - Gewog headquarters		h min

08 - Source of firewood	☐	☐☐ h	☐☐	min
09 - Tarred road	☐	☐☐ h	☐☐	min
10 - Feeder road	☐	☐☐ h	☐☐	min
11 - Farm road	☐	☐☐ h	☐☐	min
12 - Food market / Shop	☐	☐☐ h	☐☐	min
13 - Bank	☐	☐☐ h	☐☐	min
14 - RNR centre	☐	☐☐ h	☐☐	min
15 - Agriculture extension centre	☐	☐☐ h	☐☐	min
16 - Livestock extension centre	☐	☐☐ h	☐☐	min
17 - Forest extension centre	☐	☐☐ h	☐☐	min
18 - Nearest monastry/temple	☐	☐☐ h	☐☐	min
19 - Petrol station	☐	☐☐ h	☐☐	min
20 - Bus station	☐	☐☐ h	☐☐	min
21 - Nearest school/Extended classroom	☐	☐☐ h	☐☐	min
22 - ECCD or Day care centre	☐	☐☐ h	☐☐	min
23 - NFE centre	☐	☐☐ h	☐☐	min

BLOCK 5 - REMITTANCES SENT

During the past 12 months, did you or any member of your household send/gave money or payment in kind (for example food or clothing) to someone outside Bhutan (including the member student/learner outside Bhutan)?

1. Yes 2. No (>>BLOCK 6) ☐

No	RM1. What is the main use of this assistance by the recipient? 1. Education 2. Medical 3. Wedding/ funeral 4. Business 5. Food & Clothing 6. Durable goods 7. other (Specify)___ 8. Don't know	RM2. What is the amount sent/given in cash during the last 12 months? (Nu.)	RM3. What is the amount sent /given in kind during the last 12 months? (estimated value in Nu.)
1	☐		
2	☐		
3	☐		
4	☐		
5	☐		

BLOCK 6 - PRIORITIES, CREDIT AND OPINIONS

PR1. How often does your household use public transport (bus, taxi)? ☐

1. Never (>>PR3)
2. Almost everyday
3. Atleast once a week
4. Atleast once a month

PR2. How would you qualify the following aspects of the public transport you are using?

1. Good
2. Satisfactory
3. Bad
4. Don't know

Frequency (schedules) ☐

Affordability (cost) ☐

PR3. Do you or anyone in your household have savings/deposit account? ☐ ☐

a. No
b. Yes, Savings
c. Yes, current banking
d. Debit/credit/ATM card
e. Other(specity)____

PR4. Did you or anyone in your household ever avail loan in the past 12 months? (Select up to 4) ☐ ☐ ☐ ☐

a. No
b. Yes, Bank
c. Yes, BDBL
d. Yes, RICB/BIL
e. Yes, NPPF
f. Relatives / friends
g. Supplier/shop
h. Money lender
i. NGO
j. Other(specity)____

PR5. Do you or anyone in your household currently wing money to anyone

1. Yes
2. No
3. Don't know

To a bank ☐
BDBL ☐
RICBL/BIL ☐
NPPF ☐
To relatives/ friends ☐
To others (NGO, etc) ☐

PR6. How do you or anyone in your household send or receive money?

a. Not applicable ☐
b. Family/friends ☐
c. Money transfer service ☐
d. Post Office money order ☐
e. Directly into bank account ☐
f. Cheque ☐
g. Other(specity)____ ☐

PR7. What is the main option for the household during emergencies

1. Use own savings
2. Borrow from family
3. Borrow from supplier
4. Borrow from money lender
5. Borrow from savings committee
6. Liquidate assets (sell livestock)
7. Other(specity)____

PR8. What insurance products/schemes do you use

a. None
b. Life insurance
c. Health insurance
d. Crop insurance
e. Property insurance (assets, livestock, housing)
f. Other(specity)____

PR9. What is the predominant way household keep savings or extra cash

1. Not applicable
2. Safe place in house
3. Relatives/friends
4. Savings committee or cooperative
5. Convert to asset (jewely, livestock, land)
6. Bank
7. Other(specify)____

PR10. In the last 12 months, has a situation been faced when there was not enough food to feed all members of the household?

1. Yes 2. No (>>PR12)

PR11. In what months did you experience this situation?

a. January
b. February
c. March
d. April
e. May
f. June
g. July
h. August
i. September
j. October
k. November
l. December

PR12. For the welfare of your household, what are the most important actions that the government should take? Give up to three responses, sorted by order of importance. Do not read the list of priorities to the respondent. If the response he/she provides is not listed below, please write it in the corresponding line below (for coding at NSB).

1st
2nd
3rd

a. Electrification
b. Build roads
c. Water supply
d. Waste management
e. Building new schools
f. Improving existing schools
g. Boarding for students
h. Vocational training
i. Housing
j. Job creation
k. Food assistance
l. Credit
m. Public transport service
n. Family planning
o. Hospitals/medical facilities
p. Provision of medicines
q. Local religious services and personnel
r. Provision of subsidized agricultural equipment
s. Improved sanitation

BLOCK 7 - SOURCES OF INCOME

No.	SI1. Which sources of income did your household earn during the last 12 months?	SI2. What is the amount earned in cash during the last 12 months? (Nu.)	SI3. What is the amount earned in kind during the last 12 months? (estimated value in Nu.)
1	Wages/Salaries (including religious fees)		
2	Sale of Agricultural products		
2A	Cereal		
2B	Fruits		
2C	Vegetables		
2D	Meat		
2E	Dairy products		
2F	Eggs		
2G	Forest wood products		
2H	Forest non-wood products		
3	Non-agricultural activities		
3A	Pottering		
3B	Weaving		
4	Remittances received		
5	Pensions		
6	Rental / Real estate		
7	Inheritance		
8	Donations received		
9	Scholarships		
10	Selling of assets		
11	Net income from business		
12	Others (specify) _____		

BLOCK 9 - NON-FOOD EXPENDITURE			LAST 12 MONTHS		LAST 1 MONTH	
NF1. During the last 12 months, has your household purchased,or received in kind, any of the following items?	Tick if YES	Code	NF2. Amount spent in cash on [ITEM] in the last 12 months (Nu)?	NF3. If received as gift/ payment in kind, what is the market value (Nu)?	NF4. Amount spent in cash on [ITEM] in the last 1 month (Nu)?	NF5. If received as gift/ payment in kind, what is the market value (Nu)?
CLOTHING AND FOOTWEAR						
Upto 13 year's Children's Garments(socks, ready made clothes)		3011				
Men's Garments(socks, ready made clothes)		3012				
Women's Garments(socks, ready made clothes)		3013				
Clothing materials (cotton, wool, silk, etc)		3014				
Weaving yarns ('therma', terry cotton, wool,'tukuli', etc)		3015				
Weaving charge, tailoring and repairs to clothing (tego/wonju, gho, etc..)		3016				
Sewing accessories		3017				
Upto 13 years Children's Footwear		3018				
Women's Footwear		3019				
Men's Footwear		3020				
Repairs to footwear		3021				
TRANSPORT AND COMMUNICATIONS						
Bus/ taxi fare & other transport fare,		3111				
Potter, pony charges, etc		3112				
Air fare		3113				
Rail/train fare		3114				
Transport (car, motorcycle, etc.) exclude power tiller, tractor		3115				
Fuel and lubricants for personal transport (petrol, diesel, mobil, etc)		3116				
Spare parts and assessories for personal transport (tyre, brake pad, etc.		3117				
Maintenance and repair of cars (service charges only)		3118				
Telephone and telefax equipment (mobiles, telephone and telefax)		3119				
Telephone and telefax services (fixed/ postpaid,internet, recharge vochers) bills		3120				
Postal services (lettters, parcels)		3121				
Other communications		3199				
HOUSEHOLD OPERATIONS						
Cleaning articles (washing soap, detergent, etc)		3211				
Gas cylinder		3212				
Cookers (rice / curry cooker, water boiler, gas stove, microwave)		3213				
Small electrical appliances (iron, mixer,)		3214				
Other non-durable household articles (matches, gas lighter, shoe polish, broom, etc)		3215				

Heaters (rod heater, panel heater,other heaters)		3416				
Lighting and heating equipments (lantern, petromax, solar, torch, 'bukhari',)		3417				
Small tools and miscellaneous and accessories (hammer, knife, nails, bulbs, tube, etc.)		3418				
Textiles (pillow, matress, blanket, curtain, etc.)		3419				
Other household items		3499				
AGRICULTURE INPUTS AND MACHINERIES						
Agriculture seeds/seedlings		3511				
Fertilizer/Manure		3512				
Livestock/poultry		3513				
Spade, powerchain, other agri. tools		3514				
Tractor/Power tiller		3515				
Others (Specify)		3599				
MISCELLANEOUS EXPENDITURE						
Expenses for rimdo/religious ceremonies		3611				
Expenses for marriages, birthdays, 'promotions', 'tika', etc.		3612				
Domestic services (servant, maid)		3613				
Expenses for 'Tshechu'/'Lomba'/'Losar'		3614				
Expenses for picnic, treats		3615				
Expenses for funerals		3616				
Hotel accommodation (room charge only)		3617				
Gifts and donations to charities		3618				
Expenses for labour hire (other than const. of structure, house maintenance)		3619				
Other goods and services (eg. Penalty, fine, 'gaw', etc.)		3620				
Any other miscellaneous expenses		3699				
NON-CONSUMPTION EXPENDITURE						
Property taxes (house, land, livestock, orchard taxes, etc.)		3711				
Vehicle related tax		3712				
Other direct taxes (income taxes, 'mithe', etc)		3713				
Pension contribution and insurance premiums		3714				
Interest payments on loans for household		3715				

BLOCK 12- SOCIAL CAPITAL

SC1. I would like to start asking you about the groups or associations (tshogpa) to which you or any member of your household belongs. These can be formal organized groups or informal groups of people who regularly get together to discuss collective action. As I read the following list of groups, please tell me if anyone in this household belongs, and tell me the most active member in decision making.

Type of association/group	Name of association/group	Most active member [use Sl. No. from the Household roster]	How actively does this person participate in group's decision-making 1 -Leader 2 -Very active 3 - Somewhat active 4 - Does not participate
1. Farmer group		☐☐	
2. Other production group		☐☐	
3. Spritual association (eg: chothuen Tshogpa)		☐☐	
4. Trade or business organization		☐☐	
5. Credit/saving group		☐☐	
6. Education group		☐☐	
7. Occupational group		☐☐	
8. Village/gewog group		☐☐	
9. Charity group		☐☐	
10. Sport or entertaintment group		☐☐	
11. Other group (specify)_____		☐☐	
12. None (>> SC17)		☐☐	

SC2. Compared to five years ago, do members of your household participate in more or fewer groups?

1. More
2. Same
3. Fewer

☐

SC3. Of all the groups to which members of your household belong, name the two most important groups

Group A_____

Group B_____

SC4. How many times in the past 12 months did anyone in this household participate in this/these group's activities?

Group A ☐☐

Group B ☐☐

SC5. How does one become a member of this/these groups? [write the response number in the respective boxes]

1. Born into the group
2. Required to join
3. Invited
4. Voluntary choice
5. Other (specify)_____

Group A ☐☐

Group B ☐☐

SC6. How much money [Nu.] did your household contribute to this/these group in the past 12 months?

Group A ☐☐☐☐☐☐

Group B ☐☐☐☐☐☐

SC7. What other goods/kinds did your household contribute to this/these group in the past 12 months [estimated value in Nu.]

Group A ☐☐☐☐☐☐

Group B ☐☐☐☐☐☐

SC8. How many days of work did your household give to this group in the past 12 months?

Group A ☐☐ days

Group B ☐☐ days

SC9. What is the main benefit from joining this group?

1. Improves my hhold's current livelihood or access to services
2. Important in time of need or emergency
3. Important for future
4. Benefits the community
5. Enjoyment/recreation
6. Spiritual
7. Improve social status
8. Improve self-esteem
9. Other (specify)

_____

Group A ☐

Group B ☐

SC10. In total, how many days of work did your household give to this/these group in the past 12 months?

☐☐ days

SC11. Does the group help your household get access to any of the following services?

1. Yes
2. No

	Group A	Group B
Education services	☐	☐
Health services	☐	☐
Water supply	☐	☐
Credit and savings	☐	☐
Agriculture input	☐	☐
Allow spiritual activities	☐	☐
Other (specify) _____	☐	☐

SC12. In the past five years, has membership in the group declined, remained same or increased?

1. Yes
2. No

	Group A	Group B
Remained same	☐	☐
Declined	☐	☐
Increased	☐	☐

SC13. When there is a decision to be made in the group, how does this usually come about?

1. Yes
2. No

....Decision imposed by the government	☐
..... Decision imposed by donors	☐
Local leaders decides and informs members	☐
.....The group members discuss & decide	☐
.....Others (specify) _____	☐

SC14. Does this group work or interact with other groups with similar goals outside the village/neighbourhood?

1. No
2. Yes, ocassionally
3. Yes, frequently

Group A ☐☐

Group B ☐☐

SC15 Who has originally founded the group?

1. Yes
2. No

	Group A	Group B
Central Government	☐	☐
Local Government	☐	☐
Donor	☐	☐
Local Leaders	☐	☐
Community Members	☐	☐

SC16. What is the most important source of funding of this group?

1. Yes
2. No

	Group A	Group B
1. *From the membership fees*	☐	☐
2. *Other sources within the community*	☐	☐
3. *Sources outside the community*	☐	☐

SC17. About how many close friends do you have these days? These are people you feel at ease with, can talk about private matters or call on for help.

☐☐ persons

SC18. If you suddenly need a small amount of money [RURAL: Enough to pay for expenses for your household for a week; URBAN: Equal to about one week wages], how many people beyond your household would be willing to lend you money?

1. No one (>>20)
2. One or two people
3. Three or four people
4. Five or more people

☐

SC19. Of those people, how many do you think are currently able to provide this money?

☐☐

SC20. If you suddenly had to go away for a day or two, could you count on your neighbours to take care of your children?

1. Definitely
2. Probably
3. Probably not
4. Definitely not

☐

SC21. If you suddenly faced a long-term emergency such as death of member in your household, how many people could you turn for help and support?

1. No one
2. One or two people
3. Three or four people
4. Five or more people

☐

SC22. In the past 12 months, how many people with a personal problem have turned to you for assistance?

☐☐ persons

SC23. In general, do you agree or disagree with the following statements?

1. Agree strongly
2. Agree somewhat
3. Neither agree nor disagree
4. Disagree somewhat
5. Disagree strongly

Most people who live in this neighbourhood can be trusted	☐
In this nehihbourhood, one has to be alert as someone will take advantage of you	☐
Most people in this neighbourhood are willing to help if you need it	☐
In this neighbourhood, people generally do not trust each other in matter of lending or borrowing money	☐

SC24. Do you think that over the last five years, the level of trust in the neighbourhood became better, worse or stayed about the same?

1. Better
2. Stayed about the same
3. Worse

☐

SC25. How well do people in your neighbourhood help each other these days?

1. Always helping
2. Helping most of the time
3. Helping sometimes
4. Rarely helping
5. Never helping

☐

SC26. If a community activity does not directly benefit you, but has benefits for many others in the neighbourhood, would you contribute your time or money to this activity?

1. Yes
2. No

TIme ☐

Money ☐

SC27. In the past 12 months, have you worked with others in your neighbourhood to do something for the benefit of the community?

1. Yes
2. No (>>29)

☐

SC28. What were the three main such activities in the past 12 months? Was participation in these voluntary or required?

1. Voluntary
2. Required

1. _____ ☐
2. _____ ☐
3. _____ ☐

SC29. Altogether, how many days in the past 12 months did you or anyone from your household participate in the community activities?

☐☐ days

SC30. How likely is it that people who do not participate in community activities will be criticized or sanctioned?

1. Very likely
2. Somewhat likely
3. Neither likely nor unlikely
4. Somewhat unlikely
5. Very unlikely

SC31. Suppose something unfortunate happened to someone in the neighbourhood, how likely is it that people in the community would get together to help them?

1. Very likely
2. Somewhat likely
3. Neither likely nor unlikely
4. Somewhat unlikely
5. Very unlikely

SC32. How strong is the feeling of togetherness or closeness in your neighbourhood?

1. Very distant
2. Somewhat distant
3. Neither distant nor close
4. Somewhat close
5. Very close

SC33. I am now going to ask a few questions about your everyday interaction.

1. *1- In the last month, how many times have you met with the people in a public place either to talk or have food or drinks?*
2. *In the last month, how many times have people visited you in your home?*
3. *In the last month, how many times have you visited people in their homes*

SC34. Name any two main local deities [lha, lu, tsan,tshomen, dralha, etc] your community worship and specify their sex?

Name _____ *Sex*

Name _____ *Sex*

SC35. In general, how happy you consider yourself to be?

1. Very happy
2. Moderately happy
3. Neither happy nor unhappy
4. Moderately unhappy
5. Very unhappy

SC36. In general, what are the five most important things you and your household would need to make your life happy [respond in order of importance; Happy life here means both emotional and physical well being or ga-kid]?

1. _____
2. _____
3. _____
4. _____
5. _____

SC37. Who is the main respondent of this questionnaire? [Enter the Sl. No. from the Household Roster]

SC38. Do you believe that your household is poor?

1. No
2. Neither poor nor non-poor
3. Poor
4. Very poor
5. Don't know

This is the end of the interview.

Remember to include on the front cover the outcome of the interview. Thank your respondents for their cooperation and express how important the inputs are for the policy making, and leave the household.

Give explanation of any unusual situation:

VITA

Full Name: Tashi Duba

Date of birth: February 2nd 1984

Place of birth: Monggar, Eastern Bhutan

Sex: Male

E-mail: tashiba224@gmail.com

Education:

1.Master of Arts in Demography from August 2016 to December 2017 at College of Population Studies, Chulalongkorn University, Bangkok, Thailand.

2.Posgraduate Diploma in Public Administration from 01/01/2009 to 30/12/2009 at the Royal Institute of Management, Thimphu

3.Bachelors of Arts (Honors in Geography) from 2005 to 2007 at Sherubtse College, Kanglung, Trashigang (An Affiliate of Delhi University, India)

Work experience:

1.Inclusive development, including development of policy, strategy, budgeting, implementation and monitoring of climate change and disability prevention and rehabilitation projects from January 2017 - present.

2.Emergency medical services and disaster management, including road safety and trauma policy formulation, strategy, advocacy and monitoring from January 2010 to December 2016.

Academic publications:

1.Co-author of study on Burden, pattern and causes of road traffic accidents in Bhutan, 2013–2014: a police record review

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