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Global Poverty - Local Problem: Institutional Determinants of Poverty Among Indigenous Peoples of Nepal

Gyanesh Lama
Washington University in St. Louis

WASHINGTON UNIVERSITY IN ST. LOUIS

George Warren Brown School of Social Work

Dissertation Examination Committee:
Santa Pandey, Chair
Geoff Childs
David Gillespie
Itai Sened
Michael Sherraden
Molly Tovar

Global Poverty – Local Problem: Instituional Determinants of Poverty Among Indigenous Peoples in Nepal

By

Gyanesh Kumar Lama

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Since I came to the United States, the most frequently asked questions have been "How did you come to America?" and "How did you get into Washington University?" These questions are loaded with curiosity, and perhaps disbelief, that a person like me, a village boy from a rural mountain of the Himalayas, could make it to one of the best and most expensive universities in America. And my answer has been, "It's a long story."

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CHAPTER I: INTRODUCTION

Explaining disparities in wealth, health and education between rich and the poor and informing interventions that can bridge this gap is one of the fundamental issues in Social Work. In all countries of the world, we find some groups who are rich and others who are poor. These groups generally vary across ethnic and geographic communities. Why do some groups or communities become poor while others become rich? What determines the relationship between wealth, health and education? More importantly, how best should society be organized so that all humans have the capacity to "live well" regardless of who they are and where they live? These are the primary questions that motivate this dissertation study. These are important questions to the applied social sciences and to governments and organizations concerned with promoting human well-being.

Despite the global advancement in technology and economic growth, one group that has remained poor throughout the world is indigenous peoples. The United Nation's recent report on the *State of the World's Indigenous Peoples, 2009* (UNPFII, 2009) warns that poverty among indigenous peoples throughout the world is pervasive and persistent. For example, the life expectancy of an indigenous child is 20 years shorter than that of his or her non-indigenous counterpart in Australia and in Nepal; 13 years shorter in Guatemala; 11 years shorter in New Zealand; 10 years shorter in Panama; and 6 years shorter in Mexico. However, little is known about why indigenous peoples continue to be poor while other groups become rich. Much less is known about what should be done to bridge this gap.

One emerging theory on why some societies become rich while others remain poor is the theory of institutional design (North, 1990). According to this theory, societies

become poor because their *institutions* – in particular, the rules of law--constrain the economic behaviors of the citizens in those societies. According to this view, what matters are the rules of the game in a society, as defined by prevailing explicit and implicit laws and their ability to create appropriate incentives for desirable economic behaviors. By extension, this theory implies that the laws of a society, such as a country's constitution, constrains the economic productivities of some groups (such as indigenous peoples) while providing incentive structures for the others (the elites). This view is strongly associated with North (1990) and Ostrom (1990), and consistent with works of Sherraden (1991) and others.

This institutional framework was used as a theoretical guide for an in-depth investigation of poverty among indigenous peoples in Nepal, where poverty is the norm for most. In particular, this study examines Nepal's first constitution of 1964 (Muluki Ain) to determine the extent to which an institution is a source of socioeconomic disparity between indigenous and non-indigenous peoples in Nepal.

This dissertation serves as the first empirical study to examine the socioeconomic disparity between indigenous and non-indigenous peoples in Nepal using a nationally-representative sample. The dependent variable in this study is asset-poverty, as measured by wealth index (Rutstein & Johnson, 2004). The individual-level independent variables are ethnicity/caste and productivity characteristics such as education, health, employment and occupation. The community-level independent variables are geographic isolation, development regions, and ecological regions. The institutional variable is the education law that prohibits use of indigenous languages as a language of instruction in public

schools. The control variables are gender, age, marital status, household size and gender of the head of household.

This study will contribute to two areas of social science enquiry: global poverty discourses and institutional theory. The findings of this study will have important implications on poverty reduction strategies and on institutions which can provide incentives for self-governance of the indigenous communities. In particular, the study will shed light on whether geo-ethnically targeted approaches are needed to reduce disparity between indigenous and non-indigenous peoples in Nepal.

A. Statement of the problem

Poverty is a serious social problem in Nepal. Over 40% of the population of Nepal lives under poverty (ILO, 2000). However, little is known about who these people are and why they are poor. To date, no empirical studies have been conducted to determine whether indigenous peoples in Nepal are at significantly higher risk of poverty than non-indigenous peoples.

Since the 1960s, it is becoming increasingly clear that being an indigenous or ethnic minority significantly increases an individual's risk of poverty (Psacharopoulos & Patrinos, 1994; Plant, 1998; Carino, 2009, Eversole, 2005). In the words of Psacharopoulos & Patrinos (1994), there is a cost to "being indigenous." However, these studies have been conducted mostly in the industrialized countries (US, Australia, Canada, and New Zealand) or in the Latin Americas where non-indigenous peoples are White-Europeans. The extent to which socio-economic disparity exists between indigenous and non-indigenous peoples in other developing countries (where non-

indigenous peoples are non-White Europeans), and the factors that contribute to such disparity is currently unknown.

There is a reason to believe that indigenous peoples in Nepal may be more vulnerable to poverty than non-indigenous peoples. Since the establishment of Nepal as a nation-state in the 1770s, the settlers (the caste group) have dominated the political and economic life of Nepal, including those of the indigenous peoples (Aadibasi Janajati). The first constitution of Nepal (*Muluki Ain 1854*) brought about great divisions in Nepali society. This constitution served as a basis for exclusion of the indigenous peoples in governance, politics, and in the economies of the country. In particular, the constitution prohibited use of indigenous languages as a language of instruction in public schools. While caste peoples are allowed to study in their own mother-tongue (Khas language), the indigenous peoples are prohibited from studying in their mother-tongues. School text books are written only in Khas language. The primary purpose of schooling has been to assimilate indigenous peoples into the culture of caste peoples. The extent to which the prevailing institution constrains the indigenous peoples' ability to accumulate human capital--and its subsequent effect on their poverty--is currently unknown.

Nepal is a multilingual and multi-ethnic country, with two distinct racial groups of people: the caste group (Ariyan of Indian origin, the settlers) and the indigenous group (Mongoloid, known as Adibasi Janajati). The caste group consists of three caste hierarchies—high-caste, mid-caste, and low-caste. The indigenous group consists of over 60 distinct ethnic or linguistic groups. About 70% of the people in Nepal consider themselves as indigenous (detail on Nepal is provided in Chapter IV: Context). Research is needed to disaggregate the national poverty estimate into individual ethnic groups

(indigenous peoples) and caste groups (non-indigenous peoples) so that a precise estimate can be made about the determinants of poverty for each of the groups.

The prevailing public perception in Nepal is that, within a caste group, low-caste peoples will have lower socio-economic status than high-caste peoples due to caste-discrimination in the Hindu caste system. However, within the indigenous group, there is no reason to believe why some ethnic groups will have different socioeconomic status than others (except for Newar which has Hindu caste system). Ethnic groups of Nepal are culturally diverse but socially non-hierarchical. To the extent that there is a significant difference in wealth (poverty) between various ethnic groups within indigenous peoples, it will be important to understand why.

To date, there have been very few studies that explicitly looked at the poverty among indigenous peoples vis-à-vis non-indigenous populations. Much of this existing research on indigenous poverty, however, is descriptive, and some of it is inductive (mostly from anthropology), but there is much less deductive analytical work. Very little of the research is applied. In addition, none of the existing research was conducted in Nepal, the area of concern in this dissertation (Lama, 2010).

Of the previous poverty research on indigenous peoples, most have focused either on a small indigenous group or on a single geographic community. These studies are scattered here and there; and they often gloss over the disparity that may exist between ethnicities within the indigenous group. To my best knowledge, no studies have systematically looked at indigenous poverty using a nationally-representative sample or using poverty indicators that are reflective of the indigenous peoples' well-being (Lama, 2010).

Previous studies on indigenous poverty in other countries and communities have found that indigenous peoples typically have a low level of education (schooling) and many health problems. Most are largely employed, and many work as farmers or seasonal laborers (Psacharopoulos & Patrinos, 1994; Eversole, 2005; Humapage, 2005). These individual productivity characteristics (education, health, employment, occupation) were associated with poverty among indigenous peoples (Psacharopoulos & Patrinos, 1994). Previous studies have also noted that indigenous peoples live largely in isolated geographic areas, and the poverty map closely coincides with the geographic territories of indigenous people (Plant, 1998). These studies, however, do not explain why indigenous peoples have low human capital and poor health status or live in isolated geographic areas in the first place.

In recent years, there has been emerging evidence that suggests that geography or 'where you live' plays a significant role in determining an individual's access to quality healthcare (Wennberg, 1970; Raghavan et al, 2010) and quality education (Wilson, 1990; Garner & Raudenbush, 1991). Geography is the key determinant of climate and of natural resource endowments, and it can also play a fundamental role in the disease burden (Rodrik & Subramanian, 2003) and infra-structure development. Geography can influence agricultural productivity and the quality of human resources (Diamond, 1997; Sachs, 2001). Since indigenous peoples live in isolated or poor geographic communities (Plant, 1998), they are less likely to have access to quality education and quality healthcare services. The lack of access to quality education and quality healthcare services is likely to result in poor educational and health outcomes. Poor education and poor health, combined, are likely to put indigenous peoples at high risk of poverty.

However, to date no empirical studies have looked at the effect of geography on the relationship between education, health and poverty. Furthermore, why geographic communities of indigenous peoples are poor or isolated is currently unknown.

Further research is needed to better understand the geographic and institutional contexts in which indigenous peoples live and how these contexts influence the risk of poverty. This dissertation study proposes an in-depth investigation of the socioeconomic status of the indigenous peoples in Nepal, where poverty is an established part of life for the indigenous peoples. Each year, many indigenous peoples in Nepal face deaths due to poverty- induced problems such as malnutrition and tuberculosis.

The theory of institutional design (1990) predicts that societies/communities become poor due to institutional structure, such as constitution or laws, which are designed by elites of the society to further their own best interests. This dissertation research used the theory of institutional design as a theoretical guide to determine the extent to which indigenous peoples of Nepal are poor due to the institutional structure of Nepal. In particular, this study examined if the geographic territories of indigenous peoples are systematically isolated (made poor) by the prevailing institutions of Nepal, and whether this isolation is driving the observed socioeconomic disparity between indigenous and non-indigenous peoples. The study also examined if the low level of educational attainment among indigenous peoples is a result of the prevailing education laws, and whether the low level of educational attainment is contributing to their risk of poverty. The findings of this study will shed light on our understanding of why it matters 'who you are' and 'where you live' with regard to a person's capacity to 'live well'.

A1. Research Objectives

The specific objectives of this dissertation study are as follows:

1. To determine which ethnic/caste groups in Nepal are at the highest risk of poverty.
2. To determine the extent to which poverty is driven by individual productivity characteristics (education, health, employment and occupation).
3. To determine the extent to which poverty is driven by geographic characteristics.
4. To examine the extent to which disparity in education, health and wealth (poverty) between indigenous and caste groups are driven by prevailing institutions of Nepal.

A2. Background and significance of the research

Over 370 million peoples across the world consider themselves as indigenous peoples (UNPFII, 2007). They represent over 5,000 of the estimated 7,000 distinct culture and language groups in the world and live in more than 90 countries across the globe (UNPFII, 2007). Despite the vastly varied geographic and cultural contexts in which they live, they all share one common problem--poverty (Eversole, 2005).

Indigenous peoples throughout the world suffer a disproportionately higher risk of poverty than non-indigenous peoples (Eversole, 2005). Although indigenous peoples represent about 5% of the global population, they comprise over 30% of the world's 900 million extremely poor and 15% of all poor worldwide (*State of the World's Indigenous Peoples, 2009*). Over 72% of indigenous peoples are extremely poor (make less than $1 a

day) and almost 99% of indigenous peoples are classified as poor (make less than $2 a day). Global poverty, therefore, is largely a de facto poverty of the indigenous peoples.

It is an understatement to say that poverty is a serious social problem. Poverty has serious consequences on human health and well-being. Poverty has been shown to cause general health problems (Pytell, 2007), mental health problems (BMA, 2006), conflicts (Justino, 2008), crime (Hsieh & Pugh, 1993), suicide (Chuanc & Huang, 1997), and poor educational outcomes (Brooks-Gunn et al., 2000). However, little is understood about what causes poverty itself or how to overcome it. Much less is known about the determinants of poverty among indigenous peoples and the interventions that can help overcome it.

Global poverty literature has largely ignored the indigenous peoples. Much of the global poverty literature is focused on the economic structures of the society; but it gives little attention to this question: *Who are the poor people in a society*? Indigenous peoples are rarely the subject of academic discussion in global poverty discourses.

Poverty has traditionally been the primary subject of economists. However, economic studies conceptualize poverty purely as an economic problem and give little attention to the local institutions and social contexts that shape the socioeconomic behavior of the local people. Economic studies, in general, assume homogeneity across all demographic and social groups. A typical economic analysis of poverty often focuses on the efficiency of the economic system of a country rather than on the question of whether such a system is efficiently endangering the vulnerable population into further risk of poverty.

Even in the poorest countries of the world, not all people are equally poor-- some individuals or groups (the elites) in poor countries are, in fact, as well-off as those in rich

countries. Rich individuals or groups (the elites) in these societies may, sometimes, be the reasons for poverty of the commons due to exploitative labor relationships or other factors such as a caste system or slavery. Unfortunately, such group differences and local contexts have rarely been the focus of economic analysis of global poverty –largely because economists do not deal with the question of social justice. In a typical economic analysis, poverty is often romanticized, but poor people are largely ignored, or even dehumanized (for examples: Collier, 2007; Sachs, 2005; Easterly, 2006). Such analyses see poverty as something that needs to be "attacked" or to be "fought a war against." Poor people are often portrayed in a negative light (e.g. Collier, 2007) and frequently treated as less than human. Such misguided analyses do not capture the nature of society that often hosts the determinants of poverty. Research is needed to understand the social determinants of poverty among indigenous peoples and to inform intervention that can alleviate it.

In recent years, there has been increasing number of interventions purported to be addressing poverty in developing countries. These works are often spearheaded by non-profits or NGOs (Non-governmental Organizations) which market their products to the poor under the banner of micro-credit, micro-finance, or micro-enterprises. These approaches are conducted on a trial-and-error basis without any theoretical foundations that are empirically valid. To date, no countries have seen substantial economic growth and development or poverty reduction as a result of these approaches (Morduch, 1998), although these approaches have been implemented for the last 40 years since the work of Muhammad Yunus in the early 1970s. For example, Bangladesh, where micro-credit has

become established as a model of economic development, remains one of the poorest countries in the world, where the poverty rate is 49.85% (UNDP, 2008).

There are reasons to believe that poverty is rooted in the institutional structure of the society, rather than based purely on the economic behavior of the poor or economic structure of a society (North, 1990). Poverty can no longer be analyzed in isolation of the institutional context in which the poor people live, at least in the case of indigenous peoples. Multidimensional approaches are needed to study poverty (North, 1990). This study was undertaken to investigate the endogenous relationship between poverty, health and education in the context of geographic communities and institutions in which the indigenous peoples live. The findings will shed light on the knowledge gap in our understanding of the nature and determinants of poverty among indigenous peoples.

This research will contribute to two areas of social science inquiry: global poverty discourses and institutional theory. This research is the first study to examine the socioeconomic disparity between indigenous and non-indigenous peoples in Nepal using a nationally-representative sample. Understanding how institutional and community contexts influence the relationship between poverty, health and education will contribute to efforts to understand the determinants of poverty and will inform interventions that improve the living conditions of those who experience poverty, poor health and poor education.

A3. Defining poverty or "Living well"

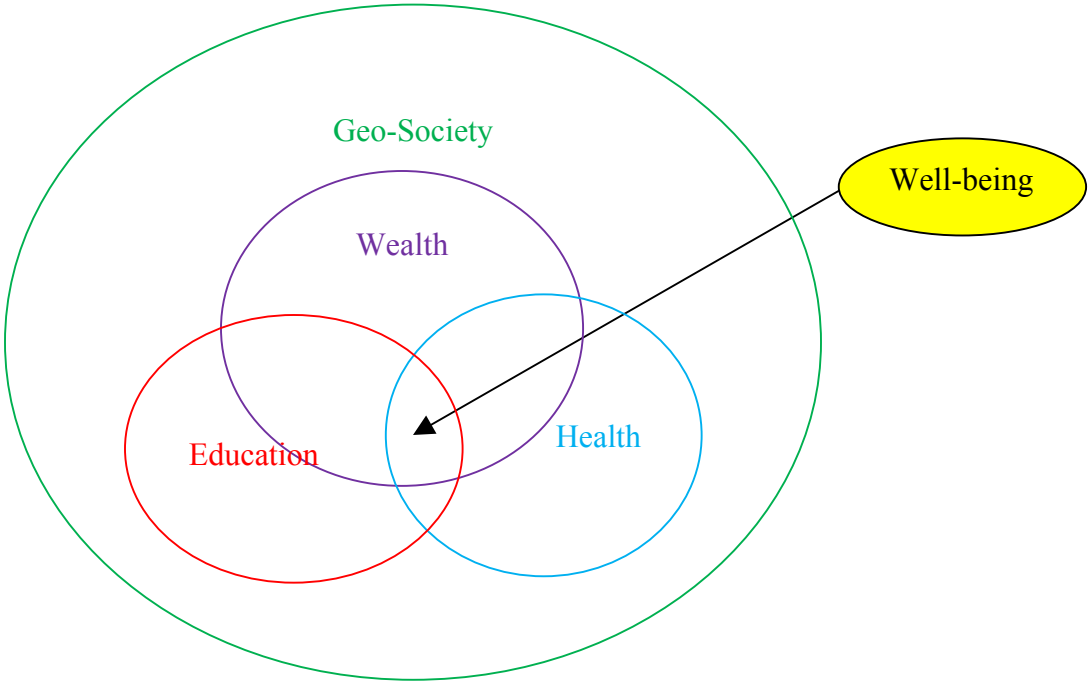
Poverty has been defined in various ways; and considerable disagreement exists among the scholars over its definition and measures (Psacharopoulos & Patrinos, 1994). The conventional income or consumption-based definition and measures of poverty have been critiqued as being limited and narrowly focused (Sherraden, 1991; Sen, 1999; Iceland, 2005; Blank, 2008; Rutstein & Johnson, 2004). Furthermore, critics argue that the non-indigenous concept of poverty is misleading and reflects the hedonistic consumer culture of the market-economy rather than the true well-being of the people (Carino, 2009).

There is a growing consensus among scholars that any measures of indigenous peoples' social and economic status must necessarily start from indigenous peoples' own definitions and indicators of poverty (Eversole, 2005; Carino, 2009). These scholars argue that the definition of poverty should be comprehensive and should encompass not only economic but also health and social dimensions. However, to date, no formal definition of indigenous poverty exists in the literature.

One approach has been to utilize the indigenous concept of "living well" as an alternative to poverty (Carino, 2009). According to this conceptualization, poverty may be thought of as a lack of capacity to live well. This concept is thought to reflect the values of indigenous peoples, who believe that the purpose of any socioeconomic development policy or program should be to promote "living well" or "living a good life" (Eversole, 2005; Carino, 2009). Intrinsic in this definition is the idea that "well-being" is a multi-dimensional quality of living. In this conceptualization, at least three basic needs are necessary --wealth, health and knowledge (wisdom/education). These three needs are

thought of as interdependent and serve as balancing forces to each other. As an aggregate, they are a necessary condition for living well. This concept is represented by a graph in Figure 1.

Figure 1. Conceptual model of well-being



This study utilized Wealth Index developed by Rutstein & Johnson (2004) as a measure of wealth (poverty). The Wealth Index is a composite of household assets and services consistent with the indigenous conceptualization of wealth. The Wealth Index provides a relative measure of wealth (poverty) and has been widely used in other studies (Rutstein & Johnson, 2004). *(See the method section of this document for more details on Wealth Index).* One critique of the Wealth Index is that it is skewed to urban areas.

Another critique is that poverty based on wealth may produce a different poverty rate than poverty based on income (Rutstein & Johnson, 2004). Since the primary focus of this study is on the determinants of wealth, rather than on the measurement methods of wealth, this document focuses on the relationship between wealth and its predictors. The construction of the Wealth Index merits a separate chapter and is beyond the scope of this paper (*Please see Rutstein & Johnson, 2004, for details on construction of this index*).

CHAPTER II: BACKGROUND

B. Defining Indigenous Peoples

According to *Webster's Dictionary*, the term "indigenous" is rooted in the Latin *indigenous*, meaning "Having originated or occurring naturally in a particular region or environment." The term *indigenous* is synonymous to native, innate or inborn---to the land. The origin of the concept of "indigenous peoples" as a group is traced back to colonization when the colonizers or settlers used the concept to differentiate themselves from the native people who were already living on the land.

Currently, there is no formal universal definition of indigenous peoples. The general understanding among the scholars of indigenous peoples is that such a universal definition is neither necessary nor sufficient to describe the scope and complexity of the diversity that exists within indigenous peoples as a group (Eversole, 2005; Carino, 2009). The current working definition used by the United Nations Permanent Forum on Indigenous Issues is that indigenous communities, peoples and nations are as follows:

> …those which having a historical continuity with pre-invasion and pre-colonial societies that developed on their territories, consider themselves distinct from other sectors of societies now prevailing in those territories, or parts of them. They form at present non-dominant sectors of society and are determined to preserve, develop, and transmit to future generations their ancestral territories, and their ethnic identity, as the basis of their continued existence as peoples, in accordance with their own cultural patterns, social institutions and legal systems. (UNPFII/2004/WS.1/3, p2).

The key to this definition is self-identification:

> An indigenous person is one who belongs to these indigenous populations through self-identification as indigenous (group consciousness) and is recognized and accepted by these populations as one of its members (acceptance by the group). This definition preserves for these communities the sovereign right and power to decide who belongs to them, without external interference (UNPFII/2004/WS.1/3, p2).

Common characteristics of indigenous peoples include being original inhabitants of a land later colonized by others, and forming distinct, non-dominant sectors of society, with unique ethnic identities and cultural systems. Indigenous characteristics also include strong ties to land and territory; experiences or threats from their ancestral territory; the experience of living under outside, culturally-foreign governance and institutional structures; and the threat of assimilation into dominant sectors of society and loss of distinct identity (McNeish & Eversole, 2005).

Indigenous people may include, but are not limited to, Aborigines or First Nation of Australia, New Zealand, and North America; the hill tribes, ethnic minorities, ethnic nationalities, original inhabitants, scheduled tribes and other indigenous groups of Asia and the subcontinent; the indigenous *campesinos* (peasants) or *indios* (Indians) of Latin America; the indigenous peoples of Russia and Scandinavia; and even to some extent the tribal peoples or ethnic groups of Africa. Each category in turn contains great diversity, comprising many groups and sub-groups, distinguished by language or lineage or geographical areas (McNeish & Eversole, 2005, p. 6).

Using the term “indigenous peoples” rather than “indigenous people” recognizes this diversity. Unlike *indigenous populations*, the term *indigenous peoples* recognizes

that a shared identity, as a people, exists within each distinct group. Adding an "s" represents an effort to acknowledge the vast diversity contained within this umbrella term. It is an effort to avoid the danger of oversimplification, of indicating a stereotypical "indigenousness." As noted by McNeish and Eversole, "When we speak of *indigenous peoples*, we recognize that we are dealing with no clearly defined group. Rather, we are placing under a single conceptual umbrella many different peoples" (McNeish & Eversole, 2005, p.6).

B1. Indigenous peoples in the world

An estimated 40 million indigenous peoples, speaking over four hundred different languages, live in Latin America and comprise nearly 10 percent of the total Latin American population (Partridge & Uquillas 1996, cited in Eversole, 2005, p.30). These people include the descendants of complex civilizations such as the Maya, Aztec, and Inca, as well as tribes of the forests and lowland plains, peoples such as the Yanomamo, Xavante, Miskito, and Guarani (Eversole, 2005). The largest indigenous peoples are found in Bolivia, Peru, Ecudor, Guatemala and Mexico (Gonzalez, 1994).

An estimated 70 percent of the world's indigenous peoples live in Asia (IFAD 2000/2001). The 'indigenous peoples', a category that first came to existence as a reaction to the legacy of Western European colonialism has become problematic in this part of the world because many governments refuse to recognize the distinction advanced by dissident ethnic groups between indigenous and non-indigenous populations (Barnes et al. 1995 p.2, quoted in Eversole, 2005: 31). As a result, the indigenous peoples of Asia do not have the same well-defined, long-standing and recognized status as indigenous

peoples in recently colonized areas such as the Americas, Australia or New Zealand (McCaskill and Rutherford, 2005). The indigenous peoples are often defined as *prior* rather than *original* inhabitants (Eversole, 2005). For example, many people of the Chittgong Hill Tracts in Bangladesh are not the original inhabitants of that region – only the Kuki peoples can make that claim- but they all pre-date recent efforts by the Bangladesh army to colonize the area through violent attacks on villages (Eversole, 2005).

Many ethnic groups in Africa pre-date the arrival of European colonizers yet do not identify themselves as indigenous peoples. Other terms such as "tribes" or "ethnic groups" are generally preferred (Eversole, 2005). In Africa, the indigenous peoples are generally pastoralists or hunter-gatherers, such as the Pygmies, Hadzabe, Maasai and Tuareg, (ILO 1999 p.3).

B2. Indigenous Peoples versus Minorities

Not all indigenous peoples are population minorities. In many countries, such as Nepal and Bolivia, indigenous peoples are the population majority. Indigenous peoples are also not necessarily a minority in terms of socioeconomic status. For example, in Nepal, Newar and Thakali, indigenous groups have achieved their economic status that is par with the non-indigenous groups. These economic achievements have been made, however, at the cost of their linguistic and cultural identity (Bhattachan & Webster, 2005). Except for a few groups, most of the indigenous peoples live in extreme poverty and are political, socio-cultural and religious minorities in the countries where they live (State of the World's Indigenous Peoples, 2009; Eversole, 2005; Pscharopoulos &

Patrinos, 1994; etc.). What differentiates indigenous peoples from other minority groups is their historical significance as the "native" or "original people of the land" as opposed to the settler who migrated later. Of course, this distinction is a relative one because, historically, every category of people has migrated from one place to another, perhaps originally from Africa, including the indigenous peoples. The implied meaning here is *prior* rather than original. The point of origin of indigenous peoples as a group is the colonization or the establishment of current nation-states.

B3. Nature and extent of poverty among indigenous peoples

Indigenous peoples experience poverty at various levels of society. At an individual level, indigenous peoples experience abject poverty. At a community level, they experience neighborhood poverty--no roads, piped water, hospitals, communication technologies, or higher educational organizations in their communities. At a national level, countries themselves are poor (except the U.S., Australia, and New Zealand). At a group level, they experience relative poverty and inequality –indigenous peoples are at higher risk of poverty than their counterparts, both in developed and developing countries.

Poverty is pervasive among indigenous peoples (Psacharopoulos & Patrinos, 1994, Kelly, 1988; Stephen & Wearne, 1984; del Aguila, 1987). In the United States, the reservation-based indigenous peoples typically have the lowest income and housing (Cornell, 2005). The poverty rate among the Native Americans and Alaska Natives is 23.2%, compared to only 12.5% of the general population (US Census Bureau, 2000). The percent of Native Americans who live in crowded households (more than one person

per room) is 18%--three times higher than the percent nationwide. The percent of Native American and Alaska Native homes that lack safe and adequate water supply and/or waste disposal facilities is 13 times higher than the homes for the U.S. general population (Indian Health Service, 2009). About 18 percent of all Native American households live in crowded households (more than one person per room), compared to 6 percent nationwide. Thirteen percent of Native American and Alaska Native homes lack safe and adequate water supply and/or waste disposal facilities (Indian Health Service, 2009).

In Canada, especially in cities, over 60 percent of indigenous children live below the poverty line. In Winnipeg, 80 percent of inner-city indigenous households reported incomes below the poverty line (a much higher percentage than for poor non-indigenous families). Similarly, indigenous homes are 90 times more likely to be without piped water than non-indigenous homes. Indigenous homes are generally overcrowded, and one reserve in four has a substandard water or sewage system. About 55 percent live in communities where half of the houses are inadequate or sub-standard, manifested in deteriorated units, toxic mold, lack of heating and insulation, and leaking pipes (Carino, 2009).

In Australia, indigenous peoples overall have lower incomes than the non-indigenous population (Eversole, 2005). Indigenous households are half as likely to own their own homes – 34 percent of indigenous peoples owned their own home, compared to 69 percent of the non-indigenous population (Carino, 2009). Over a quarter of the indigenous peoples was reported living in overcrowded conditions. The situation is worse in rural and remote communities where people frequently do not have access to adequate food, water and housing and have poor access to basic services and infrastructure

(Altman et al, 2008; Carino, 2009). In 2001, 46 percent of the Australian indigenous communities had no connection to a town water supply (Bolstridge, 2008). In New Zealand, Maori as a group has a lower level of income and housing relative to non-Maori (Humapage, 2005).

The economic situation of indigenous peoples in Latin America is not any better (Pscchapropoulos and Patrinos, 1994). In Paraguay, poverty is 7.9 times higher among the indigenous peoples, compared to the rest of the population (Plant, 1998). In Panama, poverty rates for indigenous peoples are 5.9 times higher, in Mexico 3.3 times higher, and in Guatemala 2.8 times higher than for non-indigenous peoples (ECLAC, 2007 p.152). Poor, in Latin America, is synonymous with being indigenous; in addition, virtually all the indigenous peoples living in municipalities where more than 90% of the peoples are indigenous are extremely poor (Plant, 1998).

Similarly, Africa does not seem to offer any better situation for indigenous peoples. In South Africa, the Nama and San people constitute some of the poorest of the poor, stigmatized as a rural under-class fit only for menial labor (Eversole, 2005). The Batwa in Rwanda, Burundi, Uganda and Eastern Democratic Republic of Congo have no access to forests, have little or no land, and are desperately poor. Most of the Pygmy indigenous peoples suffer hardship and work as servants on farms that do not belong to them, or practice small-scale, informal mining activities; some must resort to begging (Carino, 2009). Less than two percent of Batwa peoples have sufficient land to cultivate, very few own livestock, and most are either squatters or tenants on other people's land (Mugarura & Ndemeye, 2003).

Although over 70% of the world's indigenous peoples live in Asia (IFAD 2000/2001), the exact poverty status of many of the indigenous peoples in this region is currently unknown. The reason is that statistics on the poverty status of indigenous peoples are not readily available because few countries collect data disaggregated by ethnicity (Carino, 2009 p.29). Of the few studies that have been done, these suggest similar conditions in Asia. For example, in China, the "lack of fuels for fire, insufficient clothing and shoes, several months' shortage of grain each year, and extreme scarcity of animal protein are common conditions" among the indigenous peoples (Tapp 1995: 215); and in Taiwan, the country's so-called economic miracle has left the indigenous peoples with lower average incomes than the general populations (Eversole, 2005).

Poverty among indigenous peoples is not only pervasive, but also persistent (Hall & Patrino, 2005). In the 1980s, poverty rates among indigenous peoples were 60% in Peru, over 70% in Bolivia, 80% in Ecuador 80%, and as high as 90% in Guatemala and Mexico (The World Bank, 2007; Carino, 2009). Twenty years later, with only Guatemala the exception, the poverty rates remained the same in all of the countries (The World Bank, 2007; Carino, 2009). Similarly, in Vietnam, poverty rates in regions where indigenous peoples are concentrated remained high in the 1990s--73 percent in the northern highlands and 91 percent in the central highlands--despite the fact that the poverty rates for the country as a whole decreased from 58 to 37 percent (ILO, n.d.; Eversole, 2005 p.32).

CHAPTER III: THEORY AND LITERATURE REVIEW

H. Theories of indigenous poverty

The review of the literature indicates that, to date, there are no specific theories of indigenous poverty. The existing economic theories of poverty are based on industrialized economies and are designed to explain individual economic behavior of the poor. Since indigenous peoples experience poverty at multiple levels (individually, as a family, and as a whole community) and since their livelihoods are based on subsistent economies, the existing theories have little relevance to indigenous peoples.

Poor indigenous peoples may be viewed as a subset of the world's poor peoples. Poor people have been the central theme in both political and religious discourses throughout history. About 2600 years ago, Buddha (563BCE -483 BCE) saw that poor people could not get the opportunity for self-actualization because they were not able to fulfill their basic material needs. He saw that the poor were often those who were at the bottom of the hierarchy of the Hindu caste system. He saw the caste system as the most inhumane and unjust system and those who took advantage of the poor as lower forms of life.

Years later, Socrates (469 BC–399 BC), Plato (428 BC -348 BC) and Aristotle (348 BC -322 BC) also advocated for social justice, primarily for the poor. About another 300 years later, Jesus (0 -30 AD est.) also addressed the inhumane treatment of the poor. They all believed that the unjust socio-political system was the cause of sufferings, and the victims were always the poor.

It is only in recent centuries that the condition of poor people have been conceptualized in more abstract form as poverty, and discussed in academic discourses. In particular, the writings of Adam Smith (1723 -1790), Thomas Malthus (1766 -1834)

and Karl Marx (1818 -1883) appear to have set the stage for poverty discourse. Smith saw in each individual the potential to overcome poverty and suffering through hard work and intelligence. He saw free-market as the necessary political condition for individuals to be able to exercise economic behaviors and maximize profits of their labor. Marx, on the other hand, saw the very political structure proposed by Smith as a both necessary and sufficient condition that brews poverty. He argued that free-market economic structure allows the owner of the means of production, the upper-class, to exploit the poor, the lower-class, who form the pool of labor or means of production. He advocated for a classless society, or regulated market, as opposed to a free market so that the exploitation of the poor may be minimized or even eradicated. Malthus, on the other hand, was primarily worried about the scarcity of resources and saw that poor and uneducated people were "digging their own graves" by overpopulating and over-utilizing scarce resources. His analysis gave rise to a popular analogy known as "tragedy of the commons" – the idea that poor people don't understand the consequences of their own actions. This thesis was widely used (or abused) by early crusaders and religious missionaries who described indigenous peoples as savage and primitive, thus rationalizing the invasion and colonization of the indigenous nations. The colonization of sovereign indigenous nations is thought to be the beginning of sufferings and poverty among indigenous peoples.

The thinking of Thomas Malthus not only contributed to justification of colonization at the time, but also continues to influence the current thinking of both Smithian and Marxian economists who converge on the idea of "scarce resources" and the "competition of interests" over those resources. Indeed, several theories have been

proposed to explain poverty based on these philosophical traditions. These theories "can be simplistically lumped into two groups--theories that focus on individual behaviors and theories that focus on social structures" (Sherraden, 1991 p. 35).

The individual theories of poverty (Schultz, 1963; Becker, 1964; etc.) claim that determinants of poverty are found in the individual characteristics of the poor themselves and not in the structural characteristics of the society. The basic premise of individual explanation is the assumption that each individual human is a rational being who seeks to maximize his or her own interests over those of the others. The responsibility for poverty lies on the individual decision or choice about his or her own behaviors. Those who fail to make right choices become poor.

Structural theories of poverty (Burton, 1992; Doeringer & Piore 1971; Blau, Ferver & Winkler, 1998; Rank, 1994; Sherraden 1991; North, 1990; etc.), on the other hand, claim that the major determinants of poverty are found "not in the characteristics of the poor themselves, but in the structural elements of the larger society" (Burton, 1992, p. 149). The basic premise of structural explanation is that society does not treat its members equally and fairly, and that there's no "level playing field" for all members of the society. Individuals who start off with better socio-economic conditions have more choices and take advantage of those who start off with lower socio-economic status and who have fewer choices. Due to this comparative advantage, the rich will always be richer and those who are poor will always remain poor regardless of their individual productivity (i.e. hard work). Structural theorists contend that changes in the structure of a society are necessary to change the socio-economic status of the poor.

These existing theories, however, are fraught with sectarian ideologies of the theorists and are often at odds with each other. These economic theories of poverty are largely based on the assumption of market economies of the industrialized countries. For one thing, these theories assume availability of markets and cash income in all economies. Even the most progressive theories, such as Asset Theory (Sherraden, 1991), assumes that poor people have cash incomes, and that what is lacking is the institutional incentive structures (e.g. financial inclusion) to facilitate saving these cash incomes for future use.

These assumptions are, however, at odds with the empirical reality of the indigenous peoples. Except for a few groups in the industrialized countries, indigenous peoples largely live in subsistent economies of developing countries in which cash incomes are scarce. Indigenous peoples are largely self-employed farmers, and a few are cattle grazers or hunter-gatherers. Exchange of goods and services in these economies is often transacted through a bartering system rather than through cash. Where cash is used, it is of minimal amount. Except for the industrialized countries (US, Australia, New Zealand, and Europe), the majority of the indigenous peoples lives in countries or communities that are themselves poor or under-developed. Theorizing indigenous poverty requires not only explaining individual economic behaviors at present, but it also requires explaining the factors that shape the evolution of the local contexts in which indigenous peoples live, and how they became who they are now. Given this background, the prevailing cash income-based market theories of poverty seem to have little relevance to indigenous poverty.

The theory of institutional design (North, 1990) appears to capture both the evolution of the macro-structures of a society and how these macro-structures shape micro (individual) behaviors of the people. In the absence of specific theories of indigenous poverty, this study used institutional design as an overall theoretical framework. The human capital theories were used to guide the assessment of the relationships between education, health and poverty. The asset theory (Sherraden, 1990) was used as a guide to measure asset poverty among indigenous peoples.

C1. Theory of Institutional Design

The theory of institutional design was proposed by Douglas North (1990). According to this theory, institutions are "the rule of the game in a society, or more formally, is the humanly devised constraints that shape human interaction" (North, 1990 p.3). The major role of the institutions in a society is to reduce uncertainty by establishing a stable (but not necessarily efficient) structure to human interaction (North, 1990: 6). These institutions could be regulatory--formal rules such as a country's laws and constitutions, or they could be normative--informal rules such as codes of conduct and social norms that embody shared understandings of acceptable behavior. These institutions serve as the basis for rewarding and punishing individual acts of conformity or deviance; violators of these rules are punished (Lesorogol, 2003).

According to North (1990), institutions are different from organizations. Organizations are the "players" of the game. They include such entities as governments, firms, universities, non-profits, clubs, and teams. Organizations are created to take advantage of the opportunities provided by the institutions. As these organizations pursue

their objectives, they act as agents of institutional change. These organizations are the crucial instruments of rule-enforcement for the stability of the institutions. They impose the values, taste, culture, religion and language of the elites over other members of the society in order to ensure that the established institutions serve their best interests and that they remain stable over time.

There are several theories of institutional emergence and change. These theories may be grouped into two schools of thought: evolutionary explanation (Knight, 1995 etc.) and design explanation (North, 1990). According to evolutionary explanation, institutions emerge naturally from local processes and change through natural selection processes. The stronger institutions survive and the weaker ones die out.

According to the theory of institutional design, however, institutions do not naturally emerge from nowhere, but rather they are deliberately designed. They are designed and controlled by the few elites to further their own best interests. These institutions are changed when they no longer serve the interest of the elites, whereupon new rules are created.

Institutional theories are largely concerned with the emergences and changes in institutions, and some are concerned with how such institutions affect performance of the economies or societies. In particular, theory of institutional design is concerned with the question of how best to design and organize human societies such that the growth and development of these economies may be maximized. The primary assumption of this theory is that countries/economies (and by extension indigenous economies) become poor because they lack basic institutional structures for economic growth. In particular, poor societies have high transaction costs and lack security over property rights.

Since the origin of indigenous poverty began with the origin of modern nation-states, and since these nation-states are largely designed and controlled by the non-indigenous peoples, the design theory of institution seems more relevant than the evolutionary theory of institution. According to the theory of institutional design, indigenous poverty may be thought of as the result of institutional structure of the society, rather than due to lack of individual productivity characteristics. By extension, indigenous peoples are thought to be poor because they lack "self-governance," that is, sovereignty over their territories.

Although the theory of institutional design is largely concerned with the question "Why do some countries become rich, while others remain poor?" (North, 1990), by extension this theory has important implications for the question "Why do some groups within a country become poor, while others remain rich?" This is the central question of this dissertation study. Institutions matter because our present and future choices are shaped by the past; and our future is connected to the past through society's institutions. The assumptions of institutional theory with regard to indigenous poverty may be specified as follows: Indigenous peoples are poor : (1) The constitution of the country constrains indigenous peoples from self-governing their own territories, which makes their territories poor and isolated; (2) The education laws of the country constrains indigenous peoples using native language as a language of instruction in public schools- this leads to low human capital attainment among indigenous peoples; (3) The health laws of the country constrains poor people's access to quality healthcare; (4) The labor laws or other informal institutions related to occupation (e.g. caste system) constrains indigenous peoples' ability to move to better paying jobs; and (5) Laws governing

financial system excludes indigenous peoples and provide little incentive for economic growth.

The institutions of primary interest in this study are both regulatory or formal institutions such as a country's constitution, and informal institutions such as a caste system. Although indigenous peoples in Nepal do not have castes, the caste system (differential treatment of peoples based on their ethnicity and occupation) was imposed on the indigenous peoples through national law 'Muluki Ain 1854' of Nepal (Hofer, 2004). The national law "Muluki Ain 1854" was constructed based on the principles of the caste system and have been the de facto instrument of government control over its citizens. While indigenous and non-indigenous peoples may live under a different set of informal institutions (such as cultural or religious norms), they are both assumed to live under the same formal institutions (the country's laws or constitutions).

C2. Human Capital Theory

The human capital theory was originally conceptualized by Theodore Schultze in the 1960s, and later followed by Gary Becker's 1964 monograph "Human Capital", which has ever since served as a benchmark of the subject (Blaug, 1976, p. 827). The human capital theory contends that people invest themselves in diverse ways, not for the sake of present enjoyments, but for the sake of future returns. According to this theory, all purchases of health, education, job search, information retrieval, migration, and in-service training may be regarded more as investment than consumption, regardless of whether purchases were made by individuals on their own behalf or society on behalf of its members (Blaug, 1976, p.829).

According to this theory, schooling contributes to individual productivity which, in turn, leads to higher individual earnings. The earning advantage of the more educated relative to the less educated is subject to the laws of supply and demand-- as the number of the more educated increase, their earnings advantage declines and the minimum qualifications for given jobs rise in line with increased relative supplies (Schultz 1961; Mincer 1974; Becker 1975; Psacharopoulos & Patrinos, 1994; p.46). The lack of human capital – i.e. training, education, experiences, skills etc. – would mean less competition in the labor market which then would lead to poverty (Rank, 1994, p. 26-27). According to human capital theory, indigenous poverty may be thought of as a result of low human capital attainment among indigenous peoples.

Psacharopoulos & Patrinos (1994) tested the human capital hypothesis among indigenous peoples in Latin America. They found that indigenous peoples on average receive less schooling compared to their non-indigenous counterparts, and the schooling was positively correlated with earnings, supporting the prediction of the human capital theory.

However, this study also found substantial earning differentials between indigenous and non-indigenous peoples even after equalizing the human capital and other productive characteristics. That is, even if indigenous peoples were endowed with equal human capital, they would still earn only 50 percent of the non-indigenous earnings (Pscharopoulos & Patrinos, 1994, p.xxi). The other 50% income disparity between indigenous and non-indigenous peoples remains unexplained. Furthermore, this study does not enlighten as to why indigenous peoples lack human capital in the first place.

C3. Asset Theory

The welfare theory of asset was conceptualized and developed by Michael Sherraden (1991). This theory emerged as a reaction (or an alternative) to the prevailing income-based welfare policy approach to poverty in the U.S. This theory contends that a welfare system that relies on income-transfer may provide a safety-net for the poor but does not help the poor become rich. What poor people lack, according to this theory, is not income but asset. What is needed for the poor is an institutional incentive structure (such as financial inclusion) that will facilitate accumulation of assets and access to financial systems that encourage the poor to save their assets for the future growth. Saving is thought of as the necessary condition to lift the poor from their poverty. The assumptions of this theory are consistent with that of the theory of institutional design in that they both emphasize the institutional structures, such as incentive structures.

Since the publication of this seminal work, asset has become an established approach to measuring poverty. Asset is a more reliable indicator of wealth (poverty) than income because when people lose income, they still rely on their assets. Assets may include savings, bonds, houses, lands or any other movable and immovable possessions of capital value. According to this theory, poor people lack assets because they lack institutional incentive structures that facilitate their saving behaviors. Emerging empirical studies have found support for asset theory in the industrialized countries (Loke & Sherraden, 2009; Han et al. 2007).

Asset is more relevant to indigenous poverty than income or consumption. However, although asset-based measure is thought to be innovative in the US where income is widely used, the asset-based measure of poverty, in fact, is the oldest method in

the world. Its origin dates back to the history of humankind when hunter-gatherers began to accumulate materials for future use. In Biblical times, wealth was measured by the size of the house, number of livestock owned, amount of land holdings, and possession of jewelries and other valuable metals and minerals. Those who owned less were considered relatively poor. Those who owned the least or did not own anything were the poorest in society. They were the slaves and indentured or bonded laborers. Still today, in many villages of developing countries--especially among indigenous communities where subsistence agriculture is the primary means of livelihood--the land, house and livestock are the commonly used indicators of wealth. Where exchange of goods and services takes place, it often takes the form of bartering. Most of the farmers are self-employed and self-reliant. This study will use asset theory as guidance to measuring poverty among the indigenous peoples.

D. Empirical Evidence

The review of the literature indicates that there have been very few experimental studies on indigenous poverty. Empirical studies on socioeconomic status of indigenous peoples began only recently in the 1990s. The movement towards empirical studies of indigenous poverty was motivated by the studies of racial disparities between Blacks and Whites in the United States in the 1960s (Psacharopoulos & Patrinos, 1994). The first empirical study of indigenous poverty was conducted by Psacharopoulos & Patrinos (1994) in Latin America. Since then, there have been very few other studies in Latin America (Plant, 1998; Hall & Patrinos, 2005), the US (Cornell, 2005), Australia and New Zealand (Altman et al, 2008). The findings from these studies are summarized here.

D1. Geographic isolation and indigenous poverty

Previous studies have noted that indigenous peoples live in different geographies than non-indigenous peoples, and the indigenous territories are largely rural or isolated (Plant, 1998; Hall & Patrinos, 2005). The isolation of the geographies can have a direct effect on the level of poverty of their inhabitants. These areas are less likely to have infra-structure development (roads, electricity, piped water, irrigation system), social services (education opportunities, healthcare services), and economic opportunities (markets, industries). Living in these poor or isolated communities is likely to increase the risk of poverty compared to those who live elsewhere. For example, in Mexico, Panadiges (1994) found that indigenous communities have significantly less access to public services. In geographic areas where the majority of the populations were indigenous, only 16.1% had piped water (compared to 62.5%), 48.9% had electricity (compared to 92.9%) and only 2.4% had telephone services (compared to 22.2%). Living in areas where 50% or more of the population is indigenous increases the probability of a household being poor by 24.5% (Panagides, 1994). In almost all Latin American countries, the poverty map coincides with indigenous peoples' territories (Hall & Patrino, 2005). Across the world, indigenous women tend to live in more impoverished municipalities (Sanchez-Perez et al. 2005).

Geography is thought to effect indigenous poverty in two ways. First, different geographic areas are endowed with different levels of resources. Second, different geographies are likely to have different institutional arrangements. The variation in poverty outcomes across geographies is likely to be either due to variation in endowed

resources or due to variations in institutions. Some studies suggest that differential poverty rates across geographies are likely to be due to differences in institution rather than due to differences in endowed resources (Cornell, 2002). The studies at Harvard Project of Native American Poverty found that, independent of the endowed resources, the Indian Nations which were governed by the natives themselves (self-governance), and which had higher sovereignty over their territories were economically better off compared to those Indian Nations which did not have complete sovereignty, and which were merely acting as administrators of the U.S. Federal Government. This finding suggests that the 'self-governance' or 'sovereignty' of the indigenous territories is an important predictor of indigenous well-being.

Geography can also have an indirect effect on poverty through health. In recent years, it has become increasingly clear that geography plays an important role in determining an individual's access to needed healthcare services (Raghavan, Lama et al; 2010). In the words of Wennberg and colleagues (1973; 1982, 1987), "Where you live matters," at least with regard to receiving quality healthcare services. In geographically isolated areas, little health care services and opportunities are available to indigenous peoples. As a result, indigenous peoples are likely to suffer from disproportionately high rates of death due to preventable causes such as childbirth, diarrhea and others.

The lack of infrastructure and public services in indigenous areas constrains indigenous peoples' ability to advance their economic well-being in multiple ways. Due to the lack of educational opportunities in their isolated areas, the people have little chance to develop human capital. As they have very little human capital endowment,

their ability to move out of poverty is much slimmer than non-indigenous peoples even if they migrate to urban areas.

Due to geographic isolation, fewer or no opportunities are available for indigenous peoples to advance their economic well-being (Psacharopoulos & Patrinos, 1994). Their traditional livelihoods are hindered by the decline in the quality of the land due to soil erosion and deforestation, which in turn leads to decline in food production. Indigenous farmers lack modern irrigation systems and modern tools for agricultural production. They rely on natural rain for irrigation, so the harvests are not guaranteed. They are vulnerable to natural disaster such as famine, and their food supplies are not secure. Food shortages are further exacerbated by the population growth, which shrinks the amount of land per capita. Food shortages lead to high malnutrition, which makes the indigenous peoples vulnerable to health problems and early death.

In isolated geographic areas, indigenous peoples have little opportunity to network with people who control resources and opportunities outside their own communities. This lack of social capital minimizes their ability to emerge from poverty. Another effect of geographic isolation on poverty is seen through the housing condition of indigenous peoples. In indigenous communities in Mexico, a larger percentage of homes were built with low quality materials such as wood (21%) compared to non-indigenous communities (6%). Compared to 71% of the homes in non-indigenous communities, only 29% homes in indigenous communities were constructed with concrete and brick (Panadiges, 1994 p.136). The lower quality housing has a direct effect on the health status of the people residing in those houses. As the indigenous peoples suffer from health problems for which there are no health services in their communities,

they suffer loss of economic productivity and disproportionately higher rates of mortality, spiraling them or their families into deeper poverty.

While the previous studies have made observations on the relationship between geographic isolation and indigenous poverty, they offer little explanation as to why the indigenous peoples are geographically isolated in the first place. From the perspective of the theory of institutional design, the observed geographic isolations of indigenous peoples may be thought of as the direct result of institutions, which deny indigenous peoples' ability to self-determine, or self-govern, their own territories. Such constraints have detrimental effects on self-development of the indigenous communities. It appears that by isolating the indigenous peoples geographically, the elites effectively disfranchise them from forming collective action or revolts. Elites then reap the benefits of excess cheap labors of the indigenous peoples.

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D2. Education system and indigenous poverty

Many studies have reported that lack of human capital is an important determinant of poverty among indigenous peoples (Champagne, 2007; UNICEF, 2003; Steele, 1994; Panadiges, 1994; Macisaac, 1994 etc.). Empirical studies in Latin America found that education is the most critical determinant of poverty among indigenous peoples in Bolivia (Wood & Patrinos, 1994), Guatemala (Steele, 1994), Mexico (Panadiges, 1994) and Peru (Macisaac, 1994). In Mexico, for example, an average of 6.5 years of education would decrease an individual's probability of being poor by 22.5 percent (Panagides, 1994).

Illiteracy is the highest among indigenous peoples throughout the world. Among the H'mong of Vietnam, 83% of men and 97% of women are illiterate (UNICEF, 2003). In some indigenous communities of Australia, 93% of the populations are illiterate. In Ecuador, illiteracy among the indigenous peoples in 2001 was 28% compared to national rate of 13% (Carino, 2009; p.132). In Venezuela, the illiteracy rate among indigenous peoples is 32%, five times higher than the non-indigenous rate (6.4%) (ECLAC/CEPAL, 2006 p.177 cited in Carino, 2009 p. 132). In Guatemala, 53.5% of indigenous young people aged 15-19 have not completed primary education as compared to the 32.2% non-indigenous youth (Carino, 2009). In Nepal, 30 percent of the indigenous people have literacy rates far below the national average (UNDP, 2004 p.63). Indigenous women tend to have even lower educational attainment (Sanchez-Perez et al. 2005).

In the U.S. fewer indigenous children graduate from high school and far fewer go to colleges and universities. According to Assembly of First Nations (2009), about 70% of First Nations students on Reservations will never complete high school. Graduation rates for the on-reserve populations range from 28.9% to 32%t annually. Only about 27% of First Nations populations between 15 and 44 years of age hold a post-secondary certificate diploma or degree, compared to 46% of the Canadian population within the same age groups (Assembly of First Nations, 2009). Dropout rates from primary schools are significantly higher among Native American students compared to their non-indigenous counterparts. Only 7.6 percent of Native Americans have a bachelor's degree compared to 15.5% of the total population (Tsai & Alanis, 2004).

While the previous studies shed some light on the educational status of indigenous peoples and its relationship to poverty, these studies fall short of explaining why

indigenous peoples lack human capital in the first place. There are reasons to believe that low human capital attainments among indigenous peoples are likely to be due to the nature and quality of the education system rather than due to lack of individual motivation for personal growth. In many countries of the world, where non-indigenous peoples are the elites of the society, it seems that education systems are designed to domesticate the indigenous peoples into the culture of the elites, rather than to enlighten their citizens. In these societies, the elites of the society use organizations such as schools and universities as change agents to impose their language, culture and religion on the indigenous peoples under the pretext of assimilation or integration. In such societies, the language of instruction in public schools is generally the language of the non-indigenous elites; and in many countries such as Nepal, the languages of indigenous peoples are legally prohibited as a language of instruction in public schools. The teachers in public schools are generally non-indigenous elites who neither understand the culture or language of the indigenous peoples, nor do they seem to genuinely care about the progress of the indigenous communities. Teachers often act as masters of the indigenous pupils rather than as a guide to bettering their future.

Furthermore, since indigenous peoples live in remote isolated areas, their communities generally do not have access to educational opportunities to begin with; where schools are available, they are either of low quality, taught in a language that is different from their own, or simply too expensive. Faced with a double burden of foreign languages and culture, most indigenous children give up schooling altogether or fail to compete against their non-indigenous counterparts. As a result, the high illiteracy rate (UNICEF, 2003), high dropout rate, and lower graduation rate (Assembly of First

Nations, 2009) among the indigenous peoples seem only natural, reflecting the underlying educational system of the society. By depriving indigenous peoples of the human capital that is necessary to achieve elite status, the non-indigenous elites effectively ensure continuation of the status quo.

D3. Health system and indigenous poverty

Several studies have documented that indigenous peoples suffer disproportionately high rates of health problems. The high prevalence of health problems among indigenous peoples are thought to have direct consequences on their poverty. The high cost of health care and loss of economic productivity due to illness and death of the family member is likely to prevent the indigenous peoples from overcoming poverty. An empirical study in Bolivia found that being healthy lowers the probability of being poor by 5.3 percent (Wood & Patrinos, 1994).

Indigenous peoples experience a disproportionately lower level of life expectancy (State of the World's Indigenous Peoples, 2010; Sanchez-Perez et al. 2005; Eversole, 2005; Humapage, 2005). In Australia, an indigenous child can expect to die 20 years earlier than his non-native compatriot (Cooke, Mitrou, Lawrence, Guimod & Beavan, 2007). The life expectancy gap is also 20 years in Nepal, while in Guatemala it is 13 years, in New Zealand it is 11, in Panama, it is 10 years and in Mexico, it is 6 years (State of the World's Indigenous Peoples, 2009). In the U.S., a Native American's life expectancy is on average 2.4 years lower than that of the general population. In Canada, life expectancy was 8.1 years less for male and 5.5 years less for female Canadian Indians than for general Canadian populations. The low life expectancy rate means fewer

years in economic productivity and higher risk of poverty for the families and the communities.

Indigenous peoples experience disproportionately high levels of death due to unnatural causes such as tuberculosis, diabetes, alcoholism, and suicide (State of the World's Indigenous Peoples, 2010). Compared to the general population, Native Americans and Alaska Natives have a 600 percent higher death rate due to tuberculosis (Indian Health Services, 2006). In Canada, the Inuit TB rate is over 150 times higher. Among indigenous Americans, death rates due to diabetes are 189 percent higher than non-indigenous peoples (Indian Health Services, 2006). Worldwide, more than 50 percent of the indigenous adults suffer from Type-2 diabetes (State of the World's Indigenous Peoples, 2009). Indigenous Americans have a 510 percent higher death rate due to alcoholism, 229 percent higher rate due to motor vehicle accidents, 152 percent higher death rate due to unintentional injuries, 61 percent homicide rate, and 62 percent higher suicide rate (Indian Health Services, 2006). Death before age 75 due to suicide or unintentional injury among indigenous Canadians is four and half times higher than the general population (Health Canada, 2007). Suicide rates, particularly among indigenous youth, are considerably higher in many countries, for example up to 11 times the national average for the Inuit in Canada (State of the World's Indigenous Peoples, 2009). High level of deaths among indigenous peoples means loss of potential labor forces, and higher risk of poverty.

Indigenous women across the globe suffer from higher infant mortality rates (State of the World's Indigenous Peoples, 2009; Sanchez-Perez et al. 2005; Eversole, 2005; Humapage, 2005). Indigenous children are more likely to die before one year of

age than others in their countries (Damman, 2005). The child mortality rate in Latin America is 70 percent higher among the indigenous peoples (ECLAC, 2007 p.191, quoted in Carino, 2009). In Canada, Inuit children are 2.2 times more likely to die before one year of age compared to children in the general population; Metis and other Canadian Indian children are 1.9 times more likely to die than their counterparts. A similar trend exists for the U.S. (Eversole, 2005). A high child mortality rate means loss of return for investment in child rearing. The loss of children puts pressure on parents to produce more children (to increase the survival rates), which increases the cost and reduces the economic activities of the parents, again leading them further into poverty.

In addition to low life expectancy, high death rate and child mortality rates, indigenous peoples generally have lower health status. Reservation-based indigenous groups have some of the lowest health status in the US (Cornell, 2005). In New Zealand, Maori as a group continue to demonstrate lower levels of health relative to non-Maori (Humapage, 2005). Indigenous adults in Australia are twice as likely as non-indigenous adults to report their health as fair or poor, are twice as likely to report a high level of psychological stress, and are twice as likely to be hospitalized (Cooke, Mitrou, Lawrence, Guimod & Beavan, 2007). In parts of Ecuador, indigenous peoples have a 30 times greater risk of throat cancer than the national average (State of the World's Indigenous Peoples, 2009). The lower health status and higher disease prevalence increases health care costs in terms of time and money, perpetuating poverty.

While the high rate of health problems among the indigenous peoples is likely to prevent the indigenous peoples from coming out of their poverty, it is also possible that health problems themselves are the consequence of poverty. The relationship between

poverty and health problems is likely to be endogenous. For example, for many indigenous children, poverty is an *a priori* condition. In many cases, indigenous children are born in an impoverished families, and not that they become poor as a result of their health status or other individual economic behaviors. Being born in poverty leads them to poor health due to lack of adequate nutrition and needed health care. The poor health and cost of healthcare, in turn, are likely to lead them into further poverty as they are not able to invest their time and resources in human capital development and economic productivity, which would help them exit poverty in later life.

In this study, health is viewed as independent variable because population health is more likely to depend on the healthcare system of a society, rather than solely on the socioeconomic status of individuals. Poor countries are less likely to provide quality healthcare services to their citizens. Lack of access to quality healthcare is likely to be the reasons for low health status among indigenous peoples. Furthermore, due to ethnic mismatch between the healthcare providers and the consumers, indigenous peoples are less likely to utilize healthcare services where they are available. Since indigenous peoples have low human capital, they are less likely to be the healthcare providers. The healthcare providers are generally the non-indigenous peoples, who speak different language and practice different cultures. In most poor countries, the health care markets are designed and controlled by non-indigenous elites who are motivated by profits than services to the people. The high-cost of healthcare; compounded by linguistic and cultural barriers are likely to discourage indigenous peoples from seeking health services provided by non-indigenous peoples.

D4. Discrimination (inequality) and indigenous poverty

In the words of Psacharopoulos & Patrinos (1994), there is a "cost of being indigenous." Discrimination against indigenous peoples exists in many forms and in many spheres of their livelihood. Studies have extensively documented discrimination against indigenous peoples in land tenure, income, employment, housing, and education (Psacharopoulos & Patrinos,1994; Wood & Patrinos, 1994; ILO, 2007; Taylor & Kalt, 2005; Altman, Biddle & Hunter, 2008; Eversole, 2005; Carino, 2009; Freeman & Fox, 2005 etc.). Social exclusion is the primary form of discrimination. In many countries, indigenous peoples are excluded from participating in public affairs, civic engagement, educational organizations and governance. Where indigenous peoples are allowed to participate, they often experience differential treatment from the system.

Psacharopoulos & Patrinos (1994) have documented that in Latin America, indigenous peoples are widely discriminated against in the labor market. Indigenous workers in Latin America make on average about half of what non-indigenous workers earn. For example, in Guatemala, Mexico and Peru, indigenous peoples earn only 50% of the earnings of the non-indigenous peoples even after equalizing the human capital and other productivity characteristics. In Bolivia, the earning differential was 28 percent and the probability of being poor for indigenous peoples is 16% greater than probability for non-indigenous counterparts (Wood & Patrinos, 1994). Overall, about 25-50 percent of the income gap in Latin America is "due to discrimination and non-observable characteristics, such as quality of schooling" (ILO, 2007 p.27).

Similarly in the U.S., the average income of Native Americans is less than half the average for the general population of the U.S. (Taylor & Kalt, 2005). The reservation-based indigenous peoples have among the lowest income (Cornell, 2005). In Australia, indigenous peoples overall have lower incomes than the non-indigenous population (Eversole, 2005). The median indigenous income in Australia is just over half of the non-indigenous income (Altman, Biddle & Hunter, 2008). In New Zealand, Maori as a group has a lower level of income relative to non-Maori (Humapage, 2005). In Taiwan, the indigenous peoples have much lower average incomes than the general population (Eversole, 2005).

Discrimination also exists in housing. The reservation-based indigenous peoples have among the poorest housing conditions in the U.S. (Cornell, 2005). The percent of Native Americans who live in crowded households (18%) is three times higher than the percent nationwide. The percent of Native American and Alaska Native homes that lack safe and adequate water supply and/or waste disposal facilities is 13 times higher than the homes for the U.S. general population (Indian Health Service, 2009). In New Zealand, Maori as a group has lower level housing relative to non-Maori (Humapage, 2005).

In Canada, the Royal Commission on Aboriginal Peoples (RCAP) reported that houses occupied by indigenous people are twice as likely to be in need of major repairs as compared to house of other Canadians. The indigenous homes are 90 times more likely to be without piped water than non-indigenous homes (Carino, 2009). In Australia, indigenous households are half as likely to own their own homes – 34 percent of indigenous peoples owned their own home, compared to 69 percent of the non-indigenous population (Altman, Biddle & Hunter, 2008).

Studies have also documented discrimination in employment. While the total unemployment rate in the U.S. declined from 6.5 to 5.9 percent between 1994 and 2003, during the same period, it increased from 11.7 to 15.1 percent among American Indians and Alaska Natives (Freeman & Fox, 2005 p.122). In Canada, Aboriginal people have poor access to jobs. In 2005, the unemployment rate of Canada's western provinces of Manitoba, British Columbia, Alberta and Saskatchewan was as high as 13.6 percent among indigenous people, compared to only 5.3 percent among the non-indigenous population (Statistics Canada, 2005). In Australia, the indigenous unemployment rate was 15.6 percent in 2006, over three times higher than the non-indigenous rate. A study in Latin America found that, among the indigenous households in Bolivia, living in a household where the household head is unemployed (not working but looking for work) was the most substantial factor contributing to the probability of being poor (Wood & Patrinos, 1994).

While unemployment rate has been found to associate with poverty among the indigenous peoples in the cash-based market economy of both developed and developing countries, it is not clear whether this association remains valid in less developed market economies. Published reports have documented that in some countries, indigenous peoples work long hours, and their employment rate is higher than non-indigenous peoples, yet their income is lower and poverty rate is higher than the non-indigenous peoples. The likely reason is thought to be discrimination in labor market, which systematically puts them at lower paying, manual labor work.

The source of discrimination (inequality) is thought to be inherent institutional design, such as labor laws, which reserve better paying jobs for the elites. For example, in

Nepal many of the indigenous peoples were legally barred from running for government offices and joining national armies until the 1990s. Low caste people were structurally prevented from changing their occupations, such as from being a cobbler to a teacher. Such constraints in occupational change prevented their socioeconomic mobility. Still today, the majority of government bureaucrats, technocrats, aristocrats and political leaders are non-indigenous peoples who design market structure to their own advantage. It is in the interest of the social elites to design institutions in ways that benefit them the most and to ensure the stability of such an institution over time. Since the social elites are non-indigenous, they develop rules of engagement (e.g. bribery, nepotism as acceptable norms) which treat indigenous peoples differently from others. These rules are enforced through various organizations, firms and markets. The unequal outcome is generally felt as discrimination by the indigenous peoples.

CHAPTER IV: CONTEXT - NEPAL

Nepal is a landlocked country, located between China on the north and India on the south, east and west. Nepal is one of only a few countries in the world that has never been colonized by Europeans. Nepal was established as a nation-state in the 1770s (AD). Prior to the 1770s, the native peoples of the Himalayas governed independent kingdoms of their own. The evidences of their advanced civilizations are well-reflected in the cultural monuments such as monasteries, temples, and Stupa (Buddhist shrines). Still today, these monuments stand tall across Himalayan regions, including Kathmandu valley (Yambu). For example, the Boudha Stupa (Jhyarung Khasyor Chyorten) and Swayambu Stupa (Phapa Singun Chyorten) are thought to have been built around 300 BC. These native Buddhist monuments still impose the unmistakable identity of the advanced civilizations enjoyed by indigenous peoples in the Himalayas prior to the arrival of the Malla (1200s) and the Khas people (1770s), both of which were Hindus. Still today, Nepal is well-known because of such native heritages as the Boudha Stupa, Swayambu Stupa, the Buddha Dharma, the Namo Buddha, the Mt. Everest (Jhyomo Longma), the Gurkhas, and the Sherpas.

Currently Nepal is considered one of the poorest countries in Asia, with a poverty rate estimated to be more than 31% in 2004 (World Bank). Much of this poverty is thought to constitute indigenous peoples.

The population of Nepal was estimated to be 28.5 million in 2009 (CIA the World Fact Book). The population of Nepal is broadly classified into two groups--indigenous peoples, or *Adibasi Janajai* (Mongoloid) and the Khas people or settlers (Aryan). This distinction is based on race/ethnicity and the history of Nepal. The historical point of

convergence of these two groups under one political system is the establishment of Nepal as a nation-state or one kingdom in the 1760s. The peoples who had been living on the land and who were dominant groups prior to the establishment of Nepal as a nation-state are the indigenous peoples (*Adibasi Janajati* or Mongoloid). Those who came later as settlers are the non-indigenous group (Hindu-Aryan). These non-indigenous groups are also known as the Khas people (or peoples of the caste system). Even Prithvi Narayan Shah, who is credited for unifying Nepal as a nation-state (and destroying the indigenous nationalities), recognized these differences when he proclaimed Nepal as a garden for Chaar Jaat (four Hindu castes) and Chattis Varna (36 non-Hindu indigenous nationalities). Prithvi Narayan Shah, however, was ignorant of the existence of many of the native peoples of the Himalayas which he invaded. Today, the number of indigenous groups in Nepal is thought to be over 120.

Review of the literature on indigenous peoples in Nepal indicates that there is no authoritiative data on the indigenous population in Nepal. Until the 1990s, Nepali government banned collecting demographic and ethnicity data in the census. The reason, it is believed, is that the government was afraid that the census data would reveal indigenous peoples as the population majority. This information, if published, was considered a threat to the government—it would potentially question, or even overthrow, the two-and-half century old Bahun/Chetri regime in Nepal.

The government of Nepal allowed collection of demographic and ethnographic information in its census only in recent years, the 1990s. However, there has been a growing concern about the validity of the government-collected data. The indigenous peoples have disputed the census data claiming that the Nepali government manipulates

the data to show Bahun/Chetri (non-indigneous groups) as the majority population of Nepal. The indigenous peoples claim that their true population number has been under-counted, while Bahun/Chetri population numbers have been exaggerated. They claim that the Nepali government does this to justify the continuation of the Bahun/Chetri hegemony in the country.

Without valid census data, it is difficult to estimate the exact proportion of the indigenous population in Nepal. One report suggests that indigenous peoples in Nepal represent over 72% of the population (Leslie et al, 2010).

Much of the literature on Nepal's history and population has been written by the non-indigenous scholars, particularly Brahmin and Chetries, and a few Newars. Since the Brahmin/Chetries began to hold political dominance in Nepal in the 1800s, a new history of Nepal has been written. The new history often glorifies the Khas peoples, particularly Bahun and Chetries. The historical documents of Nepal reflect the views of the Bahun/Chetries and their biases against indigenous peoples. The views of the indigenous peoples and the history seen and experienced by them have been absent in the national literature and poltical discourses of Nepal. The written history of the indigenous peoples prior to the invastion by Bahun/Chertries, and thereafter, has been lost. However, the stories of the indigenous peoples as preserved through oral traditions and songs continue to prevail and provide a solid base for social science to examine the facts, which were systematically excluded in the written history of Nepal.

The sections that follow briefly provide the historical processes that have shaped Nepal to its current state. These historical processes reflect the views that are shared among the indigenous peoples.

E1. Indigenous Peoples of Nepal (*Adibasi Janajati* or Mongoloid Group)

Indigenous peoples of Nepal are the native or original inhabitants of the Himalayas and the southern plains known as Terai. Indigenous peoples as a group constitute about 72% of the total population of Nepal (Leslie et al, 2010). This estimate, however, is likely to be undercounted because census data is generally tempered [by the government] to project large Hindu or caste population (Lawoti, 2001). Indigenous peoples speak more than 60 languages and practice diverse religions and cultures including Buddhism, Shamanism (Bon practice), and other local religions. The indigenous peoples look distinct in their physical features due to their Mongoloid racial origin. (Note: some Khas peoples especially K.C.- Kasheko Chetri or fallen Chetries--may resemble Mongoloids due to interracial marriage with Mongoloids). According to the Nepal Federation of Indigenous Nationalities (NEFIN), as of 2007, the government of Nepal recognized 59 nationalities as the indigenous peoples. The major indigenous peoples of Nepal include Magar, Tharu, Tamang, Newar, Gurung, Rai, Limbu, Sherpa and Thakali.

Due to the process of "Sanskritization"[1] and proselytizing,[2] some of the indigenous groups are presently divided into Buddhists and Hindus. Newars, for example, were originally Buddhists until the Malla came to Kathmandu Valley. However, during

[1] According to Indian anthropologist Srinivas, "Sanskritization" is a process whereby a less powerful group adopts the religious and cultural attributes of the more powerful group in order to achieve upward mobility or a higher degree of acceptance.

[2] Gopal Gurung, the author of The Hidden Facts in Nepalese Politics (1998), contends that many Buddists were converted to Hinduism forcefully rather than voluntarily.

the Malla regime (1200 AD – 1770AD), some of the Newars were converted into Hinduism. The Malla (wrestler in Sanskrit) settlement in Kathmandu valley began in the 12th century[3]. The Mallas are believed to have migrated from north Bengal and the southeast region of Nepal (Bhojpur area)[4] during the Mogul invasion of India. The Mallas were the ones who began to call the people of Kathmandu valley "Newar" (napa: the citizen of nepa). As the Mallas began to settle in Kathmandu valley, they intermarried with the local Newars in their effort to co-exist. It was through intermarriage with the Newars that Mallas gained political prominence among the Newars. The first Malla to be the king of Newar was Ari Malla. It was also through intermarriage that Mallas propagated Hinduism to Newars, building Hindu idols (statues) on the periphery of Buddhist temples. This is thought to be the beginning of the mixing of Hindu-Buddhist idols in religious temples of Kathmandu valley. However, it was Jayashtiti Malla (r.1382-1395) who is credited for structuring Newar society by implementing the caste system. With the regime of Jayasthiti Malla, the Hindu Newars began to practice the caste system. Many of the Hindu temples in Kathmandu valley were built after the Jayasthiti Malla regime. As a result, unlike Hindu temples in India, the Hindu temples in Nepal look like Buddhist monasteries because they were built with local Buddhist architecture --the Pagoda style that is prevalent among Buddhists in much of Asia, China, Korea, and Japan. It is a common belief among Buddhist Newars that, during the Jayasthiti Malla regime, Buddha's idols in the Buddhist temples began to be replaced with Hindu-god idols. The Hindu-god idols took the center-stage in many of the Pagoda style Buddhist

[3] Andrea Matles Savada ed. *Nepal: A Country Study*. Washington: GPO for the Library of Congress, 1991.
[4] Lama (2011). Newari Buddhist's Account of Malla Regime in Kathmadu Valley. The story of how Mallas infiltrated Newar community, became the king of Newars, and sidelined those who resisted Hindu-proselytizing is a common story among the Buddhist Newar. Their story is based on their own collective memories and lived experiences rather than written history.

temples, while Buddha-idols were pushed to the periphery. The major Hindu Newars include Shrestha, Joshi, Pradhan, and Baidya. The major Buddhist Newar include Shakya, Bajracharya, Tamrakar, Ranjitkar, and others.

Prior to the establishment of Nepal as a nation-state in the 1760s (AD), the indigenous peoples of Nepal governed independent kingdoms (principalities) of their own. However, currently the indigenous peoples are the political and economic minority of Nepal. As a result of the establishment of Nepal as a nation-state, indigenous peoples lost sovereignty over their territories. Their native system of governance and inherent cultural institutions were destroyed by the government (Bhattachan, 2008; Lawoti, 2001) and their lands and resources on them were confiscated by people who ran the government. During the Rana regime (1846 -1950 AD), most of the indigenous groups (and some Khas groups) were legally barred from attending schools. In particular, Tamang indigenous peoples were barred from holding public offices or government jobs including military and police; they were also prohibited from joining the British Gurkha Army and leaving the country to seek a better future elsewhere. Tamang men were used for free labor as servants and porters. Tamang women were used as concubines in the Rana palaces and then sold to India for prostitution. Trafficking of women in Nepal originated during the Rana regime but did not end with it. Even today, Tamang women continue to be the victims of this slave trade (KC et al, 2001).

Tamangs are thought to be the first peoples to settle in the Kathmandu (Yambu) valley.[5] Kathmandu valley was once thought to be a giant lake. As the lake began to drain, Tamangs began to settle on the hills surrounding Kathmandu valley (since the top

[5] Lama (2011) Collective Memory of the Tamang Nation. Common belief among the Tamang peoples about their place in the Tamang territories. There is no written history of Tamang people because the Tamangs lost their written scripts when they lost their kingdom.

of the hills, and not the bottom pit, were the areas where the water drained out first). Still today, the majority of the peoples living on these hills are Tamangs--evidence that is often used as a support to this claim. The current political movement to create Tamang Autonomous Region: Tamsaling (Tam = language, Sa = land, ling =territory: land of the Tamang peoples) is based on this historical claim. In Tamang language, a king is called Ghleh. Still today, the descendents of Tamang kings are called Ghle (mispronounced in Nepali language as Ghale). Newars (also known as Jyahphu; Jya =work, phu =farming), who were mostly farmers and traders, migrated later and began to settle near the river bank as the lake drained completely and provided fertile land for farming.

During the Rana regime, some of the caste groups, including the Shahs, were also oppressed. However, the higher-caste groups overturned the Rana regime in the 1950s and have enjoyed the privilege status since then. The lower-caste groups, especially the untouchables or occupational castes, and some Chetri caste remain marginalized.

Indigenous peoples are still not allowed to educate their children in their native languages in public schools. One exception is the Newar, who are the natives of Kathmandu valley as mentioned earlier, and some of whom are Hindus. Due to the geographic and social proximity with the caste rulers of Nepal, some Newars have enjoyed relatively better socioeconomic status than other indigenous groups. However, these economic achievements have been at the cost of their linguistic and cultural identity (Bhattachan & Webster, 2005). The other indigenous groups continue to be excluded from participating in political process. The executive, legislative and judiciary branches of the government are controlled by non-indigenous or caste peoples. To date, not a single non-caste indigenous person has ever become the prime-minister of the country

despite the fact that they constitute population majority. Up until 1999, the Newar, Brahmin, and Chetri castes jointly held more than 81.7% of the leadership position in executive, judiciary and legislative branches of the governance of Nepal (Lawoti, 2001). Almost all of the political parties of Nepal are controlled by the caste groups. The elite castes use these political organizations to control the affair of indigenous peoples, and to constrain indigenous peoples' ability to form their own political parties.

E2. Caste peoples of Nepal (Khas or Aryan group)

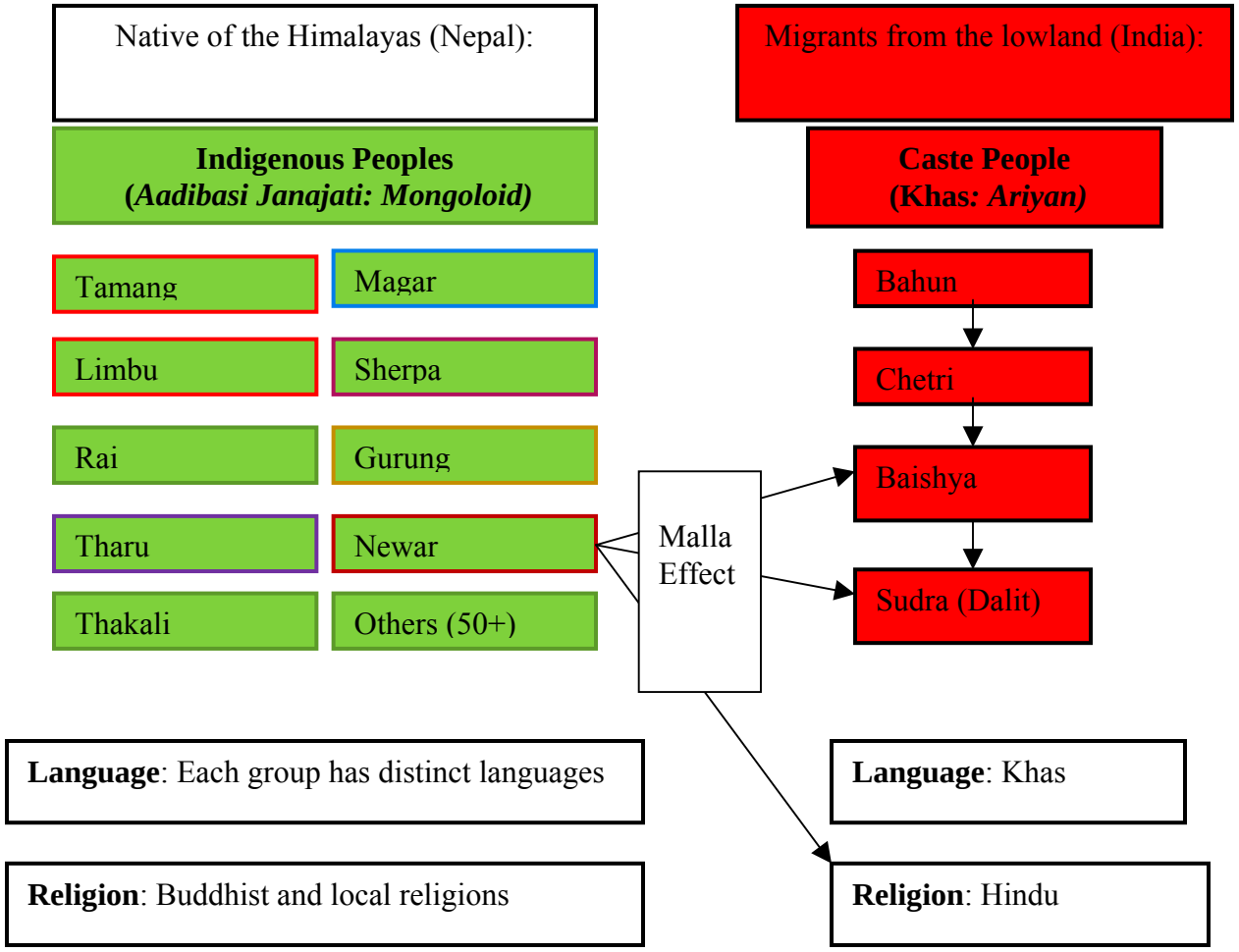
The caste, or Khas, peoples of Nepal are the settlers who migrated to Nepal in the 1500s as refugees from the low land, what is currently known as India (Note: Prior to the 1950s, there was no country called India). They are believed to have initially migrated to the western hills of Nepal--the Parbat district. Hence, they are also known as Parbatia. Their migration towards the hills is thought to have been driven by the Mogul (Muslim) invasion of India. Prior to the 1760s, no caste people were found on the east of Gorkha, including Kathmandu valley. Until the 1950s, caste people were assumed to be less than 7% of the total population of Nepal and mostly concentrated in the far western part of Nepal. However, their population grew exponentially, and today, they constitute about 32% of the total population (Lama et al, 2010). They are spread throughout the country, except on the mountain regions of Nepal. In some parts of the country, including major parts of Kathmandu, they have displaced or overpopulated the native peoples. Today, Brahmin and Chetri, combined, represent 38% of the population of Kathmandu compared to only 31.8% Newar, and less than 5% Tamang (Subedi, 2010). Prior to the establishment of Nepal as a nation-state in the 1760s, Newar and Tamang (the indigenous

groups) were the only two native peoples in Kathmandu. Newars were largely concentrated on the downstream river banks of the Kathmandu valley, while Tamangs surround the upstream and the hills around Kathmandu valley.

The Khas people are a monolithic group (one language, one religion, one culture, one race) who practice Hinduism and caste system, (although in recent years, some caste groups, especially the lower castes have converted to Christianity, Muslim or other religions in response to caste discrimination). Khas group are divided into four caste categories- Brahmin, Chetri, Baisya and Suddra. Although the amended version of Nepalese law, Muluki Ain 1963, prohibits caste-discrimination, it is perceived to be widely practiced in Nepal. The low or occupational castes are discriminated against in jobs, education, and other areas of social life (Bhattachan, Sunar, Bhattachan, 2007). On the top of the caste hierarchy is the Brahmin or the priest group, and at the bottom of the hierarchy is Sudra or untouchables. They all speak one language, the Khas language (In recent years, due to one language policy of the government, some indigenous groups, particularly Newar and those who are young and educated in Nepali schools, speak only Khas language. Many of the indigenous languages are at the verge of extinct due to the imposition of Khas language as the official language of the government. Everyone must learn Khas language in order to advance education, or work for the government. Indigenous peoples are often belittled if they can't speak Khas language). The Khas people are a homogenous group in their physical features and cultural practices, and one cannot identify their caste from their look alone. The easier way to identify their caste is by their last names or by asking them directly. Common last names of Brahmins and Chetries include Sharma, Upadhaya, Pandey, Shah, Rana, Thapa, Paudel, Pohkhrel,

Upreti, Panth, KC, among others. Common last names of lower caste people include Kami, Biswokarma, Damai, Nepali, and Sarki, among others. Figure 2 presents the distinction between native peoples and caste peoples of Nepal.

Figure 2. Indigenous Peoples and Caste People of Nepal



E3. Brief History of Nepal and its Institutions

Nepal became a nation-state in 1768 AD. However, the history of the movement to create a Nepali state may be traced further back to the arrival of caste peoples to the Himalayan nations. The caste peoples are thought to have initially transitioned from refugees to political prominence in Nepal after they took over a princely nation of Magars in the Lig Lik Kot, the current Gorkha region of Nepal (the midwestern part of Nepal). Prior to the taking over of their kingdoms by Khas peoples, Magars had a tradition of changing kings every year. Each year, during a festival, a new king would be selected based on the overall qualities of that person. One such quality was a physical attribute--the ability to win a marathon race to the top of a hill. The winner of the race would become king for a year. Only Magars could qualify for the race. However, in the year 1559, when the Magars were celebrating their festival to coronate their new king to the throne, one Drabya Shah, a Chetri caste member, pleaded to participate in the marathon. It is said that Drabay Shah himself was not a physically robust man, but he had the backing of Brahmins who conspired trickery for him. Initially he was denied participation because he was a foreign refugee. However, as the Magars were drunk during the festivities, Drabay Shah took the advantage and participated in the marathon anyway. While the Magars followed the designated route, Drabya Shah deceptively took a short cut and won. In Magar tradition, Drabya Shah was crowned king of Magar Nation (Magaranti) for one year (Encyclopedia Britanica). However, Drabya Shah soon declared hereditary monarchy, and from that year on, no new king was ever again chosen. Drabya Shah would be king for life and his son would succeed him. Most of the Magars were

killed or subjugated, their nations dissolved, and their lands and properties confiscated. Magars became slaves in their own nation.

Drabya Shah, then, declared his stolen nation as Gorkha Kingdom (named after his ancestral land, Gorakhpur in India, and his patron saint, Gorakh Nath). His great-grandson, Prithvi Narayan Shah (1723 -1775), is credited with expanding the Gorkha Kingdom in 1768 to establish what is presently a Nepali state. (When Prithvi Narayan Shah conquered Kathmandu Valley in 1768, it is said that he ordered his commanders to bring him twelve baskets of noses, twelve baskets of tongues, and twelve baskets of ears of the subjugated Newars). For the next 240 years until 2006, the feudal Shah regime was marked by brutal murder, dictatorship, killings, stealing, nepotism and family feuds. The latest saga emerged recently with reports that in June 2001, the prince supposedly murdered the whole royal family except his uncle, Gyanendra Shah, and his family. Gyanendra Shah became king in 2001 after the royal massacre but was deposed in 2006 (see Stiller, 1973; Whelpton, 2005; Shah, 1992 etc. for detailed history of Nepal).

Since the establishment of Nepal as a nation-state in the late 1760s A.D, mostly Brahmins and some Chetries have become the de facto political elites of Nepal. The kings of Nepal belonged to the Chetri caste, and they were considered by Hindus as the re-incarnation of their Hindu god, the Bishnu, even though most Hindus in Nepal practice Shivaism.[6] The Shah kings were the de facto kings of the Hindus. The Hindu kings tried to impose the caste system on the indigenous peoples, claiming to be rulers of all Nepali citizens when in reality the indigenous peoples were marginalized and treated as second-class citizens. The attempt by the final king, Gyanendra Shah, to continue as an

[6] Shiva is the god of destroyer among the three gods in Hinduism- Brahma, Bishnu and Shiva. Brahma is the god of creation, and Bishnu is the god of protection. Most Hindus of Nepal and India are Shivayats, and their guru is Sankara Acharya, who lives in India.

invincible Hindu-god king failed, resulting in the abolition of the feudal Hindu monarchy altogether in 2006. At present, Nepal is a democratic republic. As of February, 2011, Nepal is in the process of writing a new constitution which will determine the structure and future direction of Nepal as a nation-state.

During the 240 years of a feudal monarchy and centralized government system, the property rights of indigenous peoples were under constant threat. Often the fertile lands of the indigenous peoples were confiscated and handed over to the Khas people under the system called *Birta* or under the pretext of land reform.

E3a. Institutions of Nepal

The first formal (written) institution of Nepal, after it became a nation-state or one kingdom in the current form, was the *National Civil Code* called *Muluki Ain* of 1854. The *Muluki Ain,* hereafter *MA*, was promulgated by Rana[7] ruler Junga Bahadur Kunwar (Rana). Although *MA* was not exactly a constitution in the modern sense of the term, it was the primary law of the land by which all peoples of Nepal were judged (Hofer, 2004).

The *MA* was designed by Brahmins and Chetries who were the de facto political elites at the time, and are still today. The *MA* became a source of division among peoples of Nepal, dividing them into five hierarchical groups (based on Hofer, 2004, p.9):

1. Those who wear the holy cord: not supposed to drink alcohol. Brahmins and Chetries.

[7] Ranas are a clan of Chetri caste. Ranas ruled Nepal for 104 years (1846 -1950) under the nominal Shah Kings.

2. Non-enslavable: those for whom culture permits alcoholic drinks (indigenous group)
3. Enslavable: those for whom culture permits alcoholic drinks (indigenous group)
4. Impure but touchable: low-caste Hindu Newar, Muslims and Europeans (Brahmins/Chetries do not eat food or drink water from these groups but can be touched)
5. Untouchable: lower-caste Hindus--blacksmiths, tailors and musicians, cobblers, fisherman, etc. As a group, they are currently called *Dalit* or *occupational caste*. (Brahmin/Chetries do not eat food or drink from these groups and cannot be touched).

It is important to note that *MA* classifies Europeans as one of the lowest group--impure. It is believed that prior to the 1950s when Nepal was under Rana rule, anyone who went outside of Nepal and who came in contact with Europeans had to go through three days of cleansing or purification process before they could enter Nepal. This absurd classification of people into arbitrary hierarchy clearly reflects the Brahmin/Chetri prejudice against other races and religions at the time. At best, the first constitution of Nepal, the *Muluki Ain of 1854,* may be described as a racist manifesto designed to dehumanize the indigenous peoples of Nepal. Although this manifesto has been amended several times since the 1950s, it has made a lasting impact on the psychological and economic well-being of the indigenous people of Nepal. To date, no empirical studies have investigated the extent to which people of Nepal are cognizant of this document and the extent to which it has impacted their socioeconomic well-being.

Among many of the prejudices in this document, one includes prohibition of killing of Brahmin and cows. The killing of non-Brahmins by Brahmins or Chetries, however, is permissible, often without consequences.

The *MA* was amended in 1963 by king Mahendra. Under the amended *MA,* hereafter *new MA*, killing of cows in Nepal is still illegal, with sentence of 12 years or even lifetime in prison. Prior to promulgation of *MA*, killing of cows was a common practice among the native peoples of Nepal. Because of this law, many indigenous peoples are thought to be in prison for killing cows.

Although the new *MA* was supposed to reflect the aspirations of the people, it inherited much of the prejudices of the old *MA.* Among others, the new *MA* prohibited indigenous peoples from using their native language as a language of instruction in public schools. In addition, the new *MA* continued to declare Khas language as the official national language of Nepal. This language is currently known as Nepali language. The government appropriated national resources for Brahmin/Chetries to teach Nepali or Sanskrit languages in public schools and universities, while it continued to ban the languages of the native peoples into the 1990s.

In response to the popular democratic movements of the 1990s, the constitution of Nepal was amended again – more substantially this time. The revisions allow indigenous peoples to use their mother tongues as a language of instruction in public schools, up to 5^{th} grade. However, the government does not provide funding for the indigenous language education, while it continues to fund Khas (Nepali) language education.

Prior to the invasion of the Himalayan indigenous kingdoms by the Khas peoples, the indigenous peoples taught their children in their native languages. The *MA,* and its

subsequent documents, effectively cut off the system of inter-generational knowledge-transfer among the indigenous peoples. As a result, many of the indigenous languages and cultures are on the verge of extinction. Likewise, the *MA* also prohibits women from inheriting ancestral property, effectively making women vulnerable to poverty and abuse.

It appears that *MA* was designed primarily to control economic mobility of the indigenous peoples, women and lower-caste non-indigenous peoples. The *MA* classification of people appears to be the de facto classification of occupations and division of labor by their ethnicity and castes. The *MA* reserves the professional jobs (government offices, rulers, army, teachers, etc.) to the first group (Brahmin & Chetries), and the menial jobs to the last group--the untouchables. The philosophical foundation of *MA* may have been derived from Hindu texts such as Manusmriti, and the idea for population division seems to have been borrowed from the Hindu caste system that the Brahmins and Chetries brought with them to Nepal, and which they still practice. Under the Hindu caste system, change of occupation is considered sin. For example, if a cobbler becomes a teacher or a doctor, it would be considered a sin. Similarly, if a blacksmith (Kami) or tailor (Damai) becomes a priest or ruler, they have committed sin. The positions of priest, ruler, teacher, lawyer or doctor are largely controlled by the Brahmins and Chetries, and it is virtually impossible for the lower-caste Hindus to move to these positions of power.

For the indigenous peoples who are outside the Hindu-caste system (mostly Buddhists or other non-Hindu religions) and who are largely farmers and traders, the access to education is limited. Much of the public educational institutions and educational curriculum in Nepal have been controlled by Brahmins and Chetries. Curriculum is

taught in Khas language, which only Brahmins/Chetries or Khas peoples can understand. This provides a distinct advantage to Khas language speakers and puts indigenous peoples at a disadvantage in educational attainment. It is not clear, however, to what extent the *MA* constrains the indigenous people's ability to accumulate human capital and move to positions of power.

Recently, since the democratic movements of the 1990s, there has been surge of private boarding schools in which the medium of instruction is English. Both Khas language speakers and native language speakers are equally treated in terms of language. However, only a few people can afford to send their children to private boarding schools.

It is worth noting that it is not illegal to study religious texts in Newars, Tibetans, Tamangs or other native languages in religious institutions such as temples, monastery or private schools. However it is illegal to do so in public schools. There are no public schools in which teachers are paid to teach, for example, Buddhist religious texts. On the other hand, although Sanskrit is a religious text, it is compulsory in public schools and is fully funded by the government.

As of March 2012, Nepal is in the process of rewriting Nepal's constitution altogether. The indigenous peoples continue their struggle against the inherent injustices in the constitution. They demand a provision in the constitution for the autonomy of their territories and self-governance over those territories. Whether or not the aspirations of the indigenous peoples will be reflected in the new constitutions remains to be seen.

E3b. Nepal Geography

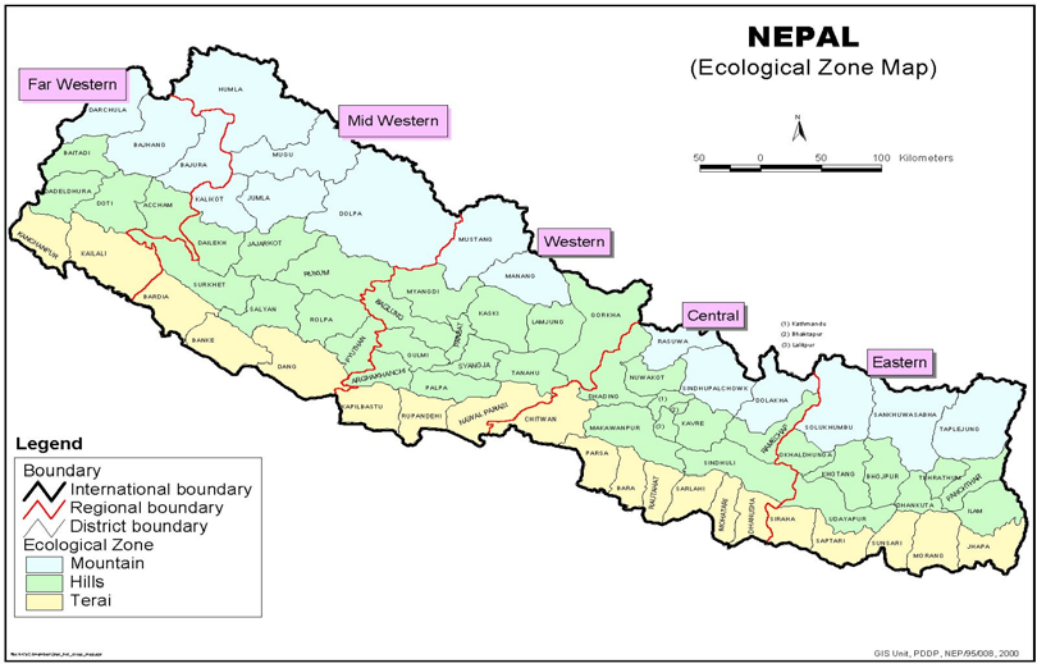
At present, Nepal is divided into 14 administrative zones. These 14 zones are further divided into 75 districts. These political boundaries were designed and created in the 1960s to disenfranchise indigenous peoples from forming geo-political units among themselves. During the three decades (1960 – 1990) of the autocratic "partyless" Panchayat system, political parties were prohibited from carrying out any forms of political activities. For the purpose of development priorities, Nepal was divided into five developmental regions: East, Central, West, Mid-west and Far-west regions. These regions were further divided into sub-regions totally 13. The administrative zones and districts are clustered into one of these sub-regions. These sub-regions serve as the geographic units of Nepal National Planning Commission, a centralized government agency which decides the development priorities of these geographic regions. These sub-regions provide logical units of geographic analysis.

Ecologically, Nepal has great physically diversity ranging from the plain region (about 300 meters above sea level) to the highest point on Earth, Mount Everest (8,848 meters above sea level). Based on this ecological diversity, Nepal is divided into three ecological regions: the Mountain Region, the Hill Region, and the Terai Region (the plain) (Figure 2). These three parallel each other, from east to west, as continuous ecological belts, occasionally bisected by the country's river system. The Terai Region (plain) is the most fertile for agricultural productivity and is considered the bread basket of Nepal. The Hill Region is not fertile for agricultural productivity and has limited economic potential, except for several valleys and river basins. The Mountain Region is

characterized by severe climate and rugged topographic conditions. Although not fertile for agricultural productivity, it has economic potential for tourism.

These ecological regions and the political administration of these regions have implications on the economic status of the people who live there. After the establishment of Nepal as a nation-state, most of the fertile land of the Hill Region (valleys and river basins) and the Terai Region were confiscated from the native peoples and transferred to the caste peoples under the system called *Birta*[8] or under other pretexts such as land reform. The native indigenous peoples were pushed further up on the hill and mountain regions.

Figure 2a. Ecological and Administrative Map of Nepal



Source: United Nation, Nepal Information Platform (http://un.org.np/node/10274)

[8] *Birta* is a land grant system by which government officers were allowed to confiscate lands of the indigenous peoples as a reward for working in remote areas.

CHAPTER V: KNOWLEDGE GAP AND CURRENT STUDY

F. Knowledge gap

The review of the literature indicates that while much has been done on global poverty, little has been done to understand the indigenous poverty throughout the world. To date, there have been very few studies that explicitly look at poverty among indigenous peoples vis-à-vis non-indigenous populations. Much of this existing research on indigenous poverty, however, is descriptive, and some of it is inductive (mostly from anthropology), but there is little deductive analytical work produced that is applied, that is, done to test a theory or intervention..

Of the previous poverty research on indigenous peoples, most have focused either on one small indigenous group or on a single geographic community. These studies are scattered here and there, and they often gloss over the variations that may exist within various indigenous groups. No known studies have systematically looked at indigenous poverty using a nationally representative sample or using poverty indicators that are reflective of the indigenous peoples' well-being. The extent to which poverty is driven by the isolation of indigenous territories and the factors that contribute to this isolation are currently unknown.

Theories of indigenous poverty are underdeveloped; in fact, to date no known specific theory of indigenous poverty exists. Poverty research on indigenous communities is fraught with shortcomings. The prevailing theories of poverty are based on the market-economy of industrialized countries. The effort to alleviate poverty has been hampered by the fact that researchers in this area have tended to take a sectarian approach to their efforts. There is, therefore, a need for theorizing indigenous poverty based on indigenous indicators of poverty.

Previous studies on indigenous poverty have used indicators, such as income (Psacharopoulos & Patrinos, 1994) or consumption (World Bank), that are not reflective of indigenous well-being (Carino, 2009). The income or consumption-based measures of poverty have been widely criticized as being limited and narrowly focused (Sherraden, 1991; Sen, 1999; Iceland, 2005; Blank, 2008; Rutstein & Johnson, 2004) or even misleading for subsistent economies (Carino, 2009). The income or consumption measure reflects the hedonistic consumer culture of the market-economy rather than the true well-being of the people (Carino, 2009). In recent years, there is a growing consensus among scholars that any measure of indigenous peoples' social and economic status must necessarily start from their own definitions and indicators of poverty (Eversole, 2005; Carino, 2009). However, there is currently no knowledge of such a measure.

Much of the empirical work on institutions has been on how institutions emerge and change (e.g. Ostrom, 1990; Knight, 1992; North, 1990), but little empirical work has been done to understand how institutions determine the socioeconomic status of various groups. The pre-1990 constitution of Nepal did not allow indigenous peoples to study in their native languages (Hofer, 2004). Article 18(2) of the new Constitution of 1990 does not sanction native language instructions in public schools beyond primary level. The state does not financially support native language instruction even at the primary level. On the other hand, the government spends millions of rupees [national currency of Nepal] for the Sanskrit *pathsalas* [schools] and the Sanskrit University whose beneficiaries are male Brahmins (Lawoti, 2001). In addition, by imposing compulsory Sanskrit throughout Nepal, the state is systematically imposing Hindu values and norms on all communities

of Nepal. The effect of this constraint on the human capital development, and subsequently on the health and economic well-being of indigenous peoples, is currently unknown.

F1. Current study

In an effort to begin to address these problems and fill in the knowledge gap, this study investigates the poverty among indigenous people in Nepal using a nationally representative sample and indicators of poverty that are native to the indigenous peoples. This study uses the Wealth Index developed by Rutstein & Johnson (2004) as a measure of poverty. The wealth index is constructed from using asset indicators that are reflective of indigenous people's socioeconomic well-being. Use of assets is a well-established approach to studying poverty (Sherraden, 1991). The asset indicators include land, livestock, housings, and other household items that are native to subsistent economies.

In the current literature on poverty, there have been two approaches to the problem. In one approach, poverty has been used as an independent variable. Such an approach attempts to establish the effect of poverty on other variables such as health, education or other outcomes. The second approach uses poverty as a dependent variable and attempts to identify the determinants of poverty, that is, to explain what causes poverty. This study uses the second approach.

Most studies have used level of education as a predictor of poverty; however, it is equally plausible that poverty is a predictor of education. Similarly, health has generally been used as an outcome variable, but in this study, it is hypothesized that health may

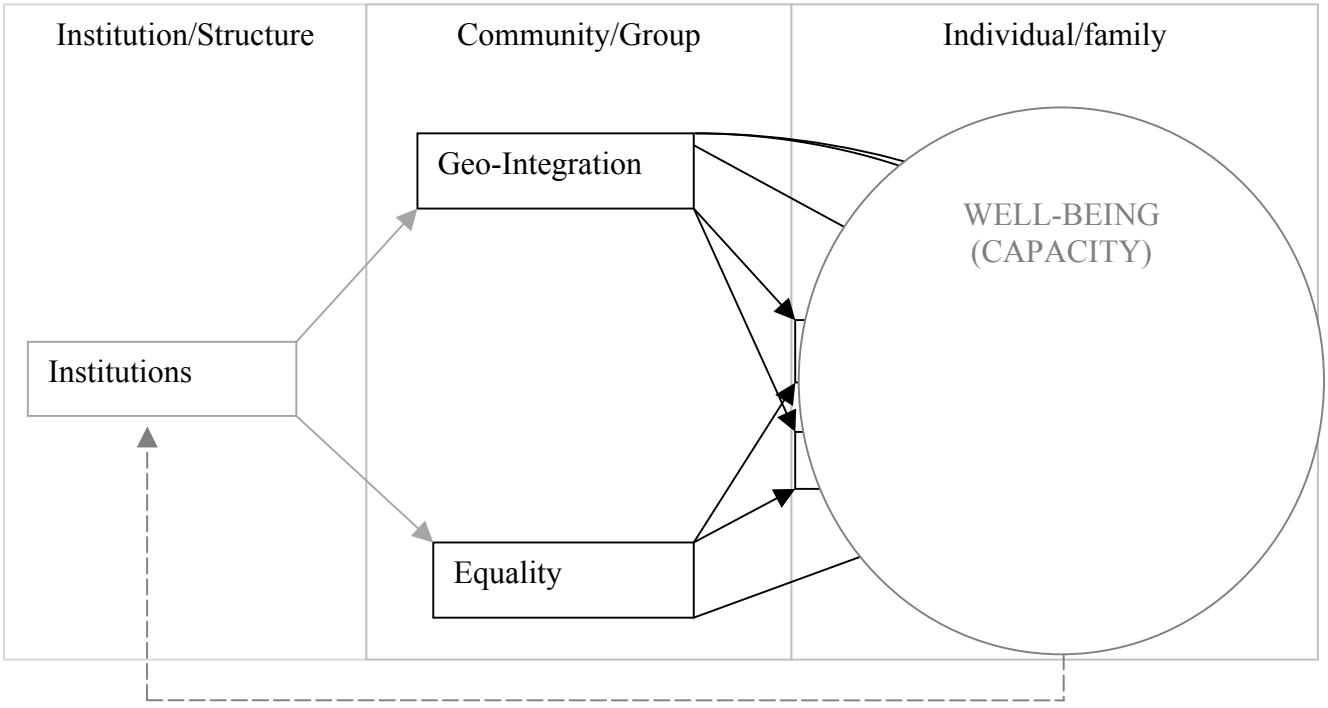
actually be a determinant of poverty. In reality, however, the relationship between poverty, health and education is likely to be endogenous.

This study will test the structural relationship between poverty, health and education to identify the causal link. It will then test whether this relationship changes by ethnicity and geography. For some ethnic groups, the relationship between poverty and education may not be the same as for other ethnic groups. The return on investment in education for indigenous groups is likely to be different than return on investment for non-indigenous peoples. For example, there is a wide-spread perception that, due to the caste system, indigenous peoples are less likely to find jobs in Nepal even if they are equally qualified. However, the empirical validity of these perceptions has not established to date.

F2. Conceptual model, research questions and hypotheses

Drawing from the theories and literature, Figure 3 presents a conceptual model of indigenous well-being. In this model, well-being (i.e. human capacity to "live well"- an indigenous definition) is conceptualized as an inter-related relationship of health, knowledge and wealth. The level of capacity of an individual and/or family is conceptualized as a function of the community and the institutions which govern their communities; in turn, the individual and/or family's capaicity provides feedback that affects the institution.

Figure3. Conceptual model of indigenous well-being (capacity)



F3. Model explanation:

Indigenous peoples are thought to be poor (have low wealth) because (1) they lack education (human capital); (2) they have poor health; (3) they live in geographically isolated areas; and (4) they are treated unequally (discriminated against) by the society in which they live. They lack education and health (human capital endowment) because their communities are geographically isolated, and because they are discriminated against by the society. Geographic isolation and discrimination, in turn, are thought to occur due to institutions. The institutions are assumed to be designed by, and in the interest of, the non-indigenous peoples (or Bahun/Chetries, in the case of Nepal). It is hypothesized that,

if these institutions remain unchanged, the indigenous peoples will remain poor even if they have the same level of human capital or productivity characteristics as the non-indigenous peoples. However, if the institutions are changed such that geo-integration and equality are maximized to an optimal level, it will improve the education, health and ultimately the wealth of the indigenous peoples. When the indigenous peoples attain higher levels of wealth, education and health (i.e. capacity to "live well"), they will, in turn, be able to design new institutions that best serve the well-being of the people. In an aggregate, the increased wealth of the indigenous peoples will increase the wealth of the nation.

The conceptual model may be specified as follows:

A. Institutional Level (Macro):

1. Good institutions (such as constitutions or laws that treat citizens equally and allow for self-governance of and a multilingual education system) lead to greater geographic integration (i.e. uniform development of all geographic communities, eliminating indigenous isolation).
2. Good institutions lead to equality among all caste/ethnic groups (less discrimination or social exclusion of certain ethnic/caste groups).

B. Community/Group Level (Meso):

1. Geographic integration (less geo-isolation) of communities leads to less disparity in education.
2. Geographic integration of communities leads to less disparity in health.
3. Geographic integration of communities leads to less disparity in wealth.

4. Equality in treatment of various ethnic/caste groups generates equality in health among all the ethnic/caste groups.
5. Equality in treatment of various ethnic/caste groups generates equality in education among all the ethnic/caste groups.
6. Equality in treatment of various ethnic/caste groups generates equality in wealth among all the ethnic/caste groups.

C. Individual/Family Level (Micro):

1. More education leads to better health.
2. More education leads to more wealth and vice versa (through changes in occupational status).
3. Better health leads to more wealth and vice versa.
4. The relationship between education and wealth (poverty) is moderated by geography.
5. The relationship between health and wealth (poverty) is moderated by geography.

D. Feedback Loop:

More capacity (more education, better health and more wealth) will, in turn, lead to advancement of better institutions, and the loop will continue.

Testing all the relationships specified in the conceptual model is beyond the scope of this study. This dissertation study tests some of the hypothesized relationships which are described in the section that follows.

F4. Specific Research Questions and Hypotheses

1. Are some ethnic/caste groups in Nepal at significantly higher risk of poverty than others?

H1: Compared to Brahmins (the de facto political elites), all the other caste/ethnic groups will be at higher risk of poverty.

H1a: The risk of poverty for indigenous peoples as a group will be significantly different from caste people as a group.

H1b: Within a caste group, people of lower caste will be at significantly higher risk of poverty than people of higher caste.

H1c: Within an indigenous group, the risk of poverty for some ethnic groups (e.g. Newar, Gurung) will be significantly higher than for the other ethnic groups (Tharu, Magar, Tamang).

H1d: Some ethnic groups are as well off as high-caste groups (i.e. the risk of poverty for some ethnic groups like Newar and Gurun is not significantly different than for people of higher caste, Brahmin).

H1e: Some ethnic groups are as poor as lower-caste groups (i.e. the risk of poverty for some ethnic groups such as Tharu, Tamang, and Magar are likely to be as high as for lower-caste groups).

Literature indicates that there is a cost of being indigenous, that is, indigenous peoples are at higher risk of poverty than non-indigenous peoples (Psacharopoulos & Patrnos, 1994). However, previous research used to support this claim was conducted in the countries where non-indigenous peoples were mostly White-European. The extent to

which such relationship exists in other developing countries where non-indigenous peoples are non-White European is currently unknown. This dissertation study tests the validity of previous findings under different socio-economic and political contexts.

Furthermore, the theory of institutional design (North, 1990) contends that institutions are deliberately created and designed to serve the interest of the elites of the society. The de facto political elites of Nepal are largely the Brahmins. This study tests the extent to which Brahmins are socioeconomically better off than other groups.

Previous studies have documented between-group differences concerning indigenous and non-indigenous peoples. These studies, however, assumed homogeneity among the indigenous groups and glossed over the variations that may exist within different indigenous groups. Since indigenous peoples vary in their cultural, linguistic and geographic contexts, there is reason to believe that some indigenous groups within a country may be at higher risk of poverty than other indigenous groups. This study expands the understanding of whether and how different indigenous groups experience the risk of poverty.

There is a general perception that caste discrimination is widely practiced among caste peoples in Nepal. The lower-caste (Dalits) are perceived to be socioeconomically worse off than the rest of the population. This study tests the extent to which there is an empirical validity to that claim.

The constitution of Nepal (Muluki Ain) categorized indigenous peoples of various ethnic groups into different social hierarchies solely based on their ethnicities. As a result, some groups such as Newars, who are largely Hindus, are more likely to be better off than others.

2. To what extent do the individual productivity characteristics (education, health, employment, and occupation) determine the risk of poverty and, conversely, how does poverty influence these characteristics?

H2a: The higher the education, the lower the risk of poverty and vice versa.

H2b: The higher the health problems, higher the risk of poverty and vice versa.

H2c: Those who are employed are at lower risk of poverty than those who not not employed,and vice versa.

H2d: Farmers are at higher risk of poverty than non-farmer.

Previous studies on poverty among indigenous peoples have documented that indigenous peoples have low education and high health problems (Corina, 2009; Psacharopoulos & Patrnos, 1994). They also note that, for the most part, indigenous peoples are employed, working in agriculture. This study expands our understanding of the relationship between individual productivity characteristics and poverty in Nepal.

An individual's occupation in Nepal is generally specified by his or her ethnic and caste identity. Within the indigenous peoples, occupation is a personal choice and largely determined by one's level of education and training (except Hindu Newars). Indigenous peoples work as monks (priests), traders, farmers and other professionals. However, within the caste peoples, the occupation is generally determined by their castes according to Hindu religion. The low-caste (Dalits) are supposed to be entertainers, tailors, metal workers (blacksmiths), cobblers, butchers and other menial jobs such as cleaning or janitorial works. The mid-caste (Chetri) is supposed to be in the military. The so-called high-caste (Brahmin) is supposed to be priests. The Chetries and Brahmins, who are not in the military or the priesthood, are supposed to be farmers (Baishya). The change of

occupation is forbidden in the Hindu caste system--it is considered a sin. Such religious indoctrination and internalized oppressions discourage the mobility of the low-caste peoples to better jobs. This study sheds light on the effect of occupational segregation on poverty in Nepal.

3. To what extent do the geographic characteristics of the community determine the risk of poverty, and vice versa?

H3: Those living in isolated geographic areas are at higher risk of poverty than those living in non-isolated geographic areas.

This hypothesis is informed by previous literature that suggests that geography is a key determinant of poverty because different geographies are endowed with different levels of resources (Diamond, 1997; Sachs, 2001; Rodrik & Subramanian, 2003). Individuals living in geographies with well-endowed natural resources (such as fertile land, availability of water, oil, and minerals) are likely to be economically better off than those living in resource-deprived geographies. More importantly, individuals living in geographies with poor human-made resources (such as a lack of infrastructure with no access to roads, electricity, irrigation systems, hospitals, schools or colleges) are likely to be at higher risk of poverty. Indigenous territories are less likely to have good infra-structure development due to lack of self-governance (Cornell, 2002). The constitution (Muluki Ain) of Nepal does not allow self-governance among indigenous peoples. This constraints the ability of indigenous peoples to self-determine the development of their communities. The infrastructure development of communities is generally determined by

government, rather than by individual poor who live in those communities, especially if the government is centralized, like in the case of Nepal.

There is a concern that the relationship between geography and poverty may be endogenous-- that poverty may cause geographic isolation as much as geographic isolation may cause poverty. It is possible that poor people move (from urban) to isolated geographies because that is where they can afford to live. In the case of indigenous peoples, however, it is unlikely that they move to isolated geographies because they are poor. Historically indigenous peoples have been pushed to the remote/isolated places not because they were poor, but because they were rich compared to the settlers. It was a political process. The establishment of Nepal as a nation-state and its constitution (Muliki Ain) were instrumental in pushing the indigenous peoples to the periphery of development processes. It is more likely that people become poor because they live in isolated geographies, rather than that their geographies are isolated because they are poor. . This study expands our understanding of the relationship between indigenous peoples, geographic isolation and poverty.

4. To what extent do the differences in individual level characteristics and geographic characteristics explain the differences in the risk of poverty between various ethnic/caste groups?

H4: The observed differences in the risk of poverty between various ethnic/caste groups will disappear when the individual level characteristics and geographic characteristics are controlled. In other words, if all the ethnic/caste groups were equal in their individual characteristics (education, health status, employment status,

and occupation) and geographic characteristics, there would not be ethnic/caste disparity in poverty (wealth).

The *Hypothesis 4* is informed by the theory of institutional design (North, 1990). If the country's constitution (Muluki Ain) or prevailing social system treats its citizens equally, the data should support the *Hypothesis 4*. If, however, the data rejects the *Hypothesis 4,* it will indicate that the country's constitution (Muluki Ain) or social system treats its citizens differentially based on their ethnicity/caste. The extent to which the ethnic/caste disparity in poverty (wealth) remains unchanged even when the individual and structural variables (geography) are controlled for, it will indicate that some ethnic/caste groups will remain poor even if they have same education, health status, employment, occupation; and live in the similar geographic areas. This study expands our understandings of the various sources of ethnic/caste disparity in poverty (wealth); and informs appropriate level of interventions: individual/family, community or institution.

CHAPTER VI: METHOD

This section presents the research design, data and samples, measures, and analytical techniques that were used to answer the research questions and test the hypotheses described in the previous section.

G. Research design

This study utilized a cross-sectional survey design. Nationally representative data was collected for major indigenous and caste groups of Nepal for one time point. In particular, this study identified twelve of the largest groups: nine ethnic groups and three caste groups. The nine ethnic groups, also known as Mongoloids, are collectively called indigenous peoples. They include Sherpa, Tamang, Magar, Gurung, Rai, Limbu, Thakali, Newar and Tharu. The three caste groups, also known as Hindu-Aryan or Khas people, are collectively called non-indigenous people. They include Brahmin, Chetri and Dalit (also known as low-caste or occupational caste).The probability of being poor for each group was estimated. Brahmin was treated as a reference group.

G1. Data and sample

Secondary data was obtained from the Demographic and Health Survey (DHS Measures), a global database covering over 80 countries. The data is collected and managed by Macro International in collaboration with in-country research partners. According to the DHS Measures (http://www.measuredhs.com), data is collected every five years for most of the countries. DHS is a public use data available upon written request. The data has two parts: restricted and unrestricted. The restricted data contains

Geographic Information System (GIS) data and information on HIV/AIDs. For this study, both restricted (GIS) and unrestricted data for Nepal was obtained.

The Nepal DHS covers a nationally representative sample. The Nepal DHS was designed to provide current and reliable estimates for the whole country, both urban and rural, and covers 13 domains obtained by cross-classifying the three ecological zones (Mountain, Hill and Terai) and five development regions (East, Central, West, Mid-west, and Far-west). Data includes indicators on key socioeconomic, health and demographic characteristics of the national population. The Nepal Demographic and Health Survey was conducted under the aegis of Nepal Ministry of Health and Population (NMOHP) and implemented by New Era, a local research agency. The field data was collected between February 2006 and August 2006 by 72 interviewers.

The Nepal DHS collected data on households (N = 8,707), women (N = 10, 793) and men (N = 4,397) of age 15 -49 years. The sampling design was selected in two stages using stratified and clustered sampling methods. In the first stage, 260 primary sampling units (PSUs)--82 urban, 178 rural--were selected from the 2001 Population Census sample frame. In the second stage, systematic sampling of 30 households per PSU in urban areas and 36 households in rural areas were selected in all regions. Oversampling was done in urban areas necessitating the weighting of the total sample. Technical details on data collection methods have been discussed elsewhere (See 2006 NDHS Introduction and Methodology, n.d.).

In addition to population information, the Nepal DHS 2006 survey also collected data on location (geography) using a Geographic Positioning System (GPS). The GPS data includes longitude/latitude coordinates for 260 clusters or primary sampling units (PSU)

in which the sample population resides. The 260 clusters represent the geographic characteristics of the population in three ecological zones and five development regions. Each cluster contains a sample size ranging from 18 to 99 people (women sample), representing the characteristics of the people who reside in that cluster (community). The GPS data allows for Geographic Information System (GIS) analyses of the sample population.

This study utilized household, women, and men samples of the Nepal DHS. The age group of 15-49 is a good fit for economic analysis since people in general are economically productive during this age range. The study used data for the year 2006 (NDHS 2006), the latest year for which data is available. The study utilized GIS data for geocoding and analyses of spatial relationships between geography, ethnicity and poverty.

DHS data structure

The Nepal DHS data contains 8,707 households. However, the household sample does not include information on ethnicity or caste of the household. To identify the ethnicity or caste of the head of household in the household data, the three datasets (household, men and women) were merged. A unique seven-digit identifier variable was created, combining the household numbers and cluster number in each of the datasets for merging. In total, the ethnicity and caste of 7659 households were identified.

To correctly identify the ethnicity or caste of the head of household, first the ethnicity and caste of each of the household members were identified in both women and men samples. However, some households (e.g. in women sample) included as many as 30

members, and not all members of the same households were of the same ethnicity or caste. Furthermore, the respondents were not always the head of the household.

More information was needed to correctly identify the ethnicity or caste of the households in the household sample. Two additional variables in men and women were analyzed: relationship structure and residency status. The relationship structure variable contains information on the relationship of a household member to the head of that household. The relationship variable identifies whether the household member is a spouse, child, parent, grand-parent, grand-child, in-law, niece, nephew, "other relative" or "unrelated" to the head of the household. The residency status variable identifies whether a member is a usual resident of the household or whether he or she is a visitor.

The ethnicity or caste of the head of household was identified by the ethnicity or caste of the closest relatives in the relationship structure. For example, if the member was a spouse of the head of household, the ethnicity or caste of the spouse was assigned to the head of household. If the member was a child of the head of household, his or her caste was assigned to the head of household over the ethnicity or caste of another member such as niece or in-laws. However, if the member was not a usual resident of the household or if the member was "other relative" or "unrelated," that person was excluded from the analysis. There were three reasons for this exclusion. First, the unrelated member who resided in the same household is most likely to be a domestic servant or other workers (Rustien and Johnson, 2004). So the ethnicity and caste of this member may or may not be the ethnicity or caste of the head of the household. Second, ethnicity or caste of the "other relative" who was counted as a member of the household but who was not a usual

resident of the household may or may not be the ethnicity or caste of the head of the household.

Third, it is unlikely that the household members who were identified as "unrelated," "other relative," or "visitor" are the owners or recipients of the wealth of their household. For example, although a domestic servant may be a member of a wealthy household, he or she does not own--and is unlikely to inherit or enjoy--the wealth of the household. Since this study is designed to understand the poverty/wealth status of the individuals or household members based on the wealth status of the household, the inclusion of these individuals in the analysis was thought to present the risk of incorrect estimates.

Geographic Information System Data

The Geographic Positioning System (GPS) data includes geo-coordinates (longitude/latitude) of geographic clusters or communities. However, this dataset does not include attributes of the respondents who reside in those geographic clusters. To identify the geographic location of the respondents, the cluster level GPS data needed to be merged with the respondent level survey data. The merged data would allow for the analysis of the relationship between the geography and respondents' poverty status.

From the survey dataset, cluster-level aggregate data was generated for each of the PSUs. The aggregated data identified distribution of sample population by poverty and ethnicity or caste for each of the geographic units. The newly-generated aggregate data was then merged with GPS data. The GPS data was used to geocode the geographic clusters and associated respondent attributes using ArcView 10.

In addition to GPS data, another set of GIS base map data was requested of the Government of Nepal. However, due to the high cost of base map layers (1 layer = N. Rs. 1000 = $14; and 100 layers = $1400), this plan was aborted. Alternatively, district level and village development committee level GIS data for Nepal was obtained (Courtesy of Dr. Keshav Bhattarai, professor/interim chair of Geography, University of Central Missouri). This data identifies the administrative boundaries and was essential to test the hypotheses on geographic distribution of ethnicity, caste and poverty. This data allows for the cross-examination of the survey data with the native territories of the indigenous peoples of Nepal.

Finally, administrative data was collected during the months of June 1 – July 30, 2011; and ethnographic data of an indigenous group was collected by conducting field-visits to the indigenous territories in the High Himalayas during the months of Ocboter – December, 2011.

Household and Men Samples

The household and men samples do not include information on health. However, health is an important variable in testing the hypotheses in this study. One approach was to use only women samples, which includes all the variables proposed in the hypotheses. However, as cautioned by Prof. David Gillespie (member of the dissertation committee), exclusion of men and women samples in the analyses would run the risk of bias in favor of the proposed hypotheses. In an effort to avoid the risk of bias, this study conducted separate analyses on women, men and household samples. Detailed analyses were

conducted on the women sample as it contains the largest sample size among the three datasets. The findings were then compared.

G2. Measures

The dependent variable in this study is wealth (or poverty). Based on the research questions and theoretical framework, three levels of independent variables were used. At the individual level, ethnicity/caste and productivity characteristics such as education, health status, employment status and occupation were measured. At the community level, structural or geographic characteristics (i.e. the degree to which a geographic community is isolated and the geographic region of resident) are measured. At the institutional level, laws governing the education system were measured by examining whether or not the language of instruction in school is a mother tongue. In addition, demographic characteristics such as age, gender, marital status, household size, and the gender of the head of household were used as control variables.

Poverty, or wealth, is measured using asset indicators. Since indigenous peoples live largely in subsistent economies of developing countries where cash incomes are scarce, asset-based measures capture the material well-being of indigenous peoples better than income or consumption-based measures (Rutstein & Johnso, 2006). Although cash-income and wage labor market is increasing, indigenous peoples in Nepal are largely self-employed farmers who consider land, livestock, houses, and common pool resources as their valuable assets. Exchange of goods and services in these economies is often transacted through bartering rather than through cash. Where cash is used, it is of minimal amount.

This study utilized the asset-based Wealth Index (NDHS 2006 Wealth Index) developed by Rutstein and Johnson (2006). The Wealth Index is a composite of various wealth indicators created by using a Principle Component Analysis (PCA) (Rutstein & Johnson, 2006). The index was constructed using over 30 household assets including land, houses, livestock, and ownership of household items ranging from a television to a bicycle or car, as well as dwelling characteristics, such as source of drinking water, electricity, sanitation facilities and type of material used for flooring, roofing, and walls. Table 1 presents the list of assets commonly used for constructing wealth index.

Table 1. Typical Assets and Services Indicators used in DHS Wealth Index

1	**Land**
Housing:	
2	Floor Type
3	Wall Type
4	Roof Type
5	Kitchen Type
6	Toilet Type
Livestock:	
7	Cow
8	Horse/donkey
9	Goat
10	Sheep
11	Chicken
12	Duck
13	Pig
14	Yak
15	Buffalo
Household items:	
16	Sofa
17	Cupboard
18	Chair
19	Table
20	Dhiki
21	Bed
Transportation items:	
22	Car/Truck
23	Motorbike
24	Tempo
25	Animal cart
26	Bicycle
Electronic items:	
27	Computer
28	Refrigerator
29	Phone
30	Mobile phone
31	TV
32	Radio
33	Fan
34	Clock
35	**Bank account**
36	Pipe water
37	Electricity

Source: DHS Nepal 2006.

The Wealth Index is a relative measure of wealth rather than an absolute value of wealth. Values range from 0 (no wealth) to 100 (great wealth). The Wealth Index is pre-coded into five quintiles: the bottom 20% (poorest), 21%-40% (poor); 41% -60% (middle); 61%-80% (rich); and top 81% -100% (richest). For this analysis, 40% was used as the cut-off point to define poverty line. The reason for this is that Nepal's national poverty rate was estimated around 42% in 2000 (ILO, 2001). Those who fall under the bottom 40% on wealth index are conceptualized as poor. If a person belongs to the bottom 40%, he/she was coded as 1 (poor); otherwise, he/she was coded 0 (non-poor). The probability of being poor is the probability that a person belongs to the bottom 40% on the asset-based wealth distribution. This is a relative measure of poverty or wealth.

In an absolute term, however, the poor people (those who fall below the bottom 40% of the wealth index) in this measure broadly represent those who live in rudimentary housing conditions such as mud, sand or dung floors; cane/palm/trunk, mud or sand walls; and thatch/straw or ceramic tile roof. Also included are those who have no television, car/truck, motorcycle, computer or refrigerator. Table 2 presents the selected housing and other characteristics of the poor households.

Table 2. Selected Characteristics of the Poor Households

Indicator	Characteristics	Poor % (Weighted)
Housing Condition	Mud, sand or dung floor	99.31%
	Cane/palm/trunk, mud, sand, bamboo with mud, stone with mud or wood planks/shingles wall	97.07%
	Thatch/straw, ceramic tiles or metal roof	96.22%
	Has no toilet facility, use bush/field, pit-latrine with or without slab	97.56%
Modernization/convenience	Television	0.19%
	Refrigerator	0%
	Car/Truck	0%
	Motorcycle/scooter	0%
	Computer	0.03%

Ethnicity/Caste identifies the caste and ethnicity of the sample population. This variable was used to classify the sample population into indigenous and non-indigenous categories. The variable was used to estimate the degree of inequality in wealth among indigenous and non-indigenous groups. There are over 60 ethnic groups that are collectively known as indigenous peoples. Of the 60 ethnic groups, this study identified nine of the largest groups based on their self-reported ethnicity. Each of the indigenous groups was then separately dummy-coded into distinct groups. This was done because although they are all indigenous peoples, they each are considered unique in many ways (e.g. they each have distinct language, culture and geographic territories). Tamang (the inhabitants of the Mountain), for example, is in no way the same as Tharu (the inhabitants of the flatland Terai) although they both are indigenous peoples. As a result, they each are thought to suffer different socioeconomic disadvantages. Treating them as

one group in the analyses will gloss over the inter-group variation within indigenous peoples. The largest indigenous groups identified in this study include Sherpa Tamang, Magar, Gurung, Rai-Limbu, Thakali, Newar and Tharu. The 'Other' category consists of small groups representing over 50 ethnic groups. Sherpa and Thakali each had a small sample size ($n<100$), and they were included in the "other' category for the analyses. Each of the ethnic groups in the "other" category has too small a sample size for separate analyses.

Similarly, there are three caste groups that are collectively described as non-indigenous peoples. They were identified based on their self-reported castes. The caste people were dummy-coded into three caste groups: Brahmin (high caste), Chetri (middle caste including Baishya), and Dalit (the low-caste on the caste hierarchy, also known as occupational or Sudra caste). Although Dalit and Brahmin belong to the same Khas group or non-indigenous people, they are thought to be distinct in many characteristics including socioeconomics. Dalits are known as the oppressed group, or victims of the caste system, while Brahmins are known as the oppressors, or the perpetrators of the caste system. Previous studies have reported huge disparities between these three castes (Bhattachan, Sunar & Bhattachan, 2007). The inclusion of Brahmin, Chetri, and Dalit into one group is likely to gloss-over the inter-group variation among the non-indigenous peoples. For this reason, they were coded separately and treated as distinct groups.

Education measures the level of "human capital" endowment. It is generally measured in two ways: (1) the number of years of schooling; and (2) the level of educational attainment. Since drop-out and failing rates in Nepal are very high, the number of years in schooling is less meaningful in measuring human capital endowment.

(For example, a person who fails 10 times in high school is in school for 20 years, but may not necessarily have two times more education than his counterpart who only has 10 years of schooling). This study uses educational attainment as a measure of human capital endowment. Typically, Nepal's education system divides educational attainment into four levels: no schooling; primary level (up to 5ht grade); secondary level (6 -10^{th} grade but not SLC); and SLC and above (SLC stands for School Leaving Certificate, which is given to a student who successfully graduates from the 10^{th} grade. If a student fails SLC, he/she is not allowed to go for college, and his or her academic future ends here. For this reason, it is commonly known as an Iron Gate. In 2006, for example, over 62% of the students did not pass this test (The Government of Nepal, Ministry of Education, Office of the Controller of Examinations, http://www.soce.gov.np/glance.php). The failing rate is generally much higher for students in public schools compared to private schools). Educational attainment is a categorical variable. Since there are only four categories (levels) in this variable, and since the distance between each level is not symmetrical, this variable cannot be treated as ordinal level or continuous level data. So it is dummy-coded for each category, creating four variables to be used in multivariate analyses. Since the survey has a large sample size, increasing the number of variables may not significantly constrain degrees of freedom in multivariate analyses. "SLC and above" was treated as a reference group.

Health, in this study, is measured by Body Mass Index (BMI) of the individual, presence of anemia, child birth, and child death. BMI uses height and weight to measure the thinness (malnourishment) or obesity status. BMI is defined as weight in kilograms divided by height squared in meters (kg/m^2) and adjusted for altitude. A cutoff point of

18.5 is used to define thinness or acute undernutrition, and a BMI of 25 or above usually indicates overweight or obesity. According to the World Health Organization, if more than 20% of a country's population has BMI less than 18.5, the county is considered to be in a serious public health disaster (Ministry of Health, 1998). This study uses 18.5 as the cut-off point to assess the health status of a person. A respondent with BMI less than 18.5 was coded 1 (poor health); otherwise he or she was coded 0 (not in poor health). If the person had anemia, it was coded 1; no anemia was coded 0. If a woman had given birth, it was coded 1; otherwise a 0 was given. If the woman had ever had a child die, it was coded 1 or else a 0.

Employment, or *Occupation,* measures the productivity characteristics of a person. In this study, the employment variable was dummy-coded into four categories: farmer (works on his/her own farm or works on another's farm), labor (skilled or unskilled), professional (technical, managers, clerical, sales, services), and "not-working." Professionals were treated as a reference category.

Geography is thought to capture two constructs: the extent to which communities are endowed with resources and the extent to which communities differ in intrinsic institutions (local laws, norms, cultures). Traditionally, studies have used urban vs. rural differences in their geographic analyses. However, such analyses gloss over the huge variations that may exist within urban or rural areas.

This study utilizes the Geo-Positioning System (GPS) to identify the degree of geographic isolation of the small communities (neighborhoods) in which the sample populations reside. The DHS 2006 survey collected GPS data from 260 geographic communities representing the geographic diversity of Nepal, both in terms of natural

resources endowment and levels of development priorities of the Nepal government (i.e. the five development regions and 13 sub-development regions). In this study, the 260 communities are classified into four categories of geographic isolation based on the degree of their infra-structure development: (1) developed (capital city); (2) moderately developed (small city); (3) less developed (town); and (4) isolated (not developed). The degree of geographic isolation measures the degree of resource deprivation (community poverty), such as lack of markets, roads, electricity, telecommunication, hospitals, college/universities and so on. The 13 sub-regions measure the degree of isolation in terms of government priorities and natural resource endowments.

Institutions are formal and informal rules or laws of the country. This study measures the formal rule that governs the education system in Nepal and the informal rule, the caste system. The national law of Nepal, Muluki Ain 1965, prohibits the use of indigenous language as a language of instruction in public schools. Only the Nepali language is permitted as a language of instruction in public schools. If the mother-tongue of a respondent was Nepali, it was coded as 1. If the mother-tongue was an indigenous language, it was coded as 0. The caste system, the informal social norm, was measured by the caste of the person.

Since the DHS survey did not ask questions on the language of instruction in public schools, it was not clear, at the individual level, whether or not the respondent received education in his or her mother tongue. However, since the official language of instruction in public schools in Nepal is Khas language, all the Khas or non-indigenous people (Brahmin, Chetri and Dalit) were assumed to have learned in their mother tongue,

and all the indigenous peoples (including Newar) were assumed to have been prevented from receiving education in their mother tongue.

One concern with this coding scheme is that, with increasing Khasinization of Nepal's population, many indigenous groups may have lost their mother tongue. Although not their original language, Khas may be the only language they can speak. This coding scheme will put them into a non-Khas speaking category.

Another concern is that some indigenous groups, particularly Newar, may have been educated in their mother tongue. The majority of the Newar live in Kathmandu valley, which when established as the capital of the nation, provided economic and other advantages for them over other groups. As a result, they are thought to have sustained the education system in their own mother tongue while other indigenous groups could not due to increasing Khasinization of the education system of the country. The extent to which Newar were taught in their native language is currently unknown, however. The coding scheme in this study assumes that Newar as a group did not have education in their own mother tongue.

Finally, there is also a concern that indigenous children who go to private boarding schools may not be linguistically disadvantaged than the Khas children who also go to private schools because the language of instruction in these schools is generally English. Since the DHS survey does not ask about the types of schools they attended, the language of instruction cannot be identified. The coding system assumes that the primary language of instruction in all the schools is Khas language.

The institution variable, therefore, is only a proxy measure of institution governing the language of instruction in public schools in Nepal. The coding scheme is

likely to underestimate the proportion of indigenous peoples whose mother tongue is the language of instruction in schools. Please note that this coding scheme is identical to the coding scheme applied to measure Khas people as a non-indigenous category and therefore measures the same underlying construct.

Table 2a below presents the summary description of the variables that will be used in this study.

Table 2a. List of variables, measures and codes

Variable/Construct	Measures/Instrument	Code
Dependent variables:		
Poverty	Asset-based measure of poverty/wealth. Measures whether or not a person is relatively poor. DHS Wealth Index was used.	1 = Poor (Bottom 40% of Wealth Index) 0 = Non Poor (Top 60% of Wealth Index)
Individual level predictors:		
Ethnicity	Identifies the ethnicity/caste of a person.	**Indigenous Group:** 1 = Rai & Limbu, 0 = Not Rai & Limbu 1 = Magar, 0 = Not Magar 1 = Tharu, 0 = Not Tharu 1 = Tamang, 0 = Not Tamang 1 = Newar, 0 = Not Newar 1 = Gurung, 0 = Not Gurung 1 = Sherpa, 0 = not Sherpa 1 = Thakali, 0 =, Thakali 1 = Other indigenous groups, 0 = Not "Other indigenous groups' **Non-Indigenous Group:** 1 = Brahmin, 0 = Not Brahmin 1 = Chetri, 0 = Not Chetri 1 = Dalits, 0 = Not Dalits
Education	Level of school attainment. It is a proxy measure of 'human capital' endowment.	1 = No Education, 0 = Not 'No Education' 1 = Primary education 0 = No primary education 1 = Up to secondary education, 0 = Not 'Up to secondary

		education' 1 = More than secondary education 0 = Not 'More than secondary education'
Health	Measures the health status of a person; Measures whether or not the respondent ever have child births and child death	1 = Poor health (BMI =<.18.5) 0 = Good health (BMI>18.5) 1 = child births 0 = no child births 1= child deaths 0= no child deaths
Employment /Occupation	Whether employed or not and types of occupation	1 = Farmer, 0 = Not farmer 1 = Laborer, 0 = Not laborer 1 = Professionals, 0 = Not professionals 1 = Not working, 0 = Not "not working"
Community level (structural) predictors:		
Geographic Isolation	Measures the degree to which communities are isolated or poor.	1 = isolated (country side) 0 = not isolated (not countryside) 1 = developed (capital city) 0 = not developed (not capital city) 1 = moderately developed (small city) 0 = not 'moderately developed (not small city) 1 = less developed (town) 0 = not 'less developed' (not town)
Geographic regions	Measures the degree to which geographies vary by development priorities of the government	1= Eastern Mountain 2 = Central Mountain 3 = Western Mountain 4 = Eastern Hill 5 = Central Hill ® 6= Western Hill 7 = Mid-western Hill 8 = Far-western Hill 9 = Eastern Terai 10 = Central Terai 11 = Western Terai 13 = Mid-western Terai 14 =Far-western Terai
Institutional (structural) predictors:		
Institution	Measures whether the mother tongue is Khas language (the official	1 = Mother tongue is Khas language 0 = Mother tongue is not Khas language

	language)	
Demographics:		
Age	Measured in years	Continuous variable
Gender	Identifies whether the person is male or female	1 = female 0 = male
Marital status	Identifies whether the person is married or not	1 = married 0 = not-married
Household size	Number of people in a household	1 = Large household>6 members 0 = Not large household =<6 rmembers
Gender of Head of household	Identifies the gender of the head of household	1 = female 0 = male

G3. Analytical techniques

First, univariate analyses were conducted to understand the sample characteristics of the study population, and to assess the overall data distribution of each of the variables in the study. Descriptive statistics were produced to describe each of the variables. For categorical variables, weighted percents and unweighted frequency distributions were provided (Table 2). For continuous variables, weighted means and standard deviation were provided. Furthermore, for the continuous variables, assumptions of normality of distribution were checked, skewness and data outliers were identified. Where the normality assumption was violated, the data was transformed using an appropriate method (such as recoding, log, square root or other types of transformation method). Missing data was checked and verified. For the data missing at random, missing values were imputed using an appropriate method (such as Multiple Imputation). For any data that were not missing at random, the values were excluded from the analyses.

Second, bivariate analyses were conducted between the dependent variable (poverty) and each of the independent variables to determine the strength and direction of

the relationship at bi-variate level. For the categorical variables, Chi-Square tests were used. For example, Chi-square tests between ethnicity/caste (categorical variable) and poverty (categorical variable) indicated whether poverty was significantly associated with ethnicity/caste. In addition, it also produced poverty rates for each of the ethnic/caste groups.

Similarly, Chi-square tests between education and poverty produced poverty rates for each of the educational groups and indicated whether education was significantly associated with poverty. Chi-square tests between health and poverty indicated whether health status (good health vs. poor health) was significantly associated with poverty. Chi-Square tests between occupation and poverty produced poverty rates for each of the occupational types, and indicated whether occupational type was significantly associated with poverty. Furthermore, Chi-square tests between geography and poverty indicated which geographic characteristics were significantly associated with poverty. Poverty rates for each of the geographic sub-regions were produced. Chi-square tests between demographic characteristics (categorical) and poverty indicated which demographic characteristics were significantly associated with poverty. The independent or control variables that were not significantly associated with dependent variables at the bi-variate level were excluded from further analyses (i.e. multivariate analyses).

Furthermore, to gain a better understanding of the characteristics of the ethnic/caste groups and their association with poverty, bi-variate analyses were conducted between ethnicity/caste and each the variables in the study. For example, bi-variate analyses between ethnicity/caste and education produced statistics on the educational status of each of the ethnic/caste groups. Similarly, bivariate analyses

between ethnicity/caste and health status provided health characteristics of each of the ethnic/caste groups. Bi-variate analyses between ethnicity/caste and occupation provided occupational characteristics of each of the ethnic/caste groups. In addition, Bivariate analyses between ethnicity/caste and geography provided geographic characteristics (e.g. geographic clustering) of each of the ethnic/caste groups. Bivariate analyses between ethnicity/caste and demographics provided demographic characteristics of each of the ethnic/caste groups.

Finally multivariate regressions were conducted to test if the observed characteristics of the ethnic/caste groups were associated with their poverty. Since the dependent variable, poverty, was binary, binomial multivariate logistic regressions were conducted.

In particular, to answer the research questions and test each of the hypotheses in this study, the following analytical techniques were used:

1. To answer Research Question #1 *(Are some ethnic/caste groups in Nepal at significantly higher risk of poverty than others?*) and test the hypotheses *H1 – H1e,* bivariate analyses were conducted. Since both the dependent variable (poverty) and independent variable (ethnicity/caste) were categorical, bivariate Chi-square tests were conducted. The Chi-square tests produced poverty rates for each of the ethnic/caste groups and tested the extent to which ethnicity/caste and poverty were associated at bivariate levels (i.e. without controlling for other variables in the study). The result of the Chi-Square tests showed which ethnic/caste groups were at the highest risk of poverty and which were at the lowest risk of poverty as indicated by the proportion of poor within

each of the groups. The ethnic/caste groups were then rank-ordered based on their level of poverty.

Multivariate logistic regressions were conducted to test the relative contribution of each of the independent variables to the risk of poverty for each of the ethnic/caste groups compared to the reference group. The dependent variable, poverty, was regressed on each of the independent variables in the study. Odds ratios and confidence limits were observed. The results of the multivariate regressions showed which ethnic/caste groups were at higher risk of poverty, and whether or not the risk of poverty was significantly different for each of the ethnic/caste groups compared to the reference group.

2. To answer Research Question # 2 *(Do some ethnic/caste groups in Nepal have significantly lower education and health than other groups?)* and test the hypotheses *H2a –H2f,* Chi-square tests were conducted. The Chi-square tests between ethnicity/caste and educational status (categorical variable) indicated which ethnic/caste groups have less education and whether or not the ethnic/caste groups are significantly different from each other in their education. Similarly, the Chi-Square tests between ethnicity/caste and health status indicated which groups have a lower health status and whether or not the ethnic/caste groups are significantly different from each other in health status.

3. Finally, to answer Research Questions #3- #5 (**3.** *To what extent do the individual productivity characteristics {education, health, employment, and occupation} determine the risk of poverty?* ***4.*** *To what extent do the geographic characteristics of the community determine the risk of poverty? 5. To what extent do the differences in individual level*

characteristics and geographic characteristics explain the differences in the risk of poverty between various ethnic/caste groups?) and to test each of the hypotheses associated with these questions, step-wise multilevel (pooled method) multivariate logistic regressions were conducted. This model may be expressed by the following equation:

$P(Y=1|ethnicity) = \beta_1\ demographics + \beta_2\ productivity\ characteristics + \beta_3\ geography + \beta_4\ Institution + e;$ where Y = poverty.

In this technique, three models were tested. In the first model (M1), odds of poverty (odds ratios) were determined for each of the ethnic/caste groups by controlling for only demographic characteristics. This test investigated the extent to which the observed inequality in poverty (wealth) between ethnic/caste groups was driven by mean level differences in their demographic characteristics (*Research Question #1*). Fixed effect of each of the demographic variables on poverty was tested.

In the second model (M2), individual productivity variables (education, health, employment, and occupation) were added to the regression equation; and changes in the odds ratios for each of the ethnic/caste groups were noted. This test determined the extent to which observed inequality in poverty (wealth) between ethnic/caste groups were driven by the mean level differences in productivity characteristics of the peoples (random effects), controlling for the demographic characteristics (*Research Question #3*). The fixed effects of each of the individual productivity characteristics on poverty were noted as indicated by their odds ratios.

And finally, in the third model (M3), geographic variables were added to the regression equation. The changes in the odds ratios for each of the ethnic/caste groups

were observed. This test determined the extent to which observed inequality in poverty (wealth) between various ethnic/caste groups are a function of structural variables (geographic isolation), controlling for the demographic and individual productivity characteristics (*Research Questions #4 and 5*). Fixed effects of each of the geographic variables on poverty were noted.

If the odds of being poor remained significantly different for each of the ethnic/caste groups in Model 3 (that is, even after controlling for demographics, individual productivity, geographic characteristics), then some unobserved forces are assumed to be driving the inequality in poverty (wealth) between these ethnic/caste groups. These unobserved forces are assumed to be institutions, such as a constitution, that treat individuals differentially based on their ethnicity or caste. One proxy measure of such institutions is the laws governing use of language in public offices including schools.

To test the extent to which language (a proxy measure of institution) is associated with the observed differential risks of poverty across ethnic/caste groups; language was added to the regression equation (M4). The changes in the odds ratios for each of the ethnic/caste groups were observed.

Furthermore, to better understand the relationship between ethnicity/caste and poverty, this study further analyzed spatial relationships using the Geographic Information System (GIS). GIS displayed the geographic distribution of ethnicity/caste and poverty and visually displayed spatial relationships which were otherwise not captured in the traditional statistical methods. For example, GIS provided information to determine if the relationship between poverty and ethnicity is the same in place "A" as

and in place “B”. GIS also helped to determine if the relationship between poverty and health vary by the geographic location in which the residents live. This data helped to clarify the probability of an indigenous person being poor if he/she lives in Kathmandu (capital city) vs. Sindhupalchok (small village) compared to non-indigenous person.

To rule out the bias due to sampling, the multivariate regression procedures were repeated for men and household samples. The results were compared.

SAS version 9.2 was used to manage the data, merging women, men and household datasets, generate and recode new variables, run univariate, bivariate and multivariate analyses. ArcView 10 was used to geocode GPS data, perform Geographic Information System (GIS) analyses and produce maps.

CHAPTER VII: RESULTS

This section provides the findings of the study. First, descriptive results from the univariate analyses are presented (Table 3). Descriptive statistics include characteristics of the overall sample population. Next, results of the bivariate analyses are presented (Tables 4 – 11). Bivariate analyses provide an early exploration of the hypothesized relationships between the variables of interest in this study. The results of the multivariate regression analyses are presented next (Tables 12 –16). The multivariate results provide detailed findings on each of the hypotheses tested in this study. Analyses are then reported from the Geographic Information System (Figures 4 –14). Finally, the multivariate regression results from the women samples are compared to those from household and men samples (Tables 18 –19). Additionally, analyses of Tamang and Brahmin sub-samples and other ethnic groups are provided (Tables 17, and 21-27).

1. Univariate Analyses: Characteristics of the Sample Population (*Women sample, N = 9836*)

Poverty

Table 3 presents the description of the characteristics of the women sample (N = 9836). Overall, 38.34% of the sample population were estimated to be poor (i.e. fall below the bottom 38.34% on wealth distribution). The percent distributions are weighted to represent the national population. The probability of being poor is the probability that an individual falls below 38.34% on wealth distribution.

Ethnicity and Caste

Indigenous peoples as a group represented 56.35% of the women sample. Among the indigenous peoples, 11.14% were Tharu, 6.59% were Magar, 5.53% were Tamang, 4.44% were Rai and Limbu (hereafter Rai-Limbu), 2.94% Gurung, less than 1% Sherpa, less than 1% Thakali, and 20.55% other indigenous groups (representing more than 50 indigenous groups). Since the sample size for Sherpa and Thakali women was very small, they were included in the "other indigenous group" category in subsequent analyses.

The caste people as a group represented 43.66% of the women sample. Of this, 12.89% were Brahmin, 19.07% were Chetri and 11.7% were Dalit. (also known as low-castes, occupational castes or untouchables within Hindu caste system).

Compared to national estimates, the indigenous group appears to be under-represented in the sample. Some estimates suggest that indigenous peoples in Nepal constitute over 70% of the national population (Leslie et al, 2010).

Education

More than half (54.07%) of the women in this study reported that they did not have any education. 17.65% reported having only primary level education (up to 5^{th} grade), 19.85% reported having only secondary education (up to 10^{th} grade but no School Leaving Certificate). Only 8.43% reported having post-secondary education (SLC and above).

Health

Almost a quarter (23.79%) of the sample population was underweight (BMI =<18.5); and more than one third (35.57%) have suffered from anemia. The majority of the women (74.1%) had given births to at least one child, with 21.21% of the women

experiencing the death of at least one child. On average a woman gave birth to 2.56 children (SD = 2.32), and the average child deaths per women was 0.33 (SD = 0.76). Some women had up to eight child deaths.

According to the World Health Organization, if more than 20% of a country's population has a BMI less than 18.5, the county is considered to be in a serious public health disaster. The findings indicate that Nepal clearly has a serious public health problem.

Occupation

The majority of the women (70.66%) in the study sample self-identified as farmers, 8.9% reported to be professionals (technical, managers, clerical, sales, services), 3.72% self-identified as laborers (skilled or unskilled), and 17.52% reported as "not-working."

Geographic Isolation

The majority of the women in the sample (82.92%) were from the geographically isolated areas (under-developed, rural areas with few roads, limited electricity, piped water, etc.). Only 5.08% were from the developed areas (the capital city), 7.16% were from moderately developed areas (small cities), and 4.83% were from less developed areas (small towns).

Development Region and Ecological Zone

In regards to development regions, 22.12% of the respondents in the women sample were from the Eastern Development Region; 33.23% were from Central Development Region; 22.53% were from Western Development Region; 13.42% were from the Mid-Western Development region; and 11.64% were from the Far-Western

Development Region. In terms of ecological zone, half of the respondents in the women sample (49.55%) were from the Terai, 43.21% were from the Hill, and 7.25% were from the Mountain area.

To better understand the geographic distribution of the data, the sample was further disaggregated to sub-development regions by cross-classifying the development regions and ecological zones. This was necessary because it is thought that variations exist within a development region and within an ecological zone. For example, within the Central Development region, characteristics of the people living in Central Tarai are less likely to be similar to those living in Central Hill or Central Mountain. The inhabitants of Central Tarai are likely to be Tharus, whereas the inhabitants of Central Hill are likely to be Tamangs and Newars, and that of the Central Mountain are likely to be Tamangs and Sherpas.

Furthermore, the ecological variation within a development region is likely to have differential consequences on the livelihood of the people who reside in those ecological zones. People living in flatland fertile Central Terai, for example, are likely to benefit from agricultural productivity, whereas such opportunities are less available for those living in the dry and rugged terrain of the Central Hill or Central Mountain. Similarly, within an ecological zone (e.g. the Hill ecological zone), the condition of people living in one development region (e.g. Central Hill) are less likely to be similar to those living in another region of the same ecological zone (e.g. the Far-western Hill). The Central Hill is considered most developed whereas Far-western Hill is considered the least developed. The variation in the level of development within an ecological zone is likely to have different consequences on the livelihood of those who reside in different

development regions within an ecological zone. Analyses of the development region or ecological zone alone are likely to gloss over the variations that may exist within a development region or an ecological zone. Analyses at the sub-development regions seem imperative to better understand the geographic effects.

When the data was further disaggregated to the sub-development regions, the largest sample came from Central-Hill (16.06%), followed by Central Terai (15.22%), Eastern-Terai (14.46%) and Western-Hill (11.84%). The rest of the sub-development regions each have less than 10% of the sample population. Eastern-Mountain and Central-Mountain each represent less than 2% of the sample population (Table, 3, Map 4).

Language Policy (Mother Tongue)

The mother tongues of all the indigenous peoples in Nepal are regarded as non-official languages. In the women sample, they represent 56.34%. Please note that the distribution of this variable is the same as the distribution of indigenous peoples as a group.

Khas language is the official language of Nepal, and it is the mother tongue of the caste groups, namely Brahmin, Chetri, and Dalit. The de facto language of instruction in public schools, in government offices, and in pubic media is Khas language. The language policy variable is thought to capture institutions that constrain the indigenous peoples' ability to accumulate human capital, to access public information, and to advance indigenous language, culture and education.

Distance to health facility: Two-fifths (40.6%) of the women reported that distance to a health facility is a major problem.

Access to Piped Drinking Water: Only 13.76% of the women reported having piped drinking water to their dwellings or yard.

Access to Electricity*:* Almost half the women (48.72%) did not have access to electricity.

Geographic Isolation, Development Region, Language Policy, Distance to health facility, access to piped drinking water and access to electricity are proxy measures of institutions. Since distance to a health facility, access to piped drinking water and access to electricity were included in the construction of Wealth Index, they were excluded in the regression analyses.

Demographics

Over three quarters of the women studied (76.8%) were married (or living with a partner); 21.31% of the women lived in households headed by a female; 34.61% of the women lived in large households (i.e. households with seven or more members. The average household size was 6.06, SD = 3.04). The average age of the women was 29.15 years (SD = 9.84).

Insert table 3 about here

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2. Characteristics of the Indigenous Peoples and Caste People (*Women sample, N = 9836*)

Ethnicity, Caste and Poverty

Table 4 presents the distribution of poverty by ethnicity and caste. A huge disparity in wealth (poverty) exists across ethnic and caste groups. Over half of the Tamang and Dalit women in the sample were impoverished compared to only one-fifth of the Newar and Brahmin women.

Among the indigenous women, the poverty rate (the proportion of women who fall below bottom 40% on the Wealth Index) was highest among Tamang (51.41%). The rate of poverty was 48.99% for Magar, 44.67% for Tharu, 37.81% for Rai-Limbu, 25.76% for Gurung, 20.62% for Newar and 33.5% for those classified as "other ethnic group." Among the caste women, the poverty rate was highest among Dalit (52.44%). Poverty rate was 43.64% for Chetri, and 19.36% for Brahmin.

Overall, the poverty rate was highest among Dalit (52.44%) and Tamang (51.41%), and lowest among Brahmin (19.36%) and Newar (20.62%). The largest disparity was within the caste group. Poverty among Dalit (52.44%) was more than two and half times the poverty among Brahmin (19.36%). Disparity within the indigenous groups was slightly less. Poverty among Tamang (51.41%) was slightly less than two and half times the poverty among Newar (20.62%). The differences in poverty rates across ethnic and caste groups were statistically significant (χ^2=495.66, p<.0001)

Insert table 4 about here

Ethnicity, Caste and Education

Table 5 presents the distribution of education by ethnicity and caste. Huge disparity was observed in education across ethnic and caste groups. A large proportion of indigenous women had no education. Very few indigenous women had post-secondary education. Similarly,very few Dalit women had post-secondary education. In contrast, among Brahmin the proportion of women with no education was relatively small but the proportion of women with post-secondary education was relatively large.

Overall, post-secondary education rates varied from 1.26% (Dalit) to 26.34% (Brahmin). The proportion of women with no education was highest among the "other ethnic group" (69.91%) and lowest among Brahmin (27.53%). Within the indigenous group, post-secondary education rate was lowest among Tharu (1.99%) and highest among Newar (18.65). Within the caste group, post-secondary rate was lowest among Dalit (1.26%) and highest among Brahmin (26.34%). The disparity in education was greater within the caste group than within the indigenous group or between indigenous and caste groups. The caste group appears to be more heterogeneous in education than the indigenous group.

Among the indigenous women, 65.41% of the Tharu had no education, 13.3% had only primary education, 19.3% had secondary education, and 1.99% had post-secondary education. Among the Tamang women, 63.05% had no education, 17.39% had only

primary education, 13.77% had secondary education, and 5.79% had post-secondary education. Among the Magar, 55.07% had no education, 23.41% had only primary education, 17.75% had secondary education, and 3.77% had post-secondary education. Among Rai-Limbu , 36.18% had no education, 23.92% had only primary education, 29.6% had secondary education, and 10.3% post-secondary education. Among Gurung women, 34.95% had no education, 24.88% had only primary education, 30.79% had secondary education, and 9.38% had post-secondary education. Among the Newar, 33.62% had no education, 21.17% had only primary education, 26.56% had secondary education, and 18.65% had post-secondary education. Among the "other ethnic group", 69.91% had no education, 15.1% had only primary education, 10.9% secondary education, and only 4.09% had post-secondary education.

Among the caste women, a large proportion of Dalit women, 67.69%, had no education, 20.5% had only primary education, 10.54% had secondary education and only 1.26% had post-secondary education. Among Chetri, 48.26% had no education, 18.2% had only primary education, 24.79% had secondary education, and 8.75% had post-secondary education. Among Brahmin, 27.53% had no education, 14.38% only primary education, 31.75% had secondary education, and 26.34% had post-secondary education.

Among the indigenous groups, Newar appears to be an outlier in the distribution of education. Among the caste group, Dalit appears to be an outlier. In terms of education, Newars appear to be more similar to Brahmins than to their indigenous cousins, and Dalits appear to be more similar to Tharu than to their caste cousins. The inclusion of Newars in indigenous category and Dalits in caste category may produce biased estimates in multivariate analyses.

Insert table 5 about here

Ethnicity, Caste and Health

Table 6 presents the distribution of health by ethnicity and caste.

Body Mass Index (Underweight): Huge variation was observed in BMI (Body Mass Index) across indigenous and caste groups. The underweight (BMI=<18.5) rates varied from 6.16% (Gurung) to 34.61% (Other ethnic group). Over one-third of the Tharu women (34.36%) were underweight (BMI=<18.5). Underweight rate among Tamang was 11.15%, among Newar was 10.71%, among Magar was 8.82%, among Rai-Limbu was 7.59%, among Gurung was 6.16%, and among "other ethnic group" was 34.64%. Similarly, among the caste people, 32.74% of Dalit women were underweight, 19.98% of Chetri women were underweight, and 21.65% of Brahmin women were underweight.

Anemia: Significant variation was observed in anemia levels across indigenous and caste groups. The anemia rates varied from 15.49% (Rai-Limbu) to 72.21% (Tharu). Of those in the sample, almost three-quarters of the Tharu women (72.21%) were anemic. Almost one-third of Tamang women (30.86%) were anemic. Simlarly, 16.78% Newar, 24.26% Magar, 15.49% Rai-Limbu, 22.69% Gurung, and 41.66% of "other ethnic group" were anemic. Among the caste group, over one-third of Dalit women (35.05%), 32.43% Brahmin and 26.09% Chetri were anemic.

Child births: Little variation was observed in births among women of indigenous and caste groups. Among the indigenous women, 73.03% Tamang, 71.7% Newar, 71.66% Magar, 70.81% Tharu, 69.1% Gurung, 65.68% Rai-Limbu, and 77.98% "other ethnic group" women had given birth to at least one child. Among the caste women, 81.51% Dalit, 73.43% Chetri, and 71.42% Brahmin women had given birth to at least one child. Overall, the proportion of women who had given birth was highest among the Dalit (81.51%) and the lowest among Rai-Limbu (65.68%).

***Child deaths*:** Variations was also observed in child deaths among women of indigenous and caste groups. Among the indigenous women, 23.58% Tharu, 23.35% Magar, 19.3% Tamang, 17.8% Gurung, 16.78% Rai-Limbu, 13.62% Newar, and 25.54% "other ethnic group" women experienced the death of at least one child. Among the caste women, 27.59% Dalit, 20.2% Chetri, and 12.32% Brahmin had at least one child die.

As high as 4.1% of Tamang, 3.44% Tharu and 3.21% Magar women had three or more child deaths compared to only 1.57% Brahmin.

Insert table 6 about here

Ethnicity, Caste and Occupation

Table 7 presents the distribution of occupation by ethnicity and caste. Types of occupation vary across indigenous and caste groups. The majority of the indigenous and caste women sampled were farmers. Overall, the highest proportion of women

professionals was among the Newar (22.34%), followed by Brahmin (14.01%) and Gurung (13.02%). Tharu women had the least proportion of professionals (2.4%) but highest proportion of farmers (84.79%). Very few of the women worked as laborers (skilled and unskilled). Newar had the highest proportion of women who worked as laborers (12.63%), followed by Rai-Limbu (5.82%). Over 20% of Brahmin and nearly 30% of "other ethnic group" women were not working compared to only 8.97% Magar women who were not working.

Among the Tharu women, 84.79% were farmers, 2.4% were professionals, 2.04% were laborers, 10.77% were not working. Among the Magar women, 82.67% were farmer, 4.98% were professionals, 3.38% were laborer, 8.97% were not working. Among the Tamang women, 76.1% were farmer, 7.93% were professional, 3.91% were laborer, 12.07% were not working. Among the Gurung women, 69.41% were farmer, 13.02% were professional, 1.54% were laborer, and 16.03% were not working. Among the Rai-Limbu women, 64.47% were farmer, 12.66% professional, 5.82% were laborer, and 17.05% were not working. Among the Newar, 46.34% were farmer, 22.34% were professionals, 12.63% were laborer, and 18.69% were not working. Among the women in 'other ethnic group', 58.79% were farmer, 5.93% were professionals, 5.3% were laborer, 29.98% were not working.

Among the Dalit caste women, 79.45% were farmer, 7.93% were professionals, 2.14% were laborers, and 10.47% were not working. Among the Chetri caste women, 75.13% were farmers, 4.69% were professionals, 3.7% were laborers, and 16.49% were not working. Among the Brahmin caste women, 63.26% were farmer,s 14.01% were professionals, 1.74% were laborers, and 20.99% were not working.

Insert table 7 about here

Ethnicity, Caste and Geographic Isolation

Table 8 presents the distribution of ethnicity and caste by geography. A large proportion of women of both indigenous and caste groups live in the countryside (geographically isolated areas). Overall, the largest proportion of Tharu women live in the country (94.7%), followed by Magar (90.53%). The largest proportions of women who live in the capital city, small cities or towns were Newar (46.82%), followed by Brahmins (27.43%). All other groups have less than 20% who live in the capital city, small cities or towns.

Among tharu women, less than one percent live in the capital city, 2.92% live small cities, 2.06% live in towns, and 94.7% live in country-side. Among Magar women, 2.43% reside in the capital city, 4.41% in small cities, 2.62% in towns, and 90.53% in country-side. Among Tamang women, 8.16% reside in the capital city, 4.79% in small cities, 2.76% in towns and 84.29% in country-side. Among Gurung women, 8% reside in the capital city, 11.91% in small cities, 3.62% in towns, and 76.47% in country-side. Among Rai-Limbu women, 4.13% reside in the capital city, 7.13% in small cities, 6.93% in towns and 81.815 in country-side. Among Newar women, closse to a quarter (23.33%) reside in the capital city, 15.85% in small cities, 7.64% in towns and 53.18% in country-

side. Among the 'other ethnic group' women, 3.72% live in the capital city, 5.64% live in small cities, 4.5% live in towns, and 86.13% live in country-side.

Among the Dalit caste women, less than one percent live in the capital city, 5.81% in small cities, 5.32 in towns and 87.895 in country-side. Among the Chatri caste women, 7.05% live in the capital city, 6.58% in small cities, 4.82% in towns, and 81.54% in country-side. Among the Brahmin caste women, 5.7% live in the capital city, 13.785 in small towns, 7.94% in towns and 72.57% in country-side.

Insert table 8 about here

Ethnicity, Caste, Development Regions and Ecological Zones

Tables 8.1. to 8.3. present the distribution of ethnicity and caste by development regions and ecological zones. A clear pattern of geographic clustering of ethnic and caste peoples was observed. Most of the Tharu in this study came from Terai region (98.32%), and they were largely concentrated in the Far-Western Development region of Terai (50.73%). Virtually no Tharus were found in the Mountain region and in most of the Hill region.

Most of the Magars in this study came from the Hill (65.38%) and Terai (30.43%) regions. They were largely concentrated in the Western (32.63%), Mid-western (16.29%) and Central (13.58%) development regions of the Hill areas, and Western (20.12%) and Mid-western (4.79%) development regions of the Terai.

The majority of the Tamang in this study came from the Central Development Region (79.96%) of the Mountain, Hill and Terai ecological zones. Tamang were largely concentrated in the Central-Hill (61.25%) and Central-Terai (15.18%). Just over seven percent live in the Eastern-Mountain and Central- Mountain, 6.27% live in the Eastern-Hill, 6.75% live in Eastern-Terai. Very few Tamang live in the Western, Mid-western or Far-western Development regions of the country. (Note: Tamang from Central-Mountain appear to be under-represented while Tamang from Central-Terai appear to be over-represented in the sample. Tamang, along with Sherpa, are known as the people of the mountain).

Almost all of the Rai-Limbu in this study came from the Eastern Development Regions (91.1%). They were concentrated in the Eastern-Mountain (13.15%), Eastern-Hill (41.4%) and Eastern-Terai (36.55%). Virtually no Rai-Limbu were found in the Central and Western Mountain, and Western, Mid-western, and Far-western regions of the Hill and Terai.

Newar were found in almost all sub-development regions of the country, and they were largely concentrated in the Central-Hill (53.87%), Western-Hill (14.07%) and Eastern-Terai (8.55%).

Many of the Guung in this study came from the Western and Eastern Development Regions (93.99%). They were largely concentrated in the Western-Hill (68.17%), Central-Hill (11.9%), Western-Mountain (5.95%) and Eastern-Terai (5.76%).

Unlike the indigenous peoples, the caste peoples were scattered all over the geographic sub-regions and do not appear to form geo-caste enclaves. A relatively higher proportion of Brahmins were found in Western-Hill (20.41%), Central-Hill (16.77%) and

Eastern-Terai (12.15%), but no more than 21% of Brahmins were concentrated in any single sub-region. A relatively higher proportion of Chetri were found in the Central-Hill (16.74%), Mid-western-Hill (16.86%) and Western-Mountain (15.59%) but no more than 17% of Chetri were concentrated in a single sub-region. Similarly, a relatively higher proportion of Dalit were found in Central-Terai (21.54%) and Western-Hill (18.49%), but no more than 22% of Dalits were concentrated in a single sub-region.

The geographic pattern of population distribution appears similar between caste peoples and the Newar indigenous group. Since caste peoples are migrants who do not have a particular place of origin in Nepal, it was not surprising to see that they were spread out throughout the country. However, it was surprising to see that Newar were also spread throughout the country. Newar are thought to be the original inhabitants of Kathmandu valley. Newar may have been spread out to other regions of the country through trade or as government employees. Newars are known as people of trade, and also constitute a sizable proportion of government employees.

Insert tables 8.1 – 8.3 about here

Ethnicity, Caste and Institutions

Table 9 presents the distribution of institutional characteristics by ethnicity and caste.

Language Policy: None of the indigenous peoples (0%) was assumed to have used official language (Khas language) as their mother-tongue. In contrast, all the caste

people (100%) were assumed to have used official language (Khas language) as their mother-tongue.

Distance to health facility: Disproportionately higher proportion of indigenous peoples reported that distance to health facility is a big problem. Distance to health facility was a big problem for 58.83% of the Magars, 54.44% Tamang, 43.34% Gurung, 41.39% Tharu, 39.56% Rai-Limbu, and 35.4% Newar. However, distance to health facility was a big problem for only 26.28% of the Brahmins. It was a big problem for 46.09% Dalit and 40.1% Chetri.

Access to piped drinking water: Less than one percent of Tharu have access to piped drinking water. Among the indigenous groups, 13.15% Magar, 15.79% Tamang, 18.19% Rai-Limbu, 27.78% Gurung, and 45.05% Newar have access drinking water. Among the caste groups, only 6.04% Dalits have access to piped drinking water compared to 23.24% Brahmin and 14.8% Chetri. Overall, access to piped drinking water was highest among Newar (45.05) and the lowest among Tharu (0.41%).

Access to electricity: Among the indigenous peoples, 33.6% of the Tharus, 37.22% Tamang, 43.3% Magar, 58.35% Rai-Limbu, 71.05% Newar and 74.69% Gurung have access to electricity. Among the caste peoples, 34.8% Dalit, 50.98% Chetri and 75.39% Brahmin have access to electricity. Overall, access to electricity was lowest among Tharu (33.6%), and highest among Brahmins (75.39%).

Insert table 9 about here

Ethnicity, Caste and Demographic Characteristics

Table 10 presents the distribution of demographic characteristics by ethnicity and caste.

Marital status: Among the indigenous peoples, the proportions of women married or living together was 74.1% for Tharu, 77% for Magar, 73.43% for Tamang, 67,13% for Rai-Limbu, 73% Newar and 68.43% Gurung. Among the caste peoples, the proportions of women married or living together was 74.3% for Brahmin, 76.87% for Chetri, and 83.72% for Dalit.

Female headed household: Among the indigenous peoples, 6.94% Tharu, 25.997% Magar, 22.15% Tamang, 32.44% Rai-Limbu, 18.64% Newar and 24.77% Gurung lived in households headed by female.

Among the caste people, 26.07% Brahmin, 25.79% Chetri and 22.72% Dalit lived in households headed by female. Overall, highest proportion of Rai-Limbu households were headed by female whereas lowest proportion of Tharu households were headed by female.

Household size: Overall, the proportion of women who lived in large households was largest among Tharu (54.73%), and smallest among Brahmin (25.43%). Among the indigenous peoples, 54.73% Tharu, 37% Magar, 31.54% Tamang, 28.74% Rai-Limbu, 25.95% Newar and 33.84% Gurung lived in large households (i.e. households with seven or more members). Among the caste peoples, 25.43% Brahmin, 26.71% Chetri and 31.14% Dalits lived in larag households (i.e. households with seven or more members).

Insert table 10 about here

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3. Bivariate Analyses: Characteristics of the Poor

Table 11 presents the bivariate association between the dependent variable, poverty, and each of the independent variables in the study (women sample, N = 98.36).

Education and Poverty

Poor women were largely those with no or little education. Poverty rate was as high as 49.03% among the women with no education, 38.32% among the women with only primary education, and 23.45% among the women with secondary education. Poverty rate was lowest among the women with post-secondary education (6.48%). Education was significantly associated with poverty (χ^2= 790.673, p<.001)

Health and Poverty

Poor women were largely underweight (BMI=<18.5), had anemia, had given births to at least one child, and had at least one child deaths. Poverty rate among underweight women was 45.81% compared to only 36.25% among 'not underweight' women. This difference was statistically significant (χ^2= 68.108, p<.0001). Poverty rate among women with anemia was 39.95% compared to 37.91% among women with no anemia (χ^2= 3.88, p<.05). Poverty rate among women who gave births to one or more children was 39.06% compared to only 34.74% among women who had not given births (χ^2= 14.399, p<.001).

Poverty rate among women who had one or more child deaths was 48.76% compared to only 35.1% among women who did not have any child deaths (χ^2= 118.031, p<.001).

Occupation and Poverty

Poverty rates varied from 6.52% to 49.7% across occupations. Poor women were largely farmers. Poverty rate among farmers was as high as 49.7% compared to only 15.07% among laborers (domestic, skilled and unskilled manuals), 6.52% among professionals (technical, managers, clerical, sales, services), and 12.95% among 'not working' women (χ^2= 1265.86, p<.001).

Geography and Poverty

Geographic Isolation: Huge variation in poverty was observed across geographic places of residents. Poverty rate varied from 1.05% (capital city, not isolated areas) to 44.95% (country-side, isolated areas). Poor women largely live in country-side (isolated places). Poverty rate among women who reside in country-side was 44.95% compared to only 17.22% for those who live in towns, 4.47% for those who live in small cities, and 1.05% for those who live in the capital city (χ^2= 870.36, p<.001).

Development Regions and Ecological Zones: Across the Development Regions, poverty rate varied from 27.28% (Central Development Region) to 60.05% (Far-western Development Region). Poverty rate was highest among women who live in the Far-western Development Region (60.05%) and lowest among women who live in the Central Development Region (27.28%). The second highest poverty rate was among the women who live in the Mid-Western Development Region (54.92%). The poverty rate for Western Development Region was 30.34%, and Eastern Development Region was 31.85%. Across the Ecological Zones, poverty rate varied from 31.09% (Terai) to

69.93% (Mountain). Poverty rate was highest among women in the Mountain (69.93%) and lowest among the women in Terai (31.09%). Poverty among the women in the Hill was 41.31%.

However, when the poverty rate was disaggregated at the sub-regional level, greatest disparity was observed within a Development Region, rather than between Development Regions or Ecological Zones. Western Development Region appears to have the greatest disparity. Although average poverty rate in the Western Development Region (30.34%) is less than overall population average (38.48%), poverty rate within this region varies from 18.46% (Western-Terai) to 82.11% (Western-Mountain). Overall, poverty rate was highest among women who live in the Western-Mountain (82.11%) and lowest among women who lived in the Western-Terai (18.46%) - more than four-fold differences. The greatest disparity was between ecological zones within a development region rather than between development regions within an ecological zone.

Within the Eastern Development Region, poverty rates varied from 20% (Eastern-Terai) to 62.25% (Eastern-Mountain). Poverty rate for Eastern-Hill was 51.84%. Within the Central Development Region, poverty rates varied from 25.31% (Central-Hill) to 45.3% (Central-Mountain). Poverty rate for Central-Terai was 36.52%. Within the Western Development Region, poverty rates varied from 18.46% (Western-Terai) to 82.11% (Western-Mountain). Poverty rate for Western-Hill was 36.99%. Within the Midwestern Development Region, poverty rates varied from 35.17% (Midwestern-Terai) to 65.59% (Midwestern-Hill). Within the Far-western Development Region, poverty rates varied from 52.51% (Far-western-Terai) to 72.73% (Far-western-Hill).

Similar disparities were also observed across Ecological Zones. Within the Mountain Ecological zone, poverty rates ranged from 45.3% (Central –Mountain) to 82.11% (Western-Mountain). Poverty rate for Eastern-Mountain was 62.25%. Within the Hill Ecological zone, poverty rates ranged from 25.31% (Central- Hill) to 72.73% (Far-western-Hill). Poverty rate for Eastern-Hill was 51.84%, Western-Hill was 36.99% and Midwestern-Hill was 65.59%.Within the Terai Ecological zone, poverty rate ranged from 18.46% (Western-Terai) to 52.51% (Farwestern-Terai). Poverty rate for Central-Terai was 36.52%, for Eastern-Terai was 20%, and for Midwestern-Terai was 35.17% (χ^2= 1221.64, p<.001).

Institutions and Poverty

Official language is a mother-tonuge: Poverty rate among indigenous women for whom the official language is not their mother-tongue was slightly higher (39.7%) than for Khas group for whom the language is a mother tongue (37.15%) (χ^2= 6.702.042, p<.01).

Distance to health facility: Poverty rate among women who reported that distance to health facility is a big problem was almost two times higher, 53.14%, than those who reported that distance to health facility is not a problem, 28.43%, (χ^2= 609.042, p<.001).

Piped Drinking Water: Poverty rate among those who did not have access to piped drinking water to their dwelling or yard was more than seven times higher (43.59%) than those who had access to piped drinking water, 6.44%, (χ^2= 676.69, p<.001).

Electricity: Poverty rate among those with no access to electricity was almost nine times higher, 69.24%, compared to those with access to electricity, 9.25%.(χ^2= 3716.059, p<.001).

Demography and Poverty

Poverty rate among married women were slightly higher (39.33%) than not married women (35.65%). Poverty rate among women who lived in female-headed households was slightly higher (41.97%) than women who lived in male-headed households. Poverty rate among women who lived in large households (seven or more members) was similar (38.58%) to those who lived in smaller households (six or fewer members) (38.27%).

Since the institutional characteristics- *distance to health facility, piped drinking water, and electricity* were suspected of being used in the construction of wealth index, they were excluded in the multivariate analyses.

Insert table 11 about here

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4. Multivariate Logistic Regressions Analyses (*Women sample, N = 9836***)**

To test the hypothesized relationships between the specified independent variables and the dependent variable, a series of logistic regression models were constructed. First, a model with only ethnicity/caste and demographic variables were conducted (Model 1). This model tested the relationship between ethnicity/caste and poverty controlling for demographic variables (*Research question #1*). Next, individual productivity characteristic were added to the regression equation (Model 2). This model tested the relationship between individual productivity characteristics and poverty (*Research question #2*), conditional upon ethnicity/caste and demographic characteristics. Next, geographic variables were added to the regression equation (Model 3). This model tested the relationship between geography and poverty controlling for ethnicity/caste, demographics and individual productivity characteristics (*Research question #3*). Finally, a language policy variable was added to the regression model (Model 4). This model tested the relationship between language policy and poverty controlling for all other variables in the model.

The step-wise regression model allowed for the investigation of two types of relationship between independent and dependent variable. First, the fixed-effect model examined the relative contribution of each of the independent variables to the dependent variable (*Research questions #2 and #3*). Second, the random-effect model examined the extent to which the observed differences in poverty (wealth) across ethnicity/caste were driven by the modeled variables (*Research question #4*). The final or full model examined the relationship between each of the independent variable and the dependent variable controlling for all other variables in the model.

Tables 12 –15 present the results of the multivariate logistic regressions. The results show huge differences in the probability of being poor across ethnic and caste groups. Demographics (household size and gender of head of household), individual productivity characteristics (education, health, and occupation), geography, and language policy were significant predictors of poverty (χ^2= 3577.4279, p<.001). These characteristics, however, did not account for the observed disparity in wealth (poverty) across ethnic and caste groups (Table 16). Detail results of each of the regression models follow.

Model 1: To test the extent to which probability of poverty vary across ethnic and caste groups; and to test the extent to which the observed variation was driven by the variation in demographic characteristics; Model 1 was run only controlling for demographics (marital status, household size, and gender of the household head).

Table 12 presents the results of the Model 1. Ethnicity/caste and demographic characteristics were significant predictors of poverty (χ^2= 590.57, p<.001). The results show huge variation in probability of being poor across ethnic and caste groups.

Controlling for demographics, Tamang women were 300% more likely to be poor (odds ratio =4.03, p<.0001) than Brahmin women. Rai-Limbu women were 260% more likely to be poor (odds ratio =3.60, p<.0001) than Brahmin women. Magar women were 207% more likely to be poor (odds ratio =3.07, p<.0001) than Brahmin women. Tharu women were 173% more likely to be poor (odds ratio =2.73, p<.0001) than Brahmin. "Other ethnic group' women were 88% more likely to be poor (odds ratio =1.88, p<.0001) than Brahmin. Odds of poverty for Newar and Gurung women were not significantly different from Brahmin women (p>.05).

Similalry, controlling for demographics, Dalit women were 353% more likely to be poor (odds ratio =4.53, p<.001) than Brahmin women, and Chetri women were 196% more likely to be poor (odds ratio = 296, p<.0001) than Brahmin women.

Compare to Brahmins, the risk of poverty were significantly higher for most of the indigenous groups (except Newar and Gurung) and all the lower caste groups, even after controlling for demographic characteristics (marital status, household size, and gender of the household head). The result indicated that variation in poverty across ethnic and caste groups were not solely due to mean level differences in demographic characteristics.

Insert table 12 about here

Model 2: To test the extent to which the observed variation in poverty across ethnic and caste groups was driven by the variation in individual productivity characteristics, education, health and occupation variables were added to the regression equation in Model 2. The variation in probability of being poor across ethnic and caste groups were noted.

Table 13 presents the results of the Model 2. Individual productivity characteristics (education, health, occupation) were significant predictors of poverty (χ^2= 2328.450, p<.0001). When the individual productivity characteristics (education, health, occupation) were added to the regression model, the odds ratios of poverty decreased slightly. For example, the odds of poverty for Tamang decreased from 4.03 to 2.81 when

individual productivity characteristics were added to the model. Similarly, the odds of poverty for decreased form 3.07 to 1.93 for Magar, from 2.73 to 1.5 for Tharu, from 4.53 to 2.89 for Dalit, and so on (Please see Table 17). The results indicated that, to some degree, the observed variation in poverty was related to variation in individual productivity characteristics. However, compared to Brahmin, the odds of being poor remained significantly higher for all the ethnic and caste groups (except Newar and Gurung), even after controlling for the individual productivity characteristics.

Controling for demographics and individual productivity characteristics (education, health and occupation), Tamang women were 181% more likely to be poor than Brahmin women, Rai-Limbu women were 261% more likely to be poor than Brahmin women, Magar women were 93% more likely to be poor than Brahmin women, Tharu women were 50% more likely to be poor than Brahmin. "Other ethnic group' women were 42% more likely to be poor than Brahmin. Odds of poverty for Newar and Gurung women were not significantly different from Brahmin women ($p>.05$). Similarly, Dalit women were 189% more likely to be poor than Brahmin women, and Chetri women were 114% more likely to be poor than Brahmin women.

The result indicated that variation in poverty across ethnic and caste groups were not solely due to mean level differences in individual level productivity characteristics of the women.

Insert table 13 about here

Model 3: To test the extent to which the observed variation in poverty across ethnic and caste groups were driven by geography, geographic characteristics (also proxy measures of institution) were added to the regression equation in Model 3. The variation in probability of being poor across ethnic and caste groups were noted.

Table 14 presents the result of the Model 3. Geography was a significant predictor of poverty (χ^2= 3577.4279, p<.0001). When the geographic variables were added to the regression model, the odds ratios of poverty increased for almost all the groups, including Newar which was not significant in the previous model. Odds ratios remained about the same for Rai-Limbu, and odds ratios remained not statistically significantly different for Gurung.

Controlling for demographics, individual productivity characteristics (education, health and occupation) and geography, Tamang women were 291% more likely to be poor than Brahmin women. Rai-Limbu women were 259% more likely to be poor than Brahmin women. Magar women were 185% more likely to be poor than Brahmin women. Tharu women were 152% more likely to be poor than Brahmin. Newar women were 54% more likely to be poor than Brahmin women. And "other ethnic group' women were 281% more likely to be poor than Brahmin. Odds of poverty for Gurung women were not significantly different from Brahmin women (p>.05). Similarly, Dalit women were over 300% more likely to be poor than Brahmin women, and Chetri women were 65% more likely to be poor than Brahmin women.

Insert table 14 about here

Model 4: To test the extent to which the observed variation in poverty across ethnic and caste groups were driven by language policy, a binary language variable (another proxy measure of institution) was added to the regression equation in the Model 4. The variation in probability of being poor across ethnic and caste groups were noted.

Table 15 presents the results of the Model 4. Language was a significant predictor of poverty. When the binary language variable was added to the regression model, the odds ratios further increased for all the indigenous groups. However, the odds ratios decreased for caste groups. Controlling for demographics, individual productivity characteristics (education, health and occupation), geography, and language, Tamang women were over 700% more likely to be poor than Brahmin women, Rai-Limbu women were 622% more likely to be poor than Brahmin women, Magar women were 492% more likely to be poor than Brahmin women, Tharu women were 426% more likely to be poor than Brahmin, Newar women were 216% more likely to be poor than Brahmin women. Gurung women were 120% more likely to be poor than Brahmin women; and "other ethnic group' women were 694% more likely to be poor than Brahmin.

However, when demographics, individual productivity characteristics (education, health and occupation), geography and language were controlled for, Chetri women were only 5% more likely to be poor than Brahmin women, and Dalit women were over 285% more likely to be poor than Brahmin women.

Insert table 15 about here

4a. Effect of demographic characteristics on poverty

Controlling for all other variables in the model, gender of the head of household and household size were significant predictors of poverty. Female-headed households were 26% likely to be poor than male-headed households, and large households (i.e. larger than average household size. The average household size was six) were 13% less likely to be poor than small household (i.e. household with less than seven members). Marital status was no longer significant when all the variables in the model was controlled for.

4b.Effect of individual productivity characteristics on poverty

Productivity characteristics- education, health and occupation- were statistically significantly associated with poverty (Table 16, Model 4). Controlling for all other variables in the model, education was statistically significantly associated with poverty women sample. Compared to women with post-secondary education (SLC and above), the odds of being poor was 6.68 times higher for women with no education, 4.35 times higher for women with only primary education, and 2.25 times higher for women with secondary education (but not SLC).

Underweight women (BM=<18.5) were 36% more likely to be poor than women who were not underweight. Anemic women were 12% more likely to be poor than women who were not anemic. Women who had child births were 26% less likely to be poor than women had had no child births. Women who had child deaths were not statistically significantly different from women who did not have child deaths.

Compared to professional women (technical, managers, clerical, sales, services), the odds of being poor was 4.2 time higher for farmer and 2.1 times higher for labor (skilled and unskilled manual). Women who were not working were not significantly different from women who were professionals.

4c.Effect of geography on poverty

Controlling for all other variables in the model, geography was statistically significantly associated with poverty (Table 16, Model 4). Compared to women who live in capital city, the odds of being poor were 24.4 times higher for women who live in isolate areas (e.g. country-side), 9.8 times for women who live in less developed areas (e.g. towns), and 5.6 times higher for women who live in moderately developed areas (e.g. small cities).

Compared to women who live in the Western-Terai region of the country, the odds of being poor was 9.7 times higher for those who live in Eastern-Mountain, 4.6 times higher for those who live Central-Mountain, 13.8 times higher for women who live Western-Mountain, 8.6 times higher for women who live in Eastern-Hill, 4.1 times higher for women who live in Central-Hill, 4.03 times higher for women who live in Western-Hill, 17.7 times higher for women who live in Mid-Western Hill, 18.9 times higher for

women who live in Farwestern-Hill, 2.2 times higher for women who live in Central-Terai, 3.6 times higher for women who live in Midwestern-Terai, and 5.5 times higher for women who live in Farwestern-Terai. Women who live in Eastern-Terai were not statistically significantly different from women who lived in Western-Terai.

4d.Effect of institution on poverty

Controlling for all other variables in the model, language policy (a proxy measure of institution) was statistically significantly associated with poverty (Table 16, Model 4). Compared to women whose mother-tongue is Khas language, an official national language of Nepal (Brahmin, Chetri and Dalit), the odds of being poor was 2.2 times higher for women whose mother tongue was Khas language.

Research Question 1: *Are some ethnic/caste groups in Nepal at significantly higher risk of poverty than others?*

Bivariate Chi-square tests and Multivariate logistic regressions results show that, among the women sample, some ethnic/caste groups in Nepal were at significantly higher risk of poverty than others. Table 11 presents the results of the bi-variate Chi-square tests, and Table 12 presents the results of the multivariate logistic regressions controlling for demographic characteristics.

Bivariate Chi-Square analyses (Table 11) indicated a statistically significant association between ethnicity/caste and poverty (χ^2= 495.6613, p<.001). Among the indigenous groups, Tamang women had the highest poverty rate (51.51%) and Newar had the lowest poverty rate (20.62%). Among the non-indigenous or caste groups, Dalit

women had the highest poverty rate (52.44%) and Brahmin had the lowest poverty rate (19.36%). Overall, Dalit had the highest poverty rate and Brahmin had the lowest poverty rate.

The results of the multivariate regressions (Table) indicate that some ethnic/caste groups in Nepal were at significantly higher risk of poverty than others. In particular, Tamang, Rai-Limbu, Magar, Tharu, and 'other' indigenous groups, and Dalit and Chetri caste groups were at significantly higher risk of poverty than Brahmin. Newar and Gurung were not significantly at higher risk of poverty than Brahmin.

H1a: Compared to Brahmins (the de facto political elites), all other ethnic/caste groups are at higher risk of poverty.

Among the women sample, this hypothesis was partially supported by the data. Multivariate logistic regression results shows that, controlling for the demographic characteristics (marital status, gender of the head of household, and household size), the odds of being poor were significantly higher for all the indigenous groups (except Newar and Gurung) and all the caste groups compared to Brahmin (χ^2= 590.56, p<.0001) (Table 12). Among the indigenous groups, the odds of being poor were 4.03 times higher for Tamang (the highest among all the indigenous groups), 3.6 times higher for Rai-Limbu, 3.07 times higher for Magar, 2.7 times higher for Tharu, and 1.88 times higher for the 'Other ethnic group' compared to Brahmin. The risk of poverty for Newar and Gurung were not statistically significantly higher than Brahmin as hypothesized.

Among the caste groups, the odds of being poor was 4.53 times higher for Dalit (highest among the all the groups), and 2.96 times higher for Chetri compared to Brahmin.

When all other variables were controlled for, the risk of poverty increased significantly for all the ethnic groups.

H1b: Within a caste group, people of lower caste will be at significantly higher risk of poverty than people of higher caste.

This hypothesis was supported by the results of the logistic regressions. Multivariate logistic regression results reveal that, controlling for the demographic characteristics, the odds of being poor was 4.53 times higher for Dalit (the lowest caste group), and 2.96 times higher for Chetri (the lower caste group) compared to Brahmin (Table 12).

H1c: Within an indigenous group, the risk of poverty for some ethnic groups (e.g. Newar, Gurung) will be significantly higher than for the other ethnic groups (Tharu, Magar, Tamang).

This hypothesis was supported by the results of the logistic regressions. Multivariate logistic regression results reveal that, controlling for the demographic characteristics, the risk of poverty was higher for Tamang (odds ratio = 4.03, $p<.0001$), Rai-Limbu (odds ratio = 3.6, $p<.0001$), Magar (odds ratio = 3.1, $p<.0001$), and Tharu (odds ratio = 2.7, $p<.0001$) than for Newar (odds ratio =1.12, $p =0.38$) and Gurung (odds ratio =1.07, $p =.06$).

H1d: Between ethnic and caste groups: Some ethnic groups are as well off as high caste group (i.e. the risk of poverty for some ethic groups, e.g. Newar and Gurung, are not significantly different than for people of higher caste, Brahmin).

This hypothesis was supported by the results of the logistic regressions. Newar (odds ratio =1.12, p =0.38) and Gurung (odds ratio =1.07, p =.06) indigenous groups were not statistically significantly different from Brahmin caste group. Newar and Gurung appear to be as well off as Brahmin.

H1e: Between ethnic and caste groups: Some ethnic groups are as poor as lower caste groups (i.e. The risk of poverty for some of the ethnic groups such as Tharu, Tamang, Magar, are likely to be as high as that for lower-caste groups?).

This hypothesis was supported by the results of the logistic regressions. The risk of poverty for Tamang (odds ratio = 4.03, p<.0001), Rai-Limbu (odds ratio = 3.6, p<.0001) and Magar (odds ratio = 3.1, p<.0001) indigenous groups were almost as high as that for low-caste Dalit (odds ratio =4.53, p<.0001). The risk of poverty for Tharu (odds ratio = 2.7, p<.0001) indigenous group was as high as that for Chetri, a caste lower than Brahmin (odds ratio =2.96, p<.0001).

H1e: The risk of poverty for indigenous peoples as a group will be significantly different from caste people as a group.

This hypothesis was supported by the data. Multivariate logistic regressions results showed that, controlling for the demographic characteristics, the odds of being poor was statistically significantly different for indigenous peoples as a group compared to caste people as a group (χ^2=49.19, p<.0001). Indigenous peoples as a group was about 9% less likely to be poor than caste peoples as a group (odds ratio = 0.914, p =.03).

However, when Dalit were excluded from caste group, indigenous people as a group were 10% more likely to be poor than caste peoples as a group (odds ratio = 1.10, p =.025). Furthermore, if Newar were excluded from the indigenous group, indigenous peoples as a group were 20% more likely to be poor than non-indigenous peoples as a group (odds ratio =1.20, p<.0001). Finally, if we only look in urban areas (and exclude Newar and Dalit), indigenous peoples as a group were 29% more likely to be poor than caste groups (odds ratio = 1.292, p =.04).

This hypothesis was supported by the data. However, the direction of the relationship changed when Newar from the indigenous group and Dalit from caste group were excluded. Stronger differences were observed in the urban areas. Newar appear to be similar to caste group while Dalit appear to be similar to indigenous group in terms of their poverty status.

Research Question 2. To what extent do the individual productivity characteristics (education, health, employment, and occupation) determine the risk of poverty?

The results of the multivariate logistic regression show that individual productivity characteristics are a significant predictor of poverty (Table 16, Model 4)).

H2a: Higher the education, lower the risk of poverty.

This hypothesis was supported by the data. Compared to women with post-secondary education (SLC and above), women with no education was 568% more likely to be poor, women with only primary education was 335% more likely to be poor, and women with secondary education (but not SLC) was 125% more likely to be poor, controlling for all other variables in the model (Table 16, Model 4)

H2b: Higher the health problems, higher the risk of poverty.

This hypothesis was partially supported by the data. Underweight (BMI=<18.5) women were 36% more likely to be poor than women who were not underweight (BMI>18.5), women with anemia were 12% more likely poor than women without anemia, women who had child births were 26% less likely to be poor than women who did not have child births. Women who had child deaths were not significantly different from women did not have child deaths (Table 16, Model 4).

H2c: Employed are at lower risk of poverty than non-employee.

H2d: Farmers are at higher risk of poverty than non-farmers.

Since employment and occupation variables were integrated, these two hypotheses were tested at once. The data partially support the employment and occupation hypotheses. Farmers and laborers were at significantly higher risk of poverty than professionals (technical, managers, clerical, sales, and services). Being a farmer increases the risk of being poor by 321% compared to professionals; and being a laborer (skilled & unskilled) increases the risk of being poor by 108% compared to professionals.

However, not-working women were not significantly at higher risk of poverty than women who were working as professionals (Table 16, Model 4).

Research Question 3. To what extent do the geographic characteristics of the community determine the risk of poverty?

The results of the multivariate regressions show that geography is a significant predictor of poverty (Table 16).

H3: Those living in isolated geographic areas are at higher risk of poverty than those living in non-isolated geographic areas.

This hypothesis was supported by the data. Women who live in isolated or under-developed areas (country-side) were 2339% higher times more likely to be poor than women who live in the developed areas (capital cities). Similarly women who live in less developed (towns) were 880% more likely and women who live in moderately developed areas (small cities) were 461% more likely to be poor than women who reside in the developed area (capital city) (Table 16, Model 4).

Furthermore, among the development regions and ecological zones, women who live in the Far-western hills were at the highest risk of poverty (1786% higher) compared to women who live in the Western Terai. Women who live in the Mid-western hill were 1673% more likely, and women who live Western-mountain were 1284% more likely to be poor than women won live in Western Terai. Overall, women who live in Eastern-development region, Western-development region, Mid-western-development region, and Far-western-development region were at higher risk

of poverty than women who live in Central-development region. Women who live in Hill ecological zone and Mountain ecological zone were at higher risk of poverty than women who live in Terai-ecological zone (Table 16, Model 4). However, women who live in Far-western Terai were about as likely as those who live in Central-hill or Central-Mountain to be poor.

Research Question 4. To what extent do the differences in demographics, individual productivity characteristics and geographic characteristics explain the differences in the risk of poverty between various ethnic/caste groups?

H4: The observed differences in the risk of poverty between various ethnic/caste groups will disappear when the individual level productivity characteristics and geographic characteristics are controlled for.

This hypothesis was not supported by the data. The observed differences in the risk of poverty between Brahmin and each of the ethnic and caste groups remained significantly high even after controlling for the individual level productivity characteristics and geographic characteristics (Table 16, Model 4).

When the individual productivity characteristics (education, health and employment/occupation) were controlled for, the observed differences in the risk of poverty between Brahmin and each of the ethnic and caste groups reduced to a certain degree (Tabel 16, Model 2). However, the difference still remained significant. The results indicate that the observed differences in the risk of poverty (i.e. wealth disparity) were not solely due to the mean level differences in the individual productivity characteristics. In other words, indigenous groups and lower caste groups would remain

relatively poorer than Brahmin even if they had the same level of education, health or employment/occupation as Brahmin. Increasing access to education, health or employment/occupation does not appear to bridge the observed disparity in wealth that exists between Brahmin and indigenous peoples and lower caster groups. Some other factors appear to be driving the observed wealth disparity.

One plausible factor is thought to be geography. Indigenous peoples are assumed to live in isolated areas and such isolation is thought to drive their poverty. When geography was controlled for in the multivariate regression (in addition to demographics and individual productivity characteristics), the disparity in wealth further exacerbated (Table 16, Model 3).

The multivariate regression results indicate that the observed wealth disparity between Brahmin and indigenous groups and lower caste groups were not driven by the differences in the geographic communities in which they live. In fact, geography appears to be a mitigating factor for wealth disparity. In other words, if Brahmin were to live in the indigenous territories, the indigenous peoples would have been much worse off. The geographic clustering of indigenous peoples appears to serve as a buffer zone against their poverty. For example, Newar, which was not significantly different in the previous model (Model 2, Table 16) becomes significant when geography was controlled for (Model 3, Table 16). The results indicate that if Brahmin and Newar were to live in the same geographic territories, the wealth disparity between Brahmin and Newar would have been significantly greater.

However, the effect of geography on the wealth relationship between Brahmin and Chetri was different. When geography was controlled for in the multivariate

regressions, the disparity between Brahmin and Chetri decreased by almost half (from 113% to 64%). The results indicate that observed wealth disparity between Brahmin and Chetri was, to a certain degree, driven by differences in geography.

When the language variable (a proxy measure of institution) was controlled for, the disparity between Brahmin and all the indigenous groups were further exacerbated (Table 16, Model 4). Gurung which was not significantly different in the previous models now became significant. The results indicate that language may be a protective factor against poverty for indigenous peoples. In other words, if the indigenous peoples spoke the same language as the Brahmin, the wealth disparity between Brahmin and indigenous peoples would have been much greater.

However, for Khas group, controlling for language significantly decreased the wealth disparity between Brahmin, Chetri, Dalit. Language, therefore, appears to be a factor that drives wealth disparity within the Khas group. In other words, if Chetri and Dalit were to speak different languages than Brahmin, the wealth disparity between them would have been less.

Insert table 16 about here

4e. **Analyses of subsamples: Tamang and Brahmin**

Table 17 presents the results of multivariate regressions conducted separately for Tamang and Brahmin. The results show differential effects of the independent variables

on dependent variable conditional upon ethnicity or catse. For Tamang, there was no significant relationship between most of the independent variables and the dependent variable. For Brahmin, however, almost all the independent variables were significantly associated with the dependent variable. For example, for Tamang, there was no significant difference between post-secondary education and less than post-secondary education; there was no significant relationship between occupation and poverty, orr geographic isolation and poverty. For Brahmin, on the other hand, there was a significant difference between post-secondary and less than post-secondary education. Brahmins with post-secondary education was significantly less likely to be poor compared to Brahmins with less than post-secondary education. Similarly, health, occupation, and geography were significant predictors of poverty for Brahmin.

Insert table 17 about here

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5. Results of the Geographic Information Systems (GIS) Analyses

Figures 4 –14 presents the results of spatial analyses of poverty using Geographic Information System (GIS). Figure 4 displayes the map of Nepal with geographic distribution of sample population by Development Regions and Ecological Zones. The map shows that the sample population was evenly distributed across the five Development Regions. However, in terms of Ecological Zones, they were concentrated mostly in Terai and Hill zones.

Insert figure 4 about here

Figures 5 displays the geographic distribution of indigenous population. The map shows a clear geographic clustering of indigenous peoples by their ethnicity.

Insert figure 5 about here

Figure 6 displays the geographic distribution of caste population. The map shows that caste population is spread out throught the country, and does not show geographic clustering.

Insert figure 6 about here

Figure 7 displays the geographic distribution of poor as percent of the total population. The bar chart indicates the proportion of individuals who are poor- taller the bar, higher the proportion of poor. The map shows that there is a geographic concentration of

poverty in Nepal. Higher concentration of poverty is seen in the Mountain areas of the Eastern, Central and Far-western Development regions, and lower concentration of poverty in the areas fo the Eastern Development Region and Western Development region.

Insert figure 7 about here

Figure 8 displays the geographic distribution of poverty by geographic isolation. A clear pattern is seen between poverty and geo-isolation. Poor people are largely concentrated in isolated communities.

Insert figure 8 about here

Figure 9 displays the geographic distribution of poverty and the indigenous peoples. The map shows that poverty is highly concentrated in areas where the indigenous peoples live.

Insert figure 9 about here

Figure 10 displays the geographic distribution of poverty by caste groups. High poverty is also seen in areas in which caste peoples live.

Insert figure 10 about here

Figure 11 displays the geograhic distribution of poverty by caste group (Brahmin/Chetri), but without the lower-caste (Dalit). Notice that much of the poverty seen in figure 10 disappears when Dalit was excluded from caste group. The findingins indicate that much of the poverty seen among caste people as a group was driven by poverty among the Dalits. The findings also confirm the heterogeneity between Dalit and Brahmin/Chetri that is independent of geography.

Insert figure 11 about here

Figure 12 displays the geographic distribution of poverty for Brahmin caste. The map shows that proportion of Brahmins who are poor is very small in majority of the areas in which they live. Very small proportion of Brahmins appears to be poor in the Central

Region and Eastern Development region. Far-western region appears to have higher proportion of Brahmins who are poor.

Insert figure 12 about here

Figure 13 displays the geographic distribution of poverty for Tamang indigenous group. Tamangs appear to concentrate around the Kathmandu valley. Proportion of poor appears to be high among Tamangs who live around the capital city. Comparison of figure 12 and figure 13 shows that the proportion of poor among Tamang is much higher than proportion of poor among Brahmin (figure 12) although they live in the same region. The finding indicates that the differences in poverty between Tamang and Brahmin are not soley driven by the differences in geography.

Insert figure 13 about here

Figure 14 displays geographic distribution of poverty for Dalit. The map shows high proportion of poor among Dalits in almost all places in which they live.

Insert figure 14 about here

The results from GIS analyses confirm and complement the findings from the bi-variate and multivariate regressions. The poverty maps show a clear geographic pattern between poverty, geographic isolation, and ethnicity. Poverty appears to be concentrated in areas that are geographically isolated. However, these isolated geographies with high poverty appear to be the places where indigenous peoples are concentrated- i.e. poverty map coincides with the territories of the indigenous peoples. Even in the geographically isolated areas, indigenous groups and Dalits were more likely to be poor than Brahimns. In all geographic areas, poverty was higher among indigenous peoples and Dalits than among Brahmins.

6. **Comparing the Multivariate Regression Results of Women Samples with Men and Household Samples**

Table 18 presents the distribution of poverty by ethnicity and caste among Women, Men and Household Samples. The findings show comparable poverty rates across these three samples.

Table 19 presents the results of multivariate logistic regressions predicting poverty among Women, Men and Household Samples. The findings indicate that the findings from women sample were consistent across findings from men and household samples.

Men sample (N = 4045):

Controlling for all other variables in the model, education was statistically significantly associated with poverty among men sample. Compared to men with post-secondary education (SLC and above), the odds of being poor was 5.23 times higher for men with no education, 3.92 times higher for men with only primary education, and 2.46 times higher for men with secondary education (but not SLC).

Men who had child deaths were 29% more likely to be poor than men who had had no child deaths.

Compared to men who work in professional jobs (technical, managers, clerical, sales, services), the odds of being poor was 3.2 higher for men who work as farmers, 2.3 times higher for men who work as laborers (skilled and unskilled manual labors), and 1.6 times higher for men who were 'not working'.

Controlling for all other variables in the model, geography was statistically significantly associated with poverty among men sample. Compared to men who live in capital city, the odds of being poor were 48.06 times higher for men who live in country-side, 14.11 times for men who live in towns, and 6.74 times higher for men who live in small cities.

Compared to men who live in the Western-Terai region of the country, the odds of being poor was 8.99 times higher for those who live in Eastern-Mountain, 4.07 times higher for those who live Central-Mountain, 11.75 times higher for those who live Western-Mountain, 7.26 times higher for those who live in Eastern-Hill, 2.88 times higher for those who live in Central-Hill, 3.52 times higher for those who live in Western-Hill, 16.48 times higher for those who live in Mid-Western Hill, 18.78 times

higher for those who live in Farwestern-Hill, 2.09 times higher for those who live in Central-Terai, 2.43 times higher for those who live in Midwestern-Terai, and 7.75 times higher for those who live in Farwestern-Terai. Men who live in Eastern-Terai were not statistically significantly different from men who live in Western-Terai.

Household sample (N = 7659):

Controlling for all other variables in the model, education was statistically significantly associated with poverty among household sample. Compared to households in which the head of the households had post-secondary education (SLC and above), households in which the head of household had no education were 363% more likely to be poor, households in which the head of household had only primary education were 232% more likely to be poor and households in which head of the household had secondary education (but not SLC) were 78% more likely to be poor.

Households headed by farmers were 282% more likely to be poor than households headed by non-farmer households (technical, managers, clerical, sales, services, skilled and unskilled manual laborers.

Controlling for all other variables in the model, geography was statistically significantly associated with poverty among household sample. Compared to household in the capital city, the odds of being poor were 27.01 times higher for households in country-side, 11.15 times for households in towns, and 6.71 times higher for households in small cities.

Compared to household in the Western-Terai region of the country, the odds of being poor was 7.43 times higher for households in Eastern-Mountain, 3.97 times higher

for households in Central-Mountain, 15.53 times higher for households in Western-Mountain, 6.68 times higher for households in Eastern-Hill, 3.88 times higher for households in Central-Hill, 3.01 times higher for households in Western-Hill, 16.88 times higher for households in Mid-Western Hill, 17.75 times higher for households in Farwestern-Hill, 1.99 times higher for households in Central-Terai, 3.21 times higher for households in Midwestern-Terai, and 5.34 times higher for households in Farwestern-Terai. Households in Eastern-Terai were not statistically significantly different from households in Western-Terai.

7. Analyses of Disaggregated Data by Geographic Sub-region and Ethnicity/Caste

To rule out the possibility of bias due to small sample size for some geographic sub-regions and ethnic groups, further multivariate analyses were conducted separately for each of the sub-region and ethnic/caste groups for which data met the assumptions of multivariate regression, including sample size. Tables 21-27 present the results of multivariate regressions on these disaggregated data. The findings from this method were consistent with the findings from the pooled method. However, the sub-regional analyses revealed that among the indigenous peoples, Magar were at the highest risk of poverty in the Central-Hill (Table 22) and in the Western-Hill (Table 23) regions; Tharu were at the highest risk of poverty in the Eastern-Terai region (Table 24), but they were less likely to be poor than Brahmin in the Central-Terai (Table 25); and again, Magar were at the highest risk of poverty in the Western-Terai (Table 26) region.

The findings from multivariate regressions on each of the ethnic/caste sub-sample further confirmed that education has differential effects on poverty for indigenous groups compared to caste group, particularly Brahmin. There was no significant difference between secondary and post-secondary education for any of the indigenous groups, but difference was significant for Brahmin.

Summary of the findings

1. Tamang people are at the highest risk of poverty among the indigenous peoples

Among the indigenous peoples, Tamangs were at the highest risk of poverty. Tamang women were over 700% more likely to be poor than Brahmin women, controlling for all other variables in the model (Table 16, M4). Magar, Rai-Limbu and Tharu were also significantly at higher risk of poverty than Brahmin. The risk of poverty for Newar and Gurung was lowest among the indigenous peoples.

2. Dalit caste is at the highest risk of poverty among the caste peoples

Among the caste/Khas people, Dalit was at the highest risk of poverty. Dalit women were 285% more likely to be poor than Brahmin women (Talbe 16, M4), controlling for all other variables in the model. Chetri caste was also significantly at higher risk of poverty than Brahmin. Brahmin caste was at the lowest risk of poverty among all the groups.

3. Indigenous peoples have low human capital attainment and are trapped in low-paying occupation.

Overall, indigenous peoples had significantly lower level of education and were employed in low-paying occupations (farming and labors), and lived in geographically isolated areas than Brahmin (Tables 5 -7). The low level of education and low-paying occupations were significantly associate with their poverty.

4. Indigenous peoples are geographically isolated

Indigenous peoples were geographically clustered, and lived in isolated areas. The geographic isolation of indigenous peoples was significantly associated with their poverty.

5. Demographics, individual productivity characteristics and geography are not the sole drivers of indigenous poverty.

Significant differences wealth (or poverty) remain between Brahmin caste and the indigenous peoples even after controlling for demographic, individual characteristics and geographic variables (Table 16). The findings suggest that observed wealth disparity between Brahmin caste and the indigenous peoples was not solely due to the mean level differences in demographic characteristics, individual level productivity characteristics or geography. Some other factors appear to be driving the disparity. These 'other' factors are thought to be underlying institution.

6. Differential Return for Investment in Human Capital Investment

The analyses of the sub-samples for Tamang and Brahmin reveal that that there is a differential return for investment in human capital development (education, health, occupation) between the indigenous peoples (Tamang) and caste people (Brahmin) (Table 17). For example, if you are a Tamang, there is no significant difference in the risk of poverty between having post-secondary education (SLC and above) and having only secondary or primary education. However, if you are a Brahmin, the risk of poverty decreases significantly if you have post-secondary education compared to having only primary or secondary education. Similarly, if you are a Tamang, there is no significant difference between underweight (BMI =<18.5) or not underweight. However, if you are Brahmin, the risk of poverty increases significantly if you are underweight (BMI=<18.5). Likewise, if you are a Tamang, there is no significant difference between being a farmer or other professionals. However, if you are a Brahmin, the risk of poverty increases significantly if you are a farmer. Furthermore, if you are a Tamang, the risk of poverty does not vary by geography. However, if you are a Brahmin, the risk of poverty changes significantly by geography. Brahmins living in the Mountains and Hills of the Mid-West and Far-West Nepal are significantly at higher risk of poverty than Brahmins living in Western Terai. The findings were consistent for other indigenous groups (Table 27).

CHAPTER VIII: DISCUSSION

Overview

The purpose of this study was to investigate the determinants of poverty among the indigenous peoples of Nepal. The study used nationally representative samples of women, men and households from Nepal Demographic and Health Survey (DHS 2006). Analyses involved conducting maximum likelihood estimates of logistic regression models and Geographic Information System (GIS) to test the hypothesized relationships derived from extant literature and theories. The findings from this study reveal that Tamang, Magar, Rai-Limbu, and Tharu indigenous peoples, and Dalit caste are significantly at higher risk of poverty than Brahmin. The differences in the risk of poverty were not solely driven by the differences in individual level productivity characteristics and geography. Other factors appear to be driving the risk of poverty. Examination of the first constitution of Nepal 1854, *Muluki Ain 1854,* reveal that the groups that were designated as 'lower' in the constitution were the groups that were at higher risk of poverty. The findings appear to suggest that the sources of wealth disparity (poverty) in Nepal may be institutional, such as a constitution. The findings provide some support to the theory of institutional design (North, 1990) that suggests that institutions, such as a country's constitution or laws, are the factors that drive some groups to become poor while others to become rich.

The experiments conducted in this study provided support for all but one hypothesis tested. The hypotheses related to ethnic and caste differences in poverty (wealth) were supported by the data. The hypothesized relationship between individual productivity characteristics, geography and poverty were also supported by the data.

However, the hypothesis that "*differences in individual level productivity characteristics and geographic characteristics account for the differences in wealth (poverty)"* was not supported by the data. The findings indicate that the ethnic/caste disparity in wealth (poverty) in Nepal is not solely driven by the mean level differences in individual level productivity characteristics or geography. Although individual productivity characteristics (such as education, health and occupation) and geographies were important predictors of poverty, poverty appears to be ultimately a function of underlying institutions, particularly the constitution of Nepal, *Muluki Ain 1854*. The constitution appears to create a caste-system like social structure, which, on one hand, isolate indigenous territories, and on the other, prevent indigenous peoples from attaining human capital endowment (education, health), thereby subsequently impoverishing the indigenous peoples, --to the same extent as the lower-castes.

The findings of this study were consistent with the previous studies that suggest that there is a cost of being indigenous (Pscharopoulos & Patrnos, 1994; Carino, 2009; Eversole, 2005; etc.). However, the findings of this study further expand the current understanding of indigenous poverty by demonstrating that the cost was primarily driven by institutional factors rather than deficiencies of the individual peoples who are poor.

Institutions and Poverty

As the findings of this study reveal, indigenous peoples appear to suffer from poverty as much as, or even more than, the lower-caste groups. How did the indigenous peoples, who are the original inhabitants and rightful owners of the land, become so poor in their own land, while the migrants, the caste people, became rich?

Poverty of the indigenous peoples and their countries in the Americas, Africa, Australia, and India has largely been attributed to the colonization of their territories by the Europeans (Psacharopoulos & Patrinos, 1994; Eversole, 2005; Carino, 2009 etc.). However, since Nepal was never colonized by the Europeans, colonization cannot be a plausible explanation to poverty of the indigenous peoples and of Nepal. An alternative explanation to the poverty of the indigenous peoples of Nepal, and their country as a whole, is warranted.

One explanation is offered by Bista (1991), who argues that fatalism and nepotism among the Brahmin-Chetri castes were the primary causes of underdevelopment of Nepal. In his seminal book, *Fatalism and Development: Nepal's Struggle for Modernization*, Bista argues that Brahmin/Chetri's world view is largely shaped by Hindu fatalism (not by rationality or science) and therefore, as long as Hindu Brahmin/Chetries remain as political elites of the country, Nepal will never develop into a modern state. Furthermore, he argues that since Brahmin/Chetries do not view Nepal as their own—having migrated from India--they do not have a genuine interest in developing the country into a modern society that will benefit non-Brahmin/Chetries. Consequently, Bista advocates for indigenous leadership in governing the country as a solution to Nepal's underdevelopment.

While Bista's assessment is considered candid by many accounts, critiques argue that Bista, being a Brahmin himself, is simply trying to warn his fellow Brahmins against their excess atrocities (Macfarlene, n.d.). Unlike other Brahmins, Bista saw the growing indigenous movements against the Brahmin/Chetri dominance as an imminent threat to the elites, including himself, and therefore wanted to devise a way to pacify the

indigenous peoples and their movements. But other Brahmins did not see the far-sighted vision of Bista (Bista is currently missing and suspected to have been killed by other Brahmins who were angered by his writings). Nevertheless, Bista's writing considerably influenced political discourses and movements in Nepal. In particular, the Communist Party of Nepal, Maoists, was born as a brain-child of Bista's book, and this party has successfully brought in some of the indigenous peoples under Brahmin/Chetri control, albeit under the pretext of the communist movement. It is important to note here that the top three leaders of the Maoist party--Prachanda, Baidyae and Bhattarai--are all Brahmins. Prachanda is a *nom de guerre* of Pushpa Kamal Dahal. It is alleged that Prachanda uses his *nom de guerre* to avoid being identified as Brahmin.

The critically missing part in Bista's analysis, however, is that he overlooks the role of institutional structure under which the current Nepali state is built and over-emphasizes the role of the caste system. He analyzes the Hindu caste-system as if it is a cultural universal when in reality, indigenous peoples of Nepal do not belong to the caste-system. Another critical error in Bista's work is that he fails to make the indigenous peoples and their poverty the central focus of his work. Without understanding the indigenous peoples and their problems, analysis of Nepal's poverty seems incomplete, or even misleading, since the majority of the Nepal's population are indigenous peoples.

What appears to be the real problem of Nepal are its basic institutions, such as the constitution. Although *Muluki Ain 1854* mirrors the Hindu-caste system, by no means are they the same thing. It appears that Brahmins/Chetries capitalize on both the caste-system and the constitution to their own economic advantage. There is no evidence to support the assertion that Brahmin/Chetries are naïve fatalists, as Bista seems to suggest. Rather they

appear to be rational actors who overlook humanity in the interest of economic benefit to the few caste-based clan. The *Muluki Ain 1854,* designed by Brahmin/Chetries, appears to be serving this purpose, at least until now. This may be one reason why although the constitution of Nepal*,* has been amended twice (in 1965 and 1990), the consequences are not realized. As predicted by North (1990), the constitution of Nepal appears to have been changed to keep the status quo of the elites. By continuing to design and redesign the constitution in ways that isolate indigenous territories and prevent or discourage indigenous peoples from obtaining human capital, Brahmin/Chetries seem to achieve their desired effect--keep the status quo and use indigenous men as cheap labor (e.g. porters, servants in Brahmin/Chetri-owned businesses) and indigenous women as sex objects for human trafficking. Such a system is what appears to be driving indigenous peoples, and the country as a whole, into poverty.

Geographic Isolation and Poverty

The fixed effect model of the logistic regression revealed that geography was positively associated with poverty (Table 16, M4). Geographic isolation significantly increased the risk of poverty for all peoples, including the caste people. Since higher proportions of indigenous peoples were geographically isolated than Brahmin, much of their poverty appears to be driven by the geographic isolation of their communities. This finding was further supported by the Geographic Information System (GIS) analyses (Figures 4 - 14).

The random effect model revealed that the disparity between Brahmin and indigenous peoples further widened when geographic variables were added to the regression equation (Table 16, M4). The findings suggest that the disparity between

Brahmin and indigenous peoples was not driven the by the differences in geography alone. In fact, if Brahmins and indigenous peoples were to live in the same geographic territories (villages), the inequality between Brahmin and indigenous peoples would have been much greater (Table 16, M4). Geography, therefore, appears to have protective effects on indigenous peoples. Geographic clustering of the indigenous peoples appears to mitigate the inequality between them and the caste people.

However, when the geographic variables were added to the regression model, the disparity between Chetri and Brahmin were significantly reduced (Table 16, M4). The findings suggest that much of the disparity between Chetri and Brahmin appear to be driven by the differences in their geographies. If Brahmin and Chetri were to live in the same geographic areas, the inequality between them would have been much smaller. The remaining differences between Chetri and Brahmin are likely to be due to caste discrimination.

The reasons for a disproportionately high level of geographic isolation among the indigenous peoples are thought to be historical and political. Historically, indigenous territories have been the targets of the Khas invasion. After the Khas invasion, much of the fertile lands were expropriated to the Khas/caste peoples by the government, and indigenous peoples were forced to move further into the hinterlands. Prior to the 1950s, very few villages had any modern infrastructure development. In the 1960s, Nepal was re-structured into 75 districts and 14 Zones. Each of the 75 districts was administered by a CDO (Chief District Officer), appointed by the central government. The primary job of a CDO is to maintain law and order in the district and to distribute development funds to

the villages in the district (Lama, 2011)[9]. Since the CDOs of all these districts are generally Brahmin or Chetri (see Table 20), in effect, Brahmin/Chetris have become the de facto rulers of all districts, including those in which indigenous peoples form the majority of the population. Given the rampant nepotism, corruption and overt caste favoritism among the Khas/caste bureaucrats (e.g. Bista, 1991), it is not unlikely that these CDOs will favor villages of their own castes over those that belong to the indigenous peoples. The asymmetric distribution of state funds to Bramhin/Chetri villages, perhaps at the expense of indigenous villages, is likely to be the key factor that drives indigenous villages into isolation.

Differential Return on Investment in Human Capital

The findings suggest that indigenous peoples are likely to be poor independent of their education, health, and occupational status, and regardless of where they live. In other words, indigenous peoples are poor not only because they have low education, health, or occupation status, and live in a particular geography but rather that the system systematically make them poor independent of these characteristics. Because of this, indigenous peoples may have been discouraged from pursuing a better education, health care, a new occupation, and even mobility to less-isolated geographies. Constitutional prohibition of multilingual study in higher education is also thought to have further prevented indigenous peoples from attaining the human capital necessary to move to a higher-paying occupation.

For the Brahmins, on the other hand, it is clear that better education, better health, better occupation, and better geographies provide better success in reducing poverty. To

[9] Tara Lama, an indigenous journalist, is a research assistant based in Kathmandu. He assisted in collecting archival data on CDOs of Nepal. He interviewed government officials on the role and responsibilities of the CDOs.

the extent Brahmins are poor, the reason, it seems, is due to lack of individual motivation for better education, health or occupation. This finding provide support for the human capital theory (Schultz, 1960; etc.). Another reason, it seems, is geography. Individuals living in isolated geographies are more likely to be poor than those living in not isolated geographies, independent of caste or ethnicity (Table 16, M4).

Sources of Indigenous Poverty are Different from the Caste Poverty

The hypothesis- "*H4: The observed differences in the risk of poverty between various ethnic/caste groups will disappear when the individual level productivity characteristics and geographic characteristics are controlled for'* – was not supported by the data (Table 16, M4). This finding suggests that the sources of poverty among the indigenous peoples are not the same as those of the caste people. The findings suggest that even if indigenous peoples have the same level of education, health and occupational status as the Brahmins, they are still likely to remain significantly at higher risk of poverty than the Brahmin. It seems that the individual level variables (education, health, occupation) may mitigate the risk of poverty for a certain degree, but they do not appear to bridge the poverty gap that exists between Brahmin caste and indigenous peoples.

The determinants of poverty among the caste peoples appear to be, largely, individual for the higher caste (Brahmin and Chetri), and caste-discrimination for the lower-caste, Dalit. As stated in the previous section, the individual determents may include lack of motivation for self-development, such as education, health or occupation (Table 16). The findings indicate that theories that focus on individual characteristics, such as human capital theory, appear to apply more to higher-caste groups.

Indigenous language appears to be a protective factor against inequality

When the indigenous language was added to the regression model, the disparity between Brahmin and indigenous peoples was further exacerbated (Table 16, M4). This suggests that the disparity between Brahmin and indigenous peoples is not driven by the differences in their mother tongues. If the indigenous peoples were to speak the same language (Khas) as the Brahmin, the inequality between Brahmin and the indigenous peoples would have been much greater.

Furthermore, when the geographic and language variables were added to the regression model, Newar, who were not significant in the previous models (Table 16, M1 –M3) became significant (Table 16, M4). The findings suggest that the disparity between Newar and Brahmin would have increased if they both were to live in the same geographic areas or speak the same language. Geography and language appear to drive the relative economic advantage enjoyed by Newar. Findings suggest that Newars might be relatively better off than other indigenous peoples only because of their geographic proximity to the capital city--the most developed area and the center of the nation's economic activities.

Explaining poverty among the indigenous peoples of Nepal

There are several historical reasons why the indigenous groups may have been "excluded" and how that exclusion might have contributed to their poverty. First, the indigenous groups once held their own independent nations and polities prior to the unification of Nepal. The territories of many of these groups were never conquered by the Khas invaders. Rather, treaties were signed between the Nepal state and these nations.

Many local kings collected taxes in their territories until very recently, 2006[10]. The king of Mustang, the Northwest district of the Himalayan regions of Nepal, for example, still maintains some degree of sovereign rule over Mustang. Within the Kathmandu valley, Chinia Lama collected taxes from the residents living around the Boudha area well into the 1980s. Due to these historical connections to their land and culture, many of the indigenous groups have recently come together as a social force and have begun demanding autonomy of their territories. Some of the notable demands are autonomy of the Tamangsaling (territory of the Tamang), Limbhuwan-Khumbhuwan (territories of the Kiraties), Magaranti (territories of the Magars), Tharuwat (territories of the Tharus), and Newa mandal (territories of the Newars). The findings of this study provide empirical validity to the historical grievances of these groups. On the other hand, the emergence of these groups provide a rationale for conducting historical analyses of their grievances as reflected in the findings of this study.

After Nepal was established as a nation-state in the 1770s, the indigenous peoples lost their land and its resources, these lands then being expropriated to the Khas invader. The Khas migrations depopulated many of the indigenous peoples in their territories. More importantly, indigenous cultural institutions were destroyed. For example, killing of a cow for meat consumption was an acceptable practice in the pre-Khas era. But after the Hindunization of the country, killing a cow became illegal. Those who continued practicing their culture were imprisoned or enslaved. Institutional constraints like these may have stifled their income from trade and other economic activities. The destruction of indigenous cultural institutions may have had a particularly devastating effect since it

[10] In 2006, the 240 years of Khas monarchy as Hindu Kingdom was abolished, and Nepal was established as Democratic Republic.

prevented the transfer of traditional knowledge and wisdom to the next generation. The lack of protection of property rights, combined with the destruction of the native culture and constraints on the people's traditional livelihood, may have contributed to indigenous poverty.

Another historical reason for the exclusion of the indigenous peoples was the opposition of the people to Hindunization of their land. The indigenous groups, such as Tamang, Magar, Rai-Limbu, and Tharu were opponents of the Hindunization (Khasanization) of their territories and annexation of their territories into the Nepali state. These groups, in particular Tamang, were sidelined by the first constitution of Nepal, *Muluki Ain 1854,* because of their fierce opposition to the Nepali state. Since the indigenous peoples (except Hindu Newar) did not belong to the caste hierarchy, they were arbitrarily designated as "lower" in the constitution. The *Muluki Ain 1854* designated all non-caste peoples, including White Europeans, as "lower." This designation appears to have been designed primarily to exclude the indigenous peoples from any socioeconomic and political processes of the Nepali state. The exclusion no doubt limited their economic opportunities and mobility, and as a result they may have become poor.

It appears that Tamang were the prime victims of the *Muluki Ain 1854*. Historically, Tamangs were treated differently from the other groups by the Nepali state. Tamangs are considered the protector of the Buddha Dharma in Nepal. Since Tamangs were the Lama (priests) among the Buddhists, as were Brahmins among the Hindu, they were least likely to be culturally subjugated by the Hindus. Since Tamang were not easily tamed by proselytization, they were punished economically. They were prohibited from

working in any public offices (education sector, governments, army, policy etc.). Tamang men were used as un-paid laborers to build palaces and roads, or as porters to transport goods and services. Even until the 1950s (during the regime Juddha Samser Rana), Tamang were forced to work as free laborers, while other laborers were paid their day wage. Tamang women were used as concubines in the Khas palaces and later sold to brothels in India. Tamang children were even prohibited from attending schools. The Tamang community still suffers from the human trafficking problems perpetrated by the Khas system. It wasn't until the 1960s, when international organizations such as United States Agency for International Development (USAID) provided funds to Nepal government on the condition that education be accessible to all, that Tamang children began to receive educational opportunities. These historical injustices, combined with current structural barriers against them, appear to be plausible reasons why Tamangs are at the highest risk of poverty.

The Gurkha Army may be responsible for the relative improvement in the socioeconomic status observed among the Gurung, Magar and Rai-Limbu individuals. During the unification process, the individuals who converted[11] to Hinduism and fought against their own peoples and territories in favor of the Khas invaders were given special status as Gurkha soldiers. Members of these groups were allowed to join the British-East India Company as soldiers. Even after the British-East India Company was dissolved, these groups continued to serve in the British Army. These Gurkha soldiers were exposed to economic opportunities outside Nepal and were earning cash income in return for their service. The relatively higher purchasing power of their cash income and other human

[11] Unlike what …. () calls Sankritization- a process by which one converts to Hinduism in exchange for economic benefits, the conversion is equally likely to have occurred due to forced proselytization.

capital gained from exposure to the outside world may have helped them overcome their poverty. The relatively better socioeconomic status, however, seems to have been achieved at the cost of their own cultural and linguistic identity.

Unlike other groups, Newars likely enjoy a higher socioeconomic status due to their close geographic proximity to the capital city. Newars live mainly in the urban areas where access to education and economic opportunities are available. Some Newars, especially those that are Hindu, were designated as "higher" in the *Muluki Ain 1854.* These Newars do not experience as much discrimination as their indigenous cousins. If, however, Newars lived in geographically isolated areas, their socioeconomic status may not have been any better than other indigenous groups (Table 16, M4).

Explaining poverty among the caste peoples of Nepal

Unlike the poverty among the indigenous peoples, the poverty among the Dalit is thought to be primarily a function of caste discrimination. Dalits have historically been treated as untouchable (i.e. Dalit cannot come in physical contact with higher castes-Chetri or Brahmin without punishment). Historically, they have been excluded from participating in any social and economic affairs of the state. They were trapped into low-paying occupations, such as tailoring, metal work (blacksmith), and entertaining. Dalits are not just discouraged from changing their occupations, but according to the Hindu religion, change is considered a sin. This internalized oppression may have discouraged them from seeking alternative professions that was more profitable. Furthermore, their work was not adequately compensated, and often the high-caste Brahmin would demand labor and financial donations in return for their religious services. Due to this system,

many of the Dalits, who were not able to pay, became bonded-labor – an intergenerational slavery system in which high caste Brahmin/Chetri landlords force low-caste Dalits into indentured labor – especially in the Western part of Nepal where Khas/caste people are concentrated.

The findings on the socioeconomic status of Chetri were surprising. Since the royal families of Nepal (Shah and Rana) belong to the Chetri caste, it was expected that Chetries as a group would have a higher socioeconomic status than was observed in this study. Shahs and Ranas (royal families) are by no means economically less well-off than Brahmins. One plausible reason for this is that huge variation exists within Chetri. Chetries who consider themselves as pure-Chetri (Shah, Rana, Thapa etc.) are thought to be better off than Chetries who are degraded as non-pure. Non-pure Chetries may include those who were given Chetri status for their service to Brahmin or King (e.g. foreign diplomats, or public servants who have abandoned their original caste or ethnicity) and those fallen from their original caste- Khaseko Chetri (KC) due to inter-caste or cast-ethnic marriages. Pure Chetri vs. non-pure chetries were not separated in this analysis. The relatively lower status of Chetri may have appeared due to the pooled method used in this analysis. Further research on sub-group analyses are required to determine the extent to which the observed socioeconomic status is the outcome of the pooled method employed in this study.

Another plausible reason for the unexpected socioeconomic results of Chetri is that a large number of Chetri live in the geographically isolated Western and Far-western region of Nepal. Due to difficult topography and distance from the capital city, infra-

structure development is difficult to achieve. This geographic isolation may contribute to their poverty.

A second but less plausible reason for lower socioeconomic status is the concern regarding fidelity of the Chetri-caste data. It is suspected that lower-caste groups, such as Dalit, may self-report as higher-caste such as Chetri. Since Cherti and Dalit physically look alike, and since revealing one's caste may invite humiliation if he/she is low-caste, there is a slight chance that low-caste Dalit may have self-reported as Chetri. This may have skewed the true distribution of Chetri-caste data. To rule out this possibility completely, an identical survey with a nationally representative sample is needed. Clearly, this is beyond the scope of this study. One approach to overcome this problem is to conduct sub-analyses of Chetri data, identifying individual surnames and triangulating this information with Geographic Information System (GIS) data. Since the primary interest of this study is indigenous peoples and not caste peoples, this approach was not implemented in this study. Researchers interested in Chetri caste should further explore this.

Implication

One contribution of this study is to expand society's understanding of why it matters "who you are" and "where you live" regarding socioeconomic well-being. Previous studies have pointed to race/ethnicity (Psacharaopoulos & Patrinos, 1994) and geography (Sachs, 2005) as a source of variation in socioeconomic status across populations. Others emphasize disparity in individual level productivity characteristics as the source of variation in socioeconomic status. This study goes further to investigate

another source of variation--the institutions--and attempts to answer why race/ethnicity or geography matters in the socioeconomic well-being of the population. The findings of this study provide important implications for theory, method and practice.

The prevailing theories of poverty assume that all groups of people become poor for the same reason. These theories do not take into account the unique historical experiences of different groups of people. For example, human capital theory assumes that Black and White Americans become poor for the same reason-- lack of human capital. The findings of this study, however, suggest that the relationship between human capital variables and poverty changes under different institutional conditions. While a strong relationship was found between education and poverty for the Brahmin sample, no significant relationship was found between education and poverty for the Tamang sample. Similarly, while a strong relationship was found between occupation and poverty for the Brahmin sample, no relationship was found between occupation and poverty for the Tamang sample. Furthermore, while a strong relationship was found between geography and poverty for Brahmin, no significant relationship was found between geography and poverty for Tamang. The findings suggest that Tamang people become poor for entirely different reasons than Brahmins. The findings imply that various groups of people become poor for entirely different reasons, perhaps due to their unique historical experiences.

Consistent with the findings of Psacharopolous and Patrinos (1994) in the Americas, the findings of this study point to racial discrimination as a determinant of poverty among the indigenous peoples. However, the findings of this study further enlighten by pointing out that the source of discrimination is rooted in the society's basic

institutions, such as a constitution--at least in the case of Nepal. These institutions appear to create an unequal playing field at the onset, which then leads to inequality in treatment (discrimination). Inequality, in turn, appears to drive the poverty among the peoples.

Implication for Method

This study employed multilevel modeling (pooled method) to examine the poverty status of each of the indigenous groups and caste groups for which data was available. The findings revealed a huge within-group variation among the indigenous peoples and among the caste people. In fact, the within-group variation among the caste people (Brahmin and Dalit) was much greater than the between-group variation between indigenous group (Tamang) and caste group (Dalit). The findings suggest that Dalit and Brahmin, although both belong to non-indigenous or caste-groups, are in no way similar to each other, and therefore cannot be grouped as one class of people. Similarly, although Tamang and Newar are both indigenous peoples, the huge economic disparity between these two groups makes it illogical to treat them as one class of people. The findings suggest that any analysis of indigenous peoples must consider inter-ethnic differences within the indigenous group. Studies that classify population into binary indigenous vs. non-indigenous categories gloss over the variation within these categories and are likely to risk wrong estimates about the true relationship.

In addition to multilevel modeling, this study conducted geographic analyses at sub-regional level by cross-classifying the ecological zones and development regions. The results show a huge within-region variation in poverty (Western region: 18.46% to 82.11%). The within-region variation was much greater than the between regions

variation (27.28% to 60.05%). The findings suggest that regional level analyses that ignore the within-region variation are likely to risk a wrong estimate of geographic effects on poverty. Sub-regional level analyses appear to provide more precise effects of geography than region or zone level.

This study controlled for ethnicity/caste and geography simultaneously in the regression model. The findings revealed that indigenous peoples were invariably clustered into certain geographies, whereas caste people were scattered throughout the country. Due to geographic clustering of ethnicity, the effect of ethnicity on poverty is often not distinguished from the effect of geography on poverty. This approach helps overcome this problem.

Finally, this study used Geographic Information System (GIS) to perform spatial relationships between ethnicity/caste and poverty. The maps produced from these analyses reveal that the poverty map coincides with the territories of the indigenous peoples. The findings suggest that GIS analyses help determine relationships which are often not possible to see in quantitative or qualitative analyses alone.

Implication for Practice

Much of the programs and policies purported to help the poor focus on changing the behaviors of the poor. These policies and programs often assume that providing knowledge or skills to the poor will solve their poverty. Social workers, in particular, have a reputation of being "poverty pimps", a notion that social workers actually live off of poor people under the guise of helping them. While this label may be applied to other professions as well, such as doctors (disease pimp), lawyers (criminal pimp) and so on,

the underlying concerns appear to have some validity-- social workers do little to bring about change in the social structure that makes people poor in the first place. Helping a poor person who needs healthcare or shelter is one thing, but helping a person such that he/she does not have to be poor in the first place is entirely another. Such an approach requires changing the conditions rather than the individual's behavior. Unfortunately, even those programs purported to focus on structure do not go beyond policy structure. Social policy, at best, brings about change in distributional structure, such as income distribution (E.g. Medicaid system in the U.S.). However, in poor countries, where the countries themselves are bankrupted, leaving little to be distributed, the change in distributional structure does little to improve the condition of the poor. On the other hand, micro- interventions such as micro- financing, micro-credit and so on do little to the economy of scale. These approaches are often driven by traditional wisdom such as 'teaching how to fish is better than giving a fish', and are not informed by theories or evidences that are empirically valid.

The findings of this study reveal that, first, different groups of people become poor for entirely different reasons. Second, the lack of knowledge (education) or skill is not the primary determinants of poverty, at least among the indigenous peoples. In addition, under the current institutional condition, even if poor people have education or other skills, groups such as indigenous peoples and lower-caste are still likely to remain poor.

According to the findings of this study, change needs to come in the form of freedom from the institutional constraints imposed on the poor by the political elites of the society. Designing a society's institution, such as a constitution, seems to be a starting

point, particularly in the case of Nepal. Such institutions should be unbiased and should provide incentive structures such that each person living in that society can advance his/her well-being to the fullest potential according to his/her own culture. A constitution that allows for self-governance among indigenous peoples (Cornel, 2002; 2005), protects indigenous property rights (Sened, 1997), promotes an indigenous education system (i.e. system which advances indigenous language, culture and technology) and indigenous health systems (i.e. system which advances indigenous health knowledge and medical technology) may be the most powerful tool to help the poor attain well-being. Social workers have important roles to play in creating such institutions and in effecting the desired changes in the society, such that all humans, independent of who they are or where they live, gain the ability to live a good life.

Implication for the development of indigenous peoples:

1. Global and national institutions, which constrain indigenous peoples' capacity to develop their own communities, must be eliminated.
2. Indigenous peoples should (be allowed to) design institutions to serve their best interests.
3. Indigenous peoples should (be allowed to) develop their communities in their own ways.
4. Indigenous peoples should (be allowed to) govern their own territories (self-governance).

Limitation

The findings of this study were tempered by a number of limitations. First, this study employed cross-sectional design. The study did not directly test the theories that guided this research. The findings do not establish a causal relationship between the independent and dependent variables.

Another recognized limitation is that this study utilized secondary data sources. The scope of this research required a large data set representative of all indigenous peoples and ethnic groups. Collecting a primary dataset on a national scale was beyond the scope of this dissertation study. Therefore, DHS data presented the best among the available data sources that could answer many of the research questions of this study. The limitation of using secondary data in general, and the DHS dataset in particular, is that there is little control over what has been collected. There is little control over survey design, population coverage, and the types of questions asked.

The use of the asset-based Wealth Index as a measure of poverty is also a limitation for this study. Wealth index is a multidimensional construct. It is a latent construct rather than a direct measure of absolute wealth. Wealth Index does not include income but instead includes measures of individual and household welfare such as land, houses, livestock and other household items including access to electricity, piped-water, and quality of housing. In this method, the probability of being poor is the probability that a person or household belongs to the bottom 40% on the asset-based wealth/welfare distribution. Thus this index does not directly measure poverty and does not tell how poor an individual is in absolute terms. In other words, it is a relative measure of poverty. The measurement of wealth index could be improved by decomposing it into its individual

dimensions and then reconstructing it with theoretically meaningful dimensions. However, since the purpose of this study was to understand the determinants of the overall socioeconomic well-being of the people rather than develop a measurement model, the development of a new measurement method of Wealth Index was beyond the scope of this study.

An additional limitation of this study is that it does not adequately capture health, geographic isolation, and institutional variables. Health status variables were not available in the DHS dataset, particularly for male samples. Inclusion of health variables, such as tuberculosis, cancer, or maternal mortality would have strengthened the study. Likewise, the geographic isolation variable does not capture all dimensions of isolation. For example, some villages may be isolated, but isolation may also provide economic values to its residents due to tourist attraction and revenue. Due to lack of data, this study did not decompose the geographic isolation variables into those that attract tourists and those that do not. Therefore the extent of positive value of geographic isolation to economic well-being is not accounted for in this study. Similarly, measurement of institutional variables is weak. Institution was partly captured by language and ethnicity and partly through geographic isolation and development regions. Factors such as rights to own property, security of contracts, institutions on financial inclusion (banking), distance to Health Post, and resource allocation to different development regions are important dimensions of institutions and their inclusion would have strengthened the study. Collection of these variables would require tremendous amounts of time and resources, which were beyond the scope of this study.

Finally, there is a concern of bias in the measurement of caste in DHS data, another study limitation. Due to caste discrimination, there is a possibility that the individuals of lower-castes, such as Dalit, may self-report as higher caste, such as Chetri or Brahmin. Diagnosing this problem is challenging since there is no apparent racial or cultural differences between Dalit, Brahmin and Chetri. They look similar (they look Khas or Indian) and speak the same language (Khas language). Fortunately, the DHS data identifies sub-castes or surnames for some of the caste groups. Since Dalit, Chetri and Brahmin do not typically live in the same communities (tole), triangulating this information with the geographic information system helps minimize this concern. Furthermore, if this concern were valid, we would see under-sampling of the Dalit. In the DHS women sample, 11.7% (weighted) self-identified as Dalit. This figure is comparable to the national estimate. To completely rule out the possibility of bias, however, another national survey, representative of all caste and ethnic groups, is needed. Clearly, this is beyond the scope of this study. Furthermore, while the possibility of this bias is a concern, to date no published reports have documented any inconsistencies in DHS data, questioning the reliability of its measures. The bias is not a concern for measuring indigenous groups.

Despite these limitations, this study represents the first- ever analysis of poverty among the indigenous peoples of Nepal using a nationally representative sample of women, men and households. Future researches should be mindful of the limitations identified in this study and incorporate the suggestions for improvement.

Agenda for Continued Research

The findings of this study provide room for more questions rather than offer a conclusive theory about the causes and consequences of poverty among the indigenous peoples in general, and Nepal in particular. To begin with, this study was able to test only a small part of the larger theoretical framework in which poverty was conceptualized as cyclical. While this study lays a foundation for empirical studies of poverty among the indigenous peoples in Nepal, it raises many questions: Why are the Tamang, who live in the surrounding hills of the capital city, even poorer than those (Chetri) who live in the far western region? Why are the Tamang villages that are so close to the capital city isolated? Why are Tharu who live in Terai, the most fertile land of Nepal, as poor as Tamang, who live in the Mountain? How have Brahmin and Chetries become so successful in disfranchising the indigenous peoples and controlling the government of Nepal for over 240 years? Understanding these political processes has far-reaching implications--more than simply understanding how a country, such as Nepal, becomes poor. This study provides only anecdotal explanations to these questions.

What we know about poverty from empirical studies seems to provide only a myopic view of this phenomenon. There is a need to understand poverty in the larger political, institutional, and geographic contexts. As pointed out in the limitation section, this study, too, was tempered by a number of limitations. There are theoretical and methodological problems that need to be addressed in the study of indigenous peoples. For example, the Western conceptualization of poverty, as something that needs to be attacked or fought against, clearly seems to be irrelevant to the condition of indigenous peoples. From the anecdotal evidences, it appears that indigenous peoples have been

made impoverished rather than that they became poor through their actions. They appear to be systematically prevented from advancing their own interests rather than being left behind in evolutionary processes. However, to confirm the validity of these claims, there is a need to study indigenous poverty over time and across space.

As indigenous peoples and their culture are becoming more important as a source of knowledge for various academic disciplines, including Anthropology and Social Sciences, there is a greater needs to understand and urgently promote indigenous well-being. In-depth studies of each unique group and large scale surveys to understand the underlying factors that affect each group are imperative. Longitudinal surveys are needed to document the changes in socioeconomic conditions over time. There is a need to replicate this study in other countries with different institutional contexts such that knowledge generated from this study can be validated and the findings may be generalized.

CHAPTER IX: CONCLUSION

This study began with a question: Why do some people (or groups) become poor while others become rich? This question was informed by the previous works, particularly of North (1990), who asked a similar question: Why do some countries become rich while others become poor? The rationale for pursuing the research question was that, to better understand why some countries become poor, it is necessary to understand who the poor people are in those countries and why they are poor. Drawing on the theory of institutional design (North, 1990) as a guide, and Nepal, a poor country as a case, this study investigated a specific research question: Who are the poor of Nepal, and why are they poor?

In Nepal, there is a reason to believe that the lower-caste groups (Dalits) are likely to be at higher risk of poverty than a higher-caste group (e.g. Brahmin). However, there is no reason to believe that indigenous peoples of Nepal should be at higher risk of poverty than the caste group (Brahmin). Indigenous peoples do not belong to the caste system and are themselves the high priest group (e.g. Lama, Bonpo, Dhami, Jhankri etc.). Indigenous peoples are, in fact, expected to be economically better off than the caste people since they are the original inhabitants of the land and the rightful owners of the land and the resources on them. The extent to which indigenous peoples in Nepal are poor, we wish to know why.

Poverty of the indigenous peoples and their countries in the Americas, Africa, Australia, and India has largely been attributed to the colonization of their territories by the Europeans (Psacharopoulos & Patrinos, 1994; Eversole, 2005; Carino, 2009 etc.). However, since Nepal was never colonized by the Europeans, colonization could not be a

plausible explanation for poverty of the indigenous peoples and of Nepal. An alternative explanation to the poverty of the indigenous peoples of Nepal and their country as a whole is warranted.

The findings of this study reveal that, like in other parts of the world, indigenous peoples in Nepal are at a significantly higher risk of poverty than non-indigenous people (Brahmin). In fact, some of the indigenous groups, particularly Tamang, Magar, Tharu, and Rai-Limbu, are at as high a risk for poverty as the lower-caste groups (Dalits).

The findings suggest that poverty among the indigenous peoples in Nepal is not solely driven by the lack of individual productivity characteristics or geography alone, although they were significantly associated with poverty. There is a differential return on investment in human capital – return on investment in education is less for indigenous peoples than for Brahmins. Geographic isolation is also a significant risk factor of poverty for indigenous peoples. However, beyond the effect of individual characteristics and geographic isolation, indigenous peoples appear to be impoverished primarily due to discrimination. Discrimination against the indigenous peoples in Nepal appears to be institutionalized and practiced at multiple levels. At an individual level, indigenous peoples appear to be discriminated against in education, health and occupation. Indigenous peoples were less likely to receive post-secondary education and healthcare services and more likely to work in low paying jobs such as farmers, porters and laborers. In schools, indigenous children were treated poorly by their teachers. In healthcare service agencies and hospitals, indigenous peoples experience humiliating treatments--they are asked to pay or show money before services are delivered or denied services if they can not pay. A majority of the teachers and healthcare professionals are non-

indigenous people (Brahmins and Chetries). At a community level, indigenous villages are less developed (e.g. lack of electricity, roads, schools, universities, hospitals, irrigation) than Brahmin villages. Indigenous villages appear to be resource-deprived and left out of the development processes. At a national level, indigenous peoples seem systematically excluded in all forms of governance. Even if indigenous peoples have the same level of education as the Brahmins, indigenous peoples seem less likely to find government jobs or be able to move to a position of power. Furthermore, when indigenous peoples try to develop business entrepreneurship, they experience humiliation and discouragement at every step of the business development. When the indigenous peoples go to CDOs (Chief District Officers) to register a business, company or organization or to apply for a citizenship card and passport, they are often asked for bribe money. They are delayed or even denied their basic civil rights to citizenship and to form social organizations if they do not offer a bribe or if they do not please the government officials in some other ways. Over 93% (70 out of 75 districts) of the CDOs were Brahmin or Chetries in 2011.

The findings further reveal that the indigenous peoples who live in closer proximity to Brahmins appear to be at a higher risk of poverty than those who do not. In other words, indigenous peoples living in the villages which were invaded by the Brahmins (or Khas peoples) and in which Brahmins still live today seem worse off than those living in villages without Brahmin residents. This finding was counter-intuitive because conventional wisdom suggests that the presence of a few wealthy or educated persons in a community have spillover effects on those who are on the periphery. What appears to happen in Nepal, in contrast, is that a few clever or wealthy Brahmins exploit

the masses of indigenous peoples, who are less educated or less wealthy. Consequently, the closer these groups live in geographic proximity, the easier it is for exploitation to occur. The findings provide further support to the discrimination hypothesis. They suggest that the culture of discrimination and other social ills, including the caste-system, arrived in Nepal with the arrival of Brahmin/Chetries, and this discrimination appears to be the reason why indigenous peoples in Nepal are poor.

The findings also suggest that the culture of discrimination in Nepal is institutionalized and systematic, and the root of this system may be traced back to the first national law or constitution of Nepal, *Muluki Ain 1854.* The study revealed that the indigenous groups that are at the highest risk of poverty were the groups which were designated as "excluded or lower" by *Muluki Ain 1854.* The findings suggest that *Muluki Ain 1854* effectively provided license to Brahmins and Chetries to commit all forms of injustices and atrocities against the indigenous peoples and the nation without legal consequences. Although counterfactuals are difficult to prove, the evidence suggests that Khas migration and subsequent establishment of a Nepali state and its institutions, particularly *Muluki Ain 1854,* appear to be the only plausible explanation to why indigenous peoples and their territories in Nepal are poor.

Although there have been several amendments to the *Muluki Ain 1854* since its inception and new constitutions have been written, this document seems to have a significant and lasting impact on the impoverishment of the indigenous peoples and the county as a whole. The *Muluki Ain 1854* and its subsequent amendments appear to have been designed by the Brahmins and Chetries to keep the indigenous peoples and the Dalits of Nepal uneducated and in poverty– most likely so that they can be easily

exploited. To some extent, the historical processes by which the indigenous peoples of Nepal became poor appear to parallel the colonization of their counterparts in the Americas, Africa and Australia. These findings provide some empirical support to the theory of institutional design (North, 1990).

Given these historical and institutional discriminatory structures against the indigenous peoples, economic policies and programs that are focused on changing the productivity characteristics of the poor are less likely to bring about needed change in the socioeconomic status of the indigenous peoples. Under current institutional conditions, even if the indigenous peoples have the same level of human capital endowment or other productivity characteristics, they are unlikely to be as economically and politically well-off as the non-indigenous people (Brahmin). Restructuring of the institutions, particularly the constitution of Nepal, seems imperative if a substantive gain in the well-being of the indigenous peoples and the country as whole is to be achieved.

How Nepal as a state will respond to the poverty of the indigenous peoples will determine the future of the country as a whole. Certainly Nepal cannot afford to continue with its racist institutions and policies against the native people who constitute the majority of the population. Likewise the government as an organization can no longer continue to be used as the exclusive club of the Brahmin/Chetries. For Nepal to survive as a nation-sate, it needs to redesign its institutions, particularly the constitution.

As Nepal is currently undergoing the process of restructuring the country, how it redesigns its institutions remains to be seen. For the moment, it seems imperative that this process be informed by empirical evidences of what works best for all people of Nepal--not just for the Brahmin/Chetries. At the minimum, the government needs to be inclusive

and should respect and tolerate different ethnic groups, cultures, languages and faiths. It should promote uniform development of all ethnic groups. One approach to achieve this goal might be to redesign the constitution in ways that allow indigenous peoples to self-govern their own territories (Cornel, 2002; 2005), protect their property rights (Sened,1997), and promote an indigenous education system and health system. Such an institution will reduce external constraints on the indigenous peoples and provide incentives to develop their own communities. When each ethnic and caste group develops its own villages in its own way, the country as a whole will be developed and the wealth of the nation will grow. Evidence suggests that people, including indigenous peoples, are capable of governing themselves, managing their common pool resources, and determining their own future without the dictate of the state (Ostrom, 1990). The new institutions should be unbiased and should provide incentive structures such that each person living in that society can advance his/her well-being to the fullest potential according to his/her own culture. Only such institutions can guarantee to all people the capacity to live a good life.

Tables

Table 3. Characteristics of the Sample Population (*Women sample, N = 9836*)

Sample characteristics	***Unweighted N***	***Weighted %***
Poverty		
Poor	3935	38.48
Indigenous groups:	4979	56.35
Tharu	900	11.14
Magar	655	6.59
Tamang	481	5.53
Rai-Limbu	468	4.44
Newar	467	4.43
Gurung	245	2.94
Sherpa	79	0.64
Thakali	6	0.09
Other Ethnic Groups	1678	20.55
Caste groups:	4857	43.66
Brahmin	1408	12.89
Chetri	2206	19.07
Dalit (Low-caste)	1243	11.7
Education		
No education	5306	54.07
Primary education	1729	17.65
Secondary education (but not SLC)	1925	19.85
Post-secondary Education (SLC and above)	876	8.43
Health		
Underweight (BMI=<18.5)	2308	23.79
Anemic	3338	35.57
Child births	7285	74.1
Child deaths	2128	21.21
Occupation		
Farmer	7058	70.66
Laborer	278	3.72
Professionals	796	8.09
Not working	1704	17.52
Geographic Isolation		
Isolated (Countryside)	7125	82.92
Less developed (Towns)	1386	4.83
Moderately developed (Small cities)	1036	7.16
Developed (Capital city)	289	5.08
Development Region and Ecological Zones		
Eastern-Mountain	510	1.81
Central –Mountain	422	1.95

Western-Mountain		465	3.49	
Eastern-Hill		668	5.85	
Central-Hill		984	16.06	
Western-Hill		989	11.84	
Midwestern-Hill		689	6.22	
Farwestern-Hill		571	3.24	
Eastern-Terai		1119	14.46	
Central-Terai		1099	15.22	
Western-Terai		873	7.2	
Midwestern-Terai		671	4.27	
Farwestern-Terai		776	8.4	
Institutions				
Mother-tongue is official language		4857	43.66	
Distance to health facility is a big problem		3853	40.67	
Has piped drinking water to dwelling or yard		1336	13.76	
Has electricity		5048	51.28	
Demographics				
Married (Currently married or living together)		7548	76.8	
Female household head		2171	21.31	
Large Household (seven or more household members)		3381	34.61	
Continuous Variables	***Mean***	***SD***	***Min***	***Max***
Age		29.15	9.84	15 49
Household size				

Table 4. Distribution of Poverty By Ethnicity and Caste (Women sample, N = 9836)

Parameters	***Not Poor %***	***Poor %***
Indigenous groups:		
Tamang	48.59	51.41
Magar	51.01	48.99
Tharu	55.33	44.67
Rai-Limbu	62.19	37.81
Gurung	74.24	25.76
Newar	79.38	20.62
Other Ethnic Groups	66.5	33.5
Caste groups:		
Dalit (Low-caste)	47.56	52.44
Chetri	56.36	43.64

Brahmin	80.64	19.36

Table 5. Distribution of Education by Ethnicity and Caste

Parameters	*No education %*	*Primary education %*	*Secondary education %*	*Post-secondary education %*
Indigenous groups:				
Tharu	65.41	13.3	19.3	1.99
Tamang	63.05	17.39	13.77	5.79
Magar	55.07	23.41	17.75	3.77
Rai-Limbu	36.18	23.92	29.6	10.3
Gurung	34.95	24.88	30.79	9.38
Newar	33.62		26.56	18.65
Other Ethnic Groups	69.91	15.1	10.9	4.09
Caste groups:				
Dalit (Low-caste)	67.69	20.5	10.54	1.26
Chetri	48.26	18.2	24.79	8.75
Brahmin	27.53	14.38	31.75	26.34

Table 6. Distribution of Health by Ethnicity and Caste.

Parameters	*Underweight (BM=<81.5) %*	*Anemic %*	*Child-Births %*	*Child-Deaths %*
Indigenous groups:				
Tharu	34.36	72.21	70.81	23.58
Tamang	11.15	30.86	73.03	19.3
Newar	10.71	16.78	71.7	13.62
Magar	8.82	24.26	71.66	23.35
Rai-Limbu	7.59	15.49	65.68	16.78
Gurung	6.16	22.69	69.1	17.8
Other Ethnic Groups	34.61	41.66	77.98	25.54
Caste groups:				
Dalit (Low-caste)	32.74	35.05	81.51	27.59
Chetri	19.98	26.09	73.42	20.2
Brahmin	21.65	32.43	71.42	12.32

Table 7. Distribution of Occupation by Ethnicity and Caste

Parameters	*Farmer %*	*Professionals %*	*Labor %*	*Not working %*
Indigenous groups:				
Tharu	84.79	2.4	2.04	10.77
Magar	82.67	4.98	3.38	8.97
Tamang	76.1	7.93	3.91	12.07
Gurung	69.41	13.02	1.54	16.03
Rai-Limbu	64.47	12.66	5.82	17.05
Newar	46.34	22.34	12.63	18.69
Other Ethnic Groups	58.79	5.93	5.3	29.98
Caste groups:				
Chetri	79.45	7.93	2.14	10.47
Dalit (Low-caste)	75.13	4.69	3.7	16.49
Brahmin	63.26	14.01	1.74	20.99

Table 8. Ethnicity and Caste by Geographic Isolation (Place of Residence)

Parameters	*Isolated %*	*Less developed%*	*Moderately developed %*	*Developed %*
Indigenous groups:				
Tharu	94.7	2.06	2.92	0.32
Magar	90.53	2.62	4.41	2.43
Tamang	84.29	2.76	4.79	8.16
Rai-Limbu	81.81	6.93	7.13	4.13
Gurung	76.47	3.62	11.91	8
Newar	53.18	7.64	15.85	23.33
Other Ethnic Groups	86.13	4.5	5.64	3.72
Caste groups:				
Dalit (Low-caste)	87.89	5.32	5.81	0.98
Chetri	81.54	4.82	6.58	7.05
Brahmin	72.57	7.94	13.78	5.7

Table 8.1. Ethnicity and Caste by Development Regions and Ecological Zones

Parameters	*Eastern-Mountain %*	*Central – Mountain %*	*Western-Mountain %*
Indigenous groups:			
Tharu	0	0	0
Magar	1.26	1.26	0.03
Tamang	3.68	3.53	0.09
Rai-Limbu	13.15	0	0
Newar	2.94	7.92	0.03
Gurung	2.21	0	5.95
Other Ethnic Groups	0.8	1.26	0.05
Caste groups:			
Brahmin	0.8	4.5	0.07
Chetri	1.89	2.13	15.59
Dalit (Low-caste)	0.98	0.54	2.65

Table 8.2. Ethnicity and Caste by Development Regions and Ecological Zones (Contd.) (Contd.)

Parameters	*Eastern-Hill %*	*Central-Hill %*	*Western-Hill %*	*Midwestern -Hill %*	*Farwestern-Hill %*
Indigenous groups:					
Tharu	0.46	1.22	0	0	0
Magar	2.88	13.58	32.63	16.29	0.78
Tamang	6.27	61.25	1.74	0.5	0.03
Rai-Limbu	41.4	8.1	0	0	0.04
Newar	5.29	53.87	14.07	0.5	0.45
Gurung	0.79	11.9	68.17	0.16	0
Other Ethnic Groups	2.86	11.79	4.17	0.97	0
Caste groups:					
Brahmin	5.15	16.77	20.41	5.7	5.97
Chetri	6.39	16.74	6.73	16.86	8.55
Dalit (Low-caste)	5.78	5.88	18.49	8.04	6.5

Table 8.3. Ethnicity and Caste by Development Regions and Ecological Zones (Contd.)

Parameters	*Eastern-Terai %*	*Central-Terai %*	*Western-Terai %*	*Midwestern-Terai %*	*Farwestern-Terai %*
Indigenous groups:					
Tharu	6.59	14.45	11.43	15.12	50.73
Magar	1.99	3.53	20.12	4.79	0.86
Tamang	6.75	15.18	0.33	0.54	0.1
Rai-Limbu	36.55	0.76	0	0	0
Newar	8.55	2.73	2.57	0.1	0.99
Gurung	5.76	0.6	2	1.88	0.57
Other Ethnic Groups	32.53	36.69	7.17	1.16	0.54
Caste groups:					
Brahmin	12.15	10.37	9.29	3.94	4.88
Chetri	6.09	3.68	3.44	5.27	6.64
Dalit (Low-caste)	12.01	21.54	8.77	3.6	5.21

Table 9. Distribution of Institutional Characteristics by Ethnicity and Caste

Parameters	*Mother-tongue is official language%*	*Distance problem %*	*Piped water %*	*Electricity %*
Indigenous groups:				
Magar	0	58.83	13.15	43.3
Tamang	0	54.44	15.79	37.22
Gurung	0	43.34	27.78	74.69
Tharu	0	41.93	0.41	33.68
Rai-Limbu	0	39.56	18.91	58.35
Newar	0	35.4	45.05	71.09
Other Ethnic Groups	0	38.01	8.45	52.53
Caste groups:				
Dalit (Low-caste)	100	46.09	6.04	34.8
Chetri	100	40.1	14.8	50.98
Brahmin	100	26.28	23.24	75.39

Table 10. Distribution of Demographic Characteristics by Ethnicity and Caste

Parameters	*Married %*	*Female household head %*	*Large household %*
Indigenous groups:			
Tharu	74.1	6.94	54.73
Magar	77	25.97	37
Tamang	73.43	22.15	31.54
Rai-Limbu	67.13	32.44	28.74
Newar	73	18.64	25.95
Gurung	68.43	24.77	33.84
Other Ethnic Groups	80.65	17.24	41.83
Caste groups:			
Brahmin	74.3	26.07	25.43
Chetri	76.87	25.79	26.71
Dalit (Low-caste)	83.72	22.72	31.14

Table 11. Results of Bi-variate Analyses: Characteristics of the Poor (Women Sample, N = 9836)

Parameters	*Not Poor %*	*Poor %*	*Chi-Square*	*P*
Education			790.67	<.0001
No education	50.97	49.03		
Primary education	61.68	38.32		
Secondary education but not SLC	76.55	23.45		
SLC and above education	93.52	6.48		
Health				
Underweight (BMI=<18.5)	54.19	45.81	68.11	<.0001
Not underweight (BMI>18.5)	63.75	36.25		
Anemic	60.05	39.95	3.89	0.0487
Not anemic	62.09	37.91		
Child births	60.94	39.06	14.40	0.0001
No child births	65.26	34.74		
Child deaths	51.24	48.76	118.03	<.0001
No child deaths	64.9	35.1		
Occupation			1265.86	<.0001
Farmer	50.3	49.7		
Laborer	84.93	15.07		

Professionals	93.48	6.52		
Not working	87.05	12.95		
Geographic Isolation (Place of Residence)			870.36	<.0001
Isolated	98.95	1.05		
Less developed	95.53	4.47		
Moderately developed	82.78	17.22		
Developed	55.05	44.95		
Development Regions and Ecological Zones			1221.65	<.0001
Eastern-Mountain	37.75	62.25		
Central -Mountain	54.7	45.3		
Western-Mountain	17.89	82.11		
Easterm-Hill	48.16	51.84		
Central-Hill	74.69	25.31		
Western-Hill	63.01	36.99		
Midwestern-Hill	34.41	65.59		
Farwestern-Hill	27.27	72.73		
Eastern-Terai	80	20		
Central-Terai	63.48	36.52		
Western-Terai	81.54	18.46		
Midwestern-Terai	64.83	35.17		
Farwestern-Terai	47.49	52.51		
Institutions			6.70	0.0096
Mother-tongue is not official language	60.3	39.7		
Mother-tongue is official language	62.85	37.15		
Distance not problem	71.57	28.43	609.04	<.0001
Distance problem	46.86	53.14		
No piped water	56.41	43.59	676.69	<.0001
Piped water	93.56	6.44		
No electricity	30.76	69.24	3716.06	<.0001
Electricity	90.75	9.25		
Demographics				
Not married	64.35	35.65	9.98	0.0016
Married	60.67	39.33		
Not female household head	62.47	37.53	13.67	0.0002
Female household head	58.03	41.97		
Not large household size	61.42	38.58	0.09	0.761
Large household size	61.73	38.27		

Table 12. Results of Logistic Regressions Predicting Poverty controlling for Demographics (women sample, N = 9711): Model 1

Parameters	*DF*	*b*	*SE*	*Wald*	*Odds Ratio*	*(95% Conf. Limits)*
Ethnic/Caste groups:						
Tamang	1	1.39	0.11	157.61	4.03	(3.242 -- 5.01)****
Rai-Limbu	1	1.28	0.11	130.75	3.6	(2.891 -- 4.485)****
Magar	1	1.12	0.1	123.88	3.07	(2.518 -- 3.738)****
Tharu	1	1	0.09	116.53	2.73	(2.276 -- 3.278)****
Newar	1	0.11	0.13	0.77	1.12	(0.873 -- 1.43)
Gurung	1	0.07	0.16	0.16	1.07	(0.773 -- 1.476)
Other Ethnic Groups	1	0.63	0.08	59.52	1.88	(1.601 -- 2.205)****
Dalit (Low-caste)	1	1.51	0.09	314.88	4.53	(3.834 -- 5.353)****
Chetri	1	1.08	0.08	203.49	2.96	(2.548 -- 3.432)****
Brahmin ®					1	
Demographics						
Married	1	0.22	0.05	17.45	1.24	(1.121 -- 1.373)****
Female household head	1	0.23	0.05	19.12	1.26	(1.136 -- 1.398)****
Large household size	1	-0.01	0.05	0.08	0.99	(0.901 -- 1.081)

Model Chi-Square = 590.5665, p<.0001
Max-rescaled R-Square =0.0788
®Reference group
****p<.0001, ***p<.001, **p<.01, *p<.05

Table 13. Results of Logistic Regressions Predicting Poverty controlling for Demography and Productivity Characteristics (women sample, N = 9711): Model 2

Parameters	*DF*	*b*	*SE*	*Wald*	*Odds Ratio*	*(95% Conf. Limits)*
Ethnic/Caste groups:						
Tamang	1	1.03	0.12	69.59	2.812	(2.205 -- 3.585)****
Rai-Limbu	1	1.28	0.13	102.55	3.614	(2.818 -- 4.634)****
Magar	1	0.66	0.11	35.67	1.931	(1.556 -- 2.397)****
Tharu	1	0.41	0.1	15.24	1.5	(1.224 -- 1.838)****
Newar	1	0.11	0.14	0.63	1.117	(0.85 -- 1.469)
Gurung	1	-0.01	0.18	0.01	0.985	(0.691 -- 1.405)
Other Ethnic Groups	1	0.35	0.09	13.85	1.416	(1.179 -- 1.701)***
Dalit (Low-caste)	1	1.06	0.09	125.28	2.894	(2.403 -- 3.486)****
Chetri	1	0.76	0.08	81.95	2.136	(1.812 -- 2.517)****
Brahmin ®					1	
Demographics						
Married	1	-0.06	0.08	0.43	0.946	(0.801 -- 1.117)
Female household head	1	0.25	0.06	17.89	1.286	(1.144 -- 1.445)****
Large household size	1	-0.15	0.05	8.17	0.865	(0.783 -- 0.955)**
Education						
No education	1	2.14	0.16	179.47	8.482	(6.204 -- 11.597)****
Primary education	1	1.64	0.16	103.52	5.174	(3.77 -- 7.102)****
Secondary education	1	0.92	0.16	32.55	2.506	(1.828 -- 3.437)****
Post-secondary education ®					1	
Health						
Underweight (BMI=<18.5)	1	0.23	0.06	17.68	1.264	(1.133 -- 1.41)****
Anemic	1	-0.04	0.05	0.55	0.962	(0.87 -- 1.065)
Child births	1	-0.46	0.09	28.18	0.632	(0.533 -- 0.749)****
Child deaths	1	0.16	0.06	7.72	1.176	(1.049 -- 1.318)**
Occupation						
Farmer	1	1.87	0.13	197.69	6.502	(5.009 -- 8.441)****
Laborer	1	0.59	0.2	8.85	1.811	(1.225 -- 2.678)**
Not-working	1	0.12	0.15	0.66	1.132	(0.839 -- 1.528)
Professionals®					1	

Model Chi-Square = 2328.450,
p<.0001
Max-rescaled R-Square =0.2881
®Reference group
****p<.0001, ***p<.001, **p<.01,
*p<.05

Table 14. Results of Logistic Regressions Predicting Poverty controlling for Demography, Productivity Characteristics and Geography (women sample, N = 9711): Model 3.

Parameters	*DF*	*b*	*SE*	*Wald*	*Odds Ratio*	*(95% Conf. Limits)*
Ethnic/Caste groups:						
Tamang	1	1.36	0.14	92.82	3.91	(2.964 -- 5.163)****
Rai-Limbu	1	1.28	0.15	70.18	3.60	(2.667 -- 4.856)****
Magar	1	1.05	0.12	70.55	2.85	(2.234 -- 3.645)****
Tharu	1	0.92	0.12	55.71	2.52	(1.977 -- 3.213)****
Newar	1	0.43	0.15	8.01	1.54	(1.141 -- 2.071)**
Gurung	1	0.06	0.20	0.09	1.06	(0.717 -- 1.568)
Other Ethnic Groups	1	1.34	0.11	139.99	3.81	(3.054 -- 4.757)****
Dalit (Low-caste)	1	1.406	0.108	169.214	4.077	(3.299 -- 5.039)****
Chetri	1	0.499	0.096	27.265	1.647	(1.366 -- 1.986)****
Brahmin ®					*1*	
Demographics						
Married	1	-0.08	0.09	0.69	0.93	(0.773 -- 1.11)
Female household head	1	0.25	0.07	15.05	1.29	(1.133 -- 1.462)****
Large household size	1	-0.14	0.06	6.28	0.87	(0.782 -- 0.97)*
Education						
No education	1	1.88	0.17	125.78	6.56	(4.725 -- 9.12)****
Primary education	1	1.46	0.17	73.71	4.30	(3.083 -- 6)****
Secondary education	1	0.81	0.17	22.80	2.25	(1.611 -- 3.129)****
Post-secondary education ®					*1*	
Health						
Underweight (BMI=<18.5)	1	0.31	0.06	27.01	1.37	(1.215 -- 1.538)****
Anemic	1	0.12	0.06	4.14	1.12	(1.004 -- 1.255)*
Child births	1	-0.30	0.09	9.94	0.74	(0.618 -- 0.894)**
Child deaths	1	0.10	0.06	2.47	1.10	(0.976 -- 1.25)

Occupation						
Farmer	1	1.44	0.14	99.09	4.20	(3.169 -- 5.578)****
Laborer	1	0.73	0.22	10.97	2.07	(1.345 -- 3.174)***
Not-working	1	0.29	0.16	3.10	1.34	(0.968 -- 1.847)
Professionals®					*1*	
Geographic Isolation						
Isolated	1	3.21	0.59	29.25	24.82	(7.751 -- 79.493)****
Less developed	1	2.31	0.60	14.93	10.09	(3.124 -- 32.598)****
Moderately developed	1	1.75	0.61	8.31	5.75	(1.751 -- 18.899)**
Developed®					*1*	
Development Region and Ecological Zones						
Eastern-Mountain	1	2.19	0.15	209.74	8.90	(6.621 -- 11.965)****
Central – Mountain	1	1.52	0.16	92.33	4.57	(3.35 -- 6.226)****
Western-Mountain	1	2.63	0.16	271.45	13.82	(10.111 -- 18.887)****
Eastern-Hill	1	2.13	0.14	221.47	8.44	(6.371 -- 11.172)****
Central-Hill	1	1.41	0.14	95.90	4.10	(3.093 -- 5.443)****
Western-Hill	1	1.40	0.13	114.32	4.05	(3.132 -- 5.229)****
Midwestern-Hill	1	2.88	0.14	403.17	17.81	(13.447 -- 23.594)****
Farwestern-Hill	1	2.95	0.15	366.12	19.09	(14.111 -- 25.819)****
Eastern-Terai	1	0.22	0.13	2.85	1.25	(0.965 -- 1.62)
Central-Terai	1	0.77	0.12	38.74	2.16	(1.697 -- 2.759)****
Midwestern-Terai	1	1.29	0.14	90.01	3.62	(2.778 -- 4.729)****
Farwestern-Terai	1	1.70	0.14	154.57	5.49	(4.194 -- 7.174)****
Western-Terai®					1	

Model Chi-Square = 3577.4279, p<.0001
Max-rescaled R-Square =0.416
®Reference group
****p<.0001, ***p<.001, **p<.01, *p<.05

Table 15. Results of Logistic Regressions Predicting Poverty controlling for Demography, Productivity Characteristics, Geography and Institution (women sample, N = 9711): Model 4.

Parameters	*DF*	*b*	*SE*	*Wald*	*Odds Ratios*	*(95% Conf. Limits)*
Ethnic/Caste groups:						
Tamang	1	2.09	0.32	42.98	8.05	(4.314 -- 15.011)****
Rai-Limbu	1	1.98	0.32	39.31	7.22	(3.892 -- 13.394)****
Magar	1	1.78	0.31	32.12	5.92	(3.201 -- 10.953)****
Tharu	1	1.66	0.32	27.73	5.26	(2.835 -- 9.753)****
Newar	1	1.15	0.32	12.72	3.16	(1.678 -- 5.933)***
Gurung	1	0.79	0.35	5.07	2.20	(1.107 -- 4.377)*
Other Ethnic Groups	1	2.07	0.31	44.49	7.94	(4.319 -- 14.597)****
Dalit (Low-caste)	1	1.35	0.11	150.36	3.85	(--) (3.103 -- 4.773)****
Chetri	1	0.44	0.10	20.20	1.55	(1.281 -- 1.881)****
Brahmin ®					*1.00*	
Demographics						
Married	*1*	*-0.08*	*0.09*	*0.79*	*0.92*	*(0.769 -- 1.104)*
Female household head	1	0.25	0.07	15.21	1.29	(1.134 -- 1.464)****
Large household size	*1*	*-0.14*	*0.06*	*6.25*	*0.87*	*(0.782 -- 0.971)**
Education						*(--)*
No education	1	1.90	0.17	127.76	6.68	(4.805 -- 9.284)****
Primary education	1	1.47	0.17	74.66	4.35	(3.115 -- 6.066)****
Secondary education	1	0.81	0.17	22.86	2.25	(1.613 -- 3.134)****
Post-secondary education ®					*1.00*	
Health						
Underweight (BMI=<18.5)	1	0.31	0.06	25.98	1.36	(1.208 -- 1.529)****
Anemic	1	0.12	0.06	4.17	1.12	(1.005 -- 1.255)*
Child births	1	-0.30	0.09	10.35	0.74	(0.614 -- 0.888)**
Child deaths	*1*	*0.10*	*0.06*	*2.62*	*1.11*	*(0.979 -- 1.254)*
Occupation						
Farmer	1	1.44	0.14	99.01	4.21	(3.169 -- 5.581)****
Laborer	*1*	*0.73*	*0.22*	*11.10*	*2.08*	*(1.351 -- 3.192)****
Not-working	1	0.29	0.17	3.13	1.34	(0.969 -- 1.851)
Professionals®					*1.00*	
Geographic Isolation						
Isolated	1	3.19	0.59	28.92	24.39	(7.614 -- 78.135)****
Less developed	1	2.28	0.60	14.55	9.81	(3.035 -- 31.692)****

Moderately developed	1	1.73	0.61	8.07	5.61	(1.708 -- 18.448)**
Developed ®					*1.00*	
Development Region and Ecological Zones						
Eastern-Mountain	1	2.27	0.16	214.69	9.72	(7.168 -- 13.17)****
Central –Mountain	1	1.52	0.16	92.99	4.59	(3.369 -- 6.26)****
Western-Mountain	1	2.63	0.16	271.71	13.84	(10.128 -- 18.921)****
Eastern-Hill	*1*	*2.16*	*0.14*	*225.22*	*8.65*	*(6.525 -- 11.463)***
Central-Hill	1	1.41	0.14	96.29	4.11	(3.101 -- 5.455)****
Western-Hill	1	1.40	0.13	114.05	4.04	(3.125 -- 5.217)****
Midwestern-Hill	1	2.88	0.14	402.34	17.73	(13.389 -- 23.484)****
Farwestern-Hill	1	2.94	0.15	363.21	18.86	(13.944 -- 25.512)****
Eastern-Terai	*1*	*0.23*	*0.13*	*2.97*	*1.26*	*(0.969 -- 1.627)*
Central-Terai	1	0.77	0.12	38.96	2.17	(1.7 -- 2.765)****
Midwestern-Terai	*1*	*1.29*	*0.14*	*90.29*	*3.63*	*(2.783 -- 4.738)****
Farwestern-Terai	1	1.70	0.14	154.46	5.48	(4.192 -- 7.169)****
Western-Terai®					*1.00*	
Language policy						
Mother-tongue	1	0.79	0.31	6.51	2.21	(1.202 -- 4.064)*

Model Chi-Square = 3584.279, p<.0001
Max-rescaled R-Square =0.417
®Reference group
****p<.0001, ***p<.001, **p<.01, *p<.05

Table 16. Results of Logistic Regressions Predicting Poverty: Model 1 – Model 4 (women sample, N = 9711).

	Odds Ratios			
Parameters	***Model 1***	***Model 2***	***Model 3***	***Model 4***
Ethnic/Caste groups:				
Tamang	4.03****	2.812****	3.912****	8.047****
Rai-Limbu	3.6****	3.614****	3.599****	7.22****
Magar	3.07****	1.931****	2.854****	5.921****
Tharu	2.73****	1.5****	2.52****	5.258****
Newar	1.12	1.117	1.537**	3.155***
Gurung	1.07	0.985	1.06	2.202*
Other Ethnic Groups	1.88****	1.416***	3.812****	7.941****
Dalit (Low-caste)	4.53****	2.894****	4.077****	3.848****
Chetri	2.96****	2.136****	1.647****	1.552****
Brahmin ®	1	1		1
Demographics				
Married	1.24****	0.946	0.926	0.921
Female household head	1.26****	1.286****	1.287***	1.289****
Large household size	0.99****	0.865**	0.871*	0.871*
Education				
No education		8.482****	6.564****	6.679****
Primary education		5.174****	4.301****	4.347****
Secondary education		2.506****	2.245***	2.248****
Post-secondary education ®		1		1
Health				
Underweight (BMI=<18.5)		1.264****	1.367****	1.359****
Anemic		0.962	1.122*	1.123*
Child births		0.632****	0.743**	0.739**
Child deaths		1.176**	1.104	1.108
Occupation				
Farmer		6.502****	4.204****	4.206****
Laborer		1.811**	2.066***	2.077**
Not-working		1.132	1.337	1.339
Professionals®		1		1
Geographic Isolation				
Isolated			24.822****	24.39****
Less developed			10.092****	9.807****

Moderately developed	5.753**	5.613**
Developed ®		1
Development Region and Ecological Zones		
Eastern-Mountain	8.901****	9.716****
Central –Mountain	4.567****	4.592****
Western-Mountain	13.819****	13.843****
Eastern-Hill	8.436****	8.648****
Central-Hill	4.103****	4.113****
Western-Hill	4.047****	4.038****
Midwestern-Hill	17.812****	17.732****
Farwestern-Hill	19.088****	18.861****
Eastern-Terai	1.25	1.256
Central-Terai	2.164****	2.168****
Midwestern-Terai	3.624****	3.631****
Farwestern-Terai	5.485****	5.482****
Western-Terai®		1
Language policy		
Mother tongue		2.21*

Table 17. Results of Logistic Regressions Predicting Poverty: Tamang and Brahmin SubSamples.

	Odds Ratio	
Parameters	***Tamang***	***Brahmin***
Demographics		
Married	0.728	1.073
Female household head	1.224	1.087
Large household size	1.759*	0.37****
Education		
No education	5.172*	7.586****
Primary education	2.22	6.312****
Secondary education	1.477	2.755**
Post-secondary education ®		
Health		
Underweight (BMI=<18.5)	1.803	1.69**
Anemic	1.234	0.876
Child births	0.998	0.643
Occupation		
Farmer	3.913	10.2****
Laborer		6.444
Not-working	1.198	2.299
Professionals®		
Geographic Isolation		
Isolated		
Less developed		
Moderately developed	0.612	
Developed ®		
Development Region and Ecological Zones		
Eastern-Mountain		45.86****
Central -Mountain		3.11
Western-Mountain	3.165	75.18***
Easterm-Hill		15.73****
Central-Hill		3.21
Western-Hill		4.936***
Midwetern-Hill	0.618	23.05****
Farwestern-Hill		61.71****
Eastern-Terai		0.23
Central-Terai		2.588
Midwestern-Terai		4.77*
Farwestern-Terai		7.182**
Western-Terai®		

Model Chi-Square	216.309****	636.5422****
Max-rescaled R-Square	0.485	0.564

®Reference group

****p<.0001, ***p<.001, **p<.01, *p<.05

Table 18. Unweighted Frequency and Weighted Percent Distribution of Poverty: Women, Men and Households Samples.

	Poverty					
	Women (N = 9836)		***Men(N= 4045)***		***Household (N = 7659)***	
Parameters	***n***	***%***	***n***	***%***	***n***	***%***
Ethnic/Caste groups:						
Tamang	253	51.41	80	51.34	202	50.97
Magar	302	48.99	117	49.56	231	48.04
Tharu	381	44.67	186	39.14	270	46.38
Rai-Limbu	234	37.81	89	35.11	200	39.01
Gurung	56	25.76	31	34.91	46	25.08
Newar	110	20.62	43	16.96	84	19.53
Other Ethnic Groups	593	33.5	250	30.4	473	34.75
Dalit (Low-caste)	698	52.44	273	50.99	603	56.13
Chetri	1001	43.64	356	38.89	819	44.65
Brahmin	307	19.36	114	19.53	255	20.76

Table 19. Results of Logistic Regressions Predicting Poverty: Women, Men and Household Samples

	Odds Ratios					
Parameters	***Women***		***Men***		***Household***	
Ethnic/Caste groups:						
Tamang	3.912	****	2.906	****	3.087	****
Rai-Limbu	3.599	****	1.804	*	3.009	****
Magar	2.854	****	2.423	****	2.802	****
Tharu	2.52	****	1.842	**	3.048	****
Newar	1.537	**	1.069		1.277	
Gurung	1.06		0.922		0.865	
Other Ethnic Groups	3.812	****	2.355	****	4.228	****
Dalit (Low-caste)	4.077	****	3.158	****	4.575	****
Chetri	1.647	****	1.244		1.684	****
Brahmin ®					*1*	
Demographics						
Married	0.926		1		1.147	
Female household head	1.287	***	0.736		0.982	
Large household size	0.871	*	0.833	*	0.755	****
Education						
No education	6.564	****	5.234	****	4.631	****
Primary education	4.301	****	3.94	****	3.319	****
Secondary education	2.245	***	2.465	****	1.776	****
Post-secondary education ®					*1*	
Health						
Underweight (BMI=<18.5)	1.367	****				
Anemic	1.122	*				
Child births	0.743	**	0.867			
Child deaths	1.104		1.29	**		
Occupation						
Farmer	4.204	****	3.198	****	3.816	****
Laborer	2.066	***	2.294	****		
Not-working	1.337		1.598	*		
Professionals®						
Geographic Isolation						
Isolated	24.822	****	48.059	****	27.014	****
Less developed	10.092	****	14.112	*	11.151	****
Moderately developed	5.753	**	6.736		6.709	****
Developed ®					*1*	
Development Region and Ecological Zones						
Eastern-Mountain	8.901	****	8.994	****	7.435	**

						**
Central –Mountain						**
	4.567	****	4.066	****	3.971	**
Western-Mountain						**
	13.819	****	11.752	****	15.535	**
Easterm-Hill						**
	8.436	****	7.257	****	6.677	**
Central-Hill						**
	4.103	****	2.883	****	3.88	**
Western-Hill						**
	4.047	****	3.517	****	3.014	**
Midwetern-Hill						**
	17.812	****	16.48	****	16.885	**
Farwestern-Hill						**
	19.088	****	18.781	****	17.753	**
Eastern-Terai	1.25		1.202		1.133	
Central-Terai						**
	2.164	****	2.087	****	1.991	**
Midwestern-Terai						**
	3.624	****	2.429	****	3.209	**
Farwestern-Terai						**
	5.485	****	7.754	****	5.339	**
Western-Terai®	*1*		*1*		*1*	

Table 20. Distribution of Chief District Officers (CDO) by Caste/Ethnicity

S. N.	***District***	***Caste of CDOs***	***S.N.***	***District***	***Caste of CDOs***	***S.N.***	***District***	***Caste of CDOs***
1	Lalitpur	Bahun	26	Bajpur	Bahun	51	Dailekh	Bahun
2	Tanahun	Bahun	27	Rukum	Bahun	52	Dolkha	Bahun
3	Surhket	Bahun	28	Sankhuwasabha	Bahun	53	Dhading	Bahun
4	Parsa	Bahun	29	Rasuwa	Bahun	54	Dadeldhura	Bahun
5	Kaski	Bahun	30	Humla	Bahun	55	Dolpa	Bahun
6	Kathamndu	Bahun	31	Bajhang	Bahun	56	Gulmi	Bahun
7	Chitwan	Bahun	32	Mustang	Bahun	57	Jajarkot	Bahun
8	Panchthar	Bahun	33	Okhaldhunga	Bahun	58	Kanchanpur	Bahun
9	Siraha	Bahun	34	Baitadi	Bahun	59	Makwapur	Bahun
10	Bara	Bahun	35	Sindhupalchok	Bahun	60	Jhapa	Chetri
11	Khotang	Bahun	36	Taplejung	Bahun	61	Rupangehi	Chetri
12	Morang	Bahun	37	Myagdi	Bahun	62	Syangja	Chetri
13	Bardiya	Bahun	38	Gorkha	Bahun	63	Baglung	Chetri
14	Saptari	Bahun	39	Ilam	Bahun	64	Ramechhap	Chetri

15	Kavrepalanchowk	Bahun	40	Terhathum	Bahun	65 Achham	Chetri
16	Kailali	Bahun	41	Salyan	Bahun	66 Bajura	Chetri
17	Mahottari	Bahun	42	Parbat	Bahun	67 Puithon	Chetri
18	Banke	Bahun	43	Kalikot	Bahun	68 Mugu	Khatri
19	Bara	Bahun	44	Jumla	Bahun	69 Kapilbastu	Thakuri
20	Rautahat	Bahun	45	Bhatapur	Bahun	70 Udayapur	Limbu
21	Sindhuli	Bahun	46	Nuwakot	Bahun	71 Doti	Limbu
22	Manang	Bahun	47	Pyuthan	Bahun	72 Solukhumba	Limbu
23	Argkhakhanchi	Bahun	48	Rulpa	Bahun	73 Dhankuta	Nawar
24	Palpa	Bahun	49	Lamjung	Bahun	74 Nawalparasi	Nawar
25	Dang	Bahun	50	Darchula	Bahun	75 Dhanusha	Yadav

Table 21. Results of Logistic Regressions Predicting Poverty controlling for Demography, Productivity Characteristics, Geography and Institution (women sample, N = 9711) (Education, Occupation, Geo-isolation recoded)

Parameter	***DF***	***Wald***	***Odds Ratios***	***(95% Conf. Limits)***
Ethnic/Caste groups:				
Tamang	1	104.16	4.16	(3.166 -- 5.475)****
Rai-Limbu	1	81.37	3.90	(2.902 -- 5.242)****
Magar	1	88.51	3.21	(2.519 -- 4.097)****
Tharu	1	54.02	2.46	(1.933 -- 3.121)****
Newar	1	11.09	1.65	(1.229 -- 2.216)****
Other Ethnic Groups	1	107.97	2.96	(2.413 -- 3.635)***
Dalit (Low-caste)	1	191.18	4.38	(3.554 -- 5.403)****
Chetri	1	31.17	1.70	(1.413 -- 2.054)****
Brahmin ®				
Demographics				
Married	1	0.03	1.02	(0.852 -- 1.213)
Female household head	1	14.87	1.28	(1.129 -- 1.45)****
Large household size	1	4.31	0.89	(0.803 -- 0.994)*
Education				
No schooling	1	183.03	2.26	(2.005 -- 2.538)****
Schooling ®				
Health				
Underweight (BMI=<18.5)	1	41.55	1.47	(1.307 -- 1.651)****
Anemic	1	4.00	1.12	(1.002 -- 1.249)*
Child births	1	6.14	0.80	(0.669 -- 0.954)*
Occupation				

Farmer	1	335.01	3.80	(3.294 -- 4.384)****
Not Farmer®				
Geographic Isolation				
Isolated	1	260.42	3.06	(2.671 -- 3.504)****
Not Isolated®				
Development Region and Ecological Zones				
Eastern-Mountain	1	177.28	7.14	(5.348 -- 9.541)****
Central -Mountain	1	88.98	4.37	(3.219 -- 5.943)****
Western-Mountain	1	247.29	11.37	(8.397 -- 15.391)****
Easterm-Hill	1	200.76	7.24	(5.504 -- 9.517)****
Central-Hill	1	77.97	3.41	(2.596 -- 4.473)****
Western-Hill	1	86.72	3.25	(2.536 -- 4.165)****
Midwetern-Hill	1	393.19	16.40	(12.44 -- 21.627)****
Farwestern-Hill	1	370.64	18.66	(13.855 -- 25.142)****
Eastern-Terai	1	5.00	1.34	(1.037 -- 1.735)*
Central-Terai	1	51.28	2.43	(1.903 -- 3.092)****
Midwestern-Terai	1	89.70	3.61	(2.766 -- 4.703)****
Farwestern-Terai	1	137.07	4.78	(3.681 -- 6.216)****
Western-Terai®				

Model Chi-Square = 3319.201, p<.0001
Max-rescaled R-Square =0.3912
®Reference group
****p<.0001, ***p<.001, **p<.01, *p<.05

Table 22. Results of Logistic Regressions Predicting Poverty: Subsample- Central Hill Region.

Parameter	*DF*	*Wald*	*Odds Ratios*	*(95% Conf. Limits)*
Ethnic/Caste groups:				
Tamang	1	32.53	8.27	(4.003 -- 17.104)****
Rai-Limbu	1	5.42	12.49	(1.489 -- 104.667)*
Magar	1	33.52	36.09	(10.719 -- 121.533)****
Newar	1	10.55	4.28	(1.779 -- 10.278)**
Other Ethnic Groups	1	1.72	1.87	(0.734 -- 4.759)
Dalit (Low-caste)	1	28.35	21.97	(7.046 -- 68.519)****
Chetri	1	0.34	1.28	(0.56 -- 2.92)
Brahmin ®				
Demographics				
Married	1	0.92	0.69	(0.327 -- 1.466)
Female household head	1	0.00	1.01	(0.598 -- 1.69)
Large household size	1	0.14	0.92	(0.575 -- 1.461)
Education				
No schooling	1	10.99	2.45	(1.442 -- 4.161)***
Schooling ®				
Health				
Underweight (BMI=<18.5)	1	0.85	1.30	(0.741 -- 2.294)
Anemic	1	3.26	1.58	(0.962 -- 2.593)
Child births	1	0.13	0.86	(0.374 -- 1.96)
Occupation				
Farmer	1	30.49	7.99	(3.821 -- 16.708)****
Not Farmer®				
Geographic Isolation				
Isolated	1	29.33	32.02	(9.131 -- 112.258)****
Not Isolated®				

Model Chi-Square = 595.4471,
p<.0001
Max-rescaled R-Square =0.6566
®Reference group
****p<.0001, ***p<.001, **p<.01, *p<.05

Table 23. Results of Logistic Regressions Predicting Poverty: Subsample- Westernl Hill Region

Parameter	*DF*	*Wald*	*Odds Ratios*	*(95% Conf. Limits)*
Ethnic/Caste groups:				
Magar	1	19.81	3.16	(1.903 -- 5.236)****
Gurung	1	4.51	1.90	(1.051 -- 3.437)*
Newar	1	0.22	1.27	(0.473 -- 3.395)
Other Ethnic Groups	1	12.35	3.65	(1.773 -- 7.52)***
Dalit (Low-caste)	1	41.79	5.84	(3.419 -- 9.965)****
Chetri	1	6.17	2.12	(1.172 -- 3.837)*
Brahmin ®				
Demographics				
Married	1	0.56	0.80	(0.447 -- 1.433)
Female household head	1	0.08	0.95	(0.65 -- 1.379)
Large household size	1	0.10	0.94	(0.649 -- 1.363)
Education				
No schooling	1	7.12	1.64	(1.141 -- 2.361)**
Schooling ®				
Health				
Underweight (BMI=<18.5)	1	4.75	1.64	(1.051 -- 2.559)*
Anemic	1	0.44	1.14	(0.767 -- 1.705)
Child births	1	0.17	1.13	(0.621 -- 2.073)
Occupation				
Farmer	1	25.55	15.08	(5.266 -- 43.178)****
Not Farmer®				
Geographic Isolation				
Isolated	1	67.19	17.58	(8.858 -- 34.893)****
Not Isolated®				

Model Chi-Square = 360.528, p<.0001
Max-rescaled R-Square =0.429
®Reference group
****p<.0001, ***p<.001, **p<.01, *p<.05

Table 24. Results of Logistic Regressions Predicting Poverty: Subsample- Eastern Terai Region

Parameter	*DF*	*Wald*	*Odds Ratios*	*(95% Conf. Limits)*
Ethnic/Caste groups:				
Tharu	1	9.49	26.36	(3.287 -- 211.434)**
Tamang	1	1.33	5.26	(0.312 -- 88.64)
Railimbu	1	9.14	23.80	(3.048 -- 185.754)**
Newar	1	0.00		
Other Ethnic Groups	1	11.40	31.07	(4.229 -- 228.274)***
Dalit (Low-caste)	1	12.16	37.08	(4.867 -- 282.475)***
Chetri	1	3.54	7.84	(0.917 -- 67.089)
Brahmin ®				
Demographics				
Married	1	0.17	1.13	(0.628 -- 2.042)
Female household head	1	0.59	1.20	(0.76 -- 1.88)
Large household size	1	5.14	0.67	(0.475 -- 0.947)*
Education				
No schooling	1	12.10	2.16	(1.398 -- 3.323)***
Schooling ®				
Health				
Underweight (BMI=<18.5)	1	5.98	1.54	(1.089 -- 2.165)*
Anemic	1	0.08	1.05	(0.746 -- 1.478)
Child births	1	1.71	0.69	(0.392 -- 1.205)
Occupation				
Farmer	1	25.06	2.62	(1.795 -- 3.812)****
Not Farmer®				
Geographic Isolation				
Isolated	1	4.28	1.64	(1.027 -- 2.63)*
Not Isolated®				

Model Chi-Square = 186.4767, p<.0001
Max-rescaled R-Square =0.2525
®Reference group
****p<.0001, ***p<.001, **p<.01, *p<.05

Table 25. Results of Logistic Regressions Predicting Poverty: Subsample- Central Terai Region

Parameter	*DF*	*Wald*	*Odds Ratios*	*(95% Conf. Limits)*
Ethnic/Caste groups:				
Tharu	1	2.80	0.20	(0.032 -- 1.313)
Tamang	1	0.42	1.86	(0.287 -- 12.096)
Other Ethnic Groups	1	0.00	1.05	(0.178 -- 6.226)
Dalit (Low-caste)	1	9.14	4.82	(1.738 -- 13.343)**
Chetri	1	0.44	1.58	(0.408 -- 6.135)
Brahmin ®				
Demographics				
Married	1	0.08	1.07	(0.644 -- 1.793)
Female household head	1	9.91	1.87	(1.267 -- 2.762)**
Large household size	1	1.05	0.85	(0.629 -- 1.156)
Education				
No schooling	1	17.25	2.36	(1.573 -- 3.532)****
Schooling ®				
Health				
Underweight (BMI=<18.5)	1	1.94	1.24	(0.916 -- 1.679)
Anemic	1	3.90	0.74	(0.553 -- 0.998)*
Child births	1	1.06	0.77	(0.468 -- 1.267)
Occupation				
Farmer	1	38.21	2.87	(2.052 -- 3.999)****
Not Farmer®				
Geographic Isolation				
Isolated	1	34.53	3.77	(2.42 -- 5.862)****
Not Isolated®				
Language Policy				
Mother tongue	1	3.45	0.15	(0.021 -- 1.11)

Model Chi-Square = 287.8651,
p<.0001
Max-rescaled R-Square =0.3228
®Reference group
****p<.0001, ***p<.001, **p<.01, *p<.05

Table 26. Results of Logistic Regressions Predicting Poverty: Subsample- Western Terai Region

Parameter	*DF*	*Wald*	*Odds Ratios*	*(95% Conf. Limits)*
Ethnic/Caste groups:				
Tharu	1	7.37	4.69	(1.537 -- 14.306)**
Magar	1	14.91	8.76	(2.912 -- 26.352)***
Other Ethnic Groups	1	9.30	5.48	(1.837 -- 16.371)**
Dalit (Low-caste)	1	12.62	7.59	(2.48 -- 23.208)***
Chetri	1	3.83	3.43	(0.999 -- 11.745)
Brahmin ®				
Demographics				
Married	1	0.05	0.92	(0.454 -- 1.871)
Female household head	1	0.01	1.02	(0.6 -- 1.745)
Large household size	1	7.35	0.58	(0.386 -- 0.858)**
Education				
No schooling	1	6.36	1.87	(1.15 -- 3.044)*
Schooling ®				
Health				
Underweight (BMI=<18.5)	1	0.00	1.00	(0.644 -- 1.557)
Anemic	1	0.02	1.03	(0.703 -- 1.499)
Child births	1	0.00	1.00	(0.508 -- 1.969)
Occupation				
Farmer	1	8.72	2.38	(1.338 -- 4.225)**
Not Farmer®				
Geographic Isolation				
Isolated	1	0.02	0.96	(0.533 -- 1.743)
Not Isolated®				

Model Chi-Square = 77.8432, p<.0001
Max-rescaled R-Square =0.1422
®Reference group
****p<.0001, ***p<.001, **p<.01, *p<.05

Table 27. Results of Logistic Regressions Predicting Poverty: Subsample Analyses of Individual Ethnicities and Castes.

	Odds Ratio							
Parameter	***Tamang***	***Magar***	***Tharu***	***Rai-Limbu***	***Newar***	***Dalit***	***Chetri***	***Brahmin***
Demographics								
Married	0.72	0.54	0.85	0.566	0.5	0.94	1.3	1.09
Female household head	1.16	0.8	1.87 *	1.063	1.69	1.83 ***	1.28 *	1.11
Large household size	1.27	0.74	0.75 *	1.276	2.04 *	0.74 *	0.97	0.58 **
Education								
No education	6.51 **	8.3 **	6.06 **	3.892 **	32.02 **	14.9 *	5.34 ***	10.21 ***
Primary education	2.91	4.59	4.8 *	1.685	12.02 *	10.4 *	2.96 ***	7.26 ***
Secondary education	1.86	1.48	3.39	0.956	5.1	5.09	1.66	2.45 *
Post-secondary education ®								
Health								
Underweight (BMI=<18.5)	1.61	1.7	1.24	1.198	1.12	1.16	1.28 *	1.64 **
Anemic	0.98	0.91	1.33	1.493	2.1	0.82	1.14	0.63 **
Child births	0.79	0.84	0.93	1.119	0.47	0.68	0.62 **	0.44 **
Occupation								
Farmer	4.08 **	2.6	3.58 *	6.951 ***	3.72 *	5.61 ***	7.63 ***	6.86 ***
Laborer		2.57	1.79	0.804	0.65	2.24	3.6 *	2.89
Not-working	0.69	0.97	1.62	1.057	1.39	0.8	1.22	0.86
Professionals®								
Geographic Isolation								
Isolated	4.44 ***	3.57 ***	1.38	6.617 ***	16.08 ***	2 ***	3.14 ***	4.76 ***
Not Isolated®								
Model Chi-Square	156	122	64.94	169.3	187	272	563	400
Max-rescaled R-Square	0.371	0.23	0.093	0.408	0.5	0.27	0.3	0.38

®Reference group
****p<.0001, ***p<.001, **p<.01, *p<.05

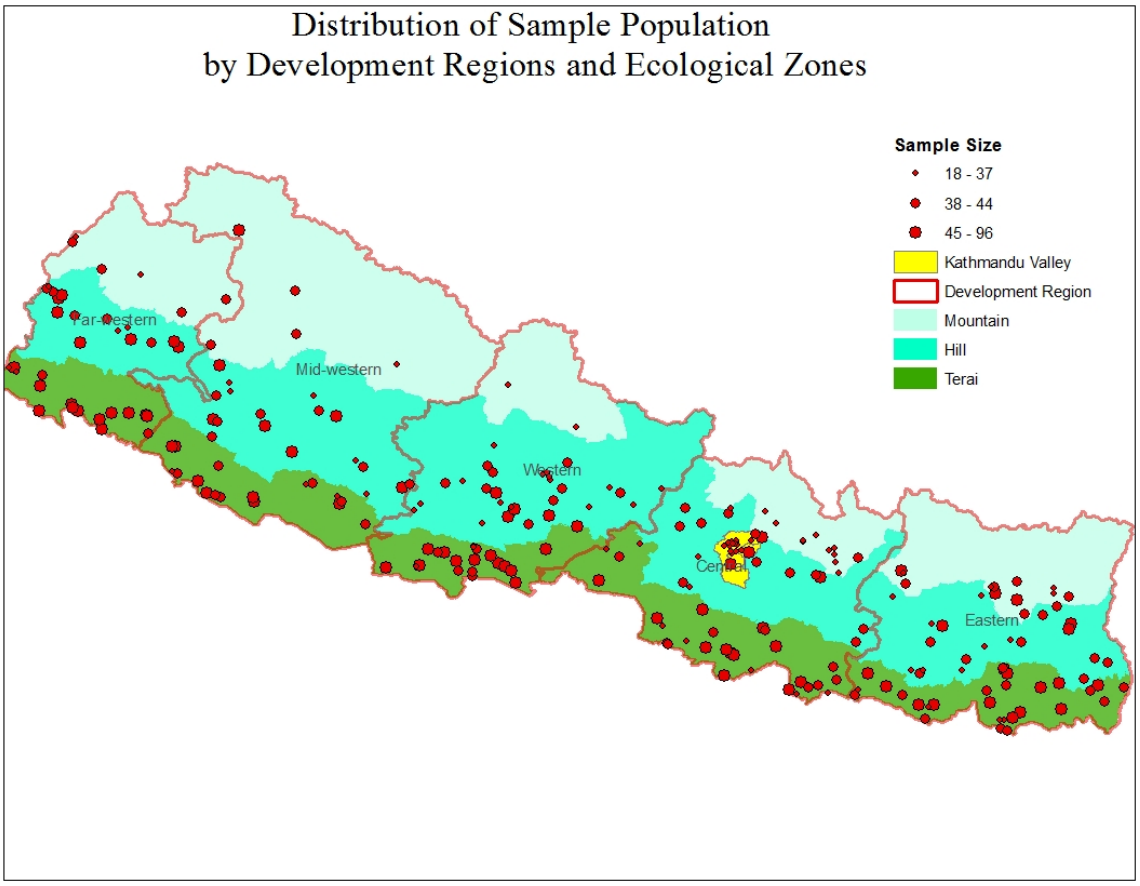
Figures

Note: Ethnicity and caste distributions in these maps are based on the sample population. The sample distribution is weighted to represent the national population. The national population is based on the Nepal Census 2000. However, there has been a growing concern about the validity of the census data. For example, the indigenous and ethnic groups have disputed the census data by claiming that the Nepali government manipulates census data to show Bahun/Chetri as the majority population of Nepal. They claim that their true population number has been under-counted, while Bahun/Chetri population number has been exaggerated. They claim that the Nepali government does this to justify the continuation of the Bahun/Chetri hegemony in the country.

It is relevant to note here that Nepali government banned collecting demographic and ethnicity data in the census until 1990s. The reason, it is believed, is that the government was afraid that the census data would reveal indigenous peoples as the population majority. This information, if published, is considered a threat to the government-- it would potentially question, or even overthrow, the two-and-half century old Bahun/Chetri regime in Nepal.

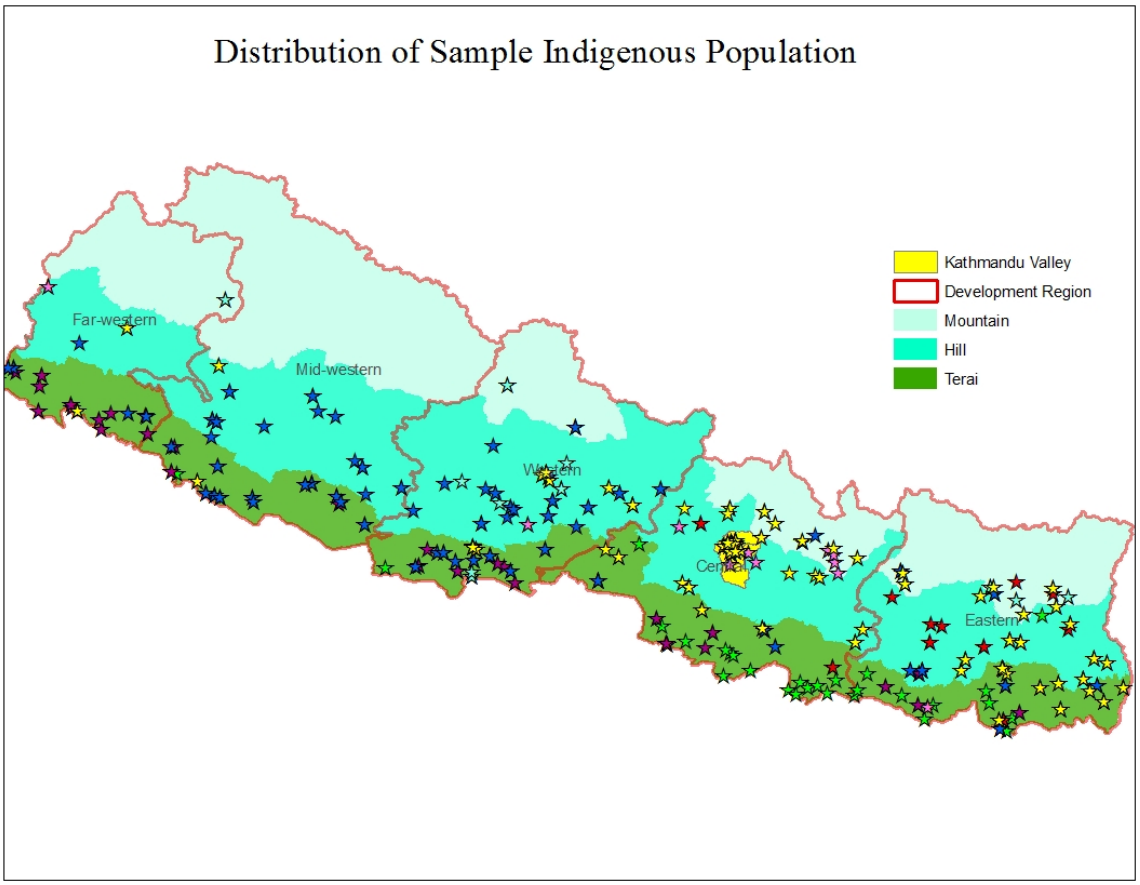
In lack of valid census data, it is difficult to estimate the exact proportion of indigenous population in Nepal. One report suggests that indigenous peoples in Nepal represent over 72% of the population (Leslie et al, 2010). The Nepal Demographic and Health Survey data, analyzed in this study show, when weighted, only 56.4% are the indigenous peoples. Indigenous peoples appear to be under-represented in the DHS sample.

Figure 4. Map 2: Geographic distribution of sample population by Development Regions and Ecological Zones.



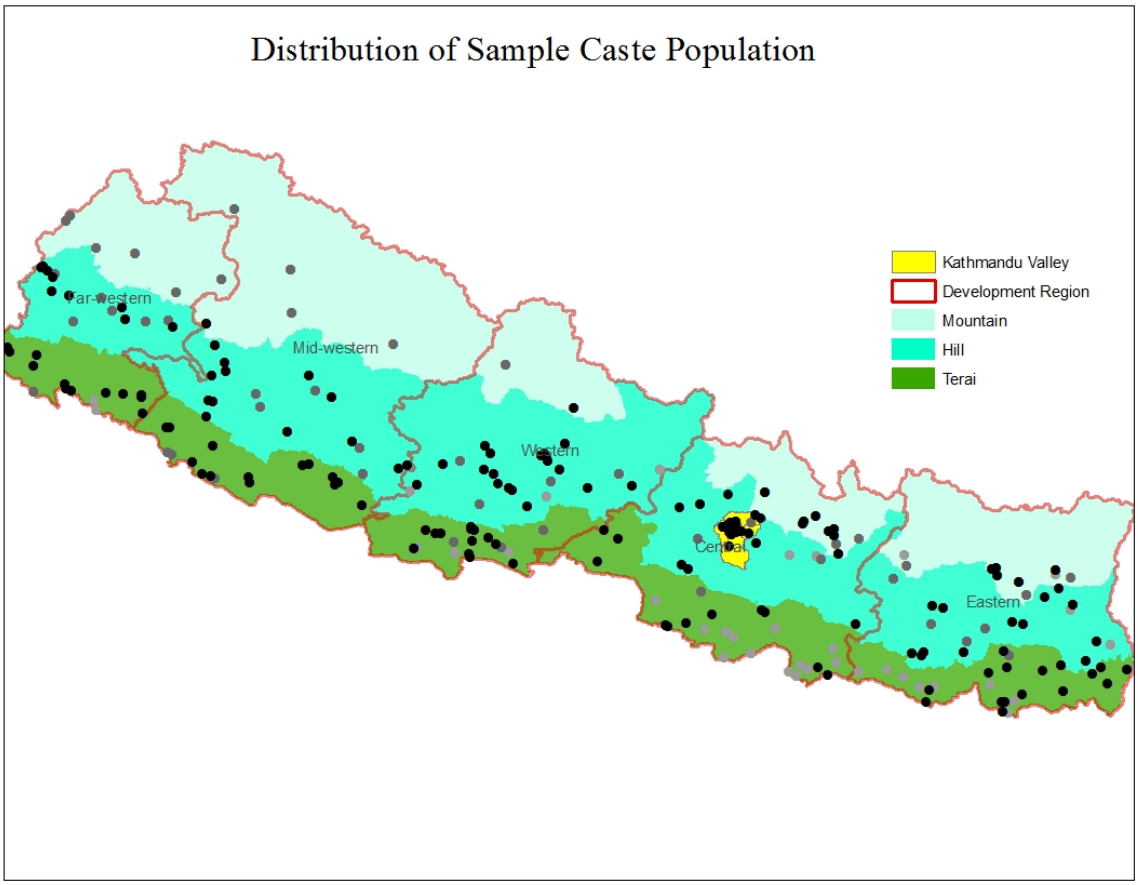
Map 2 displays the geographic distribution of sample population. Majority of the sample populations appear to come from the Terai and Hill regions.

Figure 5. Map 3: Geographic distribution of sample indigenous population.



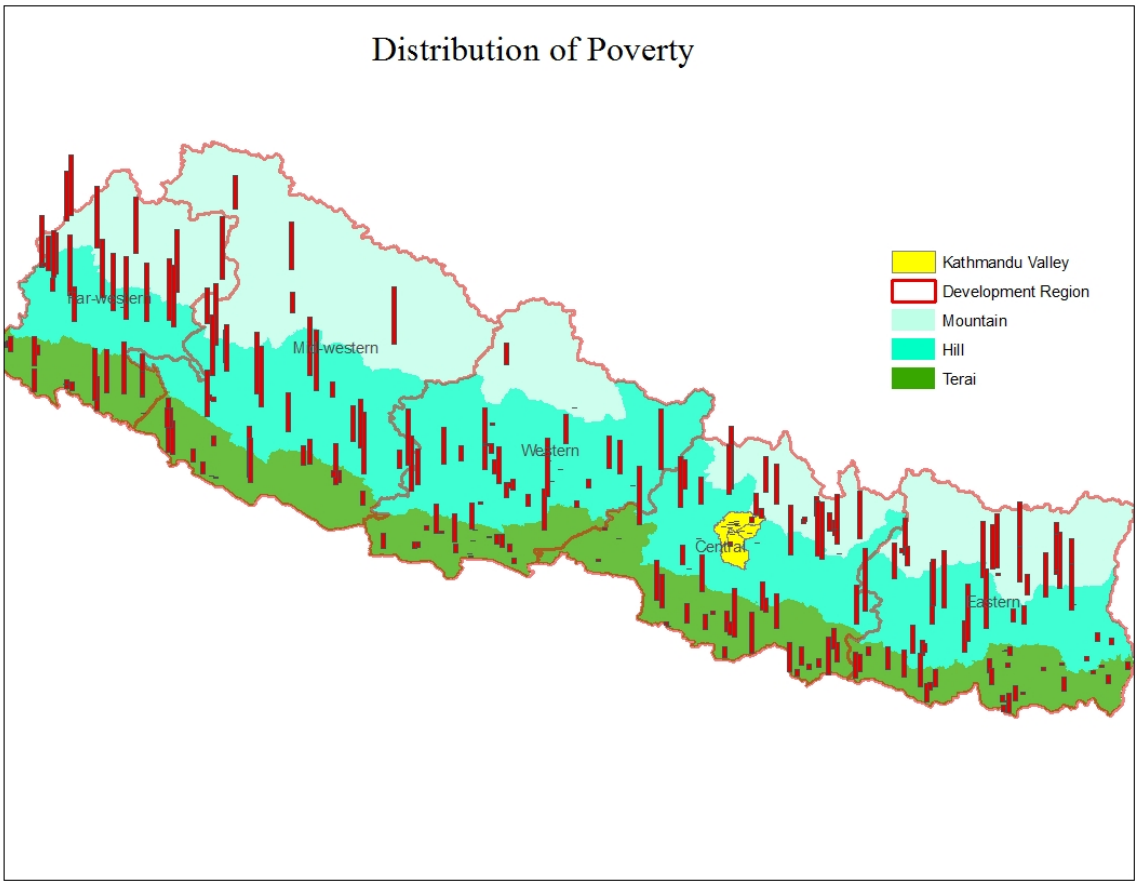
Map 3 displays the geographic distribution of sample indigenous population. To avoid cluttering, the legend is not shown. The color of the icons represents different ethnic groups. A pattern is seen of geographic clustering of indigenous peoples by their ethnicity.

Figure 6. Map4: Geographic distribution of sample caste population.



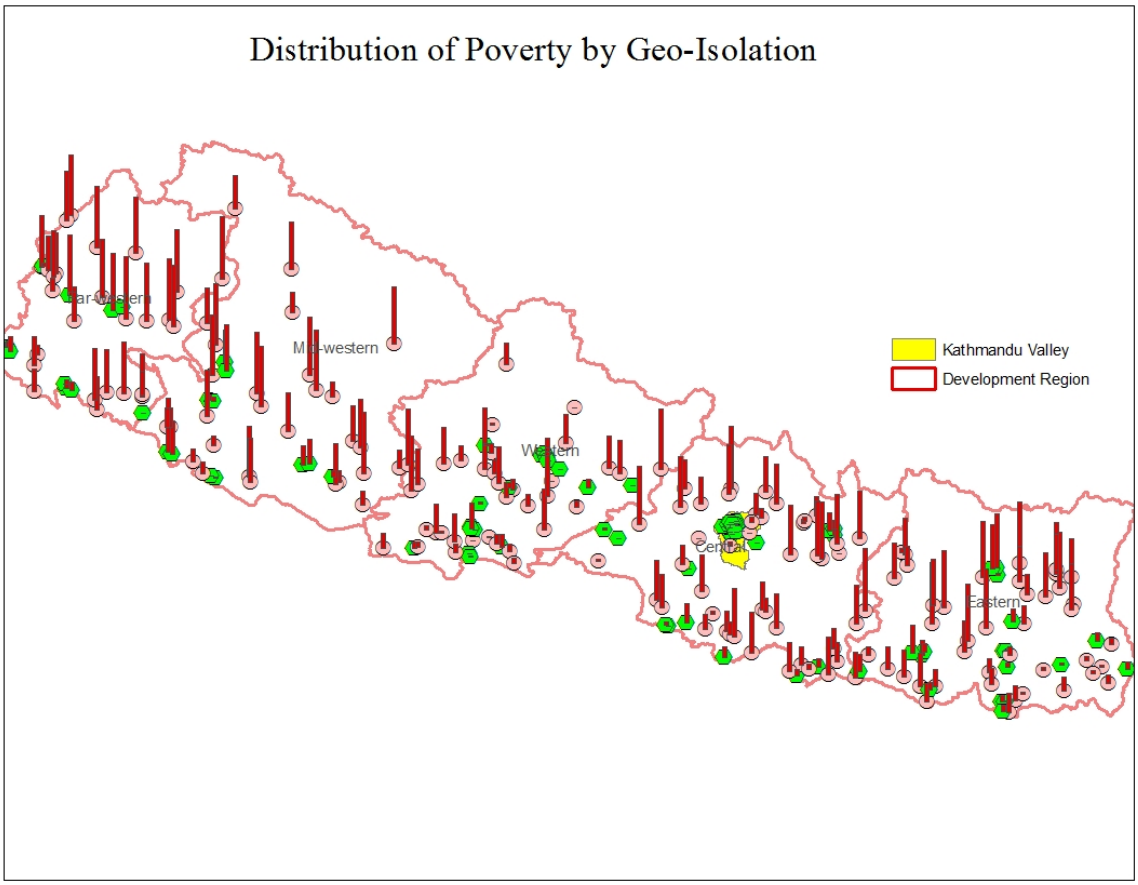
Map 4 displays the geographic distribution of sample caste population. To avoid cluttering, the legend is not shown. The color shade of the icons represents different caste groups. Caste people appear to spread throughout the country, and no geographic clustering is observed.

Figure 7. Map 5: Geographic distribution of poverty



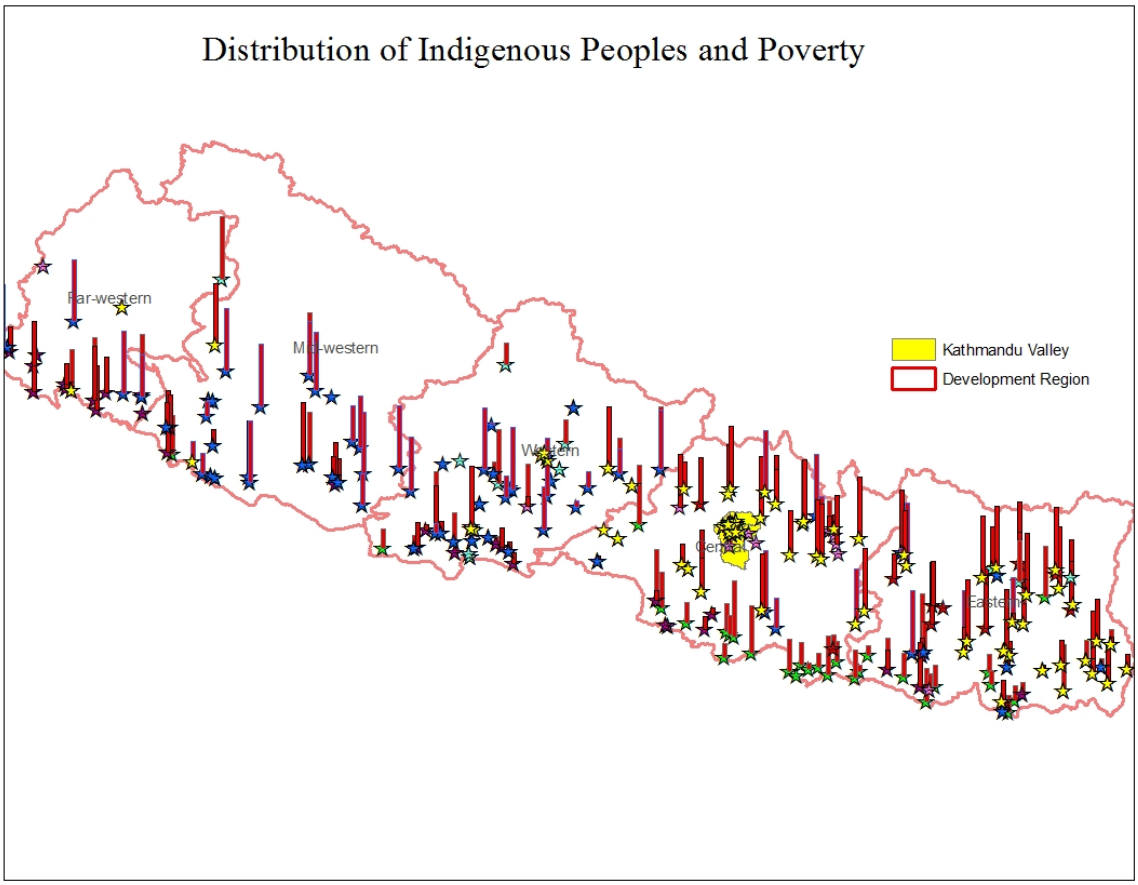
Map 5 displays the distribution of poor as percent of the total population. The bar chart indicates the proportion of individuals who are poor- taller the bar, higher the proportion of poor. Terai areas of the Eastern Development Region and Western Development region appear to have smaller proportion of populations who are poor. The Mountain areas of the Eastern, Central and Far-western Development regions appears to have higher percentage of people who are poor.

Figure 8. Map 6: Geographic distribution of poverty by geo-isolation



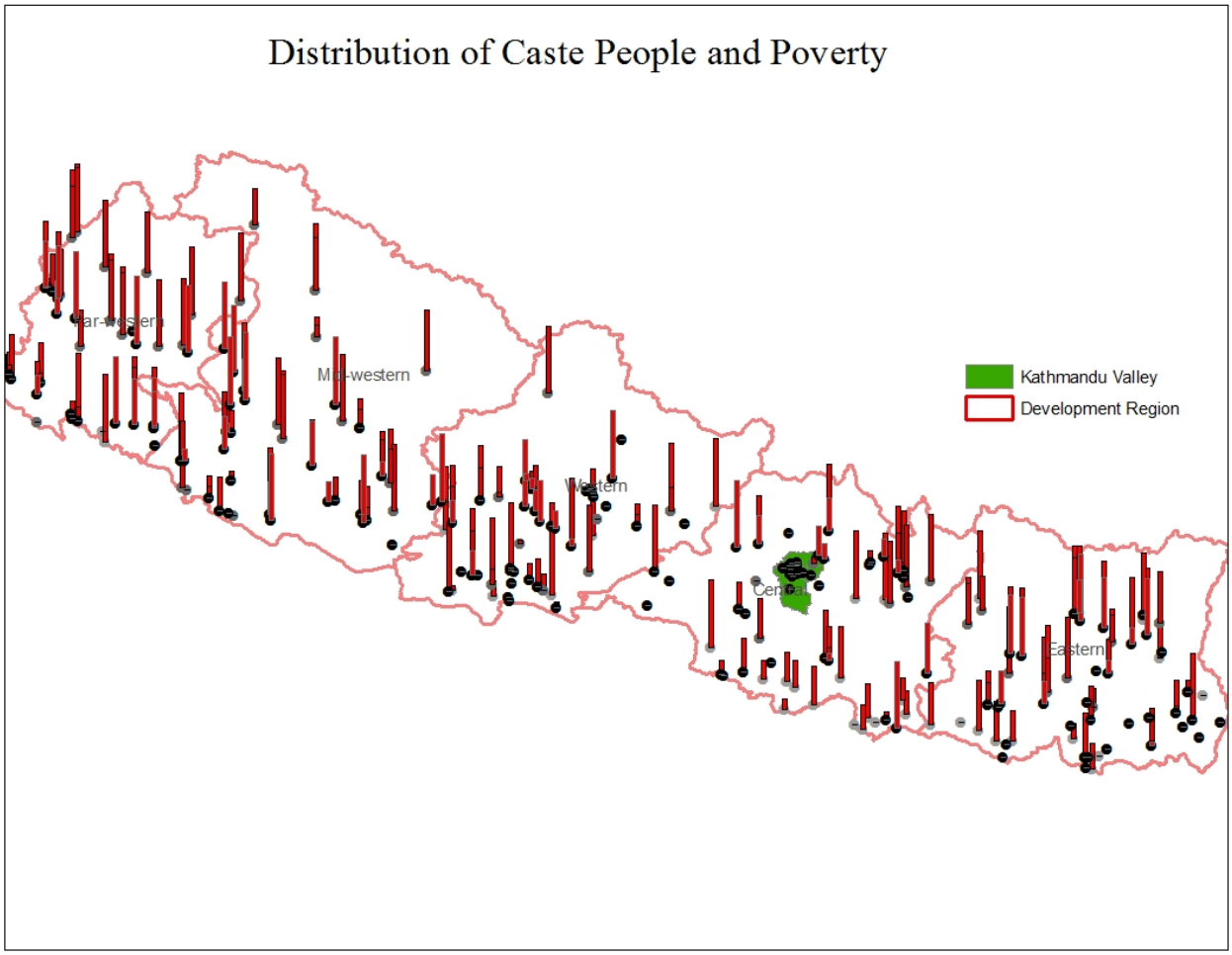
Map 6 displays the distribution of poor by geographic isolation. Pink dots represent areas that are isolated, and green dots represent areas that are not isolated. A clear pattern is seen between poverty and geo-isolation. Poor people are largely concentrated in isolated communities.

Figure 9. Map 7: Geographic distribution indigenous peoples and poverty



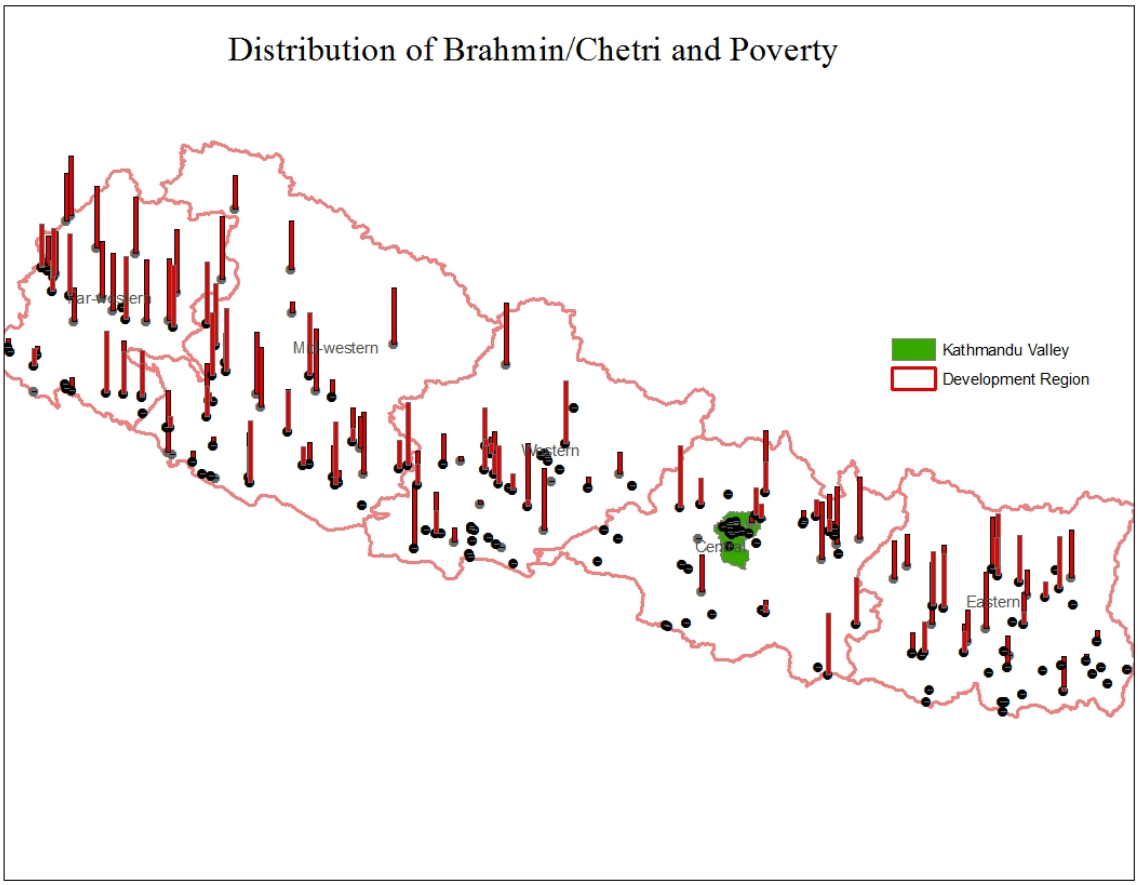
Map 7 displays the distribution of poverty by the geo-location of indigenous peoples. Poverty appears to be high almost in all areas in which indigenous peoples live.

Figure 10. Map 8: Geographic distribution of caste peoples and poverty



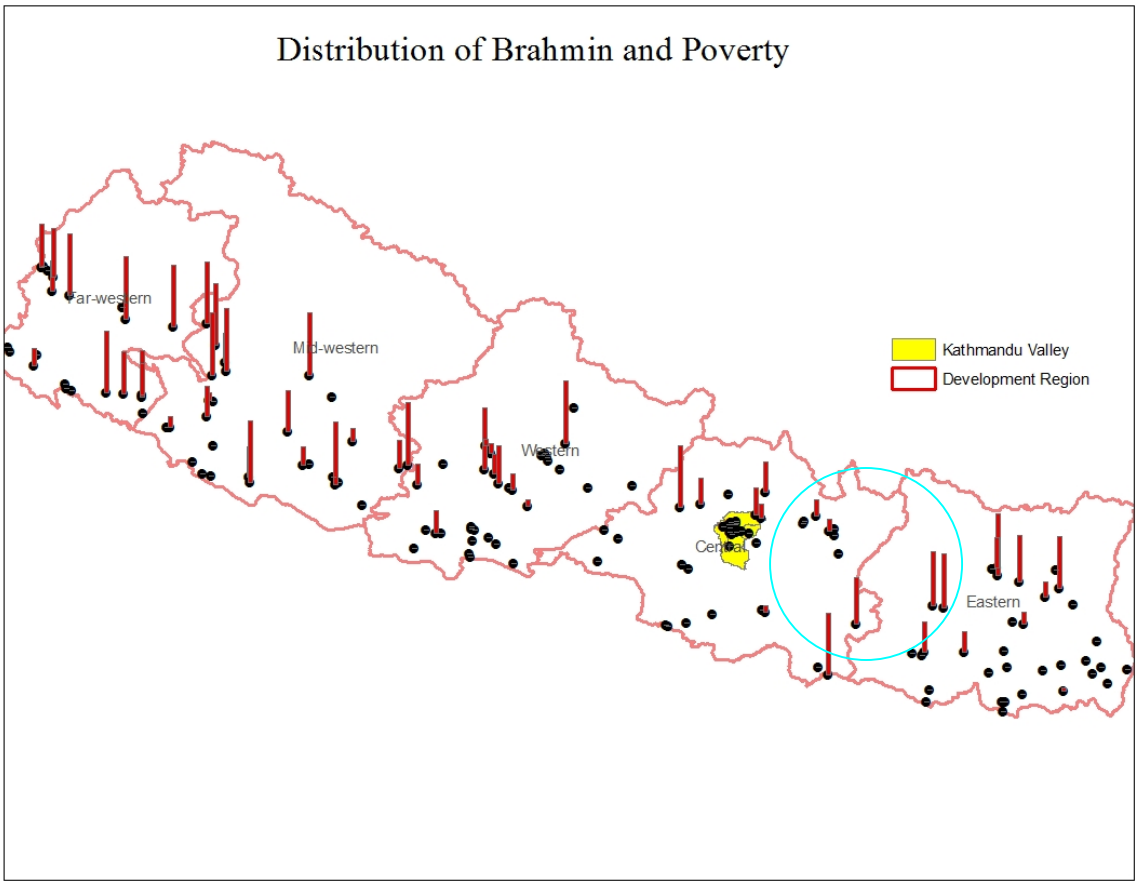
Map 8 displays the spatial distribution of poverty by caste groups. High poverty is also seen in areas in which caste peoples live.

Figure 11. Map 9: Geographic distribution of Bahun/Chetri and poverty



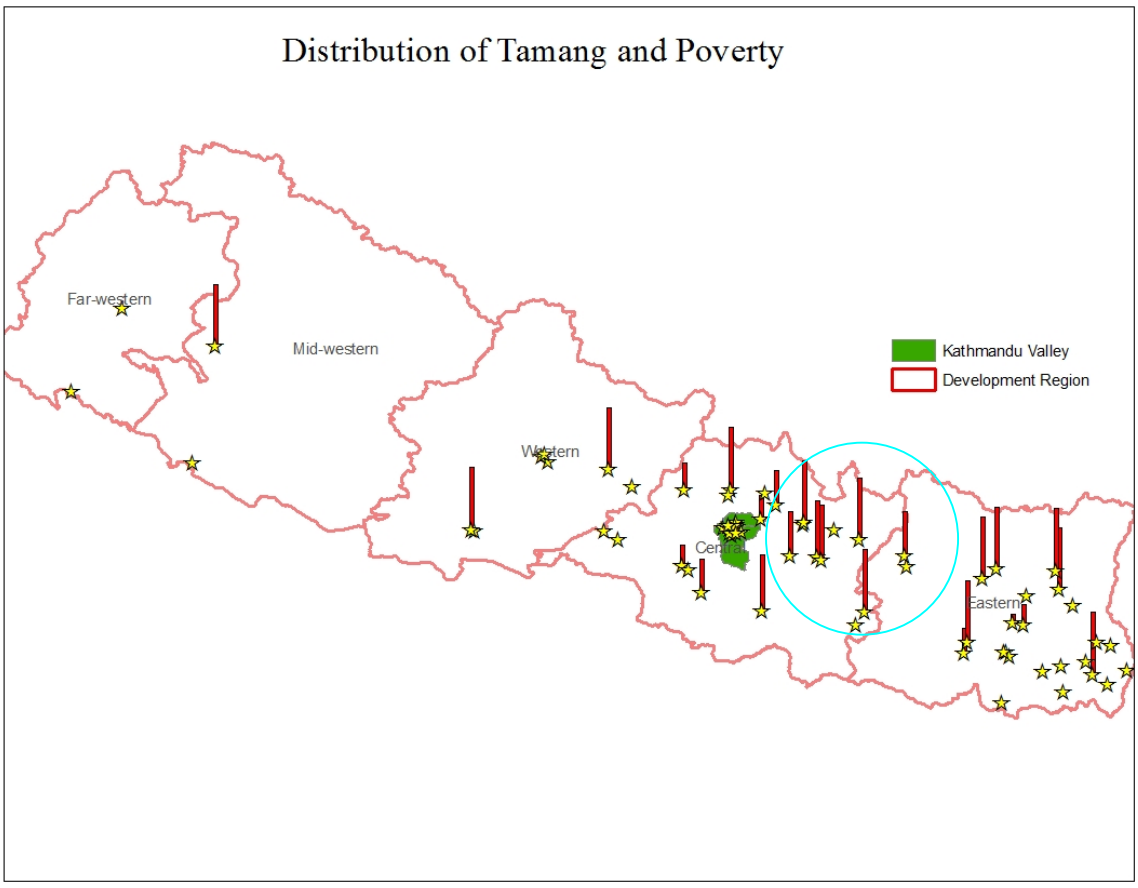
Map 9 displays the spatial distribution of poverty by caste people (Brahmin/Chetri) without lower-caste (Dalit). Notice that much of the poverty seen in map 8 disappears when Dalit was excluded from caste group.

Figure 12. Map 10: Geographic distribution of Bahun and poverty



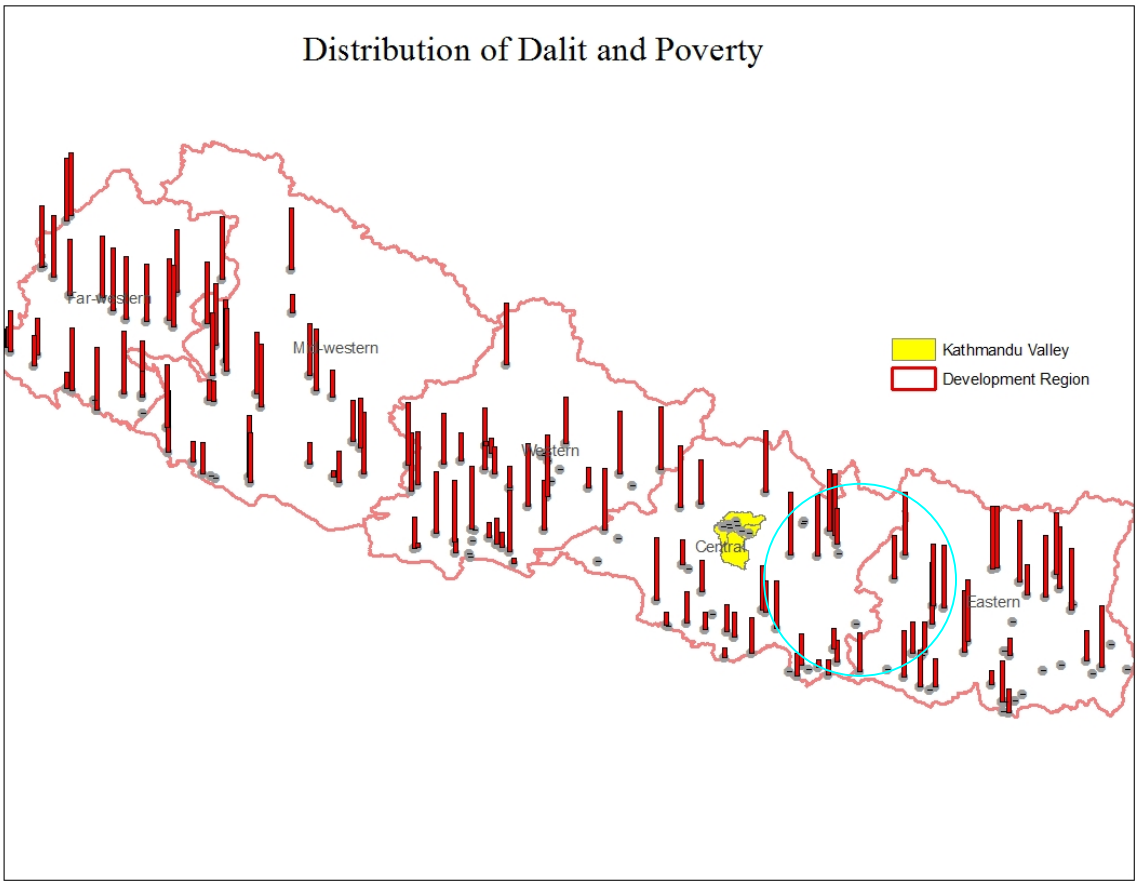
Map 10 displays spatial distribution of poverty for Brahmin caste. The map shows that proportion of Brahmins who are poor is very small in majority of the areas (black dots) in which they live. No or small proportion of Brahmins appear to be poor in the Central Region and Eastern Development region. Far-western region appears to have higher proportion of Brahmins who are poor.

Figure 13. Map 11: Geographic distribution of Tamang and poverty



Map 11 displays the spatial distribution of poverty for Tamang ethnic group. Tamangs appear to concentrate around the Kathmandu valley. Proportion of poor appears to be high among Tamangs who live around the capital city. Comparison of map 10 and map 11 shows that the proportion of poor among Tamang is much higher than proportion of poor among Brahmin (Map 10) although they live in the same region (blue circle area).

Figure 14. Map 12: Geographic distribution of Dalit and poverty



Map 12 displays spatial distribution of poverty for Dalit. The map shows high proportion of poor among Dalits in almost all places in which they live.

References

Altman, J.C, Biddle, N. & Hunter, B.H. (2008). How realistic are the prospects for 'closing the gaps' in socioeconomic outcomes for Indigenous Australians? Discussion Paper No. 287. Centre for Aboriginal Economic Policy Research, Australian National University, Canberra.

Assembly of First Nations Canada (2009). "Fact Sheet: The Reality for First Nations in Canada". http://www.afn.ca/article.asp?id=764.

Barnes, R.H., Gray, A. & Kingsbury, B. (eds) (1995). Indigenous Peoples of Asia. Ann Arbor, MI: Association for Asian Studies.

Becker, G. S. (1964, 1993, 3rd ed.). *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education.*. Chicago, University of Chicago Press. ISBN 978-0-226-04120-9.

Becker, G. S. (1964, ed. 1975). Human Capital. New York: Columbia University Press.

Bhattachan, K. B., Sunar, T. B. & Bhattachan, Y. K. (2007). Caste based discrimination in Nepal. In association with Nepal National Dalit Social Welfare Organization (NNDSWO) and Dalit NGO Federation (DNF). A final draft report prepared for Indian Institute of Dalit Studies (HDS), Delhi and International Dalit Solidarity Network (IDSN), Copenhagen. http://www.undp.org.np/constitutionbuilding-archive/pdf/CASTE%20BASED%20DISCRIMINATION%20IN%20NEPAL.pdf .

Bhattachan, K.B. & Webster, S. (2005). Indigenous Peoples, Poverty Reduction and Conflict in Nepal. International Labor Organization. Project to Promote ILO Policy on Indigenous and Tribal Peoples (PRO 169). Geneva: ILO, International

Labor Office. ISBN 92-2-117453-0. WEB PDF 92-2-117454-9 (retrieved from: http://www.ilo.org/wcmsp5/groups/public/---ed_norm/---normes/documents/publication/wcms_100554.pdf).

Bhattachan, K.B. (2008). Traditional Local Governance in Nepal. Nepal Federation of Indigenous Nationalities. http://nefin.org.np/articles/dr-krishna-b-bhattachan.html.

Bista, D. (1991). Fatalism and Development: Nepal's Struggle for Modernization. Sangam Books Ltd. Madras, India

Blank, R.M. (2008). How to improve poverty measurement in the United States. *Journal of Policy Analysis and Management, 27*(2), 233-254.

Blau, F., Ferber, M., & Winkler, A. (1998). The economics of women, men and work. Upper Saddle River, NJ: Prentice Hall.

Blaug, M. (1976). The Eempirical Status of Human Captial Theory: A slightly jaundiced survey. *Journal of Economic Literature, 14 (3), 827-855.*

Boas, F. (1940). *Race, Language, and Culture.* ISBN 0-226-06241-4 .

Bolstridge, J. A. (2008). Invisible people. In The New Black Magazine. Online magazine. Birmingham, U.K..http://www.thenewblackmagazine.com/xtact.aspx?

British Medical Association (2006). Child and Adolescent Mental Health – a guide for mental health professionals. London (10/18/2010 http://www.library.nhs.uk/childhealth/ViewResource.aspx?resID=143548&tabID=290).

Brooks-Gunn, J., Duncan, G.J. & Aber, J.L. (2000). Neighborhood Poverty: Context and Consequences for Children. Russell Sage Foundation: New York.

Burton, E (1992). The poverty debate: Politics and the poor in America. Westport, CT: Greenwood Press.

Carino, J. (2009). "Poverty and Wellbeing ", in Sate of the World's Indigenous Peoples, UNPFII. http://www.un.org/esa/socdev/unpfii/documents/SOWIP_web.pdf.

Champagne, D. (2007). Social Change and Cultural Continuity among Native Nations. Lanham, New York; Toronto; Plymouth, UK: Altamira Press.

Chuanc, H. & Huang, W. (1997). Economic and social correlates of regional suicide rates: A pooled cross-section and time-series analysis. *Journal of Socio-Economics, 26 (3), 277-289)*.

Coggins, C. (Ed.) (1992). *Artifacts from the Cenote of Sacrifice Chichen Itza, Yucatan: Textiles, Basketry, Stone, Shell, Ceramics, Wood, Copal, Rubber (Memoirs of the Peabody Museum)*. Harvard University Press. ISBN 0-873-65694-6.

Collier, P. (2007). The Bottom Billion: Why the Poorest Countries are Failing and What Can Be Done About It. Oxford: Oxford University Press.

Cooke, M., Mitrou, F., Lawrence, D., Guimod, E. and Beavon, D.(2007). Indigenous well-being in four countries: An application of the UNDP's Human Development Index to Indigenous Peoples in Australia, Canada, New Zealand and the United States. BMC International Health and Human Rights. http://www.biomedcentral.com/1472-698X/7/9

Cornell, S. (2002). The importance and power of indigenous self-governance: Evodence from the United States. Indigenous Governance Conferences, 3-5 April, 2002. Canberra.

Cornell, S. (2005). 'Indigenous Peoples, Poverty and Self-Determination in Australia, New Zealand, Canada, and the United States' in Eversole R., McNeish J. & Cimadamore A. D. (ed.), Indigenous Peoples & Poverty, An International Perspective, London: Zed Books & CROP International Studies in Poverty Research, pp. 199-225.

Damman, S.(2005). 'Nutritional Vulnerability in Indigenous Children of the Americas - a Human Rights Issue' in Eversole R., McNeish J. & Cimadamore A. D. (ed.), Indigenous Peoples & Poverty, An International Perspective, London: Zed Books & CROP International Studies in Poverty Research, pp. 69-93.

del Aguila, W. (1987). Educational Effects of Multilingualism in Guatemala. *Journal of Multilingual and Multicultural Development, 8(4), 379-382.*

Demarest, A. A.(2004). *Ancient Maya: The Rise and Fall of a Rainforest Civilization*. Cambridge, England; New York, NY: Cambridge University Press. ISBN 0521592240. OCLC 51438896.

Diamond, J. (1997). Guns, Germs and Steel. New York: W.W. Norton & Co.

Doeringer, P.B. & Piore, M. J. (1971). Internal Labor Market and Manpower Analysis. Lexington, MA: Heath Lexington Books.

Easterly, W. (2006). The White Man's Burden: Why the West's Efforts to Aid the Rest Have done So Much Ill and So Little Good. New York: Penguin Press.

ECLAC (Economic Commission for Latin America and Caribbean)(2007). Statistical Yearbook for Latin America and the Caribbean.

Eversole, R. (2005). 'Overview- Patterns of Indigenous Disadvantage Worldwide' in Eversole R., McNeish J. & Cimadamore A. D. (eds.), Indigenous Peoples &

Poverty, An International Perspective, London: Zed Books & CROP International Studies in Poverty Research, pp. 29-37.

Freeman, C. & Fox, M. (2005). Status and Trends in the Education of American Indians and Alaska Natives (NCES 2005-108). U.S. Department of Education, National Center for Education Statistics. Washington, D.C.: U.S. Government Printing Office. http://nces.ed.gov/pubs2005/2005108.pdf.

Garner, C. L. & Raudenbush, S. W. (1991). Neighborhood Effects on Educational Attainment: A Multilevel Analysis.*Sociology of Education, (4), 251-262.*

Gonzalez, M. L. (1994). 'How Many Indigenous People' in Psacharopoulos, G. & Patrinos, H. A. (ed.), Indigenous People and Poverty in Latin America, An Empirical Analysis. World Bank Regional and Sectoral Studies. Washington DC: The World Bank, pp. 21-40.

Hall, G. & Patrino, H. A. (2005). Indigenous Peoples, Poverty and Human Development in Latin America 1994 -2004. Palgrave Macmillan, United Kingdom. http://www.crid.or.cr/digitalizacion/pdf/eng/doc16327/doc16327-contenido.pdf.

Han, C., Grinstein-Weiss, M. & Sherraden, M. (2007). Asset beyond saving in Individual Development Accounts. Working Papers No. 07-2, Center for Social Development, Washington University-in-St. Louis.

Health Canada (2007).“First Nations Comparable Health Indicators”. http://www.hc-sc.gc.ca/fniah-spnia/diseases-maladies/2005-01_health-sante_indicat-eng.php.

Hofer, A. (2004). The Caste Hierarchy and State in Nepal: A study of the Muluki Ain of 1854. Himal book: Lalitpur, Nepal.

Hsieh, C. & Pugh, M. D. (1993). Poverty, Income Inequality, and Violent Crime: A Meta-Analysis of Recent Aggregate Data Studies. *Criminal Justice Review Autumn, (18), 182-202.* (10/18/2010 http://cjr.sagepub.com/content/18/2/182.abstract).

Humapage , L. (2005). 'Tackling Indigenous Disadvantage in The Twenty-first Century: Social Exclusion and Maori in New Zealand' in Eversole R., McNeish J. & Cimadamore A. D. (ed.), Indigenous Peoples & Poverty, An International Perspective, London: Zed Books & CROP International Studies in Poverty Research, pp. 158-184.

Iceland, J. (2005). Measuring Poverty: Theoretical and Empirical Considerations. Measurement , 3(4), 207-243.

IFAD (2000/2001) 'Rural poverty report 2000/2001', fact sheet: The Rural Poor http://www.ifad.org/media/pack/rpr/2.htm

ILO (n.d). Fact Seet. Discrimination At Work in Asia. (www.**ilo**.org/wcmsp5/groups/.../wcms_decl_fs_89_en.pdf)

ILO (1999). 'Indigenous peoples of South Africa: current trends', report, Project on the Rights of Indigenous and Tribal Peoples, Geneva: International Labor Office.

ILO (2001). The economic, social and political situation with reference to labor and employemen. Thirteenth Asian Regional Meeting, Bangkok, August 28-31. http://www.ilo.org/public/english/region/asro/bangkok/arm/nep.htm

Indian Health Service (2006). "Facts on Indian Health Disparities" (http://info.ihs.gov/Files/DisparitiesFacts-Jan2006.pdf).

Indian Health Service (2009). "IHS Fact Sheets: Safe Water and Waste Disposal Facilities" Available online at: http://info.ihs.gov/SafeWater.asp.

International Labour Organization (ILO) 2007. Equality at work: Tackling the challenges. Global Report under the follow-up to the ILO Declaration on Fundamental Principles and Rights at Work. Report of the Director General.International Labour Conference 96th Session 2007. Geneva: ILO.

Justino, P. (2008). Poverty and Violent Conflict: A Micro-Level Perspective on the Causes and Duration of Warfare. MICROCON Research Working Paper 6, Brighton:MICROCON. (10/18/2010 www.microconflict.eu/publications/RWP6_PJ.pdf*)*.

KC, B.K., Subedi, G., Gurung, Y.B. & Adhikari, Y.B. (2001). Nepal Trafficking in Girls with Special Reference to Prostitution: A Rapid Assessment. International Labor Organization, International Program on the Elimination of Child Labor (IPEC), Geneva.

Kelley, J. (1988). Class Conflict Or Ethnic Oppression? The Cost of Being Indian in Rural Bolivia. Rural Sociology, 53 (4), 399-420.

Knight,J. (1992). Institution and social conflict. Cambridge: Cambridge University Press.

Lama, G., Ozawa, M., & Lama, P. (2010). Geographic Isolation and Poverty Among Indigenous Peoples in Nepal. Fifth Anannual Himalayan Policy Research Conference Nepalm, Oct. 14, 2010, Madison, Wisconsin.

Lawoti, M. (2001). Racial Discrimination Towards Indigenous Peoples in Nepal. Non-Government Report for the Third World Conference Against Racism (WCAR)-2001. http://members.fortunecity.com/dharantimes/ethnic5.htm.

Leslie, K., Khanal, K. & Hachhethu, K. (2010). Federalism Dialogue: Voices from below in state restructuring in Nepal. Fifth Anannual Himalayan Policy Research Conference Nepalm, Oct. 14, 2010, Madison, Wisconsin.

Loke, V. & Sherraden, M. (2009). Building assets from birth: a global comparison of Child Development Account policies. International Journal of Social Welfare, 8 (2), 119 -129.

Macisaac, D. (1994). 'Peru' in Psacharopoulos, G. & Patrinos, H. A. (ed.), Indigenous People and Poverty in Latin America, An Empirical Analysis. World Bank Regional and Sectoral Studies. Washington DC: The World Bank, pp.165-204.

Mair, C., Diez Roux, A.V. & Galea, S. (2008). Are neighbourhood characteristics associated with depressive symptoms? A review of evidence. *J Epidemiol Community Health, 62, 940-946, doi:10.1136/jech.2007.066605.*

McCaskill, D. & Rutherford, J. (2005). 'Indigenous Peoples of South-East Asia: Poverty, Identity and Resistance' in Eversole R., McNeish J. & Cimadamore A. D. (eds), Indigenous Peoples & Poverty, An International Perspective, London: Zed Books & CROP International Studies in Poverty Research, pp. 126-157.

McNeish, J. & Eversole, R. (2005). Indigenous Peoples & Poverty, An International Perspective, London: Zed Books & CROP International Studies in Poverty Research.

Mead, M. (1928). Coming of Age in Samoa. ISBN 0-688-05033-6 .

Mincer, J. (1974). Schooling, Experience, and Earnings. New York: Columbia University Press.

Morduch, J. (1998). Does microfinance really help the poor? New evidence from flagship program in Bangladesh. Department of Economics and HIID, Harvard University; and Hoover Institution, Stanford University.

Mugarura, B. & Ndemeye, A. (2003). Batwa Land Rights in Rwanda. Micro Study. London: Minority Rights International. http://www.minorityrights.org/download.php?id=93.

North, D. (1990). Institutions, Institutional Change, and Economic Performance. New York: Cambridge University Press.

Ostrom, E. (1990). Governing the commons: the evolution of institutions for collective actions. Cambridge: Cambridge University Press.

Panagides, A. (1994). 'Mexico' in Psacharopoulos, G. & Patrinos, H. A. (ed.), Indigenous People and Poverty in Latin America, An Empirical Analysis. World Bank Regional and Sectoral Studies. Washington DC: The World Bank, pp.127-164.

Partridge, W. L. & Uquillas, J. E., with Jonhs, K. (1996). 'Including the excluded: ethnodevelopment in Latin America', paper presented at the Annual World Bank Conference on Development in Latin America and the Caribean, Bogota, Columbia.

Plant, R. (1998). Issues in Indigenous Poverty and Development. Washington D.C.: Inter-American Development Bank.

Psacharopoulos, G. & Patrinos, H. A. (1994). *Indigenous People and Poverty in Latin America, An Empirical Analysis*. World Bank Regional and Sectoral Studies. Washington DC: The World Bank.

Pytell, N.. (2007). Why poor kids may make sicker adults. Cornel University. (10/18/2010 http://www.eurekalert.org/pub_releases/2007-11/cuc-wpk110707.php).

Raghava, R., Lama, G., Kohl, P. & Hamilton, B. (2010). Interstate variations in psychotropic among a national sample of children in the Child Welfare System. *Child Maltreatment, 15 (2), 121-131.*

Rank, M. (1994). Living on the edge: The realities of welfare in America. New York: Columbia University Press.

Regmi, D. R. (1960). Ancient Nepal. Culcutta, M.L. Mukhopadyay.

Rodrick, D. & Subramanian, A. (2003). "The primacy of institutions (and what it does and does not mean)". *Finance and Developmeni, 31-34. (NBER Working Paper 9305, October 2002 (Cambridge, Massachusetts: National Bureau of Economic Research).*

Rutstein, S., & K. Johnson (2004). *The DHS wealth index*. DHS Comparative Reports No. 6. Calverton, Maryland: ORC Macro.

Sachez-Perez, H. J., Morales, V. M., & Jansa, J. M. (2005). 'Condition of life and health for Indigeous Women in Areas of High Marginalization, Chiapas, Mexico' in Eversole R., McNeish J. & Cimadamore A. D. (ed.), Indigenous Peoples & Poverty, An International Perspective, London: Zed Books & CROP International Studies in Poverty Research, pp. 38-52.

Sachs, J. D. (2001). "Tropical Underdevelopment". *NBER Working Paper 8119 (Cambridge,Massachusetts: National Bureau of Economic Research).*

Sachs, J. D. (2005). The End of Poverty: Economic Possibilities for Our Time. New York: Penguin Press.

Schultz, T. (1960). Capital formation of education. *Journal of Political Economy, 68(6), 571 -83*.

Schultz, T. (1961). Investment in human capital. *Economic Review, 5(4), 1- 17.*

Schultz, T. (1963). The Economic Value of Education. New York: Columbia University Press.

Sen, A. (1999). Development as freedom. New York: Knopf.

Shaha, R. (1992). *Ancient and Medieval Nepal*. New Delhi: Manohar Publications.

Sharma, P. R. (1999). A fresh look at the origins and forms of early temples in the Kathmandu Valley. *Nepalese Studies, 26 (1), 1 -25.*

Sherraden, M. (1991). Assets and the poor: A new American welfare policy. Armonk, New York: M. E. Sharpe, Inc.

Statistics Canada (2005). "Labour Force Survey: Western Canada's off-reserve Aboriginal population" Available online at: http://www.statcan.gc.ca/daily-quotidien/050613/dq050613a-eng.htm.

Steele, D. (1994). 'Guatemala' in Psacharopoulos, G. & Patrinos, H. A. (ed.), Indigenous People and Poverty in Latin America, An Empirical Analysis. World Bank Regional and Sectoral Studies. Washington DC: The World Bank, pp.97-126.

Stephen, D. & Wearne, P. (1984). Central America's Children. London: Minority Rights Group.

Stiller, L. (1973). The rise of the house of Gorkha: a study in the unification of Nepal, 1768-1816. Patna: Patna Jesuit Society.

Subedi, B. P. (2010). Ethnic/caste diversification in Kathmandu metropolitan: Changing social landscape of a capital city. Journal of Geography and Regional Planning Vol. 3(8), 185-199.

Tapp, N. (1995). "Minority nationality in China: policy and practice", in Barnes, R.H & Kingsbury, B. (eds), *Indigenous Peoples of Asia,* Ann Arbor, MI: Association for Asian Studies.

Taylor, J. B. and Kalt, J. B. (2005). American Indians on Reservations: A Data-book of Socioeconomic Change Between the 1990 and 2000 censuses. Harvard Project on American Indian Economic Development, Malcolm Wiener Center for Social Policy, John F. Kennedy School of Government, Harvard University. http://www.ksg.harvard.edu/hpaied/pubs/documents/AmericanIndiansonReservationsADatabookofSoicioeconomicChange.pdf.

Tsai, G. and Alanis, L. (2004). The Native American Culture: A Historical and Reflective Perspective. In National Association of School Psychologists Communique, Vol. 32 No. 8. http://www.nasponline.org/publications/cq/cq328native.aspx.

U.S. Census Bureau. Poverty Thresholds. http://www.census.gov/hhes/www/poverty/threshld.html.

Uinted Nations Permanent Forum on Indigenous Issues (2009). State of the World's Indigenous Peopels. United Nations: New York.

UNICEF (2003). "Ensuring the Rights of Indigenous Children". Innocenti Digest no. 11. Florence, Italy: UNICEF Innocenti Research Centre.

United Nations Development Program (UNDP) (2008). Human Development Indices: A statistical update, 2008. United Nation, New York. (accessed 11/20/2010).

United Nations Development Program (UNDP)(2004). Nepal Human Development Report 2004: Empowerment and Poverty Reduction. Kathmandu: UNDP. http://hdr.undp.org/en/reports/nationalreports/asiathepacific/nepal/nepal_2004_en.pdf.

United Nations Permanent Forum on Indigenous Issues (UNPFII) (2007a). African Regional Expert Working Group on Indicators of Well-being and Indigenous Peoples. UN Doc. E/C.19/2007/CRP. 3 November 2006.Available online at http://www.un.org/esa/socdev/unpfii.

United Nations Permanent Forum on Indigenous Issues (UNPFII) (2007b). Asia regional workshop: Indicators Relevant for Indigenous Peoples, the Convention on Biological Diversity and the Millennium Development Goals. UN Doc. E/C.19/2007/CRP. 10 November 2006. http://www.un.org/esa/socdev/unpfii.

UNPFII/2004/WS.1/3, p2: United Nations Department of Economic and Social Affairs (2004). *The Concept of Indigenous Peoples*, background paper, Workshop on Data Collection and Disaggregation for Indigenous Peoples, Secretariat of the Permanent Forum on Indigenous Issues. PFII/2004/WS.1/3, p.2. http://www.un.org/esa/socdev/unpfii/documents/PFII%202004%20WS.1%203%20Definition.doc.

Wennberg, J. (1973). Small area variations in health care delivery. *Science, 182(117),1102-1108.*

Whelpton, J. (2005). History of Nepal. Cambridge: Cambridge University Press.

Wilson, W.J. (1990). The truly disadvantaged: The inner city, the underclass and public policy. Chicago: University of Chicago Press.

Wood, B. & Patrinos, H. A. (1994). 'Urban Bolivia' in Psacharopoulos, G. & Patrinos, H. A. (ed.), Indigenous People and Poverty in Latin America, An Empirical Analysis. World Bank Regional and Sectoral Studies. Washington DC: The World Bank, pp.55-96.

World Bank (2007). Economic Opportunities for Indigenous Peoples in Latin America, Washington D.C.: The World Bank.