Estimating Human Capital and Earning Inequality - Insights from Household Survey Data in India

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The addition to stock of human capital has a positive effect on economic growth. It enhances employability and, if the person is employed, improves earnings and job prospects. Human capital can also reduce overall income inequality in an economy by increasing the proportion of income of the owners of human capital. If the children from low-income families benefited from public investment in education, the gap between those with the most and those with the least is expected to fall. This study deals with the measurement issues of human capital and then the role of human capital in explaining earning inequality in a micro framework with micro level data in India, but the analysis is often applicable to other developing countries.

The first part of the study looks in the estimation of human capital acquired by an individual by using personal level information taken from from 38th round, 50th round, 61st round and 68th round survey on employment and unemployment situation in India (Schedule 10) for the period 1983, 1993-94, 2004-05 and 2011-12 respectively provided by the National Sample Survey Office (NSSO), government of India. Human capital is a multidimensional concept that incorporates various skills and competencies acquired through learning and experience, the innate abilities, some aspects of motivation and behaviour, as well as the physical, emotional and mental health of individuals (OECD, 2011). But, in estimating human capital at micro level, this study uses the concept in narrow sense by assuming that human capital is a function of only education and experience.

The stock of human capital can be measured either by applying cost based approach or, life-time income based approach, or indicators-based approach. In this study we apply the indicators-based approach developed in OECD (2011) and Barro-Lee (2013). The major indicators of human capital used in this study include the year of schooling in general education, technical education, and the status of schooling, type of educational institution, whether vocational training received by a person, and the field of training of a person. To estimate human capital, the relative weights of the indicators have been calculated by applying principal component version of factor analysis. We have estimated the level of human capital separately for the young cohorts and for the overall population.

Human capital is very much crucial in explaining earning inequality through labour market dynamics in every economy (Becker, 1964; Griliches, 1977). Persons with better-endowed human capital are able to earn higher wages, experience less unemployment, and work in more high-status occupations than their less-endowed counterparts (Cohn and Addison 1997). The accumulation of human capital through education, however, is no longer a guarantee of getting a better quality job in a developing country like India. There are many socio-economic and political factors that actually restrict to enter into higher hierarchy employment of a person with adequate human capital. Moreover, in recent years the nature of jobs has been changed dramatically because of pro-business market openness and deregulation of labour market in transitional economies. Firms are allowed to be more flexible in determining the conditions under which they employ workers. Labour market flexibility enhances the peripheral segment of the labour market by reducing the core segment of it. These observed changes in labour market characteristics motivate to examine further how human capital is helpful in explaining inequality through the dynamics of labour market in a transitional developing economy, India. The second part of the study analyses the effect of human capital on earning inequality by taking job experience, the social status and gender of workers as control variables using the same set of survey data. We have constructed independently pooled cross sections of the four samples in four survey rounds drawn independently from the same population at different time points to get more robust results. The principal job activities are defined broadly in the data schedule for the working age people as self-employed, regular salaried worker, and casual wage labourer. We restrict the sample to persons aged between 15 and 60, the working age in Indian labour market. Quantile regression model is used in this paper to study the disproportional impact of human capital and experience on earnings at different quantiles. Differences in quantile returns are used to measure inequality within groups, defined in terms of endowment of human capital. To analyse the role of human capital and experience in determining income at different locations of income distribution we have estimated conditional earnings at quantiles 0.10, 0.25, 0.50, 0.75, 0.90, and 0.99. We have compared the effect of human capital on earning at different locations of the earning distribution between sectors (rural and urban), social groups, and gender by incorporating different dummy variables. The time effect is captured by the year dummies. The study observes a significant change in the distribution of working age people in terms of their human capital. The share the working age people with higher level of human capital increased significantly over the different survey rounds. Majority of the working people with no human capital were absorbed as casual workers in non-farm activities followed by self-employment in farming in rural areas and absorbed as own account workers in informal activities like small trading or street vending in urban areas in 2012. Nearly three fourth of the urban people who have education at post-graduation or above were engaged in wage employment on permanent basis during this period. The distribution of workers by human capital across different employment categories in urban India fails to support the neo-classical theory of occupational choice. The quantile regression results indicate that human capital has a larger positive effect on

conditional earning at upper quantiles partly because of unequal access to human capital across different groups of people. Higher the level of human capital higher is the return at every quantiles of the earning distribution, and the effect is more at the higher quantile than at the lower quantile. Gender gap in earning is significantly low at the upper quantiles than at the lower quantiles of the distribution.