The Nexus between Disability, Education and employment: Evidence from Nepal

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Abstract

It may seem obvious to say that education is an advantage in the labor market, and, in some cases, possessing it is what allows some individuals to enter the job market to begin with. However, in countries like Nepal, when considering the case of persons with disabilities, such common knowledge does not hold true in the minds of many. The prevailing belief is, still, that even if persons with disabilities are educated, they are less likely to make use of the education, or that they will not be useful in the workforce. To empirically challenge this assumption, in this chapter, we attempt to bring attention to the situation of people with disabilities in the developing world by focusing on the labor market of Nepal. Utilizing a unique data set collected from people with hearing, physical, and visual impairments through interview methods with structural questionnaires, we compare across employment based on type of impairments and education levels to identify variation in occupational choices, as well as estimating wage returns to the investment in education.

There are two findings from the data analysis. First, the estimated rate of returns to education is very high among persons with disabilities, ranging from 19.4 to 32.2%. One significant finding was that, across the board, persons with hearing impairments had fewer years of schooling than their counterparts with visual or physical impairments. This confirms the crisis of the lack of schools for students with hearing impairments. Also, years-of-schooling is affected negatively and significantly by financial constraints, suggesting that there are credit market imperfections for human capital investments.

Second, when analyzing the likelihood of employment of persons with disabilities, it was found that years-of-schooling, type of impairments, and age are significant in predicting the likelihood of participants' employment. Among these variables, years-of-schooling has a positive effect on the probability of employment. As to the types of impairments, it appears that physical impairment has a negative effect, meaning that compared with persons with hearing and visual impairments, and despite their often higher levels of education, regardless of longer years of schooling, persons with physical impairments are less likely to be employed. Their lower level of employment could be due to a number of factors, ranging from accessibility issues to severity of individuals' impairments to the lack of a field that persons with physical impairments are encouraged to enter. The result suggests that unless affirmative action is taken on their behalf, it may be difficult for persons with physical impairments to enter directly into the competitive labor market.

Keywords: Disability; Nepal; employment; Education; returns to the investment in education;

Section 1. Introduction

Historically, persons with disabilities were treated as passive recipients of support based on feelings of pity and sympathy. The relegation of disability issues to charitable organizations ensured the continued exclusion of persons with disabilities from mainstream society. However, in the 1960s and 70s, an era associated internationally with civil rights, a wide variety of strategies, programs and policies embracing the inclusion of persons with disabilities appeared worldwide.

United Nations in 1976 decided to celebrate 1981 as international year of disabled persons (IYDP-1981) with the theme of full participation and equality. After IYDP-1981, some positive change have started to occur and issues of persons with disabilities have been getting some space in development agendas. Then, social model which is important not only for the rights and interests of persons with disabilities but also crucial in defining and understanding disability was introduced.

Though there is not a long history that positive initiatives started to be undertaken toward mainstreaming disability issues, however, within this three decades of celebrating IYDP, some milestone achievements have been accomplished. UN brought the World Program of Action for Persons with Disabilities, 1982 and Standard Rules on the Equalization of Opportunities for Persons with Disabilities, 1994. One of the most remarkable progress is however the UN Convention on the Rights of Persons with Disabilities (UNCRPD) 2006. These efforts of three decades have had revolutionary impact on disability issues especially in developed countries. Despite several international declarations and commitments by national governments, developing countries still have significantly limited information on the socio-economic status of persons with disabilities. As a result, in the socio-economic situation, persons with disabilities are almost invisible. Efforts to explore the possibilities of persons with disabilities and make them visible in socio-economic activities have not been made in many developing countries. Because of the implication of this low attention of states, persons with disabilities and their families are living below the poverty line in the developing world in many cases.

However, it is difficult to understand these issues because of the dearth of research. In these countries, persons with disabilities' social and economical inclusion in the development has not realized to be the issue yet despite the fact that Disability belongs on the socio-economic development agenda.

In fact, the field of disability studies has only recently progressed to the point where it is addressing issues of development. Moreover, as stated above, there is still a significant gap between developed and developing countries. Researchers in developed countries have already started investigating the conditions that are necessary to improve the quality of life of persons with disabilities. Yet, in developing countries, such studies remain rare, despite the fact that about 80 percent of the world's population of persons with disabilities live in the developing world.

Therefore, by this chapter, it is the authors' intention to partially fill this lacuna, giving the picture on the education and employment situations of persons with disabilities in developing countries. More specifically, in this chapter, we describe how education helps persons with disabilities achieve economic independence and social inclusion. For this chapter, an integrated analysis of returns to the investment in education and employment situation with range of occupational options for persons with disabilities will be presented by the empirical study from Nepal.

For this chapter, we use the main data set from Nepal collected by the first author to write his Ph.D. dissertation as a primary source of analysis. Thus, the results presented in this chapter are partly the analysis of the first author's Ph.D. dissertation (Lamichhane, 2009). Lamichhane (2009) has systematically explored the relationships between disability, education and employment in developing countries. Additionally, the dissertation presents a unique interdisciplinary collaboration that joins the perspectives of disability studies, education and

economics. The main theme of the dissertation is that human capital such as education and employment are some of the most important factors and if it is made of inclusive and accessible to persons with disabilities, , not only their livelihood will be improved but also eventually the prospects of their poor families, and of the society as a whole. Therefore, the chapter is one step first to emphasize the significance of human capital for persons with disabilities and secondly to implement inclusive programs to achieve inclusive development for all. Therefore, we have written this chapter by incorporating the first author's dissertation.

1-1. The Role of Education and Employment

Education is the cornerstone both for personal and ultimately social development. It is not only a catalyst for human development, but it also "empowers the individual to exercise other civil, political, economic, social and cultural rights, attaining a life of dignity, while ensuring a brighter future for all, free from want and from fear" (UNESCO, 2005). It is in this sense that we can regard education as an engine for social progress. Furthermore, there are significant economic benefits to greater education; numerous existing studies in both developed and developing countries have shown that better-educated individuals earn higher wages, face less unemployment, and tend to work in occupations with higher status and greater job security than their less-educated counterparts (Card, 1999).

The financial returns to investment in education have been quantified for persons without disabilities since the late 1950s (Card, 1999, 2001; Heckman et al., 2006; Psacharopoulos and Patrinos, 2004). For the estimation of returns to education for persons with disabilities, there have been a few significant studies performed in the US (Hollenbeck and Kimmel, 2008): Stern examined the problems of measurement and endogeneity when creating a definition of disability for census-taking purposes (Stern, 1989); and, employer discrimination in the labor market was investigated by DeLeire and Hotchkiss (DeLeire, 2000, 2001; Hotchkiss, 2003). However, as far as developing countries are concerned, The only other study of this kind was conducted by Mori and Yamagata, in the Philippines in 2009.

Furthermore, returns to education are earned largely through paid employment. Employment is equally important to all people – without it, social inclusion and economic independence are unlikely to be achieved. This is especially true for marginalized groups like persons with disabilities, the largest minority group in the world. Some of the crucial social functions employment can facilitate are "financial independence and integration into the community. It also improves social status, provides social support, enables workers to make a contribution, and increases self-worth." (O'Day and Killeen, 2002). Despite the clear benefits, due to various barriers to their employment, persons with disabilities are generally underrepresented in the work force. Judith A. Cook and Jane Burke (2002), for example, have stated that, despite the increase in labor force participation in the United States over the course of the 20th century, the level of participation for persons with disabilities remained significantly lower. This finding has been further supported by Diane Smith Randolph and Elena M. Andresen's 2004 study of relationships between disability, gender and unemployment in the United States. In addition, individuals with disabilities have been primarily employed in part-time, low-status jobs that offer little chance for advancement (Braddock & Bachelder, 1994), while the income level of working people with disabilities is often up to 35% less than their counterparts without disabilities (Bowe, 1992).

The marginalization of persons with disabilities in the work force is even more serious in the developing world. It is estimated that the number of persons with disabilities around the world is between 600 and 650 million, and that more than 470 million of them are of working age, yet unemployment rates remain high (ILO, 2007). Furthermore, Wehbia and El-Lahibb, (2007) have found that, in Lebanon, two-thirds of persons with disabilities were self-employed, whereas only a very few worked in such mainstream professions as accounting, teaching, nursing and

secretarial work. They connected the inaccessibility of the mainstream labor market to factors associated with disability, such as the likelihood for persons with disabilities to have inadequate educational qualifications. Considering work-related challenges for persons with visual impairments, a study carried out in Turkey by Bengisu, Izbirak and Mackeih (2008) has explained that higher education and braille literacy increase the chance of employment; however, the study did not measure whether the terminal level of education is a determining factor in job type. Similarly, a study carried out in South Korea with a focus on employment predictors for persons with visual impairments by Lee and Park (2008) has also predicted that education, in particular higher education, greatly increases the odds of employment; however, this study did not examine differences in job status (blue/white collar) or job tenure (full/part-time).

On the other hand, Lisa A. Schur's 2002 study on the employment of persons with psychiatric disabilities in the United States has indicated that a low level of education is likely a factor contributing to persons with disabilities' concentration in non-standard or low-paying jobs. If education or the lack thereof contributes to the marginalization of persons with disabilities in developed countries like the U.S., which often have clearly delineated policies regarding persons with disabilities, it is more than likely that they are even more marginalized in the developing world, where comprehensive policies are often lacking.

1-2. Chapter Outline

In fact, relationships between such factors as access to education, job market viability and the range of occupational options available to persons with disabilities in developing countries has not been investigated in depth at all. Therefore, the objective of this chapter is to focus on the role of education in the labor market of Nepal, specifically by estimating returns to investment in education and discussing the range of occupational choices available for persons with disabilities. We will discuss in section 3.1 about the wage returns to the investment on education. In section 3.2, we examine the types and range of occupational options available for persons with disabilities in Nepal. Also determinants of employability are singled out by different econometric tools. The results established a clear correlation between longer years of education and whether or not individuals are likely to be employed; more education is also associated with certain patterns of occupational choices. In other word, the result confirmed that education allows individuals with disabilities to be employed in full-time, better-paying jobs, sometimes white-collar. The rest of the chapter is organized as follows: In section 2, we describe the dataset from Nepal; Section 3.1 describes the returns to the investment on education for persons with disabilities; section 3.2, we describe the relationship of education to the employment for persons with disabilities. In section 4, we will present our concluding remarks.

Section 2. Data collection

2-1. Study area

This survey was conducted in Kathmandu Valley. The Kathmandu Valley is the most populous area of Nepal, with a total population of approximately 1.6 million in the Kathmandu, Lalitpur, and Bhaktapur districts, including the metropolitan capital city of Kathmandu (Statistical Yearbook of Nepal, 2007). It has a highly mobile population including many students and migrant workers. It was found that, across Nepal, activities surrounding persons with disabilities, conducted by various organizations such as non-profits and government foundations, occurred mainly in this area. This area is also where most of the employment opportunities open to persons with disabilities exist. Thus, Kathmandu Valley was chosen as an effective site for conducting this survey.

2-2. Participants

Persons with disabilities were the participants. Disabilities included in this study are visual, hearing and physical impairment. The term visual impairment has been used for those with blindness, the partially-sighted or those with low-vision. For those with hearing impairments, those with deafness and hardness of hearing were considered. Similarly, we have defined physical impairment as those having problems with their legs or hands/arms, spinal injuries, and so on. The term "disability" has been used for all kinds of impairments used in this study.

2-3. Sample selection

To approach the respondents, we randomly selected interview participants from the name lists of the five main disability-related national organizations in Nepal: Nepal Association for the Welfare of the Blind, National Association of Physically Disabled Persons, Nepal Association of the Deaf and Hard of Hearing, Nepal National Federation of the Deaf and Hard of Hearing, and the Nepal Association of the Blind. The National Society of the Disabled/ Nepal facilitated the management of the data.

After gathering the data, we began the selection process. After collating data according to disability, we further divided the members in each impairment group, aged between 16 and 65 years, into male and female subgroups. Then, out of a total of 993 potential participants who met our age and impairment criteria, 423 respondents were randomly selected using proportionate stratified random sampling, in which the individuals' type of impairments and sex were employed to set each stratum.

2-4. Study variables

The study variables included the following socio-demographic characteristics: education- and employment-related information; and income.

(a) Socio-demographic characteristics: Socio-demographic characteristics included: age; sex; type and cause of disability; marital status; type of family (nuclear or extended); and living status (local inhabitant of Kathmandu valley or migrant from other areas of Nepal).

(b) Educational information: Educational information included the level of education obtained, type and location of the school, and causes of dropout and illiteracy.

(c) Employment: Employment-related information included level, type and sector of employment, current position of the job, number of hours worked in a week, and level of job satisfaction.

(d) Income: Participants' income was defined as monetary gain from a salary. To measure income, participants were asked about their average monthly income and also the source of their income.

2-5. Developing the questionnaire

The questionnaire was at first made in English and then translated into Nepali. It was then back translated into English and compared with the original version, to verify accuracy. The author visited Nepal in August 2007 for the purpose of pre-testing the questionnaires. In the pre-test, ten persons with visual impairments were randomly selected from Kathmandu. The basic objective of this exercise was to examine if the language, the sequence and the information asked for were clear and appropriate. Some changes in the objective of the study and modification of the questions were done, based on the results of the pretest. Before

pretesting of the questionnaires, the study was designed with the focus only on visual impairments but after the result of the pre-testing, it was felt necessary to conduct a cross-disability study with the inclusion of physical and hearing impairments so that comparative analysis could be done. With this change, the study's objective was modified in accordance with the inclusion of two other types of disabilities. After amending the questionnaires, they were again tested with five participants each from the groups with hearing and physical impairments, respectively. Finally, the modified questionnaire was used in the main survey.

2-6. Recruitment and orientation of the enumerators

Due to the large number of participants to be interviewed and due to the requirement of sign language interpreters to interview the participants with hearing impairments, in total eight enumerators were recruited for the interview process. The enumerators were selected according to their educational qualifications, as well as their understanding of disability. In this sense, recruitment priority was given to persons with disabilities as far as possible, depending on their more acute understanding of the purpose and importance of this research. Similarly, interviewing participants with hearing impairments was both more sensitive and difficult on some occasions due to difference in language. Thus, for the purpose of interviewing the participants with hearing impairments, sign language interpreters from the organizations concerning hearing impairment were employed. As the role of enumerator was crucial for successfully conducting the survey, enumerators attended an orientation session detailing the importance and objective of the research and the content of the questionnaire to enable them to better understand the process and avoid confusion. They were also given instruction in how to ask each of the questions. At the end of the orientation program, some of the enumerators were invited to interview with the author, so that any confusions or difficulties could be avoided or corrected.

2-7. Conducting the survey

The survey was conducted over the course of two study-specific information gathering trips. The first and second rounds of the survey were conducted in six-week sessions from May to June of 2008 and again from October to November of the same year. Face-to-face interviews were carried out using carefully-structured questionnaires (Appendix 1).

After the enumerators' orientation had been conducted, they were assigned the task of direct interview. The name and the address of the selected participants were given to enumerators so that they could meet them in person. The enumerators conducted interviews largely in closed rooms in the offices of several organizations, as per the convenience of participants in outreach areas. The number of participants to be interviewed by each of the enumerators differed, and it was decided keeping in mind the distance to reach the participants, and also nature of each participants' impairment. For instance, interviewing participants with hearing impairments comparatively required more time than interviewing those with visual or physical impairments, as interviews had to be entirely conducted in sign language and simultaneously transcribed. Depending on such distinctions, interviews lasted for between thirty minutes minimum and an hour and thirty minutes at maximum. Besides personally conducting interviews, the author also visited the field site and supervised the field work of enumerators.

2-8. Ethical Considerations

The study was carried out with informed consent from the participants. However, no written consent was obtained from them as it may have a negative effect on the results: many of the participants were concerned about the implied commitment resulting from signing a form. However, before participating in the interview, the objectives and the study procedures were

verbally explained to each interviewee individually, using the information sheet (Appendix 2). Only those giving their consent agreeing to participate in the study were interviewed. Similarly, participants' right to withdraw from the study at the time of interview or afterwards was accepted, and privacy of the respondent was maintained. The participants could withdraw from the study at any time, during or after, without any personal consequences. To ensure confidentiality, codes were used instead of the participants' names during the interview. The interviews were not recorded and the participants were assured of the confidentiality of the information obtained from them. The information of two participants with physical impairments who were previously selected but refused to participate was excluded from the data.

2-9. Additional Interviews

In order to further capture subjective information, direct interviews were undertaken with twelve participants in February, 2009. These twelve individuals were aged between 25 and 43, and were among the previously selected 421 survey respondents.

In the interview sample, there was an equal number of men and women – six each. Furthermore, an equal representation of each of the three categories of impairment, i.e. hearing, physical and visual impairments, was purposely chosen. At the time of the interviews, the mean age of the participants was 31 years. Five participants were in their twenties, another five participants were in their thirties, and the remaining two were in their forties.

The interviews, which were held in the participants' homes or at their workplace, were semi-structured in nature and lasted from a minimum of 1.5 hours to a maximum of 2.5 hours. The interview focused on various factors associated with their education and employment; the questions repeated the topics of the survey, but differed from it in that the latter interview was semi-structured rather than structured in order to permit a wider range of details to be raised. Interviews were conducted in Nepali and were recorded digitally and later translated into English. Sign language interpreters were hired for interviewing participants with hearing impairments.

Section 3. Results and findings

In analyzing the overall data derived from this study, this chapter has adopted mainly econometric tools. Two separate sections of analysis are presented in this results and finding sections.

3.1. Returns to education for persons with disabilities

Lamichhane and Sawada (2009) estimate the wage returns to education of individuals with disabilities in Nepal. In this aim, the paper employs Mincerian wage equation. By doing so, we intend to help identify constraints preventing people with disabilities from becoming socially and economically independent, and from being fully included in society. Such an analysis will better enable governments and concerned organizations to design policies to mitigate poverty among persons with disabilities, the largest minority group in the world (United Nations Enable, 2009).

Indeed, numerous studies regress log earnings, ln *w*, on years of schooling, *s*, and report estimated coefficients as the estimated returns to education (Heckman, Lochner, and Todd, 2006;

Card, 1999, 2001). The theoretical underpinning for such a semi-log earnings equation is attributed to Jacob Mincer, with the standard Mincer wage equation usually specified as follows:

$$\log w = \rho_s s + X\beta + u, \quad (1)$$

where ρ_s represents the returns to education, i.e., how much the wage rate increases in response to an additional year of schooling. X is a set of other determinants of wage earnings, and u is an error term.

3-1-1. Estimation problems in estimating Mincerian wage equation

One of the most serious econometric problems of estimating equation (1) is that the cross-sectional correlation between education and earnings may differ from the causal effect of education owing to the correlation between the years of education and the error term that involves unobserved factors such as abilities. Lamichhane and Sawada (2009) take two strategies to tackle this endogeneity problem. First, we incorporate dummy variables for the types of impairment as a part of the determinants of wage earnings, X, in equation (1). We believe that this strategy would mitigate the "ability" bias arising from the correlation between the years of education and the error term.

Second, the instrumental variable method also is a natural method to mitigate such a problem using an observable variable that affects schooling choices and it is uncorrelated with the error term. As summarized by Card (1999, 2000), recent studies have begun to employ supply-side variables that capture institutional features of the education system such as the minimum school-leaving age, tuition costs, or the geographic proximity of schools in order to form credible instrumental variables.

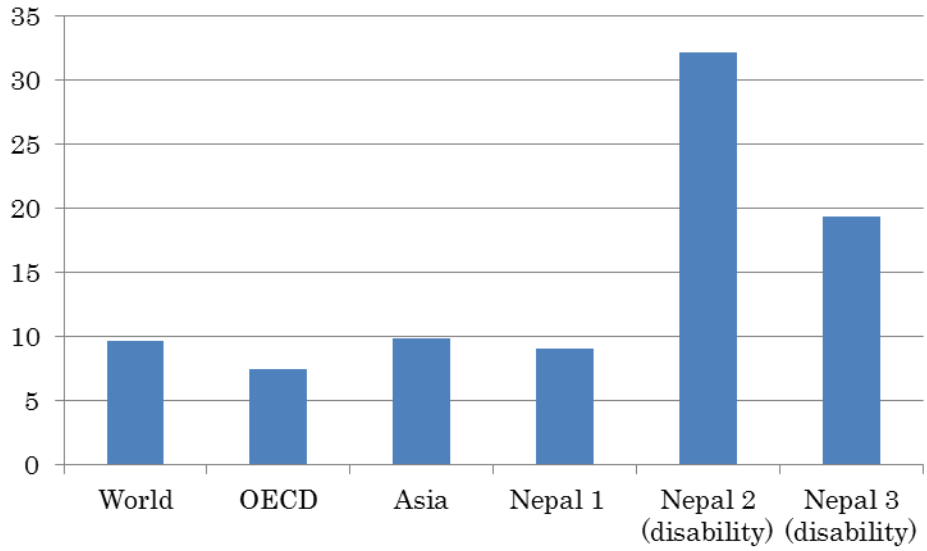
There is a novel aspect to the study by Lamichhane and Sawada (2009). Information on each of the three types of impairment has been used as identifying instrumental variables in order to estimate a Mincerian wage equation. The labor market outcome of education is not dependent on a distinction between congenital or acquired disabilities; rather, because the education of persons with disabilities is confined to institutional settings in Nepal, the main barrier to education arises from institutional problems or, more succinctly, from the fact of disability itself. Hence, using congenital or acquired disability information as well as the timing of being impaired, we may be able to identify the causal effect of education on earnings.

3-1-2. Estimated returns to education

There are two findings of Lamichhane and Sawada (2009). First, in Nepal, education exerts a significant influence on wages, with estimated returns to education for people with disabilities ranging from 19.4 to 32.2%. This is a significantly higher estimate than that of those without disabilities in the world, OECD countries, or Asian countries, as reported in Psacharopoulos and Patrinos (2004). These returns to education in different areas and Nepal are reported in Figure 1.

Second, in spite of the very high returns to education, the estimates of Lamichhane and Sawada (2009) confirm that persons with hearing impairments have benefited from significantly fewer years of schooling than people with visual and/or physical impairments. Indeed, there are serious institutional barriers in the Nepalese education system for people with hearing impairments: there is only one school for the deaf and hard of hearing in the entire Kathmandu Valley. Furthermore, so far, no arrangement has been made to facilitate the higher education of this group beyond the first 10 years of schooling. These barriers, however, could be eliminated in the future through appropriate policy interventions to improve the quantity and quality of schools for people with hearing impairments.

Figure 1. Returns to Education (%)



Source) The figures for the world, OECD, Asia, are taken from Psacaropoulos and Patrinos (2004). The numbers for Nepal 1 (persons with and without disability), Nepal 2 (persons with disability), and Nepal 3 (persons with disability) are from Lamichhane and Sawada (2009).

3.2. Disability and occupational choice

In this section, we examine the types of jobs currently held by persons with disabilities in Nepal. In the previous section, our estimations confirmed that in terms of wages, the returns to investment in education for persons with disabilities are significantly higher than estimates for persons without disabilities in developing countries. This is further confirmed by the results presented in this section – that education allows individuals with disabilities to be employed in full-time, better-paying jobs, sometimes white-collar. The study has established a clear correlation between longer years of education and whether or not individuals are likely to be employed; more education is also associated with certain patterns of occupational choices.

3-2-1. Models for Nominal Outcomes: Multinomial logit model

Occupational distinctions – e.g. between white/blue collar or fulltime/part time jobs – has been analyzed using a multinomial logit model. The multinomial logit model is the most frequently used nominal regression model. Nominal outcome means that the categories are assumed to be unordered. In this model, the effects of the independent variables are allowed to differ for each outcome. The first modern examinations of occupational distinctions using discrete choice econometrics were Boskin(1974) and Schmidt and Strauss (1974). Schmidt and Strauss (1974) propose using multiple logit model of occupational attainment, using race, sex, educational attainment and labor market experience as explanatory variables, and found that sex and race have strong effects on occupational choice.

3-2-2. Employment-related Characteristics of the Participants

Among the participants, the data from 237 employed respondents was analyzed. In this descriptive data, irrespective of disability, 70.04 percent of the participants were employed full-time, while 13.92 percent worked in part-time jobs. Another 16.03 percent of participants were self-employed.

Table 1 shows the job status depending on the type of impairments. When job status was examined by the type of disability, however, participants with hearing impairments were the most likely to hold full-time jobs. Among participants with hearing impairments, 84.54 percent were employed full-time, and only 6.19 percent had part-time employment. 9.28 percent were self-employed. Almost two-thirds of the participants with visual impairments, 65.06 percent, had full-time worker status, whereas only 15.66 percent held part-time employment. Likewise, 19.28 percent were self-employed. Finally 52.63 percent of participants with physical impairments held full-time jobs, whereas 24.56 percent worked part-time, and 22.81 percent were self-employed. Overall, compared with participants with hearing and visual impairments, fewer participants with physical impairments were employed at all, irrespective of the nature and tenure of the job.

Table 1. Type of Disability and Employment Characteristics

	Visual Impairment	Hearing Impairment	Physical Impairment	Average
Full-time	65.79%	84.04%	52.63%	70.04%
Part-time	13.16%	6.38%	24.56%	13.22%
Self-Employed	21.05%	9.57%	22.81%	16.74%
Total	100%	100%	100%	100%
Sample Size	76	94	57	227

3-2-3. Disability and employment providers

In terms of employment providers, it was found that the majority of participants, 58.19 percent, worked in the private sector. Similarly, 12.93 percent worked in non-profit organizations, i.e. the NGO sector. Beside this, 10.34 percent of participants were involved in business, or were self-employed. It was found that the government sector has very limited opportunities for persons with disabilities: only 18.1 percent of participants worked in government jobs, the majority of them as teachers.

3-2-4. Disability and job classification

Based on the type of employment held by participants, they have been classified into two categories: white collar and the blue collar workers. Those working as teachers, social workers, managers, administrators and clerical workers have been classified as white collar, while laborers, self-employed participants and restaurant workers have been included in the category of blue collar workers. Table 2 shows that overall, among our respondents, there were slightly more white collar than blue collar workers: in total, 51.10 percent of participants held white collar jobs, whereas the figure was 48.90 percent for blue collar jobs. Looking at job classification according to the type of disability, interestingly, although participants with hearing impairments were found to be more likely to hold full-time jobs, a significantly lower number of them were found working in white-collar positions. Their involvement in blue collar work, however, was significantly higher than that of participants with either physical or visual impairments; for instance, a

significant portion of our participants with hearing impairments, 40 percent, were involved in restaurant work. Participants with visual and physical impairments, however, were found to be primarily involved in white collar work. There was a clear disparity between participants' job types based on their educational histories. Perhaps unsurprisingly, those with more years of schooling were typically found working in the sectors that require educational qualifications, and, oppositely, participants with fewer years of schooling were found working in blue collar jobs such as working in restaurants or as manual laborers.

Table2. Disability and job classification

	Visual Impairment	Hearing Impairment	Physical Impairment	Average
Blue	68.42%	22.34%	75.44%	51.10%
White	31.58%	77.66%	24.56%	48.90%
Total	100%	100%	100%	100%
Sample Size	76	94	57	227

There seems to be no indication that blue collar jobs are in any way suited to individuals with hearing impairments. Rather, their predominance in these kinds of jobs is likely connected of their fewer years of schooling, compared with their counterparts with physical or visual impairments. Other factors, such as problems in communication or inadequate support system in the work place, also cause problems. In Nepal, one can be employed full-time regardless of one's educational level, but to be hired in a white collar field, where jobs are often more systematized, the lack of sufficient, standard education is often a key deterrent to prospective workers. Full-time work in either a white collar field or blue collar field, moreover, is bound to be different.

3-2-5. Disability and the likelihood of employability

When analyzing the likelihood of employment of persons with disabilities, it was found that education plays an important role. In this analysis, the data from both employed and unemployed participants was included. Table 3 shows that years-of-schooling, type of impairments, and age are significant in predicting the likelihood of participants' employment. Among these variables, years-of-schooling has a positive effect on the probability of employment. This is the main point of this study: that education is the fundamental factor in employability for persons with disabilities. Referring again to Lee and Park (2008), a study based only on data from persons with visual impairments, the similar conclusion holds true: those with college or graduate-level degrees were 1.96 times more likely to be employed than were those with an education at the elementary level or less. With our data, however, even aside from this finding, there are also several important nuances when the data is broken down by age and/or type of disability. Age, also, had a positive effect, whereby older individuals were more likely to be employed than younger persons. Among the types of impairments, it appears that physical impairment has a negative effect, meaning that participants with physical impairments are less likely to be employed compared with participants with visual or hearing impairments. We have also computed the predicted probability of becoming employed.

It may seem obvious to say that education is an advantage in the labor market, and, in some cases, possessing it is what allows some individuals to enter the job market to begin with. However, in countries like Nepal, when considering the case of persons with disabilities, such common knowledge does not hold true in the minds of many. The prevailing belief is, still, that even if

persons with disabilities are educated, they are less likely to make use of the education, or that they will not be useful in the workforce. Discussing the case of Brazil in terms of general attitudes toward persons with disabilities, Seamus Hegarty (1998) has mentioned that people with disabilities in Brazil "are not considered economically viable and are likely to have labels of inefficiency and incompetence forced upon them." In Nepal similar perceptions persist, despite our findings that individuals with disabilities who do become educated and do work tend to prosper.

Principally, whether an individual becomes economically productive or not does not depend on their disability, but rather depends on the qualifications and skills which can be gained through education. But, in societies where negative attitudes still exists regarding persons with disabilities, educational qualifications alone can not guarantee employment. The case of persons with physical impairments makes a clear example, given that they are less likely to be employed than their counterparts with hearing or visual impairments, even when they have the same educational qualifications. This could be due to a number of factors, ranging from accessibility issues to severity of individuals' impairments to the lack of a field that persons with physical impairments are encouraged to enter (i.e. in the same way that persons with visual impairments are strongly involved in teaching). The consistent bias against person with physical impairments suggests that greater efforts need to be made on the supply side of the equation. In an equal opportunity job market, the range of occupational choices for persons with all kinds of disabilities would depend fully on their education and requires necessary reasonable accommodation which is clearly stated in the convention on the rights of persons with disabilities. As well.

Table 3. Analyzing the likelihood of employment status

	Employed	**Part-time**	**Full-time**	**Blue collar**	**White collar**
Years of schooling	0.11	0.113	0.228	0.071	0.318
	(0.019)***	(0.040)***	(0.037)***	(0.039)*	(0.046)***
Female	-0.201	-0.484	-0.26	-0.325	-0.276
	-0.161	-0.345	-0.293	-0.315	-0.34
Age	0.109	0.138	0.244	0.172	0.182
	(0.052)**	-0.105	(0.119)**	-0.105	-0.135
Age square	-0.001	-0.001	-0.003	-0.002	-0.002
	(0.001)*	-0.001	(0.002)*	-0.001	-0.002
Hearing impairment	-0.041	-0.993	0.408	0.619	-0.818
(Compared with	-0.195	(0.434)**	-0.371	-0.379	(0.435)*
Visual Impairment)					
Physical impairment	-0.852	-0.926	-1.684	-1.323	-1.426
(Compared with	(0.218)***	(0.436)**	(0.410)***	(0.496)***	(0.431)***
Visual Impairment)					
Constant	-2.174	-3.295	-5.534	-3.976	-5.508
	(0.959)**	(1.970)*	(2.083)***	(1.945)**	(2.365)**
Observations	371	371	371	360	360

Section 4. Concluding remarks

In this chapter, we discussed firstly returns to education and then range of occupational opportunities for persons with disabilities in Nepal, as well as existing occupational distinctions of employed persons.

We estimated the wage returns to education of individuals with disabilities in Nepal, using information on the type and duration of the experience of the given impairments as identifying instrumental variables. After controlling for sample selection to account for endogenous labor participation, as well as endogeneity of schooling decisions, the estimated rate of returns to education is very high, ranging from 19.4 to 32.2%. These estimates, together with OLS estimates, indicate significant estimation biases in returns to education arising from sample selection and endogeneity biases. More importantly, our results will be of use to policymakers in the future, especially those aiming to facilitate human capital investments among persons with disabilities. First, the implied negative endogeneity bias and a trend of systematically fewer years of schooling on the part of individuals with hearing impairments implies that there are significant institutional barriers in education especially for people with hearing impairments. This can be eliminated by supply-side interventions aimed at persons with hearing impairments. Moreover, the coexistence of these high returns to education and limited years of schooling suggest that there are credit market imperfections.

Second, the coexistence of a high rate of returns to schooling and a limited number of years of schooling suggests the existence of credit market imperfections and/or supply-side constraints in education for individuals with disabilities. The former is also consistent with the significant negative effect of family financial constraints on years of schooling. Again, credit provisions or scholarship programs to relax the borrowing constraints of families of children with disabilities are suggested as possible policy instruments; supply-side interventions will be indispensable for such families. It is universally acknowledged that education is a basic human right. However, there are also clear economic benefits of higher education both for individuals and societies. Education is a tested and sound means of escaping poverty in the developing world; previous studies on returns to education for persons without disabilities in developing countries indicated around 10% wage returns. Comparing this figure with our findings of more than 19% returns for individuals with disabilities shows just how necessary supporting the education of persons with disabilities is for their advancement, both socially and as individuals.

Furthermore, it was found that educated individuals with disabilities are likely to get not only full-time but also white collar jobs compared with less educated or uneducated individuals. However, compared with persons with hearing and visual impairments, and despite their often higher levels of education, fewer persons with physical impairments were found to be employed overall. In other word, regardless of longer years of schooling, persons with physical impairments are less likely to enroll the competitive labor market. This indicates that, unless affirmative action is taken on their behalf, it may be difficult for persons with physical impairments to enter directly into the competitive labor market.

With our findings, it can be concluded that persons with disabilities can benefit greatly from working, if the right person is put to the right job. This requires employment opportunities, and the elimination of prejudice and discrimination. Education and employment empower persons with disabilities as citizens. Our results prove that if individuals with disabilities are treated based on the principle of what they can do rather than what they can not – a strength-based approach – they can not only take care of their own livelihoods, but also contribute significantly to social progress.

The Nepalese government and NGO sectors working for the advancement of persons with disabilities should focus their efforts not just on increasing educational but also employment opportunities. The results of this research suggest a number of possible strategies and areas of focus, including increasing access to education, broadening the quota system to increase employment opportunities, addressing accessibility issues, subsidizing private sector employment for people with disabilities, and lastly combatting social discrimination.

The Nepali state can widen their affirmative action measures to other sectors, increasing employment opportunities for persons with disabilities, as they are bound to do by the terms of article 27 of the 2006 UN Convention. The government could employ a quota system for job allocation in order to combat discrimination in hiring practices; it would be necessary to make sure that such policies are properly implemented, and are enforceable. Only then, can their skills and qualifications count equally in the job market.

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