DETERMINANTS OF CHOICE OF HEALTH FACILITIES AMONG

WORKERS IN THE PRIVATE SECTOR

IN YANGON, MYANMAR

Miss Mi Win Thida

A Thesis Submitted in Partial Fulfillment of the Requirements

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ปัจจัยที่กำหนดการเลือกประเภทสถานพยาบาลของคนงานในภาคเอกชนในนครย่างกุ้ง

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การศึกษานี้มีวัตถุประสงค์เพื่อระบุปัจจัยกำหนดตัวเลือกสถานบริการสุขภาพของแรงงานที่ มีและไม่มีหลักประกันสังคม ในส่วนภาคเอกชนในย่างกุ้ง เมียนมาร์ และอุปสรรคสำหรับแรงงานที่ มีหลักประกันสังคมในการเข้ารับบริการสุขภาพจากสถานบริการสุขภาพประกันสังคม การศึกษานี้ ได้วิเคราะห์ข้อมูลปฐมภูมิจากการสำรวจแรงงาน 518 คน ในเขต เลียง ตายาร์ โดยข้อมูลลักษณะ สังคม-ประชากร การเข้าถึงการบริการสุขภาพและปัจจัยที่เกี่ยวข้องสำหรับการเข้ารับบริการสุขภาพ ถูกเก็บรวบรวมในช่วงเดือน กุมภาพันธ์ ถึง มีนาคม 2013 แบบจำลองการถดถอยโลจิสติคแบบทวิ กลุ่มและแบบพหุกลุ่มถูกนำมาปรับใช้สำหรับการวิเคราะห์ข้อมูล

การศึกษาพบว่า โรคเรื้อรังและเวลาในการรอคอย ณ สถานให้บริการสุขภาพมีผลต่อการ เลือกประเภทของสถานบริการสุขภาพอย่างมีนัยสำคัญทางสถิติ แรงงานผู้สูงอายุ แรงงานเพศหญิง แรงงานที่สมรสแล้ว และแรงงานที่มีระดับการศึกษาและรายได้ต่ำ มักจะใช้บริการสถานบริการ สุขภาพประกันสังคมมากกว่าสถานบริการสุขภาพเอกชน การรักษาด้วยตนเองเป็นเรื่องปรกติ สำหรับแรงงานทั้งที่และไม่มีหลักประกันสังคม โดยสำหรับแรงงานที่มีและไม่มีหลักประกัน สังคม สถานบริการสุขภาพเอกชนเป็นทางเลือกที่ได้รับความนิยมมากที่สุด การขาดความเข้าใจใน เรื่องของผลประโยชน์ที่ได้รับ ความเชื่อว่าคุณภาพการให้บริการอยู่ในระดับต่ำ ความกังวลเกี่ยวกับ รายได้ที่จะถูกหักจากการลางาน และการไม่มีบัตรประกันสังคม ทั้งหมดนี้ คือ อุปสรรคสำคัญ สำหรับแรงงานผู้มีหลักประกันสังคมในการเข้ารับบริการการรักษาสุขภาพจากสถานบริการสุขภาพ ประกันสังคม

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#5585641129MAJOR: HEALTH ECONOMICS AND HEALTH CARE MANAGEMENT
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This study aims to identify the determinants of choice of health facilities among insured and uninsured workers in the private sector in Yangon, Myanmar and the barriers for insured workers to access health care service from social security health facilities. This study has analyzed the cross-sectional primary data from a survey on 518 workers in Hlaing Tharyar Township. The information on socio-demographic characteristics, accessibility to health services, and need factors for health care utilization were collected during February and March 2013. The multinomial and binomial logistic regression models were applied to analyze the data.

The study finds that among insured and uninsured workers in the private sector, socio-demographic factors, presence of chronic disease, and waiting time at health facilities are statistically significantly associated with the choice of health facilities. Insured workers who are old, female, married, with low education and low income levels are more likely to visit social security than private health facilities. Self-treatment is common among both insured and uninsured workers. Additionally, for both insured and uninsured workers, private health facilities are the most popular choices. Lack of awareness about benefit package, impression that the quality of services is low, concern about the salary to be cut for taking leave, and lack of social security cards are the main barriers for insured workers to access health care services from social security health facilities.

Field of Study: Health Economics and Health Care Management   Student's Signature………..
Academic Year: 2013   Advisor's Signature………

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LIST OF ABBREVIATIONS

ASEAN	Association of South-East Asian Nations
CCS	Community Cost Sharing
KDSS	Kanchanaburi Demographic Surveillance System
MLRA	Multiple Linear Regression Analysis
MMCWA	Myanmar Maternal and Child Welfare Association
MoH	Ministry of Health
MoPH	Ministry of Public Health
NHA	National Health Account
NHC	National Health Committee
PR	Prevalence Ratio
SHI	Social Health Insurance
SSA	Social Security Act
SSB	Social Security Board
SSS	Social Security Scheme
UC	Universal Coverage
VLSS	Vietnam Household Living Standard Survey

CHAPTER I

INTRODUCTION

1.1. Problem and Significance

Formal social security had already taken root before the First World War in the southern cone of South America. The second wave came in 1940s and 1960s when several countries in Asia and Africa gained independent and adopted social security system from their colonized countries. The third wave of event began in Chile in the early 1980s with radical approach that focused on financial consolidation, individual accumulation, and privatization of the management. A further global wave of review and reform of scheme around the world now seem to be taken underway and the most important era. In many developing countries, perceive social security scheme as an effective way to combat poverty and as a mean to facilitate and safeguard long-term economic growth (ILO, 2009).

In Myanmar, a Social Security Scheme (SSS) has been implemented by the Social Security Board (SSB) under the Ministry of Labor since 1956. It is the sole health insurance scheme in Myanmar and covers publicly-owned establishments that produce revenue as well as privately-owned establishments with at least five employees. SSS uses a direct provision model, acting as a purchaser and provider, by running three worker's hospitals and 93 clinics in 110 townships in 13 states and regions, except Chin state to provide free medical care to the insured workers.

Table I-1: Labor force, labor force participation and unemployment rate in 2011

Category	Male	Female	Total
Labor Force (in Million)	19.13	11.83	30.96
Labor Force Participation Rate	82.36	50.04	66.06
Unemployment Rate	3.66	4.55	4.00

Source: Central statistical organization

According to the national statistics data in 2010, there are 30.96 million people in the labor force in Myanmar. As the country still highly relies on the agricultural center, the majority of labor forces are in the informal sector. Even though it has been established more than half a century, SSS could not extend its full coverage to the formal sector. The 1954 Social Security Act is not in line with the current situation. The contribution rate and the benefit package are not congruent with the current situation. Despite its long history, SSS only covers 1.96% of the total working population.

Even for those covered, access to healthcare can be difficult. Health care services for primary care are only available on weekdays from 9:30 am to 4:30pm which is during working hours of insured workers. Moreover, the primary health facilities are limited in number to provide health care services to the insured workers. For example, there is only one clinic with 3 medical doctors, 3 nurses in Hlaing Tharyar Township to take care of 76,070 insured workers. Besides, the locations of some health facilities are not convenient for the insured to visit for health care services. This situation makes it difficult for the insured workers to access the health care services from social security health facilities. Despite monthly contribution from their salaries, some insured workers are less likely to use and exercise their benefits from the social security scheme.

The utilization of outpatient care from the social security clinics was very low before government reforms to the 1954 Social Security Act. The numbers of outpatient visits to social security clinics and three workers' hospital was only 4.6 in 100 people in 2009-2010. However, the number has increased significantly in 2010-2011. According to the data from SSB, the number of outpatient visits increased up to 64 in 100 people in 2010-2011 and the number keeps increasing up to 71 outpatient visits in 100 people in 2011-2012. However, the utilization of outpatient care from social security clinic in Hlaing Tharyar Township is still much lower than the average utilization rate. The number of outpatient care in Hlaing Tharyar is approximately 26 in 100 insured workers in 2012-2013.

However, Myanmar has opened a new chapter of reform after the 2010 general election and introduced some democratic systems in the country. As the country opens up, many sectors have been reformed in order to move along with the ASEAN and international community. According to the long term goals of the Ministry of Health in Myanmar, all citizens will be covered by universal coverage by 2030. In order to reach universal coverage, SSS has become the main focus and has been reformed to extend its coverage. The 2012 Social Security Act was enacted in 2012 and SSB has been preparing to introduce the 2012 Social Security Act with a new contribution rate and benefit package.

Understanding the determinants of choice of health facilities and barriers among insured workers in the private sector to access health care services from social security health facilities is very important for policy makers to improve the quality of services. This, in turn, would attract factory owners and workers in the private sector to enroll in the social security scheme. By studying determinants of choice of health facilities among workers in the private sector, we could observe who the target groups of the scheme are. Apart from this, we could also determine the most influential factors that hinder or encourage insured workers in the private sector to utilize health care services from SSS.

1.2. Research Questions

- What are the determinants of choice of health facilities among insured and uninsured workers in the private sector?
- What are the barriers for insured workers who are enrolled under social security scheme to access health care services at social security health facilities?

1.3. Research Objectives

- To identify the determinants of choice of health facilities among insured and uninsured workers in the private sector

- To identify the barriers for insured workers in the private sector to access health care services at social security health facilities

1.4. Scope of the Study

This study focuses on the workers in the private sector in Hlaing Thayar Township, Yangon Region. This study emphasizes the utilization of outpatient care among workers and mainly looks at the health facilities they used when they had health problems, except emergency situation. The workers who are currently employed by private factories and firms are included in this study. The cross-sectional data was collected in February and March 2013.

1.5. Hypothesis

The predisposing factors (age, gender, marital status, ethnicity, religion, educational status, occupation), enabling factors (traveling time to health facilities, traveling cost to health facilities, waiting time at health facilities, medical cost, hospitality of the health care personnel, satisfaction with the services, income, number of children in the family), and need factors (perceived health status and presence of chronic disease) differently influenced the health care utilization patterns among workers in the private sector.

1.6. Expected Benefits of the Study

In Myanmar, the 2012 Social Security Act was enacted in 2012, and currently is in the preparation period to introduce this Act. The results from this study could provide the information on pattern of choice of health facilities and determinants of their utilization, which could influence implementation of the Act. The results of the factors that hinder or encourage the choice of any type of health facilities are expected to help the policy makers to make better decisions in improving the services of the social security scheme.

1.7. Myanmar Country Profile

Myanmar is one of the largest mainland countries in Southeast Asia with a total area of 76,578 square kilometers. The country is divided into 14 administrative states and regions. There are 69 districts and 330 townships, 82 sub-townships, 396 towns, 3045 wards, 13267 village tracts and 67285 villages (Health in Myanmar, 2012). Myanmar

has 59.78 million population with the growth rate of 1.1 percent in 2010- 2011. The population density is 71.5 square kilometer. The distribution of population is more scattered in rural than in urban areas. Only 34.3% of the country's total population resides in urban areas while 65.7 % of population is settled in rural areas (Statistical Yearbook Asia and the Pacific, 2012).

 In 2010, it was estimated that GDP per capita would be 1,749 (2005 PPP $) and with the GDP growth rate of 11.2% (Statistical Yearbook Asia and the Pacific, 2012).The country has been under military rule for more than a half century, and the health status of people is very low among the neighboring countries. However, in 2010, the country transformed into a democratic country by holding a general election and adopting a new constitution.

According to the World Bank, live expectancy at birth of the population has increased from 62 year in 2008 to 63 years in 2011.Infant mortality rate and under-5 mortality rate (per 1000 live births) decreased from 52 in 2008 to 48 in 2011 and from 68 in 2008 to 62 in 2011 respectively. Communicable diseases such as tuberculosis and HIV still remain as top national concerned diseases of Myanmar. The health expenditure per capita has increased from 11(current US$) in 2008 to 23 (current US$) in 2011 and the health expenditure by the public has also increased from 11.1 % in 2008 to 13% of total health expenditure in 2011. However the total health expenditure still remained 2% of country GDP until 2011.

Table I-2: Health indicators of Myanmar

Indicator	2008	2009	2010	2011	2012
Crude birth rate (per 1,000 people)	18	18	17	17	
Crude death rate (per 1,000 people)	9	9	9	8	
Life expectancy at birth total (year)	62	63	63	63	
Mortality rate , infant (per 1,000 live births)	52	51	49	48	
Mortality rate, under-5 (per 1,000 live births)	68	66	65	62	
Maternal mortality rate (modeled estimate, per 100,000 live births)			200		
Incidence of tuberculosis (per 100,000 people)	393	388	388	384	381
Prevalence of HIV and total (% of population ages 15-49)	0.7	0.7	0.7	0.6	
Health expenditure per capita (current US$)	11	14	17	23	
Health expenditure, public (% of THE)	11.1	11.4	12	13.0	
Health expenditure, total (% of THE)	2.0	2.1	2.0	2.0	
Population growth rate	0.7	0.7	0.8	0.8	0.8
Total population (millions)	51.18	51.54	51.93	52.35	52.79

Source: World Bank 2012

1.8. Health Care Services in Myanmar

The Myanmar health care system is pluralistic with the mix of public and private providers, and the Ministry of Health (MoH) is taking the main responsibility to provide health care services through public health facilities. MoH is providing holistic health care services including preventive, curative and rehabilitative care to the people according to social objectives set by National Health Committee (NHC). The Department of Health provides comprehensive health care services to all citizens. Other Ministries such as Ministry of Defense, Railways, Mines, Industry, Energy, Home and Transport also provide medical care to their employees. Apart from public health facilities, local NGOs such as Myanmar Maternal and Child Welfare Association (MMCWA) and Myanmar Red Cross Society (MRCS) and international donors also provide some fragments of health care services to fill the gap of health care needs of people (Health in Myanmar, 2012).

1.9. Health Care Financing in Myanmar

In Myanmar, health care financing had various experiences from one time period to another. During the period of 1948-1962, Myanmar health care financing has mainly relied on general taxation as the country followed the National Health Services (NHS). Government taxation was the major source of health care financing during 1962 to 1974. After 1974, Myanmar adopted new constitutional laws and health care services were provided according to the National Development Plan (NDP). Since that time the private sector has been growing in importance for health care financing.

Financing of health care services are from three main sources: government from general taxation, private household contribution from out-of pocket payment, and social security system and community contribution. External donations in form of assistances also play a role in health care financing. According to Myanmar National Health Account (NHA) 2006-2007, government contributes 10.11 percent of all health expenditure. The main share of total health expenditure falls into private expenditure as household out-of-pocket payment which is 84.51 percent of total health expenditure. Apart from domestic expenditure, external donors also share 5.38 percent of total health expenditure to fill the gap of health care services to the citizens.

Figure I-1: Health expenditure by source
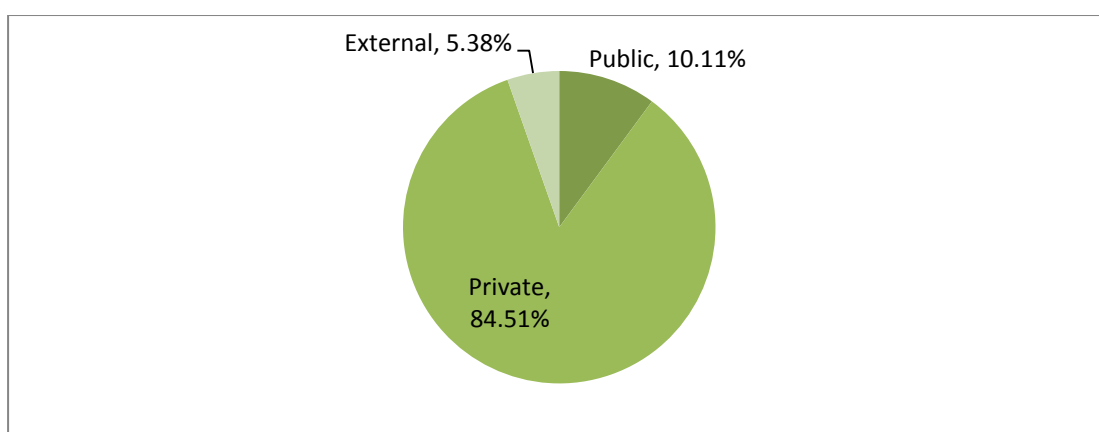
Source: Myanmar National Health Account 2006-2007

Myanmar aims to achieve universal coverage in health care for its population by 2030 (Health in Myanmar, 2012). According to long term goals of health care financing,

Myanmar is planning to expend the SSS to cover the formal sector, to implement township based health care financing schemes, social safety net and maternal and child voucher programs as pilot projects. Currently, Community Cost Sharing (CCS) scheme, Revolving Drug Fund, Trust Fund, and Social Security Scheme (SSS) are the major public health care financing schemes in the country.

CCS scheme was established in 1992. It is a user fees system with the intention to charge curative cost for health care services from the rich and provide exemption to those who could not afford their health care expenditures. According to the CCS scheme, the cost for laboratory, radio imaging, private room, drug and medical equipment are charged to those who can afford. The revenue from CCS scheme is broken down into three parts: 1) 50 percent contribute to government revenue, 2) 25 percent are used for purchasing medicine and medical equipment and 3) the last 25 percent are for maintenance of the hospitals. However, there are no clear criteria for the poor to obtain exemption and many challenges are coming up at the implementation level (Aye et al.)

The Revolving Drug Fund was introduced in 1990 by the Myanmar Essential Drug Program. The program was implemented in 9 townships as a pilot project and then extended to 100 townships in 1995. The fund was started by WHO, UNICEF, Sasakawa Foundation(Aye et al.).

 The Trust Fund is another financing source for health care and the objective is to finance poor patients who cannot pay the cost of health care at public hospitals. The policy for the Trust Fund is "ONE BED ONE LAKH"; it raises 100,000 Kyat per bed to the hospital by the donation from the community. The Trust fund is normally kept as a saving account at a bank, and the annual interest is utilized according to the trust fund management committee or the hospital management committee (Aye et al.).

1.10. **Social Health Insurance in Myanmar**

The Social Security Scheme (SSS) is the sole health insurance scheme in Myanmar. It was introduced in 1956 according to the 1954 Social Security Act. SSS has been implemented by the Social Security Board (SSB) under the Ministry of Labor, Employment, and Social Security. Despite the long history of establishment, it covers 0.5% of the total population of the country and 1.96 percent of working population (Health in Myanmar, 2012). The number of insured workers has been increasing in recent years, however the increasing rate is not significant from year to year.

Figure I-2: The progress in number of insured workers from 2007 to 2012
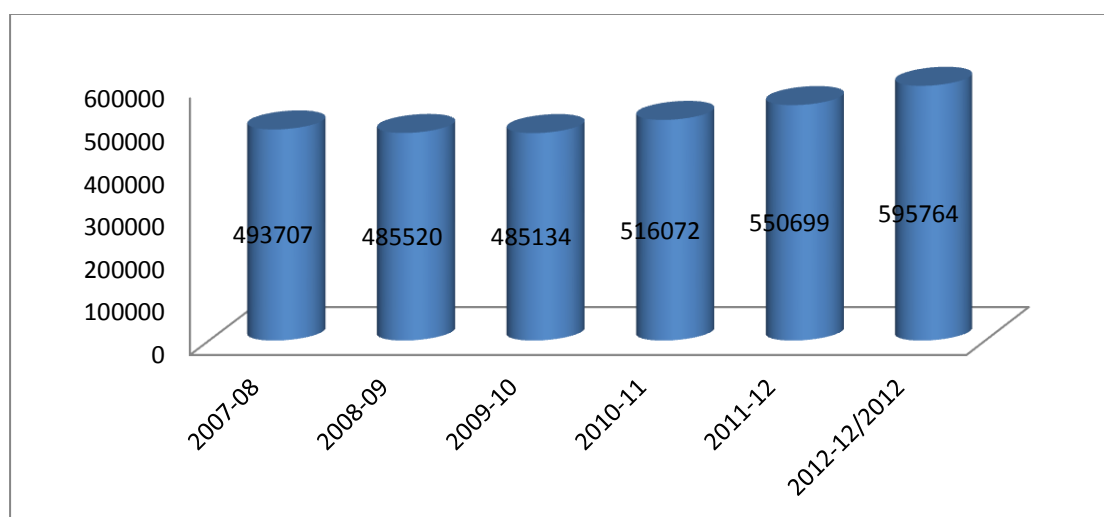
Source: Social Security Board

Among 14 states and regions, the number of insured workers is the highest in Yangon region and lowest in Kayah State. According to Myanmar statistical yearbook data, in 2010-11 there are 276,493 insured workers in Yangon region while only 917 insured workers in Kayah State.

Figure I-3: Number of insured workers by state and region in 2011
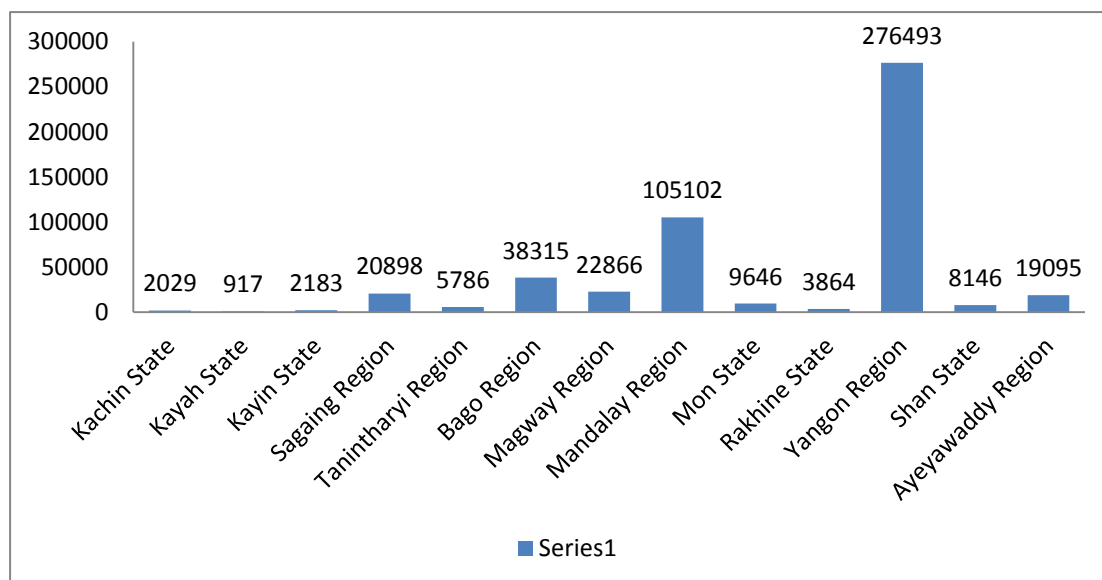
Source: Statistical Yearbook 2010-11

The four objectives of SSS are: 1) to improve the health of the insured workers in order to enhance their working ability and to boost productivity, 2) to provide effective benefits in times of social contingencies such as sickness, maternity and employment injury, unemployment, old-age, and death, and 3) to support the insured workers and their family members when the workers are unable to work and 4) to make the social security scheme cover the entire population.

In order to achieve these objectives, SSB is carrying out its duties and functions by ensuring workers enjoy the rights and protection granted under the various labor laws, providing social services for the workers, promoting higher productivity of labors and participating in international labor affairs (SSB, 2012).

The coverage groups are the state-owned enterprise's employees, temporary and permanent employees of public or private firms with five or more employees in certain establishments such as railways, ports, mines and oilfields. Employers with less than five employees, construction workers, agricultural workers and fishermen are excluded from the coverage of the social security scheme (SSB, 2012).

SSS uses a direct provision method in order to provide free medical care to the insured workers. SSB runs one 250-bed worker's hospital in Yangon, and one 100-bed Tuberculosis (TB) hospital in Htan Tabin Township in Yangon Region, and one 150-bed hospital in Mandalay. It has also opened 93 clinics to provide medical care to the insured workers in 13 states and regions across the country with the exception of Chin State.

The premium is based on tripartite contributions in which 2.5 % of the worker's salary comes from the employer, 1.5% comes from the employee's salary, and government supports capital investments as necessary. The contribution is not only in Kyats but also in US dollars for foreigners and those who work for international organizations. The contribution is collected according to 15 wage classes for those who contribute in Myanmar currency and 10 wage classes for those who contribute in US dollars.

The benefit package is divided into medical benefit and cash benefit. For cash benefit, it is categorized into: sickness benefit, maternal benefit, funeral grant, temporary disability benefit, permanent disability benefit, and survivor pension. For cash sickness benefit, 50% of the insured worker's average earning will be included from the first day of illness up to 26 weeks for one illness. Maternal benefit covers 66% of wages for 12 weeks (6 weeks before and 6 weeks after delivery). A 40,000 (Kyats) funeral grant is paid to the deceased's surviving spouse and children. Benefits of temporary and permanent disability and survival benefits are also included in the cash benefit. For medical benefit, free medical services are directly provided by SSB's clinics and Worker's Hospital. Medical services include the medical care at the clinic, emergency home care, specialist and laboratory services at a diagnostic center, necessary hospitalization, maternity care and medicine (SSB, 2011).

Table I-3: Cash benefit package and eligible period

No.	Benefit	Qualified Period	Cash
1	Sickness benefit	26 weeks	50% of wages
2	Maternal benefit	12 weeks	66% of wages
3	Funeral grant	1 month	40,000 kyats
4	Temporary disability benefit	1 month	66% of wages
5	Permanent disability benefit	1 month	Depends on loss earning capacity
6	Survivor pension	1 month	66% of wages

Source: Social Security Board

CHAPTER II
LITERATURE REVIEW

The literature review for this study will be presented in four main components, namely concept of social health insurance, health insurance and health care utilization, factors affecting health care utilization, and health care utilization in Myanmar and among Myanmar migrant workers.

2.1. Social Health Insurance

Social Health Insurance (SHI) is the compulsory form of health insurance created through the legislative process. Its original intention is meant for civil servants and formal sector workers as the premium could be easily collected from wage and salary. SHI focuses on high income groups than informal workers. Every eligible individual must enroll and pay a predetermined percentage of his/her wage and salary as a premium. In many cases, the fund is only collected from employers and employees but sometimes governments are required to contribute to the social security fund (WHO 2010).

2.2. Health Insurance and Health Care Utilization

In general, the empirical literatures suggest that health insurance has impacted on increasing utilization of health care services. Among the literature reviewed, in Vietnam, Nguyen (2012) looked at the impact of voluntary health insurance on health care utilization in Vietnam. He used a descriptive and modeling with secondary data. He observed the trend of voluntary health insurance members, categories, revenues, expenditures, and health care utilization for the whole country for a 5 years period (1993-1997). The study finds that the trend of health care utilization is increasing during this 5 year period but the number of hospital visits of voluntary health insurance members is lower than those paying out-of-pocket.

Health insurance does effect the health care utilization and it is revealed in a study from Burkina Faso Gnawali et al (2009). These researchers investigated the impact of

community-based health insurance on health care utilization in rural Burkina Fuso. The results indicate that the individuals who enroll under community-based health insurance scheme utilize outpatient services 40% more than those who are not enrolled; however inpatient utilization rate is not significantly different among those groups. Moreover, the study explains that low-income groups are less likely to enroll in the scheme and even when they are insured, utilization of health care services is still lower than middle and higher income groups. Health insurance has a statistically significant effect on utilization of health care.

In Vietnam, Xu et al (2006) analyzed the possible impacts of SHI on health care utilization and financial risk protection during transition of the economy. The data from the Vietnam Household Living Standard Survey (VLSS) conducted in 1997 and 1998 and multinomial logistic model were employed to analyze health care utilization.

The study indicates that SHI changes health seeking behavior of the individuals and also affects the choice of health facilities. Among people who reported illness, the insured individuals are more likely to visit public health facilities than private health facilities and they are less likely to use self-treatment. The higher-income group utilizes more health services than those with lower income. Individuals with age over 65 years old are more likely to use health services from all types of providers. Similarly, children under 5 years old are more likely to use public and private health facilities but less likely to use self-treatment.

In Thailand, Panpiemras, Puttitanun, Samphantharak & Thampanishvong (2011) analyzed the impact of universal health care coverage on patient demand for health care services at the hospital level. The data were obtained from Thailand's Ministry of Public Health (MoPH), Ministry of Interior, and Thailand Poverty Map database. The fixed-effect (hospital-specific effect) model was employed to analyze the health services utilization trend from 1996 to 2006.

This study predicts that the number of outpatients and inpatients increased by 55.98 and 41.34 percent respectively after launching the universal coverage (UC) program.

The results are more obvious in small hospitals than in large hospitals. Moreover, the impact is more significant in areas with lower income and large elderly population. However, the numbers of outpatient visit, inpatient visit, and hospital stay dropped after the UC program was launched. The study shows that the drop in both number of inpatients and hospital stay are more significant in the larger hospital than smaller hospitals.

In Indonesia, there is an evidence of impact of health insurance on health services utilization too. Sparrow, Suryahadi & Widyanti (2012) conducted a study to investigate the impact of the Askeskin program, a subsidized social health insurance targeted to the informal sector and the poor. They used the panel data from a national socio-economic survey conducted in 2005 and 2006 by Statistics Indonesia. They used difference-in-differences approach with propensity score matching to analyze the impact on health services utilization and health care expenditure.

They argue that the utilization of outpatient care increases with the level of welfare. About one third of outpatient visits was found in the public health facilities while the higher income groups utilize more health services from private health facilities. Utilization of public health facilities is common among all quintile groups however the utilization rate is decreased in higher-income group. In general, the utilization of outpatient visit declines from 0.19 visits per month in 2005 to 0.15 visits per month in 2006.

2.3. Factors Affecting Health Care Utilization

Many studies revealed that health care utilization vary from individual to individual based on predisposing, enabling, and need factors.

In the Philippines, Loquias, Kittisopee & Sakulbamrungsil (2006) conducted a study to apply the Andersen behavioral model in investigating the factors affecting health care utilization in the Philippines. They used the cross-sectional retrospective data from the Philippine's social health insurance. Health care utilization is defined as inpatient hospitalization and then it is operationalized into two categories; 1)

reimbursement paid by insurance scheme to the hospital where patients were admitted and 2) length of hospital stay. The explanatory variables are mainly categorized into three groups; 1) predisposing factors (age, sex, patient type, ecological or area variables and regions), 2) enabling factors (type of social insurance membership), and 3) need factors (ordinary, intensive, and catastrophic care). The Multiple Linear Regression Analysis (MLRA) was used to analyze the factors affecting health care utilization.

The study suggests that age and sex are the two predisposing variables which significantly explain reimbursement. The reimbursement rate is higher in older age than younger people. Besides demographic factors, poverty level also affects utilization; lower-economic group has higher rate of utilization than higher-economic group. Enabling factors do not have significant relation with reimbursement because all types of insurance membership have the same reimbursement rate.

All independent variables correlate with the number of hospital day. Among those factors, health status is significantly associated with health care utilization. The intensive group has longer hospital stay than ordinary group. The length of hospital stay is longer in tertiary hospital than primary hospital. Similarly length of hospital stay is longer in elderly people and dependents of the household than the members of the insurance scheme. However, length of stay is shorter in private hospitals than in public hospitals.

A cross-sectional household survey was done by Hong, Dibley & Tuan (2003) in Vietnam to identify the factors affecting utilization of health care services by mothers of children with diarrhea in three provinces of rural Vietnam. Maternal age, education, occupation, ethnicity, household residence and economic status, disease severity, time to nearest health care center, and overall satisfaction are included. Prevalence Ratio (PR) was used to identify the relationship among those factors and health services utilization. The study shows that maternal education and ethnicity are strongly associated with health care seeking behaviors. Mothers from minority groups with a lower education level and mothers whose children have only mild diarrhea are less likely to utilize health services.

Another cross-sectional study in Ethiopia done by Fistum G et al (2011) identifies the factors associated with health care utilization in the Jimma zone of Ethiopia. The study employed the Andersen behavior model by using three main factors; 1) predisposing factors (age, sex, marital status, occupation, education), 2) enabling factors (time required to reach nearest health facility, cultural acceptability and affordability of the services, and family income), and 3) need factor (perceived health status) to predict the health care utilization patterns. They used bivariate analysis and logistics regression in their analysis.

The study suggests that women are more likely to utilize health services than men while married people are 8.1 times more likely to visit health centers. Low and middle socio-economic groups are 2.6 and 3.5 time respectively more likely to visit health facilities than those from high socio-economic group. The presence of disability and health problem creates more likelihood to utilize health services. The respondents who live far from health centers and those who incur high transportations costs are less likely to visit health care facilities than those who live closer.

In Nigeria, Aigbe (2011) also applied the Andersen behavioral model to understand the maternal health care utilization pattern. He used secondary data from household surveys from seven local government areas of Lagos state of Nigeria. According to the Andersen behavioral model, he used predisposing factors (age, sex, marital status, family size, social status, education, and race), enabling factors (family income, health insurance, service availability and health level symptom or perceived sickness) and need factor (need to use service). A stepwise multiple regression technique was used to analyze the factors affecting maternal health care utilization.

The results show that maternal age is the main predisposing factor for using maternal health care services. The choice of health facilities depends on maternal education. The use of informal health facilities is common among mothers with a lower education level. The results also show that 88.1 percent of women in rural areas received antenatal care from informal sources while only 31.2 percent of women from urban utilize them. The majority of women, about 76.6 percent visited health facilities

which could be reached within 30 minutes while only 5.9 percent of women travel more than 45 minutes to get antenatal care. The quality of health care services is another influencing factor in choosing health facilities; the results suggests that 62.8 percent of pregnant women chose health facilities with prompt service and 29.3 percent of them visited health facilities with friendly services.

There is another study in Cuacao conducted by Alberts et al (1997) to explore the inequities in health care utilization among different socioeconomic groups. The study used secondary data from the Curacao Health Study carried out between November 1993 and August 1994. Health care utilization is operationalized using general practitioners, specialists, hospitals, dentists and physiotherapists and each service is categorized into the probability and volume of use. Education level is proxied as socioeconomic status to predict different health care utilization. Age, sex, and health status variables are also included in the analysis as is other explanatory variables. Logistic and ordinary least squared regression techniques are used to analyze the probability of using different type of health services and the volume of usage.

The study reveals that education level is positively related with utilization of dentists and physiotherapists. Age is not significantly associated with the utilization of general practitioners and physiotherapists but older people are more likely to visit specialists and hospitals while younger people are more likely to visit dentists. Women are more likely to visit general practitioners than men. Health status is negatively associated with utilization of all types of services except dental care.

In Canada, Curtis & MacMinn (2008) looked at the evidence of health care utilization within a 25-year span to identify the relationship between socio-economic status, health services utilization, controlling, and demographic characteristics under public health insurance scheme. They extracted the data from the Canada Health Survey (1978), General Social Survey (1991), and Canadian Community Health Survey (2001 and 2003) to analyze the differences in utilization of physicians, specialists, and hospital stay over a 25-years period.

This study finds that health care utilization is growing throughout the study period. The people with low socio-economic status (income, education, or employment) are less likely to visit physicians than those with middle socio-economic status. Individuals with low socio-economic status have lower utilization of specialist care than those with high socio-economic status. Regarding hospitalization, poorer individuals have a slightly longer stay than middle and higher socio-economic groups. The results also show that health care utilization of publicly insured individuals is strongly related with their health status.

In Sri Lanka, Vedamulla (2008) studied the factors affecting health care utilization among three common diseases; Bronchial Asthma, Ischemic Heart Disease, and Viral Fever. He conducted a cross-sectional descriptive survey and the respondents were selected randomly. The results demonstrate that patient's age, health care expenditure, household monthly income; number of dependents in the family, and religion are significantly associated with utilization of health care facilities. Age, household income, perception and religions (Buddhist and Sinhala) have positive influences on health services utilization while health care expenditure, distance to health facilities, number of family members and dependents in the family are negatively correlated with health care utilization.

2.4. Health Care Utilization in Myanmar and among Myanmar Migrant Workers

In Myanmar, Sein (2012) conducted a cross-sectional study to identify utilization of maternal health care among young married women with age from 15 to 24 years old in Kyimyingdaing Township,Yangon. The data from 196 young married women was collected by face-to-face interview by using structured questionnaires. This study employed bivariate and logistic regression models to determine the factors associated with health care utilization. The study shows that the mean number of antenatal care increases with the education level and the majority of women receive late antenatal care regardless of their residence, age, education and family income. The study also shows that place of residence, women's education and frequency of antenatal care are the key determinants for delivery place and post natal care.

Another cross-sectional study was conducted by Win (2010) to identify the determinants of demand for institutional delivery care services among reproductive age (15-49) women with a child under 3 years old in Sagaing Division, Myanmar. The data from 414 women living in three townships in Sagaing Division was collected from February to March in 2011 by using structured questionnaires. Chi-square test of independency and logistic regression model was used for data analysis. The study shows that income, education level, and parity [1]of women determine the likelihood of institutional delivery care services however distance from health facilities is not statistically significantly associated with the demand for institutional delivery.

Another cross-sectional study done by Xu et al (2012) to explore malaria treatment-seeking behavior and household affecting factors among people of Wa ethnicity. A household survey by using structured questionnaires and in-depth interview to key-format indicators were done between 1 October and 31 December 2009 in Gelongba and Mandong districts, Mengmao County, Wa State, Myanmar. The study applied logistic regression to identify the determinants of treatment seeking behavior. The study shows that family income, distance from health facility, family decision and patient characteristics are associated with delayed malaria treatment.

Another study at the Thailand-Myanmar border done by Hu & Podhisita (2008) also applied the Andersen behavior model to predict the effect of ethnicity on health care utilization. They conducted a cross-sectional study by extracting the data from Kanchnaburi Demographic Surveillance System Project (KDSS). According to the model, they used predisposing factors (age, sex, marital status, occupation, education, ethnicity, religion and language), enabling factors (family income, family health insurance, availability of health facility, health personal and transportation network, type of village, and source of information) and need factors (type of illness reported by the respondents) as explanatory variables. The utilization of health services was analyzed by using bivariate and multivariate analysis. The study concludes that

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[1] The probability of demand for institutional delivery is lower among women with higher parity.

ethnicity does not significantly correlated with health care utilization if predisposing, enabling, and need factors are controlled for different ethnic groups.

There is another cross-sectional study done by Aung (2008) to determine health seeking behaviors among Myanmar migrant workers in Thailand. The study finds that gender, occupation, health insurance status, and traveling time to the health center are significantly associated with health care utilization. Women are more likely to use health services than men and the migrant workers with health insurance cards visit health centers more often than those without health insurance.

Table II-1: Summary of the empirical findings on determinants of health care utilization

Variables	Author	Year	Data type	Data Analysis tool	Findings
Age	Aigbe Osariemen	2011	Cross-sectional	Stepwise multiple regression	-Under 5 children utilize health services 3.5 times than over 65 years old.
	Hu & Podhisita,	2008	Cross-sectional	Bivariate and multivariate analysis	-Individuals older than 24 utilize more than younger
Gender	Pokhrel et al	2005	Cross-sectional	Four-step household decision making process	-Boys are 43% more likely to seek external care than girls
	Fistum G et al	2011	Cross-sectional	Bivariate analysis & logistic regression	-Men are 0.46 times more likely to utilize health care services than women
Marital Status					
Ethnicity	Hu & Podhisita	2008	Cross-sectional	Bivariate and multivariate analysis	-Providing same opportunities (predisposing, enabling factors), health care utilization will be likely similar
Religion	Vedamulla, P. H	2008	Cross-sectional (primary data)	Ordinary lease squared method	-Religions (Buddhist and Sinhala) have positive relationship with health care utilization
Educational Status	Alberts et. Al	1997	Cross-sectional (secondary data)	Logistic and ordinary lease squared method	-53% of women with secondary education use orthodox 3 times more than those with primary education level - Highest education group utilizes dental care 5 times more than those from lowest education group.
Income	Fistum G et al	2011	Cross-sectional	Bivariate analysis and logistic	-Low income group was 0.26 times likely to use health care facilities

				regression	
Distance to health facilities	Aigbe Osariemen	2011	Cross-sectional	Stepwise multiple regression	-76% of women visit nearby health centers which could be reached within less than 30 min with vehicle. -Only 5.9% of women visit health center which have to travel more than 45 min with vehicle
Waiting time at health facilities	Aigbe Osariemen	2011	Cross-sectional	Stepwise multiple regression	-62% of pregnant women visited health facilities for the reason of promptness of services
Perceived traveling cost					-Among perceived travelling cost "cheap" 2.5 times more utilized than who perceived as "expensive"
Perceived health status	Fernandez-Olano et al	2006			-36% of elderly users graded their health status as good and 46% of them as fair -60.2% of non-users graded their health status as good and 29% as fair

CHAPTER III
RESEARCH METHODLOGY

3.1. Conceptual Framework

Andersen's behavior model was used by a number of researchers Fitsum et al (2011), Aigbe (2011), Hu & Podhisita (2008), Monet, Tanattha Kittisopee, & Rungpetch Sakulbamrungsil (2006) to analyze the factors affecting health care utilization. In 1968, Andersen developed this model which is composed of three main factors; predisposing factors, enabling factors, and need factors. Predisposing factors are the individual's tendency to utilize health care which includes demographic characteristics and social status. Enabling factors refer to the ability of an individual to use health services; it includes family and community resources that affect health care utilization. Need factors are the individual's needs for health care by representing perceived health status and presence of underlying disease or disability(Rebhan).

In this study, we applied the Andersen behavior model with adjustments and modifications in order to analyze the determinants of choice of health facilities among workers in the private sector in Hlaing Tharyar Township, Yagon. The determinants of choice of health facilities are categorized into three categories; (1) predisposing factors (age, gender, marital status, ethnicity, religion, education status, occupation), (2) enabling factors (traveling time to health facilities, waiting time at health facilities, traveling cost to health facilities, hospitality of health care personnel, satisfaction with the services, income, insurance status, and number of children in the family) and (3) need factors (perceived health status and presence of chronic disease). The differences in choice of health facilities are analyzed from the determinants factors.

Figure III-1:Conceptual framework

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┌─────────────────────────────────────┐
│         Predisposing Factors         │
│                                      │
│  Socio-demographic                   │
│  Age                                 │
│  Gender                              │
│  Marital status                      │
│  Ethnicity                           │
│  Religion                            │
│  Education status                    │
│  Occupation                          │
└─────────────────────────────────────┘

┌─────────────────────────────────────┐      ┌──────────────────────────────┐
│           Enabling Factors           │      │  Health Care Utilization Type│
│                                      │      │                              │
│  Community Resources                 │      │   1.  Self-treatment         │
│  Traveling time to health facilities │      │   2.  Social security health │
│  Traveling cost to health facilities │      │       facilities             │
│  Waiting time at health facilities   │      │   3.  Private health         │
│  Hospitality of health care personnel│      │       facilities             │
│  Satisfaction with the service       │      │   4.  Public health          │
│                                      │      │       facilities             │
│  Family Resources                    │      └──────────────────────────────┘
│  Income                              │
│  Insurance status                    │
│  Number of children in the family    │
└─────────────────────────────────────┘

┌─────────────────────────────────────┐
│            Need Factors              │
│  Perceived health status             │
│  Presence of chronic disease         │
│                                      │
│                                      │
└─────────────────────────────────────┘
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The conceptual framework mainly focuses on determinants of choice of health facilities however according to the second objective of this study; the barriers for the insured workers under (SSS) to access health care services are also analyzed by using In-depth interviews with insured workers.

3.2. Study Design

The cross-sectional retrospective design is used to identify the determinants of choice of health facilities among workers in the private sector in Hlaing Tharyar Township in Yangon and to identify barriers for insured workers to access health care services from social security health facilities. Multinomial and binomial logistic regression models were applied to analyze the determinants of choice of health facilities.

Dependent variable: The (Yi) is set as dependent variable.

Yi $\begin{cases} =0 \text{ (if the workers buy medication from drug store and self-treatment)} \\ =1 \text{ (if the workers use social security health facilities)} \\ =2 \text{ (if the workers use public health facilities)} \\ =3 \text{ (if the workers use private health facilities)} \end{cases}$

Independent variables: The independent variables are categorized into three main factors;

- *Predisposing factors*: age, gender, marital status, ethnicity, religion, educational status and occupation
- *Enabling factors*: traveling time to health facilities, waiting time at health facilities, traveling cost to health facilities, hospitality of health care personnel, income, health insurance status, and number of children
- *Need factors*: perceived health status and presence of chronic disease.

Multinomial Model

$$\Pr(Yi = 0) = \frac{1}{1 + \sum_{k=1}^{K} e^{\beta k.xi}}$$

$$\Pr(Yi = k) = \frac{e^{(\beta k \cdot xi)}}{1 + \sum_{k=1}^{K} e^{(\beta k \cdot xi)}}$$

k= 1, 2, 3 (categories of dependent variables)

Pr (Yi =k) is the probability of belonging to category (k)

xi = the vector of explanatory variable

βk = the coefficient which is estimated using maximum likelihood

$$Ln \frac{Pr(Yi = k)}{Pr(Yi = 0)} = \beta_0 + \beta_1 Age + \beta_2 Gen + \beta_3 MS + \beta_4 Child_n + \beta_5 Eth$$
$$+ \beta_6 Relig + \beta_7 Edu1 + \beta_8 Edu + \beta_9 Edu3 + \beta_{10} Oc + \beta_{11} \ln(Inc)$$
$$+ \beta_{12} Hs1 + \beta_{13} Hs2 + \beta_{14} Hs3 + \beta_{15} Chro - D + \beta_{16} TC + \beta_{17} WT$$
$$+ \beta_{18} MC + \beta_{19} Sat + \beta_{20} Hs + \mathcal{E}i$$

Table III-1: Summarized table of independent variables and expected signs

Definition Variable	Category	Abbrevia-Tion	Type of Variable	Expected Sign
Age		Age	Continuous e	+
Gender		Gen	Dummy	-/+
Marital status		MS	Dummy	+
Number of children in the family		Child_n	Continuous	-
Ethnicity	Burman	Eth	Dummy	+/-
Religion	Buddhist	Relig	Dummy	-/+
Education status	Primary	Edu1	Dummy	-
	Middle	Edu2		+
	High	Edu3		+
Occupation category	Worker	Occ	Dummy	-/+
Income		Inc	Continuous	+
Health insurance status		HIS	Dummy	+
Traveling time to health facilities (in minute)		TT	Continuous	-
Waiting time at health facilities (in minute)		WT	Continuous	-
Travelling cost to health facilities (in Kyat)		TC	Continuous	-
Medical cost (in Kyat)		MC	Continuous	-
Hospitality of health care personnel		Hp	Dummy	+
Satisfaction with the services		Sat	Dummy	+

Perceived health status	Good[2]	Hs1	Dummy	-
	Fair	Hs2		+
	Poor[3]	Hs3		+
Presence of chronic disease		Chro_D	Dummy	+

3.3. Study Area

This study is conducted in Hlaing Tharyar Township, Yangon. Hlaing Tharyar Township is an industrialized area and located in the western part of Yangon. There are 20 quarters and 9 village tracts in Hlaing Tharyar Township. It is neighbored with Htantabin Township in the north and west, Insein Township and Hlaing Township in the east and Twante Township in the south. Hlaing Tharyar Townshipt was established in 1985 and the total area is 67.4 square kilometers. In 2008, the total population of Hlaing Tharyar Township was 3,403,222 and the population density is 5,100 per square kilometers.

Hlaing Tharyar Industrial Zone is one of the largest industrial zones both in Yangon and also in Myanmar. According to SSB, there are 836 factories and firms in Hlaing Tharyar industrial zone which are registered under SSS. There are eight industrial zones in Hlaing Tharyar Township; zone one to seven and Shwe Lin Ban industrial zone. Among the 78,637 workers who are currently working for privately owned factories and firms, 76,070 workers are insured under SSS.

3.4. Sample Size Determination

The sample size for this study is calculated based on the Yamane (1967) formula.

$$n = \frac{Nz^2pq}{Nd^2 + z^2\,pq}$$

If we assume z =2 (1.96 for the 95% level of significant), then

$$n = \frac{N}{1 + Nd^2}$$

    n = sample size

    N= population size (78637)

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[2] In this category, it is included those who perceive their health status as excellent and good.
[3] In this category, it is included those who perceive their health status as poor and very poor.

d = precision (0.05)

z = reliability coefficient

p = proportion of the target population utilize health care (assuming that 50%)

q = 1-p (so q= 50% too)

$$n = \frac{78637}{1 + 78637(0.05)^2}$$

$$n = \frac{78637}{197.5925}$$

The sample size is calculated based on total number of workers in Hlaing Tharyar industrial zones who are currently working for privately owned factories and firms. According to the data from the social security board, there are a total of 78,637 workers who are working in eight industrial zones in Hlaing Tharyar Township in 2012. The study population is both the insured and uninsured workers who are currently working for privately owned firms and industries in Hlaing Tharyar Township.

3.5. Data Collection

Quantitative data: The quantitative data was collected by personal interview using structured questionnaires. Multistage sampling method is used in data collection. First, 10 quarters were randomly selected out of 20 quarters and 9 village tracts from Hlaing Tharyar Township. Second, 60 workers from each ward in Hlaing Tharyar Township were randomly interviewed by using unproportional stratified sampling method. In this study the proportional stratified sampling method is unable to apply because of limitation of the data on the number of workers in each quarter.

According to calculation from this equation, the sample size for this study is 398. We collected the data from 600 workers because a multinomial logistic regression model is better to analyze with more observations. Some data are not completed because the respondents could not recall their last illness experiences. So we have finally received 518 observations from the survey.

We hired the enumerators from Hlaing Tharyar Township. The enumerators are high school and university graduates in qualification and who have also had previous experiences in data collection. All enumerators are from local areas and they are the members of community-based organizations in Hlaing Tharyar Township so they are familiar with the local community. The collected data was reviewed on a daily basis during the data collection period to check for accuracy and reliability.

Qualitative data: Qualitative data was collected from the insured workers within the study population by conducting In-depth interviews. Qualitative data are included in this study to identify the barriers for the insured workers to access health care services from social security health facilities.

The guide line questions for In-depth interviews were:

- Have you ever visited social security health facilities?
- If yes, what are the challenges you have faced when you visit social security health facilities?
- If no, why did you not visit social security health facilities?

The open-ended questions were asked to the insured workers both who have experience of using social security health facilities and those who have never used social health facilities.

3.6. Pilot Testing

The pilot test was done in quarter 5 in Hlaing Tharyar Township. Thirty workers who are currently working for privately owned firms and factories and who had have illness histories in the last 3 months were interviewed by using structured questionnaires. The questionnaires were revised and changed base on results from the pilot survey.

3.7. Expected Benefits

Currently, Myanmar is preparing to extend the coverage of the social security scheme by introducing the 2012 Social Security Act. The results from this study could provide baseline data on health care utilization patterns and determinants of their utilization among workers in the private sector. The result could help policy makers in improving health care services for the insured workers.

CHAPTER IV
DATA DESCRIPTION

This chapter will describe the data. The distribution of demographic, socio-economic characteristics, health insurance status of the workers, and the accessibility to health care services will be presented.

4.1. Demographic Characteristics of the Workers

Table IV-1: Demographic characteristics of the workers

Variable	Mean (Std.Dev)	Min	Max
Age	25.590 (7.184)	14	60
Gender	0.813 (0.390)	0	1
Marital status (Single)	0.701 (0.458)	0	1
Number of children	0.367 (0.965)	0	6
Ethnicity (Burman)	0.909 (0.288)	0	1
Religion (Buddhist)	0.990 (0.098)	0	1
Total observation=518			

According to table IV-1, age of the study population ranges from 14 years old to 60 years old with the mean age of 25.59 years old. The distribution is normal as the study is conducted among working population. The working age in Myanmar is from 15 to 60 years old. The majority, 81.3%, of the workers in this study are female while only 18.7% of them are male. Among all the workers, 70.1% of them are single while among those who are married have 0.345 children on average. Nearly almost all of the study populations are Buddhist and Burman ethnic majority.

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4.2. Socio-economic Characteristics of the Workers

Table IV-2:Socio-economic characteristics of the workers

Variable	Mean (Std. Dev.)	Min	Max
Primary school level (self)	0.162 (0.369)	0	1
Secondary school level (self)	0.755 (0.431)	0	1
Higher education level (self)	0.083 (0.276)	0	1
Primary education level (father)	0.384 (0.487)	0	1
Primary education level (mother)	0.547 (0.498)	0	1
Income (Kyat)	73892.08 (24216.52)	26000	250000
Total observation = 518, Father's education level=414, Mother's education level=413			

Table IV-2 shows the socio-economic characteristics of the workers from the study population. A majority of the workers attained secondary education with about 75.5% and only about 16.2% and 8.3% attained primary education and higher education level, respectively. Parent's education levels are also asked in the questionnaires. However, only 414 workers can report their father's education level and 413 of them recognize their mother's education level. A majority of their parents attained only primary education especially the mothers. The monthly salary of the workers ranges from 26,000 Kyats to 250,000 Kyats per month and the mean monthly salary of the workers is 73,892.08 Kyats. As the standard error of income is 24,216.52, the variation of the worker's income is large.

4.3. Health Insurance Status and Working Experience

Table IV-3: Health insurance status and working experience of the workers

Variable	Mean (Std.Dev.)	Min	Max
Health insurance status	0.569 (0.496)	0	1
Social security card	0.494 (0.500)	0	1
Working experience (in month)	36.039 (34.78)	1	224
Period of holding social security card (in month)	37.914 (34.978)	1	189

According to table IV-3, slightly more than half, 56.9% of the workers involved in this study are enrolled under SSS. Despite the fact that they are enrolled under SSS, only 49.4% of the workers have the social security cards. So in this analysis, only those who have the social security cards are regarded as insured workers because only workers with the social security cards can access health care services from social security health facilities. The average working experience in the current factories is 36.04 months. The working experience starts from one month and maximum is 224 months. Moreover, the mean period of holding social security cards is 37.91 months and the maximum is 189 months.

Table IV-4: Health insurance card status and working experience of the workers

Variable	Mean (Std.Dev)	Min	Max
Insured workers			
Working experience (in month)	48.710 (35.769)	2	192
Uninsured workers			
Working experience (in month)	23.656 (28.897)	1	244

Table IV-4 shows the distribution of health insurance status and working experience of the workers. The mean working experience of insured workers is 48.71 months and the maximum working experience at their current factory is 192 months. The mean working experience of uninsured workers is 23.66 months and surprisingly the maximum working experience is 244 months. Generally the workers who have been working a longer period are more likely to have a social security card than those with less working experience. However, the maximum working experience of those without a social security card is longer than those with a social security card. It is reasonable that the average working experience of those with a social security card is longer than those without a social security card because the workers with more working experiences could have more chance to get a social security card.

Table IV-5: Frequency and percentage of work experinces in months among the insured workers without health insurance card

Work experiences in months	Frequency	Percentage (%)
2-12	16	42.11 %
13-24	8	21.05 %
25-36	7	18.42 %
37-48	3	7.90 %
49-60	2	5.26 %
60-68	2	5.26 %
Total	38	100 %

Surprisingly, not every insured worker in this study has a social security card. According to data, there are 256 insured workers in this study and 38 of them do not have social security cards. When we look at working experience of those without a social security card, 42.11% of working experiences ranges from 2 to 12 months

while the rest of them have experiences from 13 to 68 months. In our study, we did not ask the reasons for not having a social security card therefore, we could not identify the reasons but the number of insured workers without a social security card is high.

4.4. Accessibility to Health Facilities

Table IV-6: Distribution of the accessibility to social security health facilities for a first visit

Variable	Mean (Std.Dev)	Min	Max
Traveling cost (in Kyat)	810.810 (1917.95)	0	10000
Traveling time (in minute)	28.514 (30.863)	5	150
Waiting time (in minute)	68.243 (59.877)	5	240
Medical cost (in Kyat)	67.567 (391.032)	0	3000
Opening time of clinic is convenient	0.851 (0.275)	0	1
Get all prescribed drugs	0.919 (0.275)	0	1
Health personnel are hospitable	0.899 (0.313)	0	1
Satisfaction with the services	0.905 (0.295)	0	1
Total observation=74			

Table IV-6 describes the distribution of the accessibility to social security health facilities for a first time. The average traveling cost for those who visited social security health facilities is 810.81 Kyats and the maximum cost is 10,000 Kyats and some workers do not have to incur traveling cost to access health care services from social security health facilities. The data of traveling cost is reasonable because if the workers are referred to the Worker's hospital for health services which could not be provided at the social security clinic in Hlaing Tharyar Township, they would have to incur more traveling cost. The mean traveling time to a social security clinic is 28.51 minutes and with a minimum of 5 minutes and a maximum of 150 minutes respectively.

According to the 1954 Social Security Act, social security health facilities provide free medical care to insured workers. However, some of the insured workers reported that they have to pay some amount when they visit social security health facilities. The maximum payment is 3,000 Kyats and the mean payment is 67.57 Kyats. The amount of payment is reasonable because in public health facilities, asking donation from the patient is common so these might be a donation to the health center.

A majority, 85.1% of the workers who utilized the social security health facilities report that the opening time of the clinic is convenient. Moreover, 91.9% and 89.9% of workers who visited social security health facilities report that they receive all prescribed drugs and the health personnel are friendly, respectively. Among those who visited social security health facilities, 90.5% of them are satisfied with the services from these health facilities.

Table IV-7: Distribution of the accessibility to public health facilities for a first visit

Variable	Mean (Std.Dev.)	Min	Max
Traveling cost (in Kyat)	2876.92 (2406.295)	30	7000
Traveling time (in minute)	46.538 (38.732)	5	150
Waiting time (in minute)	15.385 (16.003)	5	60
Medical cost (in Kyat)	6715.385 (7821.109)	0	30000
Opening time of clinic is convenient	1.000 (0.000)	1	1
Get all prescribed drugs	0.923 (0.277)	0	1
Health personnel are hospitable	1.000 (0.000)	1	1
Satisfaction with the services	0.923 (0.277)	0	1
Total Observation= 13			

Table IV-7 presents the distribution of accessibility to public health facilities for the first visit. The mean traveling cost to public health facilities is 2,876.92 Kyats and the maximum traveling cost is 7,000 Kyats. The average traveling time to public health

facilities is 46.54 minutes and the maximum is 150 minutes. The average waiting time public health facilities is 15.38 minutes and the maximum is 150 minutes. The waiting time at public health facilities is shorter than the waiting time at social security and private health facilities.

Moreover, the mean medical cost at public health facilities is 6,715.385 Kyats with the maximum amount of 30,000 Kyats. The average medical cost at public health facilities is higher than at private health facilities which could be caused by the fact that the workers with more serious health problems are more likely to visit public health facilities than private health facilities. All workers who used public health facilities said that they are convenient with the opening time of these facilities. Among those visited public health facilities, 92.3% of them get all prescribed drugs from these facilities and hundred percent of them reported that the health personnel from these facilities are friendly. According to the data, 92.3 % of them are satisfied with the general services.

Table IV-8: Distribution of the accessibility to private health facilities for a first visit

Variable	Mean (Std.Dev.)	Min	Max
Traveling cost (in Kyat)	745.812 (1599.851)	0	15000
Traveling time (in minute)	21.123 (18.253)	3	120
Waiting time (in minute)	23.695 (23.566)	5	240
Medical cost (in Kyat)	3749.75 (4080.89)	0	35000
Get all prescribed drugs	0.956 (0.206)	0	1
Opening time of clinic is convenient	0.966 (0.183)	0	1
Health personnel are hospitable	0.985 (0.183)	0	1
Satisfaction with the services	0.980 (0.139)	0	1
Total observation=203			

Table IV-7 describes the distribution of the accessibility to private health facilities for a first visit. Among those who visited private health facilities for their first visit, the mean traveling cost to these facilities is 745.81 Kyats and the maximum amount is 15,000 Kyats. The mean traveling cost to private health facilities is close to the traveling cost to social security health facilities. The data distribution for traveling cost is normal. The average traveling time to access private health facilities is 21.12 minutes and the maximum traveling time is 120 minutes. The waiting time at private health facilities is 23.69 minutes and the maximum waiting time is 180 minutes. It is reasonable compared to social security health facilities because private health facilities are more responsive than social security health facilities.

Among the users of private health facilities, 96.6% of them reported that they are convenient with the opening time of the health facilities. A majority (95.6%) of the users of private health facilities reported that they have received all the prescribed drugs from these facilities. Moreover, about 98% of the workers are satisfied with health services from private health facilities. The majority of the workers are choosing health centers with which they are satisfied with the services.

Table IV-9: Distribution of the accessibility to social security health facilities for a second visit

Variable	Mean (Std.Dev.)	Min	Max
Traveling cost (in Kyat)	1361.111 (2390.132)	0	10000
Traveling time (in minute)	48.750 (49.890)	5	180
Waiting time (in minute)	67.222 (57.550)	5	240
Medical cost (in Kyat)	583.333 (1523.624)	0	6000
Get all prescribed drugs	0.889 (0.319)	0	1
Opening time of clinic is convenient	0.889 (0.319)	0	1
Health personnel are hospitable	0.806 (0.401)	0	1
Satisfaction with the services	0.861 (0.351)	0	1
Total observation= 36			

Table IV-9 describes the characteristics of the accessibility to social security health facilities for a second visit. The average traveling cost to the social security health facilities is 1,361.11 Kyats which is more than the traveling cost of the first visit. The data is realistic because the workers may be referred to the Worker's Hospital for further diagnostic tests which are not available at Hlaing Tharyar social security clinic. If the workers travel to the Worker's Hospital which is located in the downtown of Yangon, they have to incur more traveling cost to access health care services. So the data on traveling cost for a second visit is reasonable compared to traveling cost to the social security health facilities for the first visit.

The average traveling time to social security health facilities is 48.75 minutes. The minimum and maximum traveling times are 5 minutes and 180 minutes, respectively. And the average waiting time at social security health facilities is 67.22 minutes and the maximum waiting time is 180 minutes. Even though the social security health facilities provide free medical care to the insured workers, in this study, the insured workers reported that they have to pay out-of-pocket when they visit health facilities. The average out-of-pocket payment is 583.33 Kyats and the maximum amount is 6,000 Kyats. This could be caused by the fact that not all insured workers who visited the social security health facilities receive prescribed drugs and they might spend to buy drugs from other drugs stores.

Among those who visited social security health facilities for a second time, only 88.9% of them get all prescribed drugs from social security health facilities. The majority (88.9%) of those who visited the health centers is convenient with the opening time of social security health facilities and 80.6% of them said that the health care personnel at these facilities are friendly. A majority (86.1%) of the workers are satisfied with the services from the social security health facilities.

Table IV-10: Distribution of the accessibility to public health facilities for a second visit

Variable	Mean (Std.Dev.)	Min	Max
Traveling cost (in Kyat)	2750.000 (3095.696)	0	7000
Traveling time (in minute)	27.500 (13.229)	15	45
Waiting time (in minute)	35.000 (28.867)	10	60
Medical cost (in Kyat)	10000 (14142.14)	0	30000
Get all prescribed drugs	1.000 (0.000)	1	1
Opening time of clinic is convenient	1.000 (0.000)	1	1
Health personnel are hospitable	1.000 (0.000)	1	1
Satisfaction with the services	1.000 (0.000)	1	1
Total observation=4			

Table IV-10 presents the distribution of accessibility to public health facilities for a second visit. The average traveling cost to public health facilities is 2,750 Kyats which is higher than any other type of health facilities. The workers with serious health problems might use more public health facilities than other type of health facilities. The average traveling time and waiting time are 27.5 minutes and 35 minutes respectively. The maximum traveling time and waiting time are 45 minutes and 60 minutes respectively. The users of public health facilities have to pay on average 10,000 Kyats and the maximum payment is 30,000 Kyats to access health service from public health facilities.

All of them who visited public health facilities for second visit report that they get all prescribed drugs, the opening time of health facilities is convenient, and the health personnel are hospitable. All of them are satisfied with the services.

Table IV-11: Distribution of the accessibility to private health facilities for a second visit

Variable	Mean (Std.Dev.)	Min	Max
Traveling cost (in Kyat)	712.12 (1702.595)	0	15000
Traveling time (in minute)	21.667 (18.392)	0	120
Waiting time (in minute)	38.030 (44.737)	5	240
Medical cost (in Kyat)	4088.889 (5597.756)	0	35000
Get all prescribed drugs	1.000 (0.000)	1	1
Opening time of clinic is convenient	0.979 (0.141)	0	1
Health personnel are hospitable	0.989 (0.101)	0	1
Satisfaction with the services	1.000 (0.000)	1	1
Total observation= 99			

Table IV-11 depicts the characteristics of the accessibility to private health facilities for a second visit. The mean traveling cost is 712.12 Kyats and the maximum traveling cost for a second visit to private health facilities is 15,000 Kyats. The average traveling time is 21.67 minutes to access private health facilities and the maximum traveling time is 120 minutes. The average waiting time at private health facilities for a second visit is 38.03 minutes and the maximum waiting time is 240 minutes. The majority of people who visited private health facilities for a second visit have to pay about 4,088.89 Kyats. About 97% of workers who visit the private health facilities report that they are convenient with the opening time of these facilities while 99% of them said that the health personnel are friendly. One hundred percent of the workers who visit the private health facilities for a second visit are satisfied with the services of these facilities.

Table IV-12: Distribution of the accessibility to social security health facilities for a third visit

Variable	Mean (Std.Dev.)	Min	Max
Traveling cost (in Kyat)	1681.25 (2662.635)	0	10000
Traveling time (in minute)	70.000 (57.126)	5	180
Waiting time (in minute)	74.063 (57.972)	5	180
Medical cost (in Kyat)	125.000 (500.000)	0	2000
Gel all prescribed drugs	0.875 (0.342)	0	1
Opening time of clinic is convenient	0 .938 (0.250)	0	1
Health personnel are hospitable	0.875 (0.342)	0	1
Satisfaction with the services	0.875 (0.342)	0	1
Total observation =16			

According to table IV-12, the total number of people who visit social security health facilities for a third time is 16. The average traveling cost to social security health facilities for a third visit is 1,681.25 Kyats which is higher than the cost of first and second visits to the social security health facilities. It means that the workers who visit for second and third times could be referred to the Worker's hospital in downtown of Yangon as their traveling costs are higher than the formers. The mean traveling time for a third visit to social security health facilities is 70 minutes and the maximum is 180 minutes. The workers who visited social security for their third visit have to wait an average of 74.06 minutes and the maximum waiting time at health facilities is 180 minutes.

Among those who visited to social security health facilities, they have to pay about 100 Kyats to these facilities and we assume that the payment could be a donation to these facilities. Among those who visited social security health facilities for the third time, 93.8% of them feel convenient with the opening time of these facilities and a majority of them are satisfied with the services.

Table IV-13: Distribution of the accessibility to public health facilities for a third visit

Variable	Mean (Std.Dev.)	Min	Max
Traveling cost (in Kyat)	2000 (1414.214)	1000	3000
Traveling time (in minute)	22.5 (10.606)	15	30
Waiting time (in minute)	15.000 (7.071)	10	20
Medical cost (in Kyat)	5000.000 (7071.068)	0	10000
Get all prescribed drugs	1.000 (0.000)	1	1
Opening time is convenient	1.000 (0.000)	1	1
Health personnel are hospitable	1.000 (0.000)	1	1
Satisfaction with the services	1.000 (0.000)	1	1

Total observation=2

According to table IV-13, only two workers visited public health facilities for their third time.   The workers who visited public health facilities for their third visits have to spend on average 2,000 of Kyats for traveling cost and the maximum cost is 3,000 Kyats. The average traveling time for a third visit is 22.5 minutes and the maximum traveling time is 30 minutes. The waiting time at public health facilities ranges from a minimum of 10 minutes to a maximum 20 of minutes. The average medical cost is 5,000 Kyats and the maximum payment is 10,000 Kyats.

All users of public health facilities for their third visits reported that they have received all prescribed drugs from these facilities and they are convenient with the opening time of health facilities. All of them are also satisfied with general services from public health facilities and they reported that health personnel from public health facilities are friendly. However, it is difficult to draw conclusion from this data because only two workers visited public health facilities for their third time.

Table IV-14: Distribution of the accessibility to private health facilities for a third visit

Variable	Mean (Std.Dev.)	Min	Max
Traveling cost (in Kyat)	562.222 (671.257)	0	3500
Traveling time (in minute)	18.889 (19.214)	0	120
Waiting time (in minute)	20.556 (20.006)	5	90
Medical cost (in Kyat)	3777.778 (4435.748)	1000	30000
Get all prescribed drugs	1.000 (0.000)	1	1
Opening time of clinic is convenient	0.956 (0.208)	0	1
Health personnel are hospitable	0.978 (0.149)	1	1
Satisfaction with the services	1.000 (0.000)	1	1

Total observation=45

Table IV-14 shows the distribution of the accessibility to private health facilities for a third visit. The workers who chose private health facilities for their third visit have to spend a traveling cost on average of 562.22 Kyats and the maximum traveling cost is 3,500 Kyats. The average traveling time to private health facilities for a third visit is 18.89 minutes and the maximum traveling time is 120 minutes. Among the workers who used private health facilities for their third visit, they have to spend waiting time at health facilities on average 20.56 minutes to access health care services and the maximum waiting time is 90 minutes. The average medical cost for a third visit is 3,777.78 Kyats and the payment ranges from minimum of 1,000 Kyats to maximum of 30,000 Kyats.

Among the workers who visited private health facilities for a third visit, 95.6% and 97.8% of them reported that the opening time of these facilities is convenient and the health personnel are friendly. All of them reported that they received all prescribed drug from health facilities and all of them are also satisfied with the general services of health facilities.

4.5. Patterns of Choice of Health Facilities

Table IV-15: Frequency and percentage of different health facilities for first, second, and third visit

Type of health facility	First visit		Second visit		Third visit	
	Freq	%	Freq	%	Freq	%
Social security health facilities	**74**	**25.5%**	**36**	**25.5%**	**16**	**25.4%**
Public health facilities	13	4.5%	4	2.9%	2	3.17%
Private health facilities	**203**	**70%**	**99**	**71.2%**	**45**	**71.4%**
Total visit	209	100%	139	100%	63	100%

Table IV-15 shows the frequency and percentage of first, second, and third visit to different types of health facilities. Private health facilities are the most popular choice among the workers in every visit and it is followed by social security health facilities. Among those who reported that they had health problem in these last three months, 209 of them visited health facilities to access health care services. Among those who visited health facilities for the first time, 74 of them (25.5%) chose social security health facilities and only 13 workers (4.5%) visited public health facilities while 203 (70%) workers visited private health facilities to access health care services.

Among the users of health facilities for their first visit, 139 of them made the second visit for their health problems. Similar to the first visit, a majority (71.2%) of the workers chose private health facilities and only 2.9% of them went to public health facilities while 25.5% of them visited social security health facilities. The pattern of choice of health facilities for third visit is also similar to the formers.

Figure IV-1: Health insurance status and choice of health facilites for a first visit
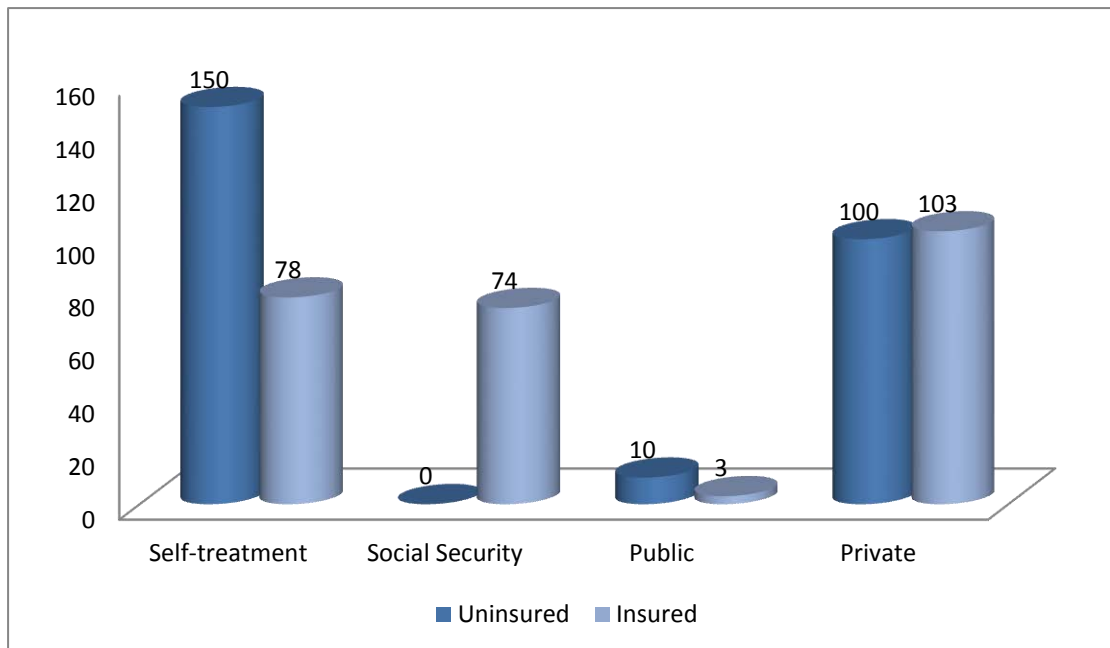
The chart IV-1 shows the health insurance status and choice of different health facilities and self-treatment. According to the results, self-treatment is common practice among the workers to take care of their health problems at the primary level especially among the workers without health insurance. Among 260 of uninsured workers, 150 of them chose a self-treatment option when they were sick. Moreover, private health facilities are reliable sources for them because 100 of uninsured workers visited private health facilities while only 10 of them visited public health facilities.

Similarly, private health facilities are the most reliable sources for insured workers to get medical care for their illnesses. Among 258 insured workers who reported illnesses within 3 months prior to this study, 74 of them visited social security health facilities while 78 and 103 of them chose self-treatment and private health facilities respectively. The choice of public health facilities is uncommon among insured workers as only 3 insured workers chose public health facilities for medical care. Despite getting free medical care from social security health facilities, a majority of insured workers still choose private health facilities. This situation is worth further inspection.
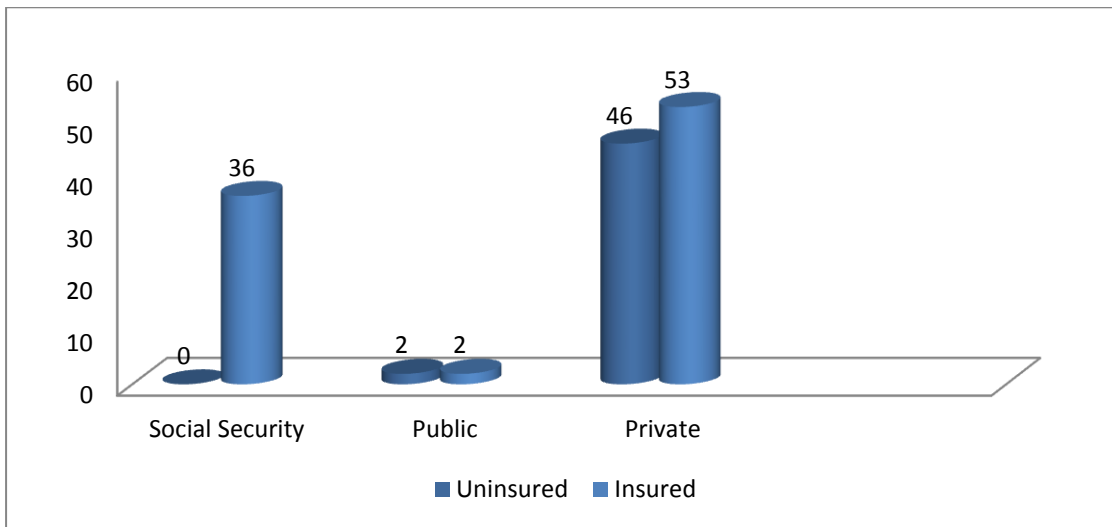
Figure IV-2: Health insurance status and choice of health facilities for second visits

The chart IV-2 shows health insurance status and choice of health facilities among insured and uninsured workers for their second visits to health facilities. We can observe that private health facilities are the most popular options for both insured and uninsured workers. For the uninsured workers, they have two types of health facilities to choose for medical care. A majority of them chose private health facilities while only 2 of them revisited public health facilities for follow up visits. Choosing public health facilities for their second visits is also uncommon among insured workers and a majority of them chose private health facilities while 36 of them revisited social security health facilities.

Figure IV-3: Health insurance status and choice of health facilities for third visits
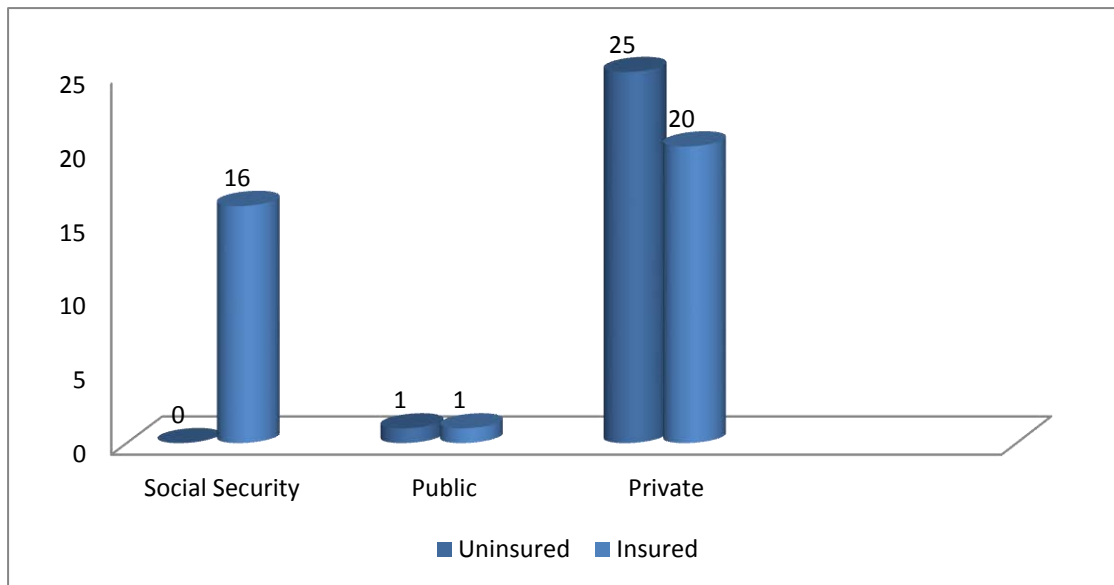
The chart IV-3 interprets the health insurance status of the workers and their choices of health facilities for third visits during their last illnesses. Among those who chose to visit health facilities for their illnesses, 63 workers visited the health facilities for third time. Similar to the first and second visits, private health facilities are the most reliable sources for medical care.

CHAPTER V

RESULTS AND DISCUSSION

This chapter will present the determinants of the choices of health facilities and the analysis from collected data. The multinomial logistics regressions were run separately for the insured and uninsured workers. The characteristics of the workers who chose different health facilities will also be discussed in this chapter.

5.1. Quantitative Results

Table V-1: Multinomial logistics results among insured workers for visit

Variable	Self-treatment		Social Security		Private
	Coef. (Robust Std.Err)	P-value	Coef. (Robust Std.Err)	P-value	Base category
Age	-0.038 (0.038)	0.325	0.059* (0.032)	0.067	
Gender	-0.070 (0.411)	0.864	1.163** (0.516)	0.025	
Marital status	0.687 (0.458)	0.133	-0.505 (0.400)	0.207	
Number of children in the family	0.739** (0.311)	0.017	-0.129 (0.280)	0.645	
Education (primary)	-0.012 (0.775)	0.988	0.119 (0.786)	0.879	
Education (middle)	0.051 (0.604)	0.933	0.092 (0.667)	0.891	
Education (higher)	Omitted		Omitted		
Occupation status	0.188 (0.592)	0.751	0.893 (0.559)	0.110	
Logarithmic of income	0.243 (0.629)	0.700	0.071 (0.632)	0.911	
Perceived health status (good)	-0.224 (0.723)	0.777	-0.978* (0.587)	0.096	
Perceived health status (fair)	0.797 (0.751)	0.288	-0.623 (0.577)	0.280	
Perceived health status (poor)	Omitted		Omitted		
Presence of chronic disease	-1.277*** (0.398)	0.001	-0.644* (0.367)	0.079	
_cons	-2.858 (7.243)	0.693	-3.386 (7.317)	0.644	

Number of obs =255[4]
Wald chi2 (22) =43.94
Prob >chi2 = 0.0036
Pseudo R2 = 0.0984
Log Pseudo Likelihood = -250.02788

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[4] The number of observation is 255 because the model is run only for insured workers.

***: Significant at 1% of significance level (P<.001)
**: Significant at 5% of significance level (P<.05)
*: Significant at 10% of significance level (P<0.10)

Table V-1 summarizes the determinants of choice of health facilities with three options[5]: 1) self-treatment, 2) social security, and 3) private health facilities. Multinomial logistics regression is run to see the pattern of choice of health facilities among insured workers. The significant levels of 1%, 5% and 10% are used to see the effects of the variables on the type of health facilities they used. Although insured workers can choose public health facilities as one of the options, public health facilities were rarely chosen with only 3 of them visiting public health facilities for medical care.

Age variable: Age of insured workers were asked and used as a continuous variable in this study. Age variability is not statistically significant on insured workers' decision whether to choose self-treatment or private health facilities but it is significantly associated with the choice between social security and private health facilities. Compared to younger insured workers, those who are older are more likely to utilize social security than private health facilities at 10% significance level.

Gender variable: Gender is a dummy variable with the value of 0 for being male and 1 for being female. Gender does not affect on decision making on whether or not to use private health facilities or self-treatment but it significantly influences the choice among social security and private health facilities. Compared to male insured workers, female insured workers are more likely to use social security than private health facilities. It indicates that social security health facilities are the most popular choice for female insured workers.

Marital status variable: Marital status variable is a dummy variable with the value of 1 for being single and 0 for being married, divorced or widowed. The coefficient of marital status variable is not statistically significant to explain the effect on decision

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[5] Actually there are four options that insured workers can choose but there are only three options in this model because only 3 insured workers visited public health facilities. As the number of observation is very low, public health facilities option is dropped from the model.

making whether to choose self-treatment or to use any type of health facilities. However we can observe from the sign that single insured workers are more likely to undertake self-treatment and less likely to visit social security health facilities than visiting private health facilities.

Number of children variable: Number of children in the family is treated as a continuous variable and the number of children in family of insured workers was asked. Number of children in the family variable does not statistically significantly explain whether the insured workers choose social security or private health facilities. However it is statistically significantly related to the decision on whether to take self-treatment or visit private health facilities with 5% significance level. Compared with insured workers with few children in their families, those who have more children in their families tend to undergo self-treatment than use private health facilities.

Education status variable: Education status variables are categorized into three categories; primary, middle, and higher education level. Education status is not statistically significant with the choice of health facilities and self-treatment. However we observe the different patterns of using type of health facilities among different education status groups. Comparing with higher education group, those from primary education groups are more likely to visit social security health facilities than private health facilities but they are less likely to take self-treatment although all the education dummy variables are not statistically significant at traditional level. The insured workers with middle education level tend to visit other types of health facilities than private health facilities compared to higher education group.

Occupation status variable: The occupation status variable is a dummy variable with the value of 1 for basic workers and 0 for administrative staff. There is no statistically significant coefficient and this indicates that occupation status does not influence decision making when choosing a type of health facilities. However, according to the sign of coefficient, the basic insured workers are more likely to use social security than private health facilities compared to administrative staff.

Income variable: Income variable is a continuous variable and monthly salary of the insured workers is asked. It is surprising that income level is not statistically significant with the choice of health facilities and self-treatment. However, the coefficients are positive for self-treatment and social security health facilities. This means that the higher income group is more likely to utilize social security health facilities and take self-treatment than private health facilities.

Perceived health status variable: Perceived health status is a dummy variable and it is categorized into three categories; good, fair, and poor. Perceived health status does not statistically significantly influence the choice of health facilities. The insured workers with perceived health status as good and fair are less likely to use social security than private health facilities compared to those with poor perceived health status. The insured workers who perceive their health status as fair are more likely to take self-treatment over private health facilities than those who perceive their health as poor.

Presence of chronic diseases variable: Presence of chronic disease is a dummy variable with the value of 1 for reported chronic disease and 0 for without chronic disease. Decision making whether to undergo self-treatment or visit any type of health facilities is statistically significantly associated with the presence of chronic disease. Surprisingly, insured workers with chronic diseases are less likely to visit social security health facilities than private health facilities. The insured workers with chronic diseases normally utilize more health facilities than those without chronic diseases. As expected, the insured workers with chronic diseases are less likely to take self-treatment than going to private health facilities and it is significant with 1% significance level. Private health facilities are other types of health facilities more reliable sources for insured workers with chronic diseases than

Among all factors, age, gender, number of children in the family and presence of chronic disease are important determinants of the choice of health facilities.

Table V-2: Multinomial logistics results among uninsured workers for first visit

Variable	Self-treatment		Public		Private
	Coef. (Robust Std.Err)	P-value	Coef. (Robust Std.Err)	P-value	Base category
Age	-0.073** (0.029)	0.015	-0.119 (0.075)	0.113	
Gender	-0.144 (0.406)	0.722	-0.881 (0.822)	0.284	
Marital status	0.409 (0.405)	0.312	0.106 (1.194)	0.929	
Number of children in the family	0.408* (0.236)	0.083	0.983** (0.442)	0.026	
Ethnicity	-0.564 (0.501)	0.261	-1.095 (1.183)	0.355	
Education (primary level)	0.190 (0.553)	0.731	12.767*** (1.137)	0.000	
Education (middle level)	-0.038 (0.469)	0.934	13.146*** (0.651)	0.000	
Education (higher level)	Omitted		Omitted		
Occupation status	0.236 (0.633)	0.709	13.244*** (0.813)	0.000	
Logarithmic of Income	-1.067 (0.611)	0.106	0.221 (1.289)	0.863	
Perceived health status (good)	0.733 (0.677)	0.279	-0.427 (1.404)	0.761	
Perceived health status (fair)	1.068 (0.611)	0.106	0.559 (1.304)	0.668	
Perceived health status (poor)	Omitted		Omitted		
Presence of chronic disease	-0.913*** (0.409)	0.026	0.671 (0.879)	0.445	
_cons	13.180** (6.793)	0.052	-27.506* (14.626)	0.060	

Number of obs   = 260
Wald chi2 (24)   = 1121.70
Prob > chi2   = 0.0000
Pseudo R2   = 0.1017
Log Pseudo Likelihood = -189.20952

***: Significant at 1% of significance level
**: Significant at 5% of significance level
*: Significant at 10% of significance level

Another multinomial logistic regression model is run for uninsured workers with choice of private health facilities being treated as a base category. According to the results, again only age, number of children in the family, and presence of chronic diseases are statistically significantly associated with choice of health facilities and self-treatment. As expected, older uninsured workers are less likely to undergo self-treatment than to go to private health facilities compared with younger uninsured workers however it is only statistically significant with the self-treatment option. Comparing to male uninsured workers, female uninsured workers tend less to choose

public health facilities and self-treatment than private health facilities though the coefficient is not statistically significant.

Moreover, marital status also predisposes a person to choose a particular type of health facilities, as single uninsured workers are more likely to undergo self-treatment and visit public health facilities than private health however the association is not very strong. The number of children in the family is also associated with different choices of health facilities. The uninsured workers with more children in the family are more likely to visit public health facilities and to undergo self-treatment than visit private health facilities and the association is very significant with public health facilities with less than 1% significance level.

Compared with higher education level, the uninsured workers with middle and primary level education are more likely to visit public health facilities than private health facilities at 1% significance level respectively. However, education level is not statistically significantly associated with the choice between self-treatment and private health facilities. Similarly, the choice of health facilities is not statistically significant based on occupation status and income level.

Uninsured workers with perceived health status as fair are more likely to undergo self-treatment and visit public health facilities than private health facilities however the uninsured workers who perceive their health status as good are less likely to visit public health facilities than private health facilities. However, perceived health status is not statistically significant to explain the difference in choice of health facilities. One of the most significant factors that determine the choice of health facilities is presence of chronic disease. Again, uninsured workers with chronic disease are less likely to undergo self-treatment than to visit private health facilities however they are more likely to visit public health facilities than private health facilities. This findings show that public health facilities are common sources from which to receive medical care for uninsured workers when they have serious health problems.

Table V-3: Binomial logistic results among insured workers for a first visit with the accessibility variables

Variable	Social Security		Private
	Coef. (Robust Std.Err)	P-value	Base category
Age	0.052 (0.039)	0.180	
Gender	1.524** (0.697)	0.029	
Marital status	-0.366 (0.488)	0.453	
Number of children in the family	-0.128 (0.340)	0.707	
Education (primary level)	0.002 (0.937)	0.998	
Education (middle)	0.196 (0.715)	0.784	
Education (higher)	Omitted		
Occupation status	0.305 (0.681)	0.659	
Logarithmic of Income	-0.089 (0.785)	0.910	
Perceived health status (good)	-0.950 (0.673)	0.158	
Perceived health status (fair)	-0.109 (0.638)	0.864	
Perceived health status (poor)	Omitted		
Presence of chronic disease	-0.860* (0.444)	0.053	
First travelling cost to health facilities	-0.0001 (0.0001)	0.466	
First waiting time at health facilities	0.036*** (0.008)	0.000	
Satisfaction to general services	-1.722*** (0.725)	0.005	
_cons	-1.120 (9.373)	0.905	

Number of obs   = 177
Wald chi2 (14)   = 36.62
Prob > chi2   = 0.0008
Pseudo R2   = 0.3112
Log Pseudo Likelihood   = -82.86375

***: Significant at 1% of significance level
**: Significant at 5% of significance level
*: Significant at 10% of significance level

Table V-3 shows the determinants of choice of health facilities among insured workers with the accessibility measures such as traveling cost to health facilities, waiting time at health facilities and satisfaction with the services. When we include these factors, the significances of some independent variables are changed. According to this model, compared to younger insured workers, older insured workers

are still more likely to utilize social security than private health facilities, although the coefficient is no longer significant. This means that social security health facilities are more reliable resources for older insured workers than for those younger. Moreover, visiting the social security health facilities is common among female insured workers and the association is very significant at 1% significance level. Single insured workers are less likely to utilize social security health facilities although the coefficient is no longer significant.

Similar to the previous model, education level is not statistically significant. However, according to the sign of coefficient insured workers with primary and middle education level are more likely to visit social security health facilities than private health facilities compared to those with higher education level. Moreover, insured basic workers are more likely to visit social security health facilities than private health facilities compared with the administrative staff but the relationship is not strong enough to be significant at traditional level. When considering income level, it influences the choice of health facilities for primary health care services but it is not statistically significant. The insured workers with higher income are less likely to visit social security health facilities than private health facilities. The implications are that social security health facilities are reliable sources for the lower socio-economic group.

Perceived health status does not strongly influence the choice of health facilities as it is not statistically significant. However, according to the sign of coefficient, the insured workers with chronic diseases are less likely to visit social security than private health facilities.
The insured workers who have to incur higher traveling cost to health facilities are less likely to visit social security health facilities than private health facilities however it is not statistically significant and the magnitude is very small. However, waiting time at health facilities significantly influences the decision to choose a particular type of health facility. The insured workers who have to wait a longer time at health facilities are more likely to visit social security health facilities than private health facilities. Conversely, this could imply that the insured who visit social security health

facilities have to wait a longer time at health facilities than those who visit private health facilities.

Moreover, satisfaction with the services of health facilities is also included in this model and it shows a strong relation with the decision to choose health facilities. The insured workers who reported that they are satisfied with general services of health facilities are less likely to visit social security and private health facilities. It could mean that insured workers who visit private health facilities are more satisfied with general services of the health facilities.

Table V-4: Binomial logistics results among uninsured workers for first visit with accessibility variables

Variable	Public		Private
	Coef. (Robust Std.Err)	p-value	Base category
Age	-0.315*** (0.120)	0.009	
Gender	-1.685* (1.005)	0.094	
Marital status	-0.017 (2.041)	0.993	
Number of children in the family	1.850*** (0.663)	0.005	
Ethnicity	-0.907 (1.957)	0.643	
Education (primary level)	14.153*** (0.819)	0.000	
Education (middle level)	14.764*** (0.959)	0.000	
Education (higher level)	Omitted		
Occupation status	14.649*** (1.380)	0.000	
Logarithmic of Income	0.533 (1.998)	0.593	
Perceived health status (good)	-0.279 (1.941)	0.886	
Perceived health status (fair)	0.491 (1.847)	0.790	
Perceived health status (poor)	Omitted		
Presence of chronic disease	0.546 (0.958)	0.568	
Traveling cost to health facilities	0.0002 (0.0002)	0.412	
Waiting time at health facilities	-0.040** (0.022)	0.048	
Medical cost	0.0002 (0.0001)	0.115	
Hospitality of health personnel	Omitted		
Satisfaction with the services	12.339*** (2.287)	0.000	

_cons	-42.023 (13.052))	0.001

Number of obs   = 110
Wald chi2 (15)   =   .
Prob > chi2   =   .
Pseudo R2   = 0.3717
Log Pseudo Likelihood   = - 21.05411

***: Significant at 1% of significance level
**: Significant at 5% of significance level
*: Significant at 10% of significance level

Table V-4 shows the determinants of choice of health facilities among uninsured workers with the accessibility to health facilities. When travelling cost, waiting time, and medical cost are added into the model, the significance of the variables are changed and some variables become insignificant in this model compared with the model without accessibility measures.

Older workers without health insurance are less likely to utilize public health facilities than private health facilities. Similarly, female uninsured workers are less likely to utilize public health facilities than private health facilities with the 10% significance level. Compared with single uninsured workers, married uninsured workers are less likely to utilize public health facilities than private health facilities but it is not statistically significant. However among the married workers, those who have more children in the family are more likely to rely on public than health facilities and it is significant at 1% significant level.

Education level is one of the determinants of choice between public and private health facilities. The uninsured workers with primary and middle education level are more likely to utilize public health facilities than private health facilities with 1% significance level. Similarly, basic uninsured workers are more likely to choose public and private health facilities. Income level also influences the decision in choosing health facilities but the association is not strong enough to explain the effect on choice of health facilities.

Perceived health status and presence of chronic diseases are not significantly associated with the choice of health facilities among the uninsured workers. The uninsured workers who perceive their health status as good are less likely to use

public health facilities than private health facilities however those who perceive their health status as fair are more likely to use public health facilities than private health facilities. However the uninsured workers with chronic diseases are more likely to utilize public health facilities than private health facilities.

The uninsured workers who have to incur more traveling cost are more likely to utilize public health facilities than private health facilities. According to the results, the workers incurred more traveling cost to access public health facilities and this means that health care services from public health facilities is less convenient than private health facilities however it is not statistically significant. Moreover, waiting time at health facilities also influences the choice of health facilities. Interestingly, the uninsured workers with longer waiting time are less likely to utilize public health facilities than private health facilities. However medical cost is not statistically significantly associated with choice of public and private health facilities.

Table V-5: Pattern of choice of health facilities among workers for first and second visits

First Visit	Second Visit							
	Social Security		Public		Private		Total	
	Freq	%	Freq	%	Freq	%	Freq	%
Social Security	30	*21.5%*	*1*	*0.7%*	*12*	8.6%	43	**30.9%**
Public	0	0%	3	2.1%	0	0%	3	2.1%
Private	*6*	4.3%	0	0%	87	62.5%	93	**66.9%**
Total	36	**25.8%**	4	2.8%	99	**71.2%**	139	100%

Table V-5 describes the pattern of choice of health facilities among the workers for the first and second visits. Some workers changed their choices of health facilities after first visit while some workers revisited the same type of health facilities. Despite free medical care from social security health facilities, 8.6% of insured workers switched to private health facilities for their second visit. The results also show the reverse changing pattern but changing from social health facilities to private health facilities is larger in general.

Switching from social security health facilities to public and private health facilities is not a normal condition. Generally people prefer to choose the health facilities from which they receive free medical care than the health facilities they have to incur treatment cost. This could imply that they are not satisfied with the services of these facilities which they visited for first time. The workers, who visited public health facilities for their first visit, continue to revisit those same health facilities for follow up visits.

Table V-6: Pattern of choice of health facilities among the workers for first and third visits

First Visit	Third Visit							
	Social Security		Public		Private		Total	
	Freq	%	Freq	%	Freq	%	Freq	%
Social Security	12	19%	0	*0%*	*3*	4.7%	15	**23.8%**
Public	0	0%	2	3.1%	0	0%	2	3.1%
Private	*4*	6.3%	0	0%	42	66.6%	46	**73%**
Total	16	**25.39%**	2	3.1%	45	**71%**	63	100%

Table V-6 suggests the pattern of change in choice of health facilities for first and third visits. Similar to first and second visits, there is no change between public health facilities and other health facilities. We can see only changes between social security health facilities and private health facilities. According to the results, 4.7% of workers switched to private health facilities even though they used social security health facilities for their first visits. Similarly, 6.3% of workers changed their preference from private health facilities to social security health facilities for their third visits.

Table V-7: Pattern of choice of health facilities among the workers for second and third visits

Second Visit	Third Visit							
	Social Security		Public		Private		Total	
	Freq	%	Freq	%	Freq	%	Freq	%
Social Security	16	25.4%	0	0%	0	0%	16	**25.4%**
Public	0	*0%*	2	3.2%	0	0%	2	3.2%
Private	0	0%	0	*0%*	45	714%	45	**71.4%**
Total	16	**25.4%**	2	3.2%	45	**71.4%**	63	100%

Table V-7 depicts the pattern of choice of health facilities in their second and third visits. According to the results, there is no change in the choice of the type of health facilities in second and third visits. The workers revisited the same type of health facilities for third time for their follow up visits.

Table V-8: Characteristics of the workers who change type of health facilities in their second visits

Variable	First visit =social security health facilities & second visit= private health Facilities Mean (Std.Dev)	First visit= private health facilities & second visit= social security health facilities Mean (Std.Dev)
Age	27.917 (5.452)	27.000 (4.816)
Gender	0.917 (0.289)	0.838 (0.408)
Marital status	0.500 (0.522)	0.833 (0.408)
Number of children in the family	0.333 (0.651)	0.167 (0.408)
Perceived health status (good)	0.500 (0.522)	0.167 (0.408)
Perceived health status (fair)	0.417 (0.514)	0.500 (0.408)

Perceived health status (poor)	0.083 (0.289)	0.333 (0.516)
Presence of chronic disease	0.500 (0.522)	0.667 (0.516)

Table V-8 presents the characteristics of the workers who changed from one to another type of health facility for their second visits. The mean age of the workers who switched from social security health facilities to private health facilities is about 28 years old and 91.7 % of them are female workers. Among those who changed from social security to private health facilities, 50% of them are married and they have 0.3 children in their family on average.

Regarding those who changed their type of health facilities, 50% and 41.7% of them reported their health status as good and fair, respectively while only 8.3% of them reported their health status as poor. We can also observe that 50% of the workers who changed from social security health facilities to private health facilities for their second visits have chronic diseases. This confirms our previous findings that private health facilities are viewed as more reliable to treat any chronic diseases.

On the other hand, we can observe the reverse changing pattern from private health facilities for visit to social security for second visit.

5.2. Qualitative Results

In-depth interviews were conducted with 15 insured workers from different factories. The in-depth interviews focused on the barriers for insured workers to access health care services from social security health facilities. According to the in-depth interview, some barriers for insured workers to access health care services have been revealed. Results from the in-depth interviews were categorized into five thematic categories:

1. Lack of knowledge about the benefit package of social security scheme
2. Low impression of the quality of health care services of social security health facilities

3. Time consuming and complication in the process to get medical leave and reimbursement from social security health facilities

4. No social security cards in hand and

5. Concern about their salaries to be suspended for taking medical leave

A majority of insured workers lack knowledge about the benefit package of the social security scheme. The employers could have provided social security cards to the workers without giving information on the benefit package and how to use the card. Among those who participated in the in-depth interview, some workers have to get regular treatment for their health problems. Despite receiving social security card, the insured workers rely on private health facilities due to lack of knowledge about benefit package and how to use the cards. An insured worker expressed his reason for utilizing private health facilities when he had health problem.

> *"I have never used the card because I don't know when and how to use it. I have recurrent chest pain and have to take leave sometimes. I just go to private clinic near my place"*

Another insured worker also reported that he does not know how to use the social security card. That is the main reason why he did not visit social security health facilities.

> *"Our employer gave us the cards and said that it is social security card but they didn't explain to us how to use the cards. I don't know how to use the card. So I just go to the private clinic when I get sick"*

The workers also have a low impression of the quality of health care services of the social security health facilities. The information from workers' colleagues regarding long waiting times at health facilities and the low quality of drugs obtained hinder the insured workers to visit social security health facilities for their primary care. An insured worker explained the reason for not using social security health facilities.

> *"I have never used a social security clinic. I heard about it from my friends. They said that they have to wait for a long time and they just got the cheap drugs"*

Among those visiting social security health facilities; they are not satisfied with the services. The workers demand improvement in the quality of health care services as

they have to contribute part of their salaries as the premiums. An insured worker explained her experiences with a social security clinic.

"I have used the social security for five and six times but our country situation is not good. I want them to treat me like a private clinic as I pay them from my salary every month"

The insured workers who visited social security health facilities also face problems in the reimbursement process. The insured workers are regularly referred to other health facilities for diagnostic tests or the services which are not available from the social security health facilities. The insured workers have to pay out-of-pocket expenses for the services and then claim for reimbursement according to the rules and regulations set by the social security board. Even though the expense for medical diagnostic test is reimbursed, the workers have to pay out-of-pocket and have to undertake extra work to get back the payment. The insured workers perceive the process as the complicated and time consuming process. The opportunity cost for getting back the payment through reimbursement is not worth the transportation cost. So sometimes the workers do not pursue the reimbursement.

The availability of social security cards is one barrier for the insured workers to access health care services. The social security cards are kept at the work office by the employers even though the workers pay the premium from their salaries. Not every insured worker holds the social security card. The process of issuing social security cards to the insured workers directly is delayed as one of the workers who participated in In-depth interview considered.

"I have been working in this factory for one year and one month. I have to pay to security board every month. But I still don't have the social security card. I have chest pains frequently and have to take medicine every day. I have to go to a private clinic every week and pay 2000-3000 Kyats for every visit."

If a worker needs to go the clinic, the employer will suspend his salary for the time that he is away from the job. A majority of the workers in in-depth interview visited private clinics for their minor illnesses.

5.3. Discussions

This study aims to identify the determinants of choice of different health facilities and the barriers for the insured workers to access health care services from social security health facilities. Multinomial and binomial logistics regression models are employed to analyze the determinants of choice of health facilities. Qualitative data were also collected to explore the barriers for the insured workers to access health care services from social security health facilities.

5.3.1.   Predisposing Factors and Health Care Utilization

Age and health care utilization: It is not surprising that the results are consistent with other studies namely, that older people are more likely to utilize health care than younger. In this study, both old insured and uninsured workers are less likely to undergo self-treatment than taking treatment from health facilities. Older insured workers tend to use more social security health facilities than private health facilities and choosing private health facilities over other types of health facilities is common among uninsured older workers. The significant level is stronger in choosing self-treatment and private health facilities than among any type of health facilities.

Gender and health care utilization: The decision making on whether to take self- treatment or visit health facilities is different between male and female workers. Both female insured and uninsured workers are less likely to undergo self-treatment for their illnesses. We also observe that female workers are more likely to use social security health facilities than male insured workers. It could be possible that male insured workers are more inpatient with the services from social security health facilities than are female insured workers.

Marital status and health care utilization: According to this study, marital status is not statistically significantly associated with the choice of health facilities. However, when we look at the magnitude of the coefficients of variables, regardless of health insurance status single workers are more likely to undergo self-treatment than private health facilities comparison with married workers. Moreover, the single insured and

uninsured workers are less likely to visit social health facilities and public health facilities, respectively than private health facilities.

Number of children in the family and health care utilization: It is not surprising that number of children in the family or family size influences the health seeking behaviors of the workers. We found that both insured and uninsured workers with more children in their families tend to undergo more self-treatment by buying drugs from drug stores than visit health facilities however it is statistically significant only among insured workers. When traveling cost and waiting time at health facilities are also controlled, the effect of the number of children in the family on choice of health facilities and self-treatment becomes statistically insignificant.

Ethnicity, religion and health car utilization: Many studies found that individuals with different ethnic and religious backgrounds utilize health care services differently. However, the effects of ethnicity and religion on choice of health facilities cannot be identified in this study as the majorities of the study population are Burman and Buddhists.

Education and health care utilization: In this study, a majority of the workers have middle education levels and only 8% of them are higher education levels. According to results, education level does not statistically significantly effect on the choice of health facilities and self-treatment among insured workers. In contrast, the uninsured workers with the primary and middle education levels are more likely to take public than private health facilities with 1% significance level. Generally speaking, both the insured and uninsured with higher education levels tend to use more private health facilities than undergo self-treatment or visit other types of health facilities but the coefficient is not statistically significant at traditional level for insured workers.

Occupation and health care utilization: About 92% of the workers in this study are basic workers and only 8% of them are administrative staff of the factories. Surprisingly, occupation status of the workers does not significantly influence the choice of health facilities but according to the magnitude of the coefficients, we can find differences in their choices. We found that basic workers are more likely to rely

on self-treatment when they get sick regardless of their insurance status. As expected, self-treatment is usually the most popular choice for workers with low income level.

5.3.2. Enabling Factors and Health Care Utilization

Traveling cost to health facilities and health care utilization: In this study, the traveling cost analysis did not include those who chose self-treatment by buying medicines from drug stores. We compared between the choice of social security health facilities and private health facilities for insured workers and between public health facilities and private health facilities for uninsured workers. Traveling cost is not statistically significant in decision making for choice of health facilities and also the magnitude of the coefficient is very small. It indicates that traveling cost to access any type of health facilities is not a very important factor in the study area.

Waiting time at health facilities and health care utilization: The choice of health facilities strongly is associated with waiting time regardless of the insurance status. We found that insured workers who have to wait longer times at health facilities are more likely to use social security health facilities. It could mean that the insured workers who visited social security health facilities have to wait longer times than those who visited private health facilities. Surprisingly, the relationship with waiting time is opposite among uninsured workers. Public health facilities are less common choices among uninsured workers but among those who visited public health facilities, the waiting time is shorter than those who visited private health facilities.

Satisfaction with the services and health care utilization: Satisfaction with the services is also one of the most important and significant factors in influencing choice of health facilities. Generally, people get more satisfaction from private health facilities as they have to pay out-of-pocket for medical treatment. Among insured workers, those who are satisfied with general services of health facilities are less likely to visit social security health facilities than to visit private health facilities. This indicates that the insured workers who visit social security health facilities have less satisfaction than those who visit private health facilities. However the uninsured workers are more satisfied with the services from public health facilities than from

private health facilities. This could come from selection bias where workers will visit public health facilities because they feel more satisfied there.

5.3.3. Need Factors and Health Care Utilization

Perceived health status and health care utilization: Surprisingly, we found that the pattern of choice of health facilities seems to be inconsistent with the expectation Perceived health status is also not statistically significant to determine the choice of health facilities. Both insured and uninsured workers who perceive their health status as good are less likely to undergo self-treatment than those who perceive their health status as poor. This is reasonable given the fact that those with good health are those who take care of their medical problem seriously. We also observe the pattern that insured workers with poor perceived health status tend to rely on social security health facilities while uninsured workers with poor perceived health status tend to use more private health facilities than other types of health facilities.

Presence of chronic disease and health care utilization: This is the most important factor and statistically significantly affects the decision of the workers whether or not to take self-treatment and choose different type of health facilities. Regardless of their insurance status, we can observe that the workers with chronic diseases are less likely to undergo self-treatment than those without chronic diseases. Surprisingly, the insured workers with chronic diseases are less likely to utilize social security health facilities than private health facilities. This indicates that insured workers with more serious health problems tend to rely on private health facilities and the main reason could be the quality of the services. In contrast, uninsured workers with chronic disease are more likely to choose public health facilities than private health facilities. This might come from financial concern.

5.3.4. Barriers to Access Health Care Services

Both quantitative and qualitative data were collected to explore the barriers for the insured workers to access health services from social security health facilities. According to this study, the numbers of insured workers who underwent self-treatment and visited private health facilities are very high. Among 258 insured

workers 78 of them took self-treatment and 103 of them visited private health facilities while only 74 insured workers used social security health facilities. We also found that among insured workers, 38 of them do not have social security cards and this could be one of the barriers for them to utilize health care services from social security health facilities.

For those who made more than one visit for medical care, second and third visits are also tracked to see the pattern of choice of health facilities from one time to another. We found that a larger percentage of insured workers moved from social security to private health facilities after the first visit compared to the reverse switch. Changing from one type to another type of health facilities only happened in second visit and no change in the third visit. A reason for a higher rate of switching from social security to private health facilities could be the low satisfaction of the services.

The main findings from in-depth interviews are a lack of awareness on the benefit package of the social security scheme, low impression of the quality of services, no social security card in hand and worry about the salary being cut off. According to the results, a majority of insured workers did not go to social security health facilities simply because of lack of awareness on the benefit package of social security scheme. Awareness about the benefit package from social security board is weak and availability of information on benefit package is very limited for the insured workers as there is no formal information channel such as a call center. A majority of the insured workers who participated in in-depth interviews obtain the information about the social security scheme from their co-workers.

If the insured workers want to visit a social security clinic, they have to take leave from their works as the clinic's opening time is from 9:30am to 4:30 pm on weekdays only. The insured workers received cash benefits from the social security scheme according to medical leave however the amount of the salary being withheld for leave is generally larger than the cash benefits. Even though medical care is free at social security health facilities, the high opportunity costs cause the insured workers to choose private health facilities where they can visit outside working hours.

CHAPTER VI
CONCLUSION AND RECOMMENDATION

In this chapter, we will present three parts: conclusion of the study, recommendations, and the limitations of the study.

6.1. Conclusion

Some form of social security schemes have been implemented in many countries to protect financial loss from sickness and to provide social assistance to their families. In Myanmar a social security scheme has been implemented since 1956, based on the 1954 Social Security Act. However, over half a century later, SSS only covers 0.97% of the country's population and 1.96% of the working population. The scheme had been less prioritized and supported by former governments so the 1954 Social Security Act is not in line with the current situation in terms of contribution rate and benefit package.

In providing free medical care to insured workers, SSB implements the direct provision method by acting as both purchaser and provider. SSB runs its own health facilities in 13 states and regions to take care of the health of the insured workers across the country. Because of the limitation in available health care services, location of health centers, and the quality of health care services, the insured workers are less likely to use social security health facilities and instead they tend to use private health facilities.

Understanding the determinants of choice of health facilities and barriers for insured workers to access health care services from social security health facilities is crucial for policy makers in order to improve the improving the quality of and accessibility to health care services. By studying determinants of choice of health facilities among the workers, we are also able to identify the influencing factors that hinder or encourage the insured workers to use social security health facilities. Apart from this, we could also observe who pays and who gets benefits from social security scheme.

This study aims to identify the determinants of choice of health facilities among the workers in the private sector in Yangon and also to identify the barriers for the insured workers to access health care services from social security health facilities. This study focuses on workers in the private sector in Hlaing Tharyar Township, Yangon region. Primary data were collected in February and March 2013 by using structured questionnaires. For the research design, the cross-sectional, retrospective and descriptive design is implied.

There are 518 workers in this study 258 insured workers and 256 uninsured involved in this study. The information on socio-demographic characteristics, health insurance status and the choice of health facilities were collected. Worker's monthly salary is proxy as income level. The multinomial and binomial logistic regression models were applied to determine the choice of health facilities among the workers. The models are run separately for insured and uninsured workers because the uninsured could not access social security health facilities. Moreover, In-depth interviews to 15 insured workers were done to identify the barriers for insured workers to access health care services from social security health facilities.

The major determinants of health facilities among insured workers are age, gender, number of children in the family, presence of chronic diseases, waiting time at health facilities and satisfaction of general services of the health facilities. We are able to see the influences of other factors but they are not statistically significant to determine the choice of health facilities strongly. Similarly, age, number of children in the family, presence of chronic disease, waiting time at health facilities and satisfaction are also the major determinants of choice of health facilities among uninsured workers. Moreover, education level and occupation status also significantly influence the choice of health facilities among uninsured workers.

Regardless of the insurance status, older workers tend to undergo less self-treatment than visiting any type of health facility. Older insured workers are more likely to use social security than younger while older uninsured workers to rely more on public health facilities. Gender also plays a role in choosing health facilities and female

insured workers are more likely to use social security health facilities than private health facilities compared to male insured workers. Moreover, both insured and uninsured workers with more children are more likely to undergo self-treatment than visiting health facilities for their illnesses. The most significant and important factor is presence of chronic disease. Both insured and uninsured workers who have underlying disease are more likely to use any type of health facilities rather than self-treatment. Surprisingly, the insured workers with chronic disease are more likely to choose private health facilities than social security health facilities.

Insured workers who incurred more traveling cost are more likely to use social security health facilities rather than private health facilities. However, the uninsured workers with chronic disease tend to use more public health facilities rather than private health facilities. One of the most important variables is waiting time at health facilities. Insured workers have to wait a longer time at social security health facilities than at private health facilities. However, the uninsured workers have to wait a shorter time at public health facilities than at private health facilities.

The choice of health facilities from one visit to another is not the same. The workers switched from one type of health facility to another after the first visit. We can see the switching from both social security health facilities to private health facilities and also reversely. However switching from social security to private health facilities is large in general. The insured workers are less likely to use social security health facilities because of some of the barriers. Lack of awareness about the benefit package is one of the major barriers to insured workers accessing health services. Apart from this, not every insured worker has a social security card in hand and that could be the barrier for them to access health care services. Besides, a low impression of the quality of social security health facilities and concern about their salaries being suspended for that day taking leave from the work make the insured workers less likely to use social security health facilities.

In conclusion, choosing self-treatment and private health facilities are the common practices among the workers regardless of their health insurance status. Only about 28% of insured workers utilized social security health facilities for their primary

health care services. Using private health facilities is a common practice among insured workers despite their monthly contributions to social security scheme as premiums.

6.2. Recommendations

Among the insured workers, private health facilities are the most reliable sources and followed by self-treatment options for their primary care while social security health facilities becomes the third choice for them. According to the results from this study, insured workers are less likely to visit social security health facilities for their primary care. The results may be due to differences in quality across these facilities. Therefore, the policy makers should evaluate the quality of health care services of social security health facilities and find a way to improve the quality of health care services if SSB wants to extend the coverage to the entire formal sector.

The study also found that about 12.8% of insured workers do not have a social security cards in hand and the majority of them have work experience of more than 6 months with maximum of 68 months in their work places. Moreover, qualitative data also show that not every insured worker has a social security card in hand even if they are enrolled under SSS. Therefore SSB should revise the process of issuing social security cards to the insured workers and ensuring they know how use it also seems important based on the quotes.

According to in-depth interviews, a majority of insured workers do not utilize social security health facilities because of lack of knowledge about the benefit package of SSS. This becomes barriers for insured workers to access health care services from social security health facilities. SSB should create a user friendly information channel for the insured workers to inquire about the benefit package. Moreover, SSB should raise awareness on the benefit package of SSS among the insured workers.

This study found that SSB also provides reimbursement for the services that are not available at social security health facilities however, according to the In-depth

interview; the reimbursement process is often delayed. SSB should revise the reimbursement process so that it can be more responsive.

These results show that insured workers are concerned about their salary being suspended for taking leave from work because of clinic's opening time. Even if medical care is free at social security health facilities, the indirect cost or opportunity cost is higher than the medical cost so a majority of insured workers use private clinic outside their working hours. This finding is very important as a reason for not using social security health facilities and SSB should figure out the alternative way to meet the needs of insured workers without affecting their working hours. SSB should adjust the clinic opening time or extend the opening time to make the services available to most insured workers.

As determinants of the choice of social security health facilities, this study finds that older, female, married, and insured workers with primary and middle education level are the major users of social security health facilities. SSB should prepare for elderly care, family planning, and also improve the quality of services to attract more insured workers with higher income, higher education level and single.

The waiting time at social security health facilities are much longer than at private and public health facilities. It is common that private health facilities are more responsive than public and health facilities however if SSB wants to improve the quality of services, the waiting time at health facilities should be reduced to be more attractive.

6.3. Limitations

-This study is a cross-section retrospective study and only conducted in Hlaing Tharyar Township so the results from this study might not be generalized for other States and regions.

-The sampling method for this study is implied multistage sampling method however due to incomplete information on the number of workers in each quarter of the township; a proportional stratified method is not applied in this study.

-The sample population of this study is all the workers in the private sector who are currently working in Hlaing Tharyar Township. However, we selected only workers who had been sick in the last 3 months prior to the study and as a result, there might be selection bias.

-Presence of chronic disease is implied as one of the need factors and this diagnosis is based on the workers' responses. We were not able to check the medical records to clarify the types of diseases.

- Another limitation is that we used a worker's salary as the income level but some of the workers might have more than one income source. Therefore a worker's one income source might not be a very reliable indicator of total income.

REFERENCES

Aigbe, Gladys Osariemen (2011). Theoretical Issues in Understanding of Maternal Health Services Utilization in Nigeria. *European Journal of Social Sciences, 22*(3), 431-442

Alberts, Jantina. F, Sanderman, Robbert, Eimers, J. Marietta, & Heuvel, Wim J. A. Van Den. (1997). Socioeoconomic Inequity in Health Care: A Study of Services Utilization in Curacao. *Social Secience Medicine, 45*, 213-220.

Anderson, James G. (1973). Demographic Factors Affecting Health Care Utilization: A Causal Model. *Medical Care, 11*(2), 104-120.

Aung, Thet. (2008). *Health Seeking Behaviors Among Myanmar Migrant Workers in Ranong Province, Thailand.* (Master of Public Health Program in Health Systems Development), College of Public Health Science, Chulalongkorn University.

Aye, San San, Tun, Soe, Min, Kyaw Swar, Myint, Htwe Htwe, Win, Htay Htay, & Khine, Kyawt Kay. *Health Care Financing Methods and Access to Health Care in Myanmar.*

Curtis, Lori J., MacMinn William J. (2008). Health Care Utilization in Canada: Twenty-five Years of Evidence. *Canadian Public Policy, 34*(1), 65-87. doi: 10.2307/30032565

Fitsum Girma, Challi Jira & Belaineh Girma. (2011). Health Services Utilization and Associated Factors in Jimma Zone, South West Ethiopia. *Ethiopia Journal of Health Science, 21*(Special issue).

Gnawali, D. P., Pokhrel, S., Sie, A., Sanon, M., De Allegri, M., Souares, A., Sauerborn, R. (2009). The Effect of Community-based Health Insurance on the Utilization of Modern Health Care Services: Evidence from Burkina Faso. *Health Policy, 90*(2-3), 214-222. doi:10.1016/j.healthpol.2008.09.015

Health in Myanmar (2012). Ministry of Health.

Hong, T. K., Dibley, M. J. & Tuan, T. (2003). Factors Affecting Utilization of Health Care Services by Mothers of Children Ill with Diarrhea in Rural Vietnam, *Southest Asain Journal of Tropical Medicine and Public Health,* 34(1), 187-198

Hu, J. & Podhisita, C. (2008). Differential Utilization of Health Care Services among Ethnic Groups on the Thailand-Myanmar Border: A Case Study of Kanchanaburi Province, Thailand. *Journal of Populatoin and Social Studies, 17*(1), 115-134.

ILO. (2009). Social Security for All: Investing in Social Justice and Economic Development, International Labor Office, Social Security Department, Geneva, 22-23

Loquias, M. M., Kittisopee, T., & Sakulbamrungsil, R. (2006). Factors Affecting Health Utilization :An Application of the Anderson Model. *Social Pharmacy. 16*(3), 202-211.

Nguyen, C. V. (2012). The impact of voluntary health insurance on health care utilization and out-of-pocket payments: new evidence for Vietnam. *Health Econ, 21*(8), 946-966. doi: 10.1002/hec.1768

Panpiemras J., Puttitanun T., Samphantharak K. & Thampanishvong K. (2011). Impact of Universal Health Care Coverage on Patient Demand for Health Care Services in Thailand. Health Policy, 103, 228-235 doi: 10.1016/j.healthpol.2011.08.008

Pokhrel, S., Snow, R., Dong, H., Hidayat, B., Flessa, S. & Sauerborn, R. (2005). Gender role and child health care utilization in Nepal. *Health Policy, 74*(1), 100-109. doi: http://dx.doi.org/10.1016/j.healthpol.2004.12.013

Rebhan, David R. *Health Care Utilization: Understanding and Applying of Theories and Models of Health Seeking Behavior.*

Sein, Kyi Kyi. (2012). Maternal Health Care Utilization among Ever Married Youth in Kyimyingdaing Township, Myanmar. *Maternal and Child Health Journal, 16(5),* 1021-1030. doi: 10.1007/s.10995-011-0815-8

Sparrow R., Suryahada A. & Widyanti W. (2012). Social Health Insurance for the Poor: Targeting and Impact of Indonesia's Askeskin Programme, Social Science and Medicine, 1-8

Social Security Board, Available from:

Statistical Year Book, 2011, Central Statisitical Organization, Nay Pyi Taw, Myanmar

Statistical Yearbook Asia and the Pacific, 2012, Available from: http://www. unescap. org/stat/data/syb2012/country-profiles/Myanmar.pdf

Vedamulla H. P. (2008). *Factors Affecting Utilization of Health Care Services in Monaragala District, Uva Province, Sri Lanka*. (Master of Health Economics and Health Care Management), Faculty of Economics, Chulalongkorn University.

WHO. (2010). World Health Report: Health Systems Financing: The Path to Universal Coverage

Win, Thida.(2010). Determinants of Demand for Institutional Delivery Care Services in Sagaing Division of Myanmar. (Master of Health Economics and Health Care Management), Faculty of Economics, Chulalongkorn University.

Xu, Jian-Wei, Xu, Qi-Zhang, Liu, Hui & Zeng, Yi-Rou. (2012). Malaria Treatment-seeking Behavior and Related Factors of Wa Ethnic Minority in Myanmar: A Cross-sectional Study. *Malaria Journal*, 11:104 doi: 10.1186/1475-2875-11-417

Xu, K., Carrin G., Phuong Nguyen, T. K., Long Nguyen, H., Bayarsaikhan, D., Aguilar, A. M. (2006). *Health Service Utilization and the Financial Burden on Households in Vietnam: The Impact of Social Health Insurance*. Paper presented at the Health Financing in Developing Countries, Clermont-Ferrand.

APPENDICES

Appendix A

Map of Hlaing Tharyar Township
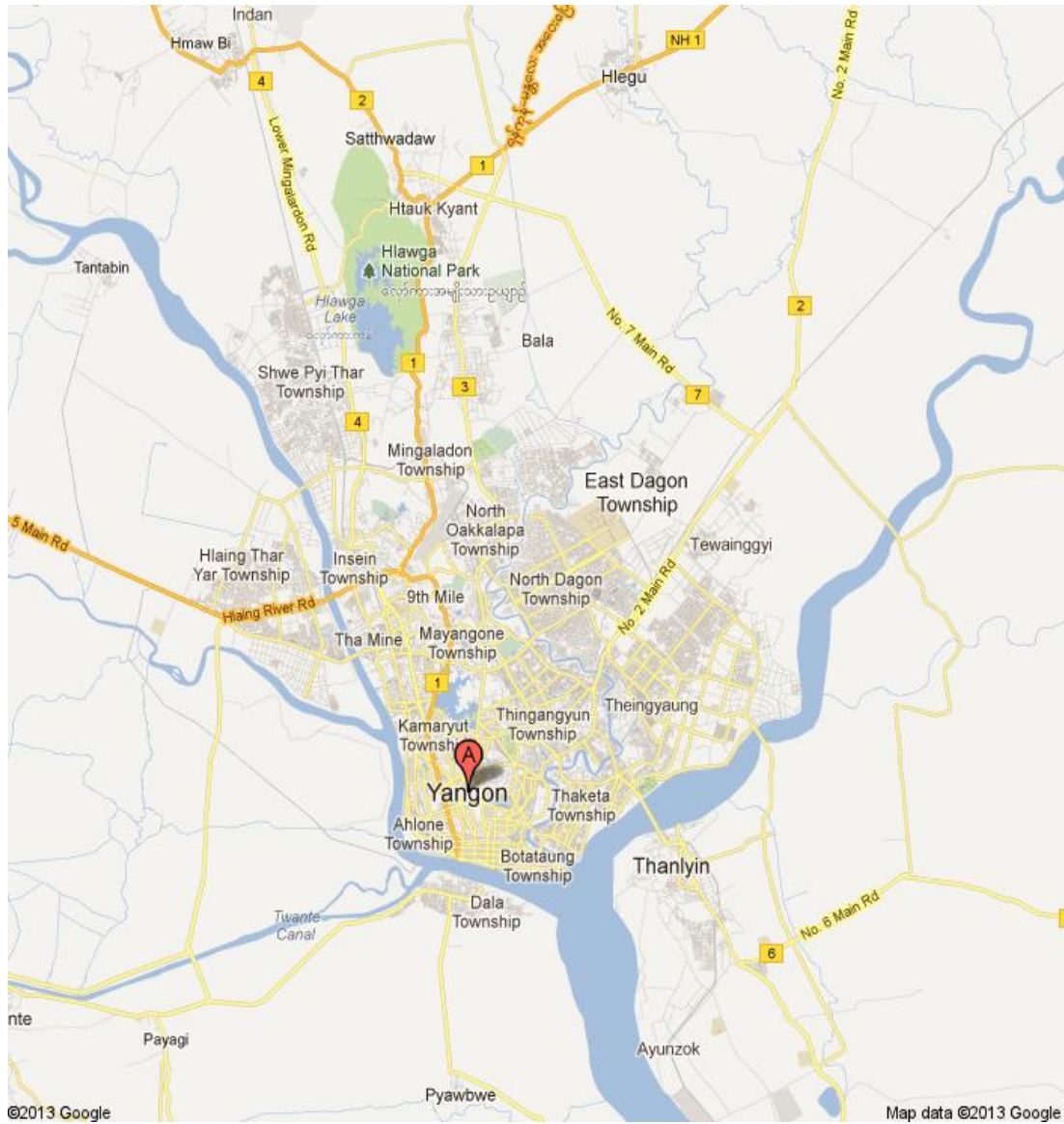
Source: Google map

Appendix B

Questionnaire

Questionnaire on Determinants of Health Care Utilization among

Workers from Private Sector in Yangon, Myanmar

Subject Code…/……./……/....   Interviewer ………………..

Type of Factory ………………   Date   ……. /…… /……

1	Age	……………………		
2.	Gender	(1) Male ☐	(2) Female ☐	
.3	Marital status	(1) Single ☐ (2) Married ☐ (3) Separated ☐ (4) Divorced ☐ (5) Widow ☐	No. of Children ……….. ……….. ……….. ………..	No. of children under 6 ……….. ……….. ……….. ………..
.4	Ethnicity	(1) Burma ☐ (2) Kachin ☐ (3) Kayah ☐ (4) Kayin ☐	(5) Chin ☐ (6) Mon ☐ (7) Rakhine ☐ (8) Shan ☐ (9) Other (specify)…………………	
.5	Religion	(1) Buddhist ☐ (2) Christian ☐	(3) Muslim ☐ (4) Hinduism ☐ (5) Other (specify)…………………	
.6	Highest Education Level	(Self) (1) Primary school ☐ (2) Middle School ☐ 3) High School ☐ (4) University ☐ (5) Other (specify)…….	Father (1) ☐ (2) ☐ (3) ☐ (4) ☐ (5)…………	Mother (1) ☐ (2) ☐ (3) ☐ (4) ☐ (5) ……...
.7	Occupation (Position)	(1) Manager ☐ (2) Administrative staff ☐ (3)Worker ☐ (4) Other (Specify)……….		

8. How long have you been working in your current work?

……………Year …………………….Month

9. How much do you earn a month?

…………….Kyats

10. Are you insured under the Social Security Scheme? (If no, skip to question no. 11 and 12)

(1) ☐ Yes   (2) ☐ No

11. Do you have a social security card?

(1) ☐ Yes   (2) ☐ No

If yes, how long have you been holding this Social Security Card?

…………………….Year………………Month

12. How much premium do you pay monthly to Social Security Board?

.............................Kyat

13. Do you smoke?

(1) ☐ Yes   (2) ☐ No

If yes, how many cigarettes do you smoke weekly (on average)?

……………………..

14. Do you drink alcohol?

(1) ☐ Yes   (2) ☐ No

If yes, how many glasses do you drink weekly (on average)?

....

15. How do you perceive your current health status?

(1) ☐ Excellent

(2) ☐ Good

(3) ☐ Fair

(4) ☐ Poor

(5) ☐ Very Poor

16. Do you have any deformity or disability: (If no, skip to question no.17)

    (1) ☐ Yes   (2) ☐ No

17. What is the level of disability?

    (1) ☐ Trivial

    (2) ☐ Moderate

    (3) ☐ Severe

18. Do you have any chronic health problems?

    (1) ☐ Yes   (2) ☐ No

    If yes, (specify)…………………………………………………………

19. Were you hospitalized in the last 12 months? (If no, skip to question no. 20 and 21)

    (1) ☐ Yes   (2) ☐ No

    If yes, for how many days?

    …………………………………………………………………

20. Were the treatments during hospitalization successful?

    (1) ☐ Yes   (2) ☐ No

21. Do you still possess the conditions caused by that illness?

    (1) ☐ Yes   (2) ☐ No

22. Have you had any health problems in last 3 months? (If yes, skip to question no. 23)

    (1) ☐ Yes   (2) ☐ No

    If yes, (specify)…………………………………………………………………..

23. When was the last time you had a health problem?

    ……………………Year…………………Month

    (Specify)…………………………………………………………………

24. How did you treat yourself? (Continue if only visited health facility)

    (1) ☐ Visited health facility

    (2) ☐ Bought drug from drug store/self-treatment

25. If you visited a health faculty, which was your choice to treat illness?

Order of visit	Types of health facilities	Traveling cost(Kyat)	Traveling time (Minute)	Waiting time at health facilities (Minute)	Payment for drug/health care Services (Kyats)
First	1.Social security health facilities 2.Public health facilities 3.Private health facilities	☐…. ☐…. ☐….	……. ……. …….	…… …… ……	…… …… ……
Second	1.Social security health facilities 2.Public health facilities 3.Private health facilities	☐…. ☐… ……	……. ……. …….	…… …… …….	…… …… ……
Third	1.Social security health facilities 2.Public health facilities 3.Private health facilities	…… ☐… ……	……. ……. …….	…… …… ……	…… …… ……

(If visited only one time, skip to question no 26)

26. Were any visits to health facility related to each other? (eg. Follow up and readmission)

    (1) ☐ Yes   (2) ☐ No

        If yes, which visit is related to each other?

    (1) ☐ First   (2) ☐ Second   (3) ☐ Third

First Visit (If visited only first time, skip to questions no. 32 to 41)

27	Did you get all drugs prescribed by doctor at health facility?	(1) ☐ Yes (2) ☐ No

28	Was the opening time of health facility convenient for you?	(1) ☐ Yes (2) ☐ No
29	When you met health person you welcomed?	(1) ☐ Yes (2) ☐ No
30	Were you generally satisfied with services?	(1) ☐ Strongly satisfied (2) ☐ Satisfied (3) ☐ Unsatisfied (4) ☐ Strongly unsatisfied
31	Were the treatments successful?	(1) ☐ Yes (2) ☐ No

Second Visit (If visit only first and second time, no need to ask questions no. 37 to 41)

32	Did you get all drugs prescribed by doctor at health facility?	(1) ☐ Yes (2) ☐ No
33	Was the opening time of health facility convenient for you?	(1) ☐ Yes (2) ☐ No
34	When you met health personnel, were you welcomed?	(1) ☐ Yes (2) ☐ No
35	Were you generally satisfied with services?	(1) ☐ Strongly satisfied (2) ☐ Satisfied (3) ☐ Unsatisfied (4) ☐ Strongly unsatisfied
36	Were the treatments successful?	(1) ☐ Yes (2) ☐ No

Third Visit

37.	Did you get all drugs prescribed by doctor at health facility?	(1) ☐ Yes (2) ☐ No
	Was the opening time of health facility	(1) ☐ Yes

38.	convenient for you?	(2) ☐ No
39.	When you met health personnel, were you welcomed?	(1) ☐ Yes (2) ☐ No
40.	Were you generally satisfied with services?	(1) ☐ Strongly satisfied (2) ☐ Satisfied (3) ☐ Unsatisfied (4) ☐ Strongly unsatisfied
41.	Were the treatments successful?	(1) ☐ Yes (2) ☐ No

Thank you for your active participation

Appendix C

Contribution rate using Myanmar currency (Kyat)

Wage Class		Monthly Contribution Rates		
Class	Monthly	Employer	Employee	Total
1	Up to 4000	75.00	45.00	120.00
2	4000.01-6000	125.0	75.00	200.00
3	6000.01-8000	175.0	105.00	280.00
4	8000.01-10000	225.0	135.00	360.00
5	10000.01-12000	275.0	165.00	440.00
6	12000.01-14000	325.0	195.00	520.00
7	14000.01-16000	375.0	225.00	600.00
8	16000.01-18000	425.0	255.00	680.00
9	18000.01-20000	475.0	285.00	760.00
10	20000.01-22000	525.0	315.00	840.00
11	22000.01-24000	575.0	345.00	920.00
12	24000.01-26000	625.0	375.00	1000.00
13	26000.01-28000	675.0	405.00	1080.00
14	28000.01-30000	725.0	435.00	1160.00
15	30000.01and above	775.0	465.00	1240.00

Source: Social Security Board

Appendix D

Contribution rate in US$

Wage Class		Monthly Contribution Rates		
Class	Monthly	Employer	Employee	Total
1	Up to 30.00	0.50	0.30	0.80
2	30.01-50.00	1.00	0.60	1.60
3	50.01-70.00	1.50	0.90	2.40
4	70.010-90.00	2.00	1.20	3.20
5	90.01-110.00	2.50	1.50	4.00
6	110.01-130.00	3.00	1.80	4.80
7	130.01-150.00	3.50	2.10	5.60
8	150.01-170.00	4.00	2.40	6.40
9	170.01-190.00	4.50	2.70	7.20
10	190.01 and above	5.00	3.00	8.00

Source: Social Security Board

BIOGRAPHY

Name	: Miss Mi Win
Date of Birth	: 28/04/1983
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2007-2009	: Nurse, Shwe Gonedine Specialist Center, Yangon, Myanmar
2006-2007	: Nurse, Ngwe Moe Medical Center, Mawlamyine, Myanmar