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CHANGES IN RETURNS TO EDUCATION IN INDIA, 1983-94: BY GENDER, AGE-COHORT AND LOCATION

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Changes in Returns to Education in India, 1983-94: By Gender, Age-Cohort and Location

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Abstract

There is hardly any estimate of the returns to schooling in India based on a national level representative data for the recent period. This paper provides estimates of the returns to education in India by gender, age cohort and location (by rural-urban) for the most recent period 1993/4, and also evaluates the changes in returns over a period of time from 1983-94 using a large national level household survey data. The data show that the returns to education increases up to the secondary level and declines thereafter. There is evidence of substantial gender and rural-urban differences in the returns to schooling. The returns to women's education for the primary and middle levels have declined while those for secondary and college levels have increased during the decade 1983-94.

JEL classification Codes: J31, I21

Key words: Rate of return, human capital, India

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1. Introduction

Low level of literacy and educational attainment, large gender disparity in enrolment, completed education, and labor market participation are important features of the Indian economy. The large scale unemployment among the educated population has led to the widely held belief that there is a surplus of education in the economy and the productivity of the labor force is low. Accordingly it has been questioned whether investment in education in India is profitable.

National level estimates of private rates of return to education made for urban India in 1960 by Blaug, Layard and Woodhall (1969) convincingly show that investing in education is profitable in India. Their estimates of the private returns to education range from 9-17 percent across different levels and the returns to most levels were higher than the expected Government of India returns of 12 percent from investment in physical capital (industry). A comprehensive summary of this and other early studies are given in Psacharopoulos and Hinchliffe (1973) and Heyneman (1980). Although these earlier studies made important contribution to the literature and findings on investment in education, their estimates are based on an urban sample and are now dated. Since then some attempts have been made to estimate the returns to education using small sample surveys (Malathy 1983; Tilak, 1987; Divakaran, 1996). More recently, Duraisamy and Duraisamy (1993, 1995) estimated the returns to higher education and also for scientific and technical education using the national level Degree Holders and Technical Personnel survey data of 1981. A limitation in these later works is that persons with higher education constitute only a small fraction of the labor force and hence not representative of the Indian labor market. These shortcomings notwithstanding, the existing studies provide evidence that the private returns to education in India or specific regions in the country confirm the stylized facts observed for

several countries (Psacharopoulos, 1994). It is however difficult to discern any time trend from these returns as the studies are not comparable.

Estimates of the rate of return to education would be useful indicator of the reward for education in the labor market and also guide public and private investment in education. How these returns vary by gender, and regions at a point in time and the variation in these over a period of time will help to understand the nature and functioning of labor markets and guide region specific educational investment policies.

The purpose of this paper is to estimate the returns to education by gender, age cohort and location (by rural-urban) for the most recent period 1993-94, and also to evaluate the changes in returns over a period of time from 1983-94. This is perhaps the first attempt in the Indian context using a national level representative survey data. The large scale employment and unemployment survey data from two rounds of the National Sample Surveys (NSS) for the years 1983 and 1993/4 are used for the purpose. It is interesting to note that these are the only national level surveys in India that provide information on the wages and some of the labor market characteristics of the individuals and are made available for researchers recently. The present work also seek to address issues in estimating the returns such as functional form of the earnings function and sample selection bias.

The rest of the paper is organized as follows: In section 2, the structure of education and the labor market in India are briefly discussed. Section 3 describes the data base and outlines the earnings function framework to estimate the returns to education. The specification and estimation issues are also discussed in this section. Section 4 presents and compares the estimates of the returns to schooling based on ordinary least squares (OLS) and joint maximum likelihood (JML) methods. The time trends in the returns to education in India is the subject matter of section 5. Lastly, the important findings are summarized in section 6.

2. Structure of Education and Labor Market in India

The school education system in India comprising primary, middle and secondary levels vary considerably across the states since education is primarily the responsibility of the state governments though recently it has been brought under the concurrent list (state plus federal subject). Most states follow five years of primary, three years of middle and two years each of secondary and higher secondary levels. In the public schools, the lessons are taught mostly in regional languages and English is learned as second language while private schools use English to teach most of the subjects. The system of higher education is however more or less uniform across the country and taught mostly in English. The first level degrees in non-technical subjects usually require about three years while the technical degree courses span over four years.

The work participation rates and the sectoral distribution of workers will provide an overview of the structure of the Indian labor markets. Although the population censuses and national sample survey organization have been collecting data on work force participation rates over a long period of time, the trends in work participation cannot be meaningfully discerned from these data because of changes in the definition of work (gainful activity) over time. However, the NSS since 1972/73, has adopted a more or less uniform, hence comparable, definition of work participation in its surveys conducted once in five years.

The work participation rates of men and women, and the structure and composition of the labor force by gender and employment, compiled from the NSS quinquennial surveys (1972-73 to 1993-94), are given in table 1. The data reveal some interesting and distinctive features of the labor market. First, the work participation rate in India is rather low (54 and 28 percent for adult men and women in 1993-4) and the work participation of women is about one half that of men in 1993-4. Further, in the two decades 1973-94, the participation rates have not increased very much (a rise of 1.5 percentage for men and 0.5 for women). Second, over 50 percent of the workers are in the self-

employed sector. The regular wage/salaried sector accounts for only 16.7 percent of men and 6.2 percent of women workers. Data also indicate that 29.6 percent of men and 37 percent of women are casual laborers. Further, over the years, the percentage of self employed workers and those in salaried/regular wage employment have registered a decline while the proportion of casual laborers has increased by 10 percentage points for men and about 6 percentage points for women.[1]

3. Data, Model and Estimation Issues

The data used in this study come from the Employment and Unemployment surveys of NSS 1983 and 1993-4.[2] Each survey covers around 120,000 households and over half a million individuals covering all States and Union Territories of India. These survey data are used to derive national level estimates on labor force participation, occupational distribution and wages.

The sample of households are drawn based on a two-stage stratified random sampling procedure. The first stage units are the census villages and urban blocks and the second stage comprises the households in these villages and urban blocks. The first stage units are selected circular systematically with probability proportional to the population and the villages and urban blocks are selected in the form of two or more independent subsamples. In the second stage, the households are arranged by means of livelihood (main occupation), and area of landholding in rural areas and monthly per-capita consumption expenditure in urban areas. The samples are selected circular systematically with a random start.[3] The entire survey is divided into four sub-rounds of three months duration and equal number of sample villages and urban blocks were allocated to each sub-round. Thus the survey covered about 69,230 rural and 46,179 urban households in 7,284 villages and 4,792 urban blocks in the year 1993/4 and about the same number of households were surveyed in the 1983 survey.[4] The survey details and the aggregate estimates are given in Government of India (1997).

The survey provides information on the activity status, wages/salary, days worked besides individual characteristics such as age, educational level, region of residence, etc., Household level information about the area of landholding and ownership of homestead are also available. Information on whether or not the household received income from different sources such as cultivation, wage/salary, interest and dividend, etc., were also collected in a companion survey on consumer expenditure in 1993/4.

3.1 Model

Returns to different levels of education may be estimated using two alternative approaches namely the elaborate method and the earnings function method (Psacharopoulos, 1994). The elaborate method requires information on the cost of education which is rarely available and hence the earnings function method is the one that is widely used. The earnings function also facilitates measurement of returns to other forms of human capital such as training and health (Schultz and Tansel, 1997).

Under the earnings function framework, the wage of an individual is assumed to depend upon level of schooling and on-the job training proxied by job experience (and usually approximated in literature by potential experience). The semi-logarithmic earnings function, also known as the Mincerian earnings function (Mincer, 1974), is the commonly accepted functional form for the earnings function and seldom has this form been subjected to empirical testing. The empirical justification for this is provided later in the paper.

The earnings equation is specified as follows:

$$(1) \qquad \ln W_i = \beta_0 + \beta_{j1} S_{ji} + \beta_2 E_i + \beta_3 E^2_i + \beta_4 L_i + u_i,\ i = 1,...,N$$

The dependent variable in the wage function, is the logarithm of the daily wage rate (W) which is obtained by dividing the total wages and salaries (in cash and in kind) receivable for the work done in the reference week by the total number of days reported working in wage work in that week.[5]

The data set provides information on individual's level of education and hence the schooling variable is measured here as level dummies (S) instead of years of schooling. The levels of education considered are primary, middle, secondary, higher secondary and graduates and above. Illiterates and person below primary belong to the reference group. A dummy variable indicating whether the person had any additional technical diploma or certificate is also included as one of the education variables. The marginal rate of returns per year of schooling for the kth level (r_k) can be measured as

$$(2) \qquad r_k = (\beta_j - \beta_{j-1})/Y_k$$

where Y_k is the number of years of schooling at the kth level. It is assumed that an individual spends 5, 3, 2, 2 and 3 additional years, over the previous level of schooling, to complete primary, middle, secondary, higher secondary and college levels of education in India.

Labor market experience (E) is defined as potential experience equal to age minus years of schooling minus 5. A squared term in potential experience is included to capture the non-linearity in the experience-earnings profiles. A dummy variable for residence in rural areas (L) is also included in the set of explanatory variables to capture the rural-urban difference.

3.2 Estimation Issues

The returns to education based on the OLS estimates of the wage equation (1) is subject to various sources of bias and the recent literature provides alternative estimation strategies to tackle such issues (See Harmon and Walker, 1995; Ashenfelter, Harmon and Oosterbeek (1999) for a discussion

on this issue). Instrumental variables method has been proposed and used to account for the endogeneity of schooling. Owing to lack of information on the parental characteristics such as education, occupation etc., or ability measures, or twins information in the data set, the sensitivity of OLS estimates, used in our study, to these sources of bias cannot be examined in this study. However, other estimation issues namely functional form of the wage equation, sample selection bias, and the effects of cohort and place of residence on the returns to schooling are given due attention.

A. Functional form

As mentioned above, the Mincerian semi-logarithmic specification is the most commonly used form of the wage function. Some studies have explicitly tested for the empirical appropriateness of this form (Heckman and Polachek,1974; Dougherty and Jimenez, 1991; Duraisamy and Duraisamy, 1998). The Box-Cox transformation is applied to test for the appropriate functional form of the earnings functions -linear versus the semi-logarithmic. The general form of the Box-Cox transformation is given as follows:

$$(3) \qquad W^{i}(\lambda) = \begin{cases} (W_{i\lambda} - 1)/\lambda & \text{for } \lambda \text{ not equal to } 0 \\ \ln(W_i) & \text{for } \lambda \text{ equal to } 0 \end{cases}$$

The interesting feature of the transformation is that the functional form depends on the parameter (λ). If the estimated $\lambda = 1$, the dependent variable is linear. Alternatively, if $\lambda = 0$, then the semi-log specification of the dependent variable in the wage function is appropriate.

The log-likelihood values obtained by maximization of the log-linear function are plotted in figures 1 for males and females. The log-likelihood value is minimum when the Box-Cox parameter λ

takes the value of 0.321 and 0.220 for men and women respectively which is statistically different from zero and also from one at the five percent level. Similar results are observed in Heckman and Polachek (1974) based on 1960 and 1970 U.S. Census data and also in a study by Dougherty and Jimenez (1991) using 1980 Brazilian census data. Both the studies preferred semi-logarithmic transformation as the linear specification is rejected at a much higher significance level than the semi-logarithmic form. Thus among the two simple transformations, the semi-logarithmic form is taken here as the preferred functional form for the earnings function.

B. Sample selection bias

The wage functions are estimated using a sub-sample of workers. This restriction may lead to the familiar sample selection bias. The workers constitute about 36 and 12 percentage of adult males and adult females aged 15-65 in our sample for 1983 and 1993/4. Heckman (1974) developed the joint maximum likelihood procedure to correct for this source of selection bias in wage estimates. This procedure involves estimating the participation in the wage work (WWP) and wage equations in a simultaneous equation framework which requires the wage equation to be identified. Although the functional form restriction provides a statistical basis for identifying the wage equation, it is empirically evident that variable exclusion restrictions are required. The appropriate identifying variable, as suggested by labor supply theory, is an exogenous source of non-labor income of the individuals or households. For the recent period (1993/4), information on whether the household received interest and dividend income is available and hence the non-labor income variable is introduced as a dummy variable. It is not uncommon to use dummy variables as identifiers in simultaneous equation estimates (Harmon and Walker, 1995).

C. Cohort, and Location Effects

Availability and quality of schooling vary over a period of time and hence different cohorts of the sample may have gone through schooling of different quality. To account for this differential effect of quality, the returns to schooling are estimated separately for three age groups - 15-29, 30-44 and 45-65. The quality and availability of schooling infrastructure also differ markedly between rural and urban areas in India. To examine the influence of rural-urban difference in school availability and quality, the returns may be estimated by separating the sample by the place of schooling or place of birth as suggested in Schultz (1988). As such information are not available in the data set used in the study, the place of current residence of the individual is used to reflect the influence of rural-urban difference on returns. The rural-urban differential in returns, in our study, should not be interpreted as indicating the differences due to schooling infrastructure between the rural and urban areas owing to rural-urban migration. That is, most migrants in urban areas might have had schooling in rural areas and thus the urban estimates would reflect not only the urban school quality but also , to some extent, the school quality in rural areas. The rural-urban difference in returns would reflect the current labor market situation and hence the rewards for the educational levels in these areas.

The variable means and standard deviations for wage workers and all persons by gender for the two years are given in Table 2. For the year 1983, the higher secondary level is clubbed with the secondary level in the data set.

4. Empirical Results

4.1 Returns to Education by Gender

The estimates of the wage and wage work participation equations for males, females and for both sexes by OLS and JML methods for the whole sample (all age cohorts and in both rural and urban areas) are reported in table 3.

The estimates of wage work participation equation show that the effects of all educational levels, except higher secondary for women, experience and its quadratic, dummy variables for rural residence and non-labor income are statistically significant (at 1 percent level) in all the three equations. Persons below primary level and those who are graduates and above are likely to be in the wage work than other with other educational levels. Potential experience increases at a decreasing rate the chances of being in the wage work. Residing in rural areas reduces the chances of being in the wage work for men but increases the likelihood of wage work for women. The wage identifier, namely a dummy variable for non-labor income, is negative and also statistically significant in all the equations at 1 percent level.

The estimates of the wage equations by the OLS and Joint ML methods confirm the conventional wisdom. That is, the coefficients of the educational level dummy variables are positive and also statistically significant at 1 percent level in all equations. The effect of potential experience is also positive and experience square is negative exhibiting the non-linear pattern of experience-earnings profile. An additional year of experience increases the wages by 6 and 4 percent, respectively, for men and women. The dummy variable for rural residence is negative and statistically significant at 1 percent level suggesting that the daily wages are significantly lower (about 2-3 percent) in rural areas compared to urban areas.

The rho term which denotes the correlation between the error terms of wage work participation and wage equations, is positive and statistically significant at 1 percent level in all equations. This implies that the less productive men are more likely to be in wage work than others and the sample selection bias in the estimates of wage equation is important.

The rate of return per year of education is computed using the estimates of wage equation by OLS and JML methods and reported in table 4. In general wage returns increase with the level of schooling up to the secondary level. The wage premia for an additional year of higher secondary and college education are lower compared to secondary level but higher than primary and middle levels.

The private returns per year of schooling in India in 1993-4 for the primary, middle, secondary, higher secondary and college levels of education based on OLS wage estimates are, 7.9, 7.4, 17.3, 9.3 and 11.7 percent respectively. The reward for an additional technical diploma or certificate is higher than that to college education (14.6 percent). The corresponding returns based on JML wage estimates indicate that the OLS estimates are slightly lower than those of JML estimates for secondary and above educational levels.

Comparing the returns to men and women, it is interesting to note that the returns to an additional year of women's education is higher than that to men at the middle, secondary and higher secondary levels, particularly so at the secondary level where wage gains to women's education is more than twice that to men's. Men receive 6.4, 15.7 and 8.9 percent returns on middle, secondary and higher secondary levels compared to 10.3, 33,7 and 11.8 percent returns to women.

Returns By Age Cohorts

The OLS and JML estimates of the wage and participation equations for three age groups - 15-29, 30-44 and 45-65- are reported in tables 5, 6 and 7 respectively. The estimates of the wage work participation equations indicate that the younger cohort of men with graduate and above levels of education are more likely to be in the wage work than the older cohort of men. However, in the case of women, those aged 30 and above with higher secondary levels of education are more likely to be in the wage work than women below 29 years of age. The selection term, rho, is positive and statistically significant at 5 percent level or above in all equations except for the women cohort 15-29. The OLS and JML estimates of wage equations show that the set of education dummy variables have a positive effect in all the equations except technical diploma in OLS for the 45-65 cohort.

The implied returns per year of education are computed and presented in table 8. The returns to education for different levels vary markedly across the age cohorts. It is interesting to note that the

returns to primary, middle and secondary levels of education are lower for younger cohorts, 15-29 and 30-44, than for the oldest cohort. However, the opposite is true for higher secondary, college and technical diploma. The returns to higher secondary education for the 45-65 age group are very low perhaps due to low sample size in this category as there was no separate level 'higher secondary' before the mid seventies in many Indian States. The decline in the returns to secondary and lower levels for the younger age cohorts may be due to overall increase in the supply of persons with these educational levels following the massive expansion of education facilities after independence in 1947. The increase in the returns for higher secondary and above levels and also to technical diploma may be attributed to the rapid industrialization in the country in recent years which might have led to increased demand for technical and highly qualified persons. The returns estimates from OLS and JML are close to each other and exhibit similar pattern.

Rural-Urban Differences in the Returns to Education

As discussed in the introductory section, most of the available estimates of the returns to education for India are based on urban samples (See Heyneman (1980) for a review of these studies). The returns to education may vary between rural and urban areas due to institutional and other constraints which create barriers to perfect mobility of labor between rural and urban areas. The estimates based on urban samples may be biased and hence of limited usefulness for educational planning and policies. In order to study the rural and urban difference in the returns to schooling, wage functions are estimated separately for rural and urban subsamples and the results are presented in tables 9 and 10 and the derived returns are given in table 11. The effects of the education and experience variables are similar to what is observed in the rural-urban pooled estimates. The selectivity term is statistically significant in all equations except in the males equation for urban sample and female equation for rural areas.

A striking finding in the rural-urban estimates is that returns per year of schooling are higher in the rural than in the urban areas for primary and secondary levels and also for additional technical diploma. Especially, the returns to primary education in rural areas are 69 and 32 percent, respectively for men and women, higher than in urban areas. The reward for middle, higher secondary and college education are higher in the urban labor markets than those in the rural areas. These estimates clearly show that the returns to education based on urban sample alone cannot be meaningfully used as representative estimates for India.

5. Changes in Returns to Education Over Time, 1983-94

It is important to examine how the returns to education vary over time within a country as this would be valuable for educational planning and also for testing the implications of important theories of the labor markets (Psacharopoulos, 1989). Available time-trend estimates for U.S. and other developing and developed countries suggest that returns tend to decline over-time within a country (Psacharopoulos, 1993, 1994). Using two cross section employment and unemployment surveys of the NSS, the changes in the returns to education from 1983 to 1993/4 in India are examined. Due to data constraints in the 1983 survey, the specification and estimation methods adopted earlier need to be modified for comparing the returns in 1983 with that in 1993/4. First, the coding of education in the 1983 survey does not contain a separate category, higher secondary level, rather this is included with the secondary level.[6] For comparison of time trends in the returns to schooling, the secondary and higher secondary levels of education in the 1993/4 survey are merged and denoted as secondary level. Second, the 1983 survey did not collect information on the sources of non-labor income and hence we could not use a dummy variable for interest and dividend income to serve as wage identifier. Some

studies use various forms of assets as proxy for non-labor income (Schultz and Mwabu, 1998). Both the 1993/4 and 1983 surveys gathered some information on assets such as whether the household owned the homestead, and the area of landholding. In India, most of the urban households do not own land but hold their assets in other forms and we have no information on these in either survey. So area of landholding is not an adequate measure of assets. An attempt was made to apply the JML method using homestead as an identifier of the wage equation. The function however turned out to be non-concave and for this reason the estimation could not be carried out. Hence I use only the OLS method to estimate the wage functions.

The OLS estimates of the wage functions by gender for 1983 and 1993/4 are reported in table 12 and the derived estimates of the returns to schooling are given in table 13. In general, there is evidence of a change in the reward for women's education during the decade 1983-94. The returns to middle level schooling have declined for both men and women but the change is particularly considerable (4 percent) for women. The secondary and college levels of education appear to be more rewarding for women in the recent years. The returns to women's secondary and college levels of education have registered an increase of 1.7 and 0.8 percentage point respectively. However, for men the returns to secondary education has declined by 0.6 percentage point while there is no change in the reward for college education. The technical diploma fetches higher returns for men in the recent year which may be due to increase in the demand for technically skilled labor.

6. Conclusions

This paper estimates the returns to education by gender, age-cohort and location and also examines the changes in the returns over the period 1983 to 1993/4 using a national level large representative survey data for India. The major findings of this study are the following:

First, it is found that the private rate of return per year of education increases as the level of education increases up to the secondary level. The returns to primary education is rather low while in general, returns per year at the secondary level are the highest. Perhaps, as indicated by Schultz and Mwabu (1998), a part of the higher returns to these higher levels can be considered to be the benefits that are receivable only upon completion of primary schooling. The wage premium for technical diploma is notably high.

Second, male-female comparison of returns reveal that the returns to women's education exceed that to men's at the middle, secondary and higher secondary levels. Especially at the secondary level, the returns to additional schooling of women is over twice as large as the corresponding returns for men.

Third, the younger age cohorts (15-29 and 30-44) receive higher returns to additional year of education at the primary, middle and secondary levels, while those in the 45-85 age cohort receive higher returns to college education than the younger age groups.

Fourth, a striking finding on the variation in returns by rural-urban residence is the higher returns to education in rural than in urban areas for primary and secondary levels and also for technical diploma. The rewards for higher secondary and college education are higher for the urban compared to the rural residents.

Last, there is evidence of considerable change in the reward for education, especially for women, between 1983 and 1993/4. The returns to women's education for primary and middle levels have declined while those for secondary and college levels have increased during the decade 1983-94. The reward for men's technical diploma has increased in recent years.

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Notes

1. The published NSS reports do not provide average daily wage rate for wage workers (regular and casual workers) and so I am unable to compare the changes in real wage during 1973-94. Individual and household level data are available only from 1983 and the change in sex-specific real wages in rural and urban areas are presented in the following section.

2. The NSS 1986-7 employment and unemployment survey was also analyzed but it was found that in that data wages were missing for most of the wage workers in the rural areas. Hence the results cannot be used for comparing the time trends in the returns to education and so the results are not reported.

3. In order to get adequate number of sample households from the affluent section of the society, the NSS 1993/4 survey stratified the households into affluent and others, based on the assets holding and monthly consumption expenditure. Two household**s** from the affluent and 8 households from 'others' were selected circular systematic with a random start.

4. The 1983 survey was administrated to 78,615 rural and 42,306 urban households spread over 8,598 villages and 4,572 urban blocks covering entire nation.

5. Daily wages may be affected by variation in hours of work. The NSS surveys do not collect data on hours of work but collected detailed information on the intensity of work (half or full day) for each activity in a day and for all the seven days of the reference period. The intensity is recorded as 0.5 if a person spent one to four hours in an activity and 1.0 if the intensity of work exceeds four hours. The days worked in each activity in the survey reference week is the sum of the product of participation and intensity of work. The wages receivable for the work done in an activity includes wages in cash as well as in-kind.

6. Prior to mid 1970s, most of the Indian States adopted a system of 11 years of school education followed by one year college/junior college education, refereed to as "Pre-University Certificate", before entering into undergraduate programs (general or technical/professional courses). Since mid 1970s, all the States have adopted a more or less uniform system of 10 years of secondary education followed by 2 years of higher secondary level education.

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Figure 1: Box-Cox Transformation: Log-likelihood Values by Lambda

Figure unavailable

Table 1
Work Participation and Structure of the Indian Labor Force,[1] 1972/3-1993/4

	1972/3	1978/9	1983	1987/8	1993/4
Work Participation:					
Men	52.9	53.6	53.8	53.1	54.4
Women	27.8	29.0	29.5	28.1	28.3
Structure of the Work Force:					
Self Employed:					
Men	60.1	58.0	55.9	54.5	53.7
Women	63.1	60.8	60.0	59.0	56.8
Regular wage/salaried workers:	19.8	18.3	18.1	18.2	16.7
Men	6.3	5.3	5.4	6.8	6.2
Women					
Casual Laborer:					
Men	19.7	23.7	26.0	27.3	29.6
Women	30.6	33.9	34.6	34.2	37.0

Note :1. Age 15-59 years
Source: Compiled from NSS Survey Reports.

Table 2
Means and Standard Deviations of Variables by Gender and Work Status, India, 1983 and 1993/4

Variables	1983				1993/4			
	All Adults		Wage Workers		All Adults		Wage Workers	
	Men	Women	Men	Women	Men	Women	Men	Women
Log Daily Wage	2.443	1.716	2.443	1.716	3.593	2.979	3.593	2.979
	(0.787)	(0.767)	(0.787)	(0.767)	(0.973)	(0.956)	(0.973)	(0.956)
Wage Work Participation dummy	0.361	0.120	1.0	1.0	0.355	0.120	1..0	1.0
	(0.480)	(0.325)			(0.479)	(0.325)		
Education Level dummy:								
Literate below Primary	0.494	0.720	0.513	0.809	0.378	0.598	0.425	0.701
	(0.500)	(0.449)	(0.500)	(0.392)	(0.485)	(0.490)	(0.494)	(0.458)
Primary	0.162	0.105	0.145	0.060	0.135	0.110	0.127	0.062
	(0.369)	(0.307)	(0.352)	(0.237)	(0.342)	(0.313)	(0.333)	(0.240)
Middle	0.161	0.083	0.128	0.029	0.182	0.122	0.142	0.050
	(0.368)	(0.276)	(0.334)	(0.169)	(0.386)	(0.327)	(0.349)	(0.218)
Secondary[1]	0.136	0.063	0.140	0.061	0.141	0.087	0.119	0.059
	(0.342)	(0.244)	(0.347)	(0.240)	(0.348)	(0.282)	(0.324)	(0.236)
Higher Secondary	--	--	--	--	0.081	0.043	0.067	0.039
					(0.272)	(0.203)	(0.251)	(0.194)
Graduate & above	0.046	0.019	0.073	0.040	0.083	0.041	0.120	0.089
	(0.208)	(0.135)	(0.260)	(0.195)	(0.277)	(0.198)	(0.325)	(0.284)
Technical diploma/ Certificate	0.026	0.009	0.046	0.033	0.038	0.014	0.059	0.042
	(0.158)	(0.096)	(0.209)	(0.179)	(0.192)	(0.117)	(0.236)	(0.201)
Potential Experience (in years)	23.550	25.844	23.643	26.105	22.328	24.852	23.813	25.901
	(15.303	(15.175	(12.663	(13.165)	(15.30)	(15.568)	(12.48)	(13.20)
Potential Experience square	788.793	898.161	719.343	854.80	732.595	860.018	722.744	845.527
	(871.76)	(913.46)	(716.84)	(784.55)	(843.79)	(911.41)	(696.78	(776.04
Rural dummy	0.636	0.659	0.551	0.711	0.606	0.621	0.522	0.645
	(0.481)	(0.474)	(0.497)	(0.453	(0.489)	(0.485)	(0.500)	(0.478)
Non-labor Income (dummy)	_	-	-	-	0.064	0.065	0.058	0.049
					(0.244)	(0.246)	(0.233)	(0.215)
# of Observations	184,458	178,373	66,651	21,444	178,896	178,896	63,507	20,393

Note: 1. includes higher secondary for the year 1983. Source: Computed using NSS 1987 and 1993/4 survey data.

Table 3

OLS and JML Estimates of the Wage and Wage Work Participation (WWP) Equations by Gender, All Age (15-65), India, 1993-94

Variables	Both Sexes			Men			Women		
	OLS	JML		OLS	JML		OLS	JML	
	Wage	Wage	WWP	Wage	Wage	WWP	Wage	Wage	WWP
Educational Level:									
Primary	0.395	0.388	-0.0826	0.313	0.302	-0.224	0.192	0.155	-0.389
	(41.75)	(40.74)	(10.53)	(30.46)	(28.66)	(22.16)	(8.42)	(6.27)	(25.24)
Middle	0.617	0.610	-0.0728	0.506	0.491	-0.286	0.502	0.460	-0.442
	(65.17)	(64.02)	(9.26)	(49.66)	(46.15)	(28.95)	(19.59)	(16.41)	(26.24)
Secondary	0.963	0.963	0.0247	0.820	0.808	-0.250	1.176	1.157	-0.184
	(95.27)	(95.05)	(2.79)	(74.76)	(71.29)	(22.78)	(48.28)	(46.37)	(10.23)
Higher Secondary	1.149	1.156	0.120	0.999	0.988	-0.225	1.411	1.419	0.0302
	(90.04)	(90.15)	(10.47)	(72.19)	(70.16)	(16.27)	(47.17)	(47.09)	(1.30)
Graduate & above	1.500	1.537	0.571	1.372	1.378	0.180	1.684	1.730	0.589
	(142.78)	(132.28)	(53.22)	(118.33)	(117.96)	(13.62)	(73.97)	(66.95)	(28.62)
Technical Diploma/ Certificate	0.291	0.332	0.618	0.305	0.323	0.470	0.241	0.310	0.852
	(22.41)	(23.53)	(42.95)	(21.51)	(21.82)	(27.68)	(8.40)	(9.07)	(29.71)
Experience	0.0559	0.0617	0.0756	0.0589	0.0633	0.0924	0.0413	0.0457	0.0505
	(66.69)	(54.11)	(117.56)	(61.53)	(45.77)	(112.45)	(25.46)	(22.68)	(43.13)
Experience Square (x 10^{-2})	-0.0783	-0.0883	-0.129	-0.0814	-0.0892	-0.163	-0.0599	-0.0675	-0.0855
	(53.55)	(44.68)	(116.02)	(47.78)	(36.24)	(111.40)	(22.49)	(20.12)	(45.00)
Rural dummy	-0.285	-0.297	-0.161	-0.299	-0.316	-0.370	-0.164	-0.159	0.0605
	(46.95)	(47.25)	(31.07)	(44.20)	(40.66)	(54.33)	(13.29)	(12.70)	(6.55)
Non-labor income	-	-	-0.271	-	-	-0.192	-	-	-0.249
			(25.28)			(73.62)			(12.85)
Constant	2.358	2.168	-1.435	2.476	2.376	-0.949	2.200	1.969	-1.706
Rho	-	0.128		-	0.0852		-	0.146	
		(7.67)			(4.43)			(3.82)	
Adj R^2/Log likelihood	0.359	-281199		0.337	-180661		0.380	-82153	
# of Observations	83,900	348,546		63,507	178,896		20,393	169,650	

Source: Computed from survey data.

Table 4

Returns to Education per Year Based on OLS and Joint Maximum Likelihood (JML) Estimates, India, 1993-94

Educational Level	OLS			JML		
	Both Sexes	Men	Women	Both Sexes	Men	Women
Primary	7.9	6.3	3.8	7.8	6.1	3.1
Middle	7.4	6.4	10.3	7.4	6.3	10.1
Secondary	17.3	15.7	33.7	17.7	15.8	34.9
Higher Secondary	9.3	8.9	11.8	9.7	9.0	12.8
College/University	11.7	12.4	9.1	12.7	13.0	10.6
Technical Diploma/ Certificate	14.6	15.2	12.0	16.6	16.2	15.5

Source: Computed using the results reported in Table 3.

Table 5

OLS and JML Estimates of the Wage and Wage Work Participation (WWP) Equations by Gender, Age Group (15-29), India, 1993-94

Variables	Both Sexes			Men			Women		
	OLS	JML		OLS	JML		OLS	JML	
	Wage	Wage	WWP	Wage	Wage	WWP	Wage	Wage	WWP
Education Level:									
Primary	0.301	0.296	-0.0789	0.251	0.244	-0.161	0.174	0.153	-0.332
	(20.91)	(20.46)	(6.32)	(15.90)	(15.25)	(9.77)	(5.24)	(4.20)	(14.38)
Middle	0.493	0.487	-0.0939	0.435	0.426	-0.211	0.354	0.328	-0.404
	(32.54)	(31.89)	(7.28)	(26.39)	(25.20)	(12.73)	(9.38)	(7.82)	(15.94)
Secondary	0.710	0.703	-0.109	0.623	0.613	-0.264	0.837	0.816	-0.315
	(38.62)	(37.90)	(7.11)	(31.04)	(29.60)	(12.70)	(19.69)	(18.18)	(10.47)
Higher Secondary	0.991	0.986	-0.0689	0.873	0.860	-0.308	1.269	1.263	-0.0914
	(42.33)	(41.99)	(3.61)	(33.69)	(32.38)	(13.12)	(25.53)	(25.31)	(2.50)
Graduate & above	1.427	1.453	0.478	1.347	1.358	0.267	1.582	1.610	0.495
	(62.08)	(58.98)	(23.50)	(51.75)	(51.24)	(10.40)	(34.70)	(32.27)	(13.55)
Technical Diploma/ Certificate	0.358	0.393	0.634	0.359	0.380	0.509	0.336	0.385	0.809
	(14.38)	(14.22)	(26.80)	(12.67)	(12.75)	(17.62)	(7.02)	(6.53)	(19.00)
Experience	0.101	0.111	0.172	0.0966	0.106	0.210	0.0714	0.0766	0.0820
	(26.78)	(21.83)	(61.99)	(22.23)	(17.88)	(57.89)	(9.56)	(9.20)	(16.59)
Experience Square (x 10^{-2})	-0.274	-0.304	-0.518	-0.237	-0.264	-0.601	-0.196	-0.210	-0.217
	(20.09)	(17.78)	(48.95)	(19.36)	(13.27)	(40.65)	(7.83)	(7.81)	(12.48)
Rural dummy	-0.208	-0.219	-0.190	-0.207	-0.222	-0.359	-0.0825	-0.0781	0.0657
	(21.63)	(21.28)	(23.25)	(19.36)	(17.87)	(31.66)	(4.08)	(3.82)	(4.48)
Non-labor income	-	-	-0.225	-	-	-0.204	-	-	-0.167
			(12.18)			(8.52)			(5.14)
Constant	2.194	2.032	-1.815	2.306	2.191	-1.562	2.091	1.922	-1.828
Rho	-	0.097		-	0.0775		-	0.104	
		(2.96)			(2.31)			(1.43)	
Adj R^2/Log likelihood	0.209	-104943		0.182	-66113		0.273	-31628	
# of Observations	29,765	154,795		22,172	79,383		7,593	75,412	

Source: Computed from survey data.

Table 6

OLS and JML Estimates of the Wage and Wage Work Participation (WWP) Equations by Gender, Age Group (30-44), India, 1993-94

Variables	Both Sexes			Men			Women		
	OLS	JML		OLS	JML		OLS	JML	
	Wage	Wage	WWP	Wage	Wage	WWP	Wage	Wage	WWP
Education Level:									
Primary	0.366	0.357	-0.127	0.297	0.288	-0.246	0.147	0.109	-0.410
	(23.07)	(22.26)	(9.24)	(17.04)	(16.06)	(13.69)	(4.01)	(2.75)	(15.63)
Middle	0.608	0.602	-0.0701	0.498	0.488	-0.247	0.563	0.521	-0.451
	(35.78)	(36.22)	(4.81)	(27.66)	(26.41)	(13.18)	(13.06)	(11.19)	(14.85)
Secondary	0.986	0.992	0.119	0.853	0.848	-0.126	1.241	1.232	-0.0718
	(55.39)	(55.49)	(7.13)	(43.64)	(43.07)	(5.93)	(30.26)	(29.86)	(2.19)
Higher Secondary	1.187	1.209	0.346	1.047	1.048	0.0382	1.502	1.519	0.225
	(55.37)	(55.03)	(16.08)	(44.80)	(44.79)	(1.44)	(30.03)	(30.03)	(5.19)
Graduate & above	1.498	1.541	0.704	1.367	1.376	0.304	1.801	1.858	0.754
	(71.80)	(67.75)	(31.63)	(52.80)	(59.28)	(11.05)	(38.52)	(35.48)	(17.28)
Technical Diploma/ Certificate	0.285	0.324	0.658	0.298	0.314	0.500	0.229	0.294	0.859
	(14.67)	(15.33)	(27.44)	(14.08)	(14.09)	(17.65)	(5.36)	(5.78)	(17.81)
Experience	0.0622	0.0668	0.0731	0.0570	0.0594	0.070	0.0546	0.0583	0.0466
	(11.59)	(14.25)	(15.69)	(10.98)	(11.22)	(11.60)	(5.79)	(6.08)	(5.40)
Experience Square (x 10^{-2})	-0.101	-0.110	-0.134	-0.0859	-0.0903	-0.128	-0.0810	-0.0866	-0.0717
	(11.42)	(12.12)	(15.30)	(8.34)	(8.61)	(10.84)	(4.78)	(5.05)	(4.67)
Rural dummy	-0.317	-0.328	-0.148	-0.334	-0.349	-0.413	-0.209	-0.202	0.080
	(33.13)	(33.31)	(16.83)	(31.05)	(27.66)	(35.30)	(10.99)	(10.51)	(5.18)
Non-labor income	-	-	-0.259	-	-	-0.134	-	-	-0.245
			(14.54)			(5.57)			(7.82)
Constant	2.335	2.165	-1.402	2.532	2.462	-0.688	1.989	1.764	-1.747
Rho	-	0.122		-	0.0732		-	0.147	
		(4.79)			(2.33)			(2.46)	
Adj R^2/Log likelihood	0.357	-105885		0.313	-67608		0.426	-30946	
# of Observations	34,036	107,431		25,852	55,119		8,184	52,312	

Source: Computed from survey data.

Table 7

OLS and JML Estimates of the Wage and Wage Work Participation (WWP) Equations by Gender, Age Group (45-65), India, 1993-94

Variables	Both Sexes			Men			Women		
	OLS	JML		OLS	JML		OLS	JML	
	Wage	Wage	WWP	Wage	Wage	WWP	Wage	Wage	WWP
Education Level:									
Primary	0.488	0.471	-0.191	0.365	0.348	-0.331	0.230	0.165	-0.563
	(21.23)	(20.09)	(10.92)	(15.05)	(13.68)	(15.60)	(3.45)	(2.26)	(13.85)
Middle	0.744	0.729	-0.158	0.564	0.544	-0.399	0.928	0.859	-0.622
	(30.39)	(29.44)	(8.05)	(22.07)	(20.04)	(17.21)	(11.04)	(9.56)	(11.79)
Secondary	1.141	1.149	0.136	0.940	0.929	-0.198	1.657	1.653	0.0337
	(47.84)	(47.91)	(6.46)	(37.01)	(35.92)	(7.98)	(26.35)	(26.20)	(0.70)
Higher Secondary	1.196	1.214	0.261	1.008	0.999	-0.169	1.638	1.661	0.290
	(36.95)	(37.08)	(8.41)	(29.62)	(29.09)	(4.75)	(18.36)	(18.43)	(3.93)
Graduate & above	1.518	1.541	0.383	1.357	1.348	-0.116	1.809	1.850	0.565
	(48.40)	(48.30)	(13.23)	(40.91)	(40.34)	(3.46)	(22.20)	(22.07)	(8.54)
Technical Diploma/ Certificate	0.230	0.264	0.525	0.256	0.269	0.339	0.0861	0.176	1.026
	(8.86)	(9.68)	(16.97)	(9.34)	(9.58)	(9.82)	(1.31)	(2.26)	(13.97)
Experience	0.0460	0.0444	-0.0329	0.0527	0.0514	-0.0498	0.0378	0.0390	0.0148
	(6.02)	(5.79)	(5.08)	(6.32)	(6.14)	(6.28)	(2.06)	(2.11)	(1.10)
Experience Square (x 10^{-2})	-0.0652	-0.0671	-0.00393	-0.0737	-0.0748	-0.0048	-0.0486	-0.0529	-0.0427
	(7.61)	(7.80)	(0.56)	(7.73)	(7.84)	(0.55)	(2.49)	(2.68)	(3.01)
Rural Dummy	-0.328	-0.338	-0.130	-0.362	-0.379	-0.353	-0.194	-0.190	-0.0287
	(24.97)	(25.26)	(12.11)	(24.92)	(23.04)	(25.17)	(7.27)	(7.08)	(1.51)
Non-labor income	-	-	-0.355	-	-	-0.225	-	-	-0.406
			(17.52)			(8.73)			(10.32)
Constant	2.559	2.517	0.867	2.638	2.655	1.987	2.210	1.931	-0.965
Rho	-	0.136		-	0.0869		-	0.166	
		(4.25)			(2.21)			(2.21)	
Adj R^2/Log likelihood	0.428	-68172		0.395	-45251		0.432	-19220	
# of Observations	20,099	86,320		15,483	44,394		4,166	41,926	

Source: Computed from survey data.

Table 8
Returns to Education per Year Based on OLS and Joint Maximum Likelihood Estimates, India, 1993-94

Age Cohort/ Educational Level	OLS			JML		
	Both Sexes	Men	Women	Both Sexes	Men	Women
Age Cohort 15-29: Education Level:						
Primary	6.0	5.0	3.5	5.9	4.9	3.1
Middle	6.4	6.1	6.0	6.4	6.1	5.8
Secondary	10.9	9.4	24.2	10.8	9.3	24.4
Higher Secondary	14.0	12.4	21.6	14.1	12.3	22.3
College/University	14.5	15.8	10.4	15.6	16.6	11.6
Technical Diploma/ Certificate	17.9	17.9	16.8	19.6	19.0	19.2
Age Cohort 30-44: Education Level:						
Primary	7.3	5.9	2.9	7.1	5.8	2.2
Middle	8.1	6.7	13.9	8.2	6.7	13.7
Secondary	18.9	17.8	33.9	19.5	18.0	35.6
Higher Secondary	10.1	9.7	13.1	10.8	10.0	14.3
College/University	10.4	10.6	9.9	11.1	10.9	11.3
Technical Diploma/ Certificate	14.2	14.9	11.4	16.2	15.7	14.7
Age Cohort 45-65: Education Level:						
Primary	9.8	7.3	4.6	9.4	7.0	3.3
Middle	8.5	6.6	23.2	8.6	6.5	23.1
Secondary	19.8	18.8	36.5	21.0	19.3	39.7
Higher Secondary	2.8	3.4	-0.9	3.3	3.5	0.4
College/University	10.7	11.6	5.7	10.9	11.7	6.3
Technical Diploma/ Certificate	11.5	12.8	4.3	13.2	13.4	8.8

Source: Computed using the results reported in tables 5-7.

Table 9

OLS and JML Estimates of the Wage and Wage Work Participation (WWP) Equations by Gender, Rural Areas, India, 1993-94

Variables	Both Sexes			Men			Women		
	OLS	JML		OLS	JML		OLS	JML	
	Wage	Wage	WWP	Wage	Wage	WWP	Wage	Wage	WWP
Education Level:									
Primary	0.421	0.410	-0.146	0.353	0.341	-0.298	0.203	0.182	-0.433
	(34.79)	(33.36)	(14.48)	(26.26)	(23.88)	(23.62)	(7.42)	(5.95)	(21.42)
Middle	0.631	0.618	-0.185	0.550	0.534	-0.415	0.423	0.401	-0.464
	(48.58)	(46.38)	(17.27)	(38.61)	(33.64)	(32.11)	(13.16)	(11.28)	(19.91)
Secondary	1.025	1.020	-0.0453	0.907	0.894	-0.334	1.106	1.093	-0.215
	(68.53)	(67.91)	(3.48)	(55.23)	(51.39)	(21.72)	(31.26)	(30.11)	(7.59)
Higher Secondary	1.205	1.207	0.0667	1.076	1.064	-0.283	1.326	1.325	0.00659
	(59.13)	(59.14)	(3.69)	(48.52)	(46.88)	(13.67)	(26.76)	(26.71)	(0.16)
Graduate & above	1.546	1.577	0.523	1.423	1.427	0.139	1.629	1.648	0.524
	(81.26)	(78.62)	(26.62)	(68.83)	(68.75)	(6.295)	(34.41)	(33.65)	(11.06)
Technical Diploma/ Certificate	0.382	0.418	0.586	0.385	0.404	0.510	0.386	0.420	0.793
	(16.25)	(16.94)	(23.54)	(14.88)	(14.93)	(17.89)	(7.48)	(7.46)	(15.07)
Experience	0.0440	0.0486	0.0665	0.0487	0.0519	-0.0780	0.0273	0.0295	0.0477
	(39.05)	(33.12)	(75.36)	(37.19)	(28.02)	(70.81)	(13.30)	(11.74)	(29.44)
Experience Square (x 10^{-2})	-0.0623	-0.0702	-0.113	-0.0688	-0.0744	-0.139	-0.0406	-0.0444	-0.0822
	(33.35)	(28.45)	(78.09)	(31.13)	(23.17)	(74.28)	(12.47)	(10.81)	(32.28)
Non-labor income	-	-	-0.312	-	-	-0.188	-	-	-0.402
			(18.16)			(8.57)			(12.67)
Constant	2.232	2.064	-1.463	2.306	2.218	-1.123	2.247	2.133	-1.587
Rho	-	0.116		-	0.0704		-	0.0824	
		(4.91)			(2.39)			(1.507)	
Adj R^2/Log likelihood	0.253	-160350		0.241	-100515		0.196	-51722	
# of Observations	46,280	213,727		33,133	10,8443		13,147	105,284	

Source: Computed from survey data.

Table 10

OLS and JML Estimates of the Wage and Wage Work Participation (WWP) Equations by Gender, Urban Areas, India, 1993-94

Variables	Both Sexes			Men			Women		
	OLS	JML		OLS	JML		OLS	JML	
	Wage	Wage	WWP	Wage	Wage	WWP	Wage	Wage	WWP
Education Level:									
Primary	0.313	0.314	0.0259	0.208	0.205	-0.0786	0.157	0.118	-0.319
	(20.67)	(20.73)	(2.05)	(12.96)	(12.75)	(5.56)	(3.91)	(2.73)	(13.26)
Middle	0.552	0.555	0.0652	0.406	0.402	-0.104	0.565	0.514	-0.407
	(38.87)	(39.00)	(5.45)	(27.22)	(26.74)	(6.52)	(13.17)	(10.79)	(16.45)
Secondary	0.872	0.878	0.110	0.700	0.696	-0.132	1.213	1.193	-0.149
	(60.68)	(60.75)	(8.78)	(45.69)	(44.78)	(8.03)	(33.17)	(31.83)	(6.23)
Higher Secondary	1.082	1.093	0.197	0.903	0.898	-0.119	1.470	1.476	0.0644
	(62.85)	(62.69)	(12.97)	(49.13)	(48.49)	(6.15)	(35.04)	(35.04)	(2.23)
Graduate & above	1.452	1.490	0.636	1.298	1.304	0.266	1.750	1.816	0.620
	(105.27)	(91.56)	(47.04)	(86.29)	(84.52)	(15.05)	(56.39)	(44.66)	(25.46)
Technical Diploma/ Certificate	0.269	0.307	0.637	0.286	0.298	0.451	0.204	0.296	0.879
	(16.81)	(16.88)	(35.97)	(16.74)	(16.30)	(21.28)	(5.38)	(5.57)	(25.66)
Experience	0.0662	0.0722	0.0865	0.0661	0.0698	0.112	0.0549	0.0609	0.0522
	(50.97)	(38.51)	(88.86)	(45.48)	(29.08)	(87.29)	(20.19)	(16.69)	(30.09)
Experience Square (x 10^{-2})	-0.0911	-0.1016	-0.150	-0.0876	-0.0942	-0.202	-0.0770	-0.0871	-0.0862
	(37.14)	(29.77)	(82.51)	(11.40)	(21.16	(81.36)	(16.02)	(13.85)	(28.71)
Non-labor income	-	-	-0.243	-	-	-0.190	-	-	-0.151
			(17.56)			(10.36)			(6.02)
Constant	2.260	2.076	-1.602	2.429	2.350	-1.218	1.985	1.675	-1.773
Rho	-	0.112		-	0.0603		-	0.167	
		(4.43)			(1.91)			(2.50)	
Adj R^2/Log likelihood	0.310	-120140		0.293	-79522		0.402	-30094	
# of Observations	37,620	134,819		20,374	70,453		7,246	64,366	

Source: Computed from survey data.

Table 11

Returns to Education per Year Based on OLS and Joint Maximum Likelihood Estimates, India, 1993-94

Location and Educational Level	OLS			JML		
	Both Sexes	Men	Women	Both Sexes	Men	Women
Rural:						
Education Level:						
Primary	8.4	7.1	4.1	8.2	6.8	3.6
Middle	7.0	6.6	7.4	6.9	6.4	7.3
Secondary	19.7	17.9	34.1	20.1	18.0	34.6
Higher Secondary	9.0	8.4	11.0	9.4	8.5	11.6
College/University	11.4	11.6	10.1	12.3	12.1	10.8
Technical Diploma/ Certificate	19.1	19.3	19.3	20.9	20.2	21.0
Urban:						
Education Level:						
Primary	6.3	4.2	3.1	6.3	4.1	2.4
Middle	8.0	6.6	13.6	8.0	6.6	13.2
Secondary	16.0	14.7	32.4	16.2	14.7	34.0
Higher Secondary	10.5	10.1	12.9	10.7	10.1	14.1
College/University	12.3	13.2	9.3	13.2	13.5	11.3
Technical Diploma/ Certificate	13.4	14.3	10.2	15.3	14.9	14.8

Source: Computed using the results reported in tables 9-10.

Table 12

OLS Estimates of Wage Equation by Gender, India 1983-1993

Variables	1983			1993		
	Both Sexes	**Men**	**Women**	**Both Sexes**	**Men**	**Women**
Education Level:						
Primary	0.411	0.307	0.205	0.393	0.312	0.189
	(61.56)	(45.41)	(11.57)	(41.57)	(30.32)	(8.29)
Middle	0.664	0.519	0.635	0.615	0.504	0.497
	(89.58)	(70.60)	(25.69)	(64.89)	(49.44)	(19.41)
Secondary	1.076	0.914	1.349	1.028	0.882	1.264
	(144.31)	(122.03)	(65.91)	(116.65)	(91.46)	(61.06)
Graduate & above	1.542	1.401	1.731	1.496	1.368	1.678
	(159.71)	(143.68)	(71.53)	(142.30)	(117.93)	(73.65)
Technical Diploma/ Certificate	0.268	0.278	0.256	0.299	0.312	0.247
	(24.56)	(24.93)	(9.85)	(22.99)	(22.04)	(8.61)
Experience	0.0477	0.0518	0.0274	0.0555	0.0586	0.0405
	(73.52)	(75.18)	(20.75)	(66.26)	(61.24)	(25.02)
Experience Square (x 10^{-2})	-0.0685	-0.0729	-0.0427	-0.0779	-0.0812	-0.0589
	(61.64)	(60.63)	(16.69)	(53.26)	(47.63)	(22.12)
Rural dummy	-0.373	-0.399	-0.164	-0.287	-0.300	-0.167
	(79.92)	(81.89)	(16.69)	(47.19)	(44.37)	(13.53)
Constant	1.483	1.607	1.291	2.365	2.482	2.215
Adj R-Square	0.471	0.480	0.413	0.357	0.335	0.378
# of Observations	88,095	66,651	21,444	83,900	63,507	20,393

Source: Computed from survey data.

Table 13

Trends in the Returns to Education in India, 1983-1993/4

Educational Level	1983			1993/4		
	Both Sexes	Men	Women	Both Sexes	Men	Women
Primary	8.2	6.1	4.1	7.9	6.2	3.8
Middle	8.4	7.1	14.3	7.4	6.4	10.3
Secondary[1]	13.7	13.2	23.8	13.8	12.6	25.5
College/University	11.6	12.2	9.5	11.7	12.2	10.3
Technical Diploma/ Certificate	13.4	13.9	12.8	14.9	15.6	12.3

Note: 1. includes Higher Secondary level.
Source: Computed using the results reported in Table 12.