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HOUSEHOLD HUMAN AND SOCIAL CAPITAL AND SCHOOL ENROLLMENT IN CHITWAN, NEPAL

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Purandhar Dhital

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We approve the thesis of Purandhar Dhital.

Date of Signature

_____ _____
Joan S. Thomson
Thesis Advisor
Professor of Agricultural Communication
Co-Chair of Committee

_____ _____
Constance A. Flanagan
Professor of Agricultural and Extension Education
Co-Chair of Committee

_____ _____
Edgar P. Yoder
Professor of Agricultural and Extension Education

_____ _____
Gordon F. De Jong
Professor of Sociology and Demography

_____ _____
Blannie E. Bowen
Professor of Agricultural and Extension Education,
Head of the Department of Agricultural and Extension Education

ABSTRACT

Nepal is among the least developed countries in the world. A large majority (90%) of its 21 million people lived in rural areas. Expansion of mass schooling remains a high priority on Nepal's development agenda.

Since the conception of first scientific education plan in 1952, the Nepalese government has attempted to address the problem of low literacy by expanding access to primary and lower secondary education with various incentives to families. Despite these efforts a large majority of primary and lower secondary school age children are not enrolled in school.

The primary objective of this study is to assess whether the collective human and social capital of a household might facilitate the educational enrollment of the children in a household. The data collected for the Chitwan Valley Family Study (CVFS) project were used. Out of the total 1668 households included in the CVFS study, a total of 849 (50.9%) households were selected for primary school enrollment analysis and 605 (36.3%) households were selected for lower secondary school enrollment analysis. Logistic regression models were run to assess the likelihood of school enrollment of both primary and lower secondary school age children in a household.

Significant relationships were found between children's age and caste on school enrollment of primary school age children. For primary school age

children, age of children (older children) and caste (upper caste Hindu household) increased the likelihood that children in the household would be enrolled. Human capital in the form of parental or other household adult's education had no effect with caste and religion controlled. However, household social capital in the form of intra-household relationships (help received by parents from non-resident children) and mother's attitudes towards daughter's education significantly increased the likelihood of primary school enrollment. Community ties (increased parental participation in youth clubs) showed positive influence on primary school enrollment when demographic, financial and household education were controlled.

For lower secondary school age children, while presence of greater number of school age children in households other than lower secondary age group decreased the likelihood of school enrollment, children from Hindu as well as upper caste Hindu households increased the likelihood of children being enrolled in school. Similarly, educated fathers as well other adults in a household influenced school enrollment of lower secondary school age children positively. Household social capital in the form of migration (recently migrated household), intra-household relationship (parents received help from non-resident children), parental residence (more years of parental presence with lower secondary school age children) and mother's positive attitude towards daughter's education) increased the likelihood of children's school enrollment significantly.

Policy planners frequently blame caste and religion for non-enrollments and school dropouts. The results of this study support that theory but add more information by focusing on human and social capital at the household level. The results suggest that educational programs that help foster congenial relationships within and outside family/households and cultivate positive attitudes towards daughter's education could enhance primary as well as lower secondary school children's enrollment.

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Chapter 1

INTRODUCTION

Background Information

Nepal is among the least developed countries in the world. About 90% of its 21 million people lived in rural areas in 1996 (CBS/Nepal, 1997). Population growth at the rate of 2.1% per year has produced a broad based population structure, indicating high numbers of dependent children under 15 years of age. The 1991 Population Census of Nepal indicated that the ratio of the economically active population (15 years to 64 years of age) to the dependent (less than 15 years of age and more than 64 years age group) is about 0.85, which is not much different than the ratio (0.84) a decade earlier (CBS/Nepal, 1997). With an average household size of 5.4 persons (CBS/Nepal, 1997), there are about three dependents.

Nepal is the homeland of several religious and ethnic groups. The 1991 Population Census of Nepal reported that the majority (86.5%) of the population was Hindu, followed by Buddhist (7.8%) and Islam (3.5%). The Census also identified 32 languages and local dialects spoken by the Nepalese (CBS/Nepal, 1995). Each ethnic group possesses its own distinct culture, including language and social values. Traditionally, education has benefited high caste Hindus, such

as the Brahmins and Chhetris and a few Tibeto-Burman people such as the Newars.

It is believed that views on education among religious and ethnic groups, especially with regard to their children's education, differ greatly as well. The final report on the second cycle of the Nepal Multiple Indicator Surveillance (NMIS) study conducted from April to June 1995 indicated that people's views differed and their reasons ranged from economic to ethical considerations. The most common reason given by household heads with children (both boys and girls) aged 6 to 10 years for the children not attending school was that the parents were too poor to pay the registration fees and other expenses. Girls were more likely to be absent from school because of being needed for household work and tending animals or younger siblings while parents worked outside the home (Acharya, 1979; Acharya & Bennet, 1981; NPC/Nepal & UNICEF, 1996a). It was also reported that some communities questioned the utility of children's education. Many respondents indicated that it was not worthwhile to send children to school, as they would be no better off. The findings also suggested that there was marked variation in school enrollment among different ethnic groups. The highest enrollment rates for both boys and girls were reported among the Brahmins and Newar ethnic groups and the lowest among the Tharus and Muslims. Caste as well as ethnicity is also indicative of social status in Nepalese society. There is little interaction among different caste or ethnic groups.

Education and Literacy in Nepal

Since the introduction of scientific national planning during the 1950s, Nepal has been continually striving to raise the living standards of its people through various intervention programs, especially education. Expansion of mass schooling remains a high priority on Nepal's development agenda. In the century preceding 1951, Nepal was a nation characterized by isolationism and little economic development. During that period, educational progress was ruthlessly stemmed. Only in 1938, did the government promulgate the Education Code, which laid the foundation for the establishment of schools (UNESCO, 1984). However, only after 1951 with a democratic governmental structure was the importance of education realized. Then schools were established by popular initiatives in different parts of the country.

In 1954 the government appointed the Nepal National Education Planning Commission (NNEPC) to review the education system of the country and to recommend measures for its comprehensive reform. One significant recommendation of the Commission was that the target of free and compulsory primary education of five years be achieved by 1985. It also recommended the adoption of a single system of publicly supported education and suggested a new curriculum for primary schools (UNESCO, 1984). Enactment of the Free and Compulsory Primary Education Policy (FCPEP) of 1960 and the Free Primary

Education Program (FPEP) in 1972, were considered major developments in the education sector.

In 1960, the Free and Compulsory Primary Education Plan was adopted in two districts, Jhapa and Chitwan, and gradually expanded to other districts and municipal areas. The basic feature of this program was a 25% contribution to the teacher's salary by the national government. This program ran from 1965 to 1970. In 1971, the Free and Compulsory Primary Education Policy was withdrawn by the government due to various difficulties encountered in implementing the program, such as lack of infrastructure especially in the hills and mountain areas and the heavy economic burden faced by communities (UNESCO, 1984).

In 1972, the Free and Universal Primary Education program was adopted under the National Education System Plan. Under this plan, the government assumed responsibility to support cent for cent teachers' salaries in the primary schools.

At the national level, the Free and Compulsory Primary Education Policy of 1960 brought about dramatic changes. Primary school enrollment increased from 1% in 1950 to 32% in 1970, and then to 68.3% in 1984 (UNESCO, 1984). Provision of free primary education resulted in massive increases in the enrollment ratio at the primary school level (grades I to V). The effect was quite evident. In 1993, national school enrollment data showed greater than a 680% increase in primary school enrollment over 1970 figures (APPENDIX A).

Yet despite increased efforts to expand education, little improvement has occurred in the overall literacy rate in Nepal. The 1991 census data indicate that the current official literacy rate (ratio of educated persons, including those who can read and write, 6 years of age and over to the total population of that age cohort) in Nepal was 30% in 1991, only about 7% higher than in the 1981 census (CBS/Nepal, 1995). However, the United Nations Development Program (UNDP, 1998) estimates that the adult literacy rate as a percentage of the population 15 years of age and above was only 26% in 1996. According to UNDP (1999), the Human Development Index (HDI) of Nepal is only 0.332, ranking Nepal 151 out of 174 countries. HDI is a measure of the quality of life of a country's citizenry. The low figure for Nepal reflects, in part, its low level of literacy (UNDP, 1998, 1999).

The institutionalization of universal education is important to prepare and train the nation's labor force for overall development of the country. However, the trend in school enrollment with respect to total school age population remains frustrating. In 1984, the official net enrollment rate (the percent of age eligible children in school) at the national level for primary and lower secondary levels were 65.33% and 25.66% respectively (CBS/Nepal, 1987). The 1999 UNDP report of school enrollment is more frustrating. The report indicated that net school enrollment for primary and lower secondary was only 57.0% and 19.0%, respectively (UNDP, 1999). In 2003, Department of Education (DOE) reported that the net school enrollment rate for 2000 was 80.4% and 33.3% at primary and lower secondary school level respectively (MOES, 2003). The annual average

rate of growth in primary enrollment between 1990 and 1999 was only 1.3% (United Nations Country Team of Nepal, 2002). Despite increases in primary school enrollment over 1999 figures, the United Nations Country Team of Nepal (2002) asserted that with the current rate of progress in enrollment in primary education, it is unlikely that Nepal will achieve universal access to primary education by 2015, a goal set forth by the Ministry of Education. Despite inconsistencies in the reports, the problem is intensified by the growth of the school age population, especially at the lower secondary levels. This increase is due to natural growth and partly due to population momentum. The projected annual percentage growth rate of the school age population from 1991 to 1996 was 3.03% and 3.66% for primary and lower secondary (CBS/Nepal, 1995). The lower net enrollment, especially at higher levels, remains a concern for educational policy planners.

Education and Literacy in Chitwan

Chitwan is a wide flat valley nestled in the Himalayan foothills approximately 450 feet above sea level. Until the 1950s, Chitwan was covered by virgin forest and infested with malaria. In the beginning, Chitwan was the homeland of the Tharus and Chepang, two indigenous groups of people. Beginning in the mid-1950s with assistance from the United States, the Nepalese government began programs of malaria eradication and rehabilitation into Chitwan for settlers from the higher Himalayas. Rich soils, flat terrain, and the

promise of new opportunities drew many farmers into the area, but the valley remained a remote, isolated frontier until the late 1970s. The first all weather road into Chitwan was completed by 1970. Changes in transportation structures, especially during the mid-1980s, produced a rapid proliferation of government services and business and wage labor markets which spread in inverse proportion to the distance from the major commercial center, Narayanghat (Pokharel & Shivakoti, 1986). These changes also continued to stimulate the government's investment in the region (Shivakoti & Pokharel, 1989), including their investment in public schools. With increased social amenities and opportunities in the labor market in the area, Chitwan became a focal point for migrants from different parts of the country, causing significant population growth (CBS/Nepal, 1987; Tuladhar, 1989).

The 1991 Population Census of Nepal identified 7 religious groups and 32 distinct ethnic groups, speaking their own languages in Chitwan (CBS/Nepal, 1997). Unlike other rural areas in Nepal, Chitwan has relatively less spatial segregation among the ethnic groups.

Reports indicated that the Chitwan district had 309 schools of all levels during the year 1991/92, one of the highest school concentrations in the country (CBS/Nepal, 1997). The flat terrain in Chitwan along with expansion of all-weather road is an advantage to young children compared to most of the other districts located in the hills and mountains. Nonetheless, the school distance could be as far as more than two miles, and inaccessible to children living in the far corners of the district. As at the national level, the national primary education

policy in combination with other factors enabled Chitwan to experience rapid expansion of schools and school enrollment at all levels between 1985 and 1993 (NPC/Nepal, 1995).

One of the prime goals to increase adult literacy in Nepal is through an effective primary education system. The 1991 Population Census of Nepal reported that Chitwan has an overall higher literacy rate (43%) compared to the national rate (30%) (CBS/Nepal, 1995). This higher literacy rate is facilitated, at least in part, by the existence of more schools than in most of the other districts in Nepal. Even though Chitwan's literacy rates for both males and females improved compared to national figures between 1971 and 1991, disparity between the educational status of males and females did not show much improvement (APPENDIX B). A majority of the primary age population is out of school and among them the proportion of females is relatively higher (UNDP, 1996).

This unique setting has created a different social environment than any other place in Nepal. Here ethnic groups mix and families are exposed to different educational expectations and norms than they had in their former villages. Parents can mix with others and gain new information relevant to their children’s education.

Statement of the problem

Following successful ratification of the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) and the Convention on the Rights of the Child (CRC) by His Majesty's Government of Nepal, which were adopted by the United Nations General Assembly, several children's laws were enacted, policies were outlined, and structural adjustments were made to promote and protect the equal rights of children and to facilitate access to education regardless of gender, caste, religion, language, or social status (NPC/Nepal & UNICEF, 1996b).

His Majesty's Government of Nepal endorsed the 80% primary school enrollment goal set forth by the World Summit for Children in 1990. The National Program of Action for Children and Development for the 1990s included targets for 1996, 1998, and 2001. The results of the Nepal Multiple Indicator Surveillance (NMIS) study revealed that the levels of adult literacy were below the targets set for 1996 in the National Plan of Action (NPC/Nepal, 1996).

At present, the Nepalese government has two major goals for public education: a (1) to increase overall primary school enrollment and (2) to reduce gender discrimination in education. A 1991 document of the Ministry of Education identified the key issues adversely affecting primary education in Nepal. These include low school enrollment, especially of girls; high drop-out and repetition rates; poor quality of instruction; inadequate instructional materials;

poor school management; under utilization of community resources; and poor performance of students (MOE/Nepal, World Bank & UNDP, 1991).

In Nepal, despite various efforts over several decades, the problem of non-enrollment as well as gender discrimination in education persists. Research on educational outcomes of young children such as school enrollment, especially that of primary and lower secondary school age children, is sparse. This research is intended to illuminate some resources within the household that might promote school enrollment for primary and lower secondary students.

The following research questions were outlined for the study:

1. What are the relationships between household education and the school enrollment of primary and lower secondary school age children?
2. Are there relationships between household social capital factors and the school enrollment of primary and lower secondary school age children?

This study is intended to assess whether the collective human and social capital of a household might facilitate the educational enrollment of children. The following hypotheses were outlined as guiding framework for the study.

Hypothesis 1:

The higher the household education, the higher will be the proportion of school-age eligible children enrolled in primary and lower secondary school.

While the central government plays a primary role in the provision of schooling in Nepal, parents and other family members play the deciding role in determining whether or not children actually enroll in school when it is available and which children they will enroll. Even when schools are accessible and

affordable, it is argued that the family has to see a net advantage for enrolling children and they must possess the means to finance their children's education (Lloyd & Blanc, 1996). Although the family reaps a certain portion of the total benefits that flow from schooling, they often are paying a significant share of the costs.

In a context like Chitwan where the roles and responsibilities of child rearing are shared by several adults in the household, the education of both biological parents as well as other family members on children's educational attainment should be taken into account. Educated members in a family or household not only assist in providing financial support for continuation of the children's education but they also provide psychological as well as intellectual input regarding the children's education. Hence, a household with higher education is expected to have a higher proportion of children enrolled in school.

In Nepal where the extended family remains an important social institution, the costs and benefits of investments in education are likely to be assessed from the vantage point of the larger extended family than from the vantage point of a nuclear family. In an extended family system, parenting is a shared responsibility and the parents' personal obligations extend not only to their biological children but also to children from other parents in the extended family (Bledsoe, 1990; Lloyd & Gage-Brandon, 1994; Magnani, Bertrand, Makani & McDonald, 1995; Townsend & Garey, 1994).

Childcare in Nepal is a whole family endeavor. Along with the mother and father, older siblings and in-laws are the child's immediate environment. All join

to a greater or lesser extent in providing stimulation, inculcating values, and educating the child. A child grows up with more than one caretaker throughout his/her life. In this environment, the parent's primary role as caretaker is often obscured due to the overlapping of roles and responsibilities and the normative obligations of other family members towards a child.

This larger circle of relationships benefits children in many ways. It provides children support and protection as well as schooling in case of the death of either or both biological parents (Ainsworth & Koda, 1993). It helps children get access to a better quality schools or successively higher levels of schooling (Bledsoe, 1990; Isiugo-Abanihe, 1985).

It has been argued that education is one of the important factors in breaking the information barrier and stimulating and enhancing progressive ideas such as the education of girls. Even though the father is considered the household head in Nepal, the roles of other family members such as the mother, immediate siblings, and other extended family members have been found to affect decisions regarding the physical and intellectual development of the child. It has been noted that in Nepal, a shared household decision making strategy has been adopted among families in which female household heads have relatively higher education levels (Neupane, Dhital, Sharma, Shrestha, Bhattarai, Gautam et al., 1994). In other words, a family's decisions can be changed, altered, or modified based on the degree of authority and influence of family members in the family decision-making process.

Oftentimes parents consult educated friends, knowledgeable community members, and their kin about their child's schooling. Household members share information about schools and their requirements, and people who are educated are more likely to be informed about school and other education related matters. In case of parental reluctance for school admission for their children, the educated members of the extended household can argue and put pressure on the parents. Hence in a context like Chitwan, the educational status of other family members can be considered as important as parental education for the school enrollment of children.

Furthermore, the educational statuses of other adult household members becomes even more important for a household where parents have no or very limited education. Extra-parental education mitigates the problems faced by parents related to educational matters such as school contacts and helping children with homework. In this context, extra-parental education can be considered an important asset in the educational advancement of children in a household. Educated members of a household should be better informed, more progressive, and open to new ideas. Hence a family /household with a higher combined level of household education is expected to have higher school enrollments for the children in that household.

Hypothesis 2:

The higher the social capital available in a household the higher will be the proportion of school-age eligible children enrolled in primary and lower secondary school.

Social capital is distinct from other forms of capital in that it exists in relationships. Relationship networks extend far beyond the immediate family context (Coleman, 1988). This social resource is one of the influential factors in children's developmental outcomes (Coleman, 1988, Hofferth, Boisjoly & Duncan, 1998). In a western context, it is typical to think of social capital as it is generated by a nuclear family. In contrast, in a setting like Nepal, the extended family should be the focus in the generation and utilization of social capital.

In social capital literature, social capital is defined within a framework of parent-child relationships (Hofferth et al., 1998; Furstenberg Jr. & Hughes, 1995) and parent-community relationships with regard to the child's educational development (Coleman, 1988; Pong, 1996, Putnam, 2000). Few scholars have attempted to understand how an extended family or household contributes to social capital generation and its role in children's education. Other members in a household may affect a parent's belief structure. They may also garner social capital through their relationships in the larger community. The insights and experiences gained by other household members is expected to alter or off-set the effects of traditional values regarding education functions in the household as well as in the social system. The extended family's or household social capital is provided by, among others, older brothers, grandparents, cousins and in-laws as well as other non-related members residing within a household. In the absence of parental guidance, children in the household are likely to get guidance and academic support from these other members of the household. This phenomenon is expected to be common in Nepalese society where extended

family norms and collectivist culture operate. Hence, a positive relationship is expected between the number of primary and lower secondary school age children enrolled in school and the social capital of their extended family.

In contrast to other districts in Nepal, Chitwan has relatively well developed social and economic institutions. A family has to rely on credible sources and channels of information and congenial social connections in the local community for effective household decision-making such as educating children. In this context, relationships among members within a household as well as between a household and a community are important sources of social capital that can benefit children. Intra-household relationships not only determine the amount of interaction within an extended family and household but also the extensiveness and quality of interactions outside the family, thus helping to generate social capital for the educational advancement of children. Similarly, extra-household relationships such as relationships between immediate household members, in-laws and cousins, and other members residing in the household can have immense influence in structuring, maintaining and modifying the structure of relationships and possibly enhancing household social capital.

Chapter 2

THEORITICAL FRAMEWORK

Social capital is a general concept. Portes and Landolt (1996) define to social capital as the resources that emerge from one's social ties. Similarly, according to Coleman (1988), social capital is a resource that exists in relationships among members of a social structure. It is the product of prior human action that accumulates or decreases (Coleman, 1990). This resource, which manifests itself in support networks, makes possible certain goals and ends that may be difficult or impossible to achieve without it (Coleman, 1988). In his discussion of social capital, Coleman (1988) emphasized the notion of "intergenerational closure," a web of relationships and networks of adults that support education of their children. Social capital can exist within families and is conceptualized as the investment of parental resources in children, which in turn, creates human capital in the next generation (Coleman, 1988). This process is dependent on the adults and other members in a household and their willingness to invest in their children

The influence of family members goes beyond the family's function of provider of material and non-material resources to individual members. For example, Pong (1998) demonstrated the importance of school-based social capital and showed that after indicators of economic resources are controlled, additional indicators of school based social capital such as parental participation

in school activities and parental acquaintances with other parents were positively related to 10th grade student achievement in U.S. schools.

Parents invest in relationships in the family and local community in order to increase social capital availability to the family (Coleman, 1988; Hofferth et al., 1998). Social capital functions like human capital by facilitating productive activity (Coleman, 1988). For example, when a person obtains more education or job training a return in the form of higher income or a better job is expected. Accordingly, when a family invests in social relationships within their family and community, they expect a return in the form of social support systems. The benefit from a support system can be as concrete as receiving books and reading materials when needed or as intangible as being informed or feeling safe and comfortable in one's community.

Pong (1998) argues

> "When parents are engaged in social networks, they act on behalf of and for the interests of their own families. They also benefit by receiving on-going feedback on effective child-rearing strategies and information on the policies of their children's schools, teachers, and peers that may allow individual families to channel their resources effectively into their children's success in schools (P. 26)."

The research on social capital typically has been grounded in nuclear family context. However, according to Coleman (1988), social capital is a resource that exists in relationships among members of a social structure. In the extended family social structure typical in Nepal, the roles of extra-parental members cannot be ignored. This role becomes prominent especially when parents are absent from homes, or when they are less likely to interact and

provide guidance to their children due to time constraints imposed by household as well as extra-household activities.

In a collectivist context like Chitwan, decisions regarding education can be affected by other members in the family such as elder siblings, uncles, aunts, cousins, and grandparents. Availability of social capital is expected to be more pronounced in Chitwan where family ties and family norms extend beyond nuclear family members.

Review of Literature

This section includes contemporary models and literature on educational achievement. The purpose of the review of literature is twofold. First, to provide major theoretical perspectives from the disciplines of sociology, education, and developmental psychology that is relevant for children's educational achievement. Second, to review empirical research on the correlates of educational outcomes for children.

Three models used to explain children's educational outcomes will be reviewed. They are: (1) the status attainment models, (2) ecological contextual models, and (3) social capital models.

Status Attainment Models

This is a general theory of socioeconomic achievement in which future status attainments such as occupational status or income are viewed as a function of aspirations for those attainments, present statuses, and the statuses of significant others, and ascriptive attributes (Haller, 1982). This perspective focused on the influence of social stratification and educational and occupational aspirations on economic, social, and educational attainment as well as the ways in which aspirations are formed (Reynolds, 1989). Three different perspectives within status attainment models are discussed below.

1. Family Socio-economic Status (SES) and Educational Aspirations of Children

One of the earliest models of status attainment was developed by Blau and Duncan (1967), in which they linked present occupational status to one's first job, education (years of schooling), father's education, and occupation. Later the model was revised by Sewell and others (Sewell, Haller, & Portes, 1969; Sewell & Hauser, 1975). This model, commonly known as "the Wisconsin Model" added social psychological variables such as aspirations, ability, and expectations that were more directly related to educational outcomes. They found that socio-economic status as reflected by mother's education, father's education, and family income influenced occupational status attainment. Mercy and Steelman (1982) further elaborated the relationship between socio-economic status and ability. They suggested that parents, by virtue of their own social class position,

might have followed different child rearing patterns that have differential consequences for the intellectual growth of children.

A study conducted by Bordua (1960) among ninth through twelfth graders in two Massachusetts cities found that socio-economic status was positively related to college plans at all school levels for both sexes and across religious affiliation. It has been documented that children of higher social class origin are more likely to aspire to high educational and occupational goals than are children of lower social class origin (Sewell, Haller, & Straus, 1957; Sewell, 1964; Sewell & Orenstein, 1965; Sewell & Haller, 1965; Sewell & Shah, 1967).

2. Human Capital and Educational Outcomes

Within the status attainment models, the impact of human capital on the educational outcomes of children has been widely emphasized. In economist's terms, capital is defined as an input to economic production and can be distinguished from other inputs (e.g., land or labor) by the fact that a capital input is itself an output of a prior productive process (Samuelson, 1976). Hagan (1994) defined human capital as " the skills and knowledge acquired by individuals through education and training." In this perspective, education is seen as an investment in the labor productivity of the individual (Becker, 1964; Becker, 1975; Kiker, 1991). This perspective addresses humans as a resource and investment in humans is made to improve their productivity and increase individual wages and incomes (Becker, 1975). Becker (1975) indicated that an individual could invest in human capital through schooling, on-the-job training,

migration, and searching for information about prices and incomes. Proponents of this perspective insist that it is the individual's decision whether to invest or not, and that s/he makes that decision based on a rational calculation of the costs (in time and money) and benefits (in outcomes). Therefore, an individual's decision to invest is independent of family or household members.

Baker & Stevenson (1986) found a positive correlation between the mother's education, child's school performance, and the academic strategies actually used by mothers of eighth grade student in a US middle school. They reported that mothers with more education (proxy for parent socio-economic status) have more knowledge about their child's schooling. For example, they are more likely to be able to name their child's teachers, identify their child's best and worst subjects, and offer an overall evaluation of their child's performance, and they are more likely to have seen their child's last report card. Mothers with higher education are also more likely to have had contact with schools and to have attended parent-teacher conferences. However, the findings showed little relationship between mother's education and suggested strategies to improve school performance (Baker & Stevenson, 1986). Educated mothers were not any better in devising homework strategies and implementing them at home than were the less educated mothers.

Powell & Steelman (1990) in their High School and Beyond Survey Study of High School Seniors of the Class of 1972 in the U.S. found marked effects of parental education on student's verbal and math scores. They further reported that the father's educational level exhibited a slightly more powerful effect than the mother's educational level and even family income.

3. Family Demographic Structure and Educational Outcomes

(i) Single parent

Family structure has also been associated with children's educational outcomes. In particular, children in single-parent families fare more poorly than their peers in two-parent families. In the US, economic deprivation theorists find that children in single mother families have access to far fewer resources than children with two parents (MacLanahan & Sandefur, 1994). Women generally earn less than men. Lacking adequate financial support from non-resident fathers, children in single mother households are five times more likely to live in poverty (Eggebeen & Lichter, 1991).

It has been mentioned that in the U.S., economic disadvantages experienced by single-parent families can result in lower rates of high school graduation and diminished parental funding of higher education. Families with less money, more children, or only one parent in residence may have fewer resources to support educational activities. In disrupted families, not only is there normally a drop in income (Hoffman & Duncan, 1988; Peterson, 1996), but also time may be lacking for other activities, such as supervising children's homework (Astone & MacLanahan, 1991). Income may not be the only reason for the poor educational outcomes in single-parent households. In their study of the effects of family dissolution and reconstitution on children's educational outcomes, Jonsson & Gahler (1997) indicated that economic deprivation in the single parent family was not the cause of lower school achievement. They argued that time

constraints faced by the parent might be the important factor because time limits the frequency and quality of interaction with children.

In an examination of the effect of widowhood and divorce on school participation of children aged 15-19 in Malaysia, Pong (1996) showed that even in an entirely different socio-cultural setting characterized by collectivism and extended kin support, divorce and separation of parents are as detrimental to children's education as they are in the US. She found that children with divorced or separated mothers are at greater risk of leaving school than their counterparts from all other family situations, regardless of individual demographic characteristics, the level of family resources, and the proximity of schools. However, she documented the differential effects of widowhood in Malaysia. Unlike children with divorced or separated mothers in Malaysia, children of widows were as likely to attend school as children with two parents when other demographic and socio-economic factors were controlled. Similar results were found in a Swedish study where children fare better in educational attainment if they lived in two-parent or widowed families than if they lived in divorced or step-parent families (Jonsson & Gahler, 1997). The differential effect of widowhood on children's educational participation was due to the widow's unearned income received in the form of material and financial help from close relatives. This form of social protection is provided to widows in Malaysian culture but not to single mothers who are divorced or separated. In Malaysia, this result basically negated the economic deprivation concept of school participation and achievement among children of single parents.

(ii) Number of Siblings, Sibling Density, Birth Order, and Educational Outcomes of Children

The inverse relationship between the number of siblings and educational outcomes is one of the most consistent findings in the literature. Individuals perform better when they have fewer brothers and sisters. This pattern remains even when parent's education, household income, race, and age are controlled (Blau & Duncan, 1967; Featherman & Hauser, 1978). Most have confirmed the inverse association of sibling numbers with years of education attained including its association with other educational outcomes, such as grades, test scores, the probability of graduating from high school, and the probability of entering and graduating from college (Powell & Steelman, 1993; Powell & Steelman, 1990; Steelman, 1985; Alwin, 1991; Blake, 1981; Blake, 1985; Blake, 1989; Steelman & Mercy, 1983; Mercy & Steelman, 1982; Zajonc & Markus, 1975). Powell & Steelman (1990) reported that sibling density in a family affects verbal and math ability. In their work on the High School and Beyond Study of seniors in the US, they found that the greater the number of siblings closely spaced to the target child, the lower the children's test performance. While both verbal and math abilities are affected negatively by sibling density, the verbal ability was more sensitive to close spacing than were the math scores. This finding is consistent with earlier findings by Mercy and Steelman (1982).

Birth order and density effects on educational achievement were found by Parish & Willis (1992) in a study in Taiwan. They found that children born early got less education and those born late in the family got more education.

Similarly, for females, being born into a large family with many siblings was increasingly disadvantageous with extra siblings increasing the probability of females leaving school to go to work or to marry. However, recent evidences from Kenya suggested that, in a context of parental control over child income, relative educational disadvantage of youngest children is reduced due to remittances received from eldest children (Gomes, 1984).

Sex composition of the family did show significant differences on academic achievement, more specifically on grade point average (Powell & Steelman, 1990). They found that each additional brother significantly depresses grade point average where as each additional sister has marginal influence. Hence, having a sister is less harmful than having brothers in terms of grade point average but did not alter the test scores.

The economic deprivation hypothesis, when interpreted in terms of income, was not particularly successful in explaining school achievement and educational outcomes of children in single parent families in the Swedish or Malaysian contexts (Jonsson & Gahler, 1997; Pong, 1996). For example, Jonsson and Gahler (1997) contend that change in adjusted household income accounts for a small portion of the effects of family disruption on educational attainment. They showed that negligible income differentials between single parents and other parental categories were due to Swedish family and social policy and favorable labor market opportunities for single mother families, creating relatively low-income dispersion.

(iii) Attitudes and Aspirations and Educational Outcomes of Children

The investigation of the relationship between social structure and individual behavior dates back to the 1960s when Merton (1968) proposed the idea of culturally defined goals as a reference for individual aspirations. Following Merton's theoretical framework, Marjoribanks (1983) put forth a model of a family-learning environment that linked children's academic outcomes to their immediate family environment. He argued that a parent's occupational and educational aspirations for their children reflect the family's educational goals. And these aspirations were reflected in parent's learning support behavior that influenced children's achievement outcomes.

Kahl (1957) first suggested the importance of parental encouragement in his study of the educational and occupational aspirations of " common-man boys." Although intelligence and social class position affected the college aspirations of common-man boys, he noted that the attitude of parents regarding the importance of occupational success for personal happiness was the critical factor.

In their study of high-school seniors in Wisconsin, Sewell and Shah (1967) note that parental encouragement had a significant effect on the college plans of males as well as females. They found that parental encouragement explained about one-fourth of the variance in the college plans of the boys and about one third of the variance in the college plans of girls. Parental encouragement had a stronger effect than did socio-economic status or intelligence. Furthermore, the

relationship between parental encouragement and college plans was stronger for females than for males.

In a study of male sophomores in secondary schools in six middle-sized Pennsylvania cities, Rehberg and Westby (1967) found that the father's education and occupation influenced educational expectations both through parental encouragement and independent of it. Further, they found that the larger the family, the greater the reduction, not only in the frequency of parental encouragement, but also in its effectiveness.

Astone and Mclanahan (1991) found that children in step families and with single parents received less parental encouragement and attention regarding educational activities and had a higher likelihood of leaving high school than those in original, two-parent families.

According to Kerckhoff (1976), encouragement by significant others varies according to the social position and demonstrated ability of children, and that this encouragement affects the level to which children aspire.

Ecological Contextual Models

Ecological contextual models conceptualize individual development within the cultural and more immediate contexts in which an individual develops (Rogoff & Morelli, 1989). According to these models, human functioning can not be understood without reference to the environment in which people live and

interact, and the belief systems that surround their rearing (Bronfenbrenner, 1989; Super & Harkness, 1986; Vygotsky, 1978).

A central theme of this perspective is that individual development is embedded in multiple and nested ecological contexts (Bronfenbrenner, 1979). Research from this perspective recognizes that individual development is molded significantly by the existence and intensity of belief systems that guide interaction with significant others (e.g. parents, teachers) as well as by the options available in a given cultural context at a particular time (Bronfenbrenner, 1989; Super & Harkness, 1986; Vygotsky, 1978).

Social Capital Models

The ecological perspective of interconnectedness of contexts has triggered significant interest in the research community to explore the home, school, and neighborhood processes affecting children's educational outcomes. In recent years, the social capital perspective has been widely utilized to understand the process of resource generation and utilization.

Contemporary literature reveals that social capital, in terms of process and outcome, manifests a web of intra-familial as well as extra-familial role relationships. Coleman (1988) distinguished, at least implicitly, between the functions of social capital and the location of these functions in social relationships. In quantitative terms, social capital has been considered a potential resource, generated by family (especially parents) through a process of

active social relationships both within and outside the immediate family environment (Coleman, 1988; Furstenberg & Hughes, 1995; Pong, 1998). Social capital within the family context is measured by the intensity of the parent-child relationship. Outside the family context, social capital is measured in terms of relationships between parents and their immediate community such as friends, teachers and other members of social structure (Furstenberg & Hughes, 1995, Pong, 1998).

Pong (1998) provides concrete examples of ways that these two major dimensions of social capital benefit children's education. Within the family context, social capital is manifest in the parent's discussion of school matters such as courses or programs, school activities and events with children. Pong (1998) argued " within the family, the micro-system social capital consists of dyadic parent-child relationships that independently contribute to a child's educational success" (Pong, 1998, p. 24). Outside the family context, participation by parents in school events and parent's social networks with other parents of school children are the basis for community based social capital. She argued that, "parents must be connected to their children's friend through their relationships with other parents if they are to communicate the social norms needed for children's academic development" (Pong, 1998, p. 25). Outside the family, such interconnections among adults and children were considered school based social capital that is available for students' learning (Pong, 1998).

Using data from the National Education Longitudinal Study (NELS), Pong (1998) investigated whether school level effects of single parenthood could be

explained by school-based social capital. She found that in a school community in which the level of parental social relations is low (e.g. parents knew few of their children's schoolmates and there was a high concentration of single-parent families), reading achievement was depressed, and this situation could be completely compensated for by parent's acquaintances with other parents.

Other scholars also have pointed to the social resources of educated parents in terms of educational benefits for their children. For example, Baker and Stevenson (1986) note that educated mothers: (1) have more knowledge about their child's performance at school and (2) have more social contact with school personnel. Thus, parent's education benefits children via parent's management of the children's education. It is also likely that parents create social capital through their contacts with teachers and with other parents.

Hagan, McMillan & Wheaton (1996) found that the negative effects of family migration are significantly more pronounced in families with uninvolved fathers and unsupportive mothers. In these families, the diminished social capital provided by parents does not compensate for the community social capital lost as a result of a family move.

Cultural Capital Models

The influence of parental education on children's educational outcomes has also explained by the cultural capital perspective. After Bourdieu's (1977) conception of prestigious cultural resources, DiMaggio and Mohr (1985) defined

cultural capital as a measure of status culture participation. The status culture is the means by which the status group maintains its cohesion and preserves its ability to distance itself from other groups in society. Cultural capital includes such things as parental education, number of books in the home and the amount of intellectual stimulation a child gets from his/her parent reading and talking to him/her (DiMaggio, 1982). This theory assumes parental education is an important cultural resource, lack of which can be detrimental to the educational outcomes of children. This theory holds that children with poor cultural capital in the home have lower educational advancement because they get less intellectual stimulation from their parents and have low educational aspirations like their parents.

Summary of Research Findings

Research in the U.S. and other developed countries has shown that various socio-economic, demographic and social capital factors that influence children's educational outcomes. Research reveals that parental education consistently is a predictor in determining educational outcomes of children in school.

Structural differences in terms of human capital (which are measured by parental educational status, employment, training, and individual skills) have been widely used both as predictor and control variables. Similarly, social capital, a resource acquired and invested in children’s education by parents have

been widely emphasized in understanding children's educational outcomes. However, since most of this work has been done in the U.S., the nuclear family has been the model and parental education has been over emphasized. Little attention has been given to understanding the social resources that is acquired and disburse in a household context. A household constitutes an extended family system in which resource generation, acquisition and investment in child's education is made based on the extended family norms.

The role of extended family members cannot be overlooked, especially in Chitwan, where ethnic, religious and cultural diversity shape family norms and relationships. Besides Chitwan is a place of migrants from different parts of the country constituting a mix of cultures that is believed to differ greatly from other parts of Nepal. The collective views on children's education in the valley should differ from the views of people residing in other more homogenous regions of Nepal.

As the literature suggests, social capital in the form of social networks can shape parents' educational aspirations for their children. Thus to the extent that parents engage in extra-familial and extra-household networks, it should reap a benefit in their children's school enrollment.

Chapter 3

RESEARCH METHODOLOGY

Research Setting

The setting for this study is the Western Chitwan Valley located in South Central Nepal. Chitwan is a wide flat valley nestled in the Himalayan foothills at approximately 450 feet above sea level. The study site is situated approximately 200 kilometers southwest of Kathmandu, the capital of Nepal. It is bordered on the east and the south by The Royal Chitwan National Park, in the west by the Narayani River, and in the north by the East-West highway that runs from the eastern to western part of Nepal. Rehabilitation in the area started in the early 1950s. Currently the 20 square mile area is inhabited by many diverse ethnic groups. The study area is basically rural. However, a portion of Bharatpur and Narayanghat urban centers are also included in the study. The area is linked with these towns and commercial centers by an all weather road.

Research Design

This study utilized a descriptive correlational design (Campbell & Stanley, 1963) with data collected in Chitwan Valley Family Study (CVFS). Because Chitwan is uniquely diverse in terms of setting, ethnicity, culture and religion, the

study results will provide valuable information on planning and executing educational policies that affect school enrollment of children in Chitwan. The CVFS provides extensive data on the educational levels of all the family members collected in 1996 through 1997. Both independent and dependent variables were sorted out from the original data set. These were transformed into household level variables coded for each household.

Data Sources

The data were collected through the CVFS project funded by the National Institute of Child Health and Human Development (NICHHD), USA, under grants No. R01-HD32912. The data were the first wave of a longitudinal study designed to examine reciprocal effects of economic growth and family formation. Data were collected under supervision of trained personnel from the Population and Ecology Research Laboratory (PERL) located within the Institute of Agriculture and Animal Science, Tribhuvan University (TU), Rampur, Nepal. Data were collected at three different levels: the community, the household, and the individual levels, each utilizing different sets of instruments. Each instrument was designed to meet the specific needs of the CVFS (Axinn, Barber & Ghimire, 1997).

The principal investigator of the project is Dr. William G. Axinn, professor of sociology, University of Michigan. Permission to utilize the data for this research in a secured location was granted by the principal investigator in

September 1999. Human subject clearance was obtained as part of the funded project. Data at the individual level collected for CVFS were used for testing the hypotheses in this study.

Population and Sampling

Individual level data were obtained from all the eligible respondents in households from randomly selected neighborhoods in the study sites in Chitwan, Nepal. A total of 5271 eligible respondents from 1668 households within 171 neighborhoods were included in the study. Eligibility of the respondent was based on his/her residence in the identified household in the selected neighborhood and on his/her age. Residents between ages 15 to 59 who were in the household for 3 or more months continually during the past 6 months were considered eligible for the interview.

The research site is located South Southwest of the Chitwan district. For the purpose of appropriate sample representation, the site was divided into three strata based on physical distance from the major commercial center, Narayanghat. Then sampling was accomplished in two stages. At the first stage, 30 settlements (10 settlements from each stratum) were randomly selected from a total of 150 settlements identified in the study area by the 1991 Population Census of Nepal. At the second stage, neighborhoods as well as households within the selected settlements were identified and demarcated. Houses with multiple households were identified based on sharing a kitchen. All

the members who shared the same kitchen for food were considered one household. Within the neighborhoods, these households were identified based on the household's caste and ethnic identity. Using the participatory approach of social mapping neighborhoods was demarcated and households were identified. Each neighborhood and household within the selected settlements was properly numbered and a sampling frame for the neighborhood was prepared. A systematic random sampling technique was applied to select the neighborhood samples from all the settlements (Barber, Shivakoti, Axinn & Gajurel, 1995).

At the initial stage of the study, only 120 sample neighborhoods were selected from a total of 30 settlements. Later, 39 neighborhoods within the same selected settlements were added to provide adequate representation of ethnic minorities. After the addition of sampled neighborhoods, the characteristics of the sample closely resembled the ethnic characteristics of the population of the entire Chitwan Valley (Barber, et al., 1995). All households within the selected neighborhoods were surveyed.

For this study, households with primary and lower secondary school age children were identified separately for analysis. Out of the 1668 households included in the CVFS study, a total of 849 (50.9%) households were selected for primary school enrollment analysis and 605 (36.3%) households were selected for lower secondary school enrollment analysis.

Instrumentation

For the present study, the cross sectional data collected for the purposes of the CVFS study were utilized to test the hypotheses. The data were collected at three different levels. Contextual data were collected at neighborhood levels using the Neighborhood History Calendar. The data were collected between July 1995 and July 1996.

At the household and individual levels, data were gathered both in question as well as in table format. An individual level questionnaire was specifically designed for this purpose. This provided data on the household's and family's demographic structure such as age and socioeconomic conditions obtained through a household registry. A Life History Calendar was designed to obtain information on events that have occurred in the respective respondent's life since his/her birth. The calendar contained the year's important national as well as local events such as earthquakes, national elections, referenda, and local development events. These were included to help respondents recall the timing of events in their lives.

The questions in Section B of the individual level questionnaire were designed to collect data on the Life History Calendar. The calendar provides information on age, migration, marital status, family planning methods, living arrangements, travel, education, and employment status of respondents. Section C of the individual level questionnaire provides educational status and other life events data on the respondent's natural as well as adopted children recorded in

a tabular format called the "Child Sheet." This child sheet provided information on the child's age, natural parents, and residency in the home, and child's schooling status. A separate data sheet was designed for each child in the household.

A series of follow-up questions in each of the sections of the questionnaire was added to validate the responses after each interview. To obtain consistency in asking questions and to reduce interviewer biases, a question guideline was developed and used to train the interviewers. The guideline provided instructions to interviewers about sensitiveness of the questions in the questionnaire and ways to ask questions. Data collection was started in August, 1996 and completed in April 1997.

Data pertaining to household educational status, migration, employment status, number of children in the family, and children's educational status were obtained from individual level data recorded both in the Life History Calendar and in the individual level questionnaire. Data regarding ethnicity of the household were obtained from the household level data for the same households.

Data Collection

This study used a mixed-method data collection approach which utilized a calendar format as well as questionnaire with a wide open search for data that included in-depth interviews with key informants, group interviews, and archival sources (Axinn et al., 1997). Interviewers specifically trained for rapport building,

interviewing, triangulating, and documenting the responses gathered the data. Interviews dates and times were scheduled with respondents. Eligible respondents who could not be interviewed at the scheduled dates and times were re-scheduled and interviewed at later dates and times at the respondent's convenience. The data obtained in the field were rechecked immediately after collection for any inconsistencies in the responses as well as for missing information. All the questionnaires with missing, confusing, and inconsistent information were sent back to re-enter and re-validate the responses at a prearranged date and time with the respondents. The data obtained were entered using a software data entry program developed specifically for the CVFS project by the Population Research Institute (PRI), Pennsylvania State University, University Park. Data were cleaned before analysis.

Variable Definition

A. Dependent Variable

The dependent variables used in this study were the school enrollment of (1) primary and (2) the lower secondary school age children of Chitwan households. The use of two levels of school enrollment was based on government policy differences at the two educational levels. In Nepal, primary education (grade I to grade V) is free in terms of tuition and textbooks. Special subsidies and incentives are provided for the children from lower socio-economic backgrounds. However, at the lower secondary levels (grade VI to grade VIII),

parents have to bear the costs of education. Due to these differences in policy, enrollment rates at these two levels were found to be significantly different (CBS/Nepal, 1995; 1997).

The schooling age of children for both primary and lower secondary school was adopted based on the eligible age group defined by the Ministry of Education and Culture, Nepal, for an appropriate level of education in public schools. The educational structure in Nepal broadly consists of primary (grades I to V) and lower secondary (grades VI to VIII). According to the Education Act and Related Regulations of 1991, children ages 6 to 10 are considered the primary school age population and children ages 11 to 13 are considered the lower secondary school age population (MOE/Nepal, 1996).

The school enrollment status of children was derived from three different data sheets used in the CVFS in the 1996-97 survey: (1) the child sheet and (2) the individual level questionnaire. Schooling events were recorded both on the child sheet and the questionnaire. This provided data on children's education as well as other events that affected their schooling since they started school. The information recorded in the child sheet were:(1) the year a child started school, (2) continuation of school, and (3) the year the child dropped out of school. Parents eligible for the interview provided information on school events for each child.

Current school enrollment status for both the primary and the lower secondary school age children was determined from the mother's response to the question C7 on the child sheet: Is the child still studying? Yes responses

were coded “1” for children who were still enrolled in school and coded “2” for children who were not enrolled. The entire “Yes” and “No” answers were counted separately for each category of student in a household to determine school enrollment indices for each household. Only the households/families with children of the defined age groups were selected for this study.

The school enrollment index is defined as a ratio of total number of children currently enrolled in school to the total number of primary and secondary school age children in a household. A household with an index value of 100% in the specified age group was considered enrolled (1); and otherwise they were not enrolled (0).

B. Independent Variables

(1) Household demographic variables

Demographic variables included in the study were obtained from the individual level questionnaire and reconstituted into household level variables. Independent variables included in the study were:

Age of children: This variable constituted average age of all born or adopted children (between 1-14) in a household defined by the parent informant.

Number of school age children: This was defined by number of school age children between 5 and 14 in a household. This variable was constituted separately for primary and lower secondary school age categories. For primary school age category, school age children other than primary school age were included. Similarly for lower secondary age category, school age children other than lower secondary school age were included.

Household religion: This is the parents' response regarding their religious affiliation. Responses were obtained from Question G1 of Section G in the individual level questionnaire. If all the respondents in a household identified themselves as Hindu, then it was coded "1" for Hindu households and coded "0" otherwise.

Household caste: Household caste is derived from the parents' responses regarding their social status. Responses were obtained from Question I26 of Section I in the individual questionnaire. If all of the respondents in a household identified themselves as upper caste Hindu, it was coded "1" and coded "0" otherwise.

(2) Household financial variables

Three measures of father's financial activities in a household constituted household financial variables. They were: (a) father's involvement in an in-home business, (b) father's employment in salaried job, (c) father's employment in wages, and (d) parental training.

(3) Household social capital variables

Household social capital is defined as a resource that is generated through relationships and connectedness to the members of social systems and utilized by household members for the educational advancement of their children. The household social capital variables included in the study were: (a) household relationships, (b) children's accessibility to family members, (c) communication, (d) attitude towards daughter's education, (e) migration and (f) community ties.

Household relationships: Two different measures of household/familial relationships were constituted: (1) intra-household relationship and (2) inter-household relationship.

An Intra-household relationship is the relationship that existed between parental respondents in a household and their adult children who were living away from home at the time of the survey. This relationship was measured in terms of help received by parents from their children. The responses were obtained from one Yes and No binary type question, “Have your children ever helped you by giving you things like grain, clothes, money or something else while they were living away from home?” Responses were dummy coded “1” if “yes” and coded “0” if “No”. All positive responses were summed to obtain the total number of parents in a household who had received help from their children. These were then transformed into a household level parent-child relationship by computing the ratio of parents who received help to the total number of parents who responded to the question within a household. If 50% or more parents in a household received help from their children, the data were coded “1” for yes or helping household and coded “0” for no or non-helping household.

Inter-household relationship is defined as a measure of the relationship among two or more related families/households. This study used three measures that indicated the strength of relationships between children’s parents and their grandparents. Questions asked of both parents were: (a) In general, would you say that your relationship with your mother is extremely happy (1),

very happy (2), somewhat happy (3), or not happy at all (4). The same question and response format was repeated for “father” and “mother-in-law”.

All scale values in the original data file were reversed to obtain higher scale values for stronger relationship. A reliability test was conducted to ensure consistency among the items for households (Alpha= .58, N=366). A single factor solution of the inter-familial relationship items was obtained through factor loading of the items using the varimax rotation method. Since all three items loaded into a single factor, a group mean of the item scores was calculated. Following this step, a household mean inter-household relationship score was calculated based on the means for all parents in a household. Households having a mean value of three or below were coded “0” for not happy households and values above three were coded “1” for happy households.

Children’s accessibility to family members: This social capital measure was comprised of three different measures: (1) parental residency, (2) frequency of travel by parents, and (3) children’s accessibility to grandparents.

Parental residency in the household was defined as the mean number of years of the parents’ residency with each primary and lower secondary school age child. Data on parents’ yearly presence in the family/household were recorded for each parent in the LHC. The total number of years of parental presence in the household/family was derived from the count of twos recorded in the LHC for each child in the household/family. A “2” was assigned when both parents were present for at least a six month period out of a year. Because the data were obtained only in terms of a year, presence of the parents in the

household for six or more months in a year was considered one year. This was then counted to obtain the total number of years of the parents' presence for each primary and lower secondary school age child in a household separately. The mean value of parents' yearly presence was taken to obtain parental residency at the household level. This measure of children's accessibility to parents was calculated separately for both primary and secondary school age categories of children in the household. Mean of parental yearly presence in the household in the last 16 years was chosen for calculating parental residency for lower secondary school age children. For primary school age children, a mean of parental yearly presence in the last 10 years was considered.

Frequency of travel was defined as mean number of year parents indicated traveling to Kathmandu. Data on parent's yearly travel in the family/household were recorded for each parent in the LHC. A total number of years of parental travel in the household were derived from counts of twos recorded in the LHC for each child in the household. A code of 2 was assigned to yearly travel events in the LHC if father or mother in the household/family traveled to Kathmandu during a particular year. Because the data were obtained only in terms of a year, the data provided only the frequency of parental travel during their children's schooling years. All the twos in the LHC were counted to obtain the total number of years travel had been made during the schooling years of each primary and lower secondary school age child in a household. Mean travel frequency was used to obtain parental residency at the household level. This measure of children's accessibility to parents was calculated separately for

both primary and secondary school age categories of children in the household. Frequency of travel in the last 16 years was used for calculating parental residency for lower secondary school age children, while for primary school age children frequency of travel in the last 10 years was used.

Children's accessibility to grandparents was determined from Section I of the individual level questionnaire (Question I1) as well as from the subsequent follow-up questions (Question numbers I2 and I3 of Section I of the individual level questionnaire). The questions recorded the information on the living arrangements of a respondent and his/her parent. Grandparents were considered accessible to the respondent's children if either or both grandparents had been residing with the respondent, or living in the same village, or they could be reached from the respondent's village in one day. A ratio of the number of parents who indicated that their parents (the child's grandparents) were accessible to their children to the number of parents who responded to the questions in a household was obtained and used in the regression models. An index value of 50% or more was coded "1 " for accessible and coded "0" otherwise.

Communication: The availability of social capital is dependent on a household/family access to communication, information, and relationships in the community, which in turn determines the strength of relationships between a household/family and a community. For communication to be effective and efficient, proficiency in local languages and dialects is a must, especially in an area like Chitwan. The communication variable used for the CVFS study was

parental proficiency in languages/dialects. Responses related to language proficiency were taken from Question A6 in Section A of the individual level questionnaire. Respondents were asked to indicate how many languages and dialects they could speak. Mean value for the number of languages spoken by parents within a household was computed separately for primary and lower secondary school levels in order to obtain a household level mean in language proficiency. Households that had a mean value (2.4) or value more than the mean were coded "1" for high language proficient households. Less than 2.4 were coded "0" for low language proficient households.

Mother's attitude toward daughter's education: Responses related to mother's attitude were obtained from Question number I26 in Section I of the individual level questionnaire: How important is it to you that a daughter of yours go to college? Would you say that it is Very important (1), somewhat important (2), Not at all important (3). All the scale values in the original data file were reversed to obtain higher scale values for more progressive attitudes. A mean value for each household was computed and the household attitude was determined. Mean values of threes were coded "1" for progressive attitude and less than threes were coded "0" for traditional attitude.

Migration: Question D1 in Section D of the individual questionnaire provided the data on migration. This question provided data on the total number of fathers who had lived in the current neighborhood since13 years of age and or moved into the neighborhood earlier. These data were used to obtain the ratio of fathers who migrated earlier or were born into that place to the total number of

parents in the household. Values of 50% or more were coded “0” for early migrant households and coded “1” for recent migrant households.

Community Ties: Community ties were based on the parent’s response on whether they had ever been members in youth clubs. Binary responses were gathered. These data were used to obtain the ratio of member parents to the total number of parents in the household. Values of 50% or more were coded “1” for “Yes,” indicating a member household and “0” for “No,” indicating not a member household.

(4) Household Education

Educational status of mother, father and other adults in each household in terms of number of years of schooling was used to determine household education. Education was measured separately for mother, father, and for other adult members in a household. This was computed by taking the average number of years of schooling completed by each parent and adult respondent.

Parental education and the educational level of other adults were obtained from self-reports of actual grade or level of education completed by adult members in a household/family. The grades were considered direct measures of the number of years of schooling. The levels of education attained such as School Leaving Certificate (S.L.C.), Intermediate in Arts (I. A.) or equivalent, Bachelor in Arts (B.A.) or equivalent, Master in Arts (M.A.) or equivalent, and Ph.D. or equivalent were considered 11, 13, 15, 17, and 20 years of schooling, respectively. This was adapted based on years of residency required to complete the levels successfully under the Nepalese education guidelines (MOE,

1996). A cumulative mean number of years of schooling attained by mothers, fathers, and other adults in a household was derived separately for each household and used in the analyses.

Since the data obtained for higher education (S.L.C. and above) were in levels of education, the number of grade or level repetitions could not be determined. Hence, the years of schooling represents the number of years based on levels of education completed rather than actual number of years spent in attaining a particular level of education.

Data Analyses

The CVFS data obtained both in table as well questionnaire formats were re-coded to obtain the measures of the variables outlined in this study. The data were processed by using the Statistical Package for Social Science (SPSS) Version 11.0, available through the Center for Academic Computing at The Pennsylvania State University, University Park. Frequencies, means, standard deviations, and percentages were used to describe sample characteristics. Even though the dependent variables were obtained as discrete binary responses, the ordinary least square regression could be used to fit a linear probability model. However, the linear probability model is heteroskedastic and may predict probability values beyond the (0,1) range, thus binary logistic regression was used to determine the probability of school enrollment of children (Austin, Yaffee & Hinkle, 1992). The Odds ratio (indicated as exponential Beta) of the logistic

regression results will determine the odds of a household's membership within the defined school enrollment category. Three regression models were tested for each level of school enrollment.

Model Definition and Selection

Models were primarily selected based on variables included in the research questions. Three models each for primary and lower secondary school age children were tested. Initially, variables in the models were primarily selected based on their potential influence on school enrollment in the previous studies. However, the variables with the largest R^2 were first selected and included in the model. A Backward Linear Regression (LR) variable entry method was used to check the influence of variables on model selection as well as improvement of the model. At the last stage, the excluded variables were rechecked and entered into the model for meaningful interpretation. This method was repeated for both educational levels (primary and lower secondary). To make a meaningful comparison, the same variables were used in the primary as well as lower secondary models.

Model Selection for Primary School Level

At the primary school level, demographic and financial variables such as age of children, number of children who were enrolled in lower secondary and

secondary grade levels, household religion, household caste, father's involvement in in-home business activities, father's employment in salaried jobs, father's employment in wages, parental training (adult education), were included in Model 1. This model serves as the control model.

In Model 2, social capital variables such as community ties (parental membership in youth clubs), migration, communication (parental proficiency in language/dialects), intra-household relationship, inter-household relationship, children's accessibility to their grandparents, parental residency, parental frequency of travel, mother's attitude towards daughter's education were included along with the demographic and financial variables. This model determines the net effect of social capital variables on school enrollment of primary school age children after statistically controlling for the effects of the demographic and financial variables.

Model 3 is comprised of household education variables indicated by father's mean years of schooling, mother's mean years of schooling, and the mean years of schooling of other adult members in the household including demographic, financial and social capital variables included in Model 1 and Model 2. This model determines the net effect of household education on the school enrollment of primary school age children after statistically controlling for demographic, financial and social capital variables.

Model Selection for Lower Secondary School Level

At the lower secondary school level demographic and financial variables such as age of children, number of children who were enrolled in primary and secondary grade levels, household religion, household caste, father's involvement in in-home business, father's employment in salaried jobs, father's employment in wages, training (adult education) were included in Model 1. This model acts as the control model.

In Model 2, social capital variables such as community ties (parental membership in youth clubs), migration, communication (parental proficiency in language/dialects), intra-household relationship, inter-household relationship, children's accessibility to grandparents, parental residency, frequency of travel, and mother's attitude towards daughter's education were included along with demographic and financial variables. This model determines the net effect of social capital variables on school enrollment of lower secondary school age children after statistically controlling for the effects of the household demographic and financial variables.

Model 3 is comprised of household education variables indicated by father's mean years of schooling, mother's mean years of schooling, and the mean years of schooling of other adult members in the household including demographic and social capital variables included in Model 1 and Model 2. This model determines the net effect of household education on the school enrollment

of lower secondary school age children after statistically controlling for all demographic, financial and social capital variables.

Limitations of the Study

The purpose of "The Chitwan Valley Family Study" was to study development and family formation. The extent of measurement error in the CVFS data was unknown. Second, the data in the CVFS study was gathered at the individual level. Reconstituting these individual level data at the household level might have compromised the internal consistency of the measures. Third, heretofore, social capital has not been studied in Nepal. Nor was social capital intentionally measured in the CVFS data. Thus many of the measures used in this study were proxies for social capital. Fourth, differences in educational policy in Nepal at primary and lower secondary school levels warranted the study of the influence of predictor variables on school enrollment at these two levels. Existing gender discrimination in school enrollment remained a major concern. This restricts further exploration of the influences of social capital variables without controlling for gender. Fifth, this study adopted a stringent measure for categorization of dependent variables. This caused a reduction of primary school enrollment at household level to 60% as compared to national figure of 70% at individual level. Finally, selection of subjects for the present study might have violated random selection presumptions. This could affect the resulting

coefficients in the analysis. Future studies should address this problem by using statistical packages that could mitigate this problem.

Chapter 4

RESULTS

In this study, the relationships between Chitwan household characteristics and the school enrollment of children in Chitwan were examined separately for primary and lower secondary school age children. The independent variables were 20 household level characteristics transformed from individual level data as well as data recorded on a Life History Calendar (LHC). These transformed variables were grouped under four categories: (1) household demographic variables, (2) household financial variables, (3) household social capital variables, and (4) household education (human capital) variables. The dependent variable at the household level was a dichotomized school enrollment index. An index value of 100% was considered 'Enrolled', and a value less than 100% was considered 'Not Enrolled'. Indices for both primary and secondary school age groups were obtained separately.

Characteristics of Household with Primary School Age Children

Household level characteristics for households with primary school age children are reported in Table 1. The sample was 849 households. This number reflects the total number of households with at least one primary school age child. Based on parents' reports, the mean age for children was 9.57 years with a standard deviation of 4.47. Children other than primary school age numbered

Table 1. Proportion of Households with Primary School Age Children by Demographic, Social Capital and Household Education Factors

Household-level Characteristic	Mean	S.D.	n	S.E
A. Predictor Variables				
1. Demographic Factors				
Age of Children	9.57	4.47	849	.153
Number of School Age Children	1.11	1.34	849	.046
Religion 0 = Non Hindu, 1= Hindu	.73	.44	843	.015
Caste 0 = Others, 1= Upper-Caste Hindu	.44	.50	800	.018
2. Financial Capital Factors				
Father's Involvement in In-home Business 0 = Not Involved, 1 = Involved	.22	.42	800	.015
Father's Employment in Salaried Job 0 = Not Employed, 1 = Employed	.64	.48	800	.017
Father's Employment in Wages 0 = Not Employed, 1 = Employed	.43	.50	800	.018
Parental Training 0 = None, 1 = Some	.25	.43	849	.015
3. Social Capital Factors				
Migration 0 = Early, 1 = Late	.71	.46	800	.016
Communication 0 = Low, 1 = High	.46	.50	800	.018
Community Ties 0 = No, 1 = Yes	.83	.38	849	.013

Table 1. (Continued…)

Household-level Characteristic	Mean	S.D.	n	S.E
Intra-household Relationship 0 = No, 1 = Yes	.58	.49	849	.017
Inter-household Relationship 0 = Not Happy, 1 = Happy	.25	.44	761	.016
Parental Residency (yrs.)	7.84	2.53	394	.127
Parental Frequency of Travel	.53	.98	849	.034
Accessibility of Paternal Grandparents to Children 0 = No, 1 = Yes	.44	.50	800	.018
Mother's Attitude Towards Daughter's Education 0= Traditional, 1 = Progressive	.80	.40	846	.014
4. Household Education Factors				
Father's Years of Schooling	4.85	4.39	799	.155
Mother's Years of Schooling	1.79	2.91	849	.100
Years of Schooling of Other Members in Household	2.61	3.77	849	.129
B. Dependent Variable				
School Enrollment of Primary School Age Children 0 = Not enrolled, 1 = Enrolled	.60	.49	847	.017

slightly more than one (mean = 1.11, S.D.= 1.34). The majority (73%) of households were Hindu with 44% belonging to the upper caste Hindu. Fathers were engaged in in-home business activities in more than one-fifth (22%) of the households. In 64% of the households, fathers were employed in salaried jobs, and in two-fifths (43%) of the households fathers were wage workers. Just one-fourth (25%) of the households included parents with non-formal education (adult education).

The majority (71%) of households had fathers who migrated to their current neighborhood at age 13 or later or were born into that place. Slightly less than one-half (46%) of the households had fathers who were proficient in three or more languages/ dialects. A large majority (83%) of households had parents who were ever involved in youth clubs. Households in which parents reported receiving help from their children were 58%. However, only 25% of the households indicated that they had a congenial inter-familial relationship (a relationship between the parents and mother-in-laws). Parental residency with their children in terms of number of years was relatively high (7.84 years, S.D.= 2.53). In the last ten years, households had a mean parental residency of about 8 years with primary school age children.

Effects of Demographic, Social Capital and Human Capital Factors on School Enrollment of Primary School Age Children

Results from logistic regression analysis were used to determine the effects of predictor variables on school enrollment of primary school age children. Three models were tested; results are presented in Table 2.

Model 1: Effects of demographic variables on primary school enrollment

Controlling for other variables, the effects of demographic and financial variables on school enrollment were examined in Model 1. The variables included were: (1) age of children, (2) number of school age children in household other than primary school age children, (3) household religion, (4) household caste, (5) father's involvement in in-home business, (6) father's employment in salaried jobs, (7) father's employment in wages, and (8) parental training (adult education).

The model indicated that, with all other demographic variables held constant, the child's age and caste influenced the school enrollment of primary school age children. The odds of school enrollment were slightly better for households having older children than for households having younger ones. In fact, households with older children were 1.18 (Exp. (b) = 1.18, $p \leq .001$) times more likely to enroll their children in primary school than households with younger children. Similarly, children from other households were less likely to be

Table 2. Logistic Regression Results Summary Showing Effects of Predictor Variables on the Odds of School Enrollment of Primary School Age Children in Chitwan Households

Household-level Characteristic	**Model 1**		**Model 2**		**Model 3**	
	Exp (b)	**S.E**	**Exp (b)**	**S.E**	**Exp (b)**	**S.E**
A. Predictor variables						
1. Demographic Factors						
Age of Children	**1.18*** **	.042	**1.26*** **	.051	**1.28*** **	.054
Number of School Age Children	.84	.134	.91	.142	.90	.146
Religion 0 = Non Hindu (rc), 1 = Hindu	1.03	.291	1.11	.309	1.06	.314
Caste 0 = Others (rc), 1 = Upper Caste Hindu	**3.11*** **	.289	**2.62** **	.328	**2.30** **	.336
2. Financial Capital Factors						
Father's Involvement in In-home Business 0 = Not Involved (rc), 1 = Involved	1.84	.337	1.96	.370	1.95	.378
Father's Employment in Salaried Job 0 = Not Employed (rc), 1 = Employed	.93	.268	.87	.303	.82	.308
Father's Employment in Wages 0 = Not Employed (rc), 1 = Employed	.76	.260	.84	.286	.94	.303
Parental Training 0 = None (rc), 1 = Some	.71	.281	.57	.301	.65	.308

Table 2 (Continued…..)

Household-level Characteristic	Model 1		Model 2		Model 3	
	Exp (b)	S.E	Exp (b)	S.E	Exp (b)	S.E
3. Social Capital factors						
Migration 0 = Early (rc), 1 = Late			1.16	.340	1.19	.343
Communication 0 = Low (rc), 1= High			.69	.298	.62	.311
Community Ties 0 = No (rc), 1 = Yes			1.88	.379	**2.21***	.407
Intra-household Relationship 0 = No (rc), 1 = Yes			**2.95*****	.316	**2.83***	.322
Inter-household Relationship 0 = Not Happy (rc), 1 = Happy			1.29	.328	1.34	.330
Parental Residency			.95	.061	.96	.062
Parental Frequency of Travel			1.27	.185	1.19	.190
Accessibility of Paternal Grandparents to Children 1 = Yes, 0 = No (rc)			1.30	.295	1.24	.297
Mother's Attitude Towards Daughter's Education 0 = Traditional (rc), 1 = Progressive			**1.99***	.325	**1.87***	.328

Table 2 (Continued…..)

Household-level Characteristic	Model 1		Model 2		Model 3	
	Exp (b)	S.E	Exp (b)	S.E	Exp (b)	S.E
4. Household Education Factors						
Father's Years of Schooling					1.05	.044
Mother's Years of Schooling					1.13	.083
Years of Schooling of Other Members in Household					.98	.042
B. Dependent variable						
School Enrollment of Primary School Age Children 0 = Not Enrolled, 1 = Enrolled						
Constant	**.38**	**.60**	**.04****	**1.00**	**.03*****	**1.07**
df	**8**		**17**		**20**	
-2Loglikelihood	**380.50**		**354.80**		**350.45**	
Model Chi-square	**53.63**		**79.32**		**83.67**	
Model Significance	**p=.000**		**p=.000**		**p=.000**	

* = Significant at 0.05; ** = Significant at 0.01; *** = Significant at 0.001
(rc) = Reference Category

enrolled than children in upper caste Hindu households. The odds ratio was 3.11 (Exp. (b) =3.11, $p \leq .001$) and the result was highly significant. In other words, upper caste Hindu households are about 3 times more likely to send their children to school than are other households.

Even though the influence of other demographic variables was not significant, non-Hindu households and those with more school age children other than primary school age were less likely to enrolled children in school. Households that had fathers employed in wage and salaried jobs were less likely to have children enrolled in school whereas those with an in-home business were more likely to have children in school (Exp. (b) = 1.84, $p \leq .337$). The model predicted an overall 73.5% percentage correct (not shown in table). The model chi-square value was 53.63 ($p \leq .001$) with 8 degrees of freedom. Both the step and block results were significant at p = .001 significant levels. The coefficient for –2Loglikelihood was 380.50.

Model 2: Effects of social capital variables on primary school enrollment

In Model 2 (Table 2), the effects of social capital variables on the school enrollment of primary school age children controlling for demographic variables were examined. The social capital variables included in the model were: (1) Community ties (parental membership in youth clubs), (2) migration, (3) communication, (4) community ties, (5) intra-familial relationship, (6) inter-familial

relationship (7) parental residence, (8) parental travel (9) children's ease of access to grandparents, and (10) mother's attitude toward daughter's education.

Among the social capital variables included in the model, mother's attitude towards a daughter's education and intra-familial relationship (help received from children) were found to be significant in determining school enrollment. Households where mothers had more progressive attitudes towards their daughters' education were about two times (Exp. (b) = 1.99, $p \leq .05$) more likely to enroll their children in school than households where mothers had more traditional attitudes. Similarly, households that had stronger intra-familial relationship (a greater proportion of parents receiving help from their non-resident children) were about two times (Exp. (b) = 1.99, $p \leq .001$) more likely to enroll children in school than households in which parents received little or no help from their children.

Other social capital variables had different influences on school enrollment. Among them, communication (parental proficiency in languages/dialects) and parental residency were negatively related where as community ties (membership in youth clubs), and frequency of travel to Kathmandu were positively related to the likelihood of children being enrolled in school. Similarly, migration, inter-familial relationships, and children's accessibility to grandparents were positively related to the likelihood of children being enrolled in school. However, the results were not significant.

The Inclusion of social capital variables in the model slightly increased the influence of some demographic variables, such as the child's age (Exp. (b) =

1.26, $p \leq .001$). However, the effect of caste decreased (Exp. (b) = 2.62, $p \leq .001$) when social capital variables was entered. In fact, social capital variables in association with the demographic variables increased the effect of age on school enrollment while it decreased the effect of caste. The influence of other demographic variables did not change.

This model classified 79.2% of the cases correctly, which is about a 6% increment over Model 1. The model's chi-square value was 79.32 and was highly significant ($p \leq .001$). The inclusion of the social capital variables improved the model's predictability over Model 1. The constant term was significant at a .01 probability level.

Model 3: Effects of household education variables on primary school enrollment

The effects of household education on primary school enrollment was examined in Model 3, controlling for all the demographic and social capital variables included in previous models. Household education variables included were: (1) father's years of schooling, (2) mother's years of schooling, and (3) years of schooling of other adults in the household.

No significant effects of household education on the school enrollment of primary school age children were found (see Table 2). However, both mother's and father's education had a positive influence while the education of other adult members was slightly negative. Although the result was not significant, the mother's educational level was more influential (Exp. (b) =1.13, $p \leq .131$) on

children's primary school enrollment than was the father's (Exp. (b) = 1.05, $p \leq .308$).

After controlling for the social capital and household education variables in Model 3, the effects of the age of school age children and household caste remained significant. The influence of these variables on the odds of school enrollment was slightly improved for the households with older children (Exp. (b) = 1.28, $p \leq .001$) and decreased for higher caste Hindu households (Exp. (b) = 2.30, $p \leq .01$). Both were significant. This implied the diminished importance of caste in the presence of social and human capital factors. No significant changes occurred in the influence of the other demographic variables such as religion, fathers' involvement in business, father's employment in salary and wage activities, and parental training when parental education was controlled.

Among the social capital variables included in Model 3, community ties (parental membership in youth clubs) had a significant effect on the odds of school enrollment. After all of the variables were held constant, households with a higher proportion of mothers who indicated they had a progressive attitude towards their daughters' education were about twice (Exp. (b) = 1.87, $p \leq .05$) as likely to enroll their children in school as households with more traditional values. Similarly, households that had a stronger community ties (households with parents who were members in youth clubs) were about twice (Exp. (b) = 2.21, $p \leq .05$) as likely to enroll primary school age children when compared to households that had weaker community ties (households with less or none of the parents engaged in such clubs). The influence of community ties was found significant

when household education was controlled. The influence of intra-familial relationship (help that parents received from non-resident children) did not change much (Exp. (b) = 2.83, $p \leq .05$) and remained significant.

Even though the results were not significant, the influence of other social capital variables indicated slight changes in the odds of school enrollment. In fact, the influence of inter-familial relationships slightly increased. When all demographic and household education variables were controlled, the odds (Exp. (b) = 1.19, $p \leq .604$) of school enrollment were slightly improved for late migrant households (households that had fathers who migrated at age 13 or later) and for households having happier inter-familial relationships (Exp. (b) = 1.34, $p \leq .378$). Similarly, the effects of communication (higher language proficiency) (Exp. (b) = .62, $p \leq .129$), more grandparent access (Exp. (b) = 1.24, $p \leq .470$) and more frequent travel (Exp. (b) = 1.19, $p \leq .364$) in the household diminished slightly the odds of primary school enrollment when compared to Model 2.

A significant positive change in the chi-square value (model Chi-square = 83.67, $p \leq .001$) of Model 3 from the previous models (Model 1 & Model 2) was observed. Similarly, the correct classification of the dependent variable was improved by about 1% (not shown in the table). This indicated an improvement in Model 3 with the introduction of household education variables. The constant term was significant at a .001 probability level.

Summary of the Effects of Demographic, Social Capital and Human Capital Variables on the Odds of School Enrollment of Primary School Age Children

Based on the logistic regression results, the influence of predictor variables on the odds of school enrollment of primary school age children can be summarized as follows:

1. The odds of primary school enrollment were higher for households with older children. The effect of children's age on school enrollment was found to be consistently positive even when other demographic, social capital, and human capital variables were controlled.

2. Caste remained an influential variable in predicting the odds of school enrollment of primary school age children even when all other factors were controlled. Higher caste Hindu households were about two times more likely to enroll their children in primary school than lower caste Hindu households. However, caste influence was diminished in the presence of higher social as well as human capital in a household.

3. Community ties had a positive influence on school enrollment. Households that have a higher proportion of parents with membership in youth clubs are almost twice as likely to enroll their children than households that have a lower proportion of parents belonging to such youth clubs.

4. Intra-familial relationships indicated a positive influence on school enrollment. Households that have a greater proportion of parents who received help from their non-resident children were almost three times as likely to enroll

their children in school than the households that have parents who received little or no help. This result was consistent even when all other variables were controlled.

5. Households that have a higher proportion of mothers with progressive attitudes towards their daughters' education were twice as likely to enroll their primary school age children than households with more traditional attitudes.

6. Parents' education and the educational level of other adults in a household had no significant effects on the school enrollment of primary school age children.

Characteristics of households with lower secondary school age children

Table 3 summarizes household level characteristics for Chitwan households that have at least one lower secondary school age child. Children between 11 to 13 years of age were considered lower secondary school age. The sample was 605 households, representing about 36% of the total households surveyed for the CVFS study. For these households, the mean age of children in the selected households was 12.82 years. The number of children who were of primary and secondary school age was about two per household (mean = 2.26, S.D. = 1.18). The majority (74%) of the households were Hindu, 44% belonging to upper caste Hindu. About one-fifth (21%) of the households had fathers who were engaged in in-home business activities. The majority (58%) of the households had fathers employed in salaried jobs. About two-fifths (44%) had fathers who were wage workers. Households with parents who

Table 3. Proportion of Sample Household with Lower Secondary School Age Children by Demographic, Social Capital and Household Education Factors

Household-level Characteristic	Mean	S.D.	n	S.E
A. Predictor Variables				
1. Demographic Factors				
Age of Children	12.82	4.16	605	.169
Number of School Age Children	2.26	1.18	605	.048
Religion 0 = Non Hindu, 1= Hindu	.74	.44	601	.018
Caste 0 = Others, 1= Upper Caste Hindu	.44	.50	558	.021
2. Financial Capital Factors				
Father's Involvement in In-home Business 0 = Not Involved, 1 = Involved	.21	.41	558	.018
Father's Employment in Salaried Jobs 0 = Not Employed, 1 = Employed	.58	.49	558	.015
Father's Employment in Wages 0 = Not Employed, 1 = Employed	.44	.50	558	.017
Parental Training 0 = Early, 1 = Late	.28	.45	605	.018
3. Social Capital Factors				
Migration 0 = Early, 1 = Late	.76	.43	558	.018
Communication 0 = No, 1 = Yes	.40	.49	558	.020
Community Ties 0 = No, 1 = Yes	.83	.38	605	.015

Table 3. (Continued…..)

Household-level Characteristic	Mean	S.D.	n	S.E
Social Capital Factors				
Inter-household Relationship 0 = Not Happy, 1 = Happy	.23	.42	508	.019
Intra-household Relationship 0 = No, 1 = Yes	.43	.49	605	.020
Parental Residency (Yrs.)	11.60	4.56	602	.186
Parental Frequency of Travel (Nos.)	.67	1.34	605	.054
Accessibility of Paternal Grandparents to Children 0 = No, 1 = Yes	.58	.48	558	.020
Mother's Attitude Towards Daughter's Education 0= Traditional, 1 = Progressive	.80	.40	603	.016
4. Household Education Factors				
Father's Years of Schooling	4.37	4.37	557	.185
Mother's Years of Schooling	1.15	2.36	605	.096
Years of Schooling of Other Members in Household	3.91	3.88	605	.158
B. Dependent Variable				
School Enrollment of Lower Secondary School age Children 0 = Not Enrolled, 1 = Enrolled	.88	.32	605	.013

received training (adult education) were relatively few (28%). In the majority (76%) of households, fathers had migrated to the present neighborhood at age 13 or later. Less than one-half (40%) of the households had parents proficient in three or more languages. Most (83%) households had parents with strong community ties (had parents who had been members of youth clubs) and 43% of the households indicated that they had good intra-familial relationships (parents received help from their non-resident children). Only 23% of households reported that their inter-familial relationships were happy and congenial. Parental residence with children in each household with lower secondary school age children was about 12 years (mean=11.6 years). More than two-thirds (67%) of the households had parents who traveled to Kathmandu. The majority (58%) of the households indicated that their children had good access to grandparents. Similarly, a majority (80%) of the households had mothers with progressive attitudes towards their daughters' education.

Fathers in a household had just over four years of schooling (mean = 4.37 years), while mothers had only one year (mean = 1.15 years) of schooling. Mean year of schooling for other adults in a household was about four (mean = 3.91 years).

Effects of Demographic, Financial, Social Capital and Household Education Factors on School Enrollment of Lower Secondary School Age Children

A logistic regression was used to determine the effects of predictor variables on the school enrollment of lower secondary school age children. Three models were tested. Results in terms of odds ratios are presented in Table 4.

Model 1: Effects of demographic and financial variables on lower secondary school enrollment

The effects of demographic and financial variables on lower secondary school enrollment were examined in Model 1, Table 4. Variables included are: (1) age of children, (2) number of school age children other than lower secondary school age children, (3) religion, (4) caste, (5) father's involvement in in-home business, (6) father's employment in salaried jobs, (7) father's employment for wages, and (8) parental training (adult education).

When other demographic variables were held constant, the number of school age children other than lower secondary age, household religion, father's employment for wages and parental training were influential in the school enrollment of lower secondary school age children. Households that had a greater number of primary and secondary school age children in the household reduced the likelihood of lower secondary school enrollment. In fact, the odds of

Table 4. Logistic Regression Results Summary Showing Effects of Predictor Variables on the Odds of School Enrollment of Lower Secondary School Age Children of Chitwan Households.

Household-level Characteristic	Model 1		Model 2		Model 3	
	Exp (b)	S.E	Exp (b)	S.E	Exp (b)	S.E
A. Predictor variables						
1. Demographic factors						
Age of Children	**.95*** **	.043	.97	.052	.94	.054
Number of School Age Children	**.56*** **	.137	**.58*** **	.156	**.54*** **	.175
Religion 0 = Non Hindu (rc), 1 = Hindu	**3.04** **	.346	**3.89*** **	.385	**4.21*** **	.410
Caste 0 = Others (rc), 1 = Upper Caste Hindu	4.42	.512	**4.49** **	.566	**3.12***	.583
2. Financial Capital Factors						
Father's Involvement in In-home Business 0 = Not Involved (rc), 1 = Involved	.71	.441	.59	.492	.64	.520
Father's Employment in Salaried Job 0 = Not Involved (rc), 1 = Involved	1.75	.335	**1.46** **	.392	1.39	.407
Father's Employment in Wages 0 = Not Employed (rc), 1 = Employed	**.23*** **	.375	**.32** **	.419	.46	.456
Parental Training 0 = Few or None (rc), 1 = Some	**2.35***	.436	1.98	.472	2.05	.482

Table 4. (Continued…)

Household-level Characteristics	Model 1 Exp (b)	Model 1 S.E	Model 2 Exp (b)	Model 2 S.E	Model 3 Exp (b)	Model 3 S.E
3. Social Capital Factors						
Migration 0 = Early (rc), 1 = Late			**3.24****	.484	**4.28****	.529
Communication 0 = Low (rc), 1 = High			**2.28***	.412	1.74	.432
Community Ties 0 = No (rc), 1 = Yes			1.32	.613	1.68	.662
Intra-household Relationship 0 = No (rc), 1 = Yes			**2.85***	.456	**2.62***	.481
Inter-household Relationship 0 = Not Happy (rc), 1 = Happy			1.61	.436	1.95	.467
Parental Residency			**1.11***	.046	**1.11***	.048
Parental Frequency of Travel			1.53	.269	1.46	.278
Accessibility of Parental Grandparents to Children 0 = No (rc), 1 = Yes			1.70	.411	1.46	.425
Mother's Attitude Towards Daughter's Education 0 = Traditional (rc), 1 = Progressive			**2.77****	.373	**2.77****	.390

Table 4 (Continued…)

Household-level Characteristic	Model 1		Model 2		Model 3	
	Exp (b)	S.E	Exp (b)	S.E	Exp (b)	S.E
4. Household Education Factors						
Father's Year of Schooling					**1.19***	.074
Mother's Years of Schooling					.91	.141
Years of Schooling of Other Members in Household					**1.16***	.065
B. Dependent Variable						
School Enrollment of Lower Secondary School Age Children 0 = Not Enrolled, 1 = Enrolled						
Constant	**36.61*** **		**.885**		**.39**	
df	8		17		20	
-2Loglikelihood	257.72		227.98		214.56	
Model Chi-square	85.27		115.00		128.48	
Model Significance	p=.000		p=.000		p=.000	

* = Significant at 0.05; ** = Significant at 0.01; *** = Significant at 0.001;
(rc) = Reference Category

school enrollment for households with a higher number of older children significantly decreased by a factor of 0.95 ($p \leq .001$). Similarly, households that had a higher number of school going children decreased the odds of school enrollment by a factor of .56 ($p \leq .001$). The likelihood of lower secondary school enrollment decreased for children born into non-Hindu households. A Hindu household is three times more likely to send their children to school than a non-Hindu household (Exp. (b) = 3.04, $p \leq .01$). The presence of trained parents in households had a positive influence. School enrollment for households that had trained parents was twice as likely as households that had no or few trained parents. Households that had a higher proportion of fathers employed for wages decreased the odds of school enrollment of lower secondary school age children by a factor of .23 ($p \leq .001$).

Although the findings were not significant, the effects of other demographic variables indicated mixed trends. While father's involvement in an in-home business (Exp. (b) = .71, $p \leq .432$) had a negative influence on school enrollment, a upper caste Hindus household with higher employment in salaried job did, in fact, indicate a positive influence of school enrollment, Model 1, Table 4.

Model statistics indicated that about 90% of the cases were correctly classified (not shown in the table). The chi-square value for this model was 85.27 with 8 degrees of freedom. Model 1 was significant at .001 significant levels.

Model 2: Effects of social capital variables on lower secondary school enrollment

The effects of specific social capital variables were examined in Model 2 after controlling for the effects of demographic variables. The social capital variables included in the models were: (1) migration, (2) communication (parental language proficiency), (3) community ties (parental membership in youth clubs), (4) intra-familial relationship (help received by parents from their non-resident children), (5) inter-familial relationship (6) parental residence, (7) parental travel (8) children's accessibility to grandparents, and (9) mother's attitude toward daughter's education. Logistic regression results are summarized for Model 2 in Table 4.

Among these nine social capital variables, migration, communication, intra-familial relationship, parental residence and mother's attitude toward daughter's education variables were significant. The likelihood of school enrollment of lower secondary school age children increased three fold (Exp. (b) = 3.24, $p \leq .01$) for households that had recent migrants when compared to households with parents who migrated earlier. Similarly, households that had higher a proportion of parents who were proficient in three or more languages/dialects were about two times (Exp. (b) = 2.28, $p \leq .05$) more likely to enroll their children in school as households where parents were less language proficient. Intra-familial relationship indicated a positive influence on lower secondary school enrollment. The odds of school enrollment increased about three times (Exp. (b) = 2.85, $p \leq$

.05) for households having a higher proportion of parents who received help (helping households) from their non-resident children compared to the households that did not (not a helping households). Mothers who had traditional attitudes towards their daughters' education were less likely to have children enrolled in lower secondary school. Households where mothers had progressive attitudes towards daughter's education increased the odds of school enrollment by a factor of about three (Exp. (b) = 2.77, $p \leq .01$). Similarly, parental residency (higher availability of parents in the households during their children's school years) was also significant in determining the school enrollment of children. Higher parental residency in the household increased the odds of school enrollment slightly (Exp. (b) = 1.11, $p \leq .05$).

Among other social capital variables included in the model, membership in youth clubs, inter-familial relationship, frequency of travel, and children's accessibility to grandparents each had a positive influence on the odds of school enrollment. However, the relationships were not significant. The odds were relatively better for households that had better grandparent access to their children (Exp. B. = 1.70, $p \leq .199$), happier inter-familial relationships (Exp. (b) = 1.61, $p \leq .273$) and a higher frequency of parent travel (Exp. (b) = 1.53, $p \leq .113$).

The inclusion of social capital variables in Model 2 (Table 4) did not change the significant influence of demographic variables, such as religion, number of school age children in households and father's wage employment, which were significant in Model 1. However, it diminished the significant effects of child's age and parental training which were no longer significant as they were in Model 1.

The influence of demographic variables such as caste and father's employment in a salaried job improved with the introduction of social capital variables. Being upper caste Hindu did, in fact, increase the likelihood of school enrollment by a factor of over four (Exp. (b) = 4.49, $p \leq .01$). Whereas school enrollment was about 1.5 times (Exp. (b) = 1.46, $p \leq .01$) more likely for households with fathers employed in salaried jobs than other households. The influence of father's in-home business activities was not significant (Exp. (b) = .59, $p \leq .287$).

Chi-square statistics for Model 2 (Model Chi-square = 115.00, $p \leq .001$) indicated that there was a significant positive change in the Chi-square value. This indicated that inclusion of social capital variables improved the model.

Model 3: Effects of household human capital variables on lower secondary school enrollment

The effects of household education on lower secondary school enrollment were examined in Model 3, Table 4, while holding all the demographic and social capital variables previously included in the other two models constant. The household human capital variables included in the model were: (1) father's years of schooling, (2) mother's years of schooling, and (3) years of schooling of other adults in the household.

Logistic regression results indicate that father's education and the educational level of other adult members in a household significantly influenced

the odds of lower secondary school enrollment. The odds of school enrollment were about 1.2 times (Exp. (b) = 1.19, $p \leq .05$) more likely in households having fathers with more years of schooling. Similarly, the odds of school enrollment were 1.16 times more likely for households with more educated adults other than parents than for households having less educated adults (Exp. (b) = 1.16, $p \leq .05$). Mother's education in a household did not have a significant influence on school enrollment. In fact, it indicated a slightly negative impact (Exp. (b) = .91, $p \leq .14$).

When social capital and human capital variables in Model 3 are controlled (Table 4), there was a slight but non-significant change in the effects of number of children and caste in terms of the direction of relationships and proportion of odds ratio when compared to Model 1 and in Model 2. The effects of these variables on school enrollment remained relatively consistent. The influence of religion and number of children was fairly constant in all three models. Although household education slightly intensified the effect of religion (Exp. (b) = 4.21, $p \leq .001$), it diminished the effect of caste (Exp. (b) = 3.12, $p \leq .05$). The influence of other demographic variables such as age of children, father's involvement in business, father's employment, and parental training did not change.

Among the social capital variables included in the model, the influence of parental residence and mother's attitude towards daughter's education remained consistent in terms of direction of relationships and odds ratio when all other variables were controlled. However, influence of migration on school enrollment strengthened when household education variables were introduced. Households

with recent migrants (father migrated at age 13 or later) were about four times more likely to enroll their children in school than households that have parents who were born in that place or migrated earlier (Exp. (b) = 4.28, $p \leq .01$). Intra-familial relationship remained significant but relationship less strong. Households that had stronger intra-familial relationship (households in which majority of parents received help from their non-resident children) were about 2.5 times more likely to enroll their children than households where intra-familial relationship were weaker (Exp. (b) = 2.62, $p \leq .05$). As in Model 2, households in which mothers had progressive attitude towards their daughters' education were about three times more likely to enroll their children in school than households with traditional attitudes (Exp. (b) = 2.77, $p \leq .05$). Household education did, in fact, diminish the significant effect of communication (parental language proficiency) as did father's salaried or wage employment, observed in Model 2.

Although the results were not significant, the trends in lower secondary school enrollment were positive for households with high language proficiency (Exp. (b) = 1.74, $p \leq .432$), those in which children had access to their grandparents (Exp. (b) = 1.46, $p \leq .278$), where parents were members of youth clubs (Exp. (b) = 1.68, $p \leq .433$), and where there were happier intra-familial relationship (Exp. (b) = 1.95, $p \leq .153$, Model 3). Frequent parent travel had a positive, yet not significant, influence on school enrollment (Exp. (b) = 1.46, $p \leq .171$).

Chi-square statistics for Model indicated that there was a significant positive change in the Chi-square value (Model Chi-square = 128.48, $p \leq .001$). This indicated that inclusion of social capital variables improved the model.

Summary of the effects of demographic, social capital, and human capital effects on the odds of school enrollment of lower secondary school age children

Based on the logistic regression results, the effects of predictor variables on the odds of school enrollment of lower secondary school age children can be summarized as follows:

1. Controlling for all other variables tested in the models, the effect of number of children was consistently significant. Households that had more school age children other than the lower secondary school age group were about 0.6 times less likely to enroll their children in lower secondary classes.

2. Religion is an influential predictor on the odds of school enrollment. School enrollment for children from Hindu households is four times more likely than is enrollment of those from non-Hindu households.

3. Caste continues to have an effect even when controlling for social capital and the education of adults in a household. Upper caste Hindu households were about three times as likely to send their children to school as were lower caste Hindu as well as other non-Hindu households. However, caste effect on lower secondary school enrollment is diminished when adult household members are more educated.

4. Recently migrated households (father migrated at age 13 or later) were more likely to enroll their children in school than households that migrated earlier. In fact, the odds were about four times better for later migrants.

5. The influence of intra-familial relationship was positive and consistent when all variables were controlled. Households that received help from their non-resident children were about 2.6 times more likely to enroll their children in school than households that did not.

6. Households that had mothers with a progressive attitude towards their daughters' education were about 2.8 times more likely to enroll their children in school than households with traditional attitudes.

7. Father's education and the education of other adults in the households had a positive and significant influence on lower secondary school enrollment. The odds of school enrollment of lower secondary school age children was about 1.2 times more likely for households that had fathers with more years of schooling than in households where fathers had fewer years of schooling.

8. Similarly, the odds of school enrollment were 1.2 times more likely for households where adults other than parents had more year of schooling than for households that had adults with fewer year of schooling.

Chapter 5

DISCUSSION AND CONCLUSSION

The association of demographic, social capital and human capital variables with the school enrollment of primary and secondary school age children was studied. The effects of predictor variables on school enrollment were examined separately for primary and lower secondary school age children. For each age group of children three models were tested. In Model 1, the influence of demographic and financial variables was examined. In Model 2, the influence of social capital variables on school enrollment, controlling for the effects of demographic and financial variables, was tested. In Model 3, the influence of household education was examined after controlling for demographic, financial and social capital variables.

Household Education and Children's School Enrollment

The first two research questions addressed the relationship between household/family education factors and the school enrollment of primary and lower secondary school age children. Based on the human capital literature, it was expected that higher levels of education among adults in a household would be related to a greater likelihood of children attending school. The hypothesis was supported for lower secondary school age children but not for primary school age children. For the lower secondary age students the father's education and

the educational level of other adult members in a household significantly influenced the odds of school enrollment. Cynthia Lloyd and Ann Blanc (1996) in their seven-country study in sub-Saharan Africa found that the school enrollment rate of younger children was more likely if the household head was well educated. They also reported that the beneficial effects of living in a female-headed household were greater for girls' school enrollment and grade completion than for boys.

Parental education has been conceived as cultural capital (DiMaggio, 1982) that positively influences children's educational outcomes (DiMaggio and Mohr, 1985). Previous research indicated a positive relationship between family educational resources and children's educational attainment controlling for demographic factors (Teachman, 1987). For example, Baker & Stevenson (1986) found a positive correlation between maternal education, eighth graders' performance and the academic strategies actually used by mothers including monitoring the child's achievement and communicating with the child's teachers. Similarly, in their High School and Beyond Study of High School Seniors of the Class of 1972 in the US, Powell & Steelman (1990) found marked effects of parental education (especially fathers') on students' verbal and math scores. Research in developing countries has also shown that parents' education is a good predictor of children's participation in school. In the sub-Saharan context, education of the household heads appeared to be an important factor in explaining school enrollment rates especially among younger children (Lloyd & Blanc, 1996).

Then why, in the current study, was household education not significant for the enrollment of primary school age children? Perhaps public policy is a more important factor than social background in primary school children's attendance in the Chitwan Valley of Nepal. In the Nepalese context, one of the most frequent reasons given for either boys or girls (29%) aged 6-10 years not attending school was that the parents were too poor to pay the school registration fee and other expenses (CERID, 1983; NPC/Nepal & UNICEF, 1996a). In the Nepalese school system, public primary education is tuition free. Further, socially disadvantaged and socially backward caste children get financial support from the government for textbooks and school uniforms. This financial support helps parents meet the immediate financial needs for schooling. This situation might have led to enrollment of children at primary school levels even among households where parents have lower levels of formal schooling. In addition, Chitwan has one of the highest concentrations of primary schools in the country, thus children have relatively better access to primary schools in Chitwan than children in other parts of Nepal do.

In Nepal, lower secondary schooling of children starts at age 11 and after the successful completion of the fifth grade. Considering the high drop-out rates among children 10 years old (5^{th} graders) (NPC/Nepal & UNICEF, 1996b) and the financial burden for parents at the lower secondary school levels, other things being equal parent's education and educational level of other adults in the household boosts the probability of school enrollment.

No significant effect of the mother's education on school enrollment of lower secondary school age children was found. The most likely explanation for this finding is that in households with less educated mothers, fathers were more involved in decisions about the children's education. For this study, the average level of the mother's education was about two years, which was significantly lower than the father's education averaging about five years. Other research has shown that in the majority of cases (83% for boys and 81% for girls) that Nepalese fathers were more involved in decisions about children's education. However, when mothers are educated, they participate equally in the process (NPC/Nepal & UNICEF, 1996b). Other work in Nepal indicated that female-headed households are equally as effective in terms of school enrollment of primary school age children as male-headed households (NPC/Nepal & UNICEF, 1996b).

The human capital literature had typically focused only on maternal and paternal education as predictors of children's educational enrollment and attainment. The current study expanded the concept of human capital to include other adults in the household. In an extended family setting such as Nepal, about 6% of school enrollment decisions were made by other immediate and extended family members (NPC/Nepal & UNICEF, 1996b). The current study found that the odds of school enrollment for lower secondary school children were significantly higher in households that had more years of formal schooling among non-biological adults residing in the households. In disrupted families, not only is there normally a drop in income (Hoffman & Duncan, 1988; Peterson,

1996), but also time may be lacking for other activities, such as supervising children's homework (Astone & MacLanahan, 1991).

Social Capital Factors and Children's School Enrollment

The third and fourth research questions addressed whether social capital was associated with school enrollment of primary and lower secondary school age children. The results suggested that three measures of social capital were influential. These were: (1) attitude (mother's attitude toward daughter's education), (2) community ties (parental membership in youth clubs), and (3) intra-familial relationship (help received by parents from their non-resident children). Mother's valuing of daughter's education was positively related to the likelihood of primary school children being enrolled. Nepal is a patriarchal and patrilineal culture where parents prefer that their sons advance more in education than their daughters (NPC/Nepal & UNICEF, 1996a; Greenhalgh, 1984; Salaff, 1981). However, the current study suggests that mother's attitude makes a difference. Controlling for demographic and household education variables, the relationship is statistically significant. Although some regional variation exists, this finding is consistent with the Nepal Multiple Indicator Surveillance study (NPC/Nepal & UNICEF, 1996b). Other studies in Nepal revealed that parents' negative attitude towards education and lack of motivation from parents for the children to go to school are contributing factors in school dropouts (CERID, 1983; CERID, 1984). In a similar study of high-school seniors in Wisconsin, Sewell and

Shah (1967) found that parental encouragement had a stronger and significant effect on college plans than socio-economic status and intelligence.

The second social capital variable, community ties, also predicted children's school enrollment. In fact, the degree of influence was slightly increased in the presence of household education variables. As expected parental involvement in youth organizations may strengthen social ties for the entire family. Such contacts also are settings where parents can get information about child-rearing practices and ideas about how to navigate educational institutions. Putnam (2000) implied that formal and informal community networks such as number of civic and social organization, meetings attended and number of group memberships measure distinct facets of community as well as state based social capital. He argued that belonging to a social organization or club inculcates civic skill in parents, and allows for the deepening of inter-personal bonds. This, in turn, establishes or strengthens norms of reciprocity and mutual concern among parents. Community ties measured by parental participation in youth clubs may facilitate access to information in the extra-familial environment. This, in turn, may provide important insights about how families of different ethnic backgrounds "navigate" educational institutions with which they may or may not be familiar (Teachman, Paasch & Carver, 1997; Bankston & Zhou, 1995). Participation in clubs might have facilitated seeing friends and colleagues more frequently. Furstenberg & Hughes (1995) found a significant and positive relationship between frequency of seeing friends and high school graduation and college enrollment.

Social capital reflected in the strength of internal bonds within the family also predicted the likelihood of children's school enrollment. Specifically, in households where parents received help from their grown children, their younger children were more likely to be enrolled in school. In fact, households where parents received more help from their children were about three times more likely to enroll their children in school than households where parents received less help from their non-resident children. This effect was found when all demographic and household education variables were controlled. One of the important tenets of Nepalese society is the expectation of reciprocal help between parents and children. Investment in education of children is made by parents with an expectation of security in the parent's old age as well as in times of need. Help received by parents from their non-resident children not only eases the costs incurred in education but also helps maintain the parent-child relationship within a family context. Help from grown children also reduces the time parents expend on work, time they can use in preparing and helping children in their school tasks.

Jonsson and Gahler (1997) indicated that in a single parent family context, time constraints restrict frequency and quality of parental interaction with children thus causing lower school achievement. Others suggested that in disrupted families, not only is there normally a drop in income (Hoffman & Duncan, 1988; Peterson, 1996), but also time may be lacking for other activities, such as supervising children's schoolwork (Astone & MacLanahan, 1991). While this measure is indirect, it suggests the important role of social relationships within

the household in promoting school enrollment. Furstenberg and Hughes (1995) found that presence of a strong extra-familial help network is strongly related to both high school graduation and college enrollment among at-risk youth. Strength of a parent-child help network also reflects the intensity of family cohesion. Family cohesion was found to be influential in high school graduation and college enrollment (Furstenberg and Hughes, 1995). This finding also supports Pong's (1996) contention that children of widowed mothers advanced in education due to support and help received from their relatives while children of divorced or separated mothers lacked that opportunity as they severed ties with their husband's families.

Residential mobility is found to be negatively associated with educational outcomes (Haveman, Wolfe, & Spaulding, 1991; Wood, Halfon, Scarlata, Newcheck, and Nessim, 1993; Ingersoll, Scamman, & Eckerling, 1989). Coleman (1990) emphasizes a residential mobility measure as an indirect measure of community based social capital. He argued that residential mobility and change of school among children disintegrates relationship structure between parent and teacher, between parents of other children, and between children and other adults, thus, affecting educational outcomes. In the present study, the timing of father's migration was significantly related to the school enrollment of lower secondary school age children. The odds of school enrollment were significantly increased for children of late or recent migrants even after controlling for demographic and household education factors. In fact

the effect of late migration on school enrollment was further strengthened with the control of household education factors.

The positive effects of late migrants on school participation of their children may be due to the fact that late migrants were young, more educated and majority of them may have migrated in order to educate their children in the lower secondary schools which otherwise are not available in other regions. Again, some of the recent migrants were younger family members of the earlier migrants who were separated from their families. The younger generations are more likely to be educated than the older ones. Hence, it is quite likely that they were more informed about the value of education than the older generations. Their children's school enrollment may reflect a norm within their own families as well as be reinforced by other educated families.

More mixed results were found for communication (parental language proficiency and ability to speak local dialects), the second measure of social capital. Coleman (1988) defined information channels as a form of social capital. Parents' language proficiency should be a benefit to children if it means that parents have better access to information. However, parental language proficiency showed a significant influence only when demographic factors were controlled and its influence was diminished when household education was introduced in the model. This is due to the positive relationship between education and language proficiency. It can be argued that both language proficiency and education act in the same direction in determining school enrollment. In the absence of education, language may be critical for maintaining

social ties and acquiring information and services from the community or from agents who control resources. Since Chitwan is a cultural hubbub of multi-ethnic groups, it provides parents an ample opportunity to learn languages that are deemed the most important in the advancement of their child's education. This finding is consistent with the work of Staton-Salazar & Dornbusch (1995) who found that bilingual students had an advantage over working class English-dominant students in the U.S. in terms of informational networks and a greater number of non-family ties. In Nepal, language barriers are often attributed to non-enrollment, drop-outs, and school repetition among non-Nepali speaking groups of people. Social capital has been considered a potential resource, generated by the family (especially parents) through a process of active social relationships both within and outside the immediate family environment (Coleman, 1988; Furstenberg Jr. & Hughes, 1995; Pong, 1998). In this study, social capital within the family was measured by the help received by all parents in the household from their non-resident adult children.

Social capital outside the family was measured by how happy parents were with their relationships with the extended family, i.e. family members outside the family. Both the intra-familial and inter-familial relationship variables affected children's school enrollment. As expected, households in which parents received help from their own children were about three times more likely to enroll their children in school than households with parents who received less or no help. Similarly, parents' satisfaction with their relationships with their extended family was positively related to their child's school enrollment although the

influence was slightly reduced when household education variables were controlled. In summary, the extended family, whether providing social or financial support to parents, facilitates the schooling of younger children in the family. The presence of parents also predicted the likelihood of children being in school. Children were less likely to be enrolled in school if their parents traveled frequently or had been absent a lot during the child's developing years. Girls in Nepal continue to suffer from the negative attitude towards female education (CERID, 1983; CERID, 1984; NPC/Nepal & UNICEF, 1996b). Parents' negative attitude towards their daughters' education has been identified as a key reason why girls are not enrolled in school. In this study, mother's attitudes proved to be very important. In fact, children were three times more likely to be enrolled if mothers had progressive attitudes towards their daughters' education.

Demographic Factors and Children's School Enrollment

In status attainment models, social structure, human capital and financial capital are considered the dominant factors affecting the educational attainment of children. This study also found that sibling numbers were negatively associated with the likelihood of a child being enrolled in school, pointing to resource dilution as a contributing factor (Becker & Lewis, 1973; Becker & Tomes, 1976, Blake, 1989). As expected, religion and caste were significant predictors of school enrollment among lower secondary school age children, even statistically controlling for financial capital, social capital and household

education variables. This study confirms the relationships found in other work (CERID, 1983; CERID, 1984; NPC/Nepal & UNICEF, 1996). Study suggests that in Nepal, Hindus, especially the upper-caste Hindus, is more educationally privileged. Their social class organization is designed to preach to other social classes of Nepalese society. It is very likely that the parents are more conscious about educating and guiding their children to maintain their status in the society. As cultural capital literature dictates, the Hindus are quite likely to possess more books at home, often read to the child or might even teach them to read and write. Furthermore, children growing up in this environment might experience a sense of belonging to a high status social group, which might motivate them to continue schooling. However, the findings suggest that caste influence diminished in the presence of household social capital as well as educated members in the household.

Implications of Findings for Primary Level Education

With other factors controlled, household education did not influence school enrollment of children at primary school level. Although, policy studies have been inconclusive (NPC/Nepal & UNICEF, 1996b), the Nepalese government policy of free primary education and programs implemented by Basic and Primary Education Project (BPEP) may be promoting primary school enrollment other things being equal. BPEP should continue to pursue their programs.

Among social capital factors, community ties measured by parental membership in youth clubs facilitated school enrollment. Thus viable social organizations in the Chitwan communities are important for promoting children's education. These community organizations also could influence more positive attitudes toward a daughter's education.

Policy planners frequently blame caste and religion for non-enrollments and school dropouts. Findings of this study support that theory. The government should launch aggressive social reform programs that help to foster democratic values and emphasize the relevancy of education for lower caste Hindus and non-Hindu members of the community. The Nepalese government should pursue adult literacy program vigorously throughout the country.

Implications of Findings for Lower Secondary Level Education

Father's education and the education of other adults influenced school enrollment, especially at the lower secondary level. Thus, enhancing adult education should also be a priority for the government. The current government's ad hoc policy on non-formal education is not sufficient for the vast majority of adults. Permanent learning centers to provide basic education for adults of different socio-economic backgrounds should be a policy goal.

Recent settlers in the area are more likely to send their children to school. Their more progressive ideas regarding education may help to offset traditional beliefs about education. School administrators, education programmers, and

parents could utilize these migrants as resources through regular community as well as school meetings. Parent-teacher and school-community conferencing should be included as a regular educational program at lower secondary school levels. Such conferences would be a means for creating and maintaining relationships among parent-teacher-community members thus generating greater social capital for the educational advancement of children.

Intra-familial relationships (help received by parents from their non-resident children), parental residency, and mother's attitude toward their daughter's education were influential in predicting lower secondary school enrollment. Even though we cannot have direct control over many of these household factors, attitudes could be changed if families had opportunities in local communities to interact, exchange ideas and acquire services that in turn facilitate the educational attainment of their children. This objective can be best achieved through collaboration of educational programs with community and other non-governmental organizations.

One conclusion suggested by these results is that the government's extension of formal schooling cannot be considered a straightforward policy in achieving 100% primary school enrollment. These findings suggest that household level factors were equally important in achieving high primary and lower secondary school enrollment rates especially at higher grades. Current primary and lower secondary education plans lack parents as well as community involvement in planning, implementing and evaluating educational processes.

Educational plans should incorporate community and household level factors that promote school enrollment.

Contribution To Literature

1. Past research has focused on individual and family aspects of human capital in understanding children's educational outcomes. This study extends that notion to household levels.
2. This study provided a new dimension to social capital literature in understanding educational outcomes of children. Use of household level social capital is unique to this study.

Directions for Future Research

1. The present study lacks a holistic nature of educational research in Nepal. Future studies should incorporate different factors such as gender that contribute to school enrollment in Nepal.
2. Research that explores community and social capital needs to be emphasized in educational researches. Such researches can provide strong foundation for educational planners to design and launch community and household level educational policies effecting school enrollment.

3. This study provides a broad concept of human and social capital affecting educational outcomes. More research is warranted in order to explore the influence of social capital in the advancement of school enrollment.

REFERENCES

Acharya, M. & Bennet, L. (1981). The rural women of Nepal: An aggregate analysis and summary of eight village studies. In M. Acharya (Ed.) The status of women in Nepal, Vol. II. Kathmandu: Center for Economic Development and Administration, Tribhuvan University.

Acharya, M. (1979). Statistical profile of Nepalese women: A critical Review. The status of women in Nepal, Vol. I, Part I. Kathmandu: Center for Economic Development and Administration (CEDA), Tribhuvan University.

Ainsworth, M. & Koda, G. (1993). The impact of adult deaths from AIDS and other causes on school enrollment in Tanzania. Paper presented at the Annual Meeting of the Population Association of America, 1-3 April, Cincinnati.

Alwin, D. F. (1991). Family of origin and cohort differences in verbal ability. American Sociological review, 56, 625 - 638.

Astone, N. M., & MacLanahan, S. S. (1991). Family structure, parental practice and high school completion. American Sociological Review, 56, 309 - 320.

Austin, J. T., Yaffee, R. A., & Hinkle, D. E. (1992). Higher education: Handbook of theory and research Vol. 8. New York: Agarthon Press.

Axinn, W. G., & Fricke, T. (1996). Community context, women's natal kin ties, and demand for children: Macro-micro linkages in social demography. Rural Sociology, 61, 249 - 271.

Axinn, W. G., Barber, J. S., & Ghimire, D. J. (1997). The neighborhood history calendar: A data collection method designed for dynamic multilevel modeling. Sociological Methodology, 355-391.

Baker. D. P. & Stevenson, D. L. (1986). Mother's strategies for children school achievement: Managing the transition to high school. Sociology of Education, 59, 56 -166.

Bankstone, C. & Zhou, M. (1995). Effects of minority-language literacy on the academic achievement of Vietnamese youth in New Orleans. Sociology of Education, 68, 1-17.

Barber, J., Shivakoti, G., Axinn, W. G., & Gajurel, K. (1995). Sampling strategies for less developed settings: A detailed example from rural Nepal. Paper presented at the annual meeting of the Population Association of America. San Francisco, CA.

Becker, G. S. (1964). Human capital. New York: Columbia University Press.

Becker, G. S. (1975). Human capital: A theoretical and empirical analysis with special reference to education (2nd. Ed.). New York: Columbia University Press.

Becker, G. S. & Lewis, H. G. (1973). On the interaction between the quantity and quality of children. Journal of political economy, 82, S279 – S288.

Becker, G. S. & Tomes, N. (1976). Child endowments and the quality and quantity of children. Journal of Political Economy, 84, S143 – S162.

Blake, J. (1981). Family size and the quality of children. Demography, 18, 421-442.

Blake, J. (1985). Numbers of siblings and educational mobility. American Sociological Review, 50, 84-94.

Blake, J. (1989). Family size and achievement. Berkeley: University of California Press.

Blau, P. M. & Duncan, O. D. (1967). The American occupational structure. New York: Free Press.

Bledsoe, C. (1990). No success without struggle: Social mobility and hardship for foster children in Sierra Leone. Man, 25, 399-418.

Bordua, D. J. (1960). Educational aspirations and parental stress on college. Social Forces, XXXVIII, 262-269.

Bourdieu, P. (1977). Cultural reproduction and social reproduction. In J. Karabel, & A. H. Halsey (Eds.), Power and ideology in education (487-511). New York: Oxford University Press.

Bronfenbrenner, U. (1979). The ecology of human development: Experiments by nature and design. Cambridge, MA: Harvard University Press.

Bronfenbrenner, U. (1986). Family as a context for human development: Research perspectives. Developmental Psychology, 22, 723-742.

Bronfenbrenner, U. (1989). Ecological systems theory. Annals of Child Development, 6, 187-249.

Campbell, D. T. & Stanley, J. C. (1963). Experimental and quasi-experimental designs for research on teaching. In N. L. Gage (Ed.), Handbook of research on teaching. Chicago: Rand McNally.

Central Bureau of Statistics (CBS)/Nepal. (1987). Population monograph of Nepal. Kathmandu: Author.

Central Bureau of Statistics (CBS)/Nepal. (1993). Population Census-1991. Kathmandu: Author.

Central Bureau of Statistics (CBS)/Nepal. (1995). Statistical Year Book of Nepal 1995. Kathmandu: Author.

Central Bureau of Statistics (CBS)/Nepal. (1997). Statistical Year Book of Nepal 1997. Kathmandu: Author.

Central Bureau of Statistics (CBS)/Nepal. (1999). Statistical year book of Nepal 1999. Kathmandu: Author.

CERID. (1983). Primary education in Nepal: Progress towards universalization. Kathmandu: Author.

CERID. (1984). Determinants of educational participation in rural Nepal. Kathmandu: Author.

Coleman, J. S. (1988). Social capital in the creation of human capital. American Journal of Sociology, 94, S95-S120.

Coleman, J. S. (1990). Foundations of social theory. Cambridge: Harvard University Press.

DiMaggio, P. (1982). Cultural capital and school success: The impact of status culture participation on the grades of US high school students. American Sociological Review, 47, 189-201.

DiMaggio, P. & Mohr, J. (1985). Cultural capital, educational attainment, and marital selection. American Journal of Sociology, 90(6), 1231-1261.

Eggebeen, D. J. & Lichter, D. T. (1991). Race, family structure, and changing poverty among American children. American Sociological Review, 56, 801-817.

Featherman, D. & Hauser, R. (1978). Opportunity and change. New York, Academic Press.

Furstenburg, F. & Hughes, M. (1995). Social capital and successful development among at-risk youth. Journal of Marriage and Family, 57, 580-592.

Gomes, M. (1984). Family size and educational attainment in Kenya. Population and Development Review, 10(4), 647-660.

Greenhalgh, S. (1984). Sexual stratification in East Asia: The other side of growth with equity in East Asia. Population Development Review, 11(2), 265-314.

Hagan, J. (1994). Crime and disrepute. Thousand Oaks, CA: Pine Forge Press.

Hagan, J., McMillan, R. & Wheaton, B. (1996). New kid in town: Social capital and the life course effects of family migration on children. American Sociological Review, 61, 368-385.

Haller, A. O. (1982). Sociopsychological aspects of schooling and achievement. In R. M. Haller, D. Mechanic, A. O. Haller, & T. S. Hauser (Eds.), Social structure and behavior (pp. 3-28). New York: Academic Press.

Haveman, R., Wolfe, B., & Spaulding, J. (1991). Childhood events and circumstances influencing high school completion. Demography, 28, 133-157.

Hofferth, S., Boisjoly, J., & Duncan, G. J. (1998). Parents' extra-familial resources and children's school attainment. Sociology of Education, 71(3), 246-268.

Hoffman, S. D. & Duncan, G. J. (1988). What are the economic consequences of divorce? Demography, 25, 641-645.

Ingersoll, G., Scamman, J., & Eckerling, W. (1989). Geographic mobility and student achievement in urban setting. Educational Evaluation and Policy Analysis, 11, 193-199.

Isiugo-Abanihe, U. (1985). Child fosterage in West Africa. Population and Development Review, 11(1), 53-73.

Jonsson, J. O. & Gahler, M. (1997). Family dissolution, family reconstitution, and children's educational careers: Recent evidence from Sweden. Demography, 34 (2), 277-293.

Kahl, J. A. (1957). Educational and occupational aspirations of common-man boys. Harvard Educational Review, XXIII, 186-203.

Kerckhoff, A. C. (1976). The status attainment process: Socialization or allocation? Social Forces, 55, 368-381.

Kiker, B.F.(ed). (1991). Investment in human capital. Columbia, SC: University of South Carolina Press.

Lloyd, C. & Blanc, A. (1996). Children schooling in sub-Saharan Africa: The role of fathers, mothers, and others. Population Development Review, 22(2), 265-298.

Lloyd, C. & Gage-Brandon, A. J. (1994). High fertility and children's schooling in Ghana: Sex differences in parental contributions and educational outcomes. Population Studies, 48(2), 293-306.

MacLanahan, S. & Sandefur, G. (1994). Growing up with a single parent: What hurts, what helps. Cambridge, MA: Harvard University Press.

Magnani, R., Bertrand, J., Makani, B. & McDonald S. (1995). Men, marriage and fatherhood in Kinshasa, Zaire. International Family Planning Perspective, 21 (1), 19-25.

Marjoribanks, K. (1983). The evaluation of family learning environment model. Studies in Educational Evaluation, 9, 343-351.

Mercy, J. A. & Steelman, L. C. (1982). Familial influence on the intellectual attainment of children. American Sociological Review, 47, 532-542.

Merton, R. K. (1968). Social theory and social structure. New York: Free Press.

Ministry of Education (MOE)/Nepal. (1996). Ministry of Education: Nepal 1996. Kathmandu: His Majesty's Government of Nepal.

Ministry of Education (MOE)/Nepal. (1997). Educational Statistics 1995. Kathmandu: Ministry of Education, Nepal.

Ministry of Education and Sports(MOES)/Nepal. (2003). General summary of educational statistics. Retrieved June 24,2004, from the His Majesty's Government of Nepal Ministry of Education and Sports Web site: http://www.doe.gov.np/statistics/statistics.htm.

Ministry of Education (MOE)/Nepal, World Bank, & UNDP. (1991). Primary education master plan. Kathmandu: Ministry of Education, Nepal.

National Education Commission. (1992). Report of the National Education Commission. Kathmandu: His Majesty's Government, Nepal.

National Planning Commission (NPC) /Nepal. (1998). The Ninth Plan (1997-2002). Kathmandu: National Planning Commission Secretariat, Nepal.

National Planning Commission (NPC) /Nepal & UNICEF. (1996a). Children and women of Nepal: A situation analysis 1996. Kathmandu: UNICEF/ Nepal.

National Planning Commission (NPC) /Nepal & UNICEF. (1996b). Primary education final report. Nepal Multiple Indicator Surveillance Second Cycle (April - June 1995), Kathmandu: National Planning Commission Secretariat, Nepal.

Neupane, F. P., Dhital, P., Sharma, R. C., Shrestha, G. K., Bhattarai, I., Gautam, T., Yadav, J. L., et al. (1994). Farming Systems Research and Extension: The IAAS Methodology, Approach and Strategy. Paper presented at the national workshop on "National Farming Systems Research and Extension Endeavors: An Appraisal and Synthesis of Different Approaches in Nepal". IAAS/Ford Foundation (India), May 21-23, Institute of Agriculture and Animal Science, Chitwan, Nepal.

Parish, W. L., & Willis, R. J. (1992). Daughters, education, and family budgets: Taiwan experiences. The Journal of Human Resources, 28 (4), 863-898.

Peterson, R. R. (1996). A re-evaluation of the economic consequences of divorce. American Sociological Review, 61, 528-536.

Pokharel, B. N. & Shivakoti, G. P. (1986). Impact of development efforts on agricultural wage labor. Winrock Rural Poverty Research Paper Series Number 1.

Pong, S.L. (1996). School participation of children from single mother families in Malaysia. Comparative Education Review, 40(3), 231-249.

Pong, S. L. (1998). The school compositional effect of single parenthood on 10th grade achievement. Sociology of Education, 71, 24-43.

Portes, A. & Landolt, P. (1996). The downside of social capital. The American Prospect, May-June, 18-21.

Powell, B. & Steelman, L. C. (1990). Beyond sibship size: Sibling density, sex composition, and educational outcomes. Social Forces, 69 (1), 181-206.

Powell, B. & Steelman, L. C. (1993). The educational benefits of being spaced out: Sibship density and educational progress. American Sociological Review, 58, 367-381.

Putnam, R. D. (2000). Bowling alone: A collapse and revival of American community. New York: Simon & Schuster

Rehberg, R. A. & Westby, D. L. (1967). Parental encouragement, occupation, education and family size: Artifactual or independent determinants of adolescent's educational expectations. Social Forces, XLV, 362-74.

Reynolds, A. J. (1989). Early schooling of children at risk. Chicago: University of Illinois at Chicago.

Rogoff, B., & Morelli, G. (1989). Perspective on children's development from cultural psychology. American Psychologist, 44 (2), 343-348.

Salaff, J. W. (1981). The working daughters of Hong Kong: Filial piety or power in the family? New York: Cambridge University Press.

Samuelson, P. (1976). Economics. New York: McGraw-Hill.

Sewell, W. H. (1964). Community of residence and college plans. American Sociological Review, XXIX, 24-38.

Sewell, W. H., & Haller, A. O. (1965). Educational and occupational perspective of farm and rural youth. In G. B. Lee (ed.), Rural youth in crisis. U.S. Department of Health, Education and Welfare), Washington, D.C: Government Printing Office.

Sewell, W. H., Haller, A. O., & Portes, A. (1969). The educational and early occupational attainment process. American Sociological Review, 34, 82-92.

Sewell, W. H., Haller, A. O., & Straus, M. A. (1957). Social status and educational and occupational aspiration. American Sociological Review, XXII, 67-73.

Sewell, W. H. & Hauser, R. M. (1975). Education, Occupation and earning. New York: Academic Press.

Sewell, W. H. & Orenstein, A. M. (1965). Community of residence and occupational choice. American Journal of Sociology, LXX, 551-63.

Sewell, W. H. & Shah, V. P. (1967). Socioeconomic status, intelligence and the attainment of higher education. Sociology of Education, XL, 1-23.

Shivakoti, G. P. & Pokharel, B. N. (1989). Marketing of major crops in Chitwan: A case study of six village panchayat. Winrock Research Paper Series (Number 8). Kathmandu: Winrock International.

Stanton-Salazar, R. D. & Dornbusch, S. M. (1995). Social Capital and the reproduction of inequality: Information networks among Mexican-origin high school students. Sociology of Education, 68, 116-135.

Steelman, L. C. (1985). A tale of two variables: A review of the intellectual consequences of sibship size and birth order. Review of Educational Research, 55, 353-386.

Steelman, L. C. & Mercy, J. A. (1983). Sex differences in the impact of the number of older and number of younger siblings on IQ performance. Social Psychology Quarterly, 46, 157-162.

Super, C. M. & Harkness, S. (1986). The developmental niche: A conceptualization at the interface of child and culture. International Journal of Behavioral Development, 9, 545-569.

Teachman, J. D. (1987). Family background, educational resources and educational attainment. American Sociological Review, 52(4), 548-557.

Teachman, J. D., Paasch, K., & Carver, K. (1997). Social capital and the generation of human capital. Social Forces, 75(4), 1343-1359.

Townsend, N. & Garey, A. (1994). Men, households and children in Botswana: An exploration of connections over time and place. Paper presented at the Annual Meeting of the Population Association of America, 5-7 may, Miami.

Tuladhar, J. (1989). The persistence of high fertility in Nepal. New Dehli: Inter India Publications.

UNDP, (1996). Human development report 1998. Retrieved June 24,2004, from the United Nations Development Program web site: http://hdr.undp.org/reports.

UNDP, (1998). Human development report 1998. New York: Oxford University Press.

UNDP, (1999). Human development report 1999. Retrieved June 24,2004, from the United Nations Development Program web site: http://hdr.undp.org/reports.

UNESCO. (1984). Towards universalization of primary education in Asia and the Pacific: Country studies - Nepal. Bangkok: Asian Program of Educational Innovation for Development, UNESCO, Thailand.

UNICEF. (1990). First call for children: World declaration and plan of action for the world summit for children and convention on the rights of the child. New York.

United Nations Country Team of Nepal (2002). Progress report 2002: Millennium development goals Nepal. Kathmandu: Author.

Vygotsky, L.S. (1978). Mind in society. Cambridge, MA: Harvard University Press.

Wood, D., Halfon, N., Scarlata, D., Newacheck, P., & Nessim, S. (1993). Impact of family relocation on children growth, development, school function, and behavior. Journal of American medical association, 270, 1334-1338.

Zajonc, R. B. & Markus, G. B. (1975). Birth Order and intellectual development. Psychological Review, 82, 74-88.

Appendix A. Status of Primary and Lower Secondary Schools and School Enrollment in Nepal.

Particular	1970	1980	1985	1990	1993
Nepal					
Number of School					
Primary	7275 (100%)	10130 (139%)	12186 (167%)	18694 (256%)	21102 (291%)
Lower Secondary			3729 (100%)	4045 (109%)	4739 (127%)
School enrollment					
Primary	408471 (100%)	106791 2 (261%)	185765 8 (455%)	288427 5 (706%)	319161 4 (781%)
Lower Secondary			271244 (100%)	378478 (139.5%)	670182 (247%)
Chitwan					
Number of School					
Primary			218 (100%)	292 (133%)	323 (148%)
Lower Secondary			73 (100%)	71 (97%)	90 (123%)
School enrollment					
Primary			53101 (100%)	65283 (123%)	72477 (136%)
Lower Secondary			9517 (100%)	12940 (136%)	20005 (210%)

Source: CBS/Nepal. (1997). Statistical yearbook of Nepal. Kathmandu: Central Bureau of statistics, His Majesty's Government of Nepal.

Appendix B. Literacy Rates of total population 6 years of age and above by census year and sex

Region	1971			1981			1991		
	M	F	Total	M	F	Total	M	F	Total
Nepal	23.6	3.9	13.9	33.9	12.0	23.26	26.9	12.4	30.0
Chitwan	33.9	7.4	20.6	46.2	20.3	33.2	32.2	20.6	43.8

Source: CBS/Nepal. (1997). Statistical year book of Nepal. Kathmandu: Central Bureau of Statistics, His Majesty's Government of Nepal.

VITAE

Purandhar Dhital
Place of Birth: Nepal
Married: Shanti Dhital

Education

Ph. D.	The Pennsylvania State University Major: Agricultural Extension Minor: Demography
M.S.	University of the Philippines at Los Banos Major: Agricultural and Extension Education Minor: Environmental Science
B.Sc.(Agric)	Tribhuvan University, Nepal Major: Agriculture

Professional experience

1997-2004	Research Assistant, Department of Agricultural and Extension Education, The Pennsylvania State University
1995-1997	Research Coordinator, Population and Environment Research Laboratory (PERL), Institute of Agriculture and Animal Science, Nepal
1991-1995 1995-1998	Research Scientist (Social Science) Farming Systems Research and Extension Division, Institute of Agriculture and Animal Science, Nepal
1981-current	Lecturer, Institute of Agriculture and Animal Sciences (IAAS), Tribhuvan University, Nepal

Publications

Bruening, T. H., D. Scanlon, C. Hodes, **P. Dhital**, X. Shao, & S. Liu. (2001). *Characteristics of Teacher Educators in Career and Technical Education*. Project Report, pp. 75. Minneapolis, MN: National Research Center for Career and Technical Education.

Bruening, T. H., D. Scanlon, C. Hodes, **P. Dhital**, X. Shao, & S. Liu. (2001). The Status of Career and Technical Teacher Preparation programs. Project Report, pp. 78. Minneapolis, MN: National Research Center for Career and Technical Education.