

# **Mismatch between Skills and Jobs in Indian Labour Market During the Post-Reform Era: Estimates with Unit Level Data**

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Human capital is one of the most important resources of any country which contributes to its growth. Human capital should be nurtured and mobilized properly so that the growth of the country can be sustainable. Achieving efficiency in the utilization of all important resources including human capital must be the priority of the policy makers of any country. In this context, proper matching of educated and skilled workers with the most appropriate jobs is of utmost importance. Efficient matching can reduce the widespread unemployment problem if not minimized, in any developing country. It is estimated that by 2025, 70 per cent of Indian population will be of working age, i.e. 15 to 60 years. In this stage, the dependency ratio of the country, i.e. the burden of children and elderly dependent people on the country is lower than it has ever been. Such a 'demographic dividend' may give India an advantage over the other developed countries which would be compelled to bear the burden of older people during the same period of time. However, growing mismatch between skills/education and jobs/occupations in Indian labour market during the post economic reform period may turn this possibility of 'demographic dividend' into a 'demographic disaster'. In fact, skill shortage of Indian workers and resulting unemployment started occurring since 1990s, i.e. during the process of economic transition as a consequence of privatization and economic reforms. The era of global competition accompanied newly created jobs which required new skills. Demand for new skills increased more rapidly than supply of newly skilled workforce trained from different vocational training centres of India, leading to widespread skill shortages among almost all occupation groups.

Education/skill mismatch in India can be divided into two broad categories. Firstly, there is education/skill deficit or education/skill gap, where a worker's education/skill is not up to the requirements of the job. Secondly, education/skill underutilization (over-education or over-skilling), which arises when level of education and skill exceed those required by the job. Incidence of education/skill mismatch can be horizontal or vertical. Horizontal mismatch is a situation in which the level of education matches job requirements, but the type of education (e.g. field of study) is inappropriate for the current job. On the other hand, vertical mismatch is the mismatch between educational qualifications (i.e. formal academic skills) held by workers and those required by their jobs. Two situations may arise under these circumstances. Firstly, it may be a situation of over-education, when a worker has more educational qualifications than those required. Secondly, it may be a situation of under-education, when a worker has low educational qualifications than those required.

This paper aims at a comparative analysis of job-skill mismatch in India using household level data from the Employment and Unemployment Survey in India (schedule 10) of 50th, 61st and 68th quinquennial rounds (for 1993-94, 2004-2005 and 2011-12) conducted by the NSSO. For our analysis, we have adopted two standard measures of job-skill mismatch (Arandarenko, M. 2012). Firstly, we construct the standardized variance of the unemployment rate across groups of

workers with different levels of technical skills and educational qualification. This measure tells us that in the absence of mismatch, each qualification group would have an equal employment probability and the variance of unemployment rates would be zero. The main drawback of this measure is that cannot identify the source of mismatch. Therefore, we also use a second measure, designed to pinpoint the source of mismatch, which compares the share of unemployed people with a given education level to the share of employed people with the same level of education (Johansen and Gatelli, 2012). If the share of unemployed people with a given education level is less/more than the share in employment the mismatch ratio there will be a negative/positive mismatch. The existence of mismatch within an education/skill group is revealed by such an imbalance and the measure therefore enables the identification of where mismatches lie within the labour market. However, this hypothesis is based on the assumption that there is no substitutability in employment between workers with different levels of educational qualification. Under the assumption of non-substitutability positive mismatch within any educational/skill group could be interpreted as a education/skill shortage. However, this is a strong assumption. In practice, employers are likely to choose workers with higher education levels (higher levels of human capital) to those with lower levels of education, even for jobs that do not require the higher level of education. This phenomenon is commonly referred to as ‘bumping down’ (McGuinness, 2006). It is a symptom of ‘vertical’ mismatch across levels of educational qualification (skill). The bumping down phenomenon also has a social cost, since it implies that too much investment is being allocated to producing an excess of highly educated people for which appropriate jobs are not available. It also implies that people with lower education levels are likely to suffer disproportionately from unemployment and that the investment in their human capital is going to waste. Therefore, if we relax the assumption of non-substitutability, positive mismatch in any education/skill group could be interpreted as bumping down of people within than group by the people from higher education/skill group.

In our paper, we have tried to find out skill gap, bumping down and over-education or over-skilling of workers among several education/skill groups, separately for men and women with different ages, castes, religions and occupations during the years 1993-94, 2004-2005 and 2011-12. Our results show that people with lowest education/skill level have highest education/skill level have negative mismatch, whereas people from other education/skill groups have positive mismatch. We have also shown that the skill gap, bumping down and over-education/over-skilling has increased over the years, indicating that this is a serious and long-term problem.