Relation between education and employment outcomes in the Indian labour market: A critical review of the literature

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Abstract

The relation between education attainment and employment opportunities is intuitively obvious. The human capital theory posits that investments in human capital are positively related to future economic growth. But does this relation hold in the context of the Indian labour market characterized by marked differences across social groups, gender and regions? This study examines the extant literature on the relation between education attainment and employment outcomes. It also reveals interesting new insights about the Indian labour marketthat contradict the human capital explanation. Finally, it suggests directions for future research to understand the nexus between education and employment outcomes in the Indian labour market.

Keywords: Education, Employment, India, Human Capital, Labour market

1. Introduction

The relationship between education attainment and employment opportunities is intuitively obvious. In the regular economic conditions, the workers with low education level are usually suited to jobs with low task complexity or manual labour, whereas highly educated workers can handle specialized jobs with high task complexity. In the periods of low economic growth, and consequently low labour demand, the high-educated workers continue to maintain an advantage over the low-educated workers. The skill-set of highly educated workers are generic and diverse, and therefore they can outcompete low-educated workers for the low-skilled job. Owing to their generic skillsets, it is also easier for employers to impart specialized firm-specific knowledge to the high-educated workers. Education serves to enhance the skills and productivity of an individual, making him more valuable to employing enterprises. Further, the education level also serves as an effective signal of a worker's prowess to the prospective employers. Therefore, high education levels are usually associated with higher wages and low durations of unemployment. It is widely accepted that education attainment increases productivity. For instance, de la Fuente and Ciccone (2003) found that increasing average education by one extra year would raise aggregate productivity by at least 5%, with even greater long-term benefits arising out of workplace innovations. The nature of technological innovation also favours skilled workers, as it increases the demand for skilled workers while replacing the labour intensive manual jobs (Chennells and Van Reenen, 2002). In long term, the trade flows and foreign direct investment (FDI) result in relocation of low-skilled jobs in less-developed countries with lower wage levels, whereas developed countries with higher wage levels generally specialize in skill-intensive sectors. Nickell and Bell (1996) show that among the G7 countries, for the period 1993-2002, the number of jobs held by low-educated workers has generally declined or grown at a much lower rate than the average employment growth.

Nicoletti et al. (2003) estimate that an additional year of average educational attainment increases the inward FDI by 1.9 per cent. Enhanced FDI flows in turn result in rapid employment growth and improving wage levels (Barry and Bradley, 1997; Walsh and Whelan, 2003). There have been several studies in the Indian context, which empirically explore the causal nexus between the level of education and employment opportunities. However, owing to the peculiarities of the Indian demographics, understanding the relationship between education and employment has become vitally important for the Indian policy makers.

India is well known as a country endowed with surplus labour. The country is on the cusp to reap the benefits of the "demographic dividend". The demographic dividend refers to a period of 20 to 30 years in which the overall fertility rate declines due to reduction in child and infant mortality and a significant proportion of the population falls in the working age-group. This in turn spurs economic growth and reduces spending on non-working dependent population. Golley and Tyers (2013) estimate that this demographic dividend would increase India's real per capita income by at least 5 per cent over the next three decades.Aiyar and Mody (2011) argue that the rapid economic growth of India, usually exclusively ascribed to economic reforms, is in fact largely a factor of changes in the age structure of the Indian workforce. In the coming two decades, India is most likely to have a relatively large working – age population (aged between 15 to 59 years), as compared to its dependent population (aged between 0 to 14 years and 60 above). It is estimated that 70 per cent of the Indian population will be of the working age latest by 2025. Full exploitation of this youth bulge which will reach its peak in somewhere around 2035 can be used to fuel the economic growth of our economy. To fully utilize the benefits of this demographic dividend window, India needs to overcome multiple challenges like skewed sex ratio, social and political conflicts, poor infrastructure and unfavourable foreign investment climate and policies (James, 2011). However, the most serious challenge that is likely to adversely affect India's human capital and the employability of its working population is the level and quality of education. The gains of demographic dividend are transient, and do not last forever. Specifically, In case of India the potential benefits of the demographic dividend have to be realized within a window of next few decades. More specifically, the United Nation's Population Division estimates that the percentage of 15-59 age group will reach its peak of around 64.6 per cent in 2035 and would taper off gradually in the subsequent years. So the real question is, will India be able to capitalize on the next 20 years window. For India, the biggest opportunity (and the biggest challenge) is educating its large workforce. At the end of the British rule, the literacy rate in India stood at 12 per cent (Nurullah, 2011). Over the next 65 years, the situation has improved considerably and the overall literacy rate stands at 74.04 per cent (Census of India, 2011). However, the literacy level are far below the global average of 84 per cent (Crossette, 1998). In China, the adult literacy rate is 95.9 per cent, whereas the youth literacy rate is 99.4 per cent (UNDP Human Development Report 2004). The primary reason for the low literacy rate is lack of public schooling infrastructure, inefficient teaching staff, poor quality of government run schooling facilities. The public education infrastructure suffers from lack of classrooms, poor sanitation facilities, no access of drinking water, shortage of blackboards, poorly maintained boundary walls, no separate toilet for girl students (Ghate, 2012). For instance, a study of 242 villages across five north Indian states found that 59 per cent of the schools had no drinking water, 26 per cent schools did not have blackboards in classrooms, 89 per cent lacked sanitation facilities and 60 per cent of the surveyed schools had leaking roofs, (De, 1999). The teaching staff is ill-trained, poorly paid and frequently absent. A UNDP survey, the Public Report on Basic Education in India (PROBE) found that only 25per cent of the teachers were engaged in teaching activities, while 42 per cent were engaged in non-teaching activities and 33per cent were absent (PROBE team, 1999). Lall and House (2005) note that while the enrolment to primary schools has increased, around 35-60 million children aged 6 to 14 years are not attending even basic primary education. They argue that the Indian education system suffers from the high dropout rate, low levels of learning and achievement, inadequate infrastructure, ill-trained teaching staff, absenteeism of the teachers and insufficient funds.However, there is another dimension to India's education problems. There are pronounced disparities between different genders, regions and social groups. For

instance, female literacy rate is 34 per cent in Bihar as compared to male literacy rate of 60 per cent. In Rajasthan female literacy rate stands at 44 per cent as compared to male literacy rate of 77 per cent (Lall and House, 2005). There are sharp regional differences. Kerala is the most literate state with an average literacy rate of 93.91 per cent, whereas Bihar has a literacy rate of 63.82 per cent (Census of India, 2011). While the primary education levels are improving over time, the situation of higher education remains bleak. The higher education institutes of India are well below global standards. The domestic corporates and MNCs employing a bulk of engineering and other graduates from Indian institutes have to incur a significant expense on re-training their employees. The large software companies like IBM, Infosys, TCS and Wipro have in-house academic program to prepare inadequately trained engineering graduates. The highly respected Indian Institutes of Technology and the Indian Institutes of Management churn out only a small number of students every year (Altbach, 2012). A world bank survey found that 64 per cent of the employers are only slightly satisfied with the skill of their newly hired employees (Blom& Saeki 2011). Finally, the structural support for education remains weak. The Kothari commission noted that we should accord highest priority to education and allocate the largest possible proportion of GDP towards education (Education Commission, 1966). Based on the estimates of population growth, economic growth, growing rate of enrolment and expenditure per student, the commission recommended that the target should be around 6 per cent of GDP. However, from 1951 to 2014 the spending on education has never exceeded 4.5per cent of GDP.A non-literate person is ill-equipped to participate successfully in the modern economy andSociety (Dreze and Sen, 2003). It is therefore vital for make material investments to improve the state of literacy in India. In the view of this situation, education has gained an impetus in the policy – making in the last few years. India has made progress in terms of attendance rate in the primary education and overall increase in the literacy rate which have been cited as the major contributors in the recent economic rise of the country.

2.The relevant economic theory

The linkage between education level and employment is one of the most debatable topics in the study of labour economics. Since education is the means of providing a skilled workforce, it is necessary for the overall development of the economy. A well-educated and highly skilled workforce is important for ensuring high economic growth and quality of life. At the same time, inequitable access to education can contribute to large disparities across different social groups and affect the employment distribution pattern in the country. Considerable empirical and theoretical literature attempts to establish the relationship between the level of education and subsequent employment or earnings. Several studies, in different economies have found evidence that education provides positive future returns, i.e., on an average additional education results in additional earnings in the labour markets (Chevalier et al., 2004; Blundell et al., 2005; Robinson & Sexton, 1994; Harvey, 2000). There are two competing economic theories to explain the empirically observed relationship, namely, the Human Capital theory and the Signalling theory. The Human Capital theory is the most referenced theory related to education and employment. "Human Capital" refers to the stock of knowledge that a particular worker has which contributes to his/her productivity. As human beings, we all have potential to acquire knowledge and learn new things throughout our lives. This knowledge can be innate or acquired depending on whether the knowledge has been present since birth or is been learned through experience respectively. The Human Capital theory argues that education imparts skills that serve to increases the productivity of an individual. The more productive individuals are able to generate a higher output which naturally translates into higher wages and better employment opportunities. The early works that supported of the Human Capital based explanations were Schultz (1961), Becker (1964) and Mincer (1974). In contrast, the Signalling theory argues that education does not enhance human capital in any way, instead it merely reflects the existing human capital. Therefore, according to the signalling theory the potential employees would opt to send signal about their ability level by acquiring better educational credentials. While the education by itself may not enhance the productivity or skill of an

individual, it conveys an informational value to the prospective employers about the ability of the individual. If the role of education is merely limited to signal the ability of an individual and not to enhance his productivity, education can be considered inefficient form of signalling. Particularly since education is expensive in terms of time and effort.

Both theories imply a positive correlation between the level of education and earnings; however, it is fundamentally difficult to establish whether education has a casual relation with earnings. Brown and Sessions (1999) compare the benefits of higher education among the privately employed and self-employed individuals. They found that the benefits were higher for privately employed individuals as compared to the self-employed individuals. This is consistent with signalling theory as the education level did not increase the productivity of self-employed individuals, but served as an effective signal to prospective employers resulting in more lucrative employment opportunities. Another economic rationale of the Signalling theory is given by the "sheepskin effect". The Human capital theory suggests that the number of years of education should be more important than acquiring the degree itself. However, the empirical evidence suggests that obtaining the degree has economically significant effect on the earnings of the individual. Hungerford and Solon (1987) found that certificate completion were associated with economic returns even after controlling for the years of education. Groot and Oosterbeck (1994) argue that rapid completion of degree signals greater ability while spending significant duration without obtaining a degree signals lack of ability and therefore does not contribute towards future earnings. Both these studies tend to support the Signalling theory. Nonetheless, Kjelland (2008) notes that from an individual's perspective what matters is that earnings and employment opportunities are an increasing function of education attainment.

Another closely related strand of literature that attempts to explain the causality between education and employment is the sorting hypothesis (Berg, 1970; Arrow, 1973; Spence, 1973; Taubman and Wales, 1973; Stiglitz 1975; Wolpin, 1977). The sorting hypothesis suggests that education drives employment and earnings by reflecting the productivity related characteristics of the workers. It provides a more general explanation of the causal linkage between the education and employment than the Signalling hypothesis. In fact, the Sorting hypothesis encompasses both the Signalling and the Screening Hypothesis. As discussed earlier, the Signalling hypothesis contends that the workers acquire educational credentials to signal their ability related characteristics to the prospective employers. Therefore, according to the Signalling hypothesis, the workers are informed about their own abilities and act first to inform the employers. Under the Screening hypothesis, the employers demand certain minimum level of education from their prospective employees. Therefore, the employers act first and use the information about the education level to screen the potential employees and infer their ability related characteristics. Both the explanations are closely related. Screening on the basis of an individual's educational attainment can only be effective if educational attainment has some signalling power. Similarly, employees can signal about their potential abilities through educational credentials only if the employers consider educational credentials as a valid tool to screen their potential employees.

The literature on Human Capital theory and the Sorting Hypothesis often assume that the explanations are mutually exclusive, and proving the validity of one explanation should automatically invalidate the other explanation. Some stringent interpretations of the Sorting Hypothesis, also known as the Strong Screening Hypothesis contends that education has no role in developing an individual's ability, and the sole role it plays is to convey the productivity characteristics of the workers. For instance Layard &Psacharopoulos (1974) argue that productivity is innate and entirely immutable through education. Such forms of the Sorting Hypothesis are indeed mutually exclusive with the Human Capital theory. However, such strong forms of the Sorting Hypothesis are yet to be empirically substantiated (Brown and Session, 1998). In practice, both explanations may hold true, at least to some extent. Some traits of the workers may indeed be inherent and immutable by the education process, therefore education will only serve to inform the potential employers about these traits. On the other hand, there can be productivity related traits that can be augmented (or enhanced) through education and

training. This is consistent with the Human Capital explanation of education playing a direct role in improving employment opportunities and future earnings.

3. Education level and linkages to employment

This section reviews the literature on education and employment, with particular emphasis on the role of education affecting the employment distribution. Using the Labour Force Survey data pooled from 1993 to 2001 for England Wales, Chevalier et al (2004) estimate that every additional year of education increases the subsequent earnings by 10 per cent. Robinson & Sexton (1994) found that education has a strong positive influence on entrepreneurship in terms of self- employment success. Chen and Wu (2007) study the relationship between education and employment in Chinese labour market. They found that development of higher education institutions has a positive influence on the employment. The Organization for Economic Cooperation and Development's "Education at a Glance" report (OECD, 2011) found that in all OECD countries, tertiary graduates are more likely to be employed than non-graduates. Education has a robust relationship with employability. The employment level for tertiary graduates is 84 per cent, it is 74 per cent for upper secondary education level and falls to 56 per cent for individuals without an upper secondary education. Aggarwal et al. (2010) found that higher educational attainment in long term reduces the propensity for workers to enter manual employment. Kingdon&Unni (2001) found that returns to education rise with the education level. The empirical evidence for the relationship between education attainment and employment (and earnings) is strong and robust to time and geographies. However, in the Indian context, the disparities based on social groups, gender and inter-regional development affect access to education and therefore influence the employment pattern. Since the socio-economic group of an individual is a key determinant of their level of education, the employment distribution is skewed in favour of the socially better-off sections. For instance,Borooah (2010) argues that participation in regular employment across different social groups is determined by the relative advantage of a particular group. He tried to estimate this relative advantage in terms of "attributes" and "access" where attributes refer to the characteristic of the particular group e.g., average years of schooling; while the latter refers to the right or privilege to make use of something e.g., reservations for specific groups. The results show that Hindus belonging to the Upper caste did best in terms of labour market outcomes. This was partly due to their superior labour market attributes (Higher proportion of the group who have completed Graduation); and partly due to their better access to regular employment. In his paper, he estimates the risk in labour market outcomes for those belonging to the disadvantaged groups to show that it is the lack of access to regular employment which holds back the disadvantaged groups.Bhaumik and Chakrabarty (2009a), examine the determinants of the inter-caste and inter-religion differences in earning. By using the data for the years 1987-99, they show that the difference in the earnings between the "Upper" castes and SC/ST declined over the sample period. On the other hand, the differences in earning between Muslims and non-Muslims have increased overtime which can be attributed to the differences in education endowment. The social groups differ in terms of attributes, for e.g. the general level of education attainment, and statutory privileges like reservation policy for a specific group. They found that the earning differences between the social groups can be best explained by difference in education levels and work experience (returns on age). They claim that difference in the education levels is the single most important factor in explaining the earning differential across groups. However, the comparison across earnings levels can only be carried out for regular salaried workers. The self-employed and casual labour form a large proportion of overall workforce, particularly for specific social groups like SC/STs. Since, reliable earnings data for these employment categories is not available; the earnings comparison is limited. In a similar study Bhaumik&Chakrabarty (2009b) compare the wages earned by Hindu and Muslim groups for the period 1987-2005. They found that education differences are largely responsible for difference in log earnings of the two religious groups. Borooah (2010) argues that for any social

group, the relative advantages (or disadvantages) would determine the participation in regular employment. He compared four socio religious groups, namely, Dalits, Muslims, Hindu OBCs and Forward caste Hindus and found that forward-caste Hindus outperformed the other categories due to higher education levels and only partly due to better access to jobs providing regular employment. He stresses that policy should focus on improving job-related attributes of the social groups, for instance improving the educational standards of Dalits and Muslims, rather than merely addressing the access to the jobs. These findings are consistent with the suggestions of the Sachar committee report. Further, discriminatory bias against a particular social group can lead to low employment levels relative to other social groups, even when the job-related attributes (like the level of education) are at par with other social groups. This is the foundational argument for reservation for specific social groups. Borooah's (2010) empirical results indicate that a discriminatory bias against the Dalits, Muslims and Hindu OBCs groups is responsible for low levels of regular employment. The problem is most pronounced for Muslims who are considerably at disadvantage when compared to the forward-caste Hindus, even after controlling for the effects of low education levels in Muslims. Consistent with the above studies, Unni (2010) finds that returns on education are high, particularly for disadvantaged social groups. Despite that the education levels in the these social groups remain low owing to non-availability of schools in local region or a general perception that chances of obtaining regular employment are low even after obtaining the required education level. The minority enclave hypothesis claims that social groups respond to job market discrimination by building self-employed venture groups (minority enclaves). Das (2008) tests the minority enclave hypothesis in the Indian context and finds some evidence in support of the hypothesis. This effect increases the proportion of self-employment in marginalized social groups. As discussed earlier, the unavailability of data for the self-employed population makes it difficult to compare between different social groups. Therefore, even if the social groups are involved in self-employed ventures it is difficult to measure the success (value) of such an enterprise. There is also a pervasive gender bias in education attainment. Sundaram&Vanneman (2008) study 409 Indian districts and show that females have relatively lower literacy as compared to males. Patkar (1995) highlights that Indian females suffer from low socio-economic status and labour market inequalities. There are several other factors that contribute to low education levels in female population, namely, social discrimination and economic exploitation, involving the girl child in domestic chores, low enrolment of girls in schools, early marriages and high dropout rates. In 2011, the literacy rate for age groups 7 and above stood at 82.14 per cent for males and 65.46 per cent for females (UNFPA , 2011).

4. Educational background of the Indian workers

As the education level increases, the likelihood of an individual getting into a regular job rather than casual job increases. In other words, the education level of regular workers will be higher when compared to the education level of the casual workers. Similarly, higher educated individuals have higher probability of getting employed in the white-collar jobs which employ individuals who have a unique set of skills and can perform professional, managerial or administrative work.To analyze the educational background of the workers by various social groups and among the major Indian states, we use NSSO (National Sample Survey Organization).We use two quinquennial survey rounds on employment and unemployment : 50th (1993-94) and the latest 68th (2011-12). We restrict our sample to the age group 15-59 as in the current study we are focusing on the individuals who belong to the working age group. As far as Indian context is concerned, NSSO data is the most comprehensive data for studying employment unemployment (Himanshu,2011)despite its various shortcomings. It provides us with the household data on consumer expenditure, employment, unemployment, wages and other social characteristics; thus providing us with the opportunity for empirical analysis in the present study. For the present study, the concept of Usual principal and subsidiary status is been used as it is the most liberal and hence is been widely used.For the industrial classification

of workers, NSSO uses National Industrial Classification (NIC-1987) and National Industrial Classification (NIC-2008) in the 50th round and 68th round respectively.

There are some problems with the data which need a mention before proceeding with the empirical analysis. For assessing the employment pattern across different industry divisions, we employ data on entire 3- digit NIC for the period 1993-94 and 5-digit data for the period 2011-2012. During this period the NIC classification changed from NIC-1987 to NIC-2008. In order to compare the industrial classification in these two rounds, we match NIC-1987 with NIC-2008 at 3-digit based on concordance between different versions of industry classification (NIC) published by Central Statistical Organization (CSO) in India. The 3-digits NIC groups are combined to form nine 1-digit major industry divisions.

Table 1.1: Sample Size

	1993-94(50th round)	2011-12(68th round)
Number of Villages Surveyed	6,983	7,469
Number of Urban Blocks Surveyed	4,670	5,268
Number of Individuals Surveyed (Total)	330,689	288,782
Number of Individual Surveyed (Rural areas)	202,279	173,676
Number of Individuals Surveyed (Urban areas)	128,410	115,106

Source: National Sample Survey on Employment-Unemployment, survey report on 50th and 68th round

4.1 Definitions and categories

The NSSO dataset does not have information regarding the individual's years of schooling. Instead of this they have provided us with the detailed categories of the education variable ranging from not-literate to postgraduate and above. To make our analysis simple we aggregate these detailed categories of the education variable into seven broader groups: Not literate, literate but below primary, primary education, middle education, secondary education, higher secondary education and graduate and above (which comprises of diploma/certificate course, graduate and above in different professional fields, postgraduate and above. For some descriptive information on education attainment, the above mentioned education categories are converted into years of education by using the following mapping: Not literate = 0 years; literate but below primary = 2 years; primary = 5 years; middle = 8 years; secondary and higher secondary = 10 years; graduate=15 years; and postgraduate and above = 17 years (Madheswaran, 2007). The current study also tries to focus on the social aspects of the individuals in terms of education and employment and how it varies across the different social groups.

The indicator of employment status distinguishes between three categories of the total employed. These are: (a) Self-employed workers (b) regular wage/ salaried workers (also known as employees); and (c) casual workers. NSSO provides us with the information on the sub-categories of the self-employed workers – self - employed workers with employees (employers), self – employed workers without employees (own-account workers); and members of producer's cooperatives and contributing family workers (unpaid family workers). These indicators are used in the present paper to study the distribution of the workforce by status in employment and how it has changed over the time span of around two decade; how this distribution differs across different social groups; and what are the important determinants of employability. However, there are often differences in definitions across different NSSO rounds resulting from variations in the information sources and methodologies which make comparison difficult. In the current study, we are focusing on the two NSSO rounds i.e. 50 (1993-1994) and 68 (2011-2012). The 1993-94 data provides us with only three categories of the social group whereas in 2011-12 data one additional category of Other Backward Classes (OBC's) has been included. To make the 1993-94 dataset comparable to the latest 2011-12

dataset for the further analysis we combine the Other Backward Classes category with 'Others' category to get an overall three sub-categories under the social group variable in the latter round.

Secondly, we face the problem of consistency when dealing with data for smaller states and UTs. The data is good at the aggregate level but at disaggregate level of different education categories there is less reliability. We face the similar problem when dealing with the North-Eastern states as the data collected by the enumerators on the basis of questionnaires are not as reliable as for other states. Therefore, for the current study we employ data for seventeen major states. Further, in order to facilitate comparison over time at the state level, analysis is not been done separately for the newly created states.

5. Socio-Economic and Demographic Trends

From 1993-94 to 2011-12, there has been a shift in the population structure by age group. As Figure 1.1 shows, the proportion of people aged 15-19 years made up a large part of the total population, but it decreased from 18.1 per cent in 1993-94 to 4.85 in 2011-12. The proportion of people under 25 years of age decreased in each age cluster and, in total, dropped by 18.64 per cent from 34.17 per cent in 1993-94 to 15.53 per cent in 2011-12; whereas the proportion of those aged 25 and older increased gradually in each age group. This trend is certain to result in a demographic shift in the proportion of older people will exceed that of young people.

India has a very young labour force, which is dominated by people aged 15-39 years, who represented about 70.21 per cent and 61.48 per cent of the labour force in 1993-94 and 2011-12, respectively. In addition, the proportion of people in the labour force aged between 15-34 is higher in 2011-12 than 1993-94, while that of 35 and above is higher in 2011-12 than 1993-94. This shows that India's labour force is aging gradually.
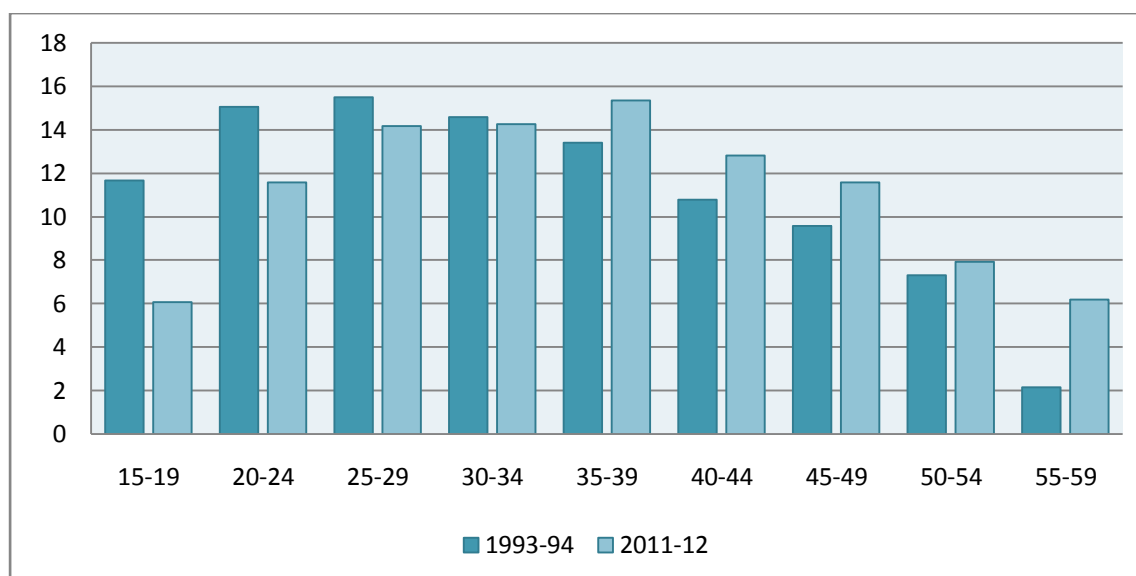
Figure 1.1: Population Structure of People by Age Group
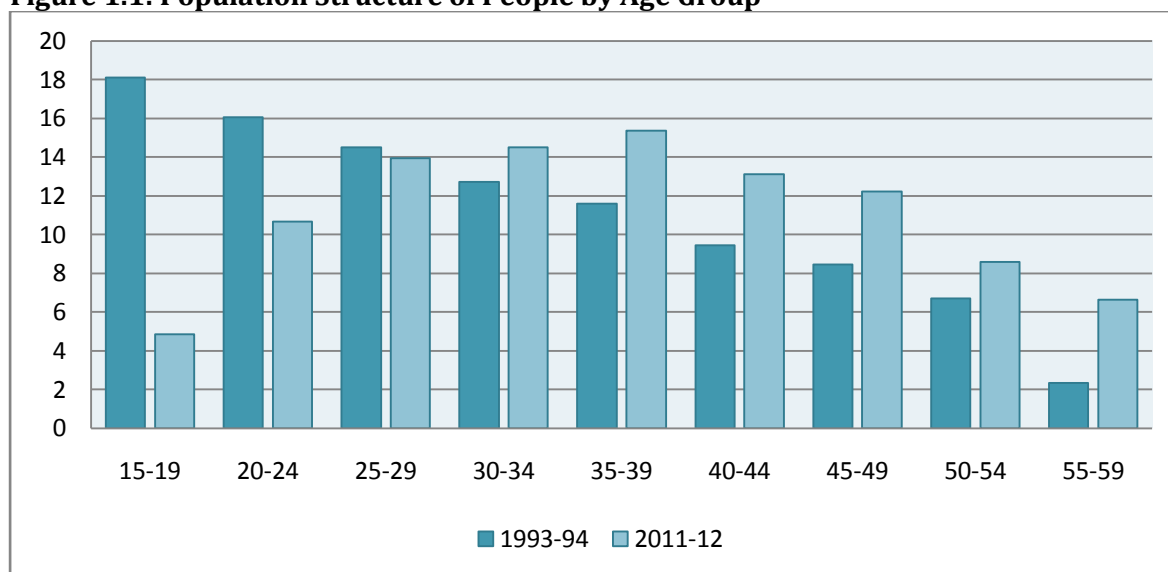
Source: Data compiled from NSS 50th round and NSS 68th round

Figure 1.2: Labour Force by Age Group (% of total labour force)

Source: Data compiled from NSS 50th round and NSS 68th round

5.1 Education Attainment across Social Groups

Table 1.2 shows the information on overall education attainment rates as well as on how this rate varies across different social groups. In 1993, the overall average year of education was 4 years which increased to an average of 6.26 years in 2011-12. However, the average year of education was 2 years and 2.37 years for STs and SCs respectively. But, a visible trend towards convergence in terms of education attainment of SC/STs towards the Non SC/STs (others) could be seen as the gap declined over the sample period.

Table 1.2: Education Gap in Years of Schooling

Years	Education Gap: Years of Schooling			
	Average years of education			
	Overall	ST	SC	Others
1993-94	4.00***	2.00**	2.37**	4.62**
	(0.008)	(0.022)	(0.018)	(0.009)
2011-12	6.26***	4.39**	4.96**	6.81**
	(0.009)	(0.023)	(0.023)**	(0.011)

*Source: Computation based on unit records of NSS 50th and 68th round employment-unemployment survey data. The values in the parenthesis are standard errors. *** and ** indicate significance at 1% and 5% levels, respectively.*

5.2 Influence of educational level on employment structure

As we have discussed above, the traditional theory of human capital and some other economic theories believe that educational level has a direct relationship with the unemployment rate. However, in reality, many previous empirical studies have found that the unemployment rate of people belonging to the group who have completed higher education is higher than those people belonging to the group with lower educational level.

From Figure 1.3, the relationship between the unemployment rate and the level of educational seemed to be positive. Philip Cometh (1985) described this strange phenomena in some developing countries that higher the educational level was, the higher the unemployment

rate would be. India is facing this problem which is better known as 'youth unemployment conundrum' probably because unskilled jobs are easier to find. This problem can be attributed to skill mismatch where workers are not well-matched with their current jobs. Further, the analysis in the forthcoming chapters will help us in throwing some light on the other plausible reasons behind this strange phenomenon.

Figure 1.3: The unemployment rate of Indian workers with different educational level in 1993-94 and 2011-12
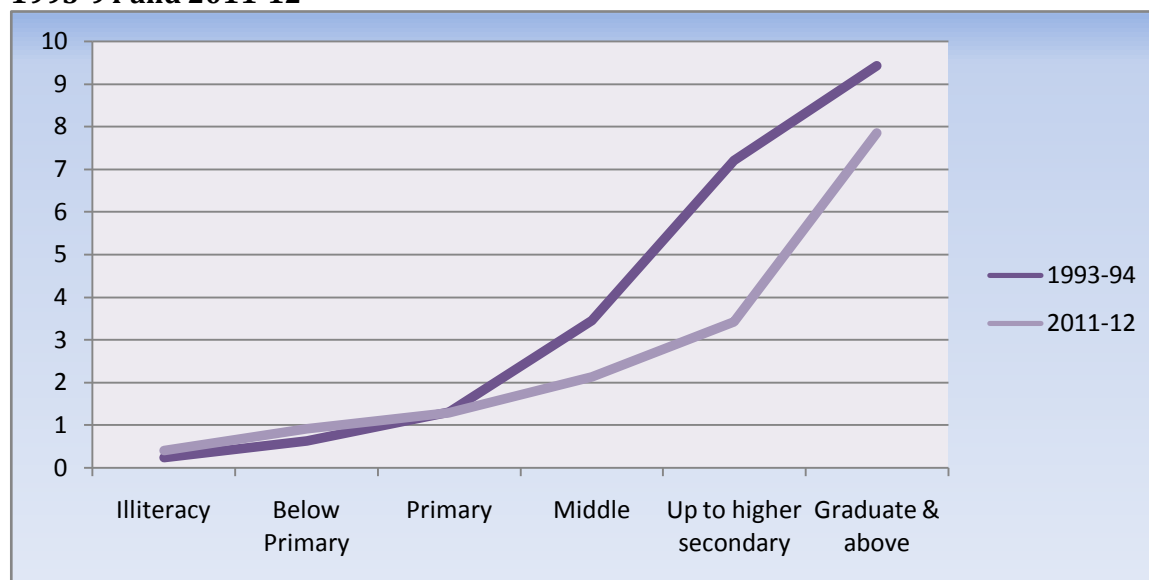
Source: Data compiled from National Sample Survey 50th and 68th round on employment-unemployment

6. Directions for future research

Based on the review of the extant literature we identify three key areas for future research. First, more research is required to examine the linkage between the education level and employment distribution. More specifically, to ascertain the relation between the level of education and the pattern of employment. Additionally, more work is required to study the changes in the pattern of employment and education over the last few decades. Second, there is a need to examine the differences across the various social groups to understand the inter-group heterogeneity in the relation between education attainment and employment outcomes. Third, additional research focus is required to study the variations across the states in the context of the relation between education and employment. This would help in determining relative success of the various states in terms of efficiency of state level educational initiatives and policies in developing the regional human capital, and whether this improvement in human capital actually translate into economic growth.

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