# EDUCATION AND LABOUR MARKET FOR PERSONS WITH DISABILITIES: A STUDY OF IT SECTOR IN INDIA

*Dissertation*

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## DECLARATION

I, Joel Vergis, hereby declare that the dissertation entitled *"Education and Labour Market for Persons with Disabilities: A Study of IT Sector in India"* is submitted in partial fulfillment for the award of the degree of Master of Philosophy of Jawaharlal Nehru University. This dissertation has not been previously submitted for any degree of this or any other University and is my original work.

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## CERTIFICATE

We recommend that this dissertation be placed before the examiners for the award of the degree of Master of Philosophy in this University.

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# Introduction

# Review of Literature

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# Chapter 1
# Introduction

## 1.1 Background

The linkage between education and labour market is well established in the literature of economics of education. Many studies reveal a positive correlation between levels of education and labour market outcomes: higher the levels of education, higher would be the employment and earnings (Becker 1993; Soloman and Fagano 1997; Lemieux 2003). While part of this employment and earnings differentials can be explained by differentials in productivity (attributed to differences in human capital investments), a large part of it remains unexplained. To some extent, these differences can be attributed to discrimination in the labour market along the line of gender, caste, race, ethnicity, or disability. The available literature on labour market outcomes of persons with disabilities (henceforth PWDs) highlights the effect of prejudice and health impairments on labour market outcomes (Baldwin and Johnson 1994 and 2000; DeLeire 2000). Few studies have discussed the relation between age of disability onset and its impact on their education and labour market outcomes. These studies found that education and labour market outcomes vary among PWDs depending on the age of manifestation of the impairment (Hollenbeck and Kemmel 2008; Loprest and Maag 2003).

Differences in the labour market outcomes of PWDs by levels of education are relatively less explored, largely due to the unavailability of survey data on education, employment and earnings of PWDs. The limited studies on economics of disability tend to focus heavily on the cost of employing PWDs, for example, cost of providing reasonable accommodation (Chirikos 1991). Studies that focus on the aspect of benefits are scarce due to the fact that the benefits accruing from employing PWDs are difficult to measure (Walton 2012). The cost of excluding PWDs by denying them opportunities to participate in the labour market could be enormous. In this connection, Metts (2000) has estimated that the annual loss in global GDP is between US$ 1.37 trillion and US$ 1.97 trillion (Cited in Walton 2012). Buckup (2009) assessed the macroeconomic losses of excluding PWDs from work based on 10 low and middle income countries and found that economic losses are large and measurable and ranges from three to seven per cent of GDP. These estimates are lower than those suggested by

Metts (2000), who estimated losses of between 15 per cent and 40 per cent for the same countries, but are likely to be accurate as they are based on country-sensitive data (Ibid).

In addition to pecuniary benefits of including PWDs there are some non-pecuniary benefits that accrue to individual families and society as a whole (Walton 2012). The PWDs constitute a vast pool of untapped human resource which has the potential to meet the labour needs of the industrial sector (ILO 2011). It adds to the diversity of a nation's workforce and enables the development process to be sustainable. A study by Metts (2000) found that 70 per cent of the world's disabled and 85 per cent of disabled children live in developing countries. The prevalence of poverty is high among the disabled people (16.7 per cent), as against the general population which has a poverty rate of 4.8 per cent (Metts 2000 cited in Walton 2012: 2).

Children with disabilities (CWDs) encounter several hurdles in accessing education; and even if they do, they rarely progress beyond the primary level (Singal 2006: 2010). This has a bearing on their human capital investment and work skills acquisition affecting their employment and earning prospects throughout their lives (WHO and World Bank 2011). This in turn makes them heavily dependent on social security benefits which have an inherent disincentive in labour market participation. Enrolment rates in education have been estimated to average between one and three per cent amongst children with disabilities in developing countries (Tanner 2007 cited in Walton 2012: 2). Employment ratios for the PWDs are significantly low on average vis-à-vis the ratios for persons without disabilities. A study by WHO and World Bank (2011) estimated that employment rates for disabled men and women are 53 percent and 20 percent respectively as compared to 65 percent for men and 35 percent for women without disabilities, although rates vary significantly across countries. Individual, societal and institutional factors make education and work place inaccessible for PWDs. While PWDs experience discrimination and disadvantage in accessing education and employment, a small proportion of PWDswho have the requisite human capital capabilities also face disadvantages in employment and earnings. Even when the PWDs are employed, they are largely confined to entry level positions (AIF 2014), and their earnings are substantially lower than that of persons without disability (Baldwin and Johnson 1994; Johnson and Lambrinose 1985; Thomas DeLiere 2000; Hollenbeck and Kimmel 2008).

There are various policies both at the national and international level that promotes equal opportunity and full participation of persons with disability in the labour market. The United Nations Convention on the Rights of Persons with Disabilities (UNCRPD 2006) in its Article 27 has stated that, 'States Parties recognize the right of persons with disability to work on an equal basis with others; this includes the right to the opportunity to gain a living by work freely chosen and accepted in a labour market and work environment that is open, inclusive and accessible'. It further states that discrimination on the basis of disability must be prohibited with regard to all matters concerning all forms of employment, including conditions of recruitment, hiring and employment, continuance of employment, career advancement, and safe and healthy working conditions. In India, the Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act 1995, mandates that not less than three per cent of posts should be reserved for PWDs in the public sector (section 33). It has also stated that incentives shall be provided to employers both in the public and private sector to ensure that at least five per cent of their workforce is comprised of PWDs (section 41). Despite these policies and legislations, persons with disability continue to face challenges in participating in the labour market.

The PWDs in India face many challenges when seeking to develop employable skills and in securing deserving employment in favorable conditions of decent work environment (ILO 2011). PWDs have lower employment rates than the general population across regional and gender lines. Employment rates for the PWDs declined from 42.7 percent in 1991 to 37.6 percent in 2002 in comparison to a fall of only 1.1 percentage points for the general population (from 58.6 percent to 57.5 percent) between 1993 and 2000 (World Bank 2007: 82-83). Out of approximately 70 million people with disabilities in India, only about 0.1 million PWDs have succeeded in getting employment in the industries (Annual report, Government of India, 2008 cited in ILO 2011: 3). In a survey conducted by National Centre for Promotion of Employment for Disabled People (NCPEDP) across top 100 companies in 1999, the employment rate of the disabled in private sector was a dismal of 0.28 percent, and it was 0.05 percent in multinational companies. On average, for all types of disabilities, 73.6 percent are out of the labour force (ILO 2011). In other words, less than 27 percent of PWDs manage to get employed.

Employment rates for the disabled vary widely across geographical location (urban or rural), gender, education levels and type of disability. They are much lower than that of the general

population for both male and female and across urban and rural areas, and have fallen since the 1990s (World Bank 2007: 84). Studies have pointed out that employment rate varies by gender among PWDs, as men with disabilities are more employed than their female counterparts (Mitra and Sambamoorthi 2006: 200). There are variations in employment rates among the PWDs by type of disability. People with mental illness, mental retardation and visual disabilities have very low employment rates in comparison to those with hearing disabilities, who have an employment rate of around 58.8 percent of the total employed disabled people (Mitra and Sambamoorthi 2006: 200). Furthermore, people with speech and locomotor disabilities have employment rates above that of the average for disabled people. Those with severe disabilities have an employment rate of around 22 percent lower than those with moderate disabilities, and around 45 per cent below the rate of the general population (World Bank 2007: 84).

A study by the World Bank in 2007 revealed that the gap in employment rate between the PWDs and general population has widened for all education levels between the 1990s and 2000s. This gap is more pronounced for those with the lowest levels of education. PWDs with secondary education and above had very similar employment rates to that of the general population with the same level of education in the 1990s. By the 2000s, the gap even at these education levels had widened, though it remained lower than for those with lower levels of educational attainment. The employment rate for the illiterate PWDs, which was 64 per cent of the general illiterate population in 1990s, declined sharply to 47 percent by 2000s (World Bank 2007: 85). PWDs have not only lost in employment terms in the 1990s, but those likely to be poorest (i.e. those with the lowest educational attainment) have lost out more proportionately (Ibid).

In India, employment opportunities for PWDs were largely confined to the public sector due to the three per cent reservation mandated by the PWD Act. Employment avenues for PWDs in the private sector in India opened up barely a decade ago when a few export houses decided to explore the viability of tapping a "different side of the population". This practice began with an aim to counter the attrition rate of workers in their factories. Initially, they started employing people with orthopedic and hearing impairment for limited tasks. Later, as technologies to aid other types of disabilities became accessible, the avenues of private sector employment was also opened up to persons with visual impairment. Despite the absence of reservation for the employment of PWDs in the private sector in India, there is an increasing

trend towards inclusive workplace in the private corporate sector which actively employs the disabled population. Although a major reason behind this inclusion is the Corporate Social Responsibility (CSR) agenda, more and more companies are being aware of the benefits that accrue to their organizations as a result of employing PWDs. These include social image enhancement, employee and customer goodwill, and a cadre of employees with high levels of loyalty, strong performance and very low rates of attrition (American India Foundation (AIF) 2014: 8). However, employment of PWDs in the private sector has started looking up across select industries in the last couple of years. This study attempts to explore at the job profiles of PWDs employed in the IT sector in India wherein, the disabled have a competitive advantage provided they have the skills and access to technology.

The National Association of Software and Services Companies (NASSCOM) Foundation launched the Accessibility Initiative in 2009 based on the rights approach of including persons with disabilities in the IT and IT-enabled Services sector. This initiative was aimed at reaching out not only to the talent acquisition team, but also to the common worker who is an integral part of making inclusion a reality. Sensitization workshops were held in Delhi, Chennai, and Mumbai which elicited participation from companies like Wipro, IBM Daksh, Genpact, Aegis, etc. As a result, 190 PWDs were employed by ten IT service companies (ILO 2011: 31). According to a survey conducted by American India Foundation in 2014, Wipro, a leading global IT firm alone employs around 500 PWDs (AIF 2014: 25).

NASSCOM Foundation conducted a number of diversity workshops for its member companies and also came out with a handbook in 2010, "Inclusivity at the Workplace – Five Principles that Enable and Empower persons with disability". To provide HR counseling to jobseekers with disabilities, the foundation collaborated with the VRC in Chennai. Given the growing demand for skilled and qualified persons with disabilities in the IT industry, the foundation conducted its first job fair in 2010 in collaboration with Sarthak, an educational institute for training PWDs and Vocational Rehabilitation Centre for the handicapped operated by the Government. It brought together some 450 disabled jobseekers with leading IT firms like IBM, Wipro, Aegis, Genpact, Synopsys, etc. (ILO 2011: 31). To facilitate sourcing of qualified employees with disabilities by the IT industry, the foundation also started a specific training and mentoring project in 2011. Despite such initiatives, PWDs constitute only a meager share 0.2/0.3 per cent of the total workforce in the IT labour market. For instance, even though Wipro employs around 500 employees with disabilities, their share

in the overall workforce of Wipro which employs nearly 145,000 employees, is negligible (AIF 2014: 25). Furthermore, availability of talent and biases of non-disabled staff pose a challenge to their inclusion. As reported by the AIF study (2014), career advancement poses a problem for PWDs. For example, "for a visually impaired person to grow professionally, his/her supervisor must be willing to take some initial risk in allowing him/her to front-end with the client" (AIF 2014: 25). In this context, the present study aims to explore the education and labour market outcomes of PWDs in India, including societal and individual perspectives. It will provide both macro level scenario of labour market outcomes of PWDs and micro level analysis of IT sector in India.

***Rationale of the Study***

As discussed in the review of literature, studies on discrimination in the labour market against PWDs are less explored, particularly in developing countries including India. Available studies on labour market outcomes of PWDs have focused largely on the impact of health impairments and prejudice, ignoring many other important factors, particularly linking it with education. Also the limited studies available in this domain have not examined the impact of employer's and employee's perspective that determine labour market outcomes of PWDs. Therefore, this study aims to examine the education and labour market outcomes of PWDs in IT sector in India. This will analyze the discrimination against persons with disabilities in India in terms of employment and earnings by levels of education or human capital endowment. It will also examine their job and career prospects by looking both employer and employee perspectives in the IT sector.

The reason behind selecting the IT sector as an area of study stems from the fact that a relatively large number of PWDs are employed in this sector because they have a competitive edge over other subsectors within the service sector. The effect of disability on productivity can be compensated by assistive technologies which enhances their comparative advantage in this sector. Another reason for selecting this sector is that it is dominated by the private sector which is not regulated by employment quotas or minimum wage legislations. Therefore, the PWDs compete with their non-disabled counterparts for job placements and career progression which is likely to expose the extent of discrimination taking place in this sector.

Initially IT firms started employing PWDs as a corporate social responsibility (CSR) initiative. When they found that the PWDs could become a reliable and potential human resource, they started employing them in large numbers (AIF 2014). Top IT firms in the country such as Infosys and Wipro have employed relatively higher number of PWDs as part of their inclusive labour policy. However those policies face setbacks due to the scarcity in the supply of man power with requisite education and training. A study conducted by the American India Foundation (2014) highlights that the availability of trained man power with higher levels of education and skill pose a major challenge and expanding employment opportunities for the PWDs or increasing their share in the total work force. Given this scenario it is imperative to explore the dynamics of the labour market outcomes of PWDs in the IT labour market.

***Objectives and Research Questions***

Following are the objectives the study:

- To examine the education and employment status of PWDs in India.
- To analyse the employment and earnings profile of PWDs working in the IT sector in India.
- To examine the employers' perspectives on labour market outcomes of PWDs.

Following are the three research questions of the study:

- What is the education and employment status of PWDs in India?
- How do job profiles of PWDs match with their level of education?
- What is the nature of discrimination experienced by disabled employees in IT labour market both at entry level and work place?
- How do employment and earnings outcomes vary among PWDs and with their non-disabled counterparts by levels of education and skills?
- What concerns do employers have with regard to including PWDs in the work force?
- What special measures have been taken by employers in creating an inclusive work environment?

## 1.2 Data and Methodology

A macro picture on education and labour market for PWDs in India has been drawn from secondary data. Relevant data on education and employment figures of PWDs were gathered from Census 2001 and 2011 database. Data on enrolment of PWDs in higher education were obtained from the Third National Survey on Status of Disability in Higher Education conducted by the National Centre for Promotion of Employment for Disabled People (NCPEDP) in 2015. The data obtained from secondary sources were analyzed along gender, social categories and types of disability across corresponding educational levels and employment rates using descriptive statistics. The results are studied, and the inferences are presented therewith.

The primary survey was planned to be conducted among employers and employees (disabled and non-disabled) in selected IT firms in Delhi, Mumbai and Bengaluru. Data related to types of job, earnings, work environment, education, skills, employers' perspectives and employees' experiences were to be obtained through mixed questionnaire and semi-structured interview. Purposive sampling technique was chosen to beemployed to select the sample. The range of the sample size was fixed between 10-20 disabled and non-disabled employees and 5 employers. However, the final selection of the respondents would of course depend on the feasibility of accessing them. Discrimination against the PWDs would be investigated on the basis of job characteristics such as types of job, time duration involved in career progression, earning returns and workplace accommodations in the IT sector. It is expected that the survey should shed light into their awareness about job openings, processes of getting jobs, and expectations and realizations out of the jobs by PWDs. This survey is so designed to obtain information to throw light on the qualification-employment mismatch in the IT labour market, and moreover on the attitudes of employers and co-workers towards PWDs at work place.

The present study is based on a primary survey that was conducted during the period February - April 2017, among employees with disabilities, employees without disabilities and HR managers of selected IT firms across the three metropolitan cities of Delhi, Mumbai and Bengaluru. In addition, a survey was also conducted among the representatives of Disabled Persons Organizations (DPOs), which are Non-Governmental Organizations working for the empowerment of people with disabilities (PWDs). The decision to survey representatives of

DPOs emerged from the idea to target them in order to gain access to employees with disabilities who are likely to serve as prospective sample respondents. DPOs serve as intermediaries between employers and candidates, providing skill development and job placement services to PWDs by collaborating with corporates. Although there are many DPOs advocating for the rights of the disabled and working towards their inclusion in the mainstream economy and society, only those DPOs working in the area of education and skill development of PWDs were covered in the survey.

Four DPOs were shortlisted, out of which two were involved in employment-oriented training, whilst one was engaged in the education of children with disabilities, and the other was operating as a network amongst DPOs. Representatives of the four DPOs were approached with the request for sharing the contacts of those candidates who had undergone training in their institutes and who were employed in the IT sector. Out of them, one DPO provided contact details of employees with disabilities working in the IT sector and the second one arranged a meeting with the HR manager of India's largest IT company. In order to identify the research population, nearly 30 small and medium IT solution firms located in Gurgaon and Noida were contacted via telephone. In addition, major Indian and multinational IT companies situated in Delhi, Mumbai and Bengaluru were also approached via email. However, there was not even a single response from any of the companies contacted. Using the contacts received from the two DPOs and contacts provided by some colleagues, a final sample of 30 respondents comprising employees with and without disabilities and HR managers were shortlisted using purposive sampling technique. Out of the 30 sample respondents, only 12 of them participated in the survey which included six employees with disabilities, four employees without disabilities and two HR managers. The two HR managers who responded to the survey were from two of India's leading IT firms.

The survey was conducted using separate questionnaires/schedules for each of the three categories of participants. The questionnaires and schedules were dispatched directly in person and via email to the participants. The questionnaires prepared for both employees with and without disabilities contained structured and open-ended questions whereas the schedule designed for the HR managers contained purely open-ended questions. Furthermore, another schedule was prepared with the purpose of eliciting the views and experiences of DPOs regarding education and employment of PWDs.

Results of the survey are analyzed using descriptive analysis. Owing to the small sample size, the findings of the survey cannot be generalized either to the entire disabled population of the country or to the IT sector of India as a whole.

### 1.3 Outline of Study

The account of the study under the topic "Education and Labour Market for Persons with Disabilities: A Study of IT Sector in India" is presented in five chapters, including introduction.

The second chapter reviews the literature on education and labour market with specific reference to PWDs. The literature concerns three broad aspects: education and labour market linkage; discrimination in the labour market; and the determinants of labour market outcomes for PWDs.

The third one is titled 'Labour Market outcome of PWDS: Gloomy Past and Promising Future' this chapter, analysis of the labour market outcomes of PWDs both in the Indian and international context, the barriers that PWDs face in gaining entry and participation in education and job market, also focusing on measures adopted by various countries to alleviate the disadvantages faced by PWDs in these respects. Also it documents the best practices implemented by the private sector towards inclusion of PWDs by presenting case studies of three IT companies based in India.

Chapter four explores and examines the experiences and outcomes of PWDs in the education and the IT labour market. The study in this regard is based on a primary survey conducted among employees with and without disabilities, HR managers from the IT sector and representatives of Disabled People's Organization.

The salient findings and scope for future research are discussed in the fifth chapter.

# Chapter 2

# Review of Literature

## Introduction

The human capital framework provides a theoretical explanation for investing in education and skills of individuals in order to prepare them to take advantage of the positive labour market outcomes, in addition to many other benefits, such as improvement in health and nutrition, reduction in fertility rate, reduction in crime rate, increase in compliance to laws, improvement in social harmony, respect for diversity, etc. Human capital can be developed by means of education/schooling, adequate training and development of skills which have a positive impact on output and earnings (Becker 1964). The earning potential of an individual depends on his/her learning cycle and up to a certain extent—on his/her physical and mental well-being. Overall, human capital framework with all its modifications provides a rationale to invest in education for obtaining better employment opportunities once a person enters the labour market, in correlation to his/her education level. However, there is a variation in human capital formation based on an individual's physical and cognitive abilities. This variation is more pronounced among PWDs which significantly affects their labour market outcomes. The literature review attempted here has discussed studies on education and labour market linkage, discrimination in the labour market, and potential determinants of labour market outcomes, considering PWDs as a cross cutting point, both in India and in international context.

## 2.1 Education and labour market linkage

There is a positive correlation between education and labour market outcomes (Mincer 1958, 1974; Hauser et al. 2000; Tansel 2004; Pascarella and Terenzini 2005; Stiglitz et al. 2009; Edgerton et al. 2012). Ionescu (2012) has discussed the various labour market outcomes which have been affected by education. Different aspects of education such as schooling, educational level attained investments in education, schooling quality, individual's educational track, parents' educational track, curriculum type and sector of activity can influence the labour market outcomes. Many studies showed that education can influence labour market outcomes in the form of earnings, employment, unemployment, worker productivity, nature of work, hours worked and fringe benefits. The more educated a person,

higher will be her/his earning capability (Soloman andFagano 1997: 826; Edgerton et al. 2012: 271). Education plays a critical role in shaping people and their choices according to job market requirements. It provides individuals with the degrees, certificates, skills and adequate training which equip and prepare them to enter the labour market. This relationship has been developed and studied by Mincer in 1974 in his book "Schooling, Experiencing and Earnings". In his empirical work, he has used the natural logarithm of earning as a function of years of schooling and potential labour market experience. This equation has been used empirically to study country-wise variations in earnings. The literature surveyed supports a strong linkage between education and labour market outcomes. Unfortunately there is lack of evidence in the literature as to confirm if people with the same level of education have the same labour market outcome. However there are many justifications for the heterogeneity in individual occupational outcomes (Levine 1976). The important one is human capital theory developed by Becker. This theory is a landmark in explaining the differences in labour market outcomes based on education, experience and innate ability of an individual. According to Becker, an individual's decision to invest in additional level of education is influenced by his/her expected future earnings and assessment of one's innate ability. If an individual's expectations of future earnings and estimation of innate ability are low, he/she will not invest in additional education. It is this difference in investment in education that results in differential labour market outcomes (Becker 1964).

Although studies that examine the correlation between education and labour market outcomes for people with disabilities are sparse, there is a general perception of a plausible positive correlation between higher levels of education and labour market outcomes for PWDs. A study carried out in Turkey demonstrated that higher education and Braille literacy increased employment chances for people with visual impairments (Bengisu, Gokhan and Adham 2008). Another study which explored employment predictors for people with visual impairments in South Korea, established that education (particularly higher education) largely increases employment opportunities (Lee and Park 2008). Study by Lamichhane (2015) on the impact of education on employment and occupational choices for PWDs in Nepal, has that longer the years of schooling, greater the likelihood of individuals with disabilities being employed.

Heterogeneity is observed in individual occupational outcomes even among people with disabilities, the cause of which may be attributed to differences in their levels of education,

often reflected in years of schooling. A study by Schur (2002) on the employment of people with psychiatric disabilities in the United States, found that a low level of education probably contributes to the concentration of PWDs in non-standard or low-paying jobs (Lamichhane 2015: 38).Based on a survey (2015) conducted among people with visual, hearing and physical impairments in Nepal, Lamichhane analysed the type of jobs obtained by PWDs. The study found a positive correlation between years of schooling and type of jobs obtained. Longer the years of schooling, greater the probability of obtaining white-collar jobs. The results of the survey showed that majority of those who secured white-collar jobs had more than twelve years of schooling, whereas those with less than twelve years of schooling were mostly engaged in blue-collar jobs or unemployed (Lamichhane 2015:47).

Education in general and post-secondary education in particular serves as a pathway for gainful employment in meaningful occupations, providing opportunities for career development thereby enhancing the quality of life (Getzel et al. 2001; Duta et al. 2009). This finding is even more significant for people with physical and sensory disabilities, whose range of employment is limited to jobs that require fewer physical abilities and skills (Kendall and Terry 1996; McGeary et al. 2003). Differences in productivity related characteristics between groups which are associated with human capital investments are capable of explaining around 50 per cent of both the earnings and employment differentials between the non-disabled and the disabled (Kidd and Sloane 2000). Accessibility to education is therefore important for PWDs (Inbar 1991, 2003; Drake et al. 2000; Getzel et al. 2001; Dorwick et al. 2005; Rimmerman and Araten-Bergman 2005). In India, access to higher education for PWDs is constricted by the non-inclusive nature of Indian higher education system. Inability to avail higher education would act as impediments for them in recruitment and career advancement. It would also result in substantial earnings differentials between the disabled and nondisabled which would in turn widen the income disparity between the two groups.

### 2.2 Discrimination in the labour market

There are various theories that explain discrimination in the labour market put forward by different scholars, notably, Becker (1971), Thurow (1968), Bergmann (1971), Staineset al. (1976), and Gundersen (1978). According to Becker (1971), “employers taste for discrimination results in discrimination” (cited in Tilak 1980: 99). Thurow (1968), Kain (1969), Bergmann (1971) and Freeman (1973) consider that discrimination does not arise out

of employers' taste, but the power of the dominant group that makes discrimination possible (cited in Tilak 1980: 100). On the other hand, Baran and Sweezy (1966) argues that differences in bargaining strength of the labour unions are responsible for discrimination.

In standard economic theory, the rationale behind discrimination is built on the premise of differences in productivity among individuals. However, in the market, an individual's personal characteristics which are not explicitly related to productivity are also taken into account. These characteristics may include race, gender, ethnic background, caste, or disability depending on the context and space. Arrow (1971) argued that discrimination can be of market or non-market types. Non-market discrimination may include deliberate racial alienation at the point of entering school, prejudiced notion towards a particular section such as PWDs or discriminatory treatment against children belonging to a particular race, creed, community or gender by the society. Discrimination may also happen in the upbringing of children in aspects of providing social services such as education, health, nutrition, etc. Such discrimination negatively affects the quantity and the quality of schooling and the paths to their future occupation, training, and earnings (Tilak 1980: 100). On the other hand, market based discrimination is mainly concerned with productivity of workers in the labour market, which might be seen as the function of non-market factors. This occurs at the time of entry into the labour market in terms of differences in employment and earnings.

Economic theory of discrimination found a place in Gary Becker's seminal contribution of 1957 'The Economics of Discrimination'. Becker's analysis focused on the relationship between racial prejudice among whites and discrimination against racial minorities in a competitive model. In a series of models, he analysed the effect of racial preferences among customers, co-workers, and employers on the relative earnings of the Afro-Americans. Furthermore, Becker argued that there is a marked difference in employers' and employees' perspective while exercising any kind of discrimination, and the same depends on the nature of output (Becker 1971). Economic theories of discrimination deal almost exclusively with discrimination in the labour market, more particularly, with the demand side of the market. The supply side of the market is effectively neutralized by the assumption of either equal productivity or "controlled-for" productivity differences (Cain 1984). The intellectual challenge is to theoretically explain how workers who are intrinsically equal in productivity receive unequal outcomes ignoring other conditions like physical disability.

Using coefficient of employment and earnings discrimination, Tilak (1980) found prevalence of labour market discrimination against women and backward castes at all levels of education. In terms of rural-urban divide this study found that highly educated people in rural areas and less educated people in urban areas experience higher rates of unemployment. Choudhury (2015) undertook an analytical study of the factors responsible for gender discrimination in the employment and earnings of engineering graduates studying in government and private engineering institutes in Delhi. Factors determining the gender discrimination in employment and earnings of engineering graduates were analyzed using 'Logit model.' The study found the prevalence of gender discrimination in both job placements and offered earnings which vary according to the socio-economic background of the graduates; wherein 'the offered earnings of women are about 54 per cent less than that of men' (p. 225). The study provides strong and consistent evidence that institutional factors act as a major determinant in the employment and earnings' gap between male and female graduates. Graham and Smith (2005) attempts to examine the factors responsible for gender differences in the selection of Science and Engineering (S&E) jobs and gender inequality in pay using 1993 National Survey of College Graduates. Using the 'maximum likelihood' technique, the study found that gender differences in S&E educational background is capable of explaining around 60 per cent of the probability of a college-educated worker getting selected in S&E job, which depends on factors such as demographic, human capital and occupational characteristics. The study further found that on average women earned 73 per cent of the mean earnings of men among all college educated full-time working graduates, 84 per cent of the mean earnings of men among S&E workers, and 71 per cent of the mean earnings of men among non-S&E workers.

Langevin et al. (2016) have analyzed the determinants of ethnic gaps in education and labour market outcomes between French-natives and second-generation immigrants. The study has three key findings: firstly, on average second-generation immigrants have a lower probability of experiencing educational success than their native counterparts, with the education gap being mainly rooted in ethnic differences and family background. Secondly, in terms of employment and earnings, second-generation immigrants are less likely to be employed and more likely to receive lower earnings, the reasons for which are attributed to differences in educational attainment. Thirdly, across different ethnic groups, the study found considerable heterogeneity with regard to educational attainment, employment and earnings. The results suggest that childhood environment acts as a key determinant in lifelong success of an

individual, impacting education and labour market outcomes. While there are ample studies on the labour market discrimination by gender, caste, race and ethnicity, literature on discrimination against PWDs are quite limited, particularly in India.

Certain studies reveal that individuals with the same level of human capital have differential labour market outcomes (Arrow 1971). Heterogeneity in labour outcomes can be observed among individuals across the lines of gender, caste, class, ethnicity and disability. This heterogeneity is more pronounced when compared between the non-disabled and the disabled for whom labour market outcomes are not determined by education and skills alone. The underlying cause behind such variability is the result of discrimination practiced by employers or organizations in terms of both pecuniary and non-pecuniary factors while recruiting employees (Arrow 1971). Therefore there seems to be no expediency in wholly relying on the human capital framework per se in understanding the labour market outcomes in the case of PWDs, as the same (framework) neither includes the kind of discrimination they face, nor explains how such discrimination affects their labour market outcomes. Persons with disabilities experience discrimination in accessing services such as education, health, transportation and information. Their participation in the labour force is much lower than their non-disabled counterparts. Disabled people have lower employment rate and earnings on average than that of the non-disabled, the reason for which is attributed partly to the impact of health impairments on productivity and partly to discrimination. Discrimination occurs when persons of equal productivity are offered different earnings or unequal opportunities for employment (Baldwin and Johnson 1994: 2). Discrimination can result from prejudice, differential information concerning the average productivity of majority and minority worker, or exploitation of worker (Ibid).

Johnson and Lambrinos (1985) estimated the extent of earnings discrimination against disabled men and women using data from 1972 Social Security Survey of the Disabled. Using the Earnings Decomposition technique they attempted to isolate the extent of discrimination on earnings of disabled male and female employees. Baldwin and Johnson (1994) found that handicapped men face greater amount of prejudice than disabled men. Since the group subject to prejudice (handicapped men) constitutes only one fifth of the population of the disabled, the authors conclude that prejudice based earnings discrimination is only a small problem. They further conclude that barriers to employment are a more serious problem than earnings discrimination for people with disabilities, and that the causes of discrimination vary for different impairments (Baldwin and Johnson 1994: 15). Legislation

such as the Americans with Disabilities Act, which was enacted to eliminate the discrimination against people with disabilities, did not achieve its intended result. Beegle and Stock (2003) found that disabled persons have worse labour market outcomes than their nondisabled counterparts, partly due to discrimination in the labour market and due to lack of access to employment opportunities (p. 856). In their study on the decline in employment among the people with disabilities, Stapleton and Burkhauser (2003) concluded that during the 1990s, the overall employment rate of people with disabilities either declined or remained constant, while those of non-disabled witnessed a growth in employment rate during the same period (p. 9-10).

### 2.3 Determinants of Labour Market Outcomes for PWDs

Participation in education and employment by PWDs is marked by factors characterized as determinants of education and labour market outcomes. As discussed in literature, in addition to education, training and experiences (Becker 1964), labour market outcomes for PWDs are also determined by factors such as accessibility to the work place (including transportation), access to assistive technology and job modification. A study by Mitra and Sambamoorthi (2006), reported that the employment rate of persons with disabilities is as low as 37.6 per cent compared to 62.5 per cent for the general population. There are considerable variations across gender, rural-urban disparities, type of disability, and state of residence. It was found that men with disabilities are three times more likely to be employed than women with disabilities (51 per cent vs. 16.1 per cent). Likewise, in rural areas, 38.4 per cent of persons with disabilities are employed compared to 34.9 per cent in urban areas. The employment rate of persons with hearing impairments is 58.8 per cent, while it is as low as 10 per cent for those with mental illness. Wide variations were observed across states with Lakshadweep reporting the lowest employment rate of 18.4 per cent of persons with disabilities while Sikkim reporting 46.8 per cent (Mitra and Sambamoorthi 2006: 200).

There are various factors that determine education and labour market outcomes for PWDs. Education act as a key determinant of labour market outcome for any individual, and this is more so for PWDs. Educational outcomes for the PWDs are determined by number of years of quality schooling (primary, secondary and higher), type of schooling (public vs. private), cost of schooling, family income, parental education and returns to investment on education. In addition to these, factors such as type and age of disability, social attitude, accessibility of school infrastructure and availability of assistive teaching-learning materials also impact the

educational attainment of PWDs. Individuals with disabilities face difficulties in accessing public sphere which begins from the early social interaction and education that also have an important bearing on their labour market participation and outcomes. Moreover, they face challenges in completing quality primary, secondary and higher education. Since higher level of education is positively correlated with employability, this education gap results in higher unemployment rate for PWDs than the non-disabled. This educational disparity in effect is considered one of the many social handicaps of disability.

In India, the current educational status of children with disabilities is affected by the diverse combinations of structural factors (such as caste, gender, religion, poverty etc.) that intersect with disability resulting in varied individual experiences. Lives of people with disabilities in India are largely marked by poverty and marginalization from mainstream social processes (Singal 2010). A recent study by the World Bank (2007), for example, noted that children with disability (CWDs) are five times more likely to be out of school than children belonging to scheduled castes or scheduled tribes (SC or ST). Moreover, when children with disability do attend school they rarely progress beyond the primary level, leading ultimately to lower employment chances and long-term income poverty (Singal 2010:7).

Family characteristics such as number of children, parental education, family income and perceptions of family members can influence educational participation and outcomes of children with disabilities. Family size has a negative effect on the school participation of children with disabilities (Lamichhane 2015). Families decide whether to send their children to school or not given the scenario that they have to divide resources among more number of children (Downey 1995; Black et al. 2005). Complementing this finding, family income which is reflected in terms of monthly household expenditure has a positive effect on school participation of children with disabilities (Lamichhane 2015). Children are deprived of participating in education when families are financially not sound. This may be due to factors such as the heavy financial burden that families have to incur in order to invest in education of all the children. Also, parents may have to take on additional work in order to feed many children, requiring older children to look after younger ones. However, when families have to distribute their resources among more children, girls and children with disabilities are less likely to be sent to school (Hillman and Jenkner 2004).

Based on NSS data, the World Bank (2007: 64) report categorically states that, 'it is very clear that both educational attainment of all PWDs and current attendance of CWDs are very poor and far below national averages'. The study suggests that people with disabilities have much lower educational attainment rates, with 52 per cent illiteracy against a 35 per cent average for the general population. Illiteracy levels are high across all categories of disability, and extremely so for children with visual, multiple and mental disabilities (and for children with severe disabilities across all the categories). Equally, the share of children with disabilities who are out of school is around five and a half times the general rate and around four times even that of the ST population. Even in states with good educational indicators and high overall enrolments a significant share of out of school children are those with disabilities: in Kerala figures stand at 27 per cent and in Tamil Nadu it is over 33 percent. Data also indicates that across all levels of severity, CWD very rarely progress beyond primary school.

United Nations report (2015) states that, while India has made significant improvement in primary education enrolment, the figures for children with disabilities are staggering. Out of 2.9 million children with disabilities in India, 990,000 children aged 6 to 14 years (34 percent) are out of school. The percentages are even higher among children with intellectual disabilities (48 percent), speech impairments (36 percent) and multiple disabilities (59 percent). The report further comments that since 'India has made tremendous efforts to make its education system more inclusive and under the Right to Education Act, all children have the right to go to school...to accommodate a greater number of children with disabilities, further progress is needed'.

Apart from the quantity and quality of schooling, the other factor that determines education and labour market outcomes for the PWDs is the nature of education institutions i.e. inclusive education vs. special education. While some have argued that India has one of the most progressive disability policy framework amongst developing economies, the nature of education institutions and government policies are such that education opportunities for children with disabilities are highly stratified and non-inclusive. Regarding inclusion in schools, the National Policy on Education (NPE 1986) states that, "the objective should be to integrate physically and mentally disabled people with the general community as equal partners, to prepare them for normal growth and to enable them to face life with courage and confidence". However, there remains a huge challenge in operationalizing this vision, which

is in itself marked by contradictory and conflicting messages (Singal 2010). For instance, the Kothari Commission observed that "many handicapped children find it psychologically disturbing to be placed in an ordinary school, and in such cases they should be sent to special schools" (Education Commission 1966: 109). In contrast, there are accounts of children being withdrawn from special schools as the fee being charged was not affordable (Singal 2010). This brings to light the existence of a dual education system for children with disabilities.

Inclusive education is not only about addressing issues of input, such as access, and those related to processes such as teacher training, but it involves a shift in underlying values and beliefs held across the system. It requires that all children, including children with disabilities, not only have access to schooling within their own community, but that they are provided with appropriate learning opportunities to realize their full potential. If one takes a closer look at the public education system, there seems to be a lack of clear understanding about inclusive education or special educational needs. The special schools for long, have isolated children with disabilities from mainstream social processes, hampering the development of their social skills which are crucial determinants for positive labour market outcomes. Given the inherent shortcoming of the public education system, parents of CWDs are increasingly willing to send their children to private schools. A study undertaken by O'Keefe for the World Bank (2007) found that "the share of CWD in private schools in rural Uttar Pradesh and Tamil Nadu is only slightly less than for children without disabilities". He further argues that "parents of CWD who are in school seem equally willing to make investment in private education despite the fact that labour market outcomes for PWD are so obviously worse" (World Bank 2007: 65).

Moreover, PWDs studying in mainstream educational institutions in India experience many difficulties in navigating through the obstacles in the Indian educational system. Problems exist in many areas such as curriculum, untrained staff, facilities, and resources as well as the learning and examination process. The relative physical inaccessibility of educational institutions, unavailability of accessible content in different languages, lack of trained and sensitive teachers, and the lack of awareness about developments in enabling technologies have until now rendered the educational environment itself rather difficult to access (Narasimhan 2012). In addition to the long waiting periods in getting the course materials digitized into accessible formats, as well as the assignment of scribes unfamiliar with subject topics for students to write the examinations put students with print disabilities at additional

disadvantage. Thus, the educational experience often becomes a nightmare for a student who is unable to perform daily life activities (Narasimhan 2012: 12).

A small proportion of students with disabilities (SWD) manage to enter the arena of higher education despite the challenges they encounter in school education. As mentioned above, negative attitudes of faculty and administrative staff may prevent SWD, particularly students with invisible disabilities from disclosing their disability and requesting reasonable accommodations they are entitled to (Jung 2003; Johnson 2006). These attitudes influence success or failure of students with disabilities, and affect inclusion in higher education (Rao 2004). Half of the students with disabilities who participated in a survey expressed that faculty members understood their needs, but only 25 per cent of the faculty were willing to change the materials covered in their courses to suit the student's learning needs (Sachs and Schreuer 2011). About 82 per cent of the students opined that faculty members need to learn more about disability issues (Kraska 2003; Barazandeh 2005).Among the barriers faced by SWD, a study conducted in the University of Delhi found that there is a need to improve access to information and provisions for SWDs. At present, a major barrier faced by SWD is limited access to information about the facilities available for them and not the lack of these services (Saksena and Sharma 2014). Furthermore, there is an urgent need to train and sensitize students, teachers and non-teaching staff and raise awareness about disability issues in colleges. Insensitive behavior on their part creates a barrier that adversely affects the level of academic participation and performance of SWD (Saksena and Sharma 2014).

Employers' perspective act as a major determinant of labour market outcomes of PWDs. Employers may possess stereotypes or biases against PWDs which is reflected in their lack of willingness to hire or low offered earnings to PWDs. Unger (2002) identified factors that influence employers' attitudes towards hiring PWDs which may include type/severity of disability of the employee or applicant, previous experience on the part of the employer with PWDs, size of the employing firm or organization, sector of business or industry, and worker traits exhibited by PWDs in comparison to coworkers without disabilities. Firms will consider the contribution, or productivity of each input relative to its cost in deciding on the types and amount of labor to be used for producing a given level of output. A firm's objective is to minimize its costs for a desired level of output. According to this perspective, employers will weigh the benefits versus the costs of hiring alternative applicants for a position. The costs of hiring include wages, non-wage compensation, training, and other investments,

whereas the potential benefits include the value of employee productivity (Livermore et al. 2000). Employers may choose not to hire individuals with disabilities because they believe PWDs are less productive than equally qualified individuals without disabilities. They perceive that it will be more costly to hire PWDs because accommodations or other investments may be necessary to achieve the same level of productivity as people without disabilities. Furthermore, they believe individuals with disabilities will be heavy users of health care benefits, thus increasing the costs of providing those benefits to employees (Lengnick-Hall et al. 2001).

Evidence comparing the productivity of PWDs to people without disabilities is scarce. Greenwood and Johnson (1987) in their review of studies covering the period 1948 to 1981 concluded that there is a continued record of quality performance. According to the statistics from the U.S. Office of Vocational Rehabilitation, 91 per cent of workers with disabilities were rated either "average" or "better than average," the same as their counterparts without disabilities (Stein 2000). A study by Lee and Newman (1995) reported that 72 per cent of employers who had hired persons with disabilities rated their job performance as average, above average, or excellent. Employers surveyed in McFarlin et al. (1991) demonstrated positive attitudes towards turnover rates, absenteeism, and performance of workers with disabilities.

On the other hand, employers that had not previously employed persons with disabilities had great concerns regarding productivity, proper job fit, accidents or injuries on the job, and worker's compensation claims (Blessing and Jamieson 1999; Diska and Rogers 1996; Fuqua et al. 1984; Johnson et al. 1988; McConnell 1986; Scheid 1999). However, studies concerned with employer reactions to the Americans with Disabilities Act (Lee and Newman 1995; Pitt-Catsouphes and Butterworth 1995; Price and Gerber 2001; Satcher and Hendren 1992) show mixed responses. While the majority reports an overall positive response on the part of employers to those issues perceived not to involve additional costs (e.g. accommodations), some studies (Gilbride et al. 1992; Roessler and Sumner 1997; and Walters and Baker 1996) found that employers were very concerned about perceived costs in accommodations for workers with disabilities. In a survey of 125 employer evaluation forms of mentally retarded workers who were hired from a supported-employment program, Shafer et al. (1988) found that those aspects of job performance that showed the greatest point loss over time were communication, attending to task consistently, and overall performance as compared to

workers without disabilities. McConnell (1986) found that "The most severe barriers facing the handicapped appear to be those based on either the perception of limitations that result from the disability or an assumption that the disability will engender additional cost to employers" (185-7). In contrast, in a study of companies identified as providing excellent employment opportunities for people with mental retardation (Olson et al. 2001), employers reported no differences in human resources costs for disabled workers from the general workforce, except for higher costs in training (cited in Lengnick-Hall et al. 2001).

In India, the private sector appears to have greater reluctance in providing equal opportunities for PWDs in comparison with the public sector since the latter has to comply with reservation quotas stipulated by the PWD Act. In the words of Javed Abidi, Honorary Director, NCPEDP "The private sector continues to be a worry. We seem to have hit a roadblock" (cited in ILO 2011: 15-16). Currently, private sector initiatives in promoting equal opportunities for PWDs are limited. The deterrents range from attitudes towards hiring the disabled to apprehensions of having to make investments for workplace modifications if the disabled are hired (Shenoy 2011: 17). Furthermore, companies who are willing to hire disabled employees receive little help from organizations working in the disability sector in making their infrastructure disabled friendly or conducting sensitization workshops. Anubhuti HR consultancy is the only HR consultancy firm which concentrates on working with PWDs with a business model. Anubhuti Mittal remarks that "corporates have insufficient knowledge and preconceived notions of what is possible and is not possible. This makes it difficult to entice corporates to look at the disabled as viable employment profiles" (Shenoy 2011: 15).

Many employers are skeptical about the potential and abilities of persons with disabilities which prevent them from hiring these persons into the workforce. As reported by ILO (Shenoy 2011: 16), companies have a mindset that the disabled will only be suitable for a very narrow set of job roles. In addition, there are companies who have clear policies of hiring candidates who are physically fit due to which they reject the disabled persons without any proper reason. Accessibility is another major issue with many companies where their workplace is not accessible for the disabled people to work. It is either the design of the building, approaching the work place area, or using washrooms (Ibid). Similarly, persons with disability, especially rural youth, take time to adjust, in the new work environment. If the supervisors are not sensitized and do not give time to the disabled youth to adjust in the workplace and be productive, the resultant would be dropout from the labour market. The

author also found that many companies are hesitant to hire visually impaired people as it would require investment in assisted technologies such as JAWS software which helps the blind in using computers. Employers and top management also assume that PWDs cannot cope with high targets required by competitive work environment. Companies which conduct sensitization programs for CEOs and supervisors find that worker sensitization act as a major stumbling block in building inclusive workforce.

Access to electronic and information technology has the potential to promote positive post-secondary academic and career outcomes for students with disabilities (Burgstahler 2003). However, this potential cannot be realized unless stakeholders ensure that all individuals with disabilities have access to technology that promotes positive academic and career outcomes. Mere access to technology alone will not result in positive outcomes for PWDs; they must learn to use technology in ways that contribute to positive outcomes and experience a seamless transition of availability of technology as they move through educational and career environments (Burgstahler 2003: 7). Although, the benefits of technology may be greater for PWDs than for those without disabilities (Anderson-Inman et al. 1999; Blackhurst et al. 1999; Goldberg and O'Neill 2000; Hasselbring and Glaser 2000; DO-IT 2002; Success stories 2002), individuals with disabilities are less than half as likely as their non-disabled counterparts to own computers, and they are about one-quarter as likely to use the internet (Kaye 2000). In addition, the design of many web pages, instructional software programs, productivity tools and telecommunication products erects barriers for PWDs (Schmetzke 2001; Burgstahler 2002; Opitz et al. 2003). For example, web pages that do not include text alternatives which can be read by speech and Braille output systems limit information access to visually impaired students; the content of a videotape that does not have captions is inaccessible to a viewer having hearing impairment; software with a high reading level may not be accessible to people with learning disabilities or developmental disabilities; and office equipment that cannot be operated from a seating position is inaccessible for an employee who uses a wheelchair for mobility (Burgstahler 2003: 7).

People with disabilities experienced far less career success than their non-disabled peers (DeLoach 1992; Gilson 1996; Wagner and Blackorby 1996; Phelps and Hanley- Maxwell 1997; McNeil 1997, 2000; Benz et al. 1998; National Organization on Disability 1998; National Council on Disability 2000). These differences in achievementbetween individuals with and without disabilities diminished as the former gained more education. The employment rate for individuals with disabilities who had not completed high school was

15.6 per cent whereas it was 30.2 per cent for those who completed high school (Yelin and Katz 1994a, 1994b). For those who had some post-secondary education, their employment rate was 45.1 per cent and for those who had four years of college education, it was 50.3 per cent (Burgstahler 2003). Access to technology that leads to greater success in pre-college and post-secondary education has the potential to improve career outcomes for PWDs (Burgstahler 2003).

In short, labour market outcomes of PWDs are determined by multiple factors that influence each other which has to be analysed from different dimensions. While certain studies have attempted to establish a correlation between higher levels of education and positive labour market outcomes for PWDs, there is a dearth of evidence concerning the degree of such correlation. Moreover, the studies that explored education and labour market linkage for PWDs which are cited in the review deals with only single disability. Studies that examine the variations in labour market outcomes among different disability categories are sparse, both from Indian and International context. Furthermore, apart from the quantitative analysis of employment rate and earnings, there is a need to explore the experiences of PWDs both in education and labour market across different education levels and employment sectors. This study is probably the first of its kind which qualitatively analysed the experiences of PWDs in education and IT labour market by considering the views from many stake-holders such as employees with disabilities, employees without disability, employers, Disabled Persons Organizations (DPOs). It will add to the existing literature on education and labour market, particularly in the context of PWDs by providing an analysis of the factors that determine education and labour market outcomes for PWDs.

# Chapter 3

# LABOUR MARKET OUTCOMES OF PWDs: GLOOMY PAST AND PROMISING FUTURE

## Introduction

Employment is equally important to all people because it facilitates crucial social functions such as financial independence and social inclusion. It has also been found to improve social status, provide social support and enable workers to make a contribution, thereby leading to an increase in self-worth (O'Day and Killeen 2002 cited in Lamichhane 2015: 19). Employment also provides opportunity for social contact and builds new friendships thus increasing a person's self-esteem. In contrast, unemployment can cause poverty and social exclusion and result in a lower sense of self-worth (Lamichhane 2015). Since employment brings several benefits including direct income, the lack of a job may have an adverse impact on psychological function. Linn, Sandifer and Stein (1985) studied the effect of unemployment on physical health and found that symptoms of somatisation disorder, depression and anxiety were significantly greater among unemployed than employed individuals. The effect of unemployment for people with disabilities may be much greater as they tend to be looked upon as dependents of their families and relatives and are not expected to be gainfully employed or independent (Lamichhane 2015).

Employment has a significant role to play in poverty reduction since unemployment and under-employment lies at the core of poverty. Labour is often the only asset for the poor which they can use to improve their well-being. Hence, it is essential to create productive employment opportunities in order to achieve poverty reduction and sustainable economic and social development. The United Nations report titled 'The Centrality of Employment to Poverty Eradication' (2005), which examined the relationship between growth, employment and poverty argued that employment is the missing link in the growth and poverty reduction equation, whereby decent and productive employment forms the fundamental cornerstone of development and poverty reduction (Lamichhane 2015).For much of the world's poor, escaping poverty implies raising both the quantity and quality of their employment, either in the wage sector or in self-employment activities. Also, the report highlights the fact that PWDs often face discriminatory treatment in the labour market and their unemployment rate is relatively high.

The present day labour market is characterized by discrimination arising out of expansion in production by developed countries, to developing countries in search of cheap labour, thereby creating pockets of wage exploitation and poverty in developing countries. One source of discrimination towards PWDs in a capitalist labour market is by way of exclusion, in terms of unemployment or underemployment or by offering them lower wages than their non-disabled counterparts. If left to itself, the labour market would tend to determine who is 'disabled' or not, and consequently whether one is exploitable, leading to an unfavorable system for both people with disabilities looking for work as well as those who are employed (Russell 2001). This implies that difficulties in employment faced by individuals with disabilities are due to a complex system of ill-disposed environments and disabling barriers, that is, institutional discrimination (Barnes 1992).

The right to employment for PWDs has been enshrined under Article 27 of the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD). The UNCRPD recognizes the right of people with disabilities to work on an equal basis with others. It includes the opportunity to gain a living by work freely chosen or accepted in the labour market and work environment that is open, inclusive and accessible to persons with disabilities. Furthermore, the UNCRPD prohibits all forms of employment discrimination, promotes access to vocational training, promotes opportunities for self-employment and calls for reasonable accommodation in the workplace (WHO 2011: 236).

Labour market outcomes for PWDs are determined by a number of factors including, productivity differentials, labour market imperfections associated with discrimination and prejudice, and disincentive created by disability benefit systems (WHO 2011). To address labour market imperfections and encourage the employment of people with disabilities, many countries have laws prohibiting discrimination on the basis of disability. These include The Equality Act 2010 in UK and The Americans with Disabilities Act in the USA. Enforcing antidiscrimination laws is expected to improve access to the formal economy and have wider social benefits. With an aim to increase employment opportunities for PWDs, many countries have adopted specific measures such as quotas. In India The Persons with Disabilities (Equal Opportunity, Protection of Rights and Full Participation) Act, 1995 serve as a guarantee of rights and equal opportunities for PWDs whereby the Act reserves three percent of seats in education and employment for PWDs. Vocational rehabilitation and employment services such as job training, counselling, job search assistance and placement can develop the capabilities of PWDs to compete in the labour market and facilitate their inclusion in the

labour market (WHO 2011). This chapter is organized as follows: Section 3.1 explains labour market participation and outcomes of people with disabilities. The issue of PWDs in informal sector is discussed in Section 3.2. The next section discusses the barriers for labour market participation for PWDs. Section 3.4 explains the policy measures to address barriers to labour market participation. Education and employment status of PWDs in India is discussed in section 3.5. Enrolment status of Students with Disabilities (SWDs) in higher education in India is discussed in the following section. Section 3.7 presents best practices in the inclusion of PWDs. The final section highlights the business case for employing PWDs.

### 3.1 Labour Market Participation and Outcomes of People with Disabilities

According to an ILO (2007) estimate, there are nearly 600-650 million people with disabilities around the world. Although around 470 million of them are of working age population, unemployment rates for this group remain much higher (ILO 2007). In order to cut off the relationship between disability and poverty, people with disabilities (PWDs) must be equipped to gain access to work or livelihoods, so as to overcome exclusion faced by PWDs and their families (Yeo and Moore 2003; Hoogeveen 2005). Some employers fear that PWDs are unqualified and not productive. But PWDs have appropriate skills, strong loyalty and low rates of absenteeism and more companies are finding it efficient and profitable to employ PWDs (WHO 2011). If people with disabilities have to live to their fullest potential, their participation in the labour force is important. This will allow the labour market to maximize human resources as well as promote human dignity and social cohesion which will lead to greater market output (Ibid). With the ageing world population, the prevalence of disability is expected to increase still further, which means that there will be a growing need to accommodate increasing numbers of these people in the working-age population (UN 2006 cited in Lamichhane 2015).

The ratio of employed to working age population for PWDs is half or less than those without disabilities (UN 2015: 88). As PWDs are often discouraged from searching a job, their participation in the labour market tends to be much lower than that of the non-disabled. Employment opportunities are scarce even for those who look for work, due to inaccessible workplaces and information, discrimination, negative attitudes towards PWDs and misconceptions about their capacity to work. Data from 1990-3 showed that in many countries, most people considered it unfair to give jobs to disabled people when non-disabled people cannot find jobs (World Values Survey (1990-3 wave) cited in UN 2015: 88, 89). The

available statistics on the participation of PWDs in the labour market in various countries is not very encouraging. Despite an overall increase in labour force participation in the United States, the participation level of PWDs remains low (Cook and Burke 2002). This finding is further supported by a study of the relationship between disability, gender and unemployment by Randolph and Andresen (2004) for the same country. People with disabilities are primarily employed in part-time, low-status jobs that offer little chance for advancement (Braddock and Bachelder 1994) and the income level of working individuals with disabilities is often up to 35 percent less than their non-disabled counterparts (Bowe 1992).

A study by the Organization for Economic Cooperation and Development (OECD 2010) of its 29 member countries found that, the percentage of part-time employees among employed persons with disabilities were higher than for their non-disabled peers. The study further revealed that in 27 countries, working-age PWDs experienced significant labour market disadvantage and worse labour market outcomes than their working-age non-disabled peers. On an average, their employment rate was found to be just over half (44 percent) than that of their non-disabled counterparts, (75 per cent) and their inactivity rate was about 2.5 times higher than that of the non-disabled people (49 per cent and 20 per cent respectively) (OECD 2010). The marginalization of PWDs in the labour market is even more glaring in the developing world. This is evident from the employment data given in table 3.1.

Table 3.1 presents employment ratios for PWDs to the ratios for overall population adapted from World Report on Disability (WHO 2011), in ascending order of countries' Gross National Income, categorized according to World Bank's analytical income groups. Table 3.1 shows that employment rates of PWDs are consistently below than that of the overall population, with employment ratios ranging from a low of 30 per cent in South Africa (upper-middle-income country) to a high of 92 per cent in Malawi (low-income country). In a few other low-income countries such as Lao PDR, Zambia and the Philippines, the employment rate of PWDs stands at above 80 per cent. Because non-working PWDs do not often look for jobs and are thus not counted as part of the labour force, the unemployment rate may not give a comprehensive picture of their status in the labour market. Instead, the employment rate is more commonly used as an indicator of the labour market status of PWDs (WHO 2011; Lamichhane 2015).

*Table 3.1: Employment ratio of people with disabilities to overall population, by country's income level*

| *Country* | *Year* | *Gross national income (US$)* | *Employment rate of overall population (%)* | *Employment rate of PWDs (%)* | *Employment ratio* |
|---|---|---|---|---|---|
| *Low-Income Countries* | | | | | |
| Malawi | 2003 | 190 | 46.2 | 42.3 | 0.92 |
| Lao PDR | 2003 | 330 | 80.7 | 72.0 | 0.89 |
| Bangladesh | 2003 | 400 | 51.1 | 35.0 | 0.68 |
| India | 2002 | 470 | 62.5 | 37.6 | 0.61 |
| Zambia | 2005 | 490 | 56.5 | 45.5 | 0.81 |
| Pakistan | 2003 | 540 | 50.7 | 30.0 | 0.59 |
| Philippines | 2003 | 1,030 | 54.4 | 48.0 | 0.88 |
| *Lower-Middle-Income Countries* | | | | | |
| Peru | 2003 | 2,160 | 64.1 | 23.8 | 0.37 |
| Upper-Middle-Income Countries | | | | | |
| Poland | 2003 | 5,480 | 63.9 | 20.8 | 0.33 |
| South Africa | 2006 | 5,480 | 41.1 | 12.4 | 0.30 |
| Mexico | 2003 | 6,140 | 60.1 | 47.2 | 0.79 |
| *High-Income Countries* | | | | | |
| Spain | 2003 | 17,570 | 50.5 | 22.1 | 0.44 |
| Australia | 2003 | 21,170 | 72.1 | 41.9 | 0.58 |
| Canada | 2003 | 24,640 | 74.9 | 56.3 | 0.75 |
| Germany | 2003 | 25,400 | 64.8 | 46.1 | 0.71 |
| Austria | 2003 | 27,020 | 68.1 | 43.4 | 0.64 |
| The | 2003 | 28,800 | 61.9 | 39.9 | 0.64 |
| United | 2003 | 29,170 | 68.6 | 38.9 | 0.57 |
| Japan | 2003 | 34,010 | 59.4 | 22.7 | 0.38 |
| Norway | 2003 | 44,010 | 81.4 | 61.7 | 0.76 |
| United States | 2005 | 44,670 | 73.2 | 38.1 | 0.52 |

Source*: Lamichhane, 2015*

Even when PWDs have lower employment outcomes, there exist wide variations in employment rates between men and women with disabilities. Analysis of the World Health Survey results for 51 countries shows that employment rates for men with disabilities are nearly three times (52.8 per cent) the employment rate for women with disabilities (19.6 per cent), compared with an employment rate of 64.9 per cent for men and 29.9 per cent for women without disabilities (WHO 2011: 237). Although PWDs experience lower employment rate, the scenario is more alarming for women with disabilities. This lower employment rate for women with disabilities may be attributed to dual discrimination that a woman may have to face, owing to her gender and her disability. Also, regardless of disability status, women might experience a transition in employment with marriage and childbirth (Lamichhane 2015).

Furthermore, employment rates vary among people with disabilities depending on the severity of their impairments. People with multiple impairments are less likely to be

employed than those with single impairment due to factors such as, the severity of their impairment and workplace accommodations that does not meet their individual needs (Lamichhane 2015). Using data on developing countries from the World Health Survey, Mizunoya and Mitra (2013) concluded that, people with multiple disabilities experience much lower employment rates than people with single disability. Wide variations exist in employment rates based on the type of disability wherein, people with psycho social disabilities and intellectual disabilities experience the lowest employment rate. A study in UK found that people with psycho-social disabilities face greater difficulties in gaining entry into the labour market and obtaining earnings compared to people with other disabilities (WHO 2011: 237). Another study found that people with intellectual impairments were three to four times less likely to be employed than people without disabilities and were more likely to experience frequent and longer periods of unemployment. They were less likely to be competitively employed and are more likely to be employed in segregated settings (WHO 2011: 238).

People with disabilities receive relatively lower earnings than their non-disabled counterparts due to factors such as low levels of education and training and lower occupational experience. Women with disabilities earn relatively less than men with disabilities. A study by O'Hara (2004) showed that, combining gender and disability discrimination, the barrier of wage discrimination may confront women more often and more severely than other impediments to work. Empirical research in the United States revealed that discrimination reduced wages and opportunities for employment (WHO 2011:239). As a result of these persistent barriers, PWDs are more likely to experience unemployment spells, and are most likely to make choices to find low paying, less stressful jobs particularly in informal sector (Lamichhane 2015).

### 3.2 People with Disabilities and Informal Sector

One of the most common features of developing countries is the dominance of the informal sector. Majority of the labour force find employment in informal labour markets, with many engaged in self-employment activities. From the data given in table 3.2, it can be observed that higher proportions of PWDs are employed in informal sector in comparison to their non-disabled counterparts. In India, for example, 87 per cent of people with disabilities who work are in the informal sector (Mitra and Sambamoorthi 2006). Similarly, in Lao PDR, over 80 per cent of the population is in the informal sector, with most individuals with disabilities

having little access to education and being unable to read or write. Relatively few gain access to vocational training that will enable them to acquire skills for gainful employment. As a result, most rely on the support of their families or subsistence-level informal activities to generate an income (Murray 1998; Sonthany 2006).

The self-employment rate between people with and without disabilities for 15 developing countries, based on countries income level, which has been adapted from Mizunoya and Mitra (2013) study, is provided in table 3.2. A general pattern that can be observed from the data, among the developing countries identified, after including an analytical income category is that, lower the gross national income (GNI), higher will be the self-employment rate for people regardless of disability status (Lamichhane 2015). This is consistent with the fact that in countries with a lower GNI or with a large population living below the poverty line, majority tend to be employed in the informal sector due to lower education, training and opportunities (Murray 1998; Mitra and Sambamoorthi 2006; Sonthany 2006).

*Table 3.2: Self-employment rate between people with and without disabilities by country's income level*

| *Country* | *Gross national income (US$)* | *Self-employment rate of non-PWDs (%)* | *Self-employment rate of PWDs (%)* |
|---|---|---|---|
| Malawi | 190 | 74 | 84 |
| Burkina Faso | 290 | 91 | 94 |
| Ghana | 320 | 82 | 83 |
| Lao PDR | 330 | 83 | 84 |
| Zambia | 370 | 81 | 89 |
| Bangladesh | 400 | 81 | 87 |
| Kenya | 410 | 62 | 75 |
| Zimbabwe | 410 | 45 | 68 |
| Pakistan | 540 | 68 | 67 |
| Philippines | 1030 | 50 | 60 |
| Paraguay | 1040 | 52 | 67 |
| Dominican | 2560 | 47 | 52 |
| Brazil | 2950 | 41 | 55 |
| Mauritius | 4220 | 20 | 29 |
| Mexico | 6140 | 45 | 53 |

Source: Lamichhane, 2015

Although the models of self-employment and income generation defer in varying degrees, there appears to be one constant in relation to disabled people in developing countries. A greater emphasis is given to self-employment due to the absence of wage employment options and the lack of income support from social security programs (Mizunoya and Mitra 2013). It is estimated that for each disabled person employed in the formal sector, at least

four are generating income out of their own enterprises, mostly in the informal sector (Harris 1994). For instance, in Lebanon two-thirds of PWDs are self-employed, and they are largely marginalized from the mainstream labour market due to factors associated with disability such as the likelihood that they will have inadequate educational qualifications (Wehbia and El-Lahibb 2007). Even among developing countries, the disability gap in employment is more common in middle-income countries compared with low-income countries (Mitra, Posarac, and Vick 2013; Mizunoya and Mitra 2013). This suggests that as countries develop, PWDs face increasing barriers to employment; but studies fall short of explaining the reasons behind this phenomenon which requires further research (Lamichhane 2015).

People with disabilities might choose self-employment as it allows individuals to arrange their own schedules at a pace that is comfortable for them. If they are not permitted flexibility in scheduling and other aspects of their work, that is, giving them adequate time to prepare for work, to travel to and fro from work, and to deal with health concerns, PWDs, particularly those with severe impairments may choose self-employment or even part-time jobs. Factors such as lower level of qualification, inaccessible workplace environments and lack of workplace support, negative attitudes of family, co-workers and society that lower their self-esteem and employers not trusting their productivity could be some of the reasons responsible for their lower labour market participation and higher tendency to engage heavily in the informal sector (Lamichhane 2015). This could limit their opportunity for social participation and reduces their level of income.

Therefore, contingent, part-time and even sheltered employment is traditionally considered an attractive option for PWDs, one in which many still engage, because these jobs provide the relative flexibility that they require. Research in the United States of America has shown that 44 per cent of workers with disabilities are in some contingent or part-time employment arrangement, compared with 22 per cent of those without disabilities (WHO 2011). Health issues were the most important factor explaining the high prevalence of contingent and part-time work (Ibid). Even though these jobs may provide lower pay and fewer benefits and are less than ideal, many people with severe impairments tend to choose any kind of employment as they are still better than unemployment (Schur 2003). However, it should be noted that PWDs have the potential to engage in white-collar, full-time and better-paid jobs in the formal sector (Lamichane 2015). Providing access to quality education, particularly technical and vocational education and skill development programs, improving employer and co-

worker attitudes, and ensuring reasonable workplace accommodation can widen the occupational options for people with disabilities.

### 3.3 Barriers for Labour Market Participation for PWDS

People with disabilities face disadvantages in the labour market which is reflected in terms of the low employment rates, lower wages and fewer opportunities for career advancement. Their lack of access to education and training or financial resources may be responsible for their exclusion from the labour market. It could also be associated with the nature of the workplace or employers' perceptions of disability and disabled people. Social protection systems may also create incentives for PWDs to exit employment and move on to disability benefits (WHO 2011; Lamichhane 2015). This section will discuss some of the barriers PWD's encounter in accessing labour markets.

***Perceived Low Productivity of People with Disabilities***

Labour market theory suggests, for reasons of both supply and demand, that the employment rate of people with disabilities will be lower than that of people without disabilities. On the supply side, PWD's might incur a higher cost of working because they may require extra effort to reach the workplace and perform their task. Employment may result in a loss of disability benefits and health care coverage in countries with generous disability allowance as its value is greater than the wages that could be earned. Consequently, PWD's are likely to have a higher reservation wage (the lowest wage a person is willing to work for) than people without disability (WHO 2011).

On the demand side, a health condition may make a person less productive, especially if the workplace environment does not accommodate PWD's. In such circumstances, a person would be offered a lower market wage. The effects of a disability on productivity are difficult to estimate, because that depend on the nature of impairment, the working environment, and the tasks required in the job. For example a visually impaired person may find it challenging to work in a chemical factory but he would have to face fewer obstacles for taking up a job in banking or IT sector. In addition, a person with a disability may be offered a lower wage as a result of discrimination. A higher reservation wage and a lower market wage thus make a person with disability less likely to be employed than one without disability (WHO 2011).

In addition, disability benefits can act as a disincentive to work if PWD's expect a lower return from employment since it would result in loss of social security. This is particularly

true in high income countries where the size of the disability allowance is substantially large (Baldwin and Johnson 1994, 2000). The ratio of benefits to wages is an important factor that determines the labour market participation of PWD's. The disincentive effect of wage discrimination gets reinforced by the provision of social security such as disability insurance (Johnson and Lambrinos 1985). Conversely, disability benefits are likely to have a positive impact as it can provide the necessary income support during periods of unemployment. However, long-term disability benefits can act as disincentives for people to seek employment and return to work (Chen and van der Klaauw 2008).

***Lack of Access to Education and Training***

Education and training is an integral pathway to productive employment. Young people with disabilities often lack access to formal education and opportunities to develop their skills, in technical and vocational education, particularly in the field of information technology (WHO 2011). Even when many have access to education, the transition from primary to secondary and higher education is low due to the non-inclusivity of the educational systems which further limits their opportunity to participate in the labour market. In matters of choosing a career, PWD's have lesser options available, adversely affecting their transition from education to employment. Lack of access to finances limits the educational and employment prospects for PWD's. The loss of productivity owing to disability can be compensated through the use of assistive technology. The lack of assistive technologies could act as an impediment for the education and labour market participation of PWD's.

Inaccessibility to public services is an important factor for the low participation of PWD's in the labour market. For example the difficulties experienced in accessing public transport and the challenges encountered in navigating the workplace etc are impediments in the effective participation of PWD's. In this information age, access to information is another crucial factor particularly for visually challenged persons as it can determine their labour market participation.

***Misconceptions about PWD's***

Negative connotations about disability have existed in society for a long period of time. It begins in the family and thus is perpetuated in society. Family members may have negative perceptions about the ability or disability of a disabled member which could severely hamper their social participation. In schools and colleges, fellow classmates and teachers might exclude PWD's from active participation in classroom interactions and co-curricular

activities. Such attitudes can lower the self esteem of PWD's and even inculcate a pessimistic attitude in them. Misconceptions about the productivity of PWD's may hinder employers from employing such candidates and even if they are employed, they are offered lower wages. This gives rise to discrimination in the labour market with the degree of discrimination varying based on type of disability. People with psycho-social disability and intellectual disability experience greater discrimination. The World Report on Disability (2011) states that 29 per cent of people with schizophrenia experienced discrimination in either finding or keeping a job, and 42 per cent felt the need to conceal their condition when applying for work, education, or training. Co-workers may hesitate to include PWD's in team activities on the basis of the notion that they require a longer time for completion of projects thus hampering the success of the team. Misconceptions about their abilities can even cause PWD's from seeking for employment. The social isolation of people with disabilities restricts their access to social networks, especially of friends and family members, which could help in finding employment.

***Overprotection of Labour Laws***

The labour policies of some countries which aim to ensure the welfare of workers might prove to be overprotective thereby sending negative signals to the society. The labour codes of Eastern European countries mandate for instance, shorter working days, more rest periods, longer paid leave and higher severance pay for disabled workers, irrespective of the need (WHO 2011). Although such provisions take into account the accommodations required by the PWD's, they might instil negative perceptions among employers that such employees are less productive and more costly to employ.

### 3.4 Policy Measures to Address Barriers to Labour Market Participation

Many policy measures have been put in place in various countries to help PWD's to overcome the barriers they face in labour market participation. The common measures adopted are quotas and anti discrimination legislations. For example, employment quotas exist in many countries wherein a certain percentage of jobs are reserved for PWD's. Germany has five per cent reservation which is mandatory for firms that employ more than 20 workers. Similarly Turkey reserves three per cent of jobs whereas South Africa mandates two per cent of jobs to be reserved for PWD's (WHO 2011). In India the Persons with Disabilities Act 1995 stipulates three per cent reservation in jobs for PWD's in public sector. It has been increased to four per cent as per the new, Rights of Persons with Disabilities

(RPD) Act 2016. However employment quotas may not serve as an effective instrument for the inclusion of PWD's in the labour market if there are no penalties imposed for non-compliance. Even if penalties are imposed, employers might prefer to pay the penalty rather than include PWD's in their workforce. This is true in the case of Japan where employers were willing to pay fines rather than comply with the legislations (AIF 2014). Furthermore even if quotas are in place, firms may not be willing to employ PWD's beyond the quota requirement and in many cases the number of PWD's employed are lower than the quota requirements.

Anti-discrimination laws prohibit discrimination against individuals based on their disability and mandates that they should have equal access to all public services and equal opportunities to participate in the social, economic and political activities. In countries where such laws exist, it is illegal to make decisions about a person's employment on the basis of their disability, as in Australia (1992), Canada (1986, 1995), New Zealand (1993), and the United States (1990) (WHO 2011). Furthermore, these laws stipulate that employers should provide reasonable accommodations to PWD's which is expected to reduce employment discrimination, increase access to the workplace and change perceptions about the ability of PWD's to be productive workers (Ibid). Special employment programs such as supported employment and sheltered employment could also serve as alternative options for enhancing the labour market participation of PWD's. Supported employment integrate PWD's into the competitive labour market by providing employment coaching, specialized job training, individually tailored supervision, transportation and assistive technology that will enable them to learn and perform better (WHO 2011). This model has been successful in providing employment to those with severe impairments, people with psycho-social disability and intellectual disability (Ibid). Enterprises that work in the open market with a social objective of providing employment to people experiencing the greatest disadvantage are known as social firms or social enterprises. Such enterprises aim to create employment opportunities for PWD's along with non-disabled counterparts. Recent estimates suggest that there are around 3800 social firms in Europe, predominantly in Germany and Italy employing nearly 43,000 PWD's (WHO 2011: 242). Sheltered employment is primarily meant for those people who are unable to compete in the open labour market. It is provided in separate facilities either in a sheltered business or in segregated part of a regular enterprise (WHO 2011). However, sheltered work arrangements are less than ideal because they isolate PWD's from the mainstream labour market and operate with a charity model.

In order to minimize the cost of providing accommodation and to promote the employment of PWD's, employers are offered various kinds of incentives such as tax concessions and additional funding for workplace modification. In addition to the provisions mentioned above, PWD's find employment through employment agencies or consultancy firms. In India, special employment exchanges and special placement cells in general employment exchanges have been established to assist PWD's find employment. Also, NGOs working with PWDs play a proactive role as mediators between the employers and disabilities. However, in western countries, general employment agencies are encouraged to serve job seekers with disabilities in the same setting as other job seekers rather than referring them to special placement services. While countries such as Austria, Belgium, Denmark and Finland include PWD's in services offered by mainstream employment agencies; Singapore and China has targeted services for the employment of PWD's (WHO 2011).

There is a change in perception that is taking place with regard to the provision of employment services for PWD's. With an aim to find a job match that will lead to viable long-term employment and life-long career, there is a move from a model of job placement that try to fit people into available job openings to a "person-centric" model that involve the interests and skills of the individual. Furthermore, there is a shift from sheltered employment towards supported employment that is from "train and place" to "place and train". The idea behind this is to help dispel believes that disabled people cannot perform a particular job (WHO 2011).

Taking a glance through the global scenario of the labour market outcomes of PWDs, one can conclude that they have lower outcomes when compared with people without disabilities. Among PWDs, women with disabilities have lower outcomes than men with disabilities, and people with psycho-social disabilities and intellectual disabilities fare worse when compared with people with vision or hearing impairments. This trend can be observed across developed and developing countries with some variations wherein PWDs in developed countries have better labour market outcomes than their peers in developing countries. Wide variations exist across developing countries whereby PWDs experience relatively higher employment outcomes in low-income countries when compared with their peers in middle-income countries. However, research on the labour market status of PWDs in developing countries is limited, and hardly any studies have aimed to explore the linkage between education and labour market outcomes for PWDs. In this context, it is imperative to closely examine

country-specific data to get a better picture on the labour market status of PWDs in developing countries.

The following section presents disability estimates across gender, rural/urban and type of disability for India. Data on distribution of PWDs by education levels and their employment rates are also given. The rationale for choosing India as an area of study is driven by the fact that it is the fastest growing economy in the world with a unique advantage of having the largest proportion of younger population. Despite growing at an impressive annual average rate of seven per cent over the past decade, many sections of the Indian population such as women, tribal people, those belonging to backward caste and people with disabilities still experience poverty and marginalization. This implies that the benefits of growth have not been inclusive. Among the groups that experience exclusion and marginalization, PWDs face the greatest disadvantage with their numbers not being reported accurately in census and NSS surveys and their participation in education and labour market being one of the lowest. In this backdrop, it is warranted to examine the education and labour market outcomes of PWDs in India.

### 3.5 Education and Employment Status of People with Disabilities in India

In India, disability issues did not receive adequate attention from the academia and the policy makers for a long period of time. This is due to the lack of survey data on disability estimates as well as data on education and employment participation of PWD's. A question on disability was included for the first time in the National Census of 1981 which was later dropped in the subsequent census of 1991. Thereafter it was re-included in the 2001 census which estimated that the PWD population was around 21.5 million or 2.13 per cent of the overall population. Out of the total PWD population, 2.37 per cent are males and 1.87 per cent are females in 2001 (Table 3.3). On the other hand the data compiled by the National Sample Survey (NSS) in its $58^{th}$ round (2002-03) estimated the PWD population to be 18.5 million or 1.8 per cent of the total population. These estimates are much lower than international estimates such as the WHO and World Bank who estimated that around 4-8 per cent or 40-80 million of people in India are disabled. Although there are huge variations between the census and NSS estimates, the census estimate is considered to be more reliable since it covers the entire population. Failure to adopt a standard question on disability which are comparable with international estimates and the lack of training among enumerators to accurately report disability can be attributed as the reasons for the lowered estimates.

Furthermore, households may be reluctant to disclose disability of a member due to the accompanying social stigma and exclusion.

*Table 3.3: PWD in total population by gender (in %)*

| | Persons | Males | Females |
|---|---|---|---|
| 2001 | 2.13 | 2.37 | 1.87 |
| 2011 | 2.21 | 2.40 | 2.01 |

Source: Census of India 2001 and 2011, accessed from www.censusindia.gov.in.

*Table 3.4: Distribution of PWD Population by gender (in %)*

| | Male | Female | Total |
|---|---|---|---|
| 2001 | 57.54 | 42.46 | 100 |
| 2011 | 55.90 | 44.10 | 100 |

Source: Census of India 2001 and 2011, accessed from www.censusindia.gov.in.

In the backdrop of the 2001 data, the 2011 census estimates provide us a better picture of the PWD population in the country. A broader definition on disability was adopted by including eight types of disability whereas census 2001 had only five types. According to census 2011, the proportion of PWD population to overall population was estimated at 2.21 per cent of which 2.40 per cent are males and 2.01 per cent are females (Table 3.3). Among the total PWD population, 44.10 per cent are females and 55.90 per cent are males in 2011 (Table 3.4). A comparative analysis of 2001 and 2011 census data reveals a marginal increase in the proportion of females with disabilities over the census period. Analysis of caste based estimates shows that there has been a marginal increase in the proportion of both SC and ST population with disabilities to that of overall population over the census period (Table 3.5).

*Table 3.5: SC and ST Population among the PWD (in %)*

| | SC | | | ST | | |
|---|---|---|---|---|---|---|
| | PWD | Male | Female | PWD | Male | Female |
| 2001 | 16.94 | 16.88 | 17.02 | 7.39 | 7.17 | 7.68 |
| 2011 | 18.38 | 18.48 | 18.24 | 7.98 | 7.64 | 8.42 |

Source: Census of India 2001 and 2011, accessed from www.censusindia.gov.in.

*Table 3.6: Distribution of PWD by disability and gender (in %)*

| | 2001 | | | 2011 | | |
|---|---|---|---|---|---|---|
| Categories of PWD | Persons | Male | Female | Persons | Male | Female |
| In seeing | 48.55 | 45.47 | 52.71 | 18.77 | 17.61 | 20.25 |
| In Hearing | 5.76 | 5.35 | 6.32 | 18.92 | 17.87 | 20.25 |
| In Speech | 7.49 | 7.47 | 7.51 | 7.45 | 7.49 | 7.40 |
| In Movement | 27.87 | 30.96 | 23.68 | 20.28 | 22.49 | 17.47 |
| Mental Illness | 10.33 | 10.75 | 9.77 | 2.70 | 2.77 | 2.60 |
| Mental Retardation | -- | -- | -- | 5.62 | 5.81 | 5.37 |
| Multiple Disability | -- | -- | -- | 7.89 | 7.76 | 8.07 |
| Any Other | -- | -- | -- | 18.38 | 18.20 | 18.60 |

Source: Census of India, www.censusindia.gov.in.

With regard to distribution of disabled population by type of disability, Census 2011 includes eight types whereas census 2001 only includes five types. According to Census 2001, nearly 50 per cent of PWDs came under the category of visual disability whereas in Census 2011, the highest proportion of PWDs account for movement disability (Table 3.6). One possible explanation for the decline in the number of people with visual disability could be the inclusion of additional categories such as 'multiple disabled' and 'any other' in Census 2011. The second largest category among the PWD population in 2011 is those with hearing impairment, followed by those with visual impairment and any other disability. A notable feature of this survey is the inclusion of 'mental retardation' as one of the categories which accounts to 5.62 per cent of the PWD population. The proportion of people with mental illness comprised 10.33 per cent of the total disabled population in 2001 but in 2011 they account to only 2.70 per cent (Table 3.6). We must also note that the ability to hide the incidence of psychological disabilities and the greater attitudinal barrier that accompanies such disabilities are responsible for their low reporting. In 2006, the UNCRPD (United Nations Convention for the Rights of Persons with Disabilities) adopted a different nomenclature with regard to mental disabilities by introducing the terms 'psycho-social disability' and 'intellectual disability'. Despite India having ratified the convention in 2007, Census 2011 uses the old terminology which stigmatizes persons with psychological disability.

The participation of PWD's in socio-economic and political processes has always remained low due to various barriers that hinder them from entering the mainstream. The barriers they have to encounter include inaccessible physical and structural environments to that of negative social attitudes. This is evident from their lower educational achievement which can be seen in the tables 3.7 and 3.8.

*Table 3.7: Distribution of Overall Population by Educational Level (in %)*

| | 2001 | | | 2011 | | |
|---|---|---|---|---|---|---|
| | Persons | Males | Females | Persons | Males | Females |
| Illiterate | 45.49 | 36.77 | 54.85 | 36.93 | 30.24 | 44.03 |
| Literate | 54.50 | 63.22 | 45.14 | 63.07 | 69.76 | 55.97 |
| Literate without education level | 1.95 | 2.13 | 1.74 | 2.90 | 3.09 | 2.70 |
| Primary | 14.27 | 15.69 | 12.73 | 15.21 | 15.93 | 14.44 |
| Middle | 8.77 | 10.51 | 6.91 | 11.06 | 12.46 | 9.58 |
| Matric/Secondary | 7.70 | 9.62 | 5.64 | 8.75 | 10.23 | 7.18 |
| Higher Secondary | 3.68 | 4.62 | 2.66 | 6.44 | 7.46 | 5.35 |
| Non-Technical Diploma | 0.04 | 0.05 | 0.03 | 0.09 | 0.12 | 0.06 |
| Technical Diploma | 0.36 | 0.55 | 0.15 | 0.60 | 0.86 | 0.32 |
| Graduate and above | 3.66 | 4.80 | 2.44 | 5.64 | 6.76 | 4.45 |

Source: Census of India, www.censusindia.gov.in

*Table 3.8: Distribution of PWD Population by Educational Level (in %)*

| | 2001 | | | 2011 | | |
|---|---|---|---|---|---|---|
| | Persons | Males | Females | Persons | Males | Females |
| Illiterate | 50.69 | 41.85 | 62.68 | 45.48 | 37.63 | 55.44 |
| Literate | 49.31 | 58.15 | 37.32 | 54.52 | 62.37 | 44.56 |
| Literate but below primary | 13.09 | 14.52 | 11.14 | 10.59 | 11.38 | 9.59 |
| Primary but below middle | 13.02 | 14.89 | 10.49 | 13.26 | 14.65 | 11.49 |
| Middle but below matric/secondary | 7.91 | 9.68 | 5.51 | 9.13 | 10.79 | 7.03 |
| Matric/Secondary but below graduate | 9.88 | 12.51 | 6.31 | 12.86 | 15.55 | 9.46 |
| Graduate and above | 2.94 | 3.86 | 1.71 | 4.65 | 5.60 | 3.44 |

*Source*: Census of India, www.censusindia.gov.in

A glance of the census 2011 data reveals a higher illiteracy rate among PWD's in comparison to the overall population. The illiteracy rate among the PWD population stands at 45.48 per cent whereas it is only 36.93 per cent for the rest of the population. A similar trend can be observed across all education levels wherein the educational achievement of PWD's is lower than that of overall population. A closer examination of the same with a focus on gender reveals that women with disabilities have lower educational achievements than men with disabilities, across all educational levels. The data on education levels for overall population

includes additional categories such as literate without education level, non technical diploma, technical diploma and unclassified which isn't available in the data on PWD's. Hence any attempt to make a comparison between the education levels of PWD's and the overall population must be dealt with caution. A comparison between the educational attainments of the PWD's and the overall population on the basis of the 2001 and 2011 census data reveals an increase in the education levels of both categories. The percentage of illiterate persons among the PWD declined from 50.69 per cent in 2001 to 45.48 per cent in 2011 and from 45.49 per cent in 2001 to 36.93 per cent in 2011 for the overall population. Similarly the percentage of literate persons among the PWD increased from 49.31 per cent in 2001 to 54.52 per cent in 2011 and from 56.45 per cent in 2001 to 65.97 per cent in 2011 for the overall population. The percentage of literate persons for the overall population has been calculated by combining the data for 'literate' and 'literate without education level'. However a closer examination reveals a huge disparity in the educational attainments of the PWD's to that of the overall population. There has been 9.52 per cent increase in the number of literate persons among the overall population while the increase is only 5.21 per cent among the PWD's. This gap is least for persons who have completed graduation and above. We also notice a higher percentage of persons completing primary level of education and pursuing higher levels of education (middle and secondary) among both PWD's and overall population. A plausible explanation for this could be the implementation of the Right to Education Act 2009 which facilitates free and compulsory education up to the elementary level (Grade 1-8).

*Table 3.9: Employment Rate among PWD (in %) (Age 15 to 59), 2001*

| | Urban+ Rural | | | Rural | | | Urban | | |
|---|---|---|---|---|---|---|---|---|---|
| Types of disability | Persons | Males | Females | Persons | Males | Females | Persons | Males | Females |
| In seeing | 61.08 | 79.33 | 38.06 | 65.46 | 81.14 | 45.80 | 50.63 | 75.05 | 19.36 |
| In Hearing | 60.72 | 76.19 | 41.19 | 65.32 | 79.67 | 46.95 | 42.14 | 61.68 | 18.71 |
| In Speech | 48.96 | 61.66 | 31.58 | 53.26 | 64.87 | 37.41 | 36.48 | 52.39 | 14.57 |
| In-Movement | 43.89 | 53.27 | 24.80 | 45.49 | 53.93 | 28.17 | 39.38 | 51.40 | 15.51 |
| Mental Illness | 27.94 | 35.05 | 16.73 | 31.62 | 38.56 | 20.84 | 19.51 | 27.15 | 7.03 |
| Total PWD population | 51.14 | 63.97 | 32.05 | 54.62 | 65.74 | 38.07 | 42.16 | 59.39 | 16.55 |

Source: Census of India, www.censusindia.gov.in.

*Table 3.10: Employment Rate among PWD (in %) (Age 15 to 59), 2011*

| Types of Disability | Urban+ Rural | | | Rural | | | Urban | | |
|---|---|---|---|---|---|---|---|---|---|
| | Persons | Males | Females | Persons | Males | Females | Persons | Males | Females |
| In-seeing | 55.37 | 72.28 | 34.69 | 58.57 | 72.80 | 41.20 | 49.55 | 71.34 | 22.84 |
| In-Hearing | 57.69 | 74.97 | 37.32 | 61.98 | 76.56 | 44.87 | 50.39 | 72.29 | 24.36 |
| In-Speech | 55.86 | 71.44 | 35.95 | 59.25 | 71.86 | 43.05 | 50.14 | 70.72 | 24.08 |
| In-Movement | 49.48 | 60.22 | 29.48 | 50.55 | 60.02 | 32.66 | 60.76 | 60.76 | 21.41 |
| Mental-Retardation | 28.06 | 34.94 | 18.42 | 31.94 | 38.61 | 22.65 | 20.34 | 27.69 | 9.93 |
| Mental-Illness | 24.78 | 30.66 | 16.35 | 28.59 | 34.58 | 20.19 | 16.66 | 22.53 | 7.88 |
| Any-Other | 57.84 | 73.24 | 37.82 | 61.88 | 74.79 | 44.83 | 50.53 | 70.38 | 25.46 |
| Multiple-Disability | 28.67 | 35.47 | 18.92 | 30.41 | 36.39 | 21.83 | 24.46 | 33.24 | 11.83 |
| All PWD | 50.50 | 63.64 | 32.35 | 53.23 | 64.23 | 37.82 | 45.11 | 62.44 | 21.76 |

*Source*: Census of India, www.censusindia.gov.in.

The employment rate of PWD is generally lower in comparison with the non-disabled. Factors such as low levels of education, inadequate skills, inaccessible work environments, negative social attitude (from employers and co-workers) are responsible for the low participation of the PWD's in the labour market. In many countries, particularly high income countries, the provision of disability benefits could serve as disincentive for PWD's to participate in the labour market. This is due to the apprehension that the returns from employment would be substantially lower than the disability benefits (Table 3.9 and 3.10).

The employment of PWD's by gender, type of disability and place of residence is given in the tables 3.9 and 3.10. It can be observed that out of the total PWD population who fall under the age group of 15-59, 50.50 per cent are part of the labour force in 2011. It means that roughly 51 per cent of PWD's in this age criteria are either actively employed or seeking employment. We must note that the PWD population that falls outside this age category are not included as part of the labour force. The employment among PWD's is relatively higher in rural areas (53.23 per cent) than in urban areas (45.11 per cent). Out of the total PWD's who are in the labour force, 63.64 per cent are males and 32.35 per cent are females. A plausible explanation for the low participation of women with disabilities in the labour force

can be attributed to dual discrimination that they have to encounter, resulting from the intersection between gender and disability. This trend of low participation is visible across rural and urban areas and across all types of disabilities. However we can find a relatively higher proportion of disabled women from rural areas participating in the workforce than disabled women from urban areas. It is striking to note that the employment gap between males and females is more pronounced in urban areas than in rural areas.

On analyzing the data based on type of disability, we find the highest participation rate among people with any disability followed by those with hearing, speech and seeing disability. On the other hand, persons with multiple disability, mental retardation and mental illness account for lower participation in the labour force. This may be due to the severe barriers that these groups have to face in gaining access to education and thereafter in the transition from education to labour market. Furthermore people with single disability have a higher participation rate than people with multiple disabilities. This is due to the severity of their impairments coupled with inaccessible and non inclusive environment.

A comparison of employment rate of PWD's between the census data's of 2001 and 2011 reveals that there has been a marginal decline in the overall participation rate. However there has been an increase in the employment rate of PWD's in urban areas in 2011 (45.11 per cent) as compared to 2001 (42.61 per cent). A reverse trend occurred in the case of PWD's in rural areas where their participation rate declined marginally from 54.62 per cent in 2001 to 53.23 per cent in 2011. This trend could be attributed to migration from rural areas to urban areas. The share of people with visual impairment and hearing impairment in employment had declined from 2001 to 2011 whereas the share of people with speech and mobility impairments has risen during the same period.

Table A3.1 (see appendix) presents distribution of disabled workers by gender, residence and type of disability based on the type of work they are engaged in. Distribution of disabled workers on the basis of work performed, reveal that majority are employed in the category of 'others' which is followed by agricultural labour and casual labour respectively. The least are employed in household industries in both rural and urban areas. We find a greater proportion of disabled workers in rural areas engaged in agricultural labour whereas in urban areas they are mostly engaged in 'other' works. Classifying the disabled workers by gender shows that a higher proportion of disabled women are engaged in agricultural labour whereas majority of disabled men are involved in other works. Based on type of disability, it is evident that people

with hearing impairment account for the highest share followed by those with any other disability. On the other hand, people with mental illness and multiple disabilities account for the lowest share among disabled workers. On analyzing the data based on participation of disabled workers in different fields of work, we find that majority are employed in 'others' whereas those with psychological disabilities (mental retardation and mental illness) are employed primarily in agricultural labour.

### 3.6 Enrolment Status of Students with Disabilities in Higher Education in India

In 2015, the National Centre for Promotion of Employment for Disabled People (NCPEDP) conducted a nation-wide survey among the top-two hundred higher education institutions across different disciplines in India to assess the status of students with disabilities. The survey covered 269 institutions across various disciplines out of which 197 institutions responded, i.e. 73.23 per cent. The institutes that were included in the survey were identified based on ranking of higher education institutions conducted by India Today; Business Today (for Business Management); EduVidya (for Social Work) and Learn Hub (for Hotel Management).

Enrolment of different categories of students with disabilities across different streams in the higher educational institutions that responded to the survey is given in table 3.11. Results of the survey show that, out of the total of 8,65,104 student population that were enrolled in 197 institutions, merely 0.73 per cent i.e. 6,374 were PWDs. Gender-wise distribution of the total disabled students enrolled in various streams reveal that, 73.10 per cent were males and 26.89 per cent were females. The ratio of disabled males to that of total male students was 0.91 per cent whereas it was mere 0.48 per cent for female disabled students.

The total disabled student population has been categorized under five disability categories: locomotor impairment; visual impairment; speech/hearing impairment; mental disabilities; and other disabilities. The category 'other' disabilities includes all other disabilities that are not covered under the four main categories. It can be seen from table 3.11 that, majority of disabled students that were enrolled (46.65 per cent) were students with locomotor impairment followed by students with visual impairment (32.52 per cent). Students with speech/hearing impairment constituted just 5.22 per cent of total disabled students whereas students with mental disabilities made up only 1.53 per cent. A striking feature to note here is that, those who fall within the category of other disabilities accounted for 14.05 per cent of the total disabled students enrolled.

***Disability-wise distribution of students***

Among the five disability categories, students with locomotor disability had a higher enrolment of 46.65 per cent. Medicine, Architecture and Business Management were the streams with maximum enrolment of locomotor disabled with enrolment percentages of 98.88 per cent, 62.5 per cent and 55.97 per cent respectively, and the streams with the lowest enrolment of locomotor disabled were Hotel Management (7.14 per cent), Design (15.9 per cent) and Social Work (20.37 per cent). Out of the total disabled students that were enrolled in the universities, 53.99 per cent comprised students with locomotor disability; whereas in the IITs their ratio was 67.15 per cent and in the IIMs it was 60.96 per cent.

Students with visual impairment constituted the second largest population (32.52 per cent) among the disabled students that were enrolled in higher education. Visually impaired students were mostly enrolled in Science (58.26 per cent), Arts (56.43 per cent) and Commerce (42.95 per cent) streams; whereas they were least enrolled in streams such as Medicine (1.11 per cent), Engineering (15.43 per cent) and no students in Hotel Management. Their proportion among the disabled students that were enrolled in the universities accounted for 28.99 per cent; whereas in the IITs and IIMs their ratios were 16.78 per cent and 28.34 per cent respectively.

Students with speech and hearing impairments have to face severe challenges in participating in higher education. This is evident from their enrolment rates which make up just 5.22 per cent of total disabled students. Design (20.45 per cent), Architecture (16.66 per cent) and Business Management (11.19 per cent) were the streams which had the highest enrolment of students with speech/hearing impairments; whereas the streams which had the lowest enrolment were Science (2.88 per cent) Arts (2.94 per cent) and no students in Medicine. In the universities, their enrolment rate was mere 4.57 per cent; whereas in the IITs and IIMs it was 6.82 per cent and 6.95 per cent respectively.

The lowest enrolment rate among the five disability categories was reported for students with mental disabilities, which was a dismal 1.53 per cent. This could be owing to relatively high degree of social stigma surrounding people with mental disabilities. Data revealed that, students with mental disabilities were largely enrolled in streams such as Hotel Management (14.28 per cent); Journalism (13.42 per cent) and Design (9.09 per cent). Streams such as Engineering, Medicine, Business Management, Architecture and Social Work had not enrolled a single student with mental disability. On the other hand, universities had a meagre

0.04 per cent enrolment of mentally disabled students among their total disabled students and IITs had only 0.18 per cent and no PWDs were enrolled in IIMs

Apart from students with locomotor disabilities and visual disabilities, the third category which accounted for a relatively higher enrolment of students with disabilities was the category 'others'. Nearly 14.05 per cent of students with other disabilities were enrolled in higher education wherein, their maximum enrolment were in streams such as Hotel Management (67.85 per cent), Design (38.63 per cent) and Social Work (35.18 per cent); and their least enrolment were in Medicine (0 per cent), Architecture (4.16 per cent) and Business Management (7.46 per cent). Universities had 12.39 per cent of students with other disabilities whereas IITs had 9.04 per cent and IIMs had 3.74 per cent.

*Table 3.11: Status of Disabled in Higher Education*

| Streams / Courses | Total No. of Students | | | Total No. of Disabled Students | | | No. of Students with Locomotor Impairment | | | No. of Students with Visual Impairment | | | No. of Students with Speech/ Hearing Impairment | | | No. of Students with Mental Disabilities | | | No. of Students with Others Disabilities | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | Male | Female | Total | Male | Female | Total | Male | Female | Total | Male | Female | Total | Male | Female | Total | Male | Female | Total | Male | Female |
| Arts | 58245 | 22818 | 35427 | **645** (1.11%) | **348** (53.95 %) | **297** (46.04%) | **180** (27.9%) | 116 | 64 | **364**(56.43% ) | 192 | 172 | **19** (2.94%) | 7 | 12 | **25** (3.87%) | 10 | 15 | **57** (8.83%) | 23 | 34 |
| Science | 58007 | 23898 | 34109 | **623** (1.07%) | **380** (60.99%) | **243** (39 %) | **166** (26.64%) | 116 | 50 | **363** (58.26%) | 223 | 140 | **18** (2.88%) | 8 | 10 | **14** (2.24%) | 10 | 4 | **62** (9.95%) | 23 | 39 |
| Commerce | 57324 | 26526 | 30798 | **589** (1.03%) | **398** (67.57%) | **191** (32.42%) | **181** (30.73%) | 128 | 53 | **253** (42.95%) | 193 | 60 | **29** (4.92%) | 10 | 19 | **21** (3.56%) | 7 | 14 | **105** (17.82%) | 60 | 45 |
| Law | 10705 | 5825 | 4880 | **140** (1.31%) | **100** (71.42%) | **40** (28.57%) | **61** (43.57%) | 45 | 16 | **28** (20%) | 22 | 6 | **8** (5.71%) | 3 | 5 | **8** (5.71%) | 6 | 2 | **35** (25%) | 24 | 11 |
| Engineering | 77849 | 62929 | 14920 | **745** (0.96%) | **655** (87.91%) | **90** (12.08%) | **379** (50.87%) | 345 | 34 | **115** (15.43%) | 103 | 12 | **57** (7.65%) | 45 | 12 | **0** (0%) | 0 | 0 | **194** (26.04%) | 162 | 32 |
| Medicine | 14484 | 8763 | 5721 | **90** (0.62%) | **69** (76.66%) | **21** (23.33%) | **89** (98.88%) | 68 | 21 | **1** (1.11%) | 1 | 0 | **0** (0%) | 0 | 0 | **0** (0%) | 0 | 0 | **0** (0%) | 0 | 0 |
| Business Management | 28210 | 20807 | 7403 | **134** (0.48%) | **113** (84.32%) | **21** (15.67%) | **75** (55.97%) | 63 | 12 | **34** (25.37%) | 29 | 5 | **15** (11.19%) | 12 | 3 | **0** (0%) | 0 | 0 | **10** (7.46%) | 9 | 1 |
| Design | 5573 | 1453 | 4120 | **44** (0.79%) | **16** (36.36%) | **28** (63.63%) | **7** (15.9%) | 4 | 3 | **7** (15.9%) | 3 | 4 | **9** (20.45%) | 2 | 7 | **4** (9.09%) | 0 | 4 | **17** (38.63%) | 7 | 10 |
| Journalism | 23247 | 7935 | 15312 | **149** (0.64%) | **63** (42.28%) | **86** (57.71%) | **45** (30.2%) | 15 | 30 | **49** (32.88%) | 25 | 24 | **9** (6.04%) | 4 | 5 | **20** (13.42%) | 6 | 14 | **26** (17.44%) | 13 | 13 |
| Architecture | 3113 | 1635 | 1478 | **24** (0.77%) | **19** (79.16%) | **5** (20.83%) | **15** (62.5%) | 12 | 3 | **4** (16.66%) | 4 | 0 | **4** (16.66%) | 3 | 1 | **0** (0%) | 0 | 0 | **1** (4.16%) | 0 | 1 |
| Social Work | 3088 | 1301 | 1787 | **54** (1.75%) | **32** (59.25%) | **22** (40.74%) | **11** (20.37%) | 7 | 4 | **21** (38.88%) | 12 | 9 | **3** (5.55%) | 1 | 2 | **0** (0%) | 0 | 0 | **19** (35.18%) | 12 | 7 |
| Hotel Management | 4202 | 3486 | 716 | **28** (0.67%) | **27** (96.42%) | **1** (3.57%) | **2** (7.14%) | 2 | 0 | **0** (0%) | 0 | 0 | **3** (10.71%) | 3 | 0 | **4** (14.28%) | 4 | 0 | **19** (67.85%) | 18 | 1 |
| Universities | 450242 | 263233 | 187009 | **2380** (0.53%) | **1802** (75.71%) | **578** (24.28%) | **128** (53.99%) | 962 | 323 | **690** (28.99%) | 580 | 110 | **109** (4.57%) | 74 | 35 | **1**(0.04%) | 1 | 0 | **295** (12.39%) | 185 | 110 |
| IITs | 64209 | 54280 | 9929 | **542** (0.84%) | **481** (88.74%) | **61** (11.25%) | **364** (67.15%) | 336 | 28 | **91** (16.78%) | 79 | 12 | **37** (6.82%) | 26 | 11 | **1** (0.18%) | 1 | 0 | **49** (9.04%) | 39 | 10 |
| IIMs | 6606 | 4583 | 2023 | **187** (2.83%) | **157** (83.95%) | **30** (16.04%) | **114** (60.96%) | 96 | 18 | **53** (28.34%) | 44 | 9 | **13** (6.95%) | 10 | 3 | **0** (0%) | 0 | 0 | **7** (3.74%) | 7 | 0 |
| GRAND TOTAL | 865104 | 509472 | 355632 | 6374 (0.73%) | 4660 (73.10%) | 1714 (26.89%) | 2974 (46.65%) | 2315 | 659 | 2073 (32.52%) | 1510 | 563 | 333 (5.22%) | 208 | 125 | 98 (1.53%) | 45 | 53 | 896 (14.05%) | 582 | 314 |

***Distribution of SWDs by discipline and type of institution***

As one makes an analysis of the data given in the table 3.11, it becomes clear that students with locomotor impairments and visual impairments secured the highest enrolment across the disciplines covered in the survey. While visually impaired students secured the highest enrolment rate in Arts, Science, Commerce, Journalism and Social Work; students with locomotor impairments accounted for the highest enrolment in Law, Engineering, Medicine, Business Management and Architecture. In case of Design and Hotel Management, students with other disabilities secured the highest enrolment. Out of the 12 disciplines covered in the survey, the discipline of Medicine seemed to highly favour students with locomotor disabilities whereas it was highly biased against the other four categories of disabilities. Analysis across type of institutions revealed that students with locomotor impairments secured a higher enrolment as compared to all other disability categories in universities, IITs and IIMs whereas students with visual impairments acquired the second position. Furthermore, a wide gap can be observed across the five disability categories in terms of enrolment rate across disciplines and type of institutions. It should be noted that students with speech/hearing impairments and mental disabilities experience greater challenges in participating in higher education due to institutional factors such as unavailability of sign language interpreters and attitudinal barriers against these categories. The lower enrolment rate for students with mental disabilities is particularly alarming, given the fact that their enrolment rate in five disciplines was zero.

The percentage of disabled students enrolled in different disciplines and institutions is given in table 3.11. A glaring reality that can be observed from the data is that none of the disciplines/institutions have fulfilled the minimum three per cent mandatory reservation quota stipulated by the PWD Act. Business Management had the lowest enrolment of 0.48 per cent across the twelve disciplines whereas Social Work recorded the highest enrolment of 1.75 per cent. Across institutions, IIMs enrolled the highest percentage of disabled students (2.83 per cent) whereas universities enrolled the lowest (0.53 per cent) of disabled students. Even IITs enrolled mere 0.84 per cent of disabled students out of their total student enrolment.

***Gender-wise distribution in enrolment rate***

Women and girls with disabilities experience double discrimination in all spheres of social and economic life. This double discrimination experienced by female students with disabilities is visible in their enrolment rate which is just one-third of the enrolment rate

(26.89 per cent vs. 73.10 per cent) of male disabled students. However, it is observed that some streams had a higher enrolment of female disabled students. They were Design (63.63 per cent), Journalism (57.71 per cent) and Arts (46.04 per cent). Streams such as, Hotel Management (3.57 per cent), Engineering (12.08 per cent) and Business Management (15.67 per cent) show a very low enrolment rate. Universities had 24.28 per cent of female disabled students enrolled whereas in the IITs their enrolment rate was only 11.25 per cent and in the IIMs it was 16.04 per cent.

***Disability unit and policy in higher education institutions***

According to the NCPEDP survey 2015, more than 100 higher education institutions covered in the survey had a disability unit in their campus whereas more than 130 institutions had a disability policy or followed the policies laid down by the government or their respective universities. The main purpose of a disability unit is to provide support services to the disabled students in order to meet their educational needs. While it is imperative that universities/institutions that receive public funding have to follow the reservation clause laid by the PWD Act, adopting an explicit equal opportunity policy from a disability perspective and institutionalizing such a policy can help minimize discriminatory behaviour displayed by the staff and non-disabled students. The factors that can prove detrimental to participation of students with disabilities in higher education are: physical access; access to assistive technology; availability of learning materials in accessible form; availability of sign language interpreters; availability of scribes and an inclusive environment including inclusive curriculum and pedagogy. Creating an inclusive higher education system requires changes in negative attitudes held by faculty and education administrators about the potential and capabilities of PWDs. In addition, disability issues must find place in the curriculum of every discipline and pedagogical methods should undergo radical innovations which is disability sensitive. The school education system should improve tremendously in order to minimize the failure rate and drop-out rate of disabled children and enable their successful transition to higher education. Furthermore, the reservation quota mandated by the Rights of Persons with Disabilities (RPWD) Act 2016, which replaced the PWD Act 1995 must be strictly adhered to in order to ensure the meaningful participation of students with disabilities in higher education.

Findings of the NCPEDP survey cannot be generalized to the entire higher education system since the survey covered merely one per cent of higher education institutions in India.

However, the survey is the only one of its kind which attempted to collect disaggregated data on the participation of students with disabilities across different disability categories, gender, disciplines and type of institutions in higher education. There is a dearth of reliable and comprehensive data on the enrolment of students with disabilities in higher education. Even the All India Survey on Higher Education (AISHE) which collects data on student enrolments in higher education across gender and social categories, does not make an attempt to collect data on enrolment of students with disabilities in higher education, except that it gives an aggregate number of representation of PWDs. For Example, the AISHE report 2015-16 mentions that there are 74,435 disabled students enrolled in higher education across India during 2015-16 but does not provide data on discipline-wise or institution-wise distribution of disabled students. In this context, the NCPEDP survey serves an important purpose of assessing the status of disabled students in the top-class higher education institutions of the country.

### 3.7 Best Practices in the Inclusion of PWDs in Private Sector

Although, an overall picture of labour market outcomes of PWDs discussed above seem to be a gloomy one, individual case studies reveal that more and more companies are adopting the policy of diversity and inclusion as part of their overall business strategy and human resources management. This shift in policy which is still in its evolving phase give us reason to cheer because it has a huge potential for enhancing the quality of life and income levels of PWDs. Companies have started recognizing that hiring people with disabilities is good for business. People with disabilities constitute a vast pool of untapped human resources. They are reliable and productive employees who bring benefits to the workplace. If they are given the right environment they can be productive just as those without a disability. Employing PWDs also enhances company's image with their clients and brings goodwill for its brand. A diverse workforce inclusive of people with disabilities is seen as important for leveraging market share. Some companies have started serving disabled customers and their families and friends, by developing products and services that cater to their needs. As companies engage with communities in which they work, they pay specific attention to the needs of the disabled (ILO 2010).

The International Labour Organization (ILO) which was established by the United Nations for the promotion of decent 'work for all' has been facilitating the ILO Global Business and Disability Network (GBDN) since 2010, through the network secretariat located at the ILO

headquarters in Geneva, Switzerland. Its aim is to provide technical expertise to its members and directly support its activities. The GBDN brought together companies who were desirous of sharing expertise, experience and challenges related to disability inclusion with other businesses. This global network of multinational enterprises, employers' organizations and business networks on disability was formed to assist employers to manage disability in the workplace and to implement their strategic plans on disability; to promote good practices in the wider business community through business-to-business knowledge sharing; and to develop products and services that respond to expressed demands from its members (ILO 2016: 7). Currently the GBDN initiative is bringing positive change to the workplace through its members.

It is crucial for the GBDN to support country level initiatives where substantial change can happen because, it aims to see changes within the members from both the policy and practical levels, related to training, hiring or retention of disabled persons. The network members also benefit from the valuable insights of people with disabilities through its partnership with the International Disability Alliance (IDA), a network of global and regional disabled persons' organization. Companies, employers' organizations and business networks that are part of the GBDN believes in the benefit of having a diverse workforce, as it makes them better prepared to meet the needs of all consumers, including consumers with disabilities (ILO 2016). The GBDN member companies reported that, employees with disabilities have generated a positive impact among other colleagues, which have often leaded to increased commitment by staff to the company. The levels of productivity, including absenteeism, of people with disabilities are similar to that of non-disabled employees. Many employers have changed their practices to effectively include persons with disabilities, including revising their recruitment processes to ensure barrier-free work places. It is also important for companies that their recruiters focus on the abilities of the candidates and not their disability (Ibid).

The network activities and events have shown that employers are not only willing and keen to share their experiences in this field, but also support and participate in the establishment of national business and disability networks. The GBDN is increasingly supporting the establishment of national networks in developing countries. These nationally established networks will be one of the key drivers for the promotion of disability inclusion among employers (ILO 2016: 7).

In 2010, the ILO Global Business and Disability Network released its first knowledge sharing initiative titled "Disability in the Workplace: Company Practices", a working paper which compiled the profiles of 25 companies that have incorporated disability in their business practices. It describes how companies address hiring and retention, products and services and Corporate Social Responsibility (CSR) from a perspective of disability (ILO 2010). Thereafter, the GBDN published several working papers, two of which presents case studies of employers' organizations and business networks that support and promote disability inclusion among their members. In addition to these, in 2014, the network came out with a working paper highlighting the business case of employing youth with disabilities. This working paper presents case studies of ten companies that experienced a difference of employing youth with disabilities as well as those youths who are considered as unable to learn and incapable to contribute to the world of work. Since this study focuses on disability inclusion in the IT sector in India, the case studies of three leading IT firms of India is briefly presented here. These case studies have been cited from the ILO working papers of 2010 and 2014.

***Tata Consultancy Services***

Located in India, Tata Consultancy Services (TCS) embraced a socialistic, humanitarian vision of encouraging young talents with disabilities to overcome life's obstacles and shine in life at work. In June 2008, TCS took a novel initiative towards enabling visually impaired persons to avail fair opportunities to develop their potentialities and compete on equal terms in the labour/professional sector. Under the initiative of TCS Maitree, a work-life balance program for promoting cultural, social events and activities as well as community development projects, Advanced Computer Training Centre (ACTC) was instituted. The goal of ACTC as envisaged by TCS was to provide specialized training to visually impaired candidates so that they become technically proficient enough and to subsequently secure them suitable employment in IT related companies as the logical justification of their undertaking.

In the first four years of this training program, ACTC has enabled over 100 students to complete the course, out of which 20 of them have been recruited by TCS itself and another 60 odd graduates have been employed successfully across infrastructure services, internal IT and Services Management, BPO etc. Those graduated from this training are successfully employed in 8 multinationals, being able to compete with their co-workers. Beside the specialized training and job placement services provided for the graduated trainees, ACTC

also ensures the prevalence of an inclusive work environment, where participants with disabilities along with other colleagues are treated equally. The state of the art training facility present in the centre, likewise offer equal opportunity to the disabled and the non-disabled alike.

It was in 2006, that TCS Maitree employees volunteered to teach blind students at Victoria Memorial School, skills in English language and basic computer. Reckoning the employment potential in those blind students, TCS Maitree designed the ACTC as a unique training program so that their potential is channelized and developed to the level that they can proficiently perform in their places of employment. The same program was set into operation at the MN Banajee Industrial Home for the Blind at Jogeshwari, Mumbai and Mitra Jyoti in Bengaluru.TCS proved its resourcefulness and creativity in addressing these challenges and designing the appropriate specialized curriculum for the participants in order to produce the proficiency required at work place.

To begin with, the pioneering committee identifies IT and ITES skills that can be performed by a visually impaired person. Simultaneously, they contact those businesses which require the same skilled labour. Thus ACTC training program becomes a specialized vocational course for the visually impaired with job placement at the end of it. After a rigorous, nation-wide selection process, about 15 candidates are chosen to undergo 45 day ACTC training. Through a BPO and IT based curriculum along with IT skills training (administration and operating systems, computer networking, help desk technicalities, Microsoft Office Modules etc), the participants receive attribute based training (behavioural pattern, customer orientation, analytical and communication skills, quality and time management etc). In addition, the program features training in self-confidence, soft skills, corporate behaviour beside other opportunities and provisions to learn business skills in order to be fully or sufficiently equipped and prepared for employment in the aforesaid sector. Being aware of the cultural reality in India in relation to the disabled section of the society, TCS also undertakes to spread awareness and sensitivity among the prospective employers and the would-be colleagues at the work places. This endeavour is carried on, not only to create a conducive working environment for the people with disabilities but also to develop an inclusive society free from prejudice and discrimination.

Sreela Das Gupta from TCS's HR encapsulates the rationale of their whole endeavour: "Disability carries a great social stigma in India and as a result, there are very few learning

centres for people living with disabilities." She goes on to say, "In India, gaining access to the IT industry is difficult for a person bordering the poverty line, though nearly impossible for those who in addition are visually impaired. The ACTC offers its unique contribution; by providing skills development for people with disabilities while creating an environment of acceptance." Since the pilot program in 2008 till the autumn of 2013, 124 trainees have participated; and 77 of them are employed already. Das Gupta feels the need to take this program to a wider and higher scale because of its positive impact on society as a whole.

(Source: ILO 2014)

***WIPRO***

Wipro Limited India, a multifaceted global company based at Bengaluru, and having a presence in more than 35 countries, provides wide-ranging IT services, consultancies, product development, and research. Espousing the vision behind CSR (Corporate Social Responsibility) charter, Wipro launched a number of initiatives and programs. Taking social inclusiveness in work life as a guiding ideal, Wipro forged a comprehensive framework to ensure responsible business commitment and work culture for favourable inclusion of people with disabilities, and their desirable output/contribution. In its framework, the company has identified 6 areas or aspects to endeavour for systemic change in its set-up: 1. People policies; 2. Recruitment; 3. Training; 4. Physical Infrastructure; 5. Information Systems; 6. Awareness.

This is part of Wipro's long term goal called 'Sustainability Focus' under the banner 'People'. In accordance, Wipro has adopted hiring policy for disabled based purely on merit or proficiency, not in few selected jobs or ancillary work profiles, but across all roles or departments. Equal job opportunities are offered to both abled and disabled candidates. A strong team headed by the Human Resources head is empowered to drive Wipro's initiative toward achieving fair and healthy inclusion of disabled in their work set-up. Going an extra mile, the company makes an effort to reach out to institutions that train or educate disabled in order to recruit employable candidates. Significantly, Wipro also champions the cause of the disabled in the corporate world and in society at large, by its example of adopting fair and non-discriminatory employment policy and promotion of diversity in the work environment.

Wipro has taken some important initiatives for the inclusion of disabled employees. Equal opportunity and prohibition of discrimination and harassment as part of employment policy requires that the company will equally treat candidates/employees without regard to their race, colour, religion, nationality, age, sex, marital status, ancestry, physical or mental

disability, medical condition, socio-economic background, sexual orientation and caste in all aspects and stages of recruitment, training, career progression, and termination or retirement. In their 'Spirit of Wipro' declaration, with regard to the disabled at work, the company seeks to sensitize all its employees to act with respect for every individual. In 2009, in line with the 'Spirit of Wipro', a major initiative to audit or assess its working system in the six key diverse areas was carried out in collaboration with one of India's leading disability consultancy firms. The audit helped Wipro draw up a sustainable framework with special reference to the disabled section that ensures equal opportunity for them and creation of a more inclusive environment.

Significant amendments were incorporated in its 'people policies'. For instance, the company now offers special transportation services and other facilities for its disabled employees. The company's buildings in all locations have been renovated to provide greater accessibility. Its infrastructural standards have been raised to meet international norms mandated by the United Nations Accessibility for the Disabled. Wipro has completed accessibility audits for all its offices in India, and 14 of them have been upgraded to better accommodate disabled employees.

In its current practices, vacancy advertisements by Wipro not only reflect its commitment to equal opportunity, but also request candidates to specify the particular needs for their disability-related accommodations. It has removed questions about the applicant's medical history, as it can amount to discrimination or harassment. Wipro also prepared a twenty-page handbook containing guidelines for its recruiters/interviewers in assessing a candidate's ability, and not disability, face-to-face and e-chat have superseded phone/video calls so as to avoid disadvantages for the candidates with hearing impairment.

The company conducts recruitment programs by collaborating with institutions such as Braille without Borders, NISH (National Institute of Speech and Hearing), AITH (Ambedkar Institute of Technology for Handicapped) in order to hire disabled proficient for the jobs as required. In 2010, Wipro held a job fair at AITH where 4 out of 40 participants were hired. Reasonably comfortable accommodation and barrier-free working environment are provided for the disabled candidates, trainees and employees. Assistive technologies such as screen reading software are provided for visually impaired persons. Through GNOME (GNU Network Object Model Environment) Accessibility, a project that supports the integration of

accessibility innovations into computer programming efforts, the company and its clients help develop and test the usability of their software products having assistive technology features.

In keeping its commitment to CSR, Wipro organizes forums and propagates good practices favourable to disabled in industry bodies such as NASCCOM (National Association of Software and Services Companies) and Confederation of Indian Industries. The company has done substantial work in its effort to realize social inclusiveness of disabled in diverse professional fields, in the IT and the ITES sector in particular. In its own organization in 2012, of all their employees, 353 regular employees and 72 employees on contractual basis were PWDs. In its drive for inclusion of disabled people, Wipro has visited or contacted top 100 engineering colleges, top 25 business schools and 3 exclusive polytechnics/institutions for PWDs for recruitments. It also maintains an active and fruitful relationship with 12 disability organizations for employing disabled people. Wipro launched the Vendor Diversity Program to effectively collaborate with vendors and NGO's involved in serving the disabled, with a view to induct them into the company's procurement system. Wipro Limited India was honoured with the 2009 NCPEDP Shell Helen Keller Award for its enterprise in promoting equal opportunities and inclusion of disabled.

(Source: ILO 2010)

***MphasiS***

MphasiS, an IT services company based in Bangaluru, has partnered with organizations to provide education, professional training and employment opportunities for disabled youth since 2008. As of mid-2013, MphasiS has facilitated the training of 225 young disabled, and has hired 176 of them; making up 0.8 per cent of its workforce of 37,000 spread over 37 offices in 21 countries. For some years now, the company's primary focus is on their inclusion practice for disabled in India as their largest workforce is located here. Among its growing initiatives and partnerships, MphasiS has collaborated with the premier Indian Institute of Management, Bangalore (IIM-B), in enrolling qualified students with disabilities. MphasiS runs its CSR programme, not only enriching its diversity, but primarily to help young disabled to complete high school, find access in good learning institutions, subsequently to enable them to successfully compete in the labour market. Through focused targeting and inclusion, MphasiS strives to achieve these set objectives.

In 2007, senior leadership at MphasiS held the view that talent and competency existed among all categories of people. Moreover, in a workforce survey, a majority of its 8,000

employees expressed the desirability to actually hire disabled and work along with them. Meenu Bhambhani, a disability expert who served in World Bank, was appointed to lead its CSR programme and develop an inclusive policy toward realizing their goal.

Through recruitment drives keeping focus on absorbing employable disabled people, the company soon learnt that the numbers of eligible candidates/applicants were found far below their expectation. Most of those disabled interviewed had poor communication, analytical and comprehension skill. Bhambhani understood that this was a reflection of the very low percentage (less than 2 per cent) of disabled in India who actually finished adequate education. Even so, a policy for a filling up 5 per cent of company posts by disabled was proposed.

Bhambhani recalled the practical challenge as to where MphasiS would look for disabled with employable skills to fill the quota. She saw that first they had to look at the barriers that stopped disabled from 'up-skilling' themselves, from becoming work ready. What followed was an outsourced three-month training pilot in Bengaluru to make many of the recruitment drive disabled applicants hireable. This pilot programme was replicated in other cities under *Project Communicate*. Soon they faced the paucity of candidates due to the high drop-out rate among young disabled at school level. Another pilot programme called 'A School for Me' was initiated to help children with disabilities move from segregated to inclusive education with the help of accommodations, in order to facilitate their empowerment and their integration into mainstream society. In the past 4 years, the programme increased enrolment of out-of-school children with disabilities in regular schools and school readiness centres that help young disabled transition from home-based education to regular schooling. Subsequently to help students who manage to graduate high school move on to institutions of higher education, Bhambhani saw the need to formulate a social policy and create a Student Disability Services office, which would facilitate the full participation of students with disabilities in campus life by providing reasonable accommodations and academic support.

Working with the premier Indian Institute of Management in Bangaluru, MphasiS helped set up the country's first campus-based centre for assistance, the Office of Disability Services. With a student population of 420, IIM-B takes in up to 12 disabled students per year (in line with the government-required quota). Rajluxmi Murthy, a professor of IIM-B heads the Committee on Disabilities. MphasiS provides the funding to set up the Office of Disability Services and to fund assisted devices and other accommodations, including motorized

wheelchairs (procured using IIM-B funds), in order to enable even young people with severe disabilities the opportunity for post-graduate management education.

With its CSR funds, MphasiS partnered with NGOs to work with the prior disabled applicants who had been deemed unemployable and train them in the skills that the company needed. Initially they collaborated with the Diversity and Equal Opportunity Centre, an NGO in India that promotes equal opportunities for disabled and non-disabled persons, and with the Bengaluru Association of People with Disabilities. The ensuing pilot project began in 2008 and included 22 of the orthopaedic applicants who had previously applied for the back-office positions. Skills training focused on computer typing, English reading, comprehension and analytical abilities. Upon completion of the training, MphasiS had the prerogative in selecting participants and recruited 17 trainees. The other five trainees secured jobs in other companies through job placement assistance from the Diversity and Equal Opportunity Centre.

Also MphasiS partnered with the Noida Deaf Society to educate deaf youth and train them in English literacy and technical skills that would enhance their prospect for employment opportunities. As of 2012, MphasiS supported the English literacy training of 250 deaf youth. Of them, 27 found permanent jobs within the company, while the rest found jobs in other companies and organisations in and around Delhi. In the first phase of Project Communicate, a week-long train-the-trainer programme was conducted, aiming at enhancing the capacity of NGOs working in the field of training and employment of disabled. After this programme, in 2009, MphasiS offered to support any NGO willing to manage the training in three medium-sized cities, where it operated call centres. MphasiS then partnered with EnAble India to launch the second phase of *Project Communicate*. EnAble India is a pan-Indian NGO that works towards the placement of persons with disabilities in the corporate sector. This collaboration allowed the execution of Project Communicate, a pre-employment training programme targeting people with disabilities from rural areas that have a secondary school education. A total of 31 trainers from 10 different cities were equipped.

Furthermore MphasiS learned that the quality of engineering education was low standard for most students in India, where only half of the graduates are found to be employable. Hence MphasiS set its next sights on helping high school graduates with disabilities find placement in quality institutions. In 2009, institutions rarely accepted anyone with a severe disability, such as blindness or deafness, let alone had accommodations for people with physical

disabilities. In 2010, in partnership with IIM-B, the first Office of Disabilities Services in the country was opened to address the need and assist disabled students in the academic campus.

(Source: ILO 2014)

### 3.8 The Business Case for Employing PWDs

The notion that disabled youths are difficult to employ has become an antiquated way of thinking, as more and more private sector firms are discovering the benefits of being "disability confident". Businesses that demonstrate disability confidence realize improved productivity and enjoy recognition as a company with responsible business practices (ILO 2014: 11). Companies that hire youth with disabilities will meet their strategic challenges by being more agile and responsive to the markets in which they operate (stated by the UK Business Disability Forum, a member of the ILO Global Business and Disability Network). A disability confident business is one that makes room for employees with disabilities and helps them to develop as individuals and workers. In turn the company grows and attracts consumer trust. The company also gains from higher productivity and reduced cost in return for seeking the best workers which includes individuals with disabilities. It results in innovative production, services offered and outstanding customer relations, leading ultimately to employee satisfaction and retention (ILO 2014: 12).

A study conducted among Canadian private sector companies by the panel on labour market opportunities for persons with disabilities, appointed by the Government of Canada in July 2012 revealed that, there is a business case for employing PWDs. The report of the panel states that, "this is good news for employers seeking talent and for the approximately 795,000 unemployed working-age Canadians whose disability does not prevent them from working". Almost half (340,000) of these working-age Canadians with disabilities have a post-secondary degree. With aging population and increasing disability rates, shortage of skilled manpower is likely to pose a problem for the economy, which makes it costly to ignore this significant group of the labour force.

Companies that hired PWDs and those who participated in the panel's study reported that their ability to attract talented and innovative people had improved, and that there was greater employee loyalty and commitment which is critical for retaining corporate knowledge. They also stated that "it improves the culture and reputation of a business through community goodwill and has a "feel good" effect on employees and customers". Empirical evidence proves that PWDs are either on par with their non-disabled counterparts or even out-perform

them in terms of productivity. They have lower turn-over rates and report very low levels of absenteeism. Analysis by Walgreens' management of its 31 distinct locations in tree distribution centres, including the one in Anderson, South Carolina where 40 per cent of employees have disabilities, proved that, the difference in productivity was statistically insignificant in 18 locations; in three locations, employees without a disability were more productive; and in 10 locations, employees with a disability were more productive (Fredeen et al 2012: 18). Walgreens also cited lower turn-over rates among its employees with disabilities (Ibid).

Tim Hortons franchisee Megleen Inc. which operates six stores in Toronto, Canada And includes people with disabilities in all aspects of the business experience an employee turn-over of 35 per cent compared to the industry average of 75 per cent (Fredeen et al 2012: 18). The absenteeism rate among Megleen's 35 employees with disabilities which comprise 17 per cent of the workforce was zero in 2011. In one particular case, there was a 20 per cent increase in productivity as a result of hiring an employee with a disability. Marriot hotels reported a turn-over of 6 per cent among PWDs compared to 52 per cent for the overall workforce (Fredeen et al 2012: 18). Another study conducted at Washington Mutual for a three-year period found 8 per cent turn-over rate among people with developmental disabilities compared to an overall rate of 45 per cent in the general population (Ibid). In addition to the measurable results, a number of attitudinal studies have documented the value of hiring PWDs. A survey of consumer perceptions towards companies that hire PWDs in the U.S. in 2005 found that, 92 per cent of the American public viewed these companies more favorably; 87 per cent said that they would prefer to give their business to companies that hire PWDs (Fredeen et al 2012: 19).

Many employers presume that employing PWDs is a costly affair, as it would entail huge costs in terms of providing reasonable accommodations. However, this assumption has been invalidated by the research findings of the Job Accommodation Network (JAN) in their survey of 2,000 employers between 2004 and 2012. Most employers reported zero or low cost for accommodating employees with disabilities; 57 per cent said that the accommodations needed by employees cost absolutely nothing, while 37 per cent reported a one-time cost (Fredeen et al 2012: 19). Only four percent of employers said that the accommodation resulted in an ongoing, annual cost to the company. Of those accommodations that did have a cost, the average one-time expenditure incurred by employers was $500 (Ibid). Furthermore, employers derive multiple direct and indirect

benefits after making accommodations. Retention of a qualified employee, increasing workers' productivity and eliminating the cost of training a new employee were the explicit direct benefits derived by the employers who participated in the JAN survey. The result of effective disability management and successful workplace accommodations can also be measured in terms of, reduced costs for workers' compensation, sick leave, disability insurance and supplementary health benefits (Fredeen et al 2012: 19).

In addition to the benefits mentioned above, an inclusive workforce gives competitive advantage to companies through innovation. Because people with disabilities must develop alternative paths to accomplish common tasks, they are forced to innovate constantly – a skill that can translate to the creation of new processes, products and services (Fredeen et al 2012). A study conducted by the Harvard Business School in the 1990s demonstrated that, organizations leveraging diversity are better able to adapt to changes in the external environment and are more innovative in anticipating and responding to these changes. Adaptive cultures dramatically outperform non-adaptive ones across many indicators, with 90 per cent posting increased market valuation compared to 74 per cent (cited in Fredeen et al 2012: 20).

According to the World Health Survey (2004) which covered 59 countries, around 650 million adults in the age group 18 and above experience significant difficulties in functioning in their everyday lives (WHO 2011: 27). These estimates were derived based on the International Classification of Functioning, Disability and Health (ICF) which estimated a prevalence rate of 15.6 per cent. If the prevalence rates are extrapolated to cover adults aged 15 years and above, around 720 million people have difficulties in functioning with around 100 million experiencing very significant difficulties (WHO 2011: 27). This implies that the prevalence of disability is likely to increase with many countries going through the demographic transition of aging population, and with more and more countries adopting the ICF definition in their national censuses to estimate disability prevalence. This opens up a vast untapped market for products and services where PWDs are the primary customers. Adding their family and friends, the opportunity is massive (Fredeen et al 2012). An inclusive workplace strategy will enable companies to build understanding and acquire knowledge about the needs of people with disabilities. Tapping this market both as an employer and as a marketer gives companies a competitive edge. This creates avenues for innovation since companies have to adapt their products and services that best suit the needs of customers with disabilities.

The problems concerning PWDs and their labour market outcomes discussed in this chapter provides a macro picture, particularly in the context of India. The next chapter (chapter four) will provide the micro picture by looking at their experiences and outcomes in the IT sector from the survey carried out among employees with disability, employees without disability and HR Managers.

## Appendix to Chapter 3

*Table A3.1: Distribution of Disabled Workers by Type of Work Performed*

| | | | Total | CL% | AL% | HHI% | Others% |
|---|---|---|---|---|---|---|---|
| Total disabled popn | Total | Persons | 97,44386 | 0.23 | 0.31 | 0.04 | 0.42 |
| Total disabled popn | Total | Males | 70,72825 | 0.24 | 0.27 | 0.04 | 0.45 |
| Total disabled popn | Total | Females | 26,71561 | 0.21 | 0.40 | 0.07 | 0.33 |
| Total disabled popn | Rural | Persons | 70,04120 | 0.31 | 0.40 | 0.04 | 0.24 |
| Total disabled popn | Rural | Males | 49,12012 | 0.34 | 0.37 | 0.03 | 0.26 |
| Total disabled popn | Rural | Females | 20,92108 | 0.26 | 0.49 | 0.06 | 0.20 |
| Total disabled popn | Urban | Persons | 27,40266 | 0.03 | 0.06 | 0.05 | 0.86 |
| Total disabled popn | Urban | Males | 21,60813 | 0.03 | 0.05 | 0.05 | 0.87 |
| Total disabled popn | Urban | Females | 57,9453 | 0.04 | 0.08 | 0.09 | 0.80 |
| In seeing | Total | Persons | 18,91919 | 0.24 | 0.31 | 0.04 | 0.40 |
| In seeing | Total | Males | 13,46034 | 0.25 | 0.27 | 0.03 | 0.44 |
| In seeing | Total | Females | 54,5885 | 0.22 | 0.41 | 0.06 | 0.31 |
| In seeing | Rural | Persons | 13,52621 | 0.33 | 0.42 | 0.04 | 0.22 |
| In seeing | Rural | Males | 92,1956 | 0.36 | 0.38 | 0.03 | 0.24 |
| In seeing | Rural | Females | 43,0665 | 0.27 | 0.50 | 0.06 | 0.18 |
| In seeing | Urban | Persons | 53,9298 | 0.04 | 0.05 | 0.05 | 0.86 |
| In seeing | Urban | Males | 42,4078 | 0.03 | 0.05 | 0.04 | 0.88 |
| In seeing | Urban | Females | 11,5220 | 0.05 | 0.07 | 0.08 | 0.79 |
| In hearing | Total | Persons | 20,62058 | 0.23 | 0.30 | 0.05 | 0.41 |
| In hearing | Total | Males | 14,44083 | 0.25 | 0.26 | 0.04 | 0.45 |
| In hearing | Total | Females | 61,7975 | 0.21 | 0.39 | 0.07 | 0.33 |
| In hearing | Rural | Persons | 14,43251 | 0.32 | 0.41 | 0.05 | 0.23 |
| In hearing | Rural | Males | 96,6542 | 0.35 | 0.37 | 0.03 | 0.24 |
| In hearing | Rural | Females | 47,6709 | 0.26 | 0.49 | 0.07 | 0.19 |
| In hearing | Urban | Persons | 61,8807 | 0.03 | 0.06 | 0.06 | 0.85 |
| In hearing | Urban | Males | 47,7541 | 0.03 | 0.05 | 0.05 | 0.87 |
| In hearing | Urban | Females | 14,1266 | 0.03 | 0.08 | 0.09 | 0.79 |
| In speech | Total | Persons | 83,9258 | 0.23 | 0.29 | 0.04 | 0.43 |
| In speech | Total | Males | 60,0179 | 0.24 | 0.25 | 0.03 | 0.48 |
| In speech | Total | Females | 23,9079 | 0.22 | 0.39 | 0.06 | 0.33 |
| In speech | Rural | Persons | 56,6849 | 0.33 | 0.41 | 0.04 | 0.22 |
| In speech | Rural | Males | 38,6552 | 0.35 | 0.37 | 0.03 | 0.25 |
| In speech | Rural | Females | 18,0297 | 0.29 | 0.49 | 0.05 | 0.17 |
| In speech | Urban | Persons | 27,2409 | 0.03 | 0.05 | 0.05 | 0.88 |
| In speech | Urban | Males | 21,3627 | 0.03 | 0.04 | 0.04 | 0.89 |
| In speech | Urban | Females | 58,782 | 0.03 | 0.07 | 0.08 | 0.82 |
| In movement | Total | Persons | 20,34876 | 0.23 | 0.29 | 0.04 | 0.44 |
| In movement | Total | Males | 16,01135 | 0.24 | 0.26 | 0.04 | 0.46 |
| In movement | Total | Females | 43,3741 | 0.20 | 0.38 | 0.06 | 0.36 |
| In movement | Rural | Persons | 15,35250 | 0.30 | 0.36 | 0.04 | 0.30 |
| In movement | Rural | Males | 11,84342 | 0.31 | 0.34 | 0.03 | 0.31 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| In movement | Rural | Females | 35,0908 | 0.24 | 0.45 | 0.05 | 0.25 |
| In movement | Urban | Persons | 49,9626 | 0.03 | 0.06 | 0.05 | 0.86 |
| In movement | Urban | Males | 41,6793 | 0.03 | 0.05 | 0.05 | 0.87 |
| In movement | Urban | Females | 82,833 | 0.02 | 0.07 | 0.09 | 0.81 |
| Mental retardation | Total | Persons | 32,2285 | 0.24 | 0.36 | 0.04 | 0.35 |
| Mental retardation | Total | Males | 23,2298 | 0.25 | 0.33 | 0.03 | 0.38 |
| Mental retardation | Total | Females | 89,987 | 0.22 | 0.44 | 0.06 | 0.28 |
| Mental retardation | Rural | Persons | 24,5121 | 0.31 | 0.45 | 0.04 | 0.20 |
| Mental retardation | Rural | Males | 17,1341 | 0.33 | 0.43 | 0.03 | 0.22 |
| Mental retardation | Rural | Females | 73,780 | 0.26 | 0.52 | 0.05 | 0.16 |
| Mental retardation | Urban | Persons | 77,164 | 0.04 | 0.07 | 0.06 | 0.84 |
| Mental retardation | Urban | Males | 60,957 | 0.03 | 0.06 | 0.05 | 0.86 |
| Mental retardation | Urban | Females | 16,207 | 0.04 | 0.08 | 0.09 | 0.78 |
| Mental illness | Total | Persons | 15,4534 | 0.26 | 0.36 | 0.04 | 0.34 |
| Mental illness | Total | Males | 11,1873 | 0.27 | 0.33 | 0.03 | 0.37 |
| Mental illness | Total | Females | 42,661 | 0.23 | 0.44 | 0.07 | 0.27 |
| Mental illness | Rural | Persons | 12,1732 | 0.32 | 0.43 | 0.04 | 0.21 |
| Mental illness | Rural | Males | 85,522 | 0.34 | 0.41 | 0.03 | 0.23 |
| Mental illness | Rural | Females | 36,210 | 0.26 | 0.50 | 0.06 | 0.18 |
| Mental illness | Urban | Persons | 32,802 | 0.04 | 0.08 | 0.06 | 0.82 |
| Mental illness | Urban | Males | 26,351 | 0.04 | 0.08 | 0.05 | 0.84 |
| Mental illness | Urban | Females | 6451 | 0.05 | 0.10 | 0.10 | 0.75 |
| Any other | Total | Persons | 20,46986 | 0.22 | 0.31 | 0.05 | 0.43 |
| Any other | Total | Males | 14,56713 | 0.22 | 0.27 | 0.04 | 0.47 |
| Any other | Total | Females | 59,0273 | 0.19 | 0.39 | 0.07 | 0.34 |
| Any other | Rural | Persons | 14,33820 | 0.29 | 0.41 | 0.04 | 0.25 |
| Any other | Rural | Males | 98,3945 | 0.32 | 0.38 | 0.03 | 0.27 |
| Any other | Rural | Females | 44,9875 | 0.24 | 0.49 | 0.06 | 0.20 |
| Any other | Urban | Persons | 61,3166 | 0.03 | 0.06 | 0.06 | 0.85 |
| Any other | Urban | Males | 47,2768 | 0.03 | 0.05 | 0.05 | 0.87 |
| Any other | Urban | Females | 14,0398 | 0.03 | 0.08 | 0.09 | 0.80 |
| Multiple disability | Total | Persons | 39,2470 | 0.26 | 0.33 | 0.05 | 0.36 |
| Multiple disability | Total | Males | 28,0510 | 0.27 | 0.30 | 0.04 | 0.39 |
| Multiple disability | Total | Females | 11,1960 | 0.24 | 0.42 | 0.07 | 0.28 |
| Multiple disability | Rural | Persons | 30,5476 | 0.33 | 0.41 | 0.04 | 0.22 |
| Multiple disability | Rural | Males | 21,1812 | 0.35 | 0.38 | 0.03 | 0.24 |
| Multiple disability | Rural | Females | 93,664 | 0.27 | 0.48 | 0.06 | 0.19 |
| Multiple disability | Urban | Persons | 86,994 | 0.04 | 0.07 | 0.07 | 0.82 |
| Multiple disability | Urban | Males | 68,698 | 0.04 | 0.07 | 0.05 | 0.84 |
| Multiple disability | Urban | Females | 18,296 | 0.04 | 0.10 | 0.11 | 0.75 |

Source: Deshpande, India Social Development Report, 2016.

Note*:* CL: casual labour; AL: agricultural labour; HHI: household industries; Others: other work.

# Chapter 4

# Education and Labour Market Outcomes of PWDs in IT Sector in India

## Introduction

This chapter will present results of the primary survey based on which this study is undertaken. It is divided into four sections. The first section will describe the data set and methodology used to conduct the survey. Results of the survey will be presented in the subsequent three sections focusing on three main themes; personal and family characteristics of individuals with disabilities; experiences of persons with disabilities in education; and experiences of PWDs in the IT labour market. The rationale for selecting IT sector as a field of study emerged from the fact that the IT sector accounts for a major share of India's Gross National Product (GNP). Over the past two decades, growth of the Indian economy has been driven by the service sector wherein the IT and IT-Enabled services industries are the key players. However, the growth of this sector in terms of output and revenue has not been commensurate with the growth in job creation. The period between 2004-05 and 2011-12 is defined as the period of jobless growth when the sector witnessed tremendous growth in output but a much lower growth in terms of jobs. Furthermore, with the rapid advancements in technology such as the penetration of Artificial Intelligence (AI) and with the growing digitization, the impact it can have on jobs could be profound. On the one hand, rapid technological change will lead to massive job cuts in those skills which may be considered outdated, while on the other hand it will create new jobs which require advanced skills. Since IT sector employs only those individuals who possess IT specific skills, it is imperative for those individuals entering the IT labour market to secure a post-secondary education. The challenge before the higher education system therefore, is to transform itself and gear towards imparting industry relevant skills which will enhance the employment prospects of the graduates.

During the period of the high growth phase, many IT companies adopted a shift in their hiring and recruitment policies. While IT sector requires a skilled and competent human resource and hires candidates based on their aptitude and skills, industry leaders have realized that a diverse workforce inclusive of women, people from linguistic and ethnic minorities, people belonging to backward caste and people with disabilities brings benefits to the

workplace. Several IT companies have adopted a diversity and inclusive policy wherein it aims to create a truly diverse workforce inclusive of candidates irrespective of their gender, race, age, religion, nationality, social or economic background, and physical or mental disability. Companies are now desirous of projecting itself as an equal opportunity employer and have therefore incorporated the policy of non-discrimination in hiring and recruitment practices. This shift in approach is a result of several key developments that have taken place both at the national and international levels. With the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) stressing the need to provide equal opportunities to PWDs at all stages of employment and mandating that reasonable accommodation should be provided to PWDs. In order for them to participate fully and be productive, organizations are required to remove all barriers and create an enabling environment for PWDs to participate fully in the world of work. Furthermore, the ILO through the establishment of the ILO Global Business and Disability Network champions the cause of disability inclusion in the workplace and encourages employer's organizations and corporates to adopt an equal opportunity policy from a disability perspective.

Recognizing the importance of inclusion, The National Association of Software and Services Companies (NASSCOM), the trade body for the IT-BPO industry and NASSCOM Foundation, the Corporate Social Responsibility (CSR) division of NASSCOM launched the 'Accessibility Initiative' in 2010. The initiative was aimed to create an industry platform to empower persons with disabilities using the collective strength of NASSCOM member companies. The initial focus of the initiative was on accessibility (both physical and information and communication technology), employability and assistive technology. As a result the representation of PWDs in the IT labour force has increased by multiple times. India's IT-BPO industry employs nearly 3.9 million people, but the representation of PWDs in the overall IT labour force is less than one per cent. This study seeks to answer the following questions: what factors determine employment outcomes for PWDs in the IT sector; what motivates employers in the IT sector to employ PWDs; and what could be the reasons for the low numbers of PWDs in the IT labour force. This study aims to shed light on the dynamics involved in the employment of PWDs from a multi stakeholder perspective. It will analyse the perspectives of employees with disabilities, employees without disabilities, HR managers and intermediaries that facilitate recruitment of trained candidates with disabilities.

## 4.1 Data and Methodology

The present study is based on a primary survey that was conducted during the period February - April 2017, among employees with disabilities, employees without disabilities and HR managers of select IT firms across the three metropolitan cities of Delhi, Mumbai and Bengaluru. In addition, a survey was also conducted among the representatives of Disabled Persons Organizations (DPOs), which are Non-Governmental Organizations working for the empowerment of people with disabilities (PWDs). The decision to survey representatives of DPOs emerged from the idea to target them in order to gain access to employees with disabilities who are likely to serve as prospective sample respondents. DPOs serve as intermediaries between employers and candidates, providing skill development and job placement services to PWDs by collaborating with corporates. Although, there are many DPOs advocating for the rights of the disabled and working towards their inclusion in the mainstream economy and society, only those DPOs working in the area of education and skill development of PWDs were covered in the survey.

Representatives of four DPOs were approached with the request for sharing the contacts of those candidates who had undergone training in their institutes and who were employed in the IT sector. Out of them, one DPO provided contact details of employees with disabilities working in the IT sector and the second one arranged a meeting with the HR manager of India's largest IT firm. In order to identify the research population, nearly 30 small and medium IT solution firms located in Gurgaon and Noida were contacted via telephone. In addition, major Indian and multinational IT companies situated in Delhi, Mumbai and Bengaluru were also approached via email. However, there was not even a single response from any of the companies contacted. Using the contacts received from the two DPOs and contacts provided by some colleagues, a final sample of 30 respondents comprising employees with and without disabilities and HR managers were shortlisted using purposive sampling technique. Out of the 30 sample respondents, only 12 of them participated in the survey which included six employees with disabilities, four employees without disabilities and two HR managers. The two HR managers who responded to the survey were from two of India's leading IT firms.

The survey was conducted using separate questionnaires/schedules for each of the three categories of participants. The questionnaires and schedules were dispatched directly in

person and via email to the participants. The questionnaires prepared for both employees with and without disabilities contained structured and open-ended questions whereas the schedule designed for the HR managers contained purely open-ended questions. Furthermore, another schedule was prepared with the purpose of eliciting the views and experiences of DPOs regarding education and employment of PWDs.

Results of the survey are analyzed using descriptive analysis. Owing to the small sample size, the findings of the survey cannot be generalized either to the entire disabled population of the country or to the IT sector of India as a whole.

### 4.2 Personal and Family Characteristics that Influence Labour Market Outcomes

Personal characteristics of an individual such as gender, age, caste, marital status, type of disability and age of disability onset influences an individual's education and labour market outcome. Being male has a greater probability of positive education and labour market outcomes; conversely, being female has a greater probability of negative education and labour market outcomes. Even among PWDs, men with disability have much higher educational and employment outcome when compared to women with disability. All the six employees with disability who participated in the survey are males. Although, it is presumptuous to conclude that women with disabilities are totally out of the IT labour force, their representation in the labour market in general and IT labour market in particular is significantly lower than that of men with disabilities. This finding can be substantiated with the fact that among the 20 employees with disabilities who constituted the sample, the representation of women with disabilities was nil. The macro picture as discussed in Chapter three (see tables 3.13 and 3.14) shows that nearly 50 per cent less employed as compared to men with disabilities. In terms of enrolment in higher education, their enrolment rate is almost three times lower than for men with disabilities (see table 3.16). This might reflect the fact that women with disabilities may have to experience dual discrimination due to gender discrimination and disability (Lamichhane 2015). On the other hand, out of the four employees without disabilities who participated in the survey, all were females. This is reflective of the fact that despite the low labour force participation rate of women, women without disabilities have almost equal opportunities on par with men in terms of employment and face relatively less discrimination in comparison with women with disabilities.

An individual's social background, namely caste, language and ethnicity can play a major role in determining his/her education and labour market outcomes. When these characteristics intersect with disability, there is a greater probability of facing double discrimination as evident from the discrimination arising out of the intersection between gender and disability. Four out of six employees with disabilities who responded to the survey belong to the general category whereas two belong to other backward caste (OBC). Conversely, all the four employees without disabilities belong to the general category. It is assumed that individuals who belong to higher social backgrounds have positive educational and labour market outcomes in comparison to those from lower social backgrounds owing to social and institutional factors which favors the former. Studies that examine employment differentials among the social groups in IT labour market are limited and there are hardly any studies that have explored the differences in labour market outcomes among PWDs who belong to historically marginalized social groups. However, based on sample characteristics, we can assume that there are employment differentials among PWDs depending on their social category. Further research that makes use of a large sample can substantiate this finding.

Place of residence (rural/urban) act as a determinant in accessing education hence can determine labour market outcomes. Five out of six employees with disabilities and three out of four employees without disabilities in the sample hail from urban areas. It is not wrong to assume that urban residence might have enabled employees with disabilities to take advantage of educational opportunities, thereby giving them a competitive advantage in the IT labour market over individuals with disabilities from rural areas. Rural residence puts individuals at a disadvantage in accessing education, be it school education or higher education, which is all the more true for PWDs. One plausible explanation for the high drop-out rate among children with disabilities is that majority of them reside in rural areas where adequate educational facilities for Children with Disabilities (CWDs) are not available. This leads to an increase in the cost of transportation which in turn drives up the cost of acquiring education. Increase in the cost of education limits access to education for children and youth with disabilities who constitute a major part of the lower economic strata.

Education and labour market outcomes vary across PWDs depending on the type and severity of disability. People with hearing, speech, visual and mobility impairments experience relatively higher labour market outcomes compared to people with intellectual and psycho-social disabilities as discussed in Chapter 3 (see tables 3.13 and 3.14). Using data on

developing countries from the World Health Survey, Mizunoya and Mitra (2013) concluded that, people with multiple disabilities experience much lower employment rates than people with single disability. People with multiple disabilities are less likely to be employed in comparison to those with single disability, owing to factors such as their severity of disability and inadequate workplace accommodations that does not meet their needs (Lamichhane 2015). This survey covered only individuals with single disability due to problems associated with accessing the respondents. Among the six employees with disabilities who responded to the survey, four have vision impairment while two have mobility impairment. Evidence from the survey and Census data 2011 reveals that people with multiple disabilities experience greater disadvantages in participating in the labour market in India, particularly in the IT sector. This may be attributed partly to the lack of workplace supports and partly to their low educational attainment, which in turn may be attributed to inaccessible educational systems and non-inclusive educational environment due to the non-availability of reasonable accommodation.

Age of disability onset may have a significant influence on education and labour market outcomes of PWDs. As many as four employees with disabilities developed their impairment at birth whereas two of them acquired their impairment at a later age. The early onset of disability, at birth, through young adulthood can affect a person's employment outcomes in varied ways. Early onset of disability is likely to affect the acquisition of education and job skills (human capital) in addition to the direct effect of disability on work (Loprest and Maag 2003). This reduced investment in human capital may in turn reduce an individual's employment and earnings prospects throughout his/her lifetime (Ibid). However, results did not show a significant association between the age of disability onset, education and employment outcomes for employees with disabilities in the sample. Three out of four employees with disabilities who acquired their disability from birth secured a graduation or above whereas both the employees who acquired their disability at a later age had a graduation. In their study Loprest and Maag (2003) found that the probability of completing high school is significantly lower for those with an early onset of disability, among young cohorts aged 22 to 35. Further-more young cohorts with an early disability onset have a lower probability of employment compared to their non disabled peers, which may be attributed partly to their lower high school completion rate and partly due to the direct effect of disability on work. This finding does not hold true with respect to the sample under study

wherein employees with an early onset of disabilities in the sample have opposed-secondary education and their disability does not prevent them from employment.

Family size can influence parents' decision regarding investing in children's education. More number of children could negatively affect the education of children with disabilities. Analysing the determinants of school participation for children with disabilities, Lamichhane (2015) found that number of children in a family is negatively correlated to school participation rate, at one per cent significance level. There seem to be no correlation between the number of siblings and educational attainment of employees with disabilities in the survey, since all but one have an education level of graduation and above. However, having siblings with a disability can have a significant negative effect on the educational attainment of the older child with disability, since he/she must discontinue education and take up some form of employment in order to gain additional income to finance the education of his/her siblings. This scenario was observed in the case of one employee with disability, who has two siblings with a disability, and who managed to secure only a diploma while all the others secured at least a graduation.

Family income has a positive effect on children's education, and this is true for children with disabilities as well. Family income is important in order to meet the hidden and upfront cost of attaining higher education (Akanle 2007; Eamon 2005; Checchi 2000). In his study on the determinants of school participation and completion in India, Lamichhane (2015) showed that monthly household expenditure has a positive effect on school participation of children with disabilities. Families would be willing to invest more in their children's education if their income level is higher than a certain threshold. This is evident from the educational qualification of all the participants in the survey both with and without disabilities, where all of them have a post-secondary education. Four out of six employees with disabilities and two out of four employees without disabilities in the sample have an annual family income between Rs 2,00,000-5,00,000. Additionally, one employee each, both with and without disability have an annual family income above Rs 5,00,000. Thus it is clear from the analysis that irrespective of disability, families are willing to invest in children's education if they have a reasonable and sufficient level of income. However, when families have to distribute their resources between more children, girls and children with disabilities are less prioritized and are less likely to be sent to school (Hillman and Jenkner 2004).

Parents' educational background may have a significant effect on children's educational outcome. Students, whose parents have not been to a university, are less likely to attend the university themselves (Sweet et al. 2012). On the contrary, parents who have attained higher levels of education place a high value on the education of their children and would ensure that they go on to secure higher education. Out of the six employees with disabilities, five employees have a graduation or above whereas among the four employees without disabilities, all have a graduation or above. This may be the result of a positive effect of parental educational background wherein the parents of all the employees in the sample, both with and without disabilities have at least a secondary education. The interaction between low family income, low parental education and more number of siblings, particularly siblings with disability, may be the plausible explanation for one employee with a disability not being able to secure a graduation.

### 4.3 Experiences of Persons with Disabilities in Education

Educational experiences vary among PWDs depending on the type and severity of disability and institutional or environmental factors. Environmental factors include physical environment which determines access to educational institutions and teaching-learning environment that determine academic participation and performance of students with disabilities. This section will present educational outcomes of employees with disabilities and their experiences in the educational institutions in India. It will also throw light on the perspectives of employees without disabilities, HR managers and representatives of Disabled Persons Organizations (DPOs) on this issue.

As mentioned earlier, five out of six employees with disabilities in the sample have a graduation or above; out of whom one is a postgraduate. Conversely, all the employees without disabilities in the sample have a graduation or above. While the number of postgraduates in both groups, with and without disability is comparable (one each), none of the employees without disability are below graduation. On the contrary, one employee with a disability managed to secure only a diploma which may indicate that education levels of PWDs are relatively less than that of their non-disabled counterparts, both in absolute and relative terms. This finding is supported by the Census data of 2001 and 2011 which shows that the proportion of PWDs with graduation or above is relatively lower than those for the overall population as discussed in Chapter 3 (see tables 3.9-3.12). Since IT sector mainly

employs people with higher education, access to quality higher education is detrimental for PWDs to gain entry and progress in the IT sector. As indicated by one of the HR managers' of India's largest IT firm who participated in the survey, education levels for PWDs must increase, as it determines their employability. Even when a small proportion of PWDs manage to enter the sphere of higher education, they have to face several barriers with regard to the choice of discipline or field of specialisation in which they desire to pursue a career. Analysing the educational background of employees with disabilities in the sample, it was found that two of them secured a degree in arts stream whereas one each specialised in basic science, engineering and management. One employee with a disability who is diploma holder attained his diploma in information technology. Conversely, out of the four employees without disability, two of them attained an engineering degree whereas one each specialised in basic science and management.

Labour market outcomes such as employment, earnings, job match and career advancement are determined not by levels of education alone but by the type of institution and discipline of study. A study conducted by Kannabiran and Vinayan (2015) found that majority of the students with disabilities (56 per cent) were enrolled in state universities. Around 28 per cent of Students with Disability (SWD) were enrolled in central universities which were followed by 13 per cent enrolment in aided private colleges aided and affiliated to recognized universities. The rest were spread across government colleges, private universities, and private unaided colleges (Kannabiran and Vinayan (2015: 90). While less than one percent of PWDs are enrolled in higher education, it is observed that majority of them are enrolled in social sciences and humanities. In their study which covered 414 students with disabilities in higher education across the country, revealed that 41 per cent of SWD opted for social sciences whereas 34 per cent chose humanities. The enrolment of SWD was extremely low in science disciplines (nine per cent) followed by commerce, engineering and education which had only three per cent each (Ibid). Negative perceptions held by educators that PWDs cannot pursue courses in science and engineering and poor socio-economic background of the disabled students compel them to take up courses in social science and humanities. According to the HR manager of a leading IT major which is the third largest IT company in India, disabled candidates opt for conventional courses like humanities. While these courses make a person knowledgeable, they do not make him employable. The IT sector demands candidates who have an engineering background. He further added that disabled students, particularly visually impaired students do not opt for science and engineering courses. Since technology

can break barriers, disabled students must opt for science and engineering disciplines so that they can compete in the IT job market. For those who are from the humanities stream, they should focus on developing their communication skills and should pursue a professional course such as MBA.

Apart from individual's education level and discipline of study, type of school attended has an important implication on the transition from school education to higher education and thereafter to the labour market. The two indicators used to capture the meaning of type of school in this analysis include the nature of school i.e. mainstream vs. special schools and ownership of schools i.e. public vs. private. On the basis of the ownership of schools, five out of six employees with disabilities studied in public schools whereas one studied in a private school. Using the nature of school as an indicator, only one of the employees with a disability studied in a special school whereas all the other five employees studied in mainstream schools. Enrolment of students with disabilities in mainstream schools does not automatically ensure their inclusion. In order to make inclusion truly meaningful from a disability perspective requires structural changes in the physical environment, teaching-learning materials, method of instruction, curriculum content, method of evaluation and assessment and shift in attitudes regarding ability and disability. PWDs studying in mainstream educational institutions in India face numerous challenges while navigating through the obstacles prevailing in Indian educational system. They vary from inaccessible physical infrastructure of the institutions (schools, colleges, & universities), difficulty in getting scribes to write exams, lack of sign language interpreters, unavailability of reading materials in accessible form, and lack of access to assistive technology. In addition to these, non-cooperation from friends, negative attitudes of teachers and non-teaching staff, and insensitivity on the part of authorities of education institutions to the needs of disabled students pose barriers to their academic participation and performance.

Four out of six employees with disability in this study resonated similar views regarding the barriers they faced in pursuing their education. Two participants did not experience any obstacles during the course of their education because one of them has a low vision and the other one acquired his disability during his working-age. The extent to which an individual's disability restricts his/her participation in education depends on the severity of disability, age of disability onset and the supports available from families and educational institutions be it schools/universities. Negative attitudes held by parents and misconceptions by individuals

with disabilities themselves may have a significant impact on their education and labour market participation. Parents often have a negative attitude towards their learners with disabilities (Rangaswami 1995). Two of the participants indicated that negative attitudes and lack of awareness about disability on the part of their parents became an obstacle in their path. The stigma from disability makes parents reluctant to send their children with disabilities outside home thus denying them education and training in vocational skills (Adogo 2006). Conversely, the positive attitudes displayed by parents serve as a strong supporting factor in the educational success of children with disabilities. Some parents are positive and enthusiastic towards education of their children with disabilities (Browers, 1985).

Not only negative attitudes of parents but also misconceptions held by PWDs themselves may adversely affect their educational participation and outcomes. One of the participant in the study who became visually impaired at the age of 13 due to an accident said that he was unwilling to accept the fact that he has a disability. The non-disabled society has a stereotypical attitude towards PWDs (McFerran 2005). This makes them grow up knowing that they are unworthy and uneducable. When learners with disabilities are regarded as abnormal by their non-disabled family and society, than all their behaviour and characteristics are coloured by the label. The result of labelling leads to the development of negative self-concept among learners with disabilities (Adogo 2006). This leads to the formation of self-destructive ideas that influence their daily life. Some children may irrationally believe that they are rotten people, who are to be blamed for their disabilities and they deserve to suffer thus seeing no need to receive education (Ellis 1974). However, some children have been helped to change these believes and attitudes and have realized that they are capable of performing better in their education (McFerran 2005). Those who have gone to school disregarding societal attitudes towards them have excelled and become successful in life (Adogo 2006).

Education plays a critical role in the development of an individual's personal, physical, intellectual, psychological aspects and not just function as a mechanism of knowledge production or knowledge acquisition. Also, it provides a space to discover and nurture one's talents and abilities and develop new capabilities which will enable individuals to contribute to the society. This requires opportunities to participate and engage in both academic and extra-curricular activities. Although, barriers faced by PWDs to engage fully in extra-

curricular activities is beyond the scope of this study, two of the participants expressed that inability to access sports and games as one of the challenges they encountered during their school and college life. Thus, when PWDs strive to enter the world of education, they not only aspire to acquire knowledge and skills that will make them employable, but also desire to be part of the socialisation process that education stands for.

Recently there are debates going on among education practitioners specialising in education for CWDs regarding the type of education that best serves the educational needs of children with disabilities. Much of the debate is lined up between special education or inclusive education. While special education is provided through special schools which are meant exclusively for CWDs, inclusive education is provided through mainstream schools. Special education is imparted through methods and processes that best suit the special educational needs of CWDs: with the use of Braille, sign language, tactile diagrams and projective tools. However, it segregates children from the mainstream society and denies them the opportunity to socialise with non-disabled peers. Moreover, most special schools admit children only with a single disability i.e. visual/hearing/mobility impaired and thus segregates children based on their type of impairment denying them the opportunity to learn and mingle with children having other disabilities.

On the other hand, inclusive education is a holistic approach wherein all children regardless of gender, race, language, ethnicity, socio economic background and disability study together in an inclusive environment. This requires a reorientation of curriculum, pedagogy, teaching-learning methods, mode of assessment and change in attitudes for education to be truly inclusive. In other words there should be an overall transformation of the education system wherein students with and without disabilities can grow in a harmonious manner. Apart from special education and inclusive education, integrated education is also available for CWDs. Integrated education is nothing but merely shifting CWDs from special schools to mainstream schools. It does not require any change in the teaching-learning process or making accommodation to suit the needs of CWDs. As a result, though CWDs are admitted to mainstream schools and get an opportunity to attend classes along with non-disabled children, their learning outcomes lag far behind than that of their non-disabled peers. In most cases their progress is very slow forcing them to drop-out of school after some years.

According to the representative of one organization that participated in this study and working in the area of education for CWDs, the special schools not at all prepares PWDs for employment by imparting necessary skills. Students from special schools have very poor communication skills, mannerism, body language, computer skills and command over English. They may have good mobility skills but that is not sufficient though it is necessary. Most special schools do not provide computer training. Recently, a few special schools have started to provide computer training but the outcome of the same is not noticeable. A few students learn basic knowledge in computers and smart phones either from friends or relatives. Concerning the type of education that best equips PWDs, he commented that "we advocate for integrated education rather than inclusive education". He went on to say that "when we get young children with disabilities primarily at the age of three – four, we equip them in reading, writing and mobility skills. Once they are equipped with these skills, we sent them to the good private schools. In addition to that, our special educators provide training to the teachers of those schools where our students are studying. The teachers can also contact our special educators if they are facing challenges in teaching our students. The additional benefit that our students have is the extra tuition classes provided by our special educators. We provide separate hostel facilities for boys and girls". He further added that "our students went on to secure higher education from the best higher education institutions like the Indian Institute of Management (IIM) and the Tata Institute of Social Sciences (TISS) etc, and have been well placed in both the government and private sectors". In case of inclusive education, there should be a minimum of at least one resource centre in a district.

In the words of the representative of a pan–India DPO involved in the training and placement of PWDs, "our education system should give more emphasis on developing inclusive educational tools, train more sign language interpreters and develop an inclusive syllabi at all levels of education". The education system should also provide inputs to the community, such as parents, care givers, etc that will help them reinforce the belief that PWDs can earn a livelihood and lead a life of dignity. Indian education system, both school and higher education, seems to be fragmented with multiple agencies and boards, curricula and types of institutions which are governed by a complex set of regulatory mechanisms that eventually produce a mass of human resources without any skills. In this context the educational provisions for children and youth with disabilities are no different from that which is available for the general population, but present a bleak picture which is fragmented between special education, integrated education and inclusive education. The deficiencies in our

school education system in empowering children and youth with disabilities by not imparting the requisite skills coupled with the denial of access to technical and vocational education necessitate PWDs to go through skill development and training programmes conducted by NGOs.

According to the CEO of an NGO which works in partnership with other NGOs serving the visually impaired, the education system should empower people by imparting the requisite skills so that they can become a viable and potential human resource. The basic reason why the government is investing in programmes such as the National Skill Development Mission is because our formal education system, both school and higher education, has failed to develop a skilled manpower. In case of CWDs, schools must work towards making them independent or self-reliant. By independence one does not mean independent mobility alone, but that they should be equipped to use computers and accessible softwares from grade III or IV onwards. By the time they reach grade V or VI they should be able to write their assignments on computers, and when they reach grade VIII they should be allowed to take their exams with the aid of computers instead of relying on scribes. The school curriculum should be designed in such a manner that students are taught various skills rather than imparting knowledge in subject matter. The pedagogical method employed in teaching maths and science to visually impaired students must undergo a change and should be inclusive in nature. From the economists' general perspective, the main goal of formal education is to transform students into potential human capital by imparting necessary skills needed to compete in the job market. The logic behind massive promotion and financing of skill development programmes is driven by the fact that formal education system is not imparting the requisite skills needed for one to become employable. This scenario prevails even for PWDs who have to undergo additional vocational training or skill development programmes.

### 4.4 Experiences of Persons with Disabilities in the IT Labour Market

Even as this study examines the linkage between education and IT labour market in relation to PWDs, the focus is particularly on higher education. Almost all the participants in the survey opined that formal education does not prepare them to compete in the IT labour market. Since IT sector requires people with either computer science or engineering background and given the fact that PWD's in general and visually impaired people in particular are denied access to technical education, they are compelled to undergo vocational

training in order to acquire skills. Among the respondents (two out of six) acquired IT specific skills from NGO run institutions, whereas two of them acquired skills through self-learning. Only one of the sample respondents acquired IT specific skills from a public institution. Similar one of the respondents has an engineering background and experienced a mismatch between his qualification and his job title. Despite having an engineering background, he had to undergo training of specialised softwares in order to perform his job. In the overall analysis, it shows that five out of the six respondents were found to have a mismatch between their educational qualification and their respective job profile.

It is interesting to note the fact that none of the employees without disabilities in the sample attended any vocational training or skill development programme. This indicates that in case of people without disabilities, companies first recruit them and then provide training in the necessary skills required for the job, whereas in case of people with disabilities, companies insist that they ought to first acquire the skills in order for them to be employable. Thus the candidates with disabilities invariably had to get trained in the concerned DPOs in order to be employable, as required by the IT companies which would then subsequently employ them.

Analysing the job profiles of sample respondents, it was found that three out of six employees with disabilities are holding positions related to accessibility testing, viz. Testing Engineer, Senior Accessibility Tester and Lead Accessibility Expert. The task entrusted with this job position is to test the accessibility of websites, web contents and applications with the screen-readers and screen-magnifiers. Based on the survey observations and personal communication with one of the managers of the human resources department in a leading IT firm in India, it can be concluded that in most cases the position of accessibility tester is held by visually impaired people. The other three respondents are holding positions of Senior Analyst, Senior IT Manager and Assistant Web Developer. In contrast, analysing the job profiles of the sample respondents without disabilities, it could be found that all the employees are posted at senior positions. Two are posted as senior analysts, and the other two are posted as Senior Engineer and senior consultant. A cursory comparison between the two groups of respondents hints at an existence of a wide gap or disparity in the ranks or positions that these two groups of employees hold. This may be attributed to differences in their educational experiences and professional skills.

Labour market outcomes vary among people having the same disability and across different disabilities which may be attributed to the level of education, work experience, functioning capabilities and level of accommodation required. This is evident from the variations in job positions and earnings among the six employees with disabilities. Wide disparity was observed in the earnings of the six employees with disabilities, wherein three employees have earnings below Rs five lakh while the returns for the other three employees are above Rs five lakh. Out of the three employees who have earnings above Rs five lakh, two are earning above Rs 15 lakh while one of them have earnings between Rs five lakh and 10 lakh. The plausible explanation for this earnings differential could be attributed to work experience and levels of productivity rather than levels of education. The perception that people with mobility impairment are more preferred in employment over people with other disabilities did not prove significant with respect to the sample under study. In terms of the earnings differential between employees with vision impairment and employees with mobility impairment which are the two categories of disabilities included in the sample, two visually impaired employees earned relatively higher than employees with mobility impairment. However, two other visually impairment earn substantially lower than the mobility impaired which indicates the extent of disparity in earnings among employees with the same disability. A comparison between the earnings of employees with and without disabilities is not possible as the latter group did not reveal their earnings. Although there is a positive correlation between education and labour market outcomes for PWDs, there is a clear mismatch between their educational qualification and job profiles and also between education and earnings. A cursory look at the nature of employment for the two groups reveals that two employees with disabilities are engaged in temporary jobs whereas among employees without disabilities, all are engaged in permanent jobs. This gives an impression that even when PWDS are employed, they are more likely to be employed in temporary and part-time jobs in comparison to their non-disabled counterparts (Braddock and Bachelder 1994).

In terms of work experience, four out of six employees with disabilities had a work experience before joining the present IT job. Among those who had a work experience, two out of four acquired their experience from IT sector while two others gained experience from the education sector and textiles sector. This invalidates the argument that PWDs have low attrition rates since four out of six employees changed their previous jobs after a period of one to three years. For employees without disabilities, two had acquired work experience

prior to joining the present job whereas for two others, it is their first job after completing their final qualification.

With respect the time duration involved in career progression and pay increment, significant variation was observed among the six employees with disabilities in the sample. Two employees stated that they received their first promotion and increment within a span of one year from their date of appointment. In case of two other employees, they had extreme outcomes wherein one of them received a promotion after six years of joining while the other did not receive any promotion at all despite completing nearly seven years in his present job. However, both of them reported that they received timely increment in pay. One of them who works for a multinational IT company told that it took relatively longer time for him to get a promotion and an increment because he was not undertaking full workload due to an accident which made him disabled, and due to recession which hit the IT sector as a result of the 2008 US financial crises. An important finding that emerged from the study was that PWDs received pay increments at regular intervals within a short time period but it took relatively longer time to get a promotion. This finding holds true for all the employees with disabilities where all of them received increment within a time period of three months to one year. In contrast, employees without disabilities reported that they received promotion and increment within a period of one year from joining.

Another perception that PWDs have relatively long job waiting periods was put to test. Three out of six respondents had a job waiting period ranging from one to three years whereas three others did not experience job waiting because they received placements immediately after their final qualification. The job waiting period for employees without disabilities in the sample was relatively less than for employees with disabilities. Out of the four respondents, two of them had a job waiting period of six and two months respectively while one of them reported that she got her first job immediately after her final qualification though not explicit.

In order to gain employment, it is necessary to gather information about available employment opportunities. Access to information is determined by social networks with family and friends, access to various forms of media including print and electronic media, availability and accessibility of information and communication technology (ICT) and so on. PWDs can also search and find jobs for themselves provided they have access to ICT and assistive technology. The perception that PWDs have poor social skills was invalidated by the

fact that three out of six respondents came to know about the present job opportunity through family and friends. In case of two others, information about the present job was obtained through electronic media while one of them obtained information through an NGO. This gives an impression that PWDs utilise the same sources as that of people without disabilities to gather information about job openings. Subsequently, Three out of four respondents without disabilities used different sources to access information about their present jobs. While one of them gathered information from friends and relatives, the other one accessed information through electronic media. The third one sought the help of an NGO to gather information about the present job.

With regard to the procedure of recruitment/placement, five out of six respondents with disabilities received their present job placement through direct recruitment. Only one of them was placed with the help of an NGO. As far as employees without disabilities are concerned, two of them received their placement through direct recruitment whereas one of them was placed through campus recruitment. A notable feature is that one of the respondents received her placement through a job fair conducted by an NGO which is a rare phenomenon for non-disabled people. Intermediaries play a crucial role with respect to employment of PWDs. Both the HR managers (HRM) who participated in the survey acknowledged the critical role of intermediaries (Disabled Persons Organizations) in supplying trained candidates with disabilities. According to the HRM of India's third largest IT company, intermediaries play a crucial role in preparing the candidates in order to make them employable in the corporate sector. They provide training in critical skills such as basic computer skills, orientation with screen-reader software such as JAWS, and communication skills. In a nutshell, these institutions act as a finishing school for candidates with disabilities. A similar view was also echoed by another HRM from India's largest IT firm. In her view, intermediaries provide talent pool to the employers by training the candidates to work efficiently and equip them to clear the interview process.

Corporates forge partnership with DPOs to identify qualified PWDs and to recruit them. The main purpose to survey representatives of DPOs was to explore the linkage between corporates and DPOs with respect to hiring of PWDs. Representatives of all the four DPOs who participated in this survey acknowledged the strong partnership between corporates and DPOs. Out of the four DPOs that were surveyed, two of them explicitly partnered with corporates from a wide range of industries in different sectors. From the perspective of this

study which explores such partnerships with the IT sector, the first organization collaborates with the IT industry in Bangalore whereas the second one collaborates with the IT industry in Delhi and the National Capital Region (NCR). When enquired whether corporates rely heavily on DPOs to recruit PWDs, the response from the representatives of three DPOs was affirmative. The CEO of one of the DPO which is engaged in networking with other organizations in the disability sector commented that, corporates look upon NGOs to supply trained personnel with disabilities. Recently there is a growing trend wherein corporates recruit directly through advertisement or through consultancy firms, but they are relatively few in number. Another source of recruiting PWDs is through campus placement. A handful of candidates with disabilities from IITs and IIMs have been recruited through this route. On the other hand, representative of another DPO pointed out that, corporates mostly reach out to NGOs to identify skilled PWDs. She added that Corporates also arrange recruitment drives for PWDs on their own. Subsequently, the secretary of a leading DPO working for the visually impaired opined that, when IT companies needs services related to training and hiring of PWDs or inputs related to accessibility, they completely rely on DPOs.

In the course of interacting with the participants, the researcher went on to ascertain if the employees with disabilities got into their present jobs as per their aspirations or out of circumstance of necessity. It came to light that four out of the six respondents chose a career in IT according to their preference, whereas the remaining two of them opted thus out of compulsion. Among those who made a career in IT by choice opined that they had other options available to them at the time of choosing their career. Out of the two who chose IT jobs out of compulsion, one of them said that he was preparing for bank exams, which gave a signal that he would switch over to the banking sector, should the opportunity arise. When enquired about the career options available to PWDs, the representative of a pan-India DPO, commented that PWDs have limited career options. More often than not, they take up a job because it is available rather than they are interested in it. This is evident from the huge mismatch between their education qualifications and job profiles they are holding. On the other hand, the CEO of a networking organization among the DPOs, commented that PWDs have various career options, but the range of options is relative depending on their type of disability, the opportunities available to them, and their preferences.

Moreover families and society hold stereotypical perceptions that PWDs do not have aspirations and are incapable of making decisions about their life. Hence they try to dictate

their choices and decisions on PWDs. When it comes to choosing a career, apart from the family of the disabled person, educators decide what a disabled student is capable of doing and which career path he/she should pursue. According to the representative of a pan-India DPO, for PWDs choices are mostly given by others and they have less independence in choosing their career. However, the CEO of the aforementioned networking organisation opined that the degree of independence varies from individual to individual. Two individuals having the same disability may have varying degree of independence in the matter of making choices. To make matters worse, negative perceptions and stereotypes held by employers and co-workers towards the disabled section, can adversely affect the labour market outcomes of PWDs. It is also found that employers hold misconceptions about the productivity of PWDs and the type of jobs that can be performed by PWDs. These misconceptions coupled with the reluctance to provide reasonable accommodation pose barriers to PWDs at various stages of the recruitment process, continuation of employment and career progression. In the words of the CEO of a well known Foundation, corporates have a blurred view about inclusion of PWDs. He attributes this to the lack of availability of qualified human resources with the requisite skills, which may be due to the low quality of Indian education system. On the contrary, according to the representative of another DPO specializing in skill development, the idea of inclusion has been very well received in the corporate world. However, given the lack of awareness about the capabilities of PWDs, many corporates struggle to put the idea of inclusion into practice. In many cases there is a lack of complete understanding of the term "inclusion" itself.

An attempt was made to explore the experiences of PWDs in the IT labour market, both at entry level and workplace. As far as their present jobs are concerned, most of them said that they did not face any barrier whatsoever during the recruitment process. However, one of them commented that his manager had to convince other staff members that he had the capability to work. Furthermore, two of them expressed the hardship they had to face in finding employment. They attended a number of interviews one after the other and cleared the interview process. Yet employers were reluctant to hire them because of their disability. Underestimation of their abilities was the most disheartening, said one. Four of the six described their challenges they faced at the workplace in the course of performing their tasks. Two of them said that they did not face any challenges. The challenges mentioned by the four turn out to be multi-dimensional and vary depending on the type and degree of disability. The challenges faced by visually impaired employees include non-cooperation from colleagues,

exploitation of credits, doubtful attitude by co-workers, and ignoring the abilities of employees with disabilities. A visually impaired employee described that he was unable to identify the conference rooms in his work premises. For those with mobility impairments, the challenges face by them concern mainly with accessing the entire workplace and inaccessible corporate systems. One of them also narrated that he lacked classroom training for skill up-gradation due to his movement restriction.

Among those employees with disabilities who participated in the survey, four of them opined that their co-workers included them in team activities and their team leaders consult their opinions in decision-making. Out of the two who expressed a different view, one of them said that his co-workers rarely included him in team activities, but added that his team leader consults his opinion in decision-making process. The other respondent worked for a multinational IT firm and was permitted to work from home as part of reasonable accommodation. Most of his co-workers were based in other cities and there was very little interaction with the team. Furthermore, he added that even though teams were constituted to perform specific tasks, each individual was given a target which they had to achieve individually. However, his team leader did consult his opinion in matters of decision making. Four out of the six said that their supervisors or top management were favourable towards hiring PWDs. One of them who worked for a large IT firm in Bengaluru said that as long as talent was available, his company's management was willing to hire PWDs and provide all necessary support. Two others also echoed similar views. One of them who became disabled due to an accident said that his senior manager was very supportive and retained him despite his disability. Two of the respondents had a critical view about the approach of the management of their company towards hiring and retention of PWDs. One of them said that his company hired PWDs to comply with a project and after the project is complete they will discard PWDs. The other respondent opined that his company's management had no idea about hiring and retention of PWDs.

It is found that technological advancement has opened up numerous opportunities for PWDs in the high-tech industries such as Information Technology (IT) and Telecommunication sectors. Moreover, all the participants surveyed agreed with the view that technology enhances the competence of PWDs in the IT labour market. It is learned that assistive technology enables PWDs to be productive and facilitates their full participation in social and economic activities including their participation in education and labour market. Accessibility

and affordability of assistive technology therefore becomes a crucial determinant for PWDs to compete and perform on par with the non-disabled counterparts, not only in the IT sector, but also in other sectors that rely excessively on technology. One of the participants commented that technology had not only provided opportunities for PWDs to be employees of software companies, but also equips them to be software developers. Another respondent affirmed that technology had opened up avenues for skill acquisition and up-gradation which enable PWDs to become productive human resource. Furthermore, one of them who is a senior manager of the IT department in a multinational telecom firm also added that there was a need for a better technology to plot diagrams and to present data to his senior managers.

In an era of technological innovation, it is observed that the nature of jobs is undergoing significant changes with more and more jobs requiring the use of technology which opens up new avenues for PWDs to excel. Hence PWDs can prove to be a potential human resource for the IT sector provided they have access to technology. This stand was taken by both the HR managers who participated in the survey. In the words of one of the HRMs, "For the IT sector, technology is the backbone and PWDs can overcome all their barriers through the use of technology and can perform similar to those without disability. PWDs are holding diverse portfolios in the IT sector such as that of software engineers, software developers as well as testing engineers (testing the codes). They are also holding managerial positions like HR, finance and business development (business analyst) etc. Hence, IT sector is a prospective employer of choice for PWDs".

In a time when technological advancement is driving the growth of almost every industry, PWDs have a promising future in high-tech industry such as information technology provided they receive the right educational qualification and have access to assistive technology. According to the CEO of a Foundation, in principle with growing digitization, access to all industries for PWDs should not be a problem. The worrying fact is that the technocrats and bureaucrats who design the digital infrastructure do not take into account the accessibility needs of the disabled. This reflects the narrow mindset of the policy makers towards issues concerning PWDs. More and more corporates in the IT and IT-Enabled Services (ITES) sector including Small and Medium Enterprises (SMEs) are willing to hire PWDs. However, given the challenges in the IT industry, we do see the need for PWDs to be better skilled to meet the changing environment, said the representative of Bengaluru-based DPO.

The UNCRPD declaration requires that individuals shall not be discriminated on the basis of their disability in all forms of employment and calls for reasonable accommodation in the workplace. The researcher intended to explore to what extend this directive was implemented in the IT sector. A proxy for discrimination was employed in the survey by trying to find out the measures adopted by companies to make their workplace accessible. Four out of six respondents stated that there were ramps and elevators installed, tactile flooring and accessible washrooms for employees with disabilities in their offices. One of them mentioned that his company provided transportation facility to and from the office. The accommodations mentioned above were basic and reasonable ones which did not impose undue burden on the employers. However a number of companies were not willing to provide such reasonable accommodations as mentioned by two employees in the sample. The explanation provided by one of them for not taking measures to make workplace accessible was the small size of the firm. There was one exception where one of the respondents who works in the third largest IT firm in India stated that his company provides personal assistance for the mobility of PWDs in the workplace.

Although diversity and inclusion is gaining popularity in the corporate HR policies and corporate parlance, it is informed that many companies have still not institutionalised inclusivity in their hiring and business practices. There is also a perceived lack of awareness among managers— and in many cases among PWDs themselves— about inclusion. This lack of awareness was evident among employees with disabilities when asked about the inclusive workplace policy of their companies and the changes that underwent recently with regard to inclusivity. Three out of six commented that they had not witnessed any changes in their companies with regard to inclusive workplace policy, but did not provide any information whether such a policy existed as part of their overall HR/business policies. Out of the remaining three, two of them mentioned about one of the respondents stated that his company which is the third largest IT firm in India was hiring more number of disabled employees.

From the angle of disability, inclusive workplace implies including PWDs at all spheres and levels of business activities of a firm. It would also include making systems and premises accessible and developing products and services that best cater to the needs of the disabled. In

other words, it is a policy of non-discrimination and equal opportunity for PWDs to prove their talents and skills and to add value to the economy.

***Employers' Perspective Towards Hiring PWDs***

If companies should hire individuals, the latter ought to have requisite skills to offer wherein companies can make gainful returns. This business logic operates even when PWDs are recruited. The representative of a reputed DPO opined that if PWDs are to be hired, their performance at work should be at par, if not better than their co-workers. A prevailing trend in the IT sector is the high attrition rate in the overall workforce. This amounts to a huge loss to the companies. For this reason, companies hire PWDs with the hope of reducing their attrition rate. To ensure a steady retention of employees (with or without disabilities), the CEO of a well-known networking organization avers that the right question to ask at the entry or selection stage is 'what qualities and work skills do employers seek while hiring individuals?" If corporate institutions should hire individuals with disabilities, they should have the necessary skills such as analytical skills, social skills, communicative skills, etc. The moment the term 'disability' is mentioned, it implies that some concessions are expected and thus the situation calls for social responsibility. However corporates would not compromise on qualifications and skills, informed a representative in charge for employment in leading DPO.

When asked about their opinion of inclusion of PWDs in the labour market, the HR manager of a major MNC from India, commented that there needed to be better laws and regulations governing the safety and employment of PWDs. She also added that there needed to be a focus on employers' effort to hire PWDs. According to the HR manager of another MNC from the IT sector, more and more companies were recruiting disabled candidates as part of their diversity and inclusion charter. PWDs were increasingly joining the mainstream labour market and were being employed in different sectors such as IT, manufacturing, pharmaceuticals, etc. Insofar as the Bengaluru-based MNC was concerned, the HR managers were equal opportunity employers and did not discriminate against candidates on the basis of their disability at the time of recruitment.

The initial motivation for companies to employ PWDs stemmed out of Corporate Social Responsibility (CSR). When companies started realising the benefits of employing PWDs,

the policy shifted from CSR to diversity and inclusion. According to the HRM of one of the MNCs approached, the company hired PWDs as part of CSR. The main aim for employing PWDs was fuelled by their aspiration to have a truly diverse workforce and to have a more loyal employee base. More companies were coming forward to recruit PWDS. In the words of HR of an MNC already referred to, most companies had a robust diversity and inclusion programme. As per this programme they preferred workforce with diverse socio-cultural backgrounds including persons with disabilities. Many companies acted as equal-opportunity employers; hence they did not discriminate against PWDs. Even if there was no reservation policy, companies were willing to recruit PWDs as part of their inclusion charter. Recruitment teams were sensitised on how to deal with PWDs. When applying for a job, candidates were required to mention their disability. However, final selection was based on merit and as long as a candidate could perform on the job his/her disability did not matter at all. To the query on economic rationale for employing PWDs, both the HRMs gave contrasting views. While one HRM cited less attrition and more productivity as a rationale, the other HRM stated that companies did not recruit PWDs for any economic benefits at all, but in fulfilling the company's ideal of social inclusivity. Furthermore, the latter HR added that large multinational companies had adopted a policy of providing reasonable accommodation. This means that wherever there was an obstacle which would hinder a person to perform his/her task due to disability, companies were required to make suitable accommodations, appropriate modifications in the nature of the job, or assign that person a role which he/she is more comfortable with. Although many companies already adopted diversity and inclusion policy and were recruiting PWDs, it was confirmed by survey that their numbers still remained low and constituted just one – two percent of the total workforce. When enquired about the reason for hiring less number of PWDs, the HR of one of the two MNCs gave no response. On the other hand, the HR of the other MNC commented that many companies felt that they would not be able to support PWDs due to the lack of required infrastructure. This was the prime reason for hiring less number of disabled employees. He further added that disabled persons' organizations (DPOs) could play an important role in this regard by sensitising companies and persuading them to make reasonable accommodations in the form of providing assistive softwares and other accessible systems.

A number of employers were found to be of the view that employing PWDs was a costly affair as they had to incur cost for providing accommodations. However, as per the opinion of one MNC's HR, employing PWDs was not at all costly. While it is true that some cost had to

be incurred for procuring softwares, it should be treated as a one-time investment. Unfortunately he could not comment on whether his company received any incentives for employing PWDs or for making infrastructure accessible. On the other hand the other HR commented that their company did not receive any incentives from the government except that disabled employees get tax concessions. Additionally, she mentioned that the cost of employing PWDs got compensated by their higher productivity.

***Opportunities and Challenges for PWDs in the IT Sector***

Even though technology and workplaces are accessible by way of reasonable accommodations, there still remains a major hurdle for PWDs to enter and continue in the labour market. The lack of awareness on the part of employers and co-workers about the capabilities of PWDs and negative perceptions that PWDs cannot perform certain jobs act as a major barrier in the employment of PWDs in every organised employment sector, and more so in the IT sector. According to the participants of this survey, some of the ground level challenges that exist in employing PWDs in the IT sector are: (a) system accessibility i.e. making internal IT infrastructure accessible and environment compatible with screen-reader softwares and (b) sensitising the corporate managers on the capabilities of PWDs. A leading MNC has been conducting a disability orientation module wherein managers have to undergo a training module which focuses on dealing with PWDs and their support needs.

Given the fact that the growth of the Indian economy is fuelled by the expansion of the IT sector, PWDs have numerous opportunities to fulfil their career dreams by pursuing a career in information technology. The HRM of a premier MNC observed that PWDs were more focused and attentive, and hence they were more productive. This motivates them to employ PWDs, which in turn portends a bright future for PWDs in the IT sector. One HRM corresponded by the researcher commented that PWDs did not incur any productivity loss owing to their disability. Further he saw that technology could help disabled persons overcome all barriers and they could take up any role in the IT sector. IT sector has a larger role to play in facilitating overall inclusion of PWDs in the labour market. Now therefore the focus has to shift to the question as to how many different categories of disabilities can be included in the IT space.

***Measures Taken by IT Companies toward Promoting Inclusion of PWDs***

Through a survey the researcher made a modest attempt to identify the measures taken by IT companies to create an inclusive work environment. Despite many companies declaring inclusive workplace policies with good intentions, it still remains on paper whilst ground realities fall well short of policy statements. Nonetheless the HRM of a well-known MNC apprised that the company conducted recruitment drives for PWDs by partnering with NGOs. She also added that reasonable accommodations had been provided to foster an inclusive environment. The HRM of a Bengaluru-based MNC assured that being an equal opportunity employer, they did not discriminate anyone on the grounds of their disability. They have made their infrastructure, both physical infrastructure (campuses) and IT infrastructure accessible. Another IT company conducts sensitising programmes for its managers so that they are willing to recruit PWDs in their teams. The company also conducts workshops and seminars where the case studies of successful employees who have made a mark in their current roles are projected. It organizes a programme known as 'All Hands Meet' for persons with disabilities to showcase their capabilities and achievements.

# Chapter 5

# Summary and Conclusions

This study examined the education and labour market outcomes of PWDs in IT sector in India. This analyzed the discrimination against persons with disabilities in India in terms of employment and earnings by levels of education or human capital endowment. It also discussed their job and career prospects by looking both employer and employee perspectives in the IT sector. The chapter is structured as follows: rationale and objectives of the study are discussed in section 5.1. Summary of major findings of the study are presented in section 5.2. Limitations and scope for future research are discussed in section 5.3. The last section spells out some policy suggestion for the promotion of employment prospects of PWDs in the IT sector.

## 5.1 Rationale and objectives

People with disabilities constitute the single largest minority in the world with nearly 15.6 percent of the world's population consisting of PWDs. While it is estimated that only 2.21 percent or 2.68 crore of Indian population comprise of PWDs, in absolute terms this figure is larger than the overall population of many Scandinavian and East European countries. Yet this critical mass of human resources has been largely overlooked and their capabilities have been underestimated. This has lead to a situation where PWDs have been denied access to education and employment. With the enactment of the Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act in 1995, there has been a shift in focus from a welfare approach to a rights based approach. Subsequently the right of PWDs to education and employment has been recognized. The United Nations Convention on the Rights of Persons with Disabilities (UNCRPD) to which India is a signatory, has laid down in its Articles 24 and 27 that PWDs shall have equal access to both education and employment without any discrimination and that reasonable accommodations shall be provided to enable their full participation in social and economic life.

From the survey of literature pertaining to education and labour market linkage, discrimination in the labour market and the determinants of labour market outcomes for PWDs, certain significant correlations can be established. Firstly, the related literature studied

makes it amply clear that there is a strong correlation between the quantum of education received by PWDs and their labour market outcomes. To be more precise, the lower labour market outcomes for PWDs can be linked to the low level of education acquired by them. Secondly, it is also noticed that the low labour market outcomes for PWDs can be partly attributed to the discrimination against them in the labour market. Such discrimination found in the labour market can be explained to stem from prejudices that are deeply rooted and prevalent in societies such as ours. The discrimination in question is indirectly reflected in the IT sector in the form of lack of adequate workplace supports such as accessibility of physical workspace, information and communication technology, availability of transportation and accommodation facilities etc. Thirdly, labour market outcomes for PWDs are dependent also on factors such as type of disability, age of disability onset, type of education (special, integrated and inclusive), gender, socio-economic status and attitudes of family and society in general, and of employers and co-workers in particular.

As discussed in the review of literature, studies on discrimination in the labour market against PWDs are less explored, particularly in developing countries including India. Available studies on labour market outcomes of PWDs have focused largely on the impact of health impairments and prejudice, ignoring many other important factors, particularly linking it with education. Also the limited studies available in this domain have not examined the impact of employer's and employee's perspective that determine labour market outcomes of PWDs. Therefore, this study examined the education and labour market outcomes of PWDs in IT sector in India. The specific objectives of the study are:

- To examine the education and employment status of PWDs in India.
- To analyse the employment and earnings profile of PWDs working in the IT sector in India.
- To examine the employers' perspectives on labour market outcomes of PWDs.

### 5.2 Summary of major findings

Statistical analysis of the Census data reveals that there is a marginal but consistent increase in the educational attainment of PWDs across all levels of education during 2001-2011, but the increase is more pronounced for people with secondary level of education. However, analysis of data with regard to employment rate of PWDs for the same period shows a overall

marginal decline instead. It is also quite apparent from the statistical tables that wide disparities that existed in educational attainment and employment rate across gender and types of disability continue to persist. Based on the National Survey on the Status of Disability in Higher Education conducted by NCPEDP 2015, less than one per cent of students with disabilities were enrolled in higher education. This fact accounts for the low availability of qualified PWDs in the labour market, and the subsequent low representation of the disabled population in the IT sector.

The NCPEDP survey showed that less than one per cent of students with disability who complete secondary education are enrolled in higher education. This may be a plausible explanation for the low employment rates of PWDs.

Based on the characteristics of the sample that were obtained, a positive correlation between education and labour market outcomes for employees with disabilities in the IT sector in India is indicated. PWDs who have received higher education have better employment prospectsin the IT sector. However, further investigation brings to light the more frequent occurrence of qualification-employment mismatch for PWDs as compared with their non-disabled counterparts. The reasons for this could be attributed to personal and systemic or institutional perceptions on the capabilities of PWDs. In other words, PWDs continue to follow conventional educational courses which have failed to adapt to the job market demand.

It emerged from the survey results that apart from level of education factors such as choice of disciplines, extent and type of disability access to assistive technology such as gender, caste, other socio-economic factors, place of residence determines the labour market outcomes of PWDs in IT sector.

In an era where technological advancement is driving the growth of almost every industry, PWDs have a promising future in high-tech industry like information technology, provided they receive the right educational qualification and have access to assistive technology. In this present world of technological innovation, the natures of jobs are undergoing significant changes with more and more jobs requiring the use of technology which opens up new avenues for PWDs to excel. PWDs can prove to be a potential human resource for the IT sector provided they have access to technology. This stand was taken by both the HR

managers who participated in the survey. In the words of HR of a leading MNC, technology is the backbone for the IT sector, and PWDs can overcome all their barriers through the use of technology and can perform similar to those without a disability. PWDs are holding diverse portfolios in the IT sector like that of software engineers, software developers as well as testing engineers (testing the codes). They are also holding managerial positions like HR, finance, and business development (business analyst) etc. Hence, IT sector is a prospective employer of choice for PWDs. According to the CEO of a networking foundation, in principle with growing digitization, access to all industries for PWDs should not be a problem. The worrying fact is that the technocrats and bureaucrats who design the digital infrastructure do not take into account the accessibility needs of the disabled. This reflects the narrow mindset of the policy makers towards issues concerning PWDs.

Despite the enactment of laws such as the PWD Act and the Right to Education (RTE) Act, enrolment of PWDs in school and higher education lag far behind than other social groups and the non-disabled counterparts. Their participation in the labour market has been constraint partly by non-inclusive and inaccessible workplaces and partly by their low levels of education which may be attributed to the narrow mindset of the educators to make education accessible and inclusive. Over the past decade, many corporates in the IT sector have shown a keen interest in recruiting PWDs as part of their diversity and inclusion policy. However, such initiative is still in its initial stage and has a long way to go for inclusion to be truly meaningful. According to the representative of a well-established DPO, the key driver that could persuade corporates in creating an inclusive workforce is to develop a business case that will help organizations understand the benefits of an inclusive workforce.

Although the PWD Act mandated three percent of jobs to be reserved for PWDs in the public sector, it did not impose any such quotas on the private sector to comply with. Even though the same act stipulates that incentives shall be provided to employers so that five percent of their workforce comprises of PWDs; neither the central government nor respective state governments have awarded tax concessions or financial support to the corporates to make workplace accommodations. In this context, the new Rights of Persons with Disabilities (RPD) Act 2016, mandates non-discrimination in the provision of services including education and employment on the basis of one's disability and imposes penalty on establishments that practice discrimination. This act goes a step forward by including the private sector under the definition of establishments. The act also mandates that reasonable

accommodations shall be provided to PWDs to enhance their full participation in economic activity such as education and employment. Concerning the policies needed to ensure inclusion of PWDs in education and employment the representative of a DPO commented that "we need stricter implementation of the laws relating to accessible premises and inclusive schooling".

### 5.3 Limitations of the study

The availability of comprehensive disaggregated data is a prerequisite to undertake any research concerning persons with disabilities. This study was conducted based on the latest National Census 2011 and a primary survey carried out among employees with and without disabilities and HR managers in the IT sector in India. A major limitation with the Census 2011 data is the unavailability of employment and earnings figures for PWDs based on their levels of education or years of schooling. Hence variations in employment and earnings among PWDs and with their non-disabled counterparts could not be explained which is regarded as a major limitation of this study. Furthermore, it does not provide sector-wise employment rates for PWDs which makes cross-sectoral comparisons impossible. The All India Survey on Higher Education, which publish data on enrolments in higher education based on discipline, programme of study and types of institutions does not cover PWDs and as a result the positive correlation between levels of education and labour market outcomes could not be empirically verified. In addition, the small size of the sample makes it impossible to generalise the findings derived on education and labour market outcomes of PWDs in the IT sector.

However, this research is probably the first of its kind within the domain of Economics of Education and hence offers scope for future research by employing a large sample. Additionally, similar studies that explore education and labour market outcomes of PWDs giving thrust to banking, telecom or retail sectors has a wide scope as they are less explored. Furthermore, with the implementation of the Rights of Persons with Disabilities (RPWD) Act 2016, the definition of disability has become broader in India to include 21 different categories of disability. The adoption of this new definition is likely to improve disability estimates in India as the Census and National Sample Surveys might incorporate it in the forth coming national surveys which will enhance further research on the education and labour market outcomes of PWDs.

In the light of the findings and inferences from the study, some suggestions are made towards the promotion of employment prospects of PWDs in the IT sector:

- Preparation of PWDs for employment must commence from grassroot level. This means accessibility to quality school education must be ensured for children with disabilities to prepare them for further learning, academic and vocational.
- An overall assessment of the present education system, both school and higher education should be undertaken with a view to revamp or transform the system in such a way that PWDs can develop their full potentialities to make themselves employable. Such an overhaul in favour of PWDs would entail corresponding enhancement in pedagogies, modification of curriculum, changes in evaluation system, infrastructural accessibility upgradation, provision for scholarship and other educational aids. etc.
- A concerted effort at every level or section of society to spread the much needed awareness and positive perception concerning PWDs— their capabilities, challenges and needs is imperative.
- Affirmative action on the part of the government towards the desirable inclusion of PWDs in every walk of life, especially in the education and employment sectors is warranted. In this connection, the government should encourage the IT sector to promote employment of PWDs by giving incentives, and also promulgate acts to ensure desired representation of PWDs in the private sector.
- A comprehensive and disaggregated survey data that facilitates cross-country and cross-sectoral comparisons which covers all aspects of education and labour market status of PWDs should be made available in the public domain by the Census and NSSO. This will generate scope for further research on education and labour market linkage relating to PWDs.

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# JAWAHARLAL NEHRU UNIVERSITY, NEW DELHI

**Research Dissertation**
**on**

## EDUCATION AND LABOUR MARKET FOR PERSONS WITH DISABILITIES: A STUDY OF IT SECTOR IN INDIA

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## Questionnaire for Employees with Disabilities

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Note: The research study is being conducted for the partial fulfillment of the degree of M.Phil in the Zakir Husain Centre for Educational Studies, Jawaharlal Nehru University.

The objective of this questionnaire is to explore the experiences of persons with disability in education and IT labour market in India.

Please note that we intend to use the information that respondents provide through this questionnaire in an aggregate form for making general inferences. Participants will not be quoted without their permission.

Your cooperation will be highly appreciated.

Thank you in anticipation.

**Joel Vergis**
M.Phil Research Scholar
Zakir Husain Centre for Educational Studies
Jawaharlal Nehru University

**Part I**

1. Name:
2. Birth year:
3. Gender (please tick): ⌊Male ⌊ Female ⌊ Transgender
4. Marital status(please tick): ⌊Single ⌊ Married
5. Social category (please tick): ⌊General ⌊OBC ⌊SC ⌊ ST
6. Place of residence (please tick): ⌊Rural ⌊Urban
7. Did you acquire your disability by birth: ⌊Yes ⌊No

   If no, at what age and mention the reason:

8. Type of disability (please tick): ⌊Visual ⌊Hearing ⌊Movement ⌊Multiple ⌊Other

   If other, please mention the type of disability:

9. Your educational qualification (please tick): ⌊ Secondary ⌊ Diploma ⌊ Graduation ⌊ Post graduation ⌊ Above post graduation
10. Discipline of study (please tick): ⌊ Engineering ⌊ Management ⌊ Medicine ⌊ Basic Science ⌊ Arts ⌊ Law ⌊ Commerce

    If any other, please mention:

11. Educational level of your parents (please tick):

    Father: ⌊ Illiterate ⌊ Primary (1-5) ⌊ Upper primary (6-8) ⌊ Secondary (9-12) ⌊ Graduation ⌊ Above graduation

    Mother: ⌊ Illiterate ⌊ Primary (1-5) ⌊ Upper primary (6-8) ⌊ Secondary (9-12) ⌊ Graduation ⌊ Above graduation

12. Occupation of your parents (please tick):

    Father: ⌊Government ⌊ Private ⌊Self employed ⌊Unemployed

Mother: ⌊Government ⌊Private ⌊Self employed ⌊Unemployed ⌊Housewife

13. Annual Income of your family (please tick):

⌊ Below 50,000 ⌊ 50,000 -1,00,000 ⌊ 1,00,000- 2,00,000

⌊ 2,00,000 – 5,00,000 ⌊ Above 5,00,000

14. Number of siblings you have:

15. Do any of your siblings have a disability (please tick): ⌊ Yes ⌊ No

If yes, please mention

The number of siblings having disability:

Their type of disability:

16. Type of school you attended (please tick):

a) ⌊ Public ⌊ Private

b) ⌊ Mainstream ⌊ Special School

17. What all challenges did you face in pursuing your education (please tick):

⌊ inaccessible physical infrastructure of the school ⌊difficulty in getting scribes

⌊ lack of reading materials in accessible form ⌊ non-cooperation of friends

⌊ lack of awareness of your parents ⌊negative attitudes of teachers

If any other, please mention:

18. Have you attended any vocational training programme (please tick): ⌊ Yes ⌊No

If yes, mention the name of the institution:

Type of the institution (please tick): ⌊ Public ⌊ Private ⌊NGO

19. How far does the education system prepare you to compete in the IT labour market?

**Part II**

20. Company's name:
21. Present designation :
22. Is it your first job after completing final qualification (please tick):

    ☐ Yes ☐ No

    If no, please mention

    Name of the previous firm you have worked:

    Period of service:

    Name of the sector:

    Source of placement of first job:
23. How long did you wait for getting your first job after final qualification?

24. Please describe the other options available to you at the time of choosing your career?

25. Year of joining the present job:
26. Nature of your employment (please tick): ☐ Temporary ☐ Permanent
27. Annual CTC (Cost to Company):
28. Are you receiving allowances in addition to CTC (please tick): ☐ Yes ☐ No

    If yes, please mention:

29. Through which of the following source did you know about the present job opportunity (please tick):

    ☐ Print media ☐ Electronic media ☐NGO

    ☐ Friends & Relatives ☐ Consultancy
30. Through which of the following procedure did you receive the present job placement (please tick):

    ☐ Campus recruitment ☐ Direct recruitment ☐ Job fair ☐ NGO

31. Did you face any barriers at any stage of the recruitment process (please tick):

☐ Yes ☐ No

If yes, please elaborate:

32. How long did it take to get your first promotion?

33. How long did it take to get your first increment in pay?

34. How do you think technology will help to improve your competence in the IT labor market?

35. What specific challenges do you face in performing your task (please tick)?

☐ non-cooperation of your colleagues

☐ non-cooperation of your supervisors

☐ delay in meeting work targets

☐ difficulty in coping with work pressure

☐ unable to access the entire workplace

☐ inflexible work timing

If any other, please mention:

36. Does your co-workers include you in team activities (please tick): ☐ Yes ☐ No

37. Does your team leader consult your opinion in matters pertaining to decision making (please tick): ☐ Yes ☐ No

38. In your view what is the approach of your supervisor with regard to hiring and retention of PWDs?

39. According to you, what measures have been taken by your company to make the workplace accessible (please tick):

- ☐ Installation of ramps and elevators
- ☐ availability of tactile
- ☐ Provision of transportation facility
- ☐ accessible washroom
- ☐ Provision of accommodation near the company

If any other, please mention:

40. What is your opinion on inclusive work place policy of your company? Has it undergone any change recently?

41. Have you realized your career aspiration from your present job (please tick):

☐Yes ☐ No

If not, how do you expect it to improve?

42. Have you received any recognition for your work from your company or from your client?

***THANK YOU FOR YOUR COOPERATION***

# JAWAHARLAL NEHRU UNIVERSITY, NEW DELHI

**Research Dissertation**
***on***

## EDUCATION AND LABOUR MARKET FOR PERSONS WITH DISABILITIES: A STUDY OF IT SECTOR IN INDIA

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## Questionnaire for Employees without Disabilities

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Note: The research study is being conducted for the partial fulfillment of the degree of M.Phil in the Zakir Husain Centre for Educational Studies, Jawaharlal Nehru University.

The objective of this questionnaire is to understand the perspective of employees without disabilities on inclusion of persons with disabilities in the IT sector in India.

Please note that we intend to use the information that respondents provide through this questionnaire in an aggregate form for making general inferences. Participants will not be quoted without their permission.

Your cooperation will be highly appreciated.

Thank you in anticipation.

**Joel Vergis**
M.Phil Research Scholar
Zakir Husain Centre for Educational Studies
Jawaharlal Nehru University

## Part I

1. Name:
2. Birth year:
3. Gender (please tick): ⊔ Male ⊔ Female ⊔ Transgender
4. Marital status(please tick): ⊔ Single ⊔ Married
5. Social category (please tick): ⊔ General ⊔ OBC ⊔ SC ⊔ ST
6. Place of residence (please tick): ⊔ Rural ⊔ Urban
7. Educational qualification (please tick): ⊔ Secondary ⊔ Diploma
   ⊔ Graduation ⊔ Post graduation
   ⊔ Above post graduation
8. Discipline of study (please tick): ⊔ Engineering ⊔ Management ⊔ Medicine
   ⊔ Basic Science ⊔ Arts ⊔ Law
   ⊔ Commerce
   If any other, please mention:

9. Educational level of your parents (please tick):

   Father: ⊔ Illiterate ⊔ Primary (1-5) ⊔ Upper primary (6-8)
   ⊔ Secondary (9-12) ⊔ Graduation ⊔ Above graduation

   Mother: ⊔ Illiterate ⊔ Primary (1-5) ⊔ Upper primary (6-8)
   ⊔ Secondary (9-12) ⊔ Graduation ⊔ Above graduation

10. Occupation of your parents (please tick):

    Father: ⊔ Government ⊔ Private ⊔ Self employed ⊔Unemployed

    Mother: ⊔ Government ⊔ Private ⊔ Self employed ⊔Unemployed ⊔Housewife

11. Annual Income of your family (please tick):

    ⊔ Below 50,000 ⊔ 50,000 -1,00,000 ⊔ 1,00,000- 2,00,000
    ⊔ 2,00,000 – 5,00,000 ⊔ Above 5,00,000

12. Number of siblings you have:

13. Do any of your siblings have a disability (please tick): ⊔Yes ⊔ No

If yes, please mention

The number of siblings having disability:

Their type of disability:

14. Type of school you attended (please tick): ⊔ Public ⊔ Private

15. Did you have the opportunity to study with students with disabilities (please tick):

⊔ Yes ⊔ No

If yes, please describe your experience:

16. Have you attended any vocational training programme (please tick): ⊔ Yes ⊔ No

If yes, mention the name of the institution:

Type of the institution (please tick): ⊔ Public ⊔ Private ⊔ NGO

## Part II

17. Company's name:

18. Present designation :

19. Is it your first job after completing final qualification (please tick):

⊔ Yes ⊔ No

If no, please mention

Name of the previous firm you have worked:

Period of service:

Name of the sector:

Source of placement of first job:

20. How long did you wait for getting your first job after final qualification?

21. Please describe the other options available to you at the time of choosing your career?

22. Year of joining the present job:

23. Nature of your employment (please tick): ⊔ Temporary ⊔ Permanent

24. Annual CTC (Cost to Company):

25. Are you receiving allowances in addition to CTC (please tick): ☐ Yes ☐ No

If yes, please mention:

26. Through which of the following source did you know about the present job opportunity (please tick):

☐ Print media ☐ Electronic media ☐NGO

☐ Friends & Relatives ☐ Consultancy

27. Through which of the following procedure did you receive the present job placement (please tick):

☐ Campus recruitment ☐ Direct recruitment ☐ Job fair ☐ NGO

28. How long did it take to get your first promotion?

29. How long did it take to get your first increment in pay?

30. Is there any person with disability (PWD) working in your team(please tick):

☐ Yes ☐ No

If yes, at which level:

31. According to you, how does inclusion of a colleague with disability as a team member influence your team's performance?

32. Nowadays inclusive workplace is highly promoted in IT sector. What is your opinion on it?

33. In your view, what all measures can increase the participation of PWDs in IT sector?

*THANK YOU FOR YOUR COOPERATION*

# JAWAHARLAL NEHRU UNIVERSITY, NEW DELHI

**Research Dissertation**

***on***

## EDUCATION AND LABOUR MARKET FOR PERSONS WITH DISABILITIES: A STUDY OF IT SECTOR IN INDIA

---

## Schedule for Interview with HR Managers in IT Sector

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Note: The research study is being conducted for the partial fulfillment of the degree of M.Phil in the Zakir Husain Centre for Educational Studies, Jawaharlal Nehru University

The objective of this schedule is to understand the perspective of HR managers about the inclusion of persons with disabilities in the IT sector in India.

Please note that we intend to use the information that respondents provide through this schedule in an aggregate form for making general inferences. Participants will not be quoted without their permission.

Your cooperation will be highly appreciated.

Thank you in anticipation.

**Joel Vergis**

Research Scholar

## Part I

1. Name of the firm : _____

2. Year of establishment : _____

3. Number of employees in the firm:

| | |
|---|---|
| Total | |
| Male | |
| Female | |
| Transgender | |

4. Number of employees with disabilities:

| | |
|---|---|
| Total | |
| Male | |
| Female | |
| Transgender | |

5. Employees with disabilities and without disabilities recruited in the following years:

| | Employees with Disabilities | | | Employees without Disabilities | | |
|---|---|---|---|---|---|---|
| Year | Male | Female | Transgender | Male | Female | Transgender |
| 2010-15 | | | | | | |
| 2005-10 | | | | | | |
| 2000-05 | | | | | | |

## Part II

1. What is your opinion on inclusion of persons with disabilities (PWDs) in the labour market?

2. According to you, what is the role of intermediaries in employing persons with disabilities in the labour market in general and in IT sector in particular?

3. According to you, what are the factors that motivate the company to employ PWDs despite the absence of reservation policy?

4. In your view, what is the economic rationale for employing PWDs? What reason would you site for hiring less number of employees with disabilities?

5. According to you, can PWDs prove to be a potential human resource for the IT sector?

6. In your view, what are the major hurdles faced by IT sector in employing PWDs?

7. Do you feel, IT sector has a role to play in facilitating greater inclusion of PWDs in the labour market given the fact that technology can bridge the productivity loss owing to disability?

8. Do you think employing PWDs is a costly affair? Are you receiving any incentives from the government for the same?

9. What is your opinion about the present education system in imparting the requisites skills to PWDs which are integral for career advancement in IT sector?

10. Could you please elaborate the measures taken by your company in promoting inclusive work environment?

*THANK YOU FOR YOUR COOPERATION*

# JAWAHARLAL NEHRU UNIVERSITY, NEW DELHI

**Research Dissertation**

***on***

## EDUCATION AND LABOUR MARKET FOR PERSONS WITH DISABILITIES: A STUDY OF IT SECTOR IN INDIA

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## Schedule for Interview with representatives of NGOs

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Note: The research study is being conducted for the partial fulfillment of the degree of M.Phil in the Zakir Husain Centre for Educational Studies, Jawaharlal Nehru University

The objective of this schedule is to understand the role of NGOs in the inclusion of persons with disabilities in education and IT labour market in India.

Please note that we intend to use the information that respondents provide through this schedule in an aggregate form for making general inferences. Participants will not be quoted without their permission.

Your cooperation will be highly appreciated.

Thank you in anticipation.

**Joel Vergis**
M.Phil Research Scholar
Zakir Husain Centre for Educational Studies
Jawaharlal Nehru University

## Part I

1. Name of the organization:

2. Number of years of work in the disability sector:

3. Area of work (Please tick): ☐ Education ☐ Employment
   ☐ Health services ☐ Rehabilitation.
   If any other, please mention:

## Part II

1. According to you, do PWDs have a range of options when it comes to choosing a career or are their choices limited?
2. Are they able to exercise their choices independently or is it given?
3. How do corporates view the idea of inclusive workplace?
4. What are the major characteristics that employers' seek while hiring PWDs?
5. Do corporates rely heavily on NGOs for recruiting individuals with disabilities?
6. According to you, what could be the key driver in persuading corporates to adopt an inclusive workforce?
7. Is there a promising future for PWDs in high-tech industries like IT and Telecommunications
8. How should our education system be geared towards nurturing a skilled workforce with disabilities?
9. In your view, are the existing government policies sufficient enough to ensure inclusion of PWDs in education and employment? How do you think the new RPWD Act will help in this way forward?

*THANK YOU FOR YOUR COOPERATION*