Descent Work and Low-end IT Occupation Workers in Delhi: Work Pathways, Challenges and Opportunities

Rajib Nandi
Research Fellow
Institute of Social Studies Trust
New Delhi
e-mail: rajib@feministevaluation.org; nandi.rajib@gmail.com

2010

Abstract:

The spectacular growth of ICT in India somehow makes people believe that the average IT professional in India is a graduate from one of the many respected technology schools and employed in a global IT firm. However, a much larger number of people, IT occupation workers, with different levels of skills are employed at the other end of the IT spectrum the "business process outsourcing" segment or the "data transcription" industry across the ICT and non-ICT sectors, formal and informal sectors, where very often the wage-rate is negotiated on the basis of verbal contracts in the absence of any standard wage rate. The present paper, based on household survey, carried out in 2009 in Delhi provides an analytical description of low-end IT occupation workers from a "descent work" perspective as conceptualized by the International Labour Organisation in order to promote opportunities, in terms of freedom, equity, security and human dignity.

I: Introduction

The Information Technology (IT) sector in India is much talked about for its growth both in terms of employment and revenue generation. According to the Annual Report 2009-10, of the Department of Information Technology (DIT), the IT-BPO industry is expected to garner a revenue aggregate of US$ 73.1 billion in 2009-10 as compared to US$ 69.4 billion in 2008-09, growing at a rate of over 5%. At the same time, the Indian software and services exports is expected to reach US$ 49.7 billion in 2009-10 as compared to US$ 47.1 billion in 2008-09, registering an increase of 5.5% in dollar terms. However, the growth of IT sector is often a reflection of the global economic situation as the Indian IT-BPO sector is more export driven. On the other hand, it should be noted that the domestic market is no less significant. BPO demand in the domestic market has witnessed noticeable growth over the past few years. The market garnered a growth of nearly 9% over the period of 2009-10, as reported by DIT (Annual Report 2009-10). According to NASSCOM, the domestic IT-BPO segment is expected to grow by 16.9% during the financial year 2010-11. "IT services" is one of the fastest growing segments in the Indian domestic market, rising by 16.8%. Government sector is key catalyst for increased IT adoption – through sectors reforms that encourage IT acceptance and other developments that creates large scale IT infrastructure and promotes corporate participation (NASSCOM 2011).

The rapid growth in IT-BPO industry and IT infrastructure has created large number of jobs for the expanding employable population. The employment provided by the industry increased more than 8 times over 2000-2009 and reached 22 lakhs in 2009, making it one of the biggest job creators in India and a mainstay of the national economy (NASSCOM 2010).

It has accounted for over 45% of incremental urban employment in the last decade with nearly 60% of the workforce from second and third tier cities, with 37% of the employee base being women and 74% less than 30 years of age. Moreover, India as a country with a favourable demographic situation has enabled the industry in employing nearly seven lakh freshers in IT and five lakh in business process outsourcing jobs in the last decade (Natarajan 2010).

The lustrous image of ICTs development in India, somehow makes people believe that the average IT professional in India is a graduate from one of the many respected technology schools and employed in a global IT firm. However, a large number of people are there in the IT labour markets with different levels of skills. At one end of the spectrum is the IT professional while on the other are workers in the 'business process outsourcing' segment or in the 'data transcription' industry of the IT sector. These IT workers are involved in tasks such as medical and legal transcription, data entry, back office work processing, maintenance of daily accounts for small clients—individuals or small businesses etc. These IT-enabled services are thought to offer considerable and growing employment opportunities for both women and men across the sectors. More to it, there are IT workers employed as home-based or small office based-IT worker in both organized and informal sectors – who has some basic marketable skills like computer operation, typing etc. These jobs might not be called as high paid jobs as it is for the IT professionals. Moreover, very often the wage-rate is negotiated and based on verbal contracts in the absence of any standard wage rate. Added to this is the insecurity of employment—contracts are extremely informal — and sometimes, there are no easy legal remedies if payment is denied by the client.

The above category of "IT workers" often termed as "IT occupation workers" is much larger. The IT labour market of India has been a creation of enhancement of IT intensive activities and adoption of IT by different industry groups like manufacturing, trade, retail and finance etc., including the government sector. This has enlarged the 'domestic' component of the IT labour market. The shift in favour of IT enabled services has enabled the entry of non-engineer IT occupation workers who had been trained even in other disciplines. This perhaps implies the widening of the labour market in terms of skills and educational background as argued by Basant and Rani (2004).

It has been argued that the complexity of IT tasks have changed the composition of the sector which in turn has changed the composition of demand for skills as well. The IT sector, which used to recruit a few thousand college graduates in 1990s, started recruiting more than 50,000 annually by 2004 (Krishna and Brihmadesam 2006). On the other hand, NSSO (55th round, 1999-2000) estimates much higher number of IT occupation workers employed across the sectors (63.4%) than the IT workers employed only in core IT industry (36.6%) (Basant and Rani 2004). Consequently, one can see that a large number of IT training institutes have come up in the recent years at several locations catering to students across the economic segments of the society, including recognized and formal institutions as well as informal, unregistered institutions run by a variety of organizations from private entrepreneurs to NGOs, etc. (ISST 2009).[1]

Since, all three broad IT sectors: (i) the ICT-producing sector; (ii) the IT-enabled sector and IT enabled Services; and (iii) ICT-using sector require a large number of people in lowly skilled jobs, it raises questions on the nature of labour processes for the professionals at the lower end of the segment. Concerns have been raised in the literature on how ICTs may have created a dual labour market, with the separation of 'intellectual labour' from 'manual labour' (Vijaybaskar and Parthasarathy 2003). However, there is not much literature on manual labour in IT sectors, which is much bigger in terms of number of people employed.[2]

On one hand, ICTs and digital technologies provide an opportunity to a large number of employees to undertake jobs like data entry and data transcription, tele-work, book-keeping etc. However, on the other, ICTs, by facilitating firms to employ homeworkers on a contractual basis, are seen to promote insecure employment opportunities (Vijaybaskar et. al. 2003). In the Indian context as well as in the context of other emerging economies, this potential of ICTs is seen to push employment from the formal sector to small firms in the informal economy where employment is not protected by any legislation.[3] The changes in the nature of employment due to adoption of ICTs, ICTs are also expected to bring about significant changes in the realm of work content, skills demanded and consequent impact on labour market segmentation. The recent evidences suggest that ICT's could be strengthening labour duality worldwide, including the emerging countries (Ramos and Ballell 2009).

With the advent of ICTs, the issue of decent work has gained importance because of the structural properties immanent in the ICT sector and the anticipated impact of it on

development and labour processes. It's argued that informationisation benefits some and deprives others (Verma and Sasikumar 2004). More importantly, ICTs enhance productivity and paves away for added employment opportunities. Consequently, questions have been raised on use of ICTs as economic activities and the labour processes in the reformulated work organizations. Informationalism and digitization, led to several reconsiderations that affect labour flows and labour processes. Of the various reconsiderations, the quest for decent work has emerged as a comprehensive category of analyzing the nature of employment in the labour market. The decent work framework captures not only the formal economy but also unregulated informal sectors. Ramesh (2004) discussed the insecurities and vulnerabilities of labour in the BPO sector, where the basic rights at work was found eroded. Sarkar and Mehta (2010) captured the conditions of workers in the ICT sectors using a two-component model of a decent work frontier. The study has found a positive scenario except for a few worries as far as the work conditions in ICTs firms are concerned. However, there is very little literature that captures the ICT workers employed with the ICT-using sectors. In this context, this paper attempts to explore both quantitative and qualitative aspects of employment in IT occupation work across the sectors, using primary data within a decent work framework. The decent work as conceptualised by the International Labour Organisation is set to provide income for broader social and economic achievement, strengthening individuals, their families and communities. Decent work sums up the aspirations of people in their working lives in terms of freedom, equity, security and human dignity (ILO 1999:3).[4]

2: Diversification of IT and Emergence of Low-end IT

There is no doubt that the growth and diversification of the ICT industry in India has had significant implications on the labour market and on descent work in particular. Consequently, the diversified IT sectors have opened up specialized employment opportunities for a wide spectrum of people according to their expertise and skills, as valued and required by the industry and economy.

The demand for IT workers is on the rise and is getting diversified in terms of worker characteristics and also the characteristics of the firm. As Basant and Rani (2004) argue that the 'globalisation' of IT markets has potentially lead to significant deepening of labour markets in developing countries like India, where market increasingly extends itself to new areas of human activity. Deepening of the market entails enhancement of employment opportunities. Studies also suggest that over-reliance on the export markets for growth in the

1990s had implications for the demand patterns for IT skills. Growth in demand for low-end skills has dominated the first decade of the 21st century (Basant and Chandra 2004). Basant and Rani (2004) provides estimates based on NSSO data of which industry groups employ IT occupation workers for the year 1999-2000. They found manufacturing, government and education are important segments where IT occupation workers are employed. Trade, finance, real estate and other business services are other important segments absorbing women IT occupation workers.

With the expansion of IT market on one hand, there has also been a simultaneous growth of IT training institutes all over the country in recent years. The IT training institutes are catering to students across the economic segments of the society. Given the potential role envisaged for ICTs in both employment generation and reduction in labour market segregation, it is worthwhile to understand the nature of new economic opportunities especially, for the poorer sections of the society in ICT sector and examine empirical evidences regarding the nature of employment in selected locations, presumably having borne the impact of the expansion of ICTs in recent years.

Presence of informality is another serious concern regarding IT employment, especially low-end IT occupation workers and the scope/opportunities for people from the poorer sections of the society. Though not much literature is available, there are indications that among the different IT segments, IT and Enabled Services (IT&ES) are dominated by unorganized enterprises. According to Sarkar and Mehta (2007), over 70% of the workers in this segment are engaged in the unorganized sector. On the basis of a household survey, the same study finds that 24 % of all employment in ICT is contributed by this segment (Sarkar and Mehta 2007). The NSSO (55th round) data shows that more than 38% workers in IT occupations worked in small, informal enterprises in 1999-2000. Basant and Rani (2004) argue that small/informal sector enterprises employing IT occupation workers were mainly in the IT industry and in the manufacturing sector. With the greater integration of information communication technologies among various sectors, further usage of IT is set to grow further. Consequently there are increasing possibilities of deepening of informality in the IT labour market of India.

At this juncture, it would be crucial to note whether the opportunities created by the expansions of ICTs on one hand have really being channeled through to include the larger

section of labour-force in a decent manner or not at the lower end. A study focusing on the low-end IT occupation workers would provide insights into the qualities and nature of job in terms from a decent work framework. How far this new sector has widened up the opportunities for the poorer section of the society is also to be looked into. The present paper, based on household survey, carried out in 2009 in Delhi would provide an analytical description of low-end IT occupation workers recruited with or without any basic IT education.

3: The City of Delhi: Economy, Employment and Informationisation

Delhi has emerged as one of the fastest growing economies in the country. The average annual growth rate of Gross State Domestic Product (GSDP) has been recorded at 17.19% at current price for the period of 2007-08 to 2009-10. The per capita income in Delhi is among the highest in the country, which at Rs. 1.36 lakhs at current price for the year 2010-11 only after Goa and Chandigarh, showing an annual growth rate of 16.19% over the previous year. The estimated percentage of the population in Delhi below the poverty line is 14.07%, as compared to 27.5% for all-India. Its literacy rate of 86.34% (Census 2011) is one of the highest among all states in the country. At the same time, the city attracts people from neighboring states and drives the rapid growth in the City's population. As per the 2001 census the City had a decadal growth rate of 46.31% over 1991, which was more than double the all India growth rate. Though, the current census data exhibit a decadal growth rate of 21%, which was far lesser than the growth rate of the previous decade. However, the major reason for the fall in the decadal growth rate is the wide ranging removal of slum clusters from the city since 2001 (Census Delhi 2011).

Consequently, on one hand the growing population, coupled with the growing per capita income is fuelling the growth of the services sector, which in turn provides employment to a majority of the work force. On the other hand, the high proportion of immigration also provides a ready pool of resources for the unorganized sector of the City, which constitutes a significant portion of the overall economy of Delhi.

There is strong evidence to suggest the increasing informalization of Delhi's economy. The unorganized sector employment in Delhi has been increasing since the 1990s. In 1993–4, unorganized sector workers accounted for 76% of employment in Delhi. By 1999– 2000, the proportion had risen to 81%. The sharpest increase in employment opportunities for men in

the unorganized sector was in the services sectors with large visible increases occurring in trade, hotels, and restaurants. The greater informalization of the workforce combined with the high in-migration into the city have led to a perpetuation of inequities in living standards.

Private sector employment has been growing in recent years especially with new job opportunities expanding in multinational companies, information technology companies and commercial complexes within and on the outskirts of Delhi. Between 35 and 43 lakh workers are employed in Delhi's unorganized sector. Trade, hotels, and restaurants account for one-third of Delhi's unorganized sector employment. Another 27% are employed in the manufacturing sector. It is argued that the high levels of migration into Delhi have resulted in an increasing informalization of Delhi's labour force (HDR, Delhi 2006).

Among all commercial activities in the national capital, more people were engaged in retail and wholesale trade than any other enterprise, reports the Fifth Economic Census of Delhi carried out in 2005. Retail was followed by the manufacturing sector, which had 112,000 establishments accounting for 14.76% of all commercial activity in Delhi. The pattern of employment is more or less uniform across the city with manufacturing, retail and community, social, personal services being the three areas offering the maximum jobs.

As far as women's employment is concerned, it has been found that, women have only 10.50% share in Delhi's jobs (Economic Census 2005). Men are still the principle breadwinners and account for 89.51% of jobs. The growth rate of employment during 1998 to 2005 was of the order of 2.78% per annum. This is considerably higher than the growth rate (1.75%) observed during 1990 to 1998. An increasingly large number of women are finding new jobs in the service sector—in journalism, retailing, tourism, and hi-tech information technology companies. The largest increase in women's employment has occurred in Delhi's manufacturing sector.

In the last decade or so Delhi and NCR has grown into a commercial hub of computer activities (NASSCOM 2010). Delhi gained the top rank in 2006 with Karnataka, Chandigarh, Maharastra, Tamil Nadu and Andhra Pradesh as far as e-Readiness rank is concerned and maintained till the last survey conducted in 2008. Delhi also emerged as the state with most computer intensive manufacturing units (ASI). However, there is a lack of detailed data on IT related employment in Delhi. There had been a serious under-estimation of low-end IT

workers. According to census 2001 data, there were about 26,000 workers in Delhi who were classified as Computer Assistants (NCO 3121), word processor and related operator (NCO 4112), data entry operator (NCO 4113) and computing machine operator (NCO 4114).

Delhi is one of the important cities where a study on low-end IT workers could be carried out. The choice of Delhi as the area for such a study could be rationalized due its recent economic growth, migration from other states, the emergence of service sector jobs and dominance of manufacturing sector as principal job provider which is also the most computer intensive sector in India. The key questions regarding the nature of job opportunities after the IT training, the role of the training institutes in getting employment, wages and conditions of work, social security available for the low-end IT occupation workers and further skills acquired in the job could be explored in Delhi. A household survey would be the best way to trace the low-end IT workers across the city and the sectors both formal and informal. Moreover, a household survey would provide a broader perspective into the spectrum of low skilled IT jobs and the scope and experience of upward mobility in the job.

A household survey carried out in Delhi among the IT workers from poorer residential colonies in 2009 brings out the nature of low-end IT occupation jobs available in Delhi, its various characteristics including entry and scope for skill up-gradation. The study tries to understand the nature of IT jobs at the lower-end of the spectrum within the descent work framework through the household based survey among the IT workers, both men and women, residing in the poorer residential areas of Delhi.
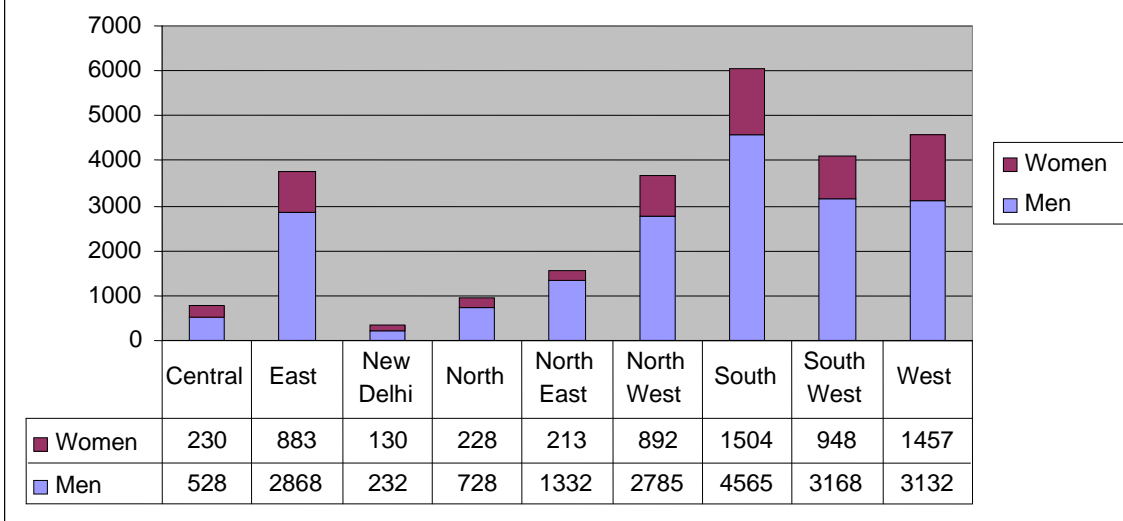
4 Sample and Methodology
The research makes a modest attempt to explore the nature and quality of IT-related employment available at the lower-end of IT spectrum in both IT and non-IT sectors in Delhi through a house-hold survey using both qualitative and quantitative methods.

The household survey was carried out in Delhi during January to March 2009, based on a listing of households covering all nine districts of Delhi, where at least one member of the household was found employed in IT related activities. As the target was the low-end IT workers, the bottom three categories of residential colonies, i.e. F, G and H categories, as certified by the Municipal Corporation of Delhi were selected for the survey. The colonies were further matched with the ranking of wards done by Census 2001 based on selected

10

socio-economic indicators. The colonies for actual survey were selected purposively according to their categories and locations. The types of residential blocks selected for the study were Resettled colonies, private residential colonies, DDA Janta Flats/government colonies, urban villages.[5] The lists of gallis (streets) were picked up randomly from the list provided by the MCD. All the households in each galli were listed, where at least one member of the household was an IT worker from either sex. The share of each district in the sample was determined on the basis of pre-existing data sets available through Census 2001 district level data. Census 2001 data on distribution of IT workers under the categories of NCO 3121, 4112, 4113, 4114, have been used to select the sample size in each district (Figure 1). Approximately, 1200 households were listed out in the selected colonies, where at least one member of the household was found involved in IT related activity. Exactly, 1111 workers were surveyed and analysed in the end, as the rest either did not agree to be surveyed, not found a designated IT worker or not found at home in three visits.

Figure 1:Distribution of IT workers in Delhi (based on occupational classification)

	Central	East	New Delhi	North	North East	North West	South	South West	West
Women	230	883	130	228	213	892	1504	948	1457
Men	528	2868	232	728	1332	2785	4565	3168	3132

Source: Census 2001

A standard criterion was maintained to identify a worker as IT worker. Only those workers were considered IT workers who were assigned to carry out his/her job through software operated computer and/or communication device/system or maintenance/repairing of such device. To increase accuracy and ensure adequate item response, the survey was conducted through face-to-face interviews of the concerned IT worker, using a questionnaire based approach.

11

The present sample has a bias of over sampling. Hence, actual number of low-end IT occupation workers in Delhi could not be predicted from this sample. However, the objectives of the study were to study the nature of IT jobs, access and entry to IT jobs, educational and social backgrounds of IT workers and related issues. Following tables (Table 1 & 2) show the final distribution of sample across the districts and types of residential locations in Delhi.

Table 1 : Distribution of IT workers sample by sex and districts in Delhi

Districts	Sex		Total
	Men	Women	
North	4.5	2.2	4.1
New Delhi	2.4	4.5	2.8
North-West	15.0	11.7	14.3
North-East	3.6	4.0	3.7
South	22.8	28.7	23.9
West	18.0	20.6	18.5
Central	3.9	4.5	4.1
East	14.0	10.3	13.2
South-West	15.9	13.5	15.4
Total	100.0	100.0	100.0

Source: ISST Survey, 2008-09

Table 2: Distribution of IT workers by type of residential area and sex

Area Type	Sex		Total
	Men	Women	
Resettled Colony	29.2	23.8	28.1
DDA Janta Flats	15.1	20.2	16.1
Govt. Colony	2.4	1.8	2.3
Pvt. Residential Colony	29.2	37.7	30.9
Urban Village	24.2	16.6	22.7
Total	100.0	100.0	100.0

Source: ISST survey, 2008-09

In Delhi, a total of 1111 IT/ITES workers have been interviewed finally, of which 80 % are men and 20 % are women.

5: Key Findings of the Study

The key findings of this paper primary focus on the constitution of the low-end IT occupation workers, the training background, the quality of job and the nature of contract.

5.1 Constitution of low-end IT Workforce of Delhi

The present survey found a wide gender gap in terms of size of the workforce in low-end IT occupation jobs. A NASSCOM survey in 2002, found that among the software professionals,

which is considered to be the high-end IT, only about 21 % of them were women. However, it had been expected that the percentage would rise to 35 by 2005. Ironically, the present study has not found any improved picture in low-end IT occupation jobs as far as women's participation is concerned. The case studies with women IT trainees at Delhi clearly show the social restrictions on mobility as the primary barrier to take a job. Moreover, the call centre jobs are particularly considered as odd hour jobs and hence not considered suitable for young women. Interviews with young women, who are already employed with BPO show that the time flexibility provided by some employers for the women also enhances the opportunity for women's employment in this sector.

According to some NASSCOM estimates, the median age of the software professionals was 26.5 years and about 42 % of the software professionals had over three years of work experience. The NSSO estimates for 1999-2000 suggests that 72 % of the IT occupation workers are below the age of 30 years and about 16 % are above 50 years.

The present study finds IT workers between the age group of 16 and 58 years, with an average age of 26.3 years. However, more than 43% of the workers have been reported in the age group between 20 and 24 years. More women (56%) have been found in this age group in comparison with the men (40%). Around 76% of the workers, otherwise, fall in the age group of 15 to 29 years. The nascent stage of the sector is evident in its skewed pattern of age distribution (Table 3). The low-end IT sector is clearly dominated by men and women in their twenties.

Table 3: Distribution of IT workers by sex and age groups in Delhi

Age groups	Sex		Total
	Men	Women	
15 – 19	5.5	9.9	6.4
20 – 24	40.4	56.1	43.6
25 – 29	26.8	21.5	25.7
30 – 34	13.6	5.4	12.0
35 – 39	6.1	4.0	5.7
40 – 44	4.5	1.8	4.0
45 – 49	2.4	0.9	2.1
50 – 54	0.6	0.5	0.5
55 – 59	0.1	0.0	0.1
Total	100.0	100.0	100.0

Source: ISST survey, 2008-09

The study has found above 80% of IT workers in the current sample had been studying either IT (49%) or taking general education (32%) prior to entering the job market. This again

implies that majority of the IT workers are of young age. The age profile of low-end IT workforce almost portrays the same picture as one used to see for the high-end IT professionals in the beginning of last decade (Rothboeck et. al. 2001). Low-end IT, which has taken pace only in the following years, is showing a similar kind of trend in social and demographic profile.

The low-end IT occupation jobs in particular are no doubt new kind of opportunities, which need a basic minimum IT qualification or skill. A number of activities and white collar jobs which were traditionally considered as non-IT jobs have totally become "IT jobs". An important example would be the job of book-keeping and accountancy. Today, the traditional ledger-book has been replaced with several computer based programmes. In course of time, the age profile of the low-end IT occupation workers would take a different shape, if the present technology sustains and continue to require same levels of skill and knowledge without a serious revamp in near future.

The study found that the majority of the low-end IT occupation workers belong to the forward castes (87.67%). The sample also indicates a much skewed distribution of population as far as their religious affinity is concerned. Almost 88% of the workers belong to Hindu communities.

Upadhyaya (2007) in her study on the IT workforce in Bangalore pointed out the educational system and exclusiveness in recruitment system as reasons behind creating the 'social homogeneity' among IT workers. The findings from the present study too indicate that the "IT" as a field of employment still maintains exclusiveness perhaps due to the complex dynamics of caste bias in the society which is strengthened further by other lacuna in the recruitment system. Moreover, it has already found in case studies that lack of knowledge in basic English and people's perception in respect to the requirement of English for computer education and computer related jobs block people from entering the IT field. The cost of IT training is another area which further narrows down the scope for a large section of population. Through the case studies of several small and branded IT training institutes in Delhi during the study, it has been found that IT institutes prefer to receive the entire fee in advance or in couple of installments, which further excludes many more IT aspirants from lower economic strata.

The present study tried to capture the intergenerational mobility among the low-end IT workers. It has been found that majority of the workers come from at least moderately educated background as far as their fathers' education is concerned. More than 79 % of the low-end IT occupation workers reported that their respective fathers are educated at least up to secondary level. More than 35% reported that respective fathers completed higher secondary, whereas 23% of the respondents' fathers have bachelors degree or Masters degree. The trend of having an educated father is common among all social groups, except the STs, where among 33% of them have only completed middle school. This trend of father's education tends to exclude a large proportion of population. Among Indian men above 40 years of age as in 2004-5, the likely fathers of this sample, only 22.5% of them are at least secondary educated. This figure for urban Indian men above 40 years of age is 47.24%. The share of graduate or higher qualification among the same group of men is 7.5% among all Indian men and 19.4% among urban men.

The share of less educated or illiterate father in the present sample is very low. There were only 4.5% cases where the father was reported as illiterate and in another 6.5% cases the fathers were reported as primary or below primary educated.

The study also found the occupation of the father of the concerned IT worker. In 59% cases, it was found they were salaried employees with the government or private sector. Another 31% were found in business or self employed. About 8% cases they were engaged fully in agriculture. The finding indirectly shows that majority of the workers come from at least a low-middle class background. An assessment of assets of the survey households too corroborates this finding. It can be concluded that the low-end IT workers are not coming from very poor backgrounds. The question of affordability of taking an IT course from a private IT training institute arises here. The present scenario is not very inclusive as far as the entry into IT sector for the people from poorer background is concerned. The study has not found many organizations in Delhi, who provide free or low-cost IT training to the poor. It has already been found that the IT workers belong mostly to forward castes. That finding corroborates with this finding. The present findings indicate that the low-end IT occupation work is dominated by the forward caste educated people from non-poor background.

However, the households, where we surveyed for this study, it was found that somebody from the household for the first time has entered in IT related work. Almost 97 % of the

workers have reported that there are no body else in the family, who worked or have been working as an IT worker.

Delhi always attracts people from neighbouring states, who come to the city in search of better livelihoods and employment. Around 36 % of the IT workers in the present sample are first generation immigrants to Delhi. Most IT workers were born locally. Among the migrated IT workers, 86 % of them report that they have migrated to Delhi for education, employment or better future, not accompanied by their parents or spouses. For many of them education and better future means an IT training and a placement after training. Only 14 % of them have migrated with family or parents. The largest chunk of the migrants in this sector is from Uttar Pradesh (44.50 %). The next place of origin is Bihar (23%). In the current sample, 25.3% workers have reported that part of their family still lives in the parental village or hometown. Among the workers, 12.6% have reported that they send remittances to their families in the place of origin. This shows that the labour market mobility in the case of low-end IT work is not as high as it is recorded in IT-BPO sector (NASSCOM 2010).

5.2: Nature and Quality of Employment

The IT industry has brought about a change in the structure of the traditional labour market (Vijaybaskar and Parthasarathy 2003; Sarkar and Mehta 2007). The advancement of Information Communication Technologies (ICTs) and subsequent development of the ICT sectors has generated new employment based on new skills and new occupational categories. The demand for the new workers on one hand and the aspirations among people who would potentially fill this demand on the other, has accelerated the growth of computer training institutes along with the existing IT institutes.

As far as low-end IT related employment is concerned, it is primarily the private sector, which employs young people for IT related purposes. Table 4 shows that more than 94 % IT workers in the present sample are in private sector jobs or are self employed (4%). The people who are self employed primarily run their own IT related business, ranging from mobile repairing to hardware consultancy and DTP jobs. About 6% workers are employed with the government and government undertaking. Among all the workers, 95% have reported them as fulltime workers.

16

Table 4: Distribution of IT workers by sex and type of job they are currently employed

Sex	Type of job			Total
	Govt. /govt. undertaking	Pvt. Job	Business/self employed	
Men	6.6	88.2	5.2	100.0
Women	1.8	98.2	0.0	100.0
Total	5.7	90.2	4.1	100.0

Source: ISST Survey, 2008-09

The present study, in several cases, faced a problem in identifying the exact sector where the concerned worker was employed.[6] However, the study has found that majority of workers (68%) employed in non-IT/ITES sectors (see Table 5). The retail and manufacturing are two main sectors, as far as recruiting low-end IT workers are concerned. The study finds only 24% workers in IT sector and 10.6% in Call Centres and BPOs. The workers employed with the BPOs and Call Centres are primarily found to be in domestic call centres. More women in comparison to men are reported employed in the call centres. The IT firms who are employing low-skilled workers, are mostly small IT firms who deal with consultancy, vending and repairing of IT equipments. However, the study certainly found a number of workers at the lower end of IT spectrum in the reputed IT and ITES enterprises.

Table 5: Distribution of IT Workers by Industry Categories

profile of company	%
Govt. and Govt. undertakings	7.7
Private (Manufacturing, construction, wholesale trade, transport)	26.6
Retail trade	20.4
Bank/Insurance/Finance	5.0
School, NGO, Hospitals, Personal Services	8.0
Software/hardware/IT consultancy	21.7
Call Centre / BPO	10.6
All	100.0

Source: ISST Survey, 2008-09

Interestingly, the NSSO 55th round data shows that more than 38% workers in IT occupations worked in small, informal enterprises in 1999-2000. Several non IT firms are increasingly using IT for various functions which entail hiring of IT occupation workers. Thus the demand for IT occupation workers is not dominated by the large public and private limited firms but small firms who also participate in the IT labour market in a significant manner.

Basic computer operating or data entry is the largest chunk of work as per the data collected in this study. More than 30% of IT workers are employed as computer operator or data entry operator in the above sectors. (Table 6) Apart from that a sizable proportion of the IT workers are employed as cashier, salesperson or accountant (20%). Almost 14% of them are employed as customer care executive, mostly in the call centres.

Table 6: Distribution of IT Workers in Delhi by designation and sex

| Designation	Sex		Total
	Men	Women	
Comp. Operator/data entry operator	29.2	35.9	30.5
Cashier/sales/accountant	20.2	19.3	20.0
IT supervisor/ Data Manager/IT officer	19.6	6.3	16.9
Customer care executive	12.3	19.7	13.8
Programmer/graphics designer	8.7	5.4	8.0
Teacher / instructor	3.7	11.2	5.2
Owner/self employed	4.1	0.0	3.2
Other	2.4	2.2	2.3
Total	100.0	100.0	100.0

Source: ISST Survey, 2008-09

As far as monthly salary is concerned, around 58 % of the IT workers in the current sample, earn between Rs. 3000/- and Rs. 8000/- per month from their current jobs. Among them, more women are in the lower bracket of Rs. 3000.00 – Rs. 5000.00 (37.7 %) than the men (20.5 %). Through the case studies it has been found that income rises with experience, skills and multi-tasking. Cases have been found where the IT worker earns Rs. 15,000.00 to Rs. 20,000.00 per month or even more than that. If one relates the salaries to the caste background of the workers, the higher salaries are drawn completely by the workers from general castes. All the workers in this sample in the highest salary bracket that is above Rs. 20,000 per month come under general caste category. In the second highest salary bracket, between Rs. 15,000 and Rs. 20,000, only one person belonged to ST category, the rest were from general category. On the other hand, the salary divisions are directly linked to workers' fathers' education. The fathers of the persons who are drawing higher salaries in this sample are mostly graduate or higher secondary educated.

An important finding of this study is that half of these IT workers are employed without any written contract. More women are in this category (64%) than the men (47%). Around 35% workers have reported their job as permanent in nature, but a specific query reveled that

majority of those jobs too are without any written contract, however the employee feels secured in the job and they perceive that as permanent job (Figure 2).

Figure 2: Nature of Contract of the IT workers by sex
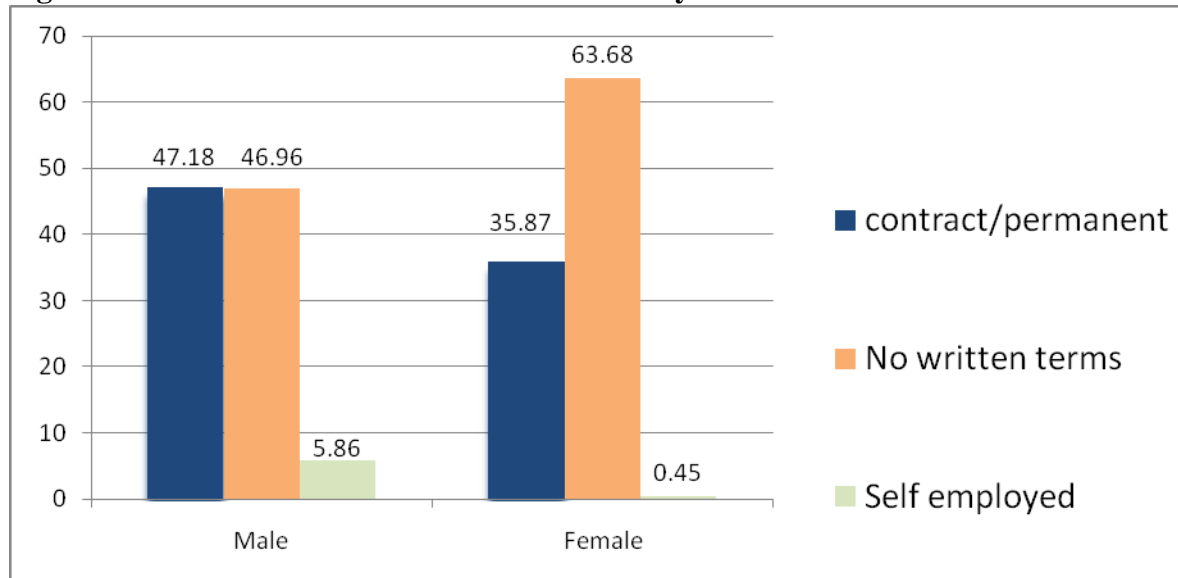
Source: ISST survey 2009

More than 95% jobs in the government sector were permanent in nature. Whereas, for the rest of the jobs, no particular trend was found regarding the nature of contract. Specific queries have found that only 9% of the workers receive house rent allowances, 12% of them receive conveyance allowance, 32% of the workers receive medical reimbursement, only 37% of the workers have received annual bonus in the previous year. As far as entitlement of leaves are concerned only 40% of them receive casual leaves, only 72% of them reported that they are entitled to get leave on gazette government holidays and 33% get sick leave when required. The employees, who are receiving most of the benefits, are mostly in the government sector. The employees outside the government sector, who are receiving some of the benefits, are employed across the sectors without any specific concentration in any particular sector.

An important characteristic of work in this sector is the long work hours. It was reported that only around 20% of the IT workers do overtime duties officially. Whereas, 61% workers reported that they were not engaged in overtime duties. Another 19% reported that, overtime was not applicable for them. However, it was found that almost 27% of the workers worked for 9 to 13 hours a day. This implies that, many of the workers were working overtime unofficially, without any extra payment for extra hours. The informality regarding the job and

19

absence of any written job contract force the workers towards unrecorded duty hours without any extra payment, which is common across the informal enterprises.

Several studies have questioned the nature of employment, quality of work and careers, skill enhancement, and autonomy at work in the newly emerged ICT sector. Questions are also raised as to whether ICTs foster equality or reinforce existing labour market segmentation. At this juncture, an understanding of how the production and use of ICTs will affect labour markets and nature of employment becomes important.

It is said that availability of a skilled and updated labour force is critical to the sustainability and long term competitive advantage of knowledge-based sectors like software industry. Hence training is important for this sector. In the present study, we have found only 6 % IT workers, who have received some kind of IT training to use particular software. However, more than 87 % workers have reported that they have learned something new related to IT and computer operation in the present job. Updating of skills lies entirely with the concerned worker, as there won't be much help from the employer. Workers learn new techniques informally from their colleagues and friends. It is known from the in-depth interviews that workers try to keep their skills updated with the arrival of new information, software and techniques. It's found that a number of workers also opt for multi-tasking for getting opportunities to learn more techniques and gain experiences to be retained by the employer.

In the current sample, we have not found many workers, who have quit the previous job or fired from the job, however we have found that less salary is the main reason behind quitting the job. Almost 63 % men reported that they quit the job due to inadequate salary, and 52 % women pointed at inadequate salary for leaving the previous job. Only 9 % men reported that they lost the previous job because the contract ended and not renewed further, but 24 % women reported non renewal of contract as the reason for losing the job.

Interestingly, the study has found 90% of the workers in the sample are overall happy with their current job. Only 32% of them reported that they might try for another job in near future.

5.3: Access to low-end IT Jobs

Friends, colleagues and the computer training institute play a major role in accessing the jobs for the IT workers. More than 50% IT workers reported that they accessed their current job through the network of the computer institute. Only a very few of them accessed their job through any placement cell or campus recruitment (10%). Figure 3, on the sources of information about job availability, shows that the low-end IT jobs are largely accessed informally through word of mouth or personal contacts. As far as use of formal source of information is concerned, it's accessed more by women than men.

Figure 3: Sources of Information about job availability by gender
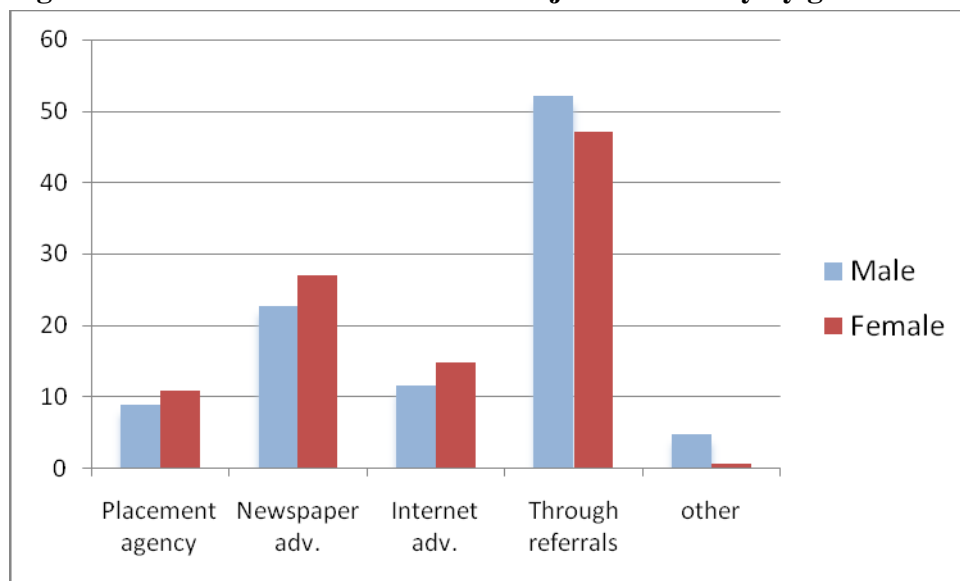
Source: ISST Survey, 2008-09

The lack of information on job opportunities in the public domain and non-transparent entry into the job market is no doubt a serious area of concern. This is the juncture, where biases regarding caste, class play a major role. The instructors and owners of the IT training institutes play a crucial role in facilitating the young job aspirants and their students. An informal network among the employers like small firm owners and the IT institutes majorly control the information regarding the availability of jobs. The instructors of the IT training centres play a major role in placing people once the training is over. The case studies have shown that among the job aspirants, there is a tendency to hang around the training centre even after the training is over. The in-depth interviews have revealed that young men and women after their trainings work free for the institute, to be in the good book of the trainer / instructor of the institute and to be placed by them.

5.2: Skill and Educational Status of Workers

A specific skill of computer operation is basic minimum requirement for low-end IT jobs. There is a long list of IT training courses, which have been found during the survey. However, a large percentage of low-end IT workers have been found with "diploma in Computer Applications" from private IT institutes (33%). The course duration of diploma in computer applications in a private IT institute is generally between 12 and 18 months. We have also found a sizable proportion of workers (15%), with an advanced diploma in computer applications, usually cover 24 months of training. The survey has found IT workers with basic course (13%) which usually takes 6 to 8 months to complete and DTP course (7%) takes eight months to an year to complete. Case studies with a few IT workers have revealed that the young job aspirants mostly prefer a normal diploma course in computer application, which they think give wider job opportunities than specific course like DTP. Basic computer training course is opted for a quick IT diploma, which is also less expensive as far as course fees are concerned. Basic courses are also preferred by those who are already in job and looking for a transfer to IT department for both higher salary and status.

However, the most striking finding of this study is that 23% of the low-end IT workers have entered the sector without any formal IT training and continued without it. More men (25%) have been found in this category than the women (16%). The finding implies that IT/ITES sector provides entry for the people with computer aptitude without even any formal training. A further analysis shows that around 77% of IT workers without any formal training come under the age group of 15 and 34. Case studies with a few IT workers without formal training show us that the employers, especially small retailers and informal enterprises, prefer workers with specific skills like data entry or general computer operating over a 'so called' formal training. A substantial number of workers without formal IT training access jobs in the call centres too. Table 7 shows the types of IT trainings among the IT workers in Delhi.

Table 7: Distribution of IT workers by IT training/degree

IT Training	%
Basic Computer Training	13.1
DTP Course	7.8
Diploma in Comp. Application	32.8
Advanced Diploma in Comp. Application	14.9
Graduate in Software/hardware	2.2
All other IT diplomas	6.0
No formal training in IT	23.1
All degrees	100.0

Source: ISST Survey, 2008-09

The study has found that majority of IT workers in the sample (61%) were trained at small IT institutes. Around 20% of them were trained at branded IT institutes like NIIT, APTECH or Jetking. About 4.33% of the workers reported that they have done an IT course in NGO run computer centres. It is understood that the fee difference between branded IT training institutes and non-branded institutes are huge. Moreover, our sample may be further skewed due to the fact that it was drawn from the comparatively poorer residential areas of Delhi. Table 8 shows the distribution of IT workers by sex and type of IT institute, where they were trained.

Table 8: Distribution of IT workers by sex and type of IT institute they were trained at

Sex	Type of IT Institute						Total
	Small IT inst.	Branded IT inst.	ITI	NGO Run centre	University	Open University	Total
Men	59.6	19.8	7.1	4.8	7.1	1.7	100.0
Women	67.0	22.9	1.1	2.7	5.9	0.5	100.0
Total	61.2	20.5	5.7	4.3	6.8	1.4	100.0

Source: ISST Survey, 2008-09

It has been found that there are huge differences between the workers who got training from small private institutes and branded institutes, in respect to the access and the nature of the jobs. For the 57% of the job aspirants, from branded institutes, the information regarding the job availability is sought through the registered placement agencies or advertisements. Whereas 64% of the job aspirants, from the small private institutes, rely on informal sources for this piece of information. Consequently, the job seekers from branded institutes are able access slightly better jobs, as far as the designation is concerned.[7] Above 50% of the workers who have completed their training from the branded institutes received appointment letters from their employers. Whereas, the figure for the small institutes is 37%. This figure is higher

too for the new entrants from ITI (63%) and for the university diploma holders (61%). More than 57% of employees, who are at the highest bracket of salary in the present sample, are from branded institutes. The share of workers from branded institutes is more among those who draw higher salaries.

ICT sector in India is largely a part of the knowledge economy, where education plays an important role in employment and its quality. In the overall employment in ICTs, graduates and those with higher qualifications constituted 45% of the workforce in 2004-5. Moreover the IT-ITES industry had the highest proportion of workers having graduate and above qualifications in 2004-5 (Sarkar and Mehta 2010).

As far as general educational backgrounds of the low-end IT workers are concerned, we have found that most of them (98.6%) have completed higher secondary education. The survey has found 39 % of IT workers with non technical graduation degree. The study found 26 % of workers who had completed higher secondary education but did not complete graduation. Through the in-depth interviews, it has been found that a number of IT job aspirants leave the education in between to enter the job market. However, in the present sample, several workers are there who were continuing the studies along with their job. Table 9 summarizes the findings of the survey relating to general education of the IT workers.

Table 9: Educational Qualification of IT Workers

Educational qualification of the IT worker	Percentage
Up to 10th std.	1.5
Higher Secondary (10+2)	27.0
College Education (but not completed graduation)	25.7
Graduation (general education)	39.0
Masters (General Education)	4.8
Graduation in software / hardware (BE/BCA)	2.2
All	100.0

Source: ISST Survey, 2008-09

The present study did not find many people with technical degree in hardware or software. The entire sector of low-end IT occupation work is dominated by people non-technical background.

6: Concluding Comments

The paper has tried to provide an analytical description of low-end IT occupation work and the workers in Delhi from a descent work perspective. Based on those observations, one might attempt to derive implications for various dimensions of the low-end IT occupation jobs.

It is expected that a technological change would bring a societal and organizational restructuring that would promote the disadvantaged. The low-end IT occupation jobs are on one hand is open to a much wider spectrum of population as far as skills are concerned. However, the present study finds the dominance of traditional power relations and informal social networks in terms of accessing the jobs, and controlling the wage setting and work conditions. This might impose a barrier to the potential of the sector's in promoting inclusive opportunities and employment generation, without strong policy initiatives.

The domination of an urban elite dynamics still play a major role in claiming the training and employment even at the lower end of the sector as it has already been found at the higher end. The low-end IT occupation jobs do not require any sophisticated skill. However, the importance of training school lies in the quick adaptation of fast changing techniques and newer technologies, which is a key criterion to survive in the sector. The skill up gradation is another area of concern in this regard. Without any formal scope for skill up gradation, the workers are continuously being pushed into routine work and finally abandoned.

It is said that ICT industry has already started catalyzing growth beyond today's core markets. The findings of this study confirm that as 70 % of the low-end IT occupation workers are employed in the non-IT sectors. The large chunk among the employers fall in the category of small enterprises both in IT related activities and non IT activities. The diversity of the IT using sectors makes it difficult for any targeted intervention.

IT occupation jobs provide a decent income to the workers. More importantly, it brings a tag of higher social status and decent job in the society. However, the study shows that a large proportion of workers are employed without any written contract, which invokes lack of job security among the workers. On the other hand, the study has not recorded any form of associations among the low-end IT occupation workers.

The present study has identified several gaps in the sector as far as opportunities for poorer sections are concerned. Training of IT and open access of IT jobs for the people from poorer could be the initial steps for the government and other implementing agencies towards more inclusive opportunities. A more transparent recruitment procedure with some institutional collaboration could be developed linking the IT training institutes, the job aspirants and the employers through a collective mobilisation. Consequently, this would also be a step towards removing the informal nature of the sector and maximisation of value addition of this labour intensive sector.

References:

Basant, Rakesh and Pankaj Chandra (2004): "Capacity Building and Inter-organisational Linkages in the Indian IT Industry: The Role of Multinationals, Domestic Firms and Academic Institutions" in A D'Costa and E. Sridharan (ed.) *India in the Global Software Industry: Innovation, Firm Strategies and Development*, (London: Palgrave), 193-219.

Basant, Rakesh and Uma Rani (2004): "Labour Market Deepening in India's IT: An Exploratory analysis", *Economic Political Weekly*, 39 (50): 5317-26

Census of India (2011): "Provisional Population Table: NCT of Delhi", Series 8, Directorate of Census Operations, New Delhi.

Chandrashekhar C P (2003): "The Diffusion of Information Technology: The Indian Experience", *Social Scientist*, 31(7/8): 42-85.

Department of Information Technology (2010a): *India: E-Readiness Assessment Report 2008* (Delhi: DIT and NCEAR)

- (2010b) "Annual Report 2009-10", Department of Information Technology, Delhi

Eggleston, Karen et. al (2002): *Information and Communication Technologies, Markets and Economic Development*, Working Paper, Department of Economics, Tufts University

Govt. of Delhi (2006): *Human Development Report Delhi*, (Delhi: Oxford University Press)

Goldar, Bishwanath and Suresh Chand Aggarwal (2010): "Informalization of Industrial Labour in India: Are labour market rigidities and growing import competition to blame?" Paper presented at the 6th Annual Conference on Economic Growth and Development, Indian Statistical Institute, New Delhi, 16-18 December.

Govt. of Delhi (2008): "Report on Fifth Economic Census 2005 in Delhi", Directorate of Economics and Statistics, Delhi.

Govt. of Delhi (2011): "Report on Estimates of State Domestic Product of Delhi", (Directorate of Economics and Statistics of Delhi, Delhi)

ILO (1999): *Decent Work: Report of the Director-General, International Labour Conference*, 87th Session, ILO, Geneva.

Javier Ramos and Paula Ballell (2009): "Globalisation, new technologies (ICTs) and dual labour markets: the case of Europe" *journal of Information, Communication and Ethics in Society*, 7 (4): 258-79.

Krishna, Anirudh. and Vijay Brihmadesam (2006): "What Does It Takes to Become a Software Professional", *Economic and Political Weekly*, 41 (30): 3307-14.

NASSCOM (2010): *Impact of IT-BPO Industry in India: A decade in Review*, (New Delhi: NASSCOM)

NASSCOM (2011): *The IT-BPO Sector in India: Strategic Review 2011*, (New Delhi: NASSCOM)

Natrajan, Ganesh (2010): "Transforming India: True Value of the IT Sector", The Financial Express, 2 August 2010, Viewed on 12 April 2011 (www.financialexpress.com/news/transforming-india-true-value-of-the-it-sector/654565/).

NSSO (2005): "*Status of Education and Vocational Training in India, 2004-05*", NSS Report No. 517, National Sample Survey Organisation, 61st Round, 2004-05, Ministry of Statistics and Programme Implementation, Government of India.

Ramesh, Babu. P (2004): "Cyber Coolies in BPO: Insecurities and Vulnerabilities of Non-Standard Work", *Economic and Political Weekly*, 39 (5): 492-97.

Rothboeck, R., M. Vijayabaskar and V.Gayathri (2001): *Labour in the New Economy: The Case of the Indian Software Labour Market*, (New Delhi: ILO).

Sarkar, Sandip and Balwant Singh Mehta (2007): "Employment Profile of ICT Sector In India", mimeo. Institute of Human Development, New Delhi.

- (2010): "Global Production Networks and Descent Work: Recent Experience in India and Global Trends, in Labour" in Anne Postuma and Dev Nathan (ed.) *Global Production Networks in Indi*a ed. IT Clusters in India, (Delhi: Oxford University Press). 319-45.

Upadhya, Carol (2007): "Employment, Exclusion and 'Merit' in the Indian IT Industry", *Economic and Political Weekly*, 42 (20): 1863-68.

Varma, Uday Kumar and S.K. Sasikumar (2004): "Information and Communication Technology and Decent Work: Study of India's Experience", Research Report prepared under the auspices of ILO/JILPT Networking of National Institutes of Labour Studies in the Asia Pacific Region, V.V. Giri National Labour Institute, Noida.

Vijayabaskar, M and Balaji Parthasarathy (2003): "Diffusion of Information and Communication Technologies in India: Labour Market Implications for Developing Countries" Project Report submitted to IDRC, by Indian Institute of Information Technology, Bangalore.

Vijayabaskar, M and V. Gayathri,(2003): "ICT and Indian Development: Processes, Prognoses, Policies", Economic and Political Weekly, 38 (24): 2360-64.

Notes

[1] ISST's survey in Delhi in 2009 witnessed a massive growth of computer training institutes all over the city catering to students from various economic and social backgrounds.

[2] Manual labour in the case of ICTs is different from the way it is traditionally understood. (Also include emotional labour etc.)

[3] There is an ongoing debate on increasing informalisation of industrial labour in India. It is argued that it has taken two forms: rising share of the unorganized sector in manufacturing employment and informalisation of the organized manufacturing sector itself through subcontracting and use of temporary and contract workers. (Goldar and Aggarwal, 2010) Authors have found ample evidence that globalisation has exacerbated the process of informalisation. Whereas there are research that shows the lock-out to strike ratio, enforcement of contract labour laws along with political stagnation in a more competitive environment in the state impede the growth of the formal sector and lead to a shift of economic activity to the informal sector.

[4] See ILO's Decent Work agenda at www.ilo.org/global/about-the-ilo/decent-work-agenda/long--en/index.htm

[5] The sample did not include households from the JJ clusters (Jhuggi-Jompri) of Delhi, as IT workers were rarely found there in the piloting phase. However, in-depth interviews were conducted later with a few respondents from JJ clusters and other residential colonies.

[6] In many cases, the concerned IT worker could not specify the sector or even the primary activity of the firm s/he was employed with. Consequently, the sectors have been clubbed together in the findings.

[7] Data Manager, IT Officer, supervisor, programmer, designer and IT Manager etc. are some of the designations which are regarded as better.

Institute of Social Studies Trust
U.G. Floor, Core 6A
India Habitat Centre
Lodhi Road, New Delhi 110 003
India

Tel: +91-11-4768 2222
Fax: +91-11-4768 2220

www.isstindia.org