

Exploring Internal Migration behavior in Nepal

Master Thesis

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Abstract

The factors that influence internal migration and how they are associated have been studied based on 2001 Census data in this Master Thesis. The level, directions and migration motives by age, sex, education, religion, and occupation are analyzed. The report suggests that Terai is the population gaining region whereas Hill and Mountain remain population losing region. The Central Hill where the capital city Kathmandu is situated is the main attraction center for migrants. People interested for their study career and service career are bounded to this greatest urban city. The second attractive destination is Terai region which is mainly famous for agriculture purpose. Relatively speaking, there is no significant regional difference in marriage motive.

The findings also prove that the younger age group has the highest migration rate in all the regions. There is no significant sex difference in regional migration level but females moved at an earlier age than males. Education has a great influence on migration behavior. Education has a positive effect on motives like study, service and marriage but negative impact on the agriculture motive. There is no noticeable religious difference in migration behavior. The results show that most of the migrants are moving short distances explicitly within a region. But if they move longer distance, they are moving to Kathmandu city for either study or service career purpose.

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Chapter 1

Introduction

1.1 Background:

Migration is one of the components of Population change. It is usually defined spatially as movement across the boundary of an areal unit (Boyle et al., 1998). Any change in the volume and flow of migration will change the size, growth and other characteristics of population both in receiving and sending areas. Internal Migration does not affect the total size of the population of a country, but it affects largely the regional and sub-regional population, growth rate and other characteristics of population within the country. There may be several causes and motivation factors why people migrate from their place of origin in Nepal. It could be family reason, study purpose, service, marriage, unemployment reasons etc. How these factors influence internal migration in Nepal and what the demographic variables such as age, sex, education levels, religions, marital status, occupation levels, place of residence influence the migration behavior in Nepal is the main focus of my master thesis on “Exploring Internal Migration behavior in Nepal”. There is no in-depth statistical and empirical study of period internal migration in Nepal so far. A proper assessment of the consequences of internal migration cannot be made without analyzing the patterns and influencing factors of such migration. So this thesis is expected to fill up this knowledge gap. Here is the overview of the thesis. This first chapter deals with background of the thesis including its research questions and their objectives. Chapter 2 is devoted to theoretical part and conceptual model of the Master Thesis. Chapter 3 discusses the data used, its quality, and tool and techniques used for analyzing the data. Chapter 4-7 are all about the output of the analysis. Chapter 4 is about the status of migrants versus non-migrants by different demographic characteristics. Chapter 5 is focused on geographical internal migration. Chapter 6 explains about different motives of migration. Chapter 7 analyses the relation and strength of relationship between the independent variable with explanatory variables. Chapter 8 is ended with the final conclusions and recommendations.

1.2 Research Questions:

To what extent do Individual Characteristics and Regional Characteristics influence internal migration in Nepal and how they are interrelated?

- How individual characteristics influence in decision of moving?
- What influences people to leave the origin, and choose the destination place?
- Do these factors vary across the region and sub-region?
- What influences people for migration motives?
- How these motives are associated with individual characteristics?

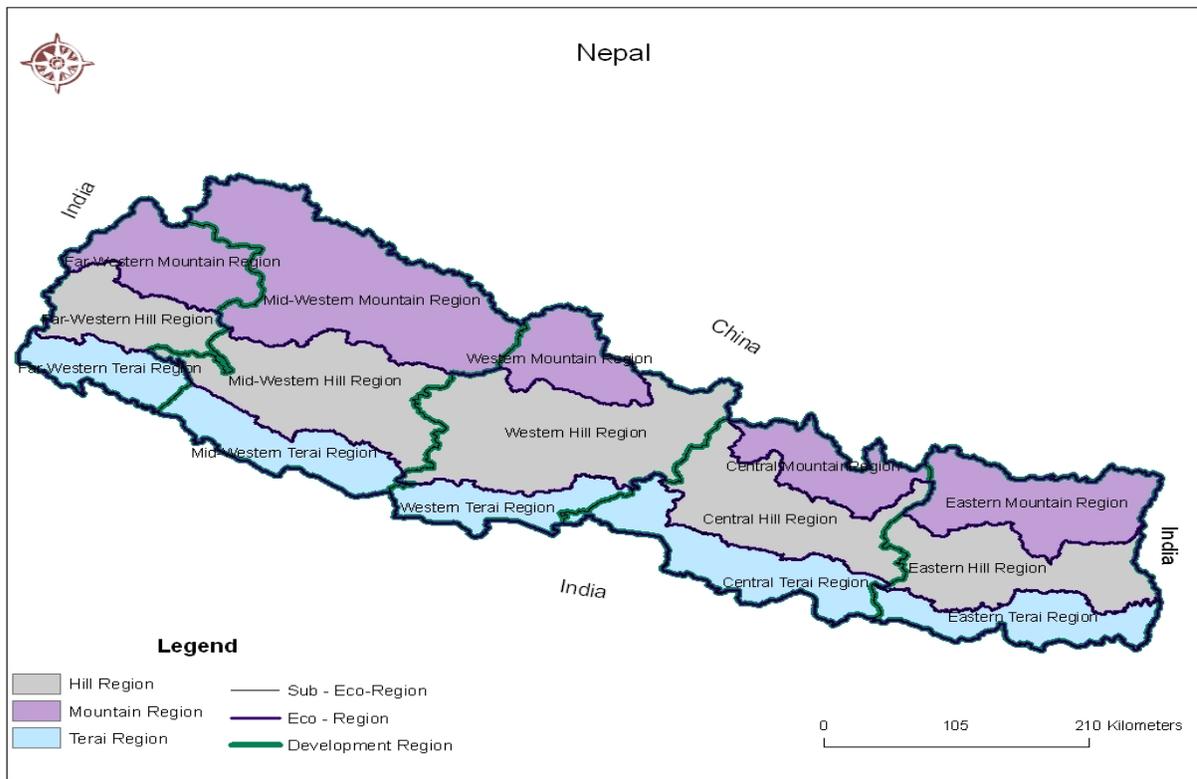
1.3 Research Objectives:

- To recognize the major influencing factors for internal migration in Nepal.
- To know the variation of these factors and its flow across the region and sub-region.
- To know the association of migration motives with individual characteristics.

1.4 Demographic and Geographic Characteristics of Nepal:

This section aims to give insight into the migration related issues of Nepal based on literatures and my own experiences. Nepal is a land-locked country nestled in the foothills of Himalayas. It occupies an area of 147, 181 square kilometers with elevation ranging from 90 meters to 8,848 meters. The country is sandwiched between the two most populous countries of the world, India to the east, south and west, and China to the north. For administrative purpose, Nepal is divided into 75 districts which are grouped into five development regions (Eastern, Central, Western, Mid-western and Far-western) and three ecological regions (Mountains, Hills and Terai). Within each district there are village development committees in rural areas and municipalities in urban areas. In total there are 3915 village development committees and 58 municipalities corresponding to about 36 thousand wards (the lowest administrative units in the country). Some of the demographic data such as total households, male, female and total population are available up to these smallest units. However, migration data are available only up to district levels.

Map 1.1 Administrative map of Nepal



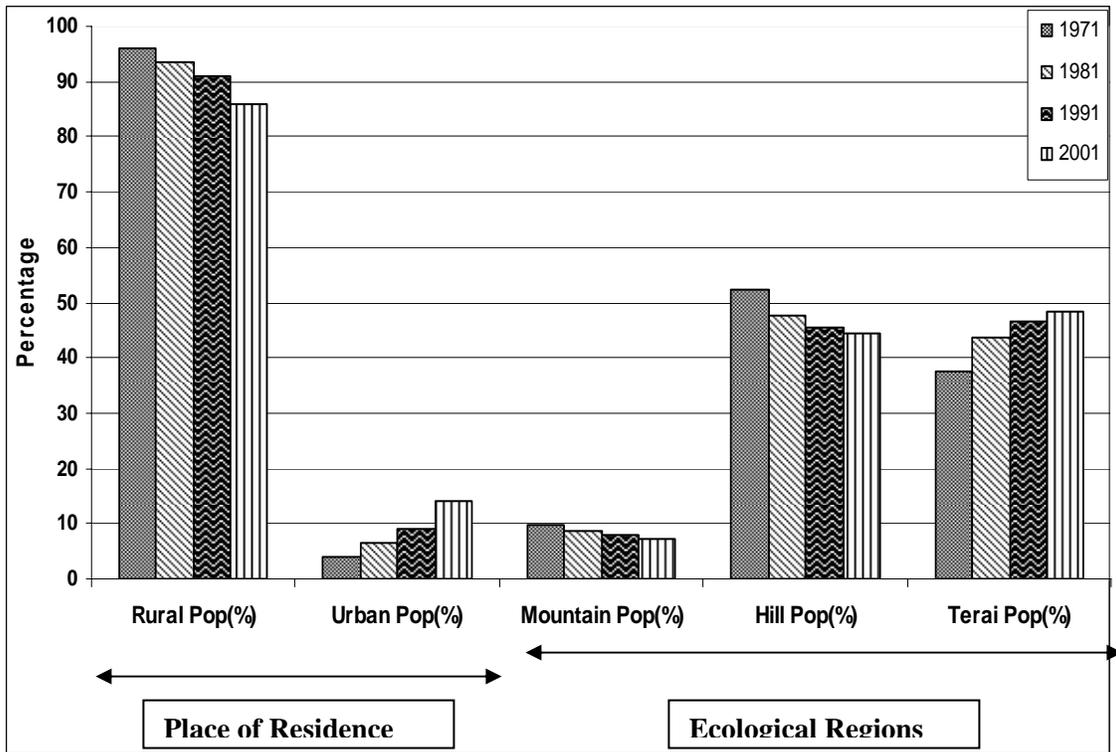
Source: GIS section, CBS

According to the population census 2001, the total population of Nepal is 23,151,423 (Central Bureau of Statistics, CBS). Nepal ranked 142 in human development index (UNDP, 2007). The population of Nepal grew at an annual rate of 2.25 per cent between 1991 and 2001 with a sex ratio of 99.8. Nepal has a huge population of female in the reproductive age group (49.2 % of all women) with high fertility rate (4.1 children per women, 2001). Marriage among girls before the age of 18 years is highly prevalent.

Likewise the infant mortality rate is 46 per 1000 population (2006) whereas the maternal mortality ratio is 830 per 100000 live births. Nepal at present has a crude birth rate of 33 and a crude death rate of 10 per 1000 population. Life expectancy at birth for females is 61.0 years and that of males is 60.1 years (Population Census Report, 2001). Females in Nepal are slowly showing the tendency of living longer than males like in most other countries. Nepal still has a low level of urbanization compared to many other countries in Asia. Nepal's urban centers increased from 16 in 1971, 23 in 1981, 33 in 1991 and 58 in 2001. In 2001, Nepal has 86.1 percent rural population and 13.9 percent urban. With an increasing number of urban centers and the level of urbanization, Nepal is experiencing an increasing volume of both internal and international migration during the 1990s. According to Census 2001, among the three Ecological Regions (Mountain, Hill and Terai), the Terai had enumerated 35 percent of the total population in the census year 1952/54 and has increased to 48 percent in the census year 2001. Since the last few decades, the eradication of Malaria has made Terai an attractive destination for migration. There has been a remarkable decrease in the share of population in Mountain and Hill from 65 percent in 1952/54 to 52 percent in 2001. The distribution of the population over Terai, Hills and Mountains are 48.4, 44.3 and 7.3 percent respectively (Population Census Report, 2001).

The life in Hills and Mountains is becoming difficult because of the landslides and deforestation. Haphazard developments in both rural and urban settlements have made this place difficult to develop. Every two in five persons in Nepal lives below absolute poverty line and every other person in rural areas is poor (Poverty Trend in Nepal, 2004). Poverty, high unemployment and underemployment (17.4 and 32.3 %) have compelled people to remain either under severe poverty or migrate to other places both inside and outside the country for better opportunity for their livelihood. The uneven distribution of population has led to a high disparity in population density in different regions. The following bar diagram explains the distribution of population over last 40 years. The Terai (Plain area) region had the highest density of population since long time followed by Hills and Mountains. Socio-economic and political problems are enforcing people to move (KC, 1998). The consequences of unplanned migration require timely responses by development planner and policy-makers to deal with pressure created on the infrastructure of destination places by the influx of migrants. So appropriate policies and programs can only play a significant role to manage the movements, and balance the regional growth and sustainable regional development of Nepal.

Figure 1.1 Population distribution trend (1971-2001)



Source: Census Report, 2001

Chapter 2

Theoretical and Conceptual Framework

2.1 Background Literature

Migration is the least researched area in Nepal. Hardly any literature related to internal migration in Nepal is available. Since the last few decades, people are moving due to numerous reasons from one place to another place in Nepal. In-migration in Terai is extremely high (KC, 2003) due to fertile land, improved infrastructure, easy access to Government facilities which is then followed by Hills and Mountains (Population Census Report, 2001).

In developing countries like Nepal, internal movement could also be driven by the employment and wage differences. A report on 'causes and consequences of rural-to-rural migration in Nepal (Conway and Shrestha, 1981) indicated that the Terai is the recipient of migrant from Hill households. The differentials in income derived from agriculture, Government investment in the industrial sectors were contributing factors for positive net migration. The micro analysis found that the decision to migrate was more prompted by the inability of a household to sustain oneself in the Hill and Mountain areas. However, Nepal is in unrest since last 15 years so many people are coming to urban area or Terai for security reason which is different than before. Likewise, KC(2003) reported that the volume of life time migration at district level is 13.2 percent of the total native born population in Nepal, 2001. Similarly, an Ad Hoc expert meeting on Migration, Poverty and Development in Nepal (2003) which was assigned by the Economic and Social Commission for Asia and the Pacific (ESCAP) came to the conclusion that there is a clear relationship between poverty and development indicators on the one hand, and net migration on the other regions experiencing net negative migration have a higher incidence of poverty and regions of net in-migration are relatively better off in development indicators.

A report on "Migration and rural-urban linkage in the Economic and Social Commissions for Asia and the Pacific (ESCAP) region" by Hugo (1992), has highlighted some issues on migration. The demographic, social, and economic impacts of especially rural-urban migration in this region are complex with a variety of consequences, both positive and negative, in areas of origin and destination.

2.2 Social and Scientific Relevance

Migration means change of place of living for a long stable period. When people leave one place and go to a new place for a temporary span of time, it is not considered to be migration (Population Census Manual, 2001). For the purpose of research, internal migration is taken into account here. Since this is a less researched area, there is limited information on causes of internal migration in Nepal. People generally move from low-earning areas to high earning areas. It indicates that there should be quite large differences between the usual place of residence and destination place in terms of living standard, opportunity and access to government facilities. People usually migrate from unproductive

areas, insufficient job opportunity areas, least develop areas, to others with better circumstances.

Internal migration has great impact on regional demographic changes. Moreover, if we could find the direction and level of flow of migration, the Government could plan to provide extra efforts in developing additional infrastructures, creating employment and providing more opportunity in these areas where influx of migrants is very high. Some time unexpected massive flow of people would create problem in the place destination. Particularly the sharing Government facilities like road, hospital, water, sanitation, security etc will be influenced by massive in-migration in destination which may cause social destruction, if prompt plan and policy is not made. This research could contribute to programs and policy maker to manage the massive migration flow properly. I hope the causes of migration, obtained hereafter, would open for new areas for researchers too.

2.3 Migration Policy and Intervention

Weeks (1986) has defined policy as a 'formalized set of procedures designed to guide behavior'. Population policy may be defined as deliberately constructed or modified institutional arrangements and/or specific programs through which governments influence, directly or indirectly, demographic change (Demeny, 2003). Policies are designed keeping the future perspectives in mind. Population policy, in general, can be either direct or indirect. Direct policies affect population variables directly. For instance, encouraging in-migrants can result in an increase in the population growth rate. But indirect policies refer to those policies, which do not have a direct effect on population variables but have indirect effect on them. For example, educated women are more likely to have a lower fertility rate. Thus policies, which increase the level of education among women, will have an indirect impact on the reduction of fertility. A high population growth rate, indeed, has negative impact on all types of development activities in the country. So people are more likely to migrate from the place where development is the least to the area where the access of the government facilities are better (KC, 2003). Different people make different choices: for instance farmers want to go to the regions with the most fertile land, students want to go where better and higher education is available, educated people want to go where they can find the relevant jobs. The higher the growth rates of population, the lesser the share of Government facilities per capita. Hence the policy of reducing population growth rate has been a priority in Nepal's population policy since a long time.

Very limited research has been done on internal migration in Nepal, and the recommendations from these studies have not been implemented as policies. This indicates that the policy circle (Hardee et al., 2004) does not exist so far. The policy circle includes the these stages: identification of the Problem based on Political, Social, Cultural and Economic context; knowing the related People and Place; Processing of Developing Policies; allocating the Price Tag; producing Documents of Policies, Laws and Regulations; lunching the Program with monitoring its Performance and Implementation. The linkage between the research and policies in the field of internal migration in Nepal is actually not observed yet. In fact, the government has still not given appropriate attention to internal migration policy. Immediate attention for making internal migration policy is needed to guide migration management efficiently. So my thesis will contribute to the body of knowledge that the Government needs to know in order to formulate migration

policy goals, like, the major causes of migration; the direction of migration flow; age and sex pattern of migrants; the role of socio-economic status, regional disparities; differences between male and female migrants and so on. I do hope this will give a clear picture for the government to set appropriate policies and programs in the context of internal migration in Nepal. In fact, knowledge about internal migration component could contribute to the sustainable development strategies of the country.

2.4 Theoretical Framework

Migration is guided by perceived differences in opportunities and living conditions of the place of origin and place of destination. The causes of internal migration can be seen as factors of demographic changes and economic development of the regions. The disparity in economic indicators, for example wages, employment, income and opportunity in labor market; government facilitates like education, business and service centers etc can be seen as influencing factors for internal migration. An important theory explaining migration based on economic perspective is the Neoclassical economic theory which says that migration is caused by regional differences in supply and demand for labor (Massey et al., 1993). Migration is thus 'labor reallocation in response to market need' (Ritchey 1976, cited by Boyle et al., 1998 p.61). Migrants aim at maximizing their incomes, which means maximization of profit on investment in migration (Boyle et al., 1998).

Likewise, another important theory which could explain the internal migration in Nepal is Human Capital theory. The key idea of this theory developed by Sjaastad (1962) is that migration is viewed as an investment decision, and potential migrants weigh up the costs of migration against its returns. Migration is for better life, so well educated and skilled people are more likely to migrate, and they perceive better opportunities of the move. Age, sex, education, skills are the key factors for this theory. People invest in their education an early age so that they can maximize benefits for a long time in the future. Overall, the Human Capital approach describes migration as a holistic investment decision for an individual based on long-term as much as short-term (both monetary and psychological) benefits.

Social networks could be another influencing factor for internal migration. It helps potential migrants by contributing to financing the journey, helping to find a job or appropriate accommodation or giving information about education possibilities or access to social security (Esveldt et al., 1995, cited in Jennissen, 2007). Marriage custom in Nepal is relying on the social network and the family. Children's parents come to know each other by the matchmaker who is also known as priest in the society. Relatives and friends are equally important to exchange the information and assist the new partners.

This study is based on the micro data of the population census 2001 of Nepal, which allows also the testing of a number of other migration theories. Ravenstein's first law of migration states that the majority of the migrants go only for short distance. His third law states that the migrants going long distance generally go by preference to one of the great centre of commerce or industry. Ravenstein's gravity model is equally important which says that the flow between regions is directly proportional to the population size of the respective regions and inversely proportional to the distance between them.

Migration decisions are the aggregate effect of push and pulls factors. Place related macro factors can push individuals to move out from certain area, and can attract or pull them to move to certain places. The widely known model explains the direction of migration is the Push-Pull theory (Bogue 1969 and Lewis 1982 as cited by Boyle et al. 1998). The list of Push and Pull factors are for instance:

Push Factors:

- Decline in a national resource or the prices it commands; decreased for a particular product or services; exhaustion of mines, timber or agricultural resources.
- Loss of employment due to incompetence, changing employers' needs, or automation or mechanization
- Discriminatory treatment on the grounds of politics, religions or ethnicity.
- Cultural alienation from a community.
- Poor marriage or employment opportunities.
- Retreat due to natural or humanly created catastrophe.

Pull factors:

- Improved employment opportunities.
- Superior income-earning opportunities.
- Opportunities for specialized training or education.
- Preferable environment or general living condition.
- Movement as a result of dependency on someone else who has moved, such as a spouse.
- Novel, rich or varied cultural, intellectual or recreational environment (especially the city for rural populations).

Source: Bogue 1969 and Lewis 1982, cf. Boyle *et al.* 1998, P.67

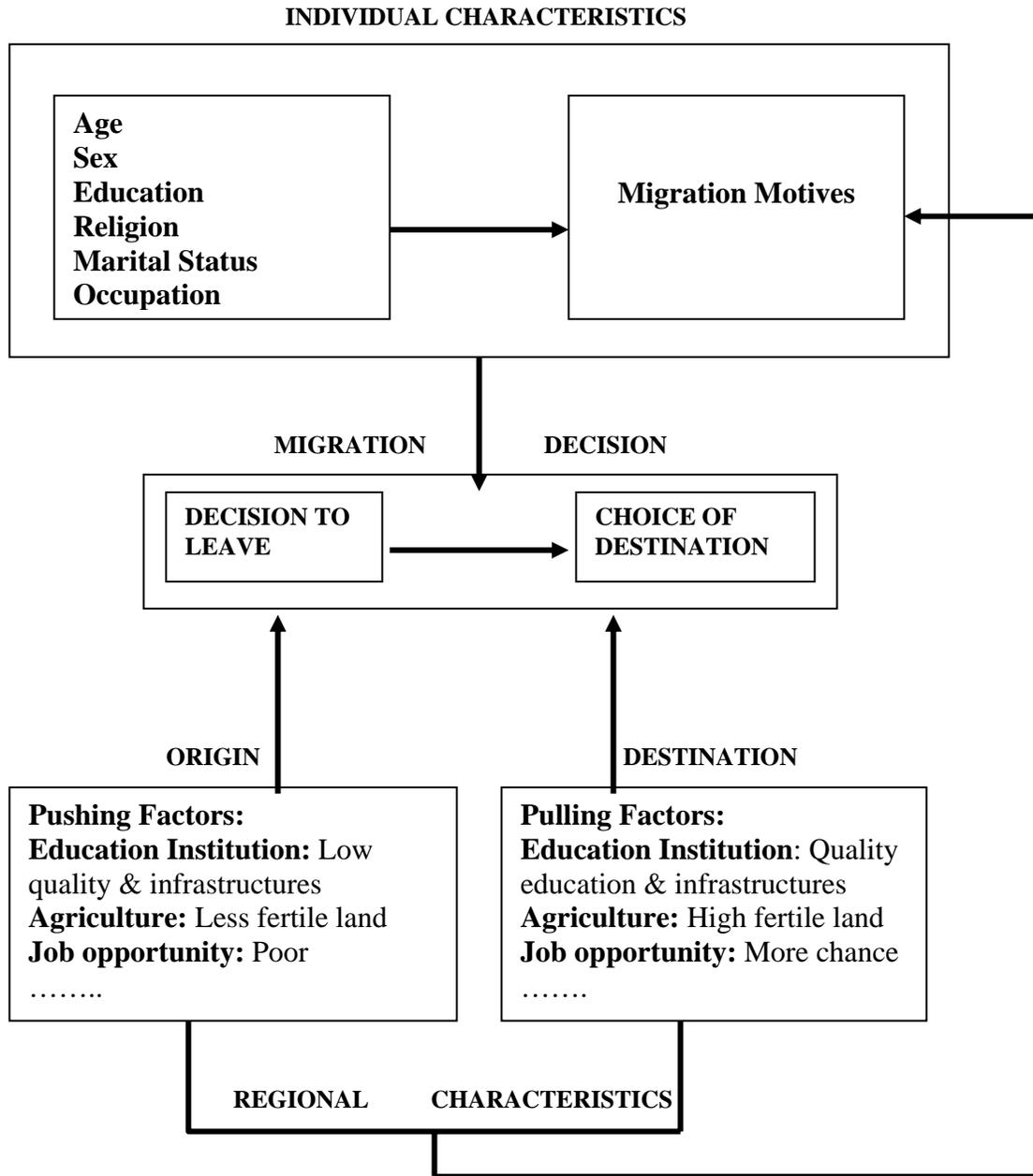
Based on these above concepts and theories, the analysis of how these factors vary across the regions and sub-regions is another interest of this research. I will examine the volume and pattern of internal migration by regions, analyzing the migration motives and characteristics of internal migrants with respect to other social status.

2.5 Conceptual Framework

The following conceptual model is based on a set of theories and concepts discussed above. It comprises economic theory, human capital theory and Social Network approach. It can be seen that the internal migration mainly depends on individual characteristics of migrants and Pulling & Pushing factors of place of origin and place of destination. Here, the main idea of this conceptual model is that the internal migration occurs as a result of individual characteristics such as age, sex, education, religion, marital status, occupation etc. and other equally important factors are the pushing and pulling factors of place of origin and destination respectively. Economic disparity across the regions such as occupation, employment, and migrant's human capital characteristics such as age, sex, education, religiosity, and family characteristics such as marriage, relatives in the place of origin and destination are the key idea of this conceptual framework. Age, sex, education, religion, occupation may play a vital role for a person to decide to leave the place, and choose the place of destination. Migration motives are also influenced by these factors. Pushing factors from the place of origin are regional characteristics that help a person to

decide to leave whereas pulling factors are regional characteristics that help to choose the destination. Both of these factors are equally important for migration motives as well. The following model visualizes how these factors link with each others.

Figure 2.1 Conceptual Model



Chapter 3

Data and Methodology

3.1 Introduction

This chapter will focus on the Data and Methodology. This research is quantitative research and is based on both retrospective and cross-sectional data collected during the last census 2001. Central Bureau of Statistics (CBS) conducted this National Population Census where questions on migration were asked for 12 per cent sample households. Based on the theoretical framework and the conceptual model, section 3.2 covers the quality and over view of the Nation Population Census 2001 data. Section 3.3 explains how the sample is drawn and population is estimated. The operationalization of variables is described in section 3.4. The statistical methods to be used are discussed in section 3.5.

3.2 Statistical Data: National Population Census 2001

Survey, Census and Vital Registration System (VRS) are the prime sources of migration information in Nepal. VRS collects information on vital events like birth, death and migration. Nepal has started VRS since 1962. Migration related information like place of origin (District, Village Development Committee/ Municipality name), name, age and sex of the household head and size of the migrated family are captured in VRS. Then the authority issues the migration certificate. But the data quality is still under question because there is no law enforcement so that people are compelled to register immediately after the migration takes place. Migration, a move from one district to another district, is a recurrent event, and migrants are not always registering themselves with appropriate authorities. It is common in Nepal that the people go to register their migration report in the local authority only when they need to produce other documents which needs migration certificate. This naturally leads to a very high underestimate of the internal migration numbers. So, VRS data is not appropriate for analysis. Some surveys like Nepal Living Standard Survey, Nepal Labor Force Survey are some crucial surveys which give some information about the internal and international migration in Nepal. But based on the availability of data, I preferred to use the micro dataset of the census data 2001 in my Master Thesis. Here the migration data is retrospective data and is mainly focused on the place of residence at 5 years prior to enumeration date. The migration data were recorded by comparing the current residence at the time of Census and the previous residence at the time of birth or five year before the census. Lifetime migration data is obtained by comparing current residence with the place of birth. Recent migration data is obtained by comparing current residence with the previous residence five year ago. So focusing on recent migration is the purpose of this thesis. This dataset has information whether he/she is migrant or non-migrant in the place of enumeration along with in-depth information on Human Capital (like age, sex, education, field of study), Social network and family (like marital status) and Economy (like occupation, and employment status), Place of Residence, Migration motives and so on.

CBS conducted the population Census 2001, which is the tenth decennial census in the history of census taking in Nepal. In this census, two types of Form (Form 1 and Form 2) were administered- the Form 1 was used for complete enumeration and Form 2 was used

for the sample enumeration. This census adopted the UN recommendations. It was based on Modified De-Jure method that is the usual place of residence concept. Form 2 is for sample enumeration which included a comprehensive range of information. In 2001 it was the first time that CBS has used this sampling procedure in the census enumeration. The sampling frame is the listing of the HH and sample selection was done on the basis of selecting one in eighth housing unit in each enumeration area by using Systematic Random Sampling method. However, 6 districts and 52 municipalities of the country were completely enumerated with regard to their population size. The ratio estimates method was used in making estimate from the sample. The total sample covers 11.35% of total population and 12.47% of total household. The census was carried out in two phases- the first was the household listing and the second phase was together with sample and population enumeration. Here our concern is only on sample enumeration which is all about Form 2. This form has Household Information and Individual Information. The household information captured the information like the main sources of drinking water, main type of cooking fuel, main type of lighting fuel, type of toilet, type of facilities (Radio, TV etc) in the HH and death in the past 12 months in the HH (sex of deceased, age of deceased, date of death of deceased and cause of death). Individual Information covers the information like place of birth, duration of stay at current place (if born outside), main reason for staying in current place (if born outside), residence five years ago, literacy, educational attainment, currently attending school, marital status, age at first marriage, children ever born (living together, living elsewhere, dead), children born in past 12 months, type of economic and non-economic activities performed in the past 12 months, main occupation, employment status etc.

To ensure the quality of Population Census data, a series of questionnaire test, trainings, supervision of field works (one for four enumerators), key verification in data entry, and data analysis by experts have been done. A number of steps were taken to improve the quality of data, for example, formation of committees like Population Census Technical Committee, Questionnaires & Manual Preparation Committee, Media Core Group, Project Management Committee and Occupation & Industrial Classification Committee where the Director General of CBS was the chief coordinator of all these committees. Moreover, census publicity was made through mass media, work shops and seminars from the very beginning to improve the coverage of the census. Delineated maps of Enumeration Area were provided to have a complete and free from duplicated count of population as well as to assign the Enumeration Area to the enumerators. Four layers of supervision were deployed to enhance the quality of data collection. More than 500 supervisors for 20000 enumerators were employed. The accuracy of the reported ages was examined by whipple's index, Myer's blended index, and adjustment was made in age distribution. Age heaping were found at ages ending 0 and 5 with whipple's Index for male and female are 205.7 and 206.6 respectively. Also it has been estimated by post-enumeration sample survey that the reported population is under enumerated by 5.3 percent (Dangol, B.D.S., 2002, p.19). The two most common sources of error in censuses of any countries are coverage error and content error (Weeks, 2005). Some time, it has become a difficult task to get full cooperation from the respondent. For example the Population census in Netherlands scheduled for the 1980s was actually cancelled after a survey indicating that the majority of the urban population would not cooperate (Robey 1983), and no census has

been taken since then. Likewise in the 2001 census, the enumeration could not be completed in all areas of Nepal. Enumeration was affected in 955 (2.7%) rural and 2 (0.2%) urban wards due to political disturbances in the country. Though 23,151,423 Population was announced in the 2001 census, most of the socio-economic and demographic details are only calculated for 22,736,934 of the population excluding the 1.8 percent of the affected areas.

3.3 Sampling and Estimation Procedure

The dataset has 2583245 records which are 100% matched between Form 1 and Form 2. This is 11.35 % of Total Population. The weight is assigned by using sex-wise district-wise population from National Population Census Report, 2001 and the given sample dataset. For example, the weight for male of a district is calculated by total male population of that district from National Population Report divided by the total sample male population obtained from the sample dataset. Same method is used for female. Using this ratio estimate, all population statistics are calculated. The ratio estimation method is used in making estimates from the sample assuming that the sample estimates are generally consistent with the 100 percent counts and the estimates have smaller sampling errors. To make the analysis more convincing and reliable, 5% sample is taken from the sample dataset. Analysis of motivation factors for migration is based on these dataset. This dataset is again large enough for running Logistic Regression to detect whether the migration participation is as a function of explanatory variables. For this purpose, a random sample of size exactly 13000 cases is drawn from the first 2583245 cases of the sample dataset. This is how the sample technique is used and estimated the population.

3.4 Operationalization of Variables

After having studied the nature of dataset, the research questions and objectives, we can determine which tools and techniques are appropriate. So the operationalisation of concept is described here in this section.

Definitions of concepts used;

Migration: Migration is usually defined spatially as movement across the boundary of an areal unit (Boyle et al., 1998). In census 2001, the movement within the country is known as Internal Migration and outside the country is known as International Migration.

Internal migration: Is defined as a move from one migration defining area to another that was made during a given migration interval and that involved a change of residence. In this Master Thesis, Internal Migration is defined as the movement across a district boundary but within the country. In the period between 5 years prior to the census date and the census date. In the census 2001, a person who was in another district other than the enumeration district 5 years prior to the census is defined as a period migrants-see below (or alternatively current migrants).

In-migrant (Immigrant): Here a person who enters the district within the last five years period before the census is an in-migrant for the district.

Out-migrant (emigrant): Here a person who departs by crossing a district boundary to a point outside it is an out-migrant for the district but there was no question for out-migration within the country in census 2001.

Net-migration: Net-migration is the difference between out- migrants and in-migrants for a district within the period of 5 years prior to the census 2001.

Period Migrants: The person of aged 5 years and above whose place of residence 5 years prior to the census was different from the place of enumeration during the census period (Population Census manual, 2001).

Human capital: Human capital defined by personal characteristics of potential migrants in terms of age, sex, education, religion, and marital status which increase opportunities to find employment and increase income in the place of destination.

3.5 Methods of Statistical Analysis

My dataset is from the sample enumeration Form 2 of the population census 2001. Here I estimate the population from sample based on ratio estimate method. The first and foremost is to assign the appropriate weight for unit of study in the sample. Simple tools like Excel, SPSS were used to calculate the number of migrants in the regions. The higher the score for reasons of migration, the more likely the cause will be a pulling factor for place of destination. The causes of migration in the region with respect to the different dimensions like population structure, education, religion, profession, marital status, occupation of the migrants will be studied. The tools and techniques of this research would be migration formula, simple calculation, tabulation, figures and GIS maps.

We used Logistic regression model to detect whether the migration participation is as a function of explanatory variables. Logistic regression model (sometime called the logit model) is the log of the odds (ratio of probability of success to failure) and is given by

$$\text{Log} \left(\frac{\Pi}{1-\Pi} \right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots$$

$$\text{Or Logit} (\Pi) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots$$

Where, Π - probability of success; X_i –Explanatory variables (independent variables), it may be either numerical or categorical. β - the change in the log-odds if X changes by 1 unit or it is the change in the log odds of being in a category, compared to being in the reference group. β -coefficient and odds values give the direction and strength of relationship. Positive sign of β value refers for positive direction whereas negative sign refers for reverse direction. Here odds ratio, $E(\beta)$ is defined as the relative risk of being in that group as compared to the reference group.

Looking at estimated valued and the P-value in Chi-square test gives a clear picture about whether the variables are significant or not. After knowing the association of variables which have a major role in internal migration in Nepal, we can develop a functional model based on their relation.

Other simple calculations would be used like:

- 1 Migration rate is the number of migrants during a year divided by the population exposed to migration (the midyear population).
- 2 In-migration rates per 1000 inhabitants = $(\text{IM}/\text{Mid year population}) \times 1000$
- 3 Out-migration rates per 1000 inhabitants = $(\text{OM}/\text{Mid year population}) \times 1000$
- 4 Net internal migration rate per 1000 inhabitants = $(\text{IM}-\text{OM})/\text{Mid year population} \times 1000$; positive value means population gaining region whereas negative value indicates population loosing region as a consequence of internal migration.
- 5 Demographic Effectiveness is the effect of moves into and out of the region for population change in the region as a percentage of the total volume of moves into

and out of the region. It is denoted by E and given as, $E = \text{Positive value of } [100 * (\text{in migration} - \text{out migration}) / (\text{in migration} + \text{out migration})]$

- 6 System Effectiveness is for the cumulative total that is $= 100 * (\text{sum over all regions of positive value of Net migration}) / (\text{sum over all regions of gross migration})$

Chapter 4

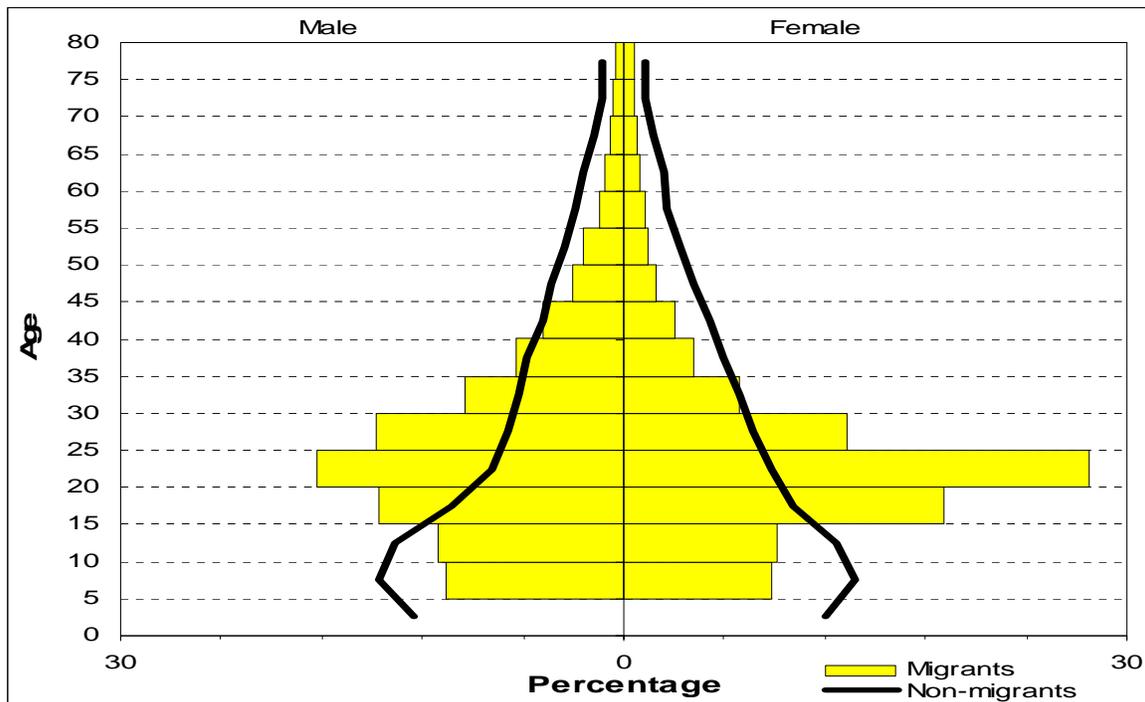
Migrants versus non-migrants

Based on the research questions and their objectives, this chapter answers how the internal migrants and non-migrants are influenced by different characteristics of migration. The outline of this chapter is given as follows. Section 4.1 covers the current age and sex pattern of migrants and non-migrants. Section 4.2 explores the age and sex specific migration rates. Section 4.3 discusses the migration age schedules by various characteristics. Section 4.4 highlights the conclusion of the chapter. Here, internal migration is measured as the number of people who arrived at the current place of residence (current district) during the last 5 years period prior to the census, 2001.

4.1 Current Age and Sex distribution of Migrants versus Non-migrants

In this section, it is intended to explain the age and sex pattern of the migrants and non-migrants. Here we are focusing only on the migration that happened during last 5 years period prior to the census 2001. This current migration is important for need based development prospective. The life time migration provides the long term trend of migration but fails to detect what is going on recent years in detail. So, period migration that is studied here in this thesis can be used to know the recent scenario of people's move. Where were you living before 5 years was asked in the census 2001 questionnaire for those all who are of aged 5 years and above. So naturally this means there is no one migrant who is of aged below 5 years (Figure 4.1). This question provides the current migration information. The following chart illustrates the current age and sex composition of the migrants and non-migrants.

Figure 4.1 Current age and sex distribution of migrants and non-migrants, 2001

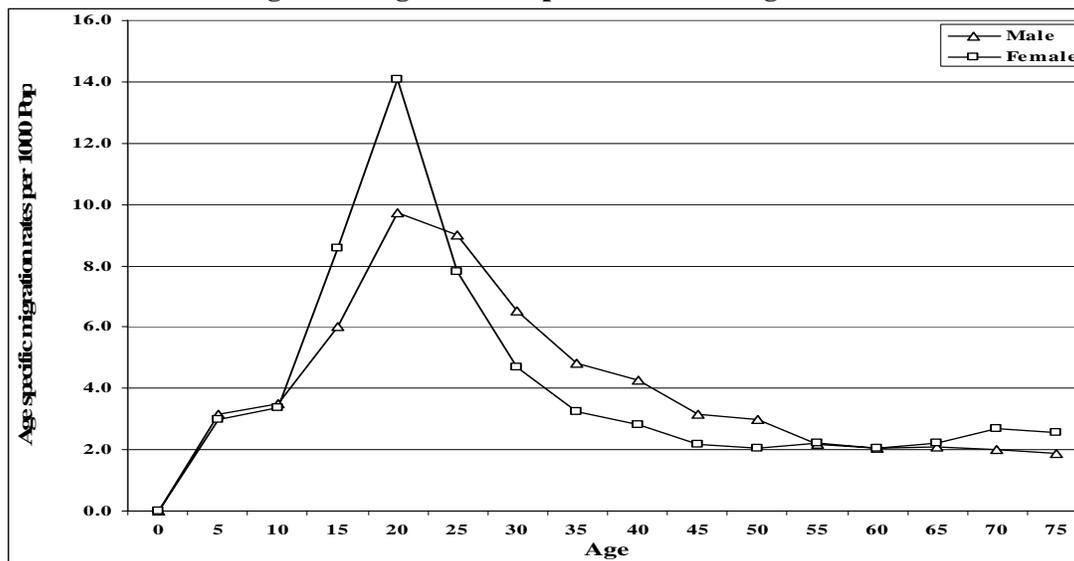


The above figure shows that the age and sex structure of migrants is wider at the bottom (younger age groups). The age groups up to 10-14 are relatively narrower than the successive three age groups belonging to 15-19 and 20-24 and 25-29 year of ages. As in most of the developing countries, the pyramid of migrant percentage of Nepal is getting narrower and narrower in higher age groups. The percentage shares of female migrants are relatively higher than males in the age group 15-24 whereas male percentages are higher in all other age groups. This means that female migration is much more age-concentrated. The pyramid of non-migrants is also flattening at the bottom. The percentage share of non-migrants is relatively higher than migrants in their corresponding age group below the age 15. Likewise, it is also higher in age above 35 years as compare to migrants. According to the Census 2001 data, the age and sex structure of migrants shows that, out of total internally moved migrants, females (51.7%) slightly outnumber males (48.3%). More than 74 percent of all the migrants are from the working age group (15-59) whereas about 23 percent and 3 percent respectively are from below and above working age groups.

The above chart proves that the migration behavior is highly age-related. There is the increase in the mobility as the age of children grow up and reach a peak at the young adult ages, and then gradually decline towards the retirement and older ages. This evidence clearly indicates that the migration is age selective in Nepal. Additionally, the age-specific migration also varies across the gender. Female mobility exceeded male migration during young adult age whereas male dominant the female migrants in rest of the ages. Thus the age schedule of migration is also sex selective, with female migration much more age-concentrated in the age range 15-24.

4.2 Migration rates by age and sex

Figure 4.2 Age and sex specific rates of migration



From the above table, we can generalize that for most migrants the move occurs in early stages of their life course, particularly under the age 29. It could be the reason behind that education, career building and marriage become more and more important for both gender thereby making age group 15-29 more mobile compared to others. Interestingly, females

are slightly more mobile than males in their early age, probably because of the early marriage. However the age specific migration rates for male and female are largely identical, except that women demonstrate high rates at younger ages, and aged above 70.

4.3 Migration age schedules by characteristics

This section is devoted to the age structure of migration by background characteristics. Subsection 4.2.1 describes age specific rates by Education Status of migrants; 4.2.2 deals with age and sex rates by Marital Status. Likewise, subsection 4.2.3 focuses on the age and sex pattern by major occupation groups.

4.3.1 By Level of Education

The following figures demonstrated the rates of illiterate migrants and literate migrants with corresponding levels of education.

Figure 4.3 Educational Status of migrants by age and sex

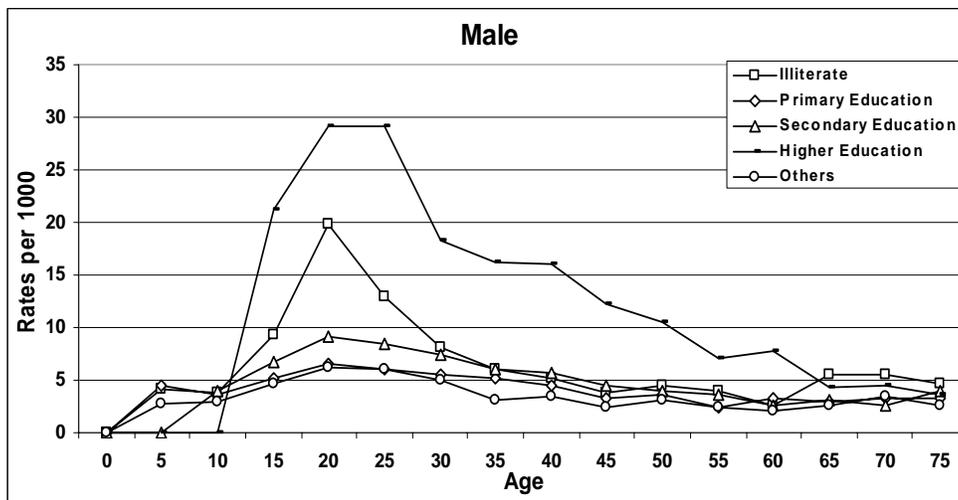
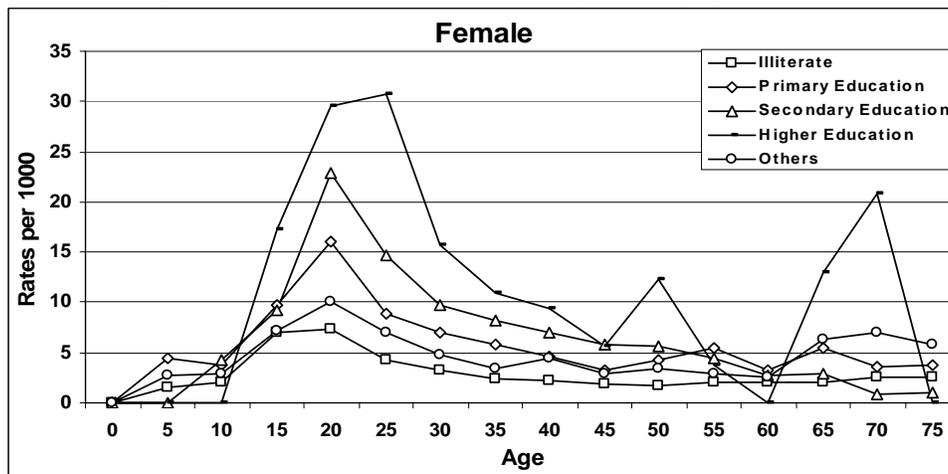


Figure 4.4 Educational Status of migrants by age and sex



Both of the above charts explicitly indicate that the internal migration rate heavily relies on educational status. In general, the higher the education the higher the migration rate.

People having higher education have the highest rates which is then followed by secondary, others, primary and illiterate people respectively. Illiterate females are less likely to move but for males of the age group 20-24 the rate is relatively very high. Age groups 15 to 30 years are more mobile age groups, and most of the rates thereafter are gradually declined. However it is interesting to note that the higher educated females have surprisingly higher migration rates above 65 years than most of their younger age counterparts.

4.3.2 By Marital Status

Marital status of internal immigrants in the place of destination was collected in the census 2001. It was asked only for person aged 10 years and above. It does not explain the marital status at the time of migration but it shows the pattern of marital status of the immigrants in the place of current residence.

Figure 4.5 Marital Status of migrants by age and sex

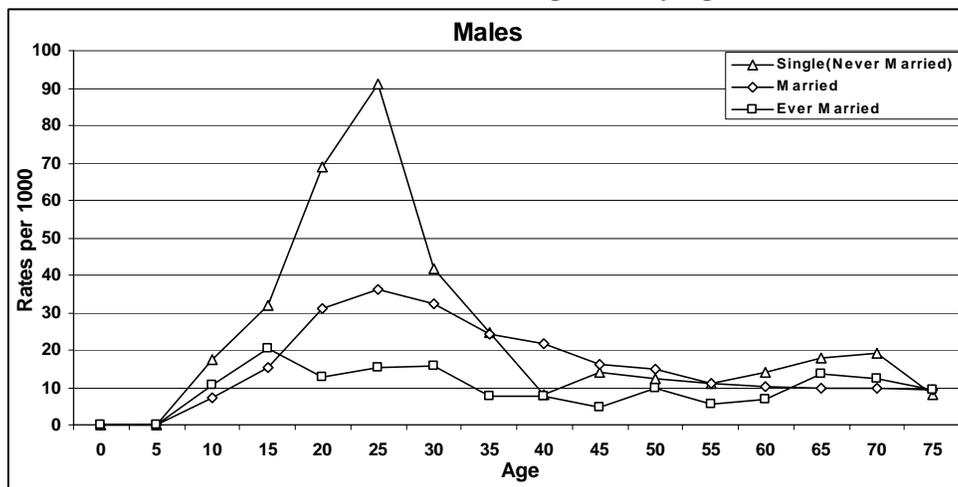
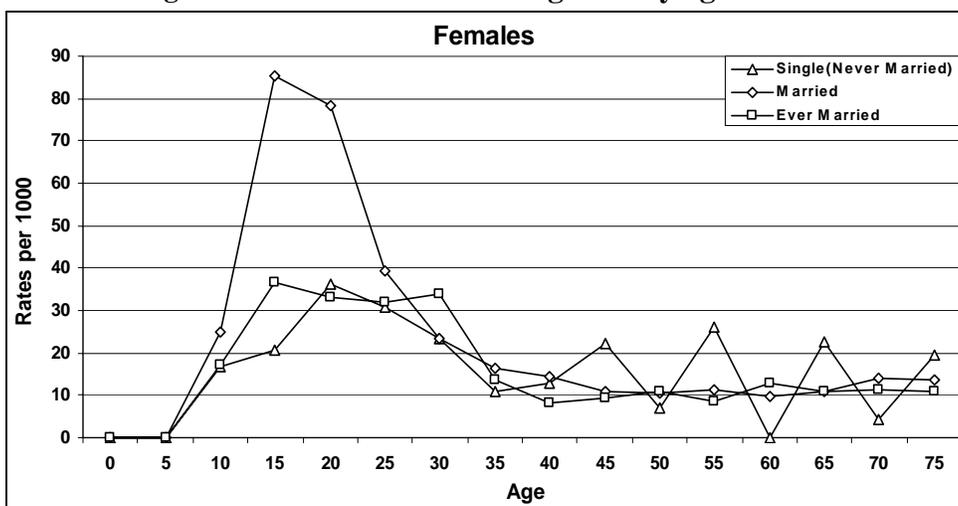


Figure 4.6 Marital Status of migrants by age and sex



The pictures clearly show that the peak rates in the age groups 15-29 are to a large extent due to currently singles for males, and married for females. Among the male migrants, the

migration rate is high for single male especially for younger age group 15-34. For female, married females have higher migration rate and they are from the age group 10-29. Migration rate for married and ever married per 1000 corresponding people are more or less the same for male. Likewise migration rate for single and ever married female are some how similar with slightly ups and downs. In fact, married female and single male migration rates are relatively high.

4.3.3 By Occupation

In the census 2001, the usual occupation of the people of aged 10 years and above was asked. Out of nine different categories (see table 4.1) provided by the census data, the first four major occupation in Nepal were Skilled/Semi-skilled Agriculture and Fishery Workers (65 % of the total people involved in different occupations); Elementary Occupation (15%); Craft Workers (8%); and Service Workers (6%). Among the migrants, skilled and semi-skilled agriculture workers are the majority, almost more than double of the number of service workers, craft workers and elementary occupations. Other categories like senior officials, professionals, technicians and office assistants are few in numbers. The migration rates of these first four major occupational groups are varying and given in the following charts.

Table 4.1 Occupations by migrant and non-migrant

Occupations	Non-migrants	Migrants	Total
Legislators, Senior Officials & Managers	0.3	1.6	0.3
Professionals	1.9	4.2	1.9
Technicians & Associate Professionals	1.0	4.2	1.0
Clerks or Office Assistants	1.3	4.3	1.4
Service Worker	5.4	13.5	5.6
Skilled/Semi-skilled Agriculture workers	66.0	38.0	65.3
Craft worker	8.0	14.9	8.2
Plant, Machine Operators	1.0	2.7	1.1
Elementary Occupations	15.1	16.7	15.1
Total	100.0	100.0	100.0

Figure 4.7 Occupational Status of migrants by age and sex

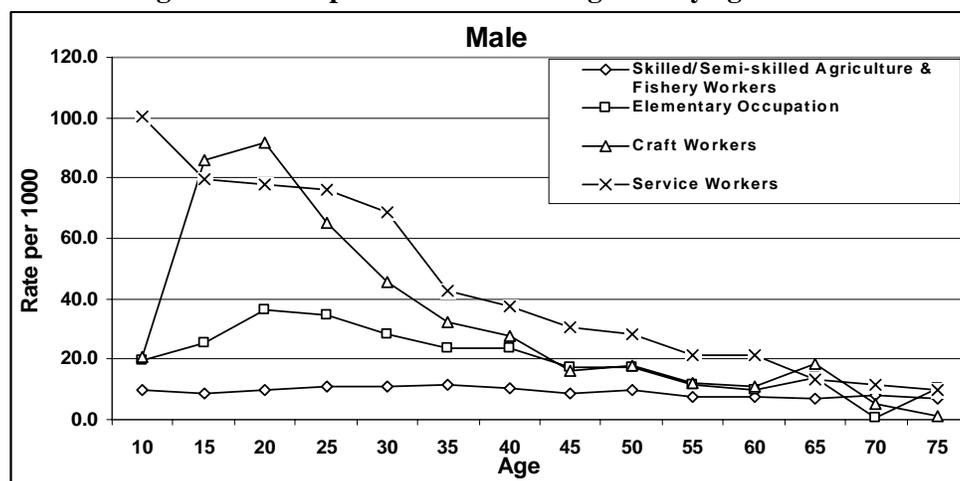
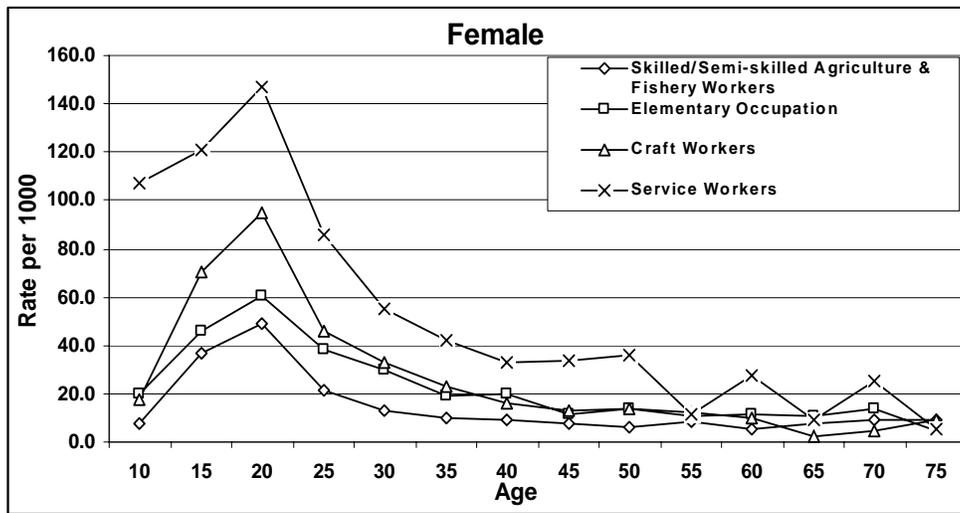


Figure 4.8 Occupational Status of migrants by age and sex



The above figure clearly depicts that service workers have relatively high mobile rate throughout the life span for both female and male but with slightly lower than craft worker migration rate at 15 to 24 for male. After the service workers migration rate, the others are followed by craft workers; Elementary occupational and then by skill/semi-skill agriculture and fishery workers with relatively lesser migration rates. So it indicates that the service workers have the highest migration rates, whereas agriculture and fishery workers are the least mobile people among these first four major occupations of Nepal.

4.4 Conclusion

Most of the above charts based on age and sex specific migration rate show that the rate is higher in the younger age particularly from 15 to 29, and it is gradually declining thereafter. This pattern supports the general pattern of age migration schedules discussed by Boyle et al. (1998). Regarding educational status, it clearly indicates that the higher the education higher the probability to move. There is high migration rate for 'single' for male and 'married' for female. It means single male and married female are more likely to migrate. Likewise professionally, service workers are more willing to move, followed by craft workers; elementary workers and skilled/semi-skilled agriculture and fishery workers have the lowest propensities. Nevertheless, given the dominance of the agriculture sector in Nepal, agriculture workers still form a large group in the migrant population. So the decision of migration with certain motives is heavily relying on age, sex, education, marital status, and occupation of the individuals.

Chapter 5

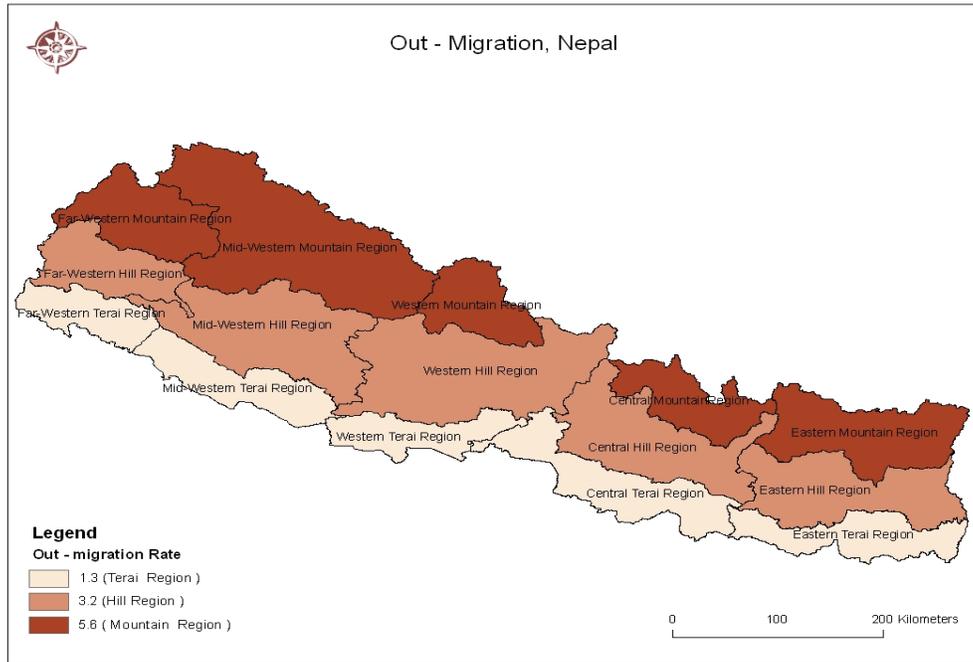
The Geography of Internal Migration

Nepal is geographically and administratively divided into three Ecological Regions, five Development Regions and seventy-five Districts. Migration information can be calculated up to the district level. However, we focus mainly on three Ecological Regions and in some cases up to fifteen Sub-regional level migrations within the country. Each ecological region has some part of all development regions with some districts. Sub-regions are the intersection of the Ecological Regions and Development Regions. The three Ecological Regions are Mountain, Hill and Terai, and fifteen Sub-regions are Eastern Mountain (EM), Eastern Hill (EH), Eastern Terai (ET), Central Mountain (CM), Central Hill (CH), Central Terai (CT), Western Mountain (WM), Western Hill (WH), Western Terai (WT), Mid-Western Mountain (MWM), Mid-Western Hill (MWH), Mid-Western Terai (MWT), Far-Western Mountain (FWM), Far-Western Hill (FWH) and Far-Western Terai (FWT). Nepal was highly infected by Malaria during 1950s with an estimated 25% of the population in specific area Terai Region (USAID Report, 2007). It was assumed to be eradicated during 1960. There after people are moving towards Terai which is the centre for Agriculture Crops with better access of Government facilities like hospital, road, school etc. So, in general, there is a tendency to move out from geographically difficult area such as Mountain and Hill. In the Census 2001 a question was asked to all persons of age 5 and above where the person was living exactly 5 years before the census. A person is considered a current migrant if 5 years ago he/she was living in other than the enumeration district. This method gives the total number of internal migrants within the last five years period. To calculate the annual migration rates, it is divided by 5 to get the number of migrants in a year assuming the uniform flow of migration during the last 5 years period. Here migration rates per 1000 population are calculated as a more comparable measure for migration flow statistics across the regions/sub-regions. The following tables, figures and geographical maps demonstrate the clear picture of the flow rate of internal migration in Nepal.

5.1 Out-migration by Region/Sub-regions

The Census data 2001 show that the total number of internal migrants who moved between districts is 494,285. The following map and figure show that there is a massive flow of migration within the ecological regions itself, for instance the highest number of people 150,142 moved from Hill to Hill which is followed by the next (78360) movement from Terai to Terai. When we consider the migration across the ecological region, the highest number of out-migrants is from Hill (149288) and then from Terai (73096) and Mountain (42089). 264472 people moved across the ecological regions in the last 5 years prior to the census. So in terms of number, Hill remained the heavily Population losing area. When we consider migration rates per year, the out-migration rate in Mountain is extremely high as compared to other regions, especially in the age category 15-29. The over all rate in Mountain is more than double the rate from Hill and more than four times higher than that of Terai. The age group 15-29 is moving with the higher out-migration rate which is then followed by 30-44, 45-59. The economically inactive age group 00-14 and 60+ are moving out with the least migration rates.

Map 5.1 Out-migration rates per 1000 Population by Eco-regions, 2001



Map 5.2 Out-migration rates per 1000 Population by sub-regions, 2001

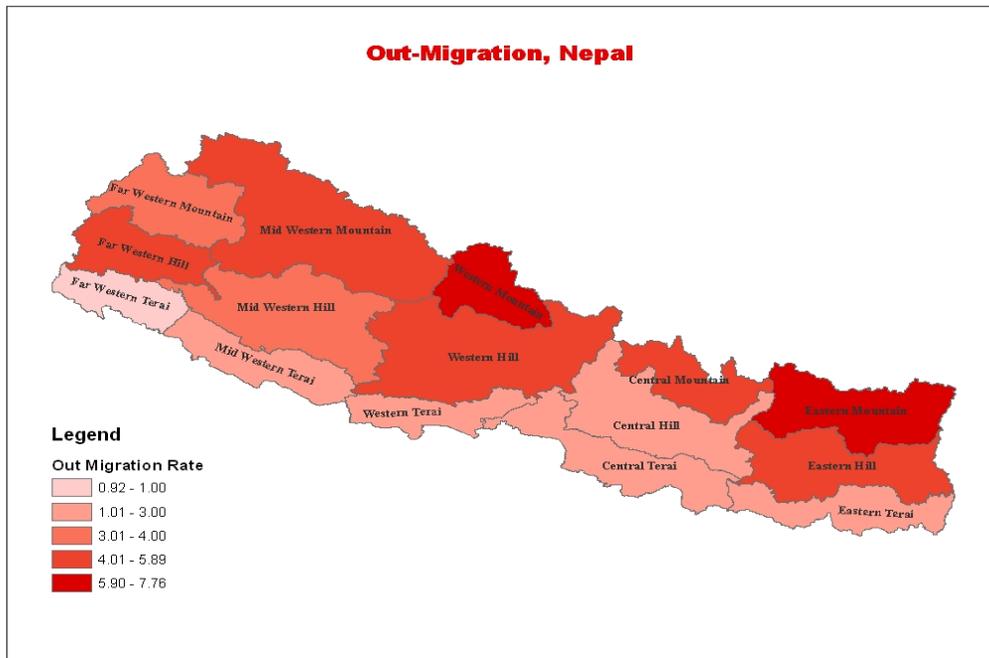
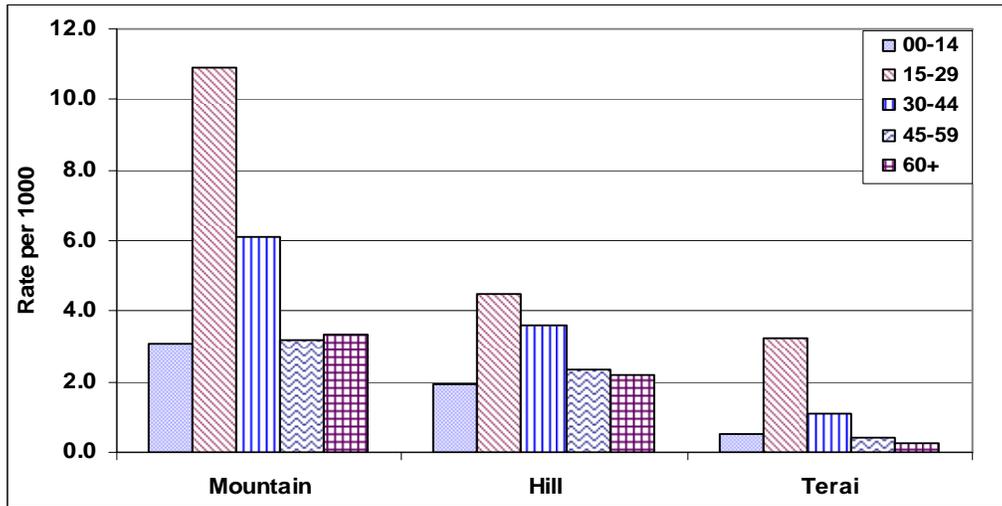


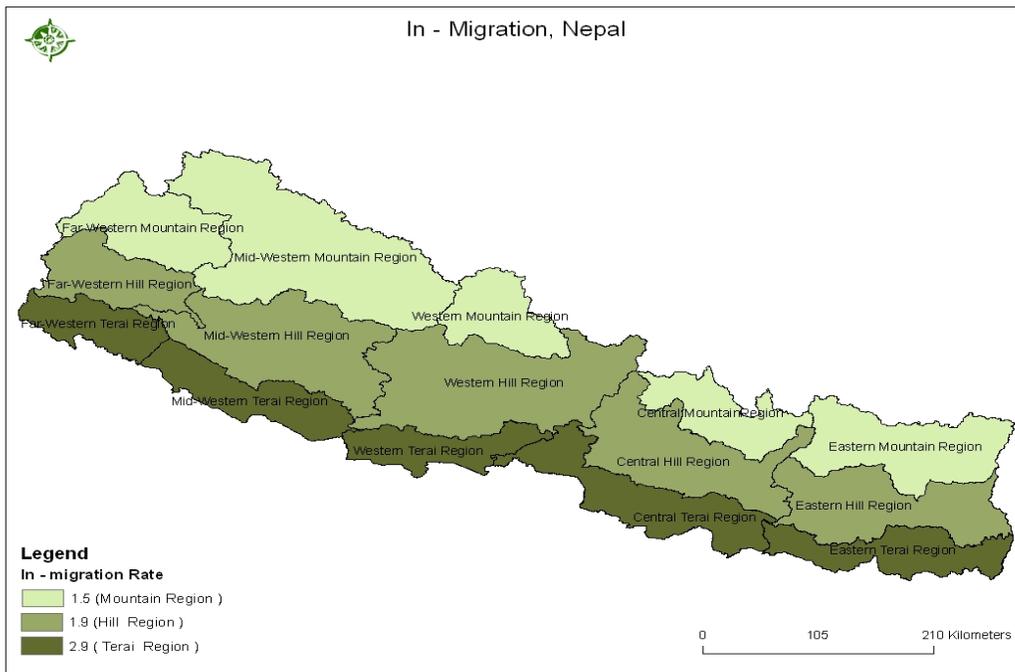
Figure 5.1 Out-migration age schedule rates by Eco-region, 2001



5.2 In-migration by Region

Terai Region has a fertile land and easy access of Government facilities and urban infrastructure and services such as roads, hospitals, collage/universities, industries ect. which are highly attractive to migrants. Looking at the number of migrants, Terai is the most attractive area with an inflow of 159389, during the last 5 years followed by Hill (93969) and Mountain (11115). Likewise the in-migration rate is also the highest in Terai and then to Hill and Mountain.

Map 5.3 In-migration rates per 1000 population by Eco-regions, 2001



Map 5.4 In-migration rates per 1000 population by Sub-regions, 2001

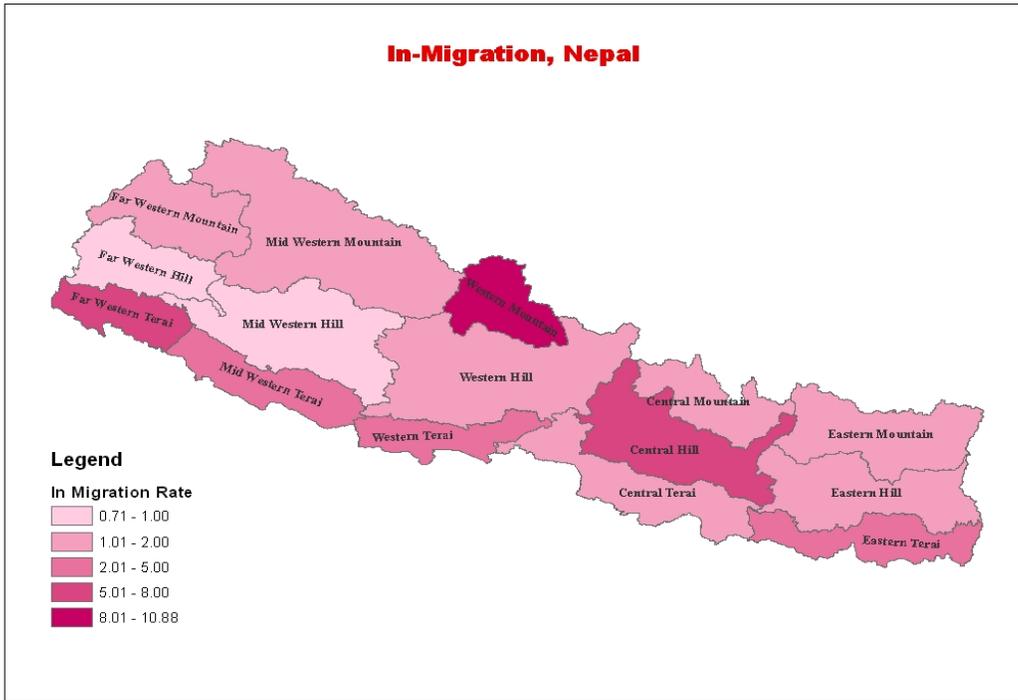
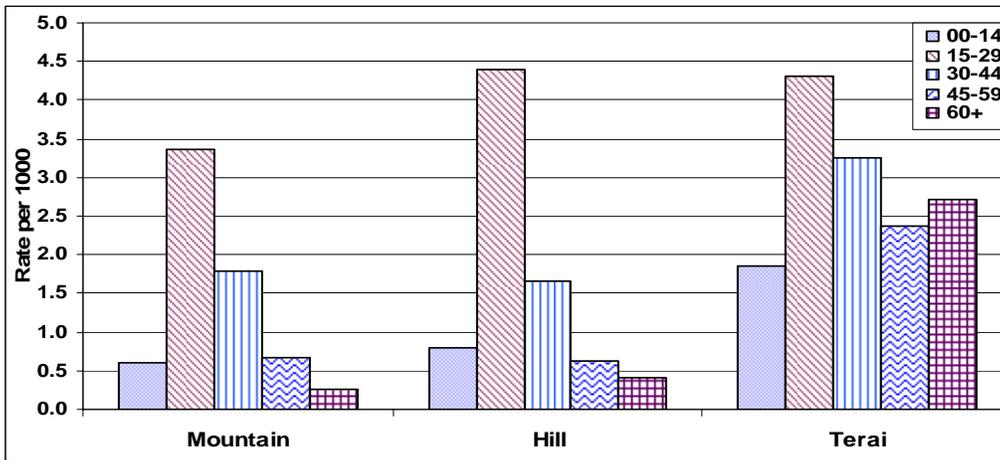


Figure 5.2 In-migration age schedule rates by Eco-region, 2001



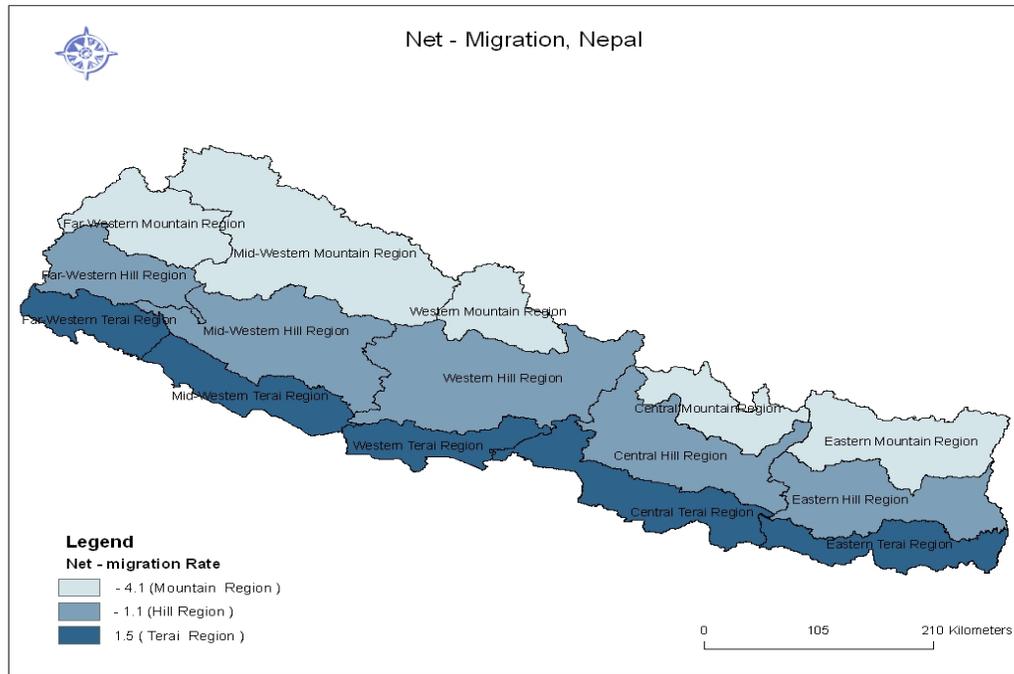
The dataset clearly indicates that the age group 15-29 has the highest in-migration rate in all the regions among other age groups. It is then followed by age group 30-44, 45-59. However it is interesting to note that the older age group 60+ is relatively more likely to move to Terai than to other regions.

5.3 Net-migration by Region

There is a loss of population in Mountain (30,974) and Hill (55,319) whereas there is a heavy gain in Terai (86,293) in terms of number of migrants during 5 years period. This is reflected in the rate of net-migration as well, the negative net-migration rate is in Mountain

and Hill but it is positive in Terai by 1.5 per 1000 population. In deed Mountain and Hill are population loosing regions whereas Terai is population gaining region.

Map 5.5 Net-migration rates per 1000 population by Eco-regions, 2001



Map 5.6 Net-migration rates per 1000 population by Sub-regions, 2001

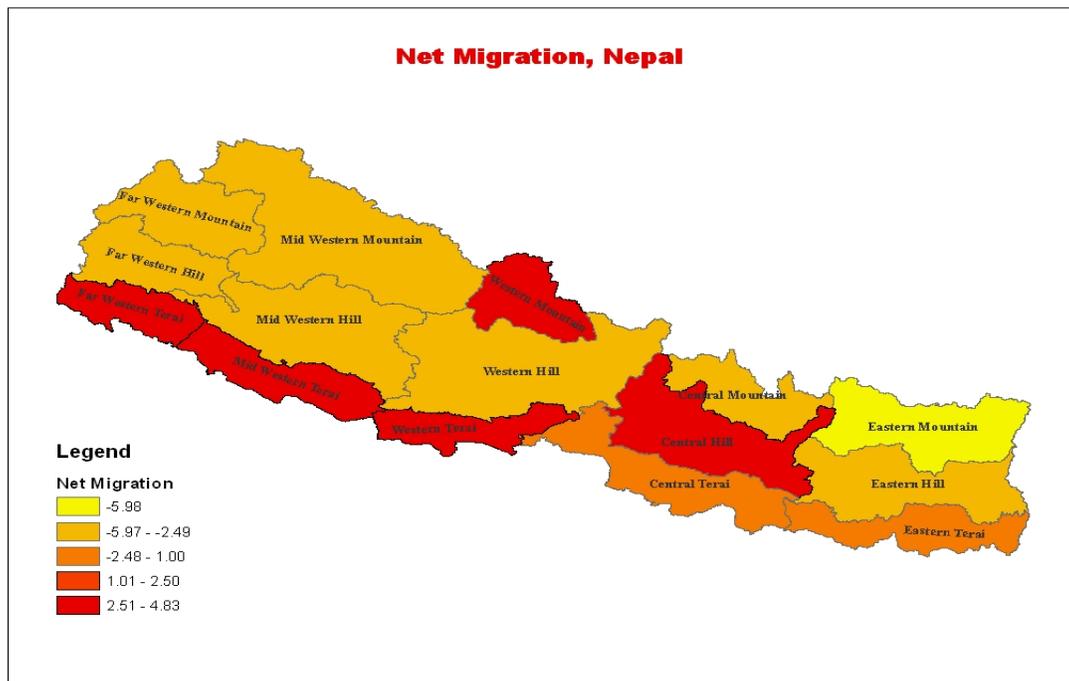
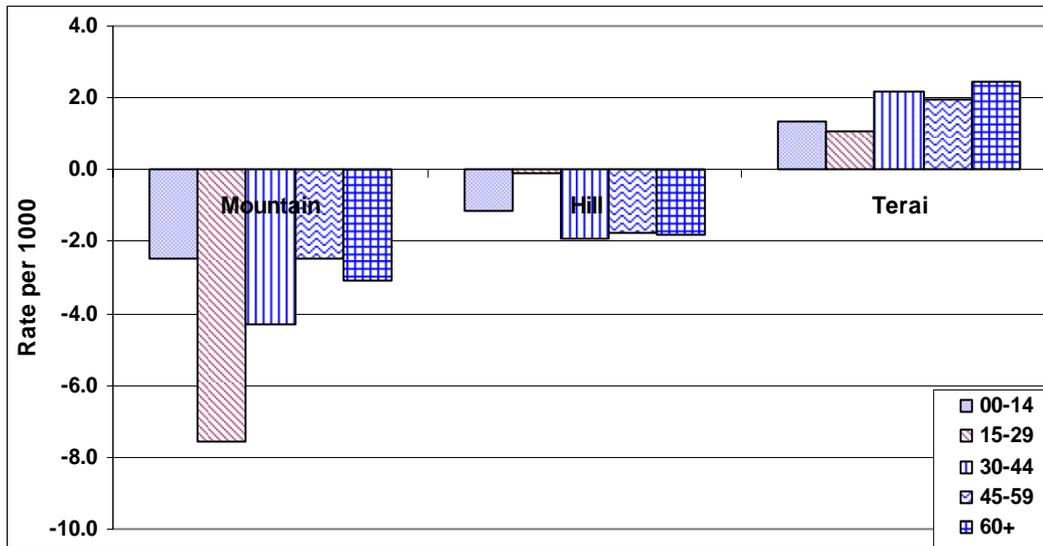


Figure 5.3 Net-migration age schedule rates by Eco-region, 2001



The net-migration rates for all the age groups in Mountain are negative and it is very clear evidence of the substantial loss of population from all the ages. It is comparatively less in Hill, particularly there is the same in-flow and out-flows in Hill at the age group 15-29. But it is positive and more or less the same rates for all age groups in Terai with slightly more in older age group 60+ years.

5.4 Migration Effectiveness

In-Migration rate, Out-Migration rate, Net-Migration rate, Effectiveness of Migration and System Effectiveness are the major indicators of migration streams in a region. The following table illustrates these indicators which clearly explain the effect of moves into and out of the regions for population change in the region as a percentage of the total volume of moves into and out of the region. The effectiveness of migration is the percentage of absolute value (positive value) of net migration divided by its gross migration. Summing up all the positive values of net migration of all the regions and dividing it by its gross total in terms of percentage gives the System Effectiveness as a whole. Here the System Effectiveness is 33 percent. The negative net migration of Mountain and Hills conclude that these regions are population losing regions whereas Terai is a population gaining region.

Table 5.1 Migration flows across the Eco-regions, 2001

Eco-regions	Out Migration	In Migration	Net Migration	Mid Year Pop	IM rate/000	OM rate/000	NM rate/000	Effectiveness (%)
Mountain	8418	2223	-6195	1505032	1.5	5.6	-4.1	58.2
Hill	29858	18794	-11064	10077035	1.9	3.0	-1.1	22.7
Terai	14619	31878	17259	11154867	2.9	1.3	1.5	37.1

Here demographic effectiveness (also known as demographic ‘efficiency’) measures the ability of bidirectional streams of migration to effect population change within an area. Higher the value of Effectiveness meanings higher the percentage changes in population.

5.5 Migration Origin and Destination

We are considering only the period migration which indicates the mobility patterns of internal migrants within five years prior to the Census in terms of where they were living then. The volume of period migration representing those native born population 5 years and above by place of residence five years ago for three regions and 15 sub-regions are presented below. The following tables give the clear picture of migration stream in these areas. The highest flow of number of migrants is observed across districts within Hill region and is followed by the flow from Hill to Terai region. Likewise, the first four measure flow across the districts in 15 sub- regions are from i) Central Hill to Central Hill, ii) Western Hill to Western Terai, iii) Western Hill to Western Hill and iv) Eastern Hill to Eastern Terai.

Table 5.2 Inter district migration flow in 5 years period

		Destination				
		Ecological Region	Mountain	Hill	Terai	Total
Origin	Mountain		1311	23756	18333	43400
	Hill		8231	150142	141057	299430
	Terai		2883	70212	78360	151455
	Total		12425	244110	237750	494285

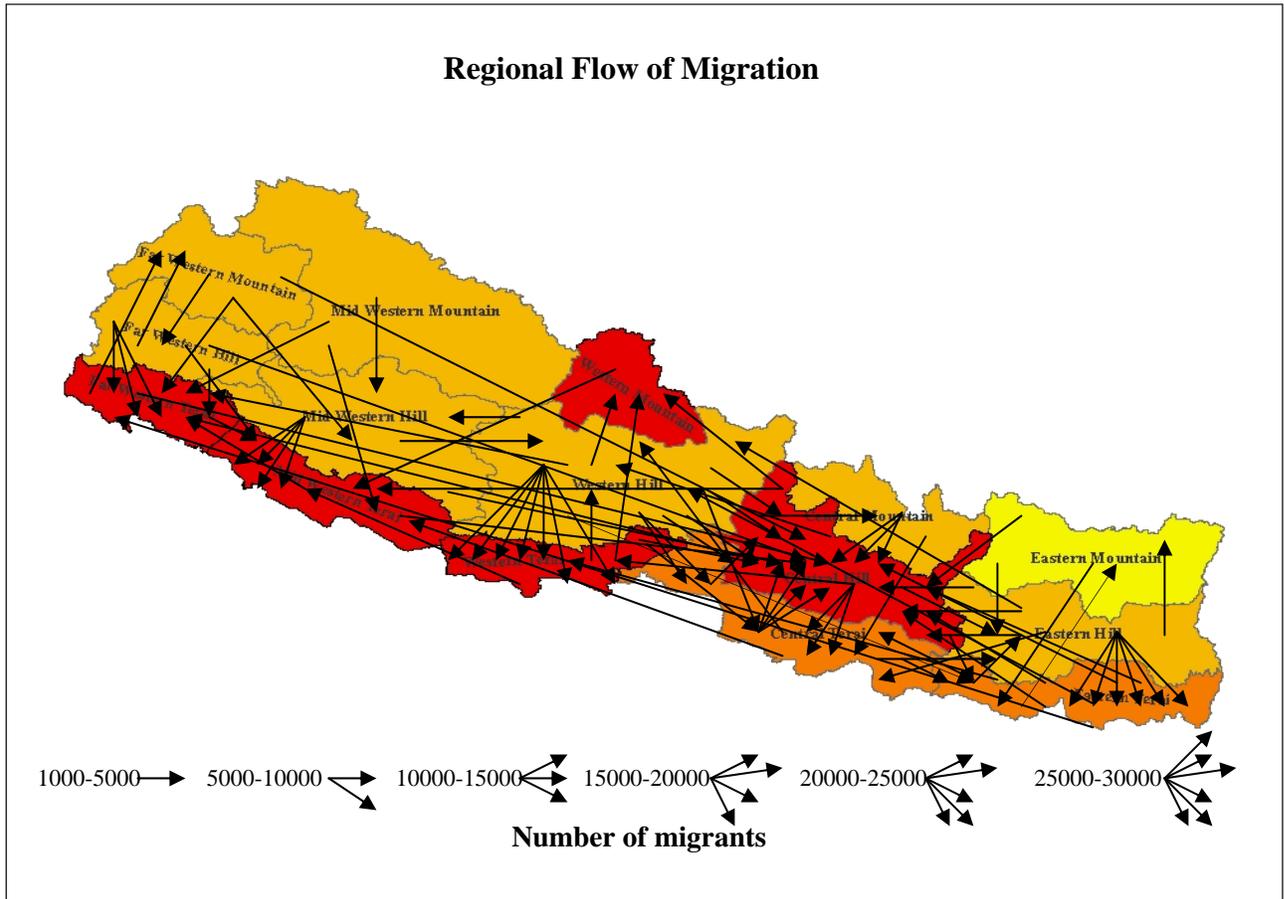
Table 5.3 Inter districts migration flow in 5 years period by 15 sub-regions

Sub-regions	EM	EH	ET	CM	CH	CT	WM	WH	WT	MWM	MWH	MWT	FWM	FWH	FWT	Out-migration
EM	160	3405	8330	62	3021	197	25	340	77	6	14	53	0	2	61	15753
EH	2286	11667	29469	216	12701	1926	21	1058	223	33	84	198	26	51	120	60079
ET	629	8210	26009	173	18389	4820	32	1099	576	51	242	428	74	101	629	61462
CM	27	105	349	259	12062	1259	27	214	52	3	19	117	0	20	23	14536
CH	241	1404	3922	2201	56436	12611	129	4166	1820	91	389	993	83	69	762	85317
CT	214	670	3375	332	21407	17383	54	3296	3077	69	269	1058	64	151	320	51739
WM	0	12	11	3	337	50	11	238	34	0	138	0	0	28	2	864
WH	92	132	522	143	20298	11492	850	29570	34740	152	1315	3448	37	123	816	103730
WT	14	212	235	71	4526	1859	42	2800	5815	13	209	1054	0	50	152	17052
MWM	0	27	4	3	406	63	38	33	39	243	1135	1248	134	113	1351	4837
MWH	13	16	207	24	2503	134	102	917	1096	202	3710	17451	132	287	2903	29697
MWT	51	20	182	6	3776	465	11	484	931	247	1811	5107	86	142	1412	14731
FWM	2	6	2	3	842	14	3	16	17	130	23	45	171	1201	4936	7411
FWH	12	21	97	5	1014	90	3	26	62	19	385	866	1119	1800	15090	20609
FWT	2	27	306	14	1386	182	0	154	152	9	292	933	627	489	1899	6472
In-migration	3743	25934	73020	3515	159104	52545	1348	44411	48711	1268	10035	32999	2553	4627	30476	494289

According to the 2001 Census data, migrants within sub-region are in large number (Table 5.3) For example, 56436 people moved within Central Hill, 29570 people within Western Hill, 26009 within Eastern Terai during the last 5 years period prior to the Census 2001. It clearly indicates that the people usually move within the short distance which favors for Ravenstein first law of migration. The same scenario is observed across the sub-regions as

shown in the following map. More people are moving to the nearest sub-regions. As in terms of distance or scale, the action space considered is probably more bounded within a relatively shorter distance. It also shows that the Central Hill and all Terai regions are the most attractive place of destination.

Map 5.7 Flow of number of migrants across the sub-regions



5.6 Conclusion

Disparity in flow of migration is clearly seen across the geographical area of Nepal. Life in Mountain is very difficult, socio-economic and infrastructure is very poor (ICIMOD Report, 2003). So, very few people (around 7% of the total population) live there. Out-migration rate per 1000 population in Mountain is very high (5.6) but in-migration is very low (1.5) which is a clear indication of rapid decline in population in this region. Hill region is more or less stable with a slightly higher out-migration rate than in-migration rate. But Terai became an attractive destination place for migrants with an in-migration rate more than double the out-migration rate. Looking across the sub-regions, the GIS maps clearly indicate that a large number of people are moving to the capital city Kathmandu (Hill region) and then to Terai region. People preferred to move the closest distance supporting Ravenstein first law of migration. Favoring Ravenstein third law of

migration, the map shows that people from different parts of the country are focusing to Kathmandu as it being industrial and biggest urban center in Nepal. Central Hill is attractive place for people interested in their education career and service career. Terai is renowned for agriculture purpose since long time. Moreover, the majority of the people moving in and moving out are from the young adult age category 15-44 in all the regions. So based on their preference, people choose their place of destination differently.

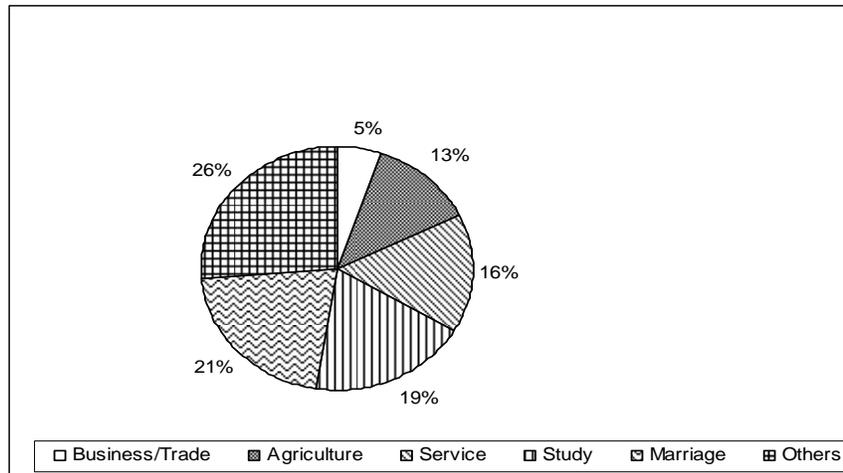
Chapter 6

Migration Motives

6.1 Migration Motives and Personal Characteristics

In the census 2001, people who migrated during the last 5 years period prior to the census were asked about their main reason of stay in the enumeration area. The reason of stay reflects the motivation factor for the migration. For example, a person saying study is the reason of stay in the enumeration area means he/she came there for study motive. The objective of the census question is to know the reason behind his/her coming to the place of enumeration district. The categories for main reason were Business/Trade, Agriculture, Service, Study, Marriage and others. Except 'other reason', the highest number of migrants reported that their main reason of stay in enumeration area is 'Marriage' (21%). This is followed by 'Study' (19%), 'Service' (16%), 'Agriculture' (13%) and 'Business/trade' (5%). The dominant reason for migration for females was marriage (40.6%). No male has reported marriage as their reason of stay. Excluding the marriage reason, numbers of males are dominating the females in all the motives.

Figure 6.1 Flow of migration by motives



6.1.1 Migration motives by Age and Sex

Motives for migration are different for males and females. The following figure clearly supports this fact that male are moving for study with highest share particularly in their age group 15-29. Service is equally important factor for this age group male migration. None of the males have reported that marriage is their migration motive. But females stayed in enumeration area as a reason of "marriage" with tremendously high share around 60 percent of the female of the age group 15-29 moved in a year. This is then followed by "Other" reason and so on. The share of male and female for agriculture motive in their adult age is higher, and has more or less the same share. In both male and female, "Others" reason has relatively high percentage share which indicates that there is missing some important reason except the given options for migration reasons.

Figure 6.2 Percentage shares of male migration age schedules by motives

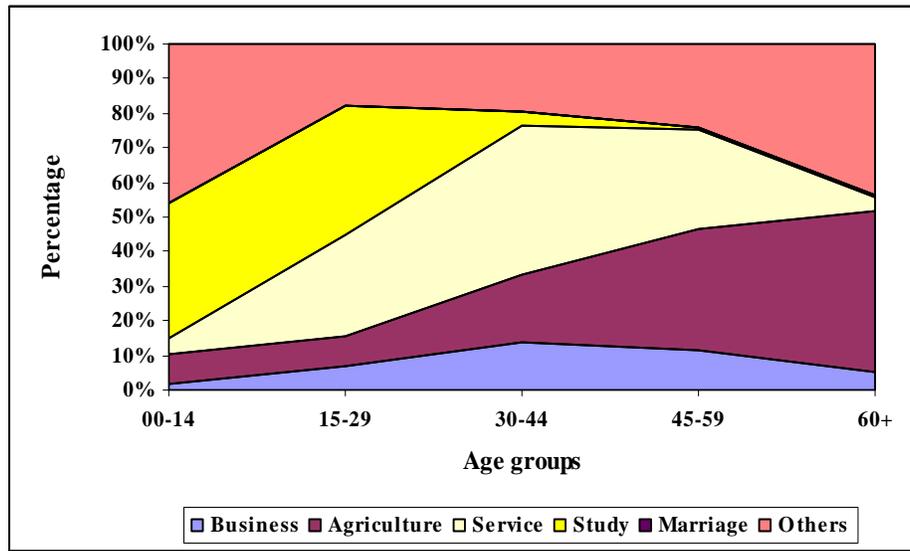
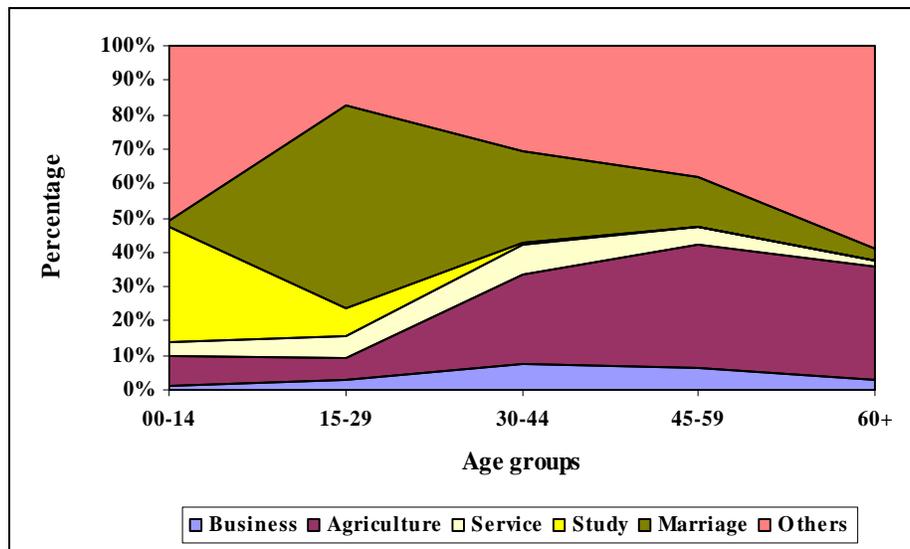


Figure 6.3 Percentage shares of female migration age schedules by motives



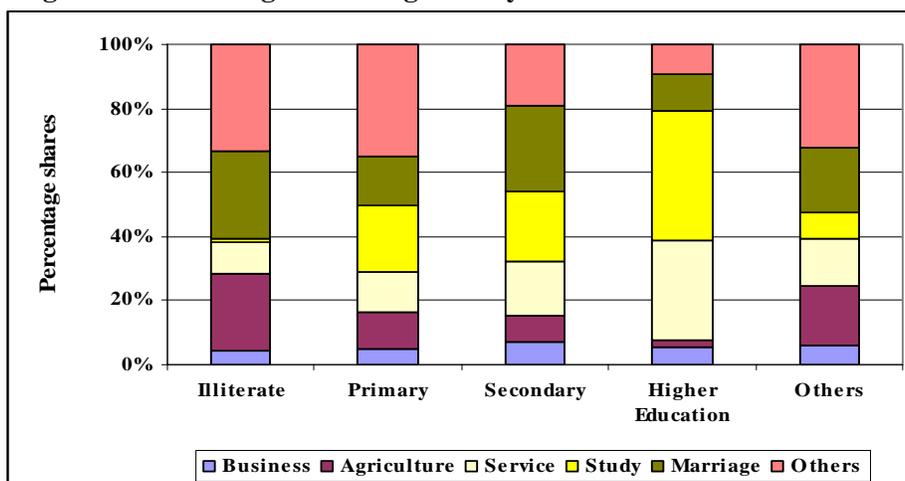
6.1.2 Migration motives by Education

The following migration rates by motives and level of education reveal that the migration rates are highest for higher educated people for all the motives, except agriculture. People having higher education are less likely to move for agriculture motives. Higher educated persons (after the move) have migrated primarily for reasons of study and service. Migration rate for those who said “other reasons” are more or less similar for all levels of education. For secondary educated people, “marriage” for female is the most important motive for migration: about 2.2 females per 1000. Similarly when we observe the percentage share of these motives across the education status, we found that the illiterate people move with equal priority for agriculture, marriage and other motives. Likewise, higher educated people move mostly for study and service purpose. Percentage share of ‘other’ motive is also remarkably high in all level of education.

Table 6.1 Migration Rates per 1000 Population by Motives and level of Education

Motives	Level of Education				
	Illiterate	Primary	Secondary	Higher Education	Others
Business/Trade	0.11	0.22	0.57	1.13	0.22
Agriculture	0.63	0.57	0.68	0.48	0.71
Service	0.24	0.59	1.42	6.64	0.56
Study	0.03	1.00	1.80	8.64	0.30
Marriage	0.71	0.75	2.18	2.46	0.77
Others	0.86	1.68	1.58	1.98	1.22

Figure 6.4 Percentage share migrants by Motives and level of Education



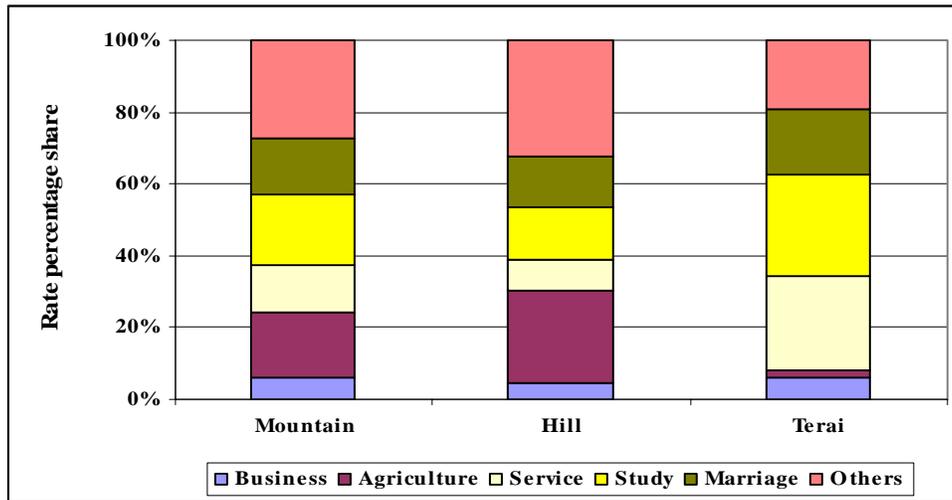
6.2 Migration Motives by Regions

The mountain region, where the world’s highest mountain “The Mount Everest” is situated, occupies 35.2 per cent of the total land space with population density 32.6 persons per square kilometer (Census Report, 2002). Likewise the Hill region occupies 41.7 per cent of the total area with a population density of 167.1 persons per square kilometer. Terai, the plain area of Nepal, occupies 23.1 per cent of the total area of the country with population density almost double (329.6 person per square kilometer) that in the Hills. Migration motives are varying in these regions. The following subsections clearly explain these patterns.

6.2.1 Migration out-migration rates by motive and region

The below chart explicitly show that people are moving out from Mountain with highest preference with motive “Study” and then followed by “Agriculture”, “Marriage”, “Service and Business. But “Agriculture” is the most important for those who moved out from Hill and it is followed by the motives “Marriage”, “Study”, “Service” and “Business”. Similarly “Study” is the prominent factor for people moving out from Terai and it is followed by “Service”, “Marriage” and so on. Here the reason “Other” has again significant role for moving out.

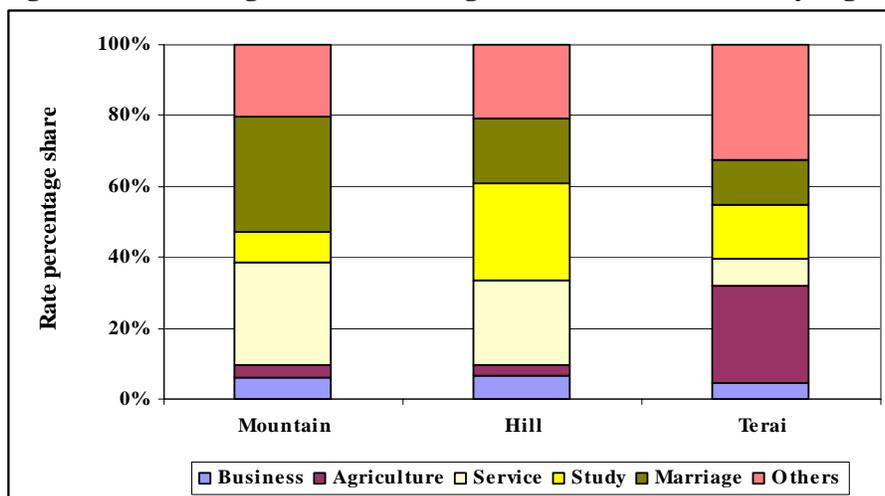
Figure 6.5 Percentage share of Out-migration rates for motives by regions



6.2.2 Migration in-migration rates by motive and region

Based on in-migration rates, the different regions have different priority of motivation factors. People are coming to Terai mainly for Agriculture motive and then by Study, Marriage, Service and Business respectively. Many agriculture labors move in this region. Terai region has fertile land and almost 60 percent food grow in this region. There is high demand of agriculture labor which attracts migrants from other regions. But the Hill and Mountain regions have less fertile land and many part of it is covered by snow. Similarly, study is the main reason for coming to Hills mainly Capital Kathmandu and this is followed by Service, Marriage, Business and Agriculture. Many higher education institutes are centered in Kathmandu which attracts migrants who are interested in study career. Likewise, marriage is relatively the most popular motive for people coming to Mountain. Service is equally important factor for in-migration in Mountain. Study, Business, Agriculture are less important for people coming to Mountain. Here also “Others” has significant role for in-migration rate in the entire region.

Figure 6.6 Percentage shares of in-migration rates for motives by regions



6.2.3 Migration flows by motives

Looking at the volume of migration across the districts in different regions, Marriage plays a vital role for internal migration in Nepal. Other equally contributing factors are Study, Service and Agriculture. Business is the least priority motive so it is omitted here for my study. The following tables illustrate that the highest number of female are moving for marriage across the districts and within the Hill region and then the second highest number is within Terai Region. This shows that marriage usually takes place within the nearest society. Marriage procedure usually begins with an arrangement of a boy and a girl with the help of parents, relatives and a priest who are well known as matchmakers. The meeting takes place between the parents of the two families and the marriage is decided by their parents, sometimes with the consent of the marriage partners. It is very easy to know each other if they are within the society or within short distance. Once it is decided, the bride has to go to the bridegroom's house which accumulates a greater number of migrants as shown in below table. So the social network here, like relatives, friends and priests are the important mediators for arranging marriage in Nepal. Not a single male has moved with marriage motive. It also indicates that males are pulling factor in destination and females are pushing factor in the place of origin. Here Mountain has very high effectiveness which indicates that there is high gap in between incoming and out going of people with marriage motive. The total system effectiveness is 7.2 percent.

Table 6.2 Period migration flow by marriage (3X3 matrix)

Eco-regions	Motivation: Marriage			Out-migration	Net-migration	Effectiveness
	Mountain	Hill	Terai			
Mountain	459	4550	1895	6904	-3309	31.5
Hill	2681	34211	17638	54530	-3854	3.7
Terai	455	11915	25202	37572	7163	8.7
In-migration	3595	50676	44735	99006		
System Effectiveness	7.2					

Study is the key reason for people living in Hill. The Capital Valley where most of the renowned academic institutes are established could be the main reason for people coming to Kathmandu district which is in Hill region. People moving with study motive from districts of Terai to Hill and vice versa are almost equal in number. Here study is pushing factor for Mountain and pulling factor for Hill region. Here again Mountain has widest lost in population with study motive. Its system effectiveness is 8.0 percent.

Table 6.3 Period Migration flow by Study (3X3 matrix)

Eco-regions	Motivation: Study			Out-migration	Net-migration	Effectiveness
	Mountain	Hill	Terai			
Mountain	75	4999	2998	8072	-7184	80.2
Hill	589	31679	20110	52378	4056	3.7
Terai	224	19756	9009	28989	3128	5.1
In-migration	888	56434	32117	89439		
System Effectiveness	8.0					

Similarly, for Service purpose, the highest number of people (about 28000) moved across the districts within Hill region during the last 5 years period prior to the Census 2001. Another attractive movement for service is from Terai to Hill region. Here also Hill remains attraction for service so called pulling factor. Here Mountain remains with highest effectiveness but for this motive it is now little bit less as compare to other motives. It is then followed by Terai and Hill. Its system effectiveness is 11.6 percent.

Table 6.4 Period Migration flow by Service (3X3 matrix)

Eco-regions	Motivation: Service					
	Mountain	Hill	Terai	Out-migration	Net-migration	Effectiveness
Mountain	198	4463	1008	5669	-2664	30.7
Hill	1679	27933	11080	40692	8683	9.6
Terai	1128	16979	10098	28205	-6019	11.9
In-migration	3005	49375	22186	74566		
System Effectiveness	11.6					

Terai is a fertile land for agriculture. So many people are moving in Terai since long time. A tremendously large number of people (about 37000) moved from Hill to Terai during the reference period. It is almost 62 percent out of all the people who moved with the motive “Agriculture”. It indicates that “Agriculture” is the key reason for people coming to Terai districts. Hence agriculture is the pulling factor for Terai. The effectiveness for agriculture motive shows that there is a wider gap in between incoming and outgoing people in all the regions, and consequently the system effectiveness is also very high (69.9 percent).

Table 6.5 Period Migration flow by Agriculture (3X3 matrix)

Eco-regions	Motivation: Agriculture					
	Mountain	Hill	Terai	Out-migration	Net-migration	Effectiveness
Mountain	43	1391	5983	7417	-7025	90.0
Hill	344	6361	36680	43385	-34207	65.1
Terai	5	1426	6786	8217	41232	71.5
In-migration	392	9178	49449	59019		
System Effectiveness	69.9					

6.3 Conclusion

Here motives vary across the regions. Agriculture is the most popular motive for people coming in to Terai. Study and Service are for Hills, and Marriage and Service are slightly more prominent motivational factor for Mountain. Relatively the out-migration rate from Terai is very low where Marriage is the main cause of out-migration from Terai. As in other cases, the younger age group 15-29 has the highest migration rate for almost all the motives. Study and Service are popular motives for male of this age group while Marriage is the most popular motive for female. Here marriage for male is the pulling factor in destination whereas for female it is pushing factor from origin. Study and service are the pulling factors for Hill especially in Kathmandu where higher education institutes are situated and also have the opportunity for services. Similarly agriculture is the pulling

factor for Terai as it is famous for fertile land area and pushing factor for Mountain and Hill. These pushing factors made people to take a decision to leave the place of origin and consecutive pulling factors help them to choose the place of destination. Hence migration motives which lead a person decide to migrate or not to migrate depend not only on individual characteristics like age, sex, education level, marital status, religion but also on pushing and pulling factors of place of origin and place of destination. Agriculture motive has the highest system effectiveness which indicates that there is high disparity of population movement due to this motive. It is then followed by service, study and marriage motives. Marriage has the lowest system effectiveness implying that there is no remarkably loosing or gaining population due to this motive.

Chapter 7

Explaining Internal Migration

7.1 Explaining Migration

This section is devoted to analyze the factors that affect internal migration in Nepal. The random sample size exactly 13000 cases are drawn from the first 2583245 cases of the sample dataset. In order to analyze the factors affecting the migration process, the decision to migrate is modeled as a dichotomous variable representing migrant/non-migrant status in a logistic regression model. The set of explanatory variables reflecting the factors that influence the migration in terms of cost and returns to migration consist of Human Capital theory representing variables for instance age in years (here 15 years age group, AgeGr15), sex (q2_sex), education level (N_Edul), skill level (N_Occup, see annex 2), marital status (N_MariSt) and variables representing religions (N_Reli). Here question on education was asked only for those who are of aged 6 years and above, marital status and occupation were asked only for people of age 10 years and above. To make the analysis more convincing, the sample is filtered by aged 10 and above which yields 9733 cases out of which 351(3.6 percent) are classified as migrants and 9382 (96.4 percent) are classified as non-migrants. Categories of some variables are re-grouped into new category for instance, education from 19 categories to 4 categories, marital status from 7 categories to two categories. Some category which has very less in number is taken out from the study for example, religions other than given four religions (0.8 percent of all religions). The specified model can be written as:

$$\text{Mig} = f(\text{AgeGr15}, \text{q2_sex}, \text{N_Edul}, \text{N_Occup}, \text{N_MariSt}, \text{N_Reli})$$

The following table is obtained after running the binary logistic regression model.

Table 7.1 Logistic regression model for migration for the people of aged 10 and above

Variables	B	S.E.	Wald	df	P-value (Sig)	Exp(B)	Reference Category
Female	-0.070	0.125	0.319	1	0.572	0.932	Male
Age group			72.300	4	0.000		00-14 age group
15-29 age group	0.699	0.211	10.964	1	0.001	2.012	
30-44 age group	-0.181	0.266	0.464	1	0.496	0.834	
45-59 age group	-0.794	0.342	5.380	1	0.020	0.452	
60+ age group	-1.330	0.471	7.961	1	0.005	0.264	
Education Level			63.683	3	0.000		No Education
Primary	0.629	0.181	12.098	1	0.001	1.875	
Secondary	0.814	0.165	24.475	1	0.000	2.257	
Higher	1.670	0.210	63.349	1	0.000	5.314	
Religion			3.924	3	0.270		Hindu
Boudha	-0.179	0.201	0.796	1	0.372	0.836	
Kirat	0.199	0.320	0.388	1	0.533	1.220	
Islam	-0.844	0.511	2.728	1	0.099	0.430	
Married	0.706	0.159	19.719	1	0.000	2.026	
Skill Level			22.906	4	0.000		No Skill Level
Skill level I	-0.263	0.218	1.453	1	0.228	0.769	
Skill level II	-0.669	0.142	22.167	1	0.000	0.512	
Skill level III	-0.072	0.403	0.032	1	0.859	0.931	

							Contd.
Variables	B	S.E.	Wald	df	P-value (Sig)	Exp(B)	Reference Category
Skill level IV	-0.352	0.323	1.189	1	0.275	0.703	
Constant	-4.101	0.231	316.009	1	0.000	0.017	
Included cases in Analysis		9390					
Missing Cases		343					
-2 Log Likelihood		2695.253		Variable(s) entered on step 1: q2_sex, AgeGr15, N_Edul,			
Nagelkerke R-Square		0.097		N_Reli, N_MariSt, N_Occup.			

The above table explicitly shows that female migration is not significantly different than that of male. They have more or less the same attitude towards migration behavior. However migration is highly influenced by the age of the people. Age group 15-29 is positively significant and the risk of migration behavior is almost double the risk of migration by age group 00-14. However age group 30-44 is not significantly different than that of youngest age group. The older age groups above 45 ages are negatively significantly different as compare to the reference age group 00-14. This indicates higher the age above 30 the lesser the probability to move. 2.012 is the odds ratio of migration for age group 15-29 verses age group 00-14 (see $\exp(\beta)$). Odds ratio must be compared with reference group (here the youngest age group 00-14). It means migration for the young age group 15-29 is 201 percent higher as compared to reference group. In other word, the relative risk of moving for this young age group is 2.012 times higher than that of 00-14. Likewise, there is higher the education the higher the probability to move. Education levels have a positive significance with migration. Here primary, secondary and higher educated people move with respectively 1.87, 2.26 and 5.31 times higher than that of illiterate people move. It indicates higher the education the higher the chance of being migrant. There is no remarkably significant different migration behavior between the religions groups. However, Islam shows negatively significant different migration behavior at 10 percent level of significant as compared to Hindu. The probability of moving Islam people is almost less than half of the moving probability of Hindu people. There is no significant difference for migration behavior amongst Boudhist and Kirat comparing to Hindu. Married people has a significant different in migration behavior with never married people. The relative risk of moving married people is more than double that of never married people. Similarly, there is a significant different in terms of migration between the skill level II and no skill level people. People having skill level II migrate around 49 percent lesser than that of people having no skill level. Other levels have no significant different. Here the analysis includes 9733 cases. The Nagelkerke R-square value is 0.097 indicates that the model for migration is 9.7 percent explained by the given explanatory variables. It's -2* Likelihood value is 2695.25.

7.2 Explaining Motives

This section is devoted to analysis of internal migration motives in Nepal using Logistic regression model. Here major motives for migration such as Marriage, Study, Service and Agriculture are analyzed on the basis of explanatory variables for instance Age, Sex, Education Levels, Religion, Marital Status, Occupation and Regions. For the purpose of this analysis, the motive question was asked only for those who were in other than enumeration district 5 years prior to the census, so we select only those cases who are

migrants. The information on some variables such as marital status, occupation is obtained from people of aged 10 years and above. So again the data is filtered by 10 years and above which consists of 3442 migrants and others are non-migrants. The following sub-sections illustrate how these motives are influenced by different explanatory variables.

7.2.1 Marriage Motive

Having examined the general patterns of internal migration in Nepal, marriage motive played a vital role for a person to move. However no one male has reported their “Marriage” is as a motive of migration. Obviously, female are only contributing for marriage as a motive of internal migration because traditionally female goes to husband house in Nepal. So here we don’t take into account the sex variable. Likewise, marriage motive is only concern with married people so variable marital status is equally not important. But the other key variables of human capital such as education levels, religions, skill levels are trigger to migration decision so these are taken as explanatory variables. According to the theory and interest of study, other variables for example the regional residence of the migrants (both origin and destination) are also taken into account in this model. So, here migration with marriage motive is a dummy variable and is the function of education level, religion, skill level and place of destination and origin. That is,

$$MMar = f(N_Edu, N_Reli, N_Occup, EcoCode_O, EcoCode_D)$$

The following table is obtained after running the logistic regression model.

Table 7.2 Logistic regression model for migrants with marriage motive

Variables	B	S.E.	Wald	df	P-value (Sig)	Exp(B)	Reference Category
Age group			136.838	4	0.000		00-14 age group
15-29 age group	4.136	0.588	49.545	1	0.000	62.575	
30-44 age group	3.212	0.600	28.643	1	0.000	24.822	
45-59 age group	2.320	0.651	12.706	1	0.000	10.178	
60+ age group	0.769	0.926	0.690	1	0.406	2.157	
Education Level			70.474	3	0.000		No education
Primary	-0.375	0.147	6.553	1	0.010	0.687	
Secondary	-0.648	0.125	26.958	1	0.000	0.523	
Higher	-1.432	0.174	67.936	1	0.000	0.239	
Religion			6.363	3	0.095		Hindu
Boudha	-0.289	0.169	2.926	1	0.087	0.749	
Kirat	0.441	0.272	2.632	1	0.105	1.554	
Islam	-0.370	0.536	0.478	1	0.489	0.690	
Skill Level			27.996	4	0.000		No skill
Skill level I	-0.524	0.179	8.590	1	0.003	0.592	
Skill level II	-0.353	0.107	10.918	1	0.001	0.703	
Skill level III	-2.843	1.014	7.861	1	0.005	0.058	
Skill level IV	-1.323	0.473	7.829	1	0.005	0.266	
Region(Origin)			14.065	2	0.001		Mountain(Origin)
Hill (Origin)	0.412	0.194	4.529	1	0.033	1.510	
Terai (Origin)	0.685	0.202	11.525	1	0.001	1.984	
Region(Destination)			3.283	2	0.194		Mountain(Destination)
Hill (Destination)	-0.083	0.242	0.117	1	0.733	0.921	
Terai (Destination)	-0.250	0.245	1.039	1	0.308	0.779	
Constant	-4.588	0.657	48.708	1	0.000	0.010	

Included cases in Analysis	3270	
Missing Cases	172	
-2 LogLikelihood	2773.895	Variable(s) entered on step 1: AgeGr15, N_Edul, N_Reli,
Nagelkerke R-Square	0.200	N_Occup, EcoCode1, EcoCode.

The above P-values (at 5 percent level of significant with corresponding degree of freedom) for test of significance show that the people having higher education are negatively significantly different for marriage motive than that of people having no education (ref cat). The chance of moving with marriage motive for higher educated people is very less than that for illiterate people. Here β is negative, and 0.239 is the odds ratio of marriage motive for higher educated people versus no educated people. It means people moving with marriage motive is 74 percent lesser for higher educated people as compare to no educated people. Likewise primary educated people has also significant different than that of no educated people. Primary educated people moving with marriage motive are about 33 percent less than no educated people moving with the same motive. Similarly, secondary educated people has significant different with no educated people in terms of migration with marriage motive and it is 48 percent lesser than the reference category. Similarly, younger the age group, the higher the probability of moving with marriage motive as compared to youngest age group. It is also observed that the people having different skill levels are negatively significant different than that of people having who don't have skill. As compare to zero skill level, the chance of moving with marriage motive for skill level I, II, III and IV are respectively 39, 30, 94 and 73 percent lesser. Likewise, people going out with this motive from different origin regions are significant different. People out migrated from Hill and Terai with marriage motive are respectively 151 and 198 percent higher than that of people moving out from Mountain. For the different religions and destination regions, these are generally not significant different implying that the difference of destination places and different religious peoples have no effect on migration with marriage motive. Here the migration with marriage motive is 20 percent explained by the variables.

7.2.2 Study Motive

People are always willing to migrate for better life. Educated people might have better information about where to go and why to go. As mentioned by Sjaastad (1962), people are ready to invest time and money in their education in their early age so that they can get good opportunity and can maximize their benefit for a long time in the days to come. People move with Study motive for better education towards the area of academic centers. Work and education are considered as wealth and status. A move for wealth and status is more likely considering wider special scale. It means people are moving for study from a large distance. It is some time considered as brain circulation, they return after completing their study. In the life course perspective, these are the triggering careers for migration: work career and education career. So base on this perspective and result come out from the earlier descriptive statistics, migration with study motive is dichotomous variable and is the function of sex, age, education level, religion, marital status and place of destination and origin. That is

MStu = f (q2_sex, AgeGr15, N_Edul, N_Reli, N_MariSt, EcoCode_O, EcoCode_D)

The following table obtained from logistic regression shows how the study motive for migration is influenced by the explanatory variables.

Table 7.3 Logistic regression model for migrants with study motive

Variables	B	S.E.	Wald	df	P-value (Sig)	Exp(B)	Reference Category
Female	-0.226	0.131	2.963	1	0.085	0.798	Male
Age group			36.764	4	0.000		00-14 age group
15-29 age group	-0.921	0.197	21.820	1	0.000	0.398	
30-44 age group	-1.902	0.351	29.436	1	0.000	0.149	
45-59 age group	-3.155	1.059	8.870	1	0.003	0.043	
60+ age group	-17.461	3689.792	0.000	1	0.996	0.000	
Education Level			162.275	3	0.000		No Education
Primary	1.508	0.373	16.368	1	0.000	4.516	
Secondary	3.122	0.368	71.930	1	0.000	22.680	
Higher	3.907	0.384	103.610	1	0.000	49.746	
Religion			6.024	3	0.110		Hindu
Boudha	-0.434	0.226	3.693	1	0.055	0.648	
Kirat	0.565	0.415	1.854	1	0.173	1.760	
Islam	-0.428	0.912	0.220	1	0.639	0.652	
Married	-3.093	0.174	316.032	1	0.000	0.045	Never married
Region(Origin)			2.466	2	0.291		Mountain (Origin)
Hill (Origin)	0.326	0.228	2.040	1	0.153	1.386	
Terai (Origin)	0.204	0.241	0.714	1	0.398	1.226	
Region(Destination)			18.380	2	0.000		Mountain (Destination)
Hill (Destination)	1.927	0.507	14.419	1	0.000	6.866	
Terai (Destination)	1.632	0.508	10.306	1	0.001	5.112	
Constant	-3.912	0.656	35.553	1	0.000	0.020	
Included cases in Analysis		3282					
Missing Cases		160					Variable(s) entered on step 1: q2_sex, AgeGr15, N_Edul, N_Reli, N_MariSt, EcoCode1, EcoCode.
-2 Log Likelihood		1799.650					
Nagelkerke R-Square		0.555					

From the table above, the Nagelkerke R-square value 0.555 indicates that the model for migration with service motive is 55.5 percent explained by the independent explanatory variables. The age group 15-29, 30-44 and 45-59 are all negatively significant different with the age group 00-14 for migration with study motive. It shows the higher the age group the lesser the risk of moving with study motive. Here there is a very few number of migrants above age 65 who said their motive for migration is study which yielded a large figure in Standard Error. This table also clearly depicts that the study motive for migration is highly significantly different for primary, secondary and higher education at 95% confidence interval. The higher the education is more likely to migrate with study motive. The relative risk for primary, secondary and higher educated people with study motive for migration are respectively 4.516, 22.680 and 49.746 times more than that of people having no education. There is no significant different for different religions as compare to Hindu for study motive. Married people have significant different with 'never married'. There is 96% less chance of moving with study motive for married as compare to 'never married'

people. Similarly, place of residence (Destination) has also significant different for this motive. Coming to Hill and Terai with study motive have respectively 6.866 and 5.112 odd ratios indicating that people coming to these regions have higher chance of coming with study motive than that of people coming to Mountain. It means many people are moving to Hill followed by Terai for study purpose.

7.2.3 Service Motive

People are moving for jobs and services. Service centers and industrial centers are mostly focused on Capital (Hill) and Terai regions in Nepal. So tendency of moving people towards these regions are significantly high. As mentioned by Boyle et al. (1998), urbanization attracts people in developing countries. So is the case in Nepal. Most of the urban centers are situated in Terai and Capital which accumulates the higher number of in-migration. Human capital has a great role in migration for searching job and services such as age, sex, education, skill, religions, marital status of the individual characteristics. Other regional difference for example place of residence (origin and destination) is equally important for such a migration. The functional model for service motive for migration is as:

$$MSer=f(q2_sex, AgeGr15, N_Edu, N_Reli, N_MariSt, N_Occup, EcoCode_O, EcoCode_D)$$

Where, MSer is a dummy variable with values 0 and 1.

The following table analyses how the service motive for migration is different for such an explanatory variables.

Table 7.4 Logistic regression model for migrants with service motive

Variables	B	S.E.	Wald	df	P-value (Sig)	Exp(B)	Reference Category
Female	-1.356	0.129	110.335	1	0.000	0.258	Male
Age group			10.798	4	0.029		00-14 age group
15-29 age group	-0.340	0.260	1.709	1	0.191	0.712	
30-44 age group	-0.381	0.300	1.607	1	0.205	0.683	
45-59 age group	-0.590	0.340	3.010	1	0.083	0.554	
60+ age group	-2.527	0.812	9.689	1	0.002	0.080	
Education Level			27.406	3	0.000		No Education
Primary	0.394	0.175	5.055	1	0.025	1.483	
Secondary	0.545	0.160	11.604	1	0.001	1.725	
Higher	1.011	0.194	27.148	1	0.000	2.747	
Religion			8.363	3	0.039		Hindu
Boudha	0.268	0.181	2.186	1	0.139	1.307	
Kirat	-0.414	0.410	1.018	1	0.313	0.661	
Islam	-1.792	0.820	4.774	1	0.029	0.167	
Married	-0.129	0.152	0.722	1	0.396	0.879	Never married
Skill Level			315.479	4	0.000		No skill
Skill level I	2.992	0.229	171.413	1	0.000	19.922	
Skill level II	2.860	0.192	221.232	1	0.000	17.462	
Skill level III	4.451	0.317	197.210	1	0.000	85.673	
Skill level IV	3.746	0.272	189.521	1	0.000	42.363	
Region(Origin)			14.905	2	0.001		Mountain (Origin)
Hill (Origin)	0.017	0.193	0.008	1	0.929	1.017	

Contd.

Variables	B	S.E.	Wald	df	P-value (Sig)	Exp(B)	Reference Category
Terai (Origin)	0.470	0.205	5.258	1	0.022	1.601	
Region(Destination)			37.594	2	0.000		Mountain (Destination)
Hill (Destination)	0.001	0.225	0.000	1	0.997	1.001	
Terai (Destination)	-0.693	0.228	9.247	1	0.002	0.500	
Constant	-3.054	0.393	60.369	1	0.000	0.047	
Included cases in Analysis		3257					
Missing Cases		185					
-2 Log Likelihood		2207.325					
Nagelkerke R-Square		0.438					

Variable(s) entered on step 1: q2_sex, AgeGr15, N_Edul, N_Reli, N_MariSt, N_Occup, EcoCode1, EcoCode.

The above table shows that the migration with service motive is different for male and female. Female have almost 74 percent less chance of moving with service motive as compare to male movers. Likewise, people having primary, secondary and higher education are statistically significant at 5 percent level of significance as compare to people having no education. The relative risk for primary, secondary and higher educated people have respectively 1.48, 1.73 and 2.75 times the higher risk of moving with service motive as compare to reference category (no education). Islam people are the least mobile people for this motive among the four major religions. The odds ratio 0.167 indicates that the Islam move relatively 83 percent less than that Hindu people move with service motive. Other religions are not significantly different. Similarly, people having skill level I II and III are all positively significantly different as its p-value is less than 0.05 at 5 percent level of significant. The relative risk of moving with service motive for these categories are respectively 20, 17, 86 and 42 times higher than that of people having skill level zero. Coming to Terai is also significantly different but negatively as compared to people coming to Mountain for this motive. Here the probability of coming to Terai with service motive is almost 50 percent lesser than that of people coming to Mountain. But going out from Terai with this motive is 1.60 times higher than that of going out from Mountain and it is statistically significant different. Age groups has no significant different for service as a reason of migration. This model of migration is 44 percent explained by the explanatory variables.

7.2.4 Agriculture Motive

In Nepal, the economy is dominated by agriculture. It is the livelihood for more than 80 percent of the population. It is the main source of food, income and employment for the majority people. After the eradication of Malaria, many people moved to Terai region, a very fertile land of Nepal. Like other motives, agriculture motive is also influenced by the key variables of Human capital such as age, sex, education, religion, marital status and skill level of the individuals. Other equally important variable is the place of origin and destination. So migration with agriculture motive (MAgr) which is a dummy dependent variable and is tested here with these explanatory variables. The functional model is as:

$$MAgr = f(q2_sex, AgeGr15, N_Edul, N_Reli, N_MariSt, N_Occup, EcoCode_O, EcoCode_D)$$

The following table obtained by logistic regression model explicitly relate about how the agriculture motive for migration is influenced by these explanatory variables.

Table 7.5 Logistic regression model for migrants with agriculture motive

Variables	B	S.E.	Wald	df	P-value (Sig)	Exp(B)	Reference Category
Female	-0.220	0.169	1.681	1	0.195	0.803	Male
Age group			55.303	4	0.000		00-14 age group
15-29 age group	0.161	0.329	0.240	1	0.624	1.175	
30-44 age group	1.046	0.389	7.208	1	0.007	2.845	
45-59 age group	1.753	0.408	18.421	1	0.000	5.773	
60+ age group	2.046	0.444	21.266	1	0.000	7.734	
Education Level			53.048	3	0.000		No Education
Primary	-0.303	0.197	2.359	1	0.125	0.738	
Secondary	-1.301	0.215	36.645	1	0.000	0.272	
Higher	-2.008	0.375	28.669	1	0.000	0.134	
Religion			10.221	3	0.017		Hindu
Boudha	-0.989	0.318	9.654	1	0.002	0.372	
Kirat	0.199	0.408	0.238	1	0.626	1.220	
Islam	0.223	0.847	0.069	1	0.793	1.249	
Married	-0.452	0.260	3.007	1	0.083	0.637	Never married
Skill Level			42.571	4	0.000		No skill
Skill level I	0.769	0.268	8.237	1	0.004	2.157	
Skill level II	1.203	0.195	37.984	1	0.000	3.329	
Skill level III	-0.774	1.058	0.535	1	0.464	0.461	
Skill level IV	0.007	0.660	0.000	1	0.991	1.007	
Region(Origin)			44.200	2	0.000		Mountain (Origin)
Hill (Origin)	-0.552	0.224	6.082	1	0.014	0.576	
Terai (Origin)	-1.812	0.289	39.227	1	0.000	0.163	
Region(Destination)			100.954	2	0.000		Mountain (Destination)
Hill (Destination)	0.083	0.502	0.028	1	0.868	1.087	
Terai (Destination)	1.892	0.486	15.167	1	0.000	6.633	
Constant	-3.148	0.596	27.899	1	0.000	0.043	
Included cases in Analysis			3257				
Missing Cases			185				
-2 LogLikelihood			1300.976				
Nagelkerke R-Square			0.345				

Variable(s) entered on step 1: q2_sex, AgeGr15, N_Edul, N_Reli, N_MariSt, N_Occup, EcoCode1, EcoCode.

It is found that an education level is negatively significantly different for agriculture motives. The higher the education, there is less risk of moving with agriculture motive as compared to no educated people. Higher and secondary educated people moved respectively 87 and 73 percent lesser than no educated people move whereas primary educated people are not significantly different than that of illiterate people. There is a reverse effect of education level in agriculture motive. Similarly, the relative risks of people coming out from Hill and Terai with agriculture motive are respectively 42 and 84 percent less than people coming out from Mountain. But people coming to Terai with agriculture motive are almost 6.63 times higher than that coming to Mountain and it is highly significant different. Higher age group people are also positively significantly different than that of youngest age group. It shows that the older people prefer to migrate with agriculture motive as compared to youngest one. Skill level I and II are significant different with no skill level people in terms of migration with agriculture motive. However higher skill level people are not significantly different with no skill level people. Other

variables such as sex, religion, marital status have not significantly influenced on migration for agriculture motive. But Buddhist are significantly different comparing to Hindu. They move almost 63 percent less than Hindu move with this motive. The model for this migration is 35 percent explained by the explanatory variables.

7.3 Conclusion

An analysis presented here is based on logistic regression model to detect how migration motives and internal migration as such are influenced by different demographic variables. Here partial part of conceptual model is tested because of the limited time, and difficult to get in-depth information about the census 2001 report and its manual. Looking at the migration behavior, migration is influenced by age, sex, education, religion, marital status, occupation. Younger age groups are more likely to migrate specially age group 15-29. There is no significant different for male and female for this migration, in general. There is no remarkable difference in religion for migration. However Hindus are the most migrant religious group whereas IIsam are the least. The higher the education, the higher the chances to migrate. Married people migrate more than double that of never married people. People having skill level II are moving lesser than people having no skill and they are significantly different too. Regarding migration motives, the higher the education lesser the probability to move with marriage motive. People having higher level of skill will less likely to move with this motive. Younger adult age groups (15-29) are more likely to migrate with marriage motive as compared to youngest age group. It is highly positively significant and almost 63 times higher. Similarly, migration with study motive is influenced by age, education, marital status, and destination place. Higher the age lesser the risk of move with study motive. The higher the education higher the probability to move with this motive. The relative risk of moving married people with study motive is almost half of single people. People coming to Hill and Terai for this motive are more than that coming to Mountain. Likewise, service motive is significant different for different sex, educational level, skill and origin as well as destination place. Females are quite less than male move with service motive. The higher the education higher the chance to move with service motive. Higher the skill level there is more chance to move with this motive. For example, people having skill level III moves almost 86 times higher for service motive than that of people having no skill. Coming to Terai with this motive is 50 percent less than that coming to Mountain. Similarly relative risk of going out from Terai for this motive is more than people going out from Mountain. In a similar way, agriculture motive is highly negatively influenced by education. People having higher education are less likely to move with this motive. Higher the age group people, they are more willing to go for agriculture purpose. Skill level I and II have positive influence on this motive. Coming out from the different origin places also differ the migration for agriculture motive. Relative risk of coming to Terai with agriculture motive is large enough. These results are also supported by the earlier descriptive statistics.

Chapter 8

Conclusion and Recommendation

8.1 Conclusions

When we look at differences in terms of choice of destination, the result indicates that the people willing to have study career and service career (wealth and status) prefer to move to the Central Hill region, where the capital of Nepal, Kathmandu, is situated. There are two possible explanations: 1) better and higher educational institutes are available there; 2) better opportunities for job as it is the biggest urban center that matches their values/goals. Thousands of students come to Kathmandu for better and higher education. In this case higher enrolment rate in capital area experienced high in-migration rate due to overall popularity of higher education in Kathmandu and rational choice made in favour of future return on investment in human capital. Population relocations between districts were mainly directed to the growth centers of capital city that absorbed about 21 percent of total migrants in 2001. Terai is famous for agriculture land which attracts people interested in agriculture. About 80 percent of the people in Nepal are still relying on agriculture so there is a massive in-flow of people in Terai. People moving with marriage motive have no remarkably significant difference across the destination regions. However, it is significant different of pushing from Origin place. Here study and service are the pulling factors for Hill, and agriculture is for Terai regions. Marriage is pushing factor for female residing place (origin), and pulling factor for male residing area (destination).

In general, the 2001 census data proved the fact that the different life course stages show different migration behavior with a high mobility among child, increasing further at young adults ages and slowly dropping down at adult ages, and with sharp decline during and after retirement ages. The younger age group 15-29 is more likely to conduct migration for overall moves. Almost 54 percent of the migrants are under this category. However it is interesting to note that a little bit more matured people of aged 30 and above is moving for agriculture purpose (see figure). Thus agriculture profession can be considered as the choice of adult people. This evidence demonstrates that migration is age selective in Nepal. Females are moving mostly with marriage motive (40.6% of total female migrants). They move in their early age because they get married earlier than their male counterparts which accumulate 21 percent of the total internal migrants in 5 year period prior to the Census 2001. Not a single male reported that they moved with marriage motive. Excluding this case, gender similarities are more striking than differences, in general.

Most of the migrants are moving within a short distance. The result shows that about one third of the migrants moved within fifteen Sub-regions while about half of the migrants moved within three Ecological regions. It explicitly says that people are more willing to move to the closer areas, supporting Ravenstein's first law of migration. People leaving/coming rate in Mountain is correspondingly very high/low and is followed by Hill and then Terai. It yields Terai is the population gaining region whereas Hill and Mountain is the population loosing regions. In terms of number, Central Hill where the capital of Nepal is situated is the highest recipient area during the period. Having studied the distance moved by the people, the large city like Kathmandu and other urban centers attract more

migrants from the nearest distances. It also proved Ravenstein's gravity model, which says that the flows between regions are proportional to the population size of the respective regions and inversely proportional to the distance between them.

Indeed, motivation factors that help a person to decide to migrate or not to migrate are significantly dependent on the individual characteristics like age, sex, education level, marital status, and occupation. Besides these individual characteristics, pushing and pulling factors of the place of origin and the place of destination help to make the decisions to leave and the choice of destination. Migration takes place after analyzing collectively the loss and profit, level of risk associated, and merit and demerit of his/her move with respect to his/her place of residence (origin) and the place of destination choice.

8.2 Recommendations

In this section, I would like to make some recommendations based on data available and the findings of the analyses. The motivation factors, as I discussed in Chap 6, should ideally be measured differently, not just as the main reasons for moving. 26 percent of migration motive is under 'others' category which indicates that it is not capturing some important motives considered by individuals, more in-depth study is required. Most probably, the options given to the respondents for migration motives are not enough during the census. Nepal is under political crisis during this period and a large number of people were moved for insecurity reason. Equally important causes could be poverty, inequitable distribution of income, unemployment, difficult livelihood, and food insecurity. However, I am afraid that the last census conducted in 2001 failed to capture these important reasons for migration which yielded a rather high percentage of migrants under the 'other' category. So, I would like to recommend revising the options for migration motives to capture the major reasons in forthcoming Census 2011. This study does not discuss about the internal migration caused by poverty, geographically difficult areas, and insecurity. The dataset is not sufficient to explore about wage, income and labor market situation of the place of origin and place of destination. This could be a new research area. Now, the contribution of remittance is about 16 percent of GDP in Nepal (National Planning Commission Report, 2007). It could be one of the encouraging factors for internal migration. This would be another interesting area for new research and I am eager to do a fresh research on it in the days to come.

There is a growing importance of population management like monitoring, forecasting, regulating the internal migration and balance distribution of population across the country. Conducive environment for moving people will foster the sustainable development of the country. To guide this properly, I would like to recommend the Government to initiate migration policy, even more important for internal migration in Nepal. It is advisable that the government should integrate its developmental programmes and policies with the migration policy to achieve the sustainable development of an area/region. After having the knowledge of migration motives, its flow and direction, the Government could develop a reliable migration policy to make the people's moves less risky and less expensive. I would also like to advise the Government to address the policy circle so that the recommendation of the research would be reflected in migration policy.

References:

- Agresti, A. (1996) *An Introduction to categorical Data Analysis*. A John Wiley & Sons, inc., Publication.
- Babbie, E. (2007) *The practice of social research*. Belmont: Wadsworth Publishing Company.
- Boyle, P.J., Halfacree, K. & Robinson, V. (1998) *Exploring Contemporary Migration*, United Kindom: Harlow.
- Central Bureau of Statistics, Nepal (2001) *National Population Census Report* [online] Available: http://www.cbs.gov.np/national_report_2001.php[accessed 24 May 2009].
- Central Bureau of Statistics, Nepal (2003) *Population monograph of Nepal* [online] Available: http://www.cbs.gov.np/population_volume2.php[accessed 27 May 2009].
- Central Bureau of Statistics, Nepal (2004) *Nepal Living Standard Survey* [online] Available: <http://www.cbs.gov.np/Surveys/NLSSII/NLSS%20II%20Report%20Vol%201.pdf> [accessed 27 May 2009].
- Central Bureau of Statistics, Nepal (2004) *Poverty Trend in Nepal*, Kathmandu Nepal.
- Colman, A. & Pulford, B. (2006) *A Crash Course in SPSS for Windows*: Malden, MA Blackwell Publishing.
- Conway, D. & Shrestha, N. (1981) *Causes and Consequences of rural-to-rural migration in Nepal* [online] Available: <http://www.popline.org/docs/0610/019726.html>[accessed 15 May 2009].
- Dangol, B.D.S, 2002, *Post Enumeration Survey Report, 2001*. Submitted to UNFPA/CBS, Kathmandu, Nepal.
- Demeny P. (2003) *Population Policy: a concise summary*. New York, Population Council, (Policy Research Division Working Papers No. 173).
- Economic and Social Commission for Asia and the Pacific (2003) -*Ad Hoc expert meeting on Migration, Poverty and Development in Nepal* [online] Available: <http://www.unescap.org/esid/psis/meetings/migrationaug2003/Nepal.pdf> [accessed 17 May 2009].
- Greenwood, A.M.(2007), *Updating the International Standard Classification of Occupation, ISCO-08*, ILO Bureau of Statistics [online] Available: <http://unstats.un.org/unsd/class/intercop/training/escwa04/escwa04-9.PDF> [accessed 20 June 2009].
- Hardee, K., Feranil I., Boezwinkle, J. And Clark, B. (2004). *Policy circle. A framework for analyzing the components of family planning, reproductive health, maternal health and HIV/AIDS policies*. Policy Working Paper Series, 11.

Hugo G. (1992) *Migration and rural-urban linkage in the ESCAP region*[online] Available: http://db.jhuccp.org/ics-wpd/exec/icswppro.dll?BU=http://db.jhuccp.org/ics-wpd/exec/icswppro.dll&QF0=DocNo&QI0=101335&TN=Popline&AC=QBE_QUERY&MR=30%25DL=1&&RL=1&&RF=LongRecordDisplay&DF=LongRecordDisplay [accessed 25 May 2009].

International Centre for Integrated Mountain Development, ICIMOD Nepal (2003) *Ranking of Districts based on weighted score* [online] Available: <http://www.hdihumla.org.np/remote-districts-of-nepal.htm> [accessed 28 June 2009].

Jennissen R. (2007) *Causality Change in International Migration System Approach*, Netherlands: Springer Netherlands.

KC, B. (1998) *Trends, Patterns and Implication of rural-to-urban migration in Nepal*. Tribhuvan University, p. 105.

KC, B. (2003) *Internal Migration in Nepal*, Monograph of Nepal vol I p. 121-168, Kathmandu Nepal.

Massey, D.S., J Arrango, G Hugo, A Kouaouci, A Pellegrino & JE Taylor (1993) 'Theories of International Migration: A review and appraisal' *Population and Development Review* Vol. 19, P. 443.

Sjaastad, L.A. (1962), *The Costs and Returns of Human Migration*. *Journal of Political Economy* P 80.

Shryock, H. and Siegal, J. (1976) *The Methods and Materials of Demography*, United Kingdom: Academic Press Limited.

United Nations manual, *Method of Measuring Internal Migration* Vol VI, 1970.

United States Agency for International Development, (2007) *The History of Malaria in Nepal* [online] Available: <http://nepal.usaid.gov/program.php?pid=37>[accessed 25 July 2009].

Weeks JR.(2005) *Population: An introduction to concepts and issues*. Belmont, California, Wadsworth Publishing.

Relevant Websites:

Central Bureau of Statistics, Nepal [online] Available: <http://www.cbs.gov.np/#>[accessed 5 June 2009].

National Planning Commission, Nepal [online] Available: <http://www.npc.gov.np/#>[accessed 25 July 2009].

United Nations Population Fund [online] Available: <http://www.unfpa.org/pds/migration.html>[accessed 25 May 2009].

World Population Prospectus [online] Available: <http://esa.un.org/unpp/> [accessed 25 May 2009].