School To Work Transition in India: An Empirical Study with Survey Data

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Abstract

This paper studies the incidence of youth unemployment and the major factors associated with it, using Indian data. Specifically, it looks into how the youth (15-29 years) with education at different levels are transitioning into work and whether they have succeeded in getting productive employment and are being integrated into the labour market. This study has been motivated by the fact that, while most of the empirical studies on youth unemployment and school-to-work transitions are based on data from high-income countries, very little has been undertaken with data from developing countries and no such attempt has been made with survey data in India. Using probit estimation methods we have shown that youth unemployment can only be reduced through the introduction of policies that promote a work related curriculum and seek to reform education systems and professional development; in other words, through the introduction of educational policy, capable of giving the same importance to vocational training and technical education as to other economic policies in governmental and private institutions.

Keywords: Youth unemployment, education, response model, India

JEL Codes : I20, J13, J24, J62

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1. Introduction

The basic research question of this study relates to youth unemployment as the problem of transition from education to work. The problem of youth unemployment remains a considerable area of research in the developing world because of the persistence of frictional unemployment among youth during the high growth regime. We have taken young age people entering first time into the labour market for empirical analysis of how they are transitioning from school to work and how the general education system gears towards the acquisition of skills needed for employment. Young age population[3] in the low income developing countries are at a risk of unemployment and joblessness in presence of underemployment, informalisation, low wage and lack of quality employment in the labour market (ILO 2013, 2014). In this context it is highly significant to analyse the transition from school to work[4] in a developing country like India. While the shorter transition period may not be an indication of good job market, the longer transition might potentially indicate low employability of the youth along with the presence of skill mismatch, low wage and poor quality jobs in the labour market. The longer unemployment spell induces the youth for distress sale of labour in the low productive sector at sub optimal wage (Machin and Manning 1999).It is believed that skill biased technological change along with skill neutral education process, job destroying growth and some institutional factors are likely to lead to longer transition from school to work in the developing economies.

Longer the transition, higher is the incidence of youth unemployment (Pastore, 2009). In this study, the observed youth unemployment is used as proxy for school to work transition.Youth unemployment appears partly because of low employability of the young people and partly because of the failure of manufacturing or services to generate employment matching with the supply of labour. The incidence of youth unemployment in many countries, particularly in developing countries, is high at least partly because of the mismatch between skills of labour demanded by the entrepreneurs and the skills young people have to offer in entering the labour market. The conventional demand-supply mechanism is not sufficient to capture the problem of youth unemployment largely because of the failure of education to generate skill matching with the labour market characteristics in many developing countries

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[3] The UN has adopted the age group 15 to 24 years for defining youth. The National Youth Policy (2003) of the government of India defined the youth as persons within the age 13-35 years. Later on, National Youth Policy (2014) in India defined the youth as persons in the age group of 15-29 years.

[4] The period of time during which an individual leaves school and finds stable employment

including India. Skill mismatch in the Indian labour market is one of the critical issues in analysing the incidence of youth unemployment and informalisation of employment. Education, particularly general stream, in India has very little capacity to make youth employable in accordance with skill biased technological change that has been appearing during the high growth regime[5].

Quality of education is one of the prime factors in determining the transition from school to work and ultimately the incidence of youth unemployment. If education is skill augmenting and matching with job characteristics, then the young people can exploit their formal schooling and training to reduce the transition period. In India, the progress in primary education and an expansion of access to education have not been accompanied by necessary provisions for ensuring quality, resulting in minimal impact on employment particularly among disadvantaged segments of societies. Poor quality of education and training fail to generate basic skills needed to escape poverty and unemployment for the young people even in the formal education system. The present study is motivated by these stylised facts.

Some studies are available on the length of transitions from school to work in more advanced economies (Cunningham and Salvagno 2011, OECD 1998, Quintini and Martin 2007, 2014, Ryan 2001). But, considerably fewer studies are available on the characteristics and key correlates of transition from school to work in developing countries. As the majority of youth worldwide live in low and middle income countries, characterizing these transitions and understanding their determinants is of primary importance.The International Labour Organization(ILO) has taken an initiative to generate a database on school to work transition of 28 low and middle income countries (ILO-STWT)to look into the issue properly. However, India is not included into this initiative of the ILO.

In this study we cannot locate the length and end-point of the transition process from school to the labour market because of the lack of STWT data in India. We take unemployment among the youth who are not in schooling as a measure of incidence of school transition to work by using the survey data collected by the National Sample Survey Office (NSSO) on employment and unemployment situation in India to bridge the gap in the literature. We investigate the determinants of the incidence of transition to employment in probabilistic sense.

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[5] India's economy has experienced high GDP growth at 7.6 percent in 2015-16, while its real challenge continues to be to ensure that economic growth translates into better labour market conditions.The majority of workers in India are in informal jobs.

The rest of the study is organised as follows.Section 2 describes the data used in this study. Econometric methodology used in empirical analysis is provided in short in section 3. Section 4 discusses some observed facts of school transition to work in India. Section 5 interprets the empirical results based on probit estimation. Section 6 summarises and concludes.

2. The data

The study uses mostly the personal and household level information from the 68th round survey on employment and unemployment situation in India (Schedule 10), the latest survey round available for the period 2011-12 provided by the National Sample Survey Office (NSSO) under the Ministry of Statistics and Programme Implementation, Government of India. For 68th round, the survey period is of one year duration (1st July 2011 to 30th June 2012) and is divided into four sub-rounds of three months' duration. In each of these four sub-rounds equal number of sample villages and urban blocks are allotted for survey for uniform spread of sample units at the first stage over the entire survey period. In this survey round 12784 first stage units have been allotted for the central sample at all-India level and 14772 first stage units are taken for the state sample. Households are the ultimate sampling units which are selected by simple random sampling without replacement.

Major types of information collected in employment and unemployment survey relate to activity status, industry, occupation and earning from employment for the employees along with education particulars, and so on.It gathers information about education and demographic characteristics of household members, weekly time disposition, and their main and secondary job activities. In schedule 10 of the survey round, activity status is classified into 13 groups consisting mainly different forms of self-employment, wage employment, available for employment, currently in education and other activities. The activity participation of the people is multidimensional, and it varies with region, age, education, gender, industry and occupational category. These aspects of the labour force have been captured in detail in the present survey on employment and unemployment.

In the survey schedule, persons not continuing for further education and available for work are treated as unemployed.Unemployed persons are differentiated in terms of the duration of unemployment, the period for which the person remains unemployed. In the survey schedule the duration of unemployment varies from one week to more than 12 months. In our study a person seeking job for more than 12 months is considered as unemployed. We restrict the sample to persons aged between 15 and 29, the young age people in India.

In defining employment and unemployment status, NSSO uses three different measures of activity of an individual (usual activity status, current weekly status and current daily status) based on three different reference period (one year, one week and each day of the reference week). The usual activity status is further differentiated into principal status (engaged in the activity for a relatively significant period of the 365 days preceding the date of survey) and subsidiary status (engaged in the activity for at least 30 days during the 365 days reference period). In this study, the analysis of youth unemployment is based on the concept of usual principal status.

3. Econometric framework

We assume that the young people approaching the end of their compulsory schooling have two options: continuing for further education or trying to enter into the labour market for jobs. But, there is no guarantee that a person will get a job immediately after completion of education. The transitional phase between the completion of schooling and getting a job is the phase of unemployment of the youth. The lack of ability to get a job is responsible for longer transition or unemployment of the youth and this ability is not observed in the sample. Let us specify a model for transition in the following form:

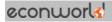$$y_i^* = \acute{\beta} x_i + \varepsilon_i \qquad (1)$$

Here, y^* is the latent variable denoting the lack of ability to get a job. We cannot observe the inability, but what we observe is the binary outcome (y = 1, or, 0) if the person is unemployed or employed with the following rule:

$$y_i = \begin{matrix} 1, & \forall y_i^* > 0 \\ 0, & otherwise \end{matrix}$$

If a young person was not successful to get a job, we observe $y_i = 1$, and we take this as evidence that the person was in transition or in unemployment. The failure to get a job has two components: $\acute{\beta} x_i$, and ε_i. The first part is deterministic and depends on the person specific factors like education, and training, while the second part is purely stochastic and unobserved. In this study, the binary response model as shown in equation (1) deals primarily with the probability that person i within age group 15-29 years remains unemployed:

$$Prob(y_i = 1) = P_i = F(\acute{\beta} x_i) = F(z_i) \qquad (2)$$

The function F() is a cumulative distribution function which maps points on the real line {-∞, ∞} into the probability measure {0, 1}.The functional form for *F* in (2) will depend on the assumption made about the error term ε. We assume that the cumulative distribution of ε is normaland thus the binary choice model is binomial probit:

$$F(z_i) = \int_{-\infty}^{z_i} \frac{1}{\sqrt{2\pi}} exp\left(-\frac{t^2}{2}\right) dt \tag{3}$$

One of the major challenges in working with probit model is the complexity of explanatory factors' marginal effects on the result of interest. That complexity arises from the nonlinearity of the relationship.In this study, the coefficient estimates, their standard errors, and the value of the log-likelihood function are obtained by estimating the model with a software package Stata 15.1.

4. School to work transition: some observed facts

According to neoclassical theory, a degree of unemployment presents in the labour market even during the phase of high economic growth, popularly known as *natural rate of unemployment*. While the existence of a natural rate of unemployment stems from imperfections in the labour market, one of the major sources of youth unemployment is the imbalance between the workers' education and skills offered and those required by the employers. The skill mismatch is especially acute with regard to youth employment and transition from school to work. This is because of the time lapse that exists while the employers search for the best candidate, and the youth remain without employment until they find a job (Mortensen 1970; Mortensen 1986; Mortensen and Pissarides 1999). The education system in India has insufficient capacity to keep frictional unemployment under control and thus adequate interventions in the form of job oriented training initiatives are needed to reduce the transition period from full-time education to work. Thus youth unemployment cannot be explained meaningfully in terms of demand-supply mechanism in a neoclassical framework but rather in terms of the mechanism of transition from education to work, the period from the end of compulsory education to the acquisition of full-time permanent employment (Ryan 2001).

The accumulation of human capital through education is no longer a guarantee of getting better job with higher earning. Many socio-economic and cultural factors actually restrict people with higher education to enter into higher hierarchy employment. Youth unemployed accounted for 36.7 per cent of the global unemployed (ILO 2015). Despite an increase in education, the youth unemployment continues to be a major challenge. We have estimated the percentage share of the young age people in different activity statuses separately for male and female at different levels of their education and the distributions are shown in Tables 1 and 2. We have reclassified activity status performed by the individuals into self-employment, wage employment, unemployment, continuing education and other activities. Persons neither in employment nor in education are treated as unemployed or in transition from school to work. The pattern of

distribution of the youth by their activities is different at different levels of their education. In 2011-12, the incidence of transition at any level of education is more among the male youth as compared to female youth. Lower transition rate among young females does not necessarily imply that they are in better position than the young male. The lower transition among female is not simply because of higher incidence of wage employment or self-employment, but because of the fact that significantly higher percentage of young females are forced to engage in other type of jobs which include domestic work, begging, or prostitution. At the level of education postgraduate and above, for example, the transition rate is around 18 percent for male and 13 percent for female in the age group 15-29 years. Their respective shares in other type of jobs at the same level of education are below 1 percent and nearly 43 percent. As expected, lower the level of education lower is the rate of incidence in transition both for male and female, because higher percentage of them are still in education. However, at the level of education primary or below primary, the youth are absorbed in any type of employment, particularly among females roughly three fourth are engaged in odd jobs, and as a result transition rate is very low.

Demographic pressure and the paucity of decent job opportunities are likely to lead to accept either odd jobs or longer transition durations.Widespread poverty and inequality in income distribution are also responsible for accepting odd jobs at very low wage rate.

Table 1 Distribution of male youth by education across activity status: 2011-12
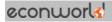
Education/ Activity	Self-employment	Wage employment*	Unemployment (in transition)	In education	Other jobs**
Below primary	32.8	54.9	3.4	4.6	4.4
Primary	29.9	47.8	3.7	15.8	2.8
Middle	25.2	33.3	3.0	36.8	1.6
Secondary	20.9	21.4	2.8	53.6	1.3
Higher secondary	17.4	16.6	4.1	60.8	1.0
Diploma course	11.9	40.0	11.1	36.3	0.7
Graduate	21.4	32.8	12.7	31.7	1.4
Postgraduate and above	19.8	46.3	18.3	15.2	0.5

Note: * includes both permanent and temporary employment, ** includes domestic work, not able to work, and begging, prostitution, etc.
Source: Authors' estimation with 68th round (2011-12) survey data

Table 2 Distribution of female youth by education across activity status: 2011-12

Education/ Activity	Self-employment	Wage employment*	Unemployment (in transition)	In education	Other jobs**
Below primary	10.2	11.8	0.5	3.3	74.2
Primary	10.1	10.2	0.3	11.6	67.8
Middle	6.6	5.8	1.0	32.3	54.3

Secondary	4.9	4.0	1.6	45.7	43.8
Higher secondary	3.9	3.9	2.0	51.4	38.8
Diploma course	4.0	18.3	9.2	36.5	32.1
Graduate	3.5	14.9	8.0	27.9	45.7
Postgraduate and above	3.6	30.1	12.8	10.7	42.8

Note: * includes both permanent and temporary employment, ** includes domestic work, not able to work, and begging, prostitution, etc.

Source: Authors' estimation with 68th round (2011-12) survey data

5. Empirical interpretation

We have taken level of education and other personal characteristics, and type of educational institute as the major determining factors for school transition to work. The dependant variable is a binary one (1, 0) representing unemployed or employed constructed on the basis of lack of ability for transition to work. In this study youth unemployment is treated as a proxy for transition from school to work because of the limitation of survey data available in India. To find out the probable effect on transition we have estimated a probit model as discussed above. The econometric model shown in (1) is specified in expanded form as

$$y = \beta_0 + \sum_j \beta_{1j} D_{j,edu} + \beta_2 D_{training} + \beta_3 D_{TE} + \beta_4 D_{inst} + \beta_5 exp + \beta_6 exp^2 +$$
$$\beta_7 D_{MS} + \sum_k \beta_{8k} D_{SS} + \beta_9 D_F + \varepsilon \qquad (1^{/})$$

The model is estimated from the sample of young age people within the age group 15 to 29 years, and separately for the age cohort 15-19 and 20-29 years. Estimated results and the corresponding marginal effects are shown in Table 3. The mean log odd ratio of a person to be unemployed after ignoring the effects of education and other characteristics is negative in all cases, and it is more negative for persons within the age cohort 15-19 years. The chance of a person to be unemployed is much less for younger group because majority of them are still in education.

Education at primary or below primary level has no significant effect on school transition to work or the incidence of unemployment of the youth. Education does not determine whether a young individual is in employment of any type or not in employment if level of education is primary or below primary. But education plays a significant role in determining the transition to work of the youth if level of education is middle school and above, and higher the level of education higher is the effect on transition. The positive sign implies that education enhances the transition in a sense that a person with higher education remains unemployed at least temporarily because the person will hesitate to accept an indecent job with low pay in the initial phase after completion of schooling. For this reason, the coefficient of education dummy is
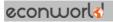
positive and higher at higher level of education. In many cases, the youth with higher education may not have sufficient skill as demanded by the employer, and, as a result, the duration of the transitional phase becomes long.

Vocational training enhances necessary skill for employment. The negative sign of the estimated coefficient of the dummy representing vocational training supports this fact. The probability being unemployed is less for those who have vocational training along with education from general stream, and the marginal effect is significantly more for the persons in higher age cohort who have scope to have higher education and vocational training.Technical education, however, has little effect on transition to work in the Indian labour market. Type of educational institution has a significant effect on the transition in probabilistic sense. Young people passing out from government school have lower probability to be unemployed and this effect is stronger in the higher age cohort.

Higher the age of a person higher is the probability of being unemployed or higher transition to work. Negative sign of the estimated coefficient of square of age suggests the diminishing effect of age on unemployment. A married person has lower probability of being unemployed. The incidence of transition to work is low for a married person as compared to unmarried one because of more urge to get a job after marriage. Social status of a person has significant role in getting a job in the Indian labour market. In the NSSO survey data used in this study social status is classified into four groups: scheduled tribes, scheduled castes, other backward caste and general or upper caste. We have used here social status dummy by taking upper caste as a reference group. Surprisingly enough, the estimated results suggest that the transition from school to work is more for scheduled tribes and also for scheduled castes youth as compared to upper castes despite the fact that some reservation policies of employment for them have been taken by the Indian government. The practice of reservation in the formal sector and also the availability of manual jobs in the informal sector is an endeavour by the government to reduce the struggle of these deprived sections. The failure of school to work transition among the different minority social categories can be explained as variations in human capital and quality of jobs. The female youth have lower transition period as compared to male in getting a job. However, as shown in Table 2, the majority of the female young people are engaged either in unpaid family work or other type of indecent job.

Table 3 Estimated coefficients of the probit regression model

Age cohort	15-29	15-19	20-29

Coefficients	Estimated values		Estimated values		Estimated values	
β_0	-3.33***		-5.74***		-2.18***	
$\beta_{1,below\ primary}$	-0.02	(-0.001)	0.06	(0.002)	-0.05	(-0.003)
$\beta_{1,primary}$	-0.04	(-0.002)	0.11	(0.003)	-0.07	(-0.005)
$\beta_{1,middle\ school}$	0.11***	(0.006)	0.25**	(0.007)	0.15***	(0.012)
$\beta_{1,secondary}$	0.17***	(0.010)	0.15	(0.004)	0.32***	(0.027)
$\beta_{1,higher\ secondary}$	0.32***	(0.021)	0.47***	(0.017)	0.35***	(0.030)
$\beta_{1,graduate}$	0.87***	(0.091)	1.57***	(0.197)	0.83***	(0.100)
$\beta_{1,post\ graduate}$	1.05***	(0.141)			1.02***	(0.164)
β_2	-0.15***	(-0.007)	-0.10**	(-0.002)	-0.16***	(-0.010)
β_3	0.07**	(0.004)	-0.34**	(-0.006)	0.10***	(0.008)
β_4	-0.98***	(-0.033)	-0.98***	(-0.024)	-0.97***	(-0.035)
β_5	0.22***	(0.012)	0.61***	(0.015)	0.07***	(0.005)
β_6	-0.01***	(0.000)	-0.02***	(-0.001)	0.00***	(0.000)
β_7	-0.65***	(-0.030)	-0.25***	(-0.005)	-0.67***	(-0.053)
$\beta_{8,ST}$	0.24***	(0.015)	-0.01	(0.000)	0.31***	(0.027)
$\beta_{8,SC}$	0.13***	(0.008)	0.13***	(0.003)	0.12***	(0.009)
$\beta_{8,OBC}$	-0.01	(-0.001)	-0.06	(-0.001)	0.00	(0.000)
β_9	-0.19***	(-0.010)	-0.45***	(-0.011)	-0.13***	(-0.009)
Number of obs	1,22,567		45,370		77,196	
LR chi2(17)	6726.29		1365.45		5003.77	
Prob> chi2	0.00		0.00		0.00	
Pseudo R2	0.1582		0.1437		0.1553	

Note: Figures in parentheses indicate marginal effects, *** indicates significant at 1 percent level, ** significant at 5 percent level, the rest are insignificant.
Source: Authors' estimation with 68th round NSS data

6. Summary and conclusions

The school-to-work transition regime differs across countries and time periods. Research into such differences raises measurement issues, the most important of which is the measurement of youth employment-related problems. Our paper has studied each of the broad categories of transition issues: firstly, the descriptive attributes of the school-to-work transition and secondly, the determinants of key attributes. We have shown that youth unemployment can only be reduced through the introduction of policies that promote a work related curriculum and seek to reform education systems and professional development; in other words, through the introduction of educational policy, capable of giving the same importance to vocational training and technical education as to other economic policies. Our results depict that higher levels of education alongwith skill development through vocational training increase the chances of obtaining employment (which maybe full-time). Job prospects of new school leavers (15-19 years old) are also highly sensitive to the overall state of the labour market. As the damaging effects of high and persistent unemployment maybe particularly evident for those fewer educational qualifications and women: so we conclude that the policies with which governments have responded to transition-related problems need to be spread to private educational institutions to replicate the success of the government institutions.

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