The Education-Job Mismatch Determinants Among Youth of Kyrgyzstan

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Abstract

This paper aims to examine determinants of education-job mismatch among youth in Kyrgyzstan. Analysis are based on the data School-to-Work Transition Survey (STWT) for 2013. Education-job mismatch is measured by the subjective and objective approach. Subjective approach is based on subjective self-reporting of youth whether their education match to their current employment requirements. Objective approach uses field of work according to the ISCO classification and then the required level of education for a certain position is compared to highest level of education. Determinants of education-job mismatch are identified according to objective measures. Bivariate discrete estimation technique is applied.

1 Introduction

Education policy is one of the core interventions of the government towards human capital development. High rate of education enrolment lead to the long-term sustainable growth of economy. However, formal education itself does not always guarantee employment of educated individuals. Supply and demand dynamics of the labour force may not coincide and result in unemployment or long period of job search. Moreover, individuals after their education are not employed with their professional qualification, which refers to the case of the education-job mismatch. One of the mostly researched topics in education-job mismatch is the vertical mismatch that shows the mismatch between education credentials of workers and those required by their job. Mismatch analysis indicate three possible outcomes: overeducated, undereducated and well matched. Mismatch is harmful both in terms of the financial burden at individual level and ineffective resource allocation at macro level.

Youth employment is very sensitive to the education-job mismatch issues. Formal education not corresponding to the labour market requirements may lead to their lower labour supply performance: lower wages, lower satisfaction with job, longer period of unemployment or time necessary to find stable and regular job. (Allen, Van Der Velden, & Van Der Veldent, 2001; Badillo-Amador & Vila, 2013; Bauer, 2002; Bratberg & Nilsen, 2000; Cuesta, 2005; Lamo & Messina, 2010; Zamfir, Matei, & Lungu, 2013).

As the legacy of the Soviet period Kyrgyzstan has higher rate of general education enrollment. In particular, since the independence in 1991 country witnessed rapid growth of the tertiary education, while decreasing rate of the pre-school education institutions. For instance, in 1990 number of higher education institutions in Kyrgyzstan was only 9, while in 2015 about 50 higher education institutions were functioning. Large number of higher education institutions resulted in the high rate of tertiary education enrolment. According to the World Bank in 2013 gross enrolment ratio at tertiary education was 47 per cent (World Development Indicators).

Higher rate of education enrolment is considered as one the potential key factors that facilitate economic growth. However, according to the most of the analytical reports on the private sector development in Kyrgyzstan, human capital with necessary skills in the labour market is one of the constraints of the private sector development. Moreover, according to the data of the National Statistical Committee of Kyrgyz Republic (NSCKR) for 2014 almost 51 % of unemployed were youth in 15-29 ages. Moreover, if 29.2 % of unemployed in 25-29 age group had tertiary education. These data indicate the issue that unemployment of youth is high and having tertiary education does not provide with the solution.

The fact of having larger tertiary education enrolment on one hand, but also the increasing issue of finding qualified labour force for employment on the other hand, underlines the issue of formal education content and its ability to provide with necessary skills required in the labour market. Education-job mismatch affects not only wage earnings of youth, but also have influence on their opportunity to find stable and satisfactory job (Elder, Barucci, Gurbuzer, Perardel, & Principi, 2015). Some studies have examined the mismatch effect from the economic restructuring perspective in transition economies, in particularly in Eastern and Southern European countries context (Lamo & Messina, 2010; Kogan & Unt, 2005; Atanovska et al. (2015); Kupets, 2016; Petreski, Dane, Maja, & Mojsoska-Blazevski, 2016). Although education-job mismatch tendency is widespread in Central Asian countries, there are no large empirical studies on this topic. Therefore, for raising this issue and designing more efficient government policies in this area it is important to understand the main characteristics of those having matching job and not matching job.

To our best knowledge there are no empirical study on education-job mismatch in the specific case of Kyrgyzstan. Some analytical reports on the education-job mismatch effect discussing education-job mismatch based on the descriptive information have covered to some extend Kyrgyzstan along with other Central Asian countries (Quintini, 2011; Sondergaard, Murthi, Abu-Ghaida, Bodewig, & Rutkowski, 2011; Sparreboom &

Staneva, 2014). To fill out this gap, this paper aims to examine determinants of education-job mismatch among youth in Kyrgyzstan. Our study is based on the School-to-Work Transition Survey (SWTS) data by ILO for Kyrgyzstan for 2013, which specifically focuses on young people aged 15 to 29 years.

The paper is organized as follows. Section 2 describes dataset and presents summary statistics. Section 3 provides information about the empirical strategy. Section 4 discusses estimation results and last section concludes.

2 Data and Descriptive Statistics

This study uses the data from the School-to-Work Transition Survey (SWTS) by ILO for Kyrgyzstan. The SWTS includes labour market information on young people aged 15 to 29 years, including information on their transitions within the labour market. For our study, we will use the dataset from the Kyrgyzstan survey that was carried out in 2013. For Kyrgyzstan the dataset includes 3930 young individuals and nationally representative sample.

Several features of this dataset make it unique for youth education and job analysis in Kyrgyzstan case. First, questionnaire of the survey includes different sections from individual characteristics and educational background to the employment history and experience of respondents. Second, the survey was oriented at the youth specifically and provides with detailed information on youth. Third, to our best knowledge, this is the only data source that provide with necessary information on the school to work transition of youth in the specific case of Kyrgyzstan. Fourth, to our best knowledge, there are no previous empirical studies that used this data for Kyrgyzstan.

The education-job mismatch variable construction was based on Davalos et al. (2016) method, and two mismatch variables - objective and subjective – were created. The subjective variable constructed based on the answer of the respondents, how they assess their education qualification for present job, whether it is relevant or not. While the objective mismatch variable is generated from comparison of required level of education for certain position with the highest level of education received by respondent.

	Subjective	Objective
Overeducated	16.1	33.2
Matched	69.1	45.7
Undereducated	14.8	21.1

Table 1. Matching Positions (%)

The table 1 shows the education-job mismatch shares according to the two mismatch variables. Interestingly most of the respondents (69.1 %) perceive themselves as having proper education level for their present job, while there is only 45.7 % of those having required level of education. The one third of youth in Kyrgyzstan are overeducated for their current jobs, where the share of those who perceiving themselves as overeducated twice less; hence the 21.1 % youth in Kyrgyzstan are undereducated, and only 14.8 % of them perceive themselves as undereducated.

	Agriculture	Mining	Manufacturing	Construction	Wholesale and retail	Transport	Hotels and restaurants	Communication	Financial interm.	Public admin.	Education	Health
Objective												
Overeducated	39.6	19.5	26.4	17.1	35.4	21.4	52.3	22.1	52.5	33	9.2	6
Matched	47.4	42.8	47.4	58.6	55.1	70.6	35.6	37.6	4.3	13.6	6.3	22.7
Undereducated	13	37.7	26.1	24.2	9.5	8	12.1	40.3	43.2	53.4	84.5	71.3
Subjective												
Overeducated	11.5	14.3	20	16	28.1	31.9	31.3	18.5	15.9	7.4	1.4	7.4
Matched	70.3	64.1	63	68	58.5	60.8	53.4	76.8	83.1	90.7	94.8	89.4
Undereducated	18.2	21.6	17	16	13.4	7.3	15.3	4.7	1	1.9	3.8	3.2
Number of obs.	739	11	167	222	324	65	80	41	34	67	92	38

Table 2. Matching Positions with Respect to Sectors (%)

According to the sectoral division of mismatch positions, the mostly matched youth of Kyrgyzstan are working in transport (70.6 %) and construction (58.6 %), wholesale and retail (55.1 %) sectors. While the overeducated youth for their current work positions are presented in the hotels and restaurants (52.3 %) and financial intermediation (52.3 %) sectors. The sectors with high shares of undereducated youth are public administration

(53.4 %), education (84.5 %) and health (71.3 %). Interestingly, even though there is a large share of undereducated youth in these three sectors, these workers perceive themselves as well matched workers for their current positions.

	Managers	Professionals	Technicians and Associate professionals	Clerical support workers	Services and sales workers	Skilled agricultural and forestry workers	Craft and related trade workers	Plant and machine operators	Elementary occupation
Objective									
Overeducated	0	6.6	11.1	66.1	40	39.1	15.8	22.5	88.3
Matched	14.6	0	30	33.9	51.7	48.6	65.7	70.4	11.7
Undereducated	85.4	93.4	58.9	0	8.3	12.3	18.5	7.1	0
Subjective									
Overeducated	7.5	10.6	9	9.2	29.9	11.9	16.9	24.6	18.7
Matched	84.1	87.8	78.3	90	56.8	70.2	65.6	68.2	62.3
Undereducated	8.4	1.6	12.7	0.8	13.3	17.9	17.5	7.2	19

Table 3. Matching Positions with Respect to Occupations (%)

Going further in details show that the most undereducated youth are working as managers (85.4 %), professionals (93.4 %), technicians and associate professionals (58.9 %). Due to significant differences between subjective and objective mismatch variables, the estimation of the determinants will be based on the objective mismatch measurements.

3 Methodology

The probability of the individual to be in one of the mismatch categories or to be matched will be estimated with binary choice models. Precisely, every mismatch category (y) is estimated with Probit model, which is conditional on individual level and present work characteristics (x). Formally models is given below (Wooldridge, 2002):

$$\begin{aligned}
 P(y = 1 | x) &= G(\beta_0 + \beta_1 x_1 + \dots + \beta_k x_k) = G(\beta_0 + x\beta) \\
 x\beta &= \beta_1 x_1 + \dots + \beta_k x_k \\
 G(z) &= \Phi(z) \equiv \int_{-\infty}^z \phi(v) dv \\
 \phi(z) &= (2\pi)^{-1/2} \exp(-z^2/2)
 \end{aligned}$$

4 Estimation Results

Table 4 presents the estimation result for undereducation determinants. According to these results the young men less likely to be undereducated, while women with tertiary education more likely to be undereducated. There is significant impact of having written contract for present job to be undereducated, hence this is highly significant for women. The probability of being undereducated for particular occupation is decreasing in wholesale and retail sector, particularly this true for men. The same result is obtained for industry sector as well.

The probability of youth to have education and job matched increases in wholesale and retail sector. While youth with tertiary education, working in the firm having from 5 to 19 employees less likely to be matched. But young men from North region more likely to be matched, rather than other males from Central region.

The determinants of overeducation show that, in the firms with 5-19 workers more likely to have overeducated young workers rather than bigger firms, and that young individuals working in the wholesale sector more likely to be overeducated for their present work position.

Undereducated Youth			
	<i>Total</i>	<i>Male</i>	<i>Female</i>
Marital status (ever married = 1)	-0.0310	-0.0151	-0.1909*
Gender (male = 1)	-0.1075**		
Age	-0.0014	-0.0011	0.0013
Education level (reference: basic and secondary education):			
- Tertiary education	0.2212***	0.1478*	0.2545**
- Technical education	-0.0134	-0.1635**	0.1378
Firm size			
- Small firm (less than 5 employees)	-0.0501	-0.0710	-0.0036
- Medium size firm (5-19 employees)	-0.0007	0.0275	0.0402
Contract type (written contract = 1)	0.0985*	-0.0548	0.4814***
Sector			
- Agriculture	0.1160	0.0293	0.3021
- Industry	-0.1394**	-0.1781**	-0.0877
- Wholesale and retail	-0.2670***	-0.2960***	-0.0852
Regions (reference: Central region)			
- North	-0.1249**	-0.2362***	0.1054
- South	0.0519	-0.1250**	0.2384**

Table 4. Estimation Results for Undereducation (Marginal Effect Estimates)

Education-Job Matched Youth			
	<i>Total</i>	<i>Male</i>	<i>Female</i>
Marital status (ever married = 1)	0.0719	0.0446	0.1703**
Gender (male = 1)	0.1071*		
Age	-0.0012	0.0031	-0.0084
Education level (reference: basic and secondary education):			
- Tertiary education	-0.5628***	-0.6456***	-0.4357***
- Technical education	-0.0066	0.1645**	-0.1133
Firm size			
- Small firm (less than 5 employees)	-0.0578	-0.0553	-0.1348
- Medium size firm (5-19 employees)	-0.1322**	-0.2259**	-0.0623
Contract type (written contract = 1)	-0.0873	-0.0061	-0.2525**
Sector			
- Agriculture	-0.1776	-0.1557	-0.1030
- Industry	0.0670	0.1229	-0.0383
- Wholesale and retail	0.1607*	0.2175**	0.1310
Regions (reference: Central region)			
- North	0.0616	0.1759**	-0.1031
- South	-0.0898	0.0427	-0.1990**

Table 5. Estimation Results for Matched Youth (Marginal Effect Estimates)

Overeducated Youth			
	<i>Total</i>	<i>Male</i>	<i>Female</i>
Marital status (ever married = 1)	-0.0069	0.0036	0.0129
Gender (male = 1)	0.0084		
Age	-0.00004	-0.0025	0.0008
Education level (reference: basic and secondary education):			
- Tertiary education	0.3160***	0.4968***	0.1946***
- Technical education	-0.0407	-0.0371	-0.0388
Firm size			
- Small firm (less than 5 employees)	0.0846	0.0702	0.1990
- Medium size firm (5-19 employees)	0.0862**	0.1116**	0.0094
Contract type (written contract = 1)	-0.0177	0.0370	-0.2207**
Sector			
- Agriculture	-0.0072	0.0070	-
- Industry	0.0607	0.0604*	0.1006
- Wholesale and retail	0.1381*	0.2455**	-0.0535
Regions (reference: Central region)			
- North	0.0529	0.1073*	0.0136
- South	0.0186	0.0574*	-0.0023

Table 6. Estimation Results for Overeducation (Marginal Effect Estimates)

5 Conclusion

Relatively young demographic structure of population and increase of youth employment is one of the core issues for Kyrgyzstan. Increasing employment is multifaceted issue. This is not only related with the low private sector development, but also with low level of qualification or low availability of young individuals with corresponding professional qualification in the labour market. In public discourses government institutions, private sector representatives and international organization agree on the fact that the education system of Kyrgyzstan should be reformed towards the better meeting of demand for labour force in the labour market.

For raising the issue for policy agenda and emphasizing its importance in terms of the its consequences and understanding its scope, it is extremely important to provide with analytical reports on education and job mismatch in Kyrgyzstan. Most of the reports on this topic are limited with descriptive approach and does not provide with deep evidence on scientific approach, which will be more emphasizing. Moreover, no previous empirical studies from the academia on education-job matching and youth employment increase potential interest to the present research.

To fill out this gap, this paper aims to examine determinants of education-job mismatch among youth in Kyrgyzstan. Our study is based on the School-to-Work Transition Survey (SWTS) data by ILO for Kyrgyzstan for 2013, which specifically focuses on young people aged 15 to 29 years. According to the empirical results the young men less likely to be undereducated, while women with tertiary education more likely to be undereducated. The probability of youth to have education and job matched increases in wholesale and retail sector. The determinants of overeducation show that, in the firms with 5-19 workers more likely to have overeducated young workers rather than bigger firms.

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Appendix

	Undereducated Youth		
	<i>Total</i>	<i>Male</i>	<i>Female</i>
Marital status (ever married = 1)	-0.0808 (0.1421)	-0.0434 (0.1807)	-0.4889* (0.2707)
Gender (male = 1)	-0.2781** (0.1350)		
Age	-0.0036 (0.0251)	-0.0034 (0.0309)	0.0034 (0.0471)
Education level (reference: basic and secondary education):			
- Tertiary education	0.5721*** (0.1666)	0.4071* (0.2167)	0.6518** (0.2886)
- Technical education	-0.0351 (0.1728)	-0.5183** (0.2347)	0.3536 (0.2791)
Firm size			
- Small firm (less than 5 employees)	-0.1321 (0.1779)	-0.2079 (0.2249)	-0.0092 (0.3557)
- Medium size firm (5-19 employees)	-0.0019 (0.1492)	0.0785 (0.2056)	0.1013 (0.2458)
Contract type (written contract = 1)	0.2586* (0.1519)	-0.1570 (0.1938)	1.3200*** (0.3031)
Sector			
- Agriculture	0.2948 (0.3703)	0.0822 (0.4205)	0.8840 (0.7926)
- Industry	-0.3673** (0.1482)	-0.5079** (0.2022)	-0.2204 (0.2663)
- Wholesale and retail	-0.8075*** (0.2343)	-1.1411*** (0.3025)	-0.2142 (0.4119)
Regions (reference: Central region)			
- North	-0.3415** (0.1471)	-0.8432*** (0.2059)	0.2696 (0.2777)
- South	0.1349 (0.1460)	-0.3622* (0.1887)	0.6184** (0.2648)
Constant	-0.0364 (0.6038)	0.3799 (0.7689)	-1.2085 (1.0880)
No. of Obs.	733	473	260

Table 7. Estimation Results for Undereducation (Coefficient Estimates)

	Education-Job Matched Youth		
	<i>Total</i>	<i>Male</i>	<i>Female</i>
Marital status (ever married = 1)	0.184 (0.1484)	0.1119 (0.1926)	0.5256** (0.2619)
Gender (male = 1)	0.2765* (0.1501)		
Age	-0.0033 (0.0255)	0.0078 (0.0317)	-0.0247 (0.0435)
Education level (reference: basic and secondary education):			
- Tertiary education	-1.7102*** (0.2059)	-2.0334*** (0.3051)	-1.3553*** (0.3234)
- Technical education	-0.017 (0.1700)	0.4205* (0.2189)	-0.3556 (0.2826)
Firm size			
- Small firm (less than 5 employees)	-0.1488 (0.1841)	-0.1388 (0.2380)	-0.4363 (0.3395)
- Medium size firm (5-19 employees)	-0.3423** (0.1713)	-0.5745** (0.2390)	-0.1865 (0.2705)
Contract type (written contract = 1)	-0.2226 (0.1625)	-0.0153 (0.2110)	-0.6980** (0.2887)
Sector			
- Agriculture	-0.4894 (0.3557)	-0.3981 (0.4045)	-0.3352 (0.8304)
- Industry	0.171 (0.1578)	0.3094 (0.2310)	-0.114 (0.2678)
- Wholesale and retail	0.4059* (0.2287)	0.5658* (0.2979)	0.3579 (0.3908)
Regions (reference: Central region)			
- North	0.1559 (0.1539)	0.4527** (0.2122)	-0.327 (0.2997)
- South	-0.2306 (0.1623)	0.1071 (0.2078)	-0.6311** (0.2861)
Constant	0.4709 (0.6068)	0.2028 (0.7965)	1.308 (0.9825)
No. of Obs.	733	473	260

Table 8. Estimation Results for Matched Youth (Coefficient Estimates)

Overeducated Youth			
	<i>Total</i>	<i>Male</i>	<i>Female</i>
Marital status (ever married = 1)	-0.0447 (0.1629)	0.0353 (0.2142)	0.0854 (0.2840)
Gender (male = 1)	0.0554 (0.1944)		
Age	-0.0003 (0.0266)	-0.0252 (0.0418)	0.0052 (0.0491)
Education level (reference: basic and secondary education):			
- Tertiary education	1.5073*** (0.2923)	2.3027*** (0.4219)	1.1869*** (0.4511)
- Technical education	-0.301 (0.3388)	-0.4573 (0.3813)	-0.2851 (0.4711)
Firm size			
- Small firm (less than 5 employees)	0.4651* (0.2699)	0.5591* (0.3255)	0.8794* (0.5136)
- Medium size firm (5-19 employees)	0.5068** (0.2137)	0.9062*** (0.3290)	0.0604 (0.3064)
Contract type (written contract = 1)	-0.114 (0.2857)	0.3542 (0.3185)	-1.0515** (0.4473)
Sector			
- Agriculture	-0.0486 (0.5395)	0.0657 (0.7358)	-
- Industry	0.3803 (0.2344)	0.5988* (0.3297)	0.5498 (0.3484)
- Wholesale and retail	0.6534** (0.2998)	1.2438*** (0.4412)	-0.4568 (0.5423)
Regions (reference: Central region)			
- North	0.2955 (0.2032)	0.6930** (0.3134)	0.0847 (0.3248)
- South	0.1189 (0.1842)	0.5270* (0.3181)	-0.0155 (0.3072)
Constant	-2.4139*** (0.6946)	-3.1298*** (1.1067)	-1.5909 (1.1727)
No. of Obs.	733	473	256

Table 9. Estimation Results for Overeducation (Coefficient Estimates)