Education and Occupation (Mis-)match in the Indian Labor Market

Shweta Grover
Fellow Participant, Indian Institute of Management Indore

Introduction

Education is considered to be one of the most important channels of growth and development (Romer, 1989). But education can lead to enhancement of human capital only through proper utilization and provision of conducive environment. In the education literature, there has been a long standing emphasis on matching the skills and expertise of the individuals with the job profiles. It is argued that matching of education and occupation of workers leads to not only productivity improvements and on the job learning (Tsang & Levin, 1985) but also job satisfaction (McGuinness & Sloane, 2011), less attrition (Verhaest & Omey, 2004), and positive social capital formation for work environment (Belfield, 2010).

In this study, we analyze the education and occupation matching in the context of Indian labor market, with a focus on:

• Returns to (mis-)matching
• Determinants of such (mis-)matching

In the context of developing countries, especially India, this study sheds light on some of the current debates related to Demographic Dividend and Skill India.

• Firstly, in realising the potential of demographic dividend (large proportion of educated individuals in working age categories), we need to understand the demand side of labor market i.e. what are the type of jobs available and how this will evolve over time? We take a stock of the current situation in terms of demand and supply mismatch in the labor market from education-occupation perspective.

• This is connected to the second issue i.e. Skill India. Though the intention of the government is welcomed, there is no consensus on the nature, implementation and efficacy of this program. This study can point in the direction where this type of intervention might be helpful.

Methodology

• **Data:** We have used the employment and unemployment survey, 2009 - 2010, 66th round and 2011 – 2012, 68th round collected by National Sample Survey Organization (NSSO). The NSSO, once in every five years, conducts an employment and unemployment survey with the sample which can be regarded as representative of the entire nation. The study is done in all the states and union territories of India, exception being the inaccessible places. The 66th round and 68th round cover 1,00,957 households (59,129 in rural areas and 41,828 in urban areas) and 1,01,724 households (59,700 in rural areas and 42,024 in urban areas) respectively.

• **Variables of Interest:** From NSSO micro-data, we use individual level information on general education and National Classification of Occupations (NCO 2004) codes for usual principal activity status (UPAS) to analyze education-occupation mismatch. We also use individual level socio-economic and demographic information for profiling the workers.

• **Measurement Methods:** The conventional literature classify methods of measuring required level of education into two broad categories namely, subjective and objective.

➤ The subjective approach involves worker's assessment of his/her job.

➤ The next approach is more objective and comprises of two methods namely, **Realized Matches (RM) and Job Analysis (JA)**. RM captures the aspect of overeducation, by contrasting the attained education with the mean education of the group of the people working in a particular job. JA method involves careful examination of the occupations by the professional job analysts to ascertain the various characteristics associated with a particular job. It answers what kind of physical and mental activities, qualifications, skills, and abilities the specific job requests.

We follow the RM and JA approach to ascertain the incidence of (mis-)match in India. While using RM approach, required level of education is calculated separately for different rounds to avoid the bias due to changing educational requirements. Also, JA method, in our case, comes with a variant. NCO 2004 to be in line with ISCO 88 classifies occupation as per (a) kind of work performed in an occupation and (b) the level of skill involved in the performance of the occupation. The NCO 2004 further provides concordance table to convert skill levels into years of formal education. This is done for all the divisions (except Legislators, Senior Officials, and Managers). We have used this information to calculate the required level of education for every occupation at one-digit level. Accordingly, comparing the attained level of education with the required level, we have classified an individual to be over/under educated. All the observations are weighted to create nationally representative estimates.

Descriptive Statistics

On average our sample is 38 years old and have 7 years of formal schooling. Also, 78% of the individuals in our data are married. The representation of males (78%) and residents of rural areas (62%) is quite high. About 18% of our sample is working in government enterprises and surprisingly 71% of the total sample does not have any written job contracts. The proportion of individuals receiving or have received vocational education and training varies notoriously from 2009-2010 (10%) to 2011-2012 (17%).

In this study, we find that around 60 and 35% of the individuals are adequately matched as per RM and JA method respectively.

Preliminary Findings

Table 1: Education and Occupation (Mis-)match as per Gender – 66th (68th) Round

Gender	Job Analyst			Realized Matches		
	Under Educated	Adequately Educated	Over Educated	Under Educated	Adequately Educated	Over Educated
Male	53.44 (55.61)	40.79 (38.15)	5.77 (6.25)	17.87 (19.07)	60.46 (60.21)	21.67 (20.73)
Female	50.51 (54.61)	47.21 (42.36)	2.28 (3.02)	31.02 (33.47)	59.47 (56)	9.51 (10.54)

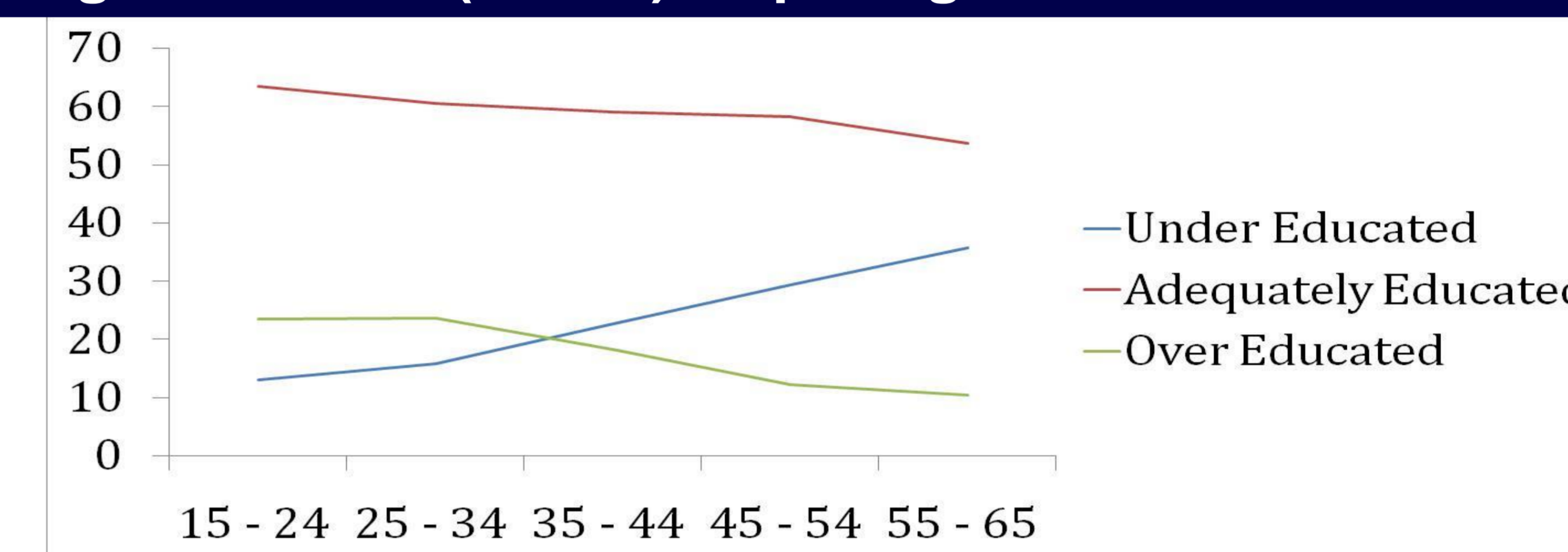*Note: Calculations as per 68th round are in parenthesis.*
Source: Author's calculation on the basis of NSSO 66th and 68th round.

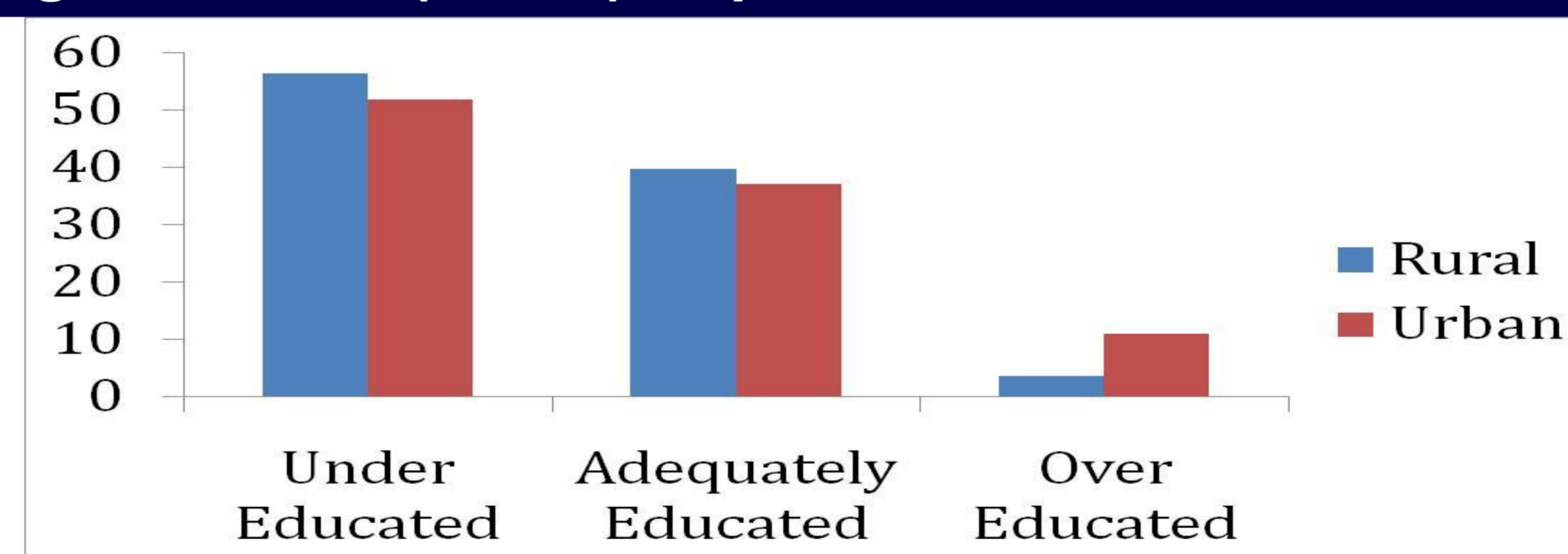### Figure 1a: Mis-(match) as per Age-Cohorts – JA Method
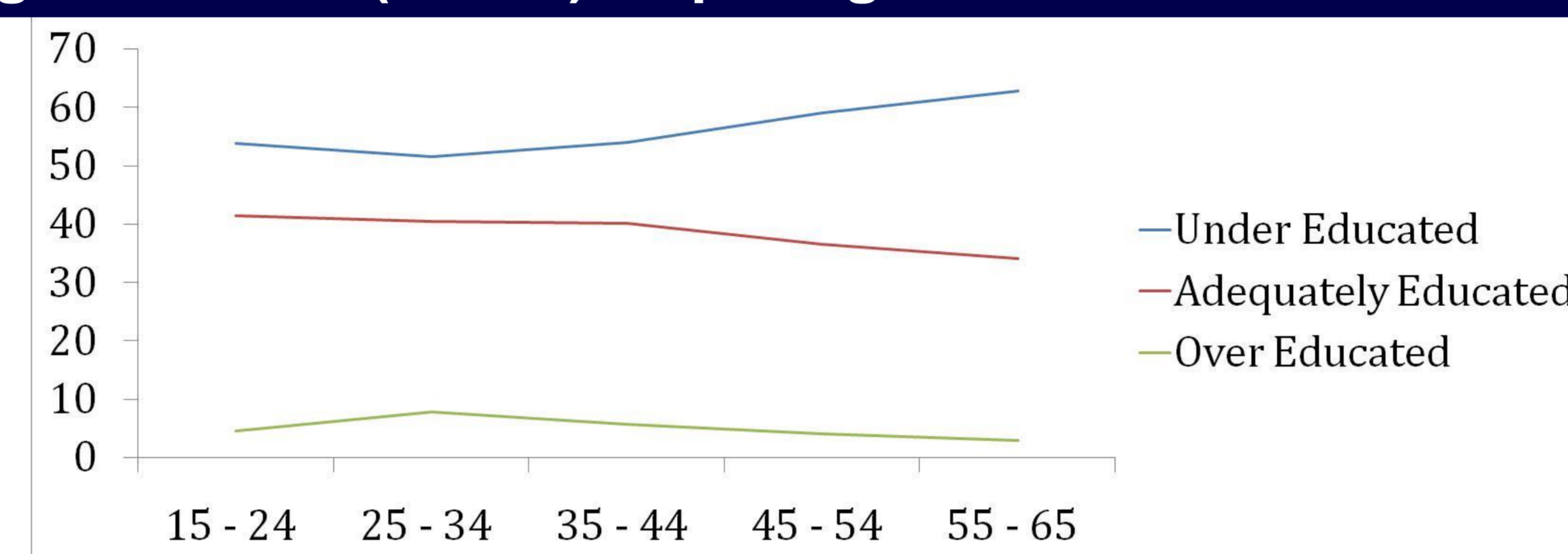
Source: Author's calculation on the basis of NSSO 68th round.

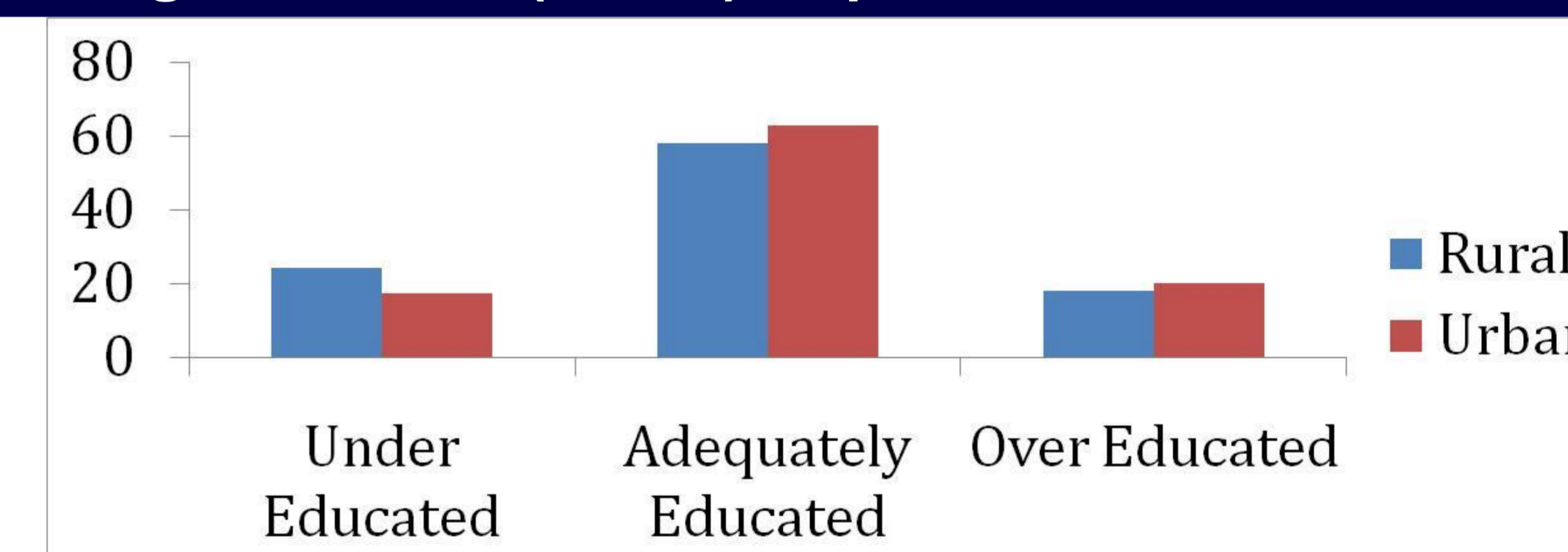### Figure 1b: Mis-(match) as per Age-Cohorts – RM Method

Source: Author's calculation on the basis of NSSO 68th round.

Figure 2a: Mis-(match) as per Location – JA Method

Source: Author's calculation on the basis of NSSO 68th round.

Figure 2b: Mis-(match) as per Location – RM Method

Source: Author's calculation on the basis of NSSO 68th round.

Table 2: Incidence of (Mis-)matching as per RM and JA method

	Match	Job Analyst		
		Under Educated	Adequately Educated	Over Educated
	Under Educated	16.75 (18.2)	31.04 (32.04)	4.93 (5.15)
Realized Matches	Adequately Educated	4.53 (4.38)	28.08 (26.22)	9.76 (8.52)
	Over Educated	0 (0)	0.86 (0.88)	4.05 (4.63)

Note: Calculations as per 68th round are in parenthesis.
Source: Author's calculation on the basis of NSSO 66th and 68th round.

Discussion

• **Gender:** Majority of the studies find that although the undereducation is intermittent among the female workers, a higher proportion of women is overeducated in comparison to the male workers (Groot & van den Brink, 2000). However, contradictory to previous studies, our study finds that overeducation is a more common phenomenon among males rather than females.

• **Age-Cohorts:** We find higher level of over-education among the younger cohorts as compared to the older cohorts. Sicherman (1991) contemplated that people at the start of their career may choose jobs that require lower education than their attained level as it helps them to gain necessary training and experience for subsequent career mobility. Therefore, overeducation at the young cohorts should not be of much policy concern (Robst, 2007).

• **Location:** Another striking observation as per our analysis is lower proportion of overeducated workers in rural areas than the urban location.

Future Directions

1. What are the reasons for the education and occupation mismatch in the context of India? Whether it is the wages/salary or the availability of jobs or some other factors?

2. Are there regional patterns in education and occupation mismatch? What are the determinants of that?

3. Whether mobility of workers (migration, commuting etc.) affects the nature and extent of education and occupation mismatch? What are its implications?

4. How education and occupation mismatch influence wage dispersion in the labor market?

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Thank You