



Education Mismatch of Higher Education Graduates in Georgia

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1. Introduction

University educated workers represent a large part of Georgia's workforce. As the latest survey shows 45.7% of the young Georgian population has tertiary education (Badurashvili et al., 2019a). However, the productive job opportunities are few and unemployment is heavily concentrated among high educated workers (Rutkowski 2013). According to data from the TEW-CCA Youth Transitions Survey in Georgia (Badurashvili et al., 2019c), 44% of young population (22-35) with tertiary education is unemployed. Though a pool of well-educated young workers is an important asset, extent of higher education expansion in Georgia, as in many transition nations is suggestive of a situation when an economy has a surplus of workers with tertiary education. Common symptoms of this problem are high unemployment and employment in low skilled jobs among graduates, which induces mismatch in the labor markets.

According to Badurashvili (2019) the traditional employment structure in Georgia is indicative of limited demand for highly skilled labor, and a large supply of workers with tertiary education, which results into the problem that all the tertiary educated persons have troubles finding an adequate job or any kind of job. According to World Bank (2013: 15) there is not only the problem of high unemployment rates and overqualification among tertiary graduates but also that higher educated persons work in jobs that do not correspond to their field of study.

In the early 1990-s tuition based public education was introduced along with private education sector. These changes shifted education costs towards students and their parents and more importantly, these changes also induced a declining quality and relevance of education. Specifically, due to profit orientation universities expanded popular fields of studies such as business, law, international relations and humanities without corresponding investment in laboratories, libraries or infrastructure. As a consequence, the universities came to function as a "degree mills" that did not coincide with the skills and competencies required by employers in modern firms (Dobbins & Khachatryan 2014).

Thus, overeducation (also known as vertical mismatch) seems to correspond with a field of study/skill gap (horizontal mismatch). How can the effectiveness of education system can be increased so that there should be better employment prospects for young graduates and a smoother transition from education to labour market? Since youth occupational mismatch is a major challenge to Georgia, finding answers to a variety of key questions is an undeniable need. Up to now, in Georgia, there is a lack of detailed empirical investigation on this topic. Though educational mismatch from the perspective of educational attainment is more studied, there is a less of data on field of study mismatch which is very interesting from the policy perspective. They are less common as mainly because the information about worker's field of study with job sphere is less easily available than the data about the educational attainment.

The paper reflects the incidence and determinants of educational mismatch both vertical where the level of education or qualification is less or more than required and horizontal where the type/field of education is inappropriate for the job. In doing so, it analyzes the education level and field of study based variables and the individual and field of study determinants related to educational mismatch in Georgia. The statistical data is exploited from the TEW-CCA research project- a recent nationwide representative study which provides a longitudinal data on the dynamic processes and specifics of education attainment and on their employment along with valuable information on individual and educational characteristics (Gebel et al., 2019).

2. Research Hypothesis and Outline

This paper addresses the following two research questions:

- (1) What is the incidence of mismatch among young graduates at the start of the career

- (2) What is difference in incidence of mismatch across a) individuals and b) field-of-study segments in the Georgian market.

Analysis of education mismatch is complex, given that it is multidimensional and manifests itself at different levels. This new rich source of information is exploited from the TEW-CCA research project that was carried out in autumn 2016 in Georgia. Based on the survey results, the paper will contain descriptive analysis to systematize trends, patterns, and subgroup differences by research questions as well as explanatory, multivariate data analysis in order to obtain new empirical results that have not yet been produced so far. Namely, nuanced conclusions on the incidence of mismatch and the determinants of individual or field of study segment are allowed.

Though this paper provides only the limited insight, focusing on the start of high graduates' career, it addresses the significant gap in data and research evidence on mismatch. It will help in informing the ongoing debate on strategy of vocational education and training (VET) and further optimal investment in education.

The rest of the sections are organized as follows: Section 2 overviews the education and labor market trends in Georgia, section 3 concerns the theoretical and empirical literature with regard to the educational mismatch. In section 4, the data and methods used are described. The results will be presented in section 5 and section 6 concludes.

3. Higher Education and Labor Market Trends in Georgia

Since May 2005, when Georgia joined the Bologna process, a number of Bologna-related changes occurred in the higher education system of Georgia. Specifically, a three-cycle degree system with Bachelor (BA) (usually lasting four years), Master (MA) (usually lasting two years) and Doctoral degrees (lasting at least three years) was introduced in the form of modular programs. All students below doctoral level are enrolled in the two-cycle BA–MA degree system (except for certain specific specializations such as medicine and dentist higher education that are organized in a six-years one-cycle study program). Bachelor program cannot comprise less than 240 European Credit Transfer and Accumulation System (ECTS) credits whereas Master programs comprise 120 ECTS and doctoral programs (doktorantura) 180 ECTS (EACEA 2012). Tools for recognition of degrees such as diploma supplement and ECTS were established as well.

During Socialist time Georgia followed the centralized Soviet system where studies and degrees were organized in the following way. The Specialist was the most common academic qualification under the Soviet higher education system. It required four to six years of study depending on the field of study. The Kandidat Nauk conducted at research institutes under the Academy of Science and the Doktor Nauk were the highest academic degrees in the Soviet system taking a study duration of five to 15 years.

Currently, there are 73 HEIs recognized by the state: 21 public and 52 private. 64 % of HEIs are located in the capital city, Tbilisi. According to Badurashvili et al. (2019a), the majority of the youth graduates (22–35yo) attained the tertiary education at public institution (Bachelor: 84%; Master: 88%), however, a substantial percentage from the sample also indicates to be enrolled in private ones (Bachelor: 88%; Master: 12%). As the research shows, significant part of young population (45.7%) received tertiary education out of which 34.1% received Bachelor and 11.6% Master degrees. In terms of education female, at minimum, equal to or even outperform their male peers. In the TEW-CCA research data, the advantages of woman in all level of education is evident. It may also imply that woman study longer, while men are entering the workforce earlier. Every fourth respondents indicate that their post-secondary education was funded by the state, however, the data reveals that the majority of the respondents paid for their study either fully (63%) or co shared with the state (10.6%).

Since 2006, unified system of test score-based admission system defined the ranges of grants according to the test results. Before Georgia followed the Soviet System admission based on entrance exam, where the high education programs were either fully financed by the state if the students receive the adequate score at the entrance exams or fully financed by the students themselves if they receive the score below what is needed for State funding. Analyses of the TEW-CCA Youth Transitions Survey in Georgia reveal that among persons who were enrolled in tertiary education the share of persons who did a national exam is almost the same as share of persons who did an entrance exam access the post-secondary education. The data analysis also confirms that as the tendency in Georgia, the social sciences and law (18.4%), business (18.7%) and health (12%) are the dominant fields of study among Georgian graduates. A small share of the respondents indicates the engineering (4.6%), manufacturing and processing (1.3%) and life sciences (2.4%) as their field of study. National education and training system is blamed for attracting too many students to some fields and for the low quality of the education and training provided. The solution often proposed to skill mismatch is to improve career guidance, along with the quality and relevance of formal education. The research also shows, that in contrast to most EU countries, where unemployment is heavily concentrated among less educated workers, those with less than secondary education represents a minority among the unemployed in Georgia. This type of unemployment is long-term one and it is caused mainly by a mismatch between the skills of worker and the available jobs on the market. Weak labor demand is likely to coincide with the structural unemployment, traditional industrial structure.

The Georgian employment structure is dominated by agriculture, which accounts for 42 percent of total employment in 2015 (Badurashvili et al., 2019b). Agriculture provides employment of last resort for those who cannot find jobs elsewhere, and eventually work as subsistence farmers. Services and industry play significant roles in driving growth in Georgia. ETF (2015) identified trade followed by manufacturing, public administration, transport and construction as key economic sectors next to the large agricultural sector.

Despite high formal education many of the unemployed lack skills sought after by employers. Next to a lack of labor demand, Rutkowski (2008) sees skill mismatch as a contributing factor for unemployment. Among the higher tertiary (MA) graduates who found a first job as a dependent employee 44% are employees in public sector compared to 54% who are employees in the private sector (Badurashvili et al., 2019a). The respective shares are just 29% public sector employees and 70% private sector employees among lower tertiary (BA) graduates (Badurashvili et al., 2019a).

Until recently, the Georgian government considered that labour market in the conditions of free economy does not need any management and almost did not interrupt in relationships between employers and employees. The lack of proper public institutions created significant obstacles for effective management of labour market. . It should be pointed out that in Georgia did not exist any active labour market policy.

According to Kupets (2015: 31) high unemployment and the educational mismatch among Georgian graduates are caused by several factors: A supply-sided argument is that for young people high education tends to be a social norm with a cultural value than financial as they tend to get degrees in the popular fields without considering their employment chances in the respective field. From the demand side, occupational upgrading did not match the speed of higher education expansion, which translates into a relative shortage of high-skilled jobs. Moreover, it is argued that the tertiary education attainment does not represent a signal of ability and skills towards the potential employers (Kupets 2015: 31).

4. Theoretical Background

Education mismatch refers to the mismatch between the education level of a person and the job requirement. Various types of skill mismatch can be distinguished. As identified by the European Centre for the Development of Vocational Training (Cedefop, 2010), vertical mismatch is defined as the situation in which the education of a person does not match the level of education that is required in a specific. In this respect, overeducation occurs if the education of the person surpasses the required education level, whereas undereducation refers to the reversed situation. A horizontal mismatch is defined as the missing congruence of the field of study of person to the required field of study for the job the person occupies. According to Cedefop (2010), both vertical and horizontal mismatch can cause negative consequences for the job market.

There are different explanations for mismatch. The *job assignment model* unifies explanations that take labor supply and labor demand into account (Sattinger, 1993). Based on the assumption that worker's productivity varies in a job, even if they have the same education level, it is argued that overeducation occurs if workers are not allocated to the job according to their comparative advantage of performing it. Thus, inefficiency in the allocation of workers to jobs occurs. In contrast, a purely supply-sided explanation is the *career mobility theory* (Sicherman, 1991; Sicherman & Galor, 1990), which assumes that persons voluntarily enter positions for which they are overqualified in terms of education to compensated for a lack of other productivity-relevant factors. However, they can use this overqualified position as a stepping stone by acquiring the lacking skills on the job and proceed in their career to better jobs. Thus, overeducation is seen as a transitory phenomenon.

In terms of gender it is argued that women with care responsibilities have fewer opportunities to find a job matching their educational attainment. As the *theory of differential over qualification* developed by Frank (1978) explains, in traditional gender role model settings women are more restricted in their job search process than men who are seen as the primary breadwinner. Thus married women and/or mothers should have higher risks of being overqualified. Several independent studies about educational mismatch supports this assumption where the women, in comparison with men, exhibit a higher degree of over education (Barone & Ortiz, 2011; Leuven & Oosterbeek, 2011; Carroll & Tani, 2015).

5. Data, Sample Selection and Variables

As stated, this paper is based on the data of the “TEW-CCA Youth Transitions Survey in Georgia” (Badurashvili et al., 2019c; Gebel et al., 2019). This is a large-scaled nationally representative youth survey that was conducted in Georgia in autumn of 2016 in frame of the research project TEW-CCA funded by Volkswagen Foundation. The survey’s targets population were young people aged 18 to 35 who finished or stopped formal education in the period from 2006 to 2015 and who are not enrolled in formal education at the date of the interview.. Applying a multistage stratified random sampling procedure 2000 youths were around whole Georgia chosen and interviewed using a standardized questionnaire that includes detailed information on individual demographic, family, work history and human capital characteristics. This survey was conducted with strong retrospective elements, namely, longitudinal data was collected on the dynamic processes of education attainment, labor market entry, work history, individual level dynamic as well as data on subjective attitudes and identities. The TEW-CCA dataset allows to test the theories mentioned above and to explore our hypotheses.

This paper focus on a sample of higher education graduates and the first registered job, which is defined as the first job with a standard labour contract in which the graduates worked for at least 6 months. Self-employed and those never worked are excluded from the analysis which reduced the sample to 650 cases. The sample of our analysis are those at 22-35 age category. The lowest age of 22 was defined from the minimum age graduates finish a first level program. A high age limit of 35 years is necessary in order to capture also tertiary graduates up to 10 years after leaving education, which usually happens in the mid-20s. The restriction of “up to 10 years after leaving education” was defined to minimize recall bias on the recording of educational trajectories and initial labour market history. Most of the analysis are estimated for the male and female samples, which contain 31% and 69% observations respectively.

In the literature, different ways for measuring overeducation are applied, ranging from expert statements and respondents’ subjective assessments to statistical approaches (realized matches). For our purposes, we adopt experimental indicators measuring the "vertical" and "horizontal" skills mismatch proposed by Eurostat (2019). Vertical mismatch is calculated by using the standard occupation code (2-digit), occupations that require degrees (graduate jobs) are: 1 managers and administrators; 2 professional occupations; 3 associate professional and technical occupations. However, two levels of education are distinguished- the 1st level (bachelor), whose occupation (ISCO 2008 major groups 4-9) do not require that level of education and the 2nd level (Master), whose occupation require the higher level of education (the major group 1 and 2 of ISCO 2008).

Horizontal skills mismatch by field of education is measured by matching mainly broad fields of education and training (ISCED 1999 fields of education and training) with occupations (ISCO 2008 3-digit level) (Eurostat 2019). Whenever a worker reports having studied in the field that is different than the field that correspond to his/her occupation is the worker is considered to be mismatched horizontally by field of study.¹

Finally, we look at the determinants of educational mismatch in terms of individual and field of study characteristics. For individual characteristics, we account for gender, educational level of parents, working experience during the study, educational level and better educational credentials at university enrolment.² Regarding the field of study, the graduates’ probability of mismatch will be measured by the fields of the study program. The analysis is conducted by means of logistic regression. The estimation results are reported in Table 7.

¹ The coding table reporting all education-occupation fields with matched pairs was done by high qualified specialist considering the Georgian context. The table will be available upon request.

² Since 2005, all entrants are taking the centralized national exam. Based on the results, the state allocated the ranges of grants (100%, 70%, 50%, and 30%). Before, as the Soviet based system, the entrance exams were organized by universities and the high education programs were either fully financed if the students receive the adequate score or fully financed by the students themselves if they receive the score below needed.

For our further analysis, the group of mismatched individuals will be singled out, therefore we will focus on one-dimensionally as well as on two-dimensionally mismatched cases, testing the following theories of the educational mismatch.

Here we summarized hypothesis that we are going to test empirically:

- Being a female raises the probability of being over-educated.
- A higher degree level enhances the chances of education match.
- A high academic performance enhances the chances of education match.
- Parents education plays a role in job match.
- Graduates from the social sciences, arts and humanities are more likely to be overeducated. However, those individuals with degree in law, health, business or science degrees are more educationally matched.

6. Descriptive Results

Tertiary graduates between 22 and 35 years represent around 46% of the total sample³. Within this age group, females comprise the largest share (around 69%). The unemployed constitute 44.5% of target sample among those, the largest share are woman (49%) with married woman in absolute majority (85%). Table 1 provides basic information about employment status, and age distribution by gender in the dataset of high graduates.

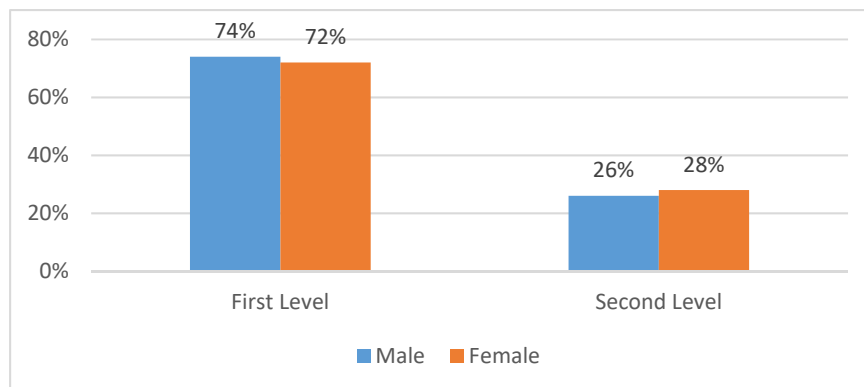
Table 1. Age distribution and employment status of tertiary graduates by gender

Gender	Age			Employed	Not employed
	22-25	26-30	31-35		
Male	10.2%	45.8%	44.0%	64.7%	35.3%
Female	7.4%	36.5%	56.1%	51.1%	48.9%
Total	8.3%	39.4%	52.2%	55.5%	44.5%

Source: TEW-CCA Youth Transition Survey in Georgia, own calculation.

Within the sample, two categories (sublevels) of education have been set: Programmes providing direct access to doctorate and programmes not providing direct access to doctorate. These two categories correspond to bachelor level and master level of study respectively. There is a larger share of those who passed the first level of education (72%). Almost 28 % of them continued their studies after graduating from the first level. The share of male and female graduates in the individual levels does not differ in any noticeable way (see Figure 1).

Figure 1. Distribution of tertiary graduates on the two levels of tertiary education, by gender



Source: TEW-CCA Youth Transition Survey in Georgia, own calculation.

As mentioned above, for highly educated graduates, some fields of education are more popular, some of them are in lower demand. Examining broad fields of education according to ISCED (see Table 2), we can see that almost one third of graduates had attended study programmes falling under the field of social sciences, business and law (41.7%). On the other hand, among the least attended fields of study ranks the field of services (3.2%) and engineering, manufacturing and construction (6.6%). From the point of view of gender, there are several inequalities in numbers. While the fields such as social science and business can be considered as relatively balanced in terms of male and female graduates, there are certain fields preferred by one or the other gender. It is the case of the field of education

³ Dropouts were excluded from the analysis.

and health, where women are considerably superior in number (women: 16.8% vs. men: 2.2%), whereas some of the “more men’s” fields include engineering, manufacturing and construction.

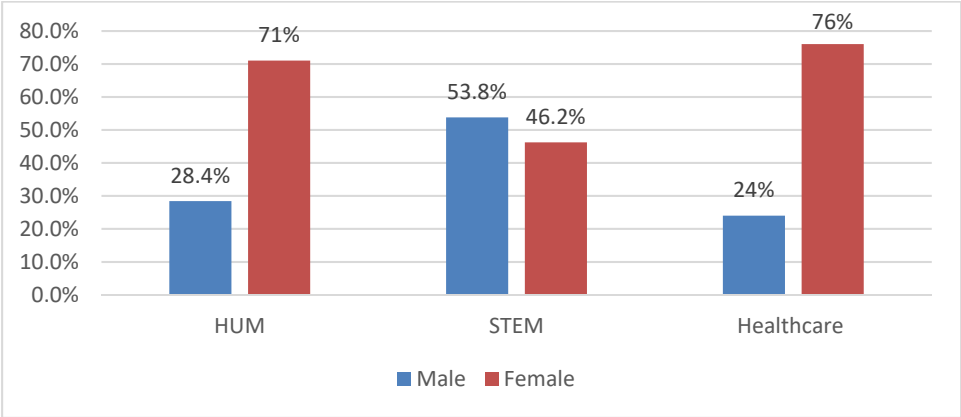
Table 2 Structure of graduates’ fields of study

Broad field of education	Male	Female	Total Share
Education	2.2%	16.8%	12.1%
Humanities and Arts	11.2%	19.7%	16.9%
Social sciences, Journalism, Business and Law	50%	37.7%	41.7%
Science, Mathematics and Computing	10%	7%	8.1%
Engineering, Manufacturing, Construction	15.9%	2.7%	6.6%
Health	3.3%	14%	10.7%
Services	7.4%	2.1%	3.2%
Total	100%	100%	100%

Source: TEW-CCA Youth Transition Survey in Georgia, own calculation.

In our analysis the study programs are divided into three major groups: Humanities, STEM (Science, Technology, Engineering and Math) and Healthcare. As it is evident from the Figure 2, STEM does not seem to predominate when considering the gender perspective. In STEM studies 54% are men and 46% are women, whereas in humanitarians 71% are women and 28.4% are men. The research shows that computing and engineering are by far the largest STEM disciplines measured by the share of graduates. These two STEM disciplines are heavily male dominated. Life science, however, which is the third largest STEM discipline is dominated by women. The remaining STEM disciplines have a fairly equal participation rate of males and females.

Figure 2. Distribution of gender across major graduates’ fields of study



Source: TEW-CCA Youth Transition Survey in Georgia, own calculation.

Table 3 shows the structure of the graduates’ first jobs taken after their graduation. The type of occupation was defined according to the ISCO-88, 1-digit level categorizing three types of employees: High skilled white collar (ISCO codes 1,2, 3); Low skilled white collar (ISCO codes 4,5); Blue Collar (ISCO codes 7,8,9). As a precedent for this categorization, the reference was made to the international standards for coding and classification proposed by Eurofound (2015). It is evident that out of nine different groups, the most frequently chosen field of occupation for fresh graduates is the field of professionals, since 34% of the involved graduates have chosen a job falling under one of these sub-major groups of the section. This is followed by the associated professionals (29%), both sections almost equally distributed among the males and females. Clerical and sales workers are predominated

by the female while male are in majority in the three last group of ISCO 88. Altogether, high graduate men outnumber in blue collar occupation while the females have better positions in white collar occupations. Interestingly, occupational group of four and five (service and sales and clerical support workers respectively) has one of the highest share of overeducated of young graduates (28%). These figures indicate that over qualification is a considerable problem in Georgia. This finding shows that a significant proportion of the workforce has invested in qualifications that are not needed and higher than those required in the jobs that they perform.

Table 3. First jobs after graduation

ISCO groups		Male Graduates	Female Graduates	Total
High skilled white collar	1	2,3%	2.8%	2.6%
	2	30.9%	34.7%	33.5%
	3	30.7%	28.2%	29.0%
Low skilled white collar	4	12.1%	20.2%	17.6%
	5	7.4%	11.8%	10.4%
Blue Collar	7	5.8%	1.6%	3.0%
	8	5.4%	-	1.7%
	9	5.0%	-	1.9%

Source: TEW-CCA Youth Transition Survey in Georgia, own calculation.

As we mentioned before, a narrow field of study was compared to a sub-major group of occupation fields using ISCED-ISCO table to see how fields of study match with fields of occupation. As it is evident from the survey, there are approximately 36% of graduates that can be considered as relatively well matched in their first jobs since their first job requires either that particular field of study or a related one. From this point of view, more than 64% of graduates entered the labour market by taking a job that does not match the study program that well. In case of educational level appropriate for the first job, 57% of the sample can be thought as perfectly matched, since approximately the education level of 43% of graduates is considered as the one needed for this particular position. Taking a closer look at the gender subcategories of educational mismatch, there is some kind of tendency of men to become mismatched horizontally to a smaller degree than women. While there is no difference in vertical mismatch from the gender perspective, it seems that men are more prone to lower quality jobs as it was also affirmed in Table 3 or take the jobs outside from their field of study.

Table 4. Vertical and Horizontal Mismatch by Gender

Gender	Vertical Mismatch		Horizontal Mismatch	
	Mismatched	Matched	Mismatched	Matched
Male	42%	58%	71.5%	28.5%
Female	44%	56%	65%	35.0%
Total	43.3%	56.7%	64.2%	33%

Source: TEW-CCA Youth Transition Survey in Georgia, own calculation.

The graduates were groups whether they were both, horizontally and vertically mismatched. Such graduates, after their studies, took jobs which are not related to the field of education they had completed and, at the same time, do not correspond with the attained level of education. Out of the total number of respondents, almost 39% are two dimensionally mismatched in their first job. Then

there are two groups which are matched in one way. Together it makes 31%. Approximately the third of the respondents are perfect match both horizontally and vertically (Table 5).

Table 5. Two dimensions of match

Both horizontally and vertically match	30.8
Neither horizontally nor vertically match	38.6
Vertically match horizontally mismatch	25
Vertically mismatch	5.6

Source: TEW-CCA Youth Transition Survey in Georgia, own calculation.

For our further analysis, the group of mismatched individuals will be crucial, therefore, below we will focus on one-dimensionally as well as on two-dimensionally mismatched cases, testing the hypothesis presented above. However, before the regression analysis, we compare the early labour market attainment of two cohorts of graduates, one entered the tertiary education through the university entry exams (before reform) whilst the second enrollees through the centrally organized examinations (after reform).⁴ The contribution of analyzing these two cohorts in terms of overeducating is to capture early labor market experience over the 10 years of period before and after the reform. In the sample, the share of these two cohorts are almost equal with an average age of 33 (pre-reform) and the age of 26 (after reform). Interestingly, we find a reduction in the proportion of matched graduates in the after-reform cohort, compared to the pre-reform ones. This suggests that over 10 years, taking also the reform of admission into consideration, the labor market is failing to accommodate the inflow of new graduates and the educational mismatch is increasing (Table 6).

Table 6. Educational mismatch by type of enrolment in high education

	National Exam	Entry exam required by the institute
Mismatch	76.6%	67.6%
Match	23.4%	32.4%

Source: TEW-CCA Youth Transition Survey in Georgia, own calculation.

⁴ The system of Unified National Examinations was established in 2005, giving the right to study to those enrollees, who successfully pass the centrally organized examinations. Before enrollees passed the exam that was organized by the universities. This reformed system of admission was regarded as one of the main achievement of HE system in Georgia that dismantled corruption of the old system.

7. Results of Regression Analysis

Our research objective was to study the incidence of mismatch across a) individuals and b) field-of-study segments in the Georgian labor market of high graduates at start of their career. We hypothesized that education mismatch varies among individual characteristics such as gender, degree level, academic credentials, parental education as the added value of social relations. This analysis was also aimed to obtain the evidence to check whether the educational mismatch is related to field of study (which in turn reflects national labor market characteristics). To complement the descriptive statistics and being able to test the hypothesis presented above, we run the logistic regression analysis. The results are given in the Table 7.

Table 7. Logistic regression of the determinants of having an education mismatch

Variables in the Equation

	B	Sig.	Exp(B)
grades (granted100%-70%) (<i>Reference group</i>)			
grades (granted 50%)	.439	.026	1.551
grades (granted below 50%)	-.494	.366	.610
bachelor.master	-.634	.001	.530
di_edu (humanities, social science and art) (<i>Reference group</i>)			
di_edu (law, health and business)	1.107	.081	3.025
di_edu (science)	1.237	.053	3.444
di_edu (service)	.055	.937	1.056
Constant	-1.646	.012	.193

Variables not in the Equation

	Score	df	Sig.
gender	.013	1	.910
notsingle	.053	1	.818
childexist	.086	1	.769
PEDU3L	1.120	2	.571
PEDU3L(1)	.204	1	.652
PEDU3L(2)	1.039	1	.308

Source: TEW-CCA Youth Transition Survey in Georgia, own calculation.

7.1. Gender

The descriptive statistics showed (Tables 3 and 4) that theories and empirical literature about female educational mismatch (Barone & Ortiz, 2011; Leuven & Oosterbeek, 2011) does not hold true in Georgia. There is even the tendency that men become mismatched to a greater degree than woman.

The regression analysis also shows that gender has no significance in terms of educational mismatch. We may hypothesize two different reasons for this finding.

First, women record much higher than men for inactivity regarding first significant job with a rate of 78% with the largest share of married ones. The most important reason for inactivity for women is having a child and household career breaks, and the men are earlier and the first mover to take the job, even if it is less qualified. Once they are in the workforce, women are less likely to take less qualified jobs than males. Thus, civil status and having children in relations with first significant job seem to have no impact on the probability to be educationally mismatched. A possible explanation is that, as already noted, the civil status might not matter anymore to the males who are in the workforce.

Second, women predominately get a degree in the fields of education, health care and administration, which offers many job opportunities. "More men's" field of industrial and high technology has a very small share in the Georgian labor market, which offers male tertiary graduated fewer chances of getting matched jobs. The same result on the gender difference in the shares of overeducated is revealed in other surveys (Kupets. 2015: 17), It also shows that men have higher share of overeducation in Georgia than, for example, Macedonia or Ukraine. The line of thought behind it is that in Georgia, internal mobility is low, the family does not change the location on man's labour market prospect, as the major restrict for the woman's choice of jobs articulated in the literature, In Georgia, woman bear almost the same financial responsibility as man do and regardless of gender and marital status, both are pushed to low level jobs.

7.2. Field of Study

There are two few observations in the detailed fields of studies in the TEW-CCA data to include the fine-graded field of study classification into the regression model. While the individual fields could not be estimated, the following broader categories of educational degrees were estimated: 1. humanities and social sciences (as the broader field of education) 2. law, health and business (as more specialized fields) 3. science (related to industry and high tech services). The regression analysis shows that the educational field is linked with educational mismatch (see Table 7). Those with the degree of humanities and social science have 1.5 higher probability of educational match than other fields. The results are not consistent with the literature we presented above and does not support the hypothesis stating that the study mismatch is lower for the graduates in science. High probability of over education for science majors can be explained by contemporary dynamics of the education and labor market in Georgia. In the FSU, Georgia was an industrial country with large factories, which pretty much stopped working after the collapse of the Soviet Union. The field of science has also been downgraded due to the disruption of the sector and the respective infrastructure in the universities (e.g. laboratories, no existence of enterprise internship and etc). Those with higher education dominate such sectors as healthcare, education, public administration, becoming the popular fields and also "broader" to have a better prospect to be employed compared to the specific field of science. However, it should also be mentioned that these sectors employing most workers are generally those offering the lowest average monthly earnings. Though there is a scarcity of degree holders in science, the innovative and growing industries are facing the severity of skill shortages in this fields. This is the diagnose of the quality of labor supply indicating that skills upgrading and reorganization of work towards higher productivity and high-tech services such as ICT is essential.

7.3. Academic Credentials and/or Parental Education

As mentioned above, due to the lack of competences of graduates, the higher educational attainment does not carry the signal for the employers about the corresponding abilities and skills. However, it

seems that the longer years in education (master courses) compete with the shorter degree (bachelor courses) in the occupations, where no extra years for schooling may not be needed. As the regression analysis (see Table 7) shows having completed advanced master courses, reduces the risk of educational mismatch. This tendency is consistent with the credentialism as the social movement towards acquiring credentials as the signaling productive ability (Solga 2000). The extra years in schooling as more investment in education might be a signal for the employers. It may signal a more motivated and qualified graduate no matter if someone satisfies the requirements of the certain occupation, as being with lower quality already disqualifies him.

Together with the longer study (master's level), better educational credentials also increase the chance to be educationally matched more than socio-economic indicator of a family, such as parents' education. This result is consistent with other research findings that reveals the same trend in Georgia (Bregvadze 2013: 10). Overall, motivation and educational investment, as measured by high grades at the enrollment of university, seems to be the most important determinant of the probability of avoiding educational mismatch.

7. Conclusion

This paper aimed at studying the incidence and the determinants of educational mismatch in terms of individual and field of study characteristics. The results were obtained based on descriptive and multivariate analyses of the TEWCA database. The data allowed us to determine the incidence of educational mismatch and establish a number of links to investigate the selected and field of study determinants on educational mismatch. The results show that educational mismatch is prevalent among young graduates at the start of their career. A significant proportion of the workforce has invested in qualifications that are not needed and higher than those required in the jobs that they perform. The usual interpretation is that it is due to a lack of demand for human capital in the country which is still strongly specialized in the traditional manufacturing industry, but at the same time is experiencing a dramatic increase in the share of graduates. If we look closer to the mismatch, horizontal mismatch is 20% higher than vertical mismatch. With respect to vertical mismatch, we may assume that to some degree it may be a temporary situation in the young graduate labour market due to information asymmetry and lack of experience. However, 64% of graduates who entered the labour market by taking a job that is irrelevant to his study program means that they are unable to utilize their expertise and skills they have acquired from the learning. This has a policy implication to the problem faced by the young graduates on whether their investment in education pays off.

Gender is not statistically significant. Civil status and having children in relations with first significant job also seem to have no impact on the probability to be educationally mismatched.

Longer study (master's level) and better educational credentials increase the chance to be educationally matched more than socio-economic indicator of a family, such as parents' education. It may indicate the motivation and effort that is valued by the "credentialism" and cannot be directly linked to the high relevance of the degree or the better skills for the specific occupation.

8. References

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