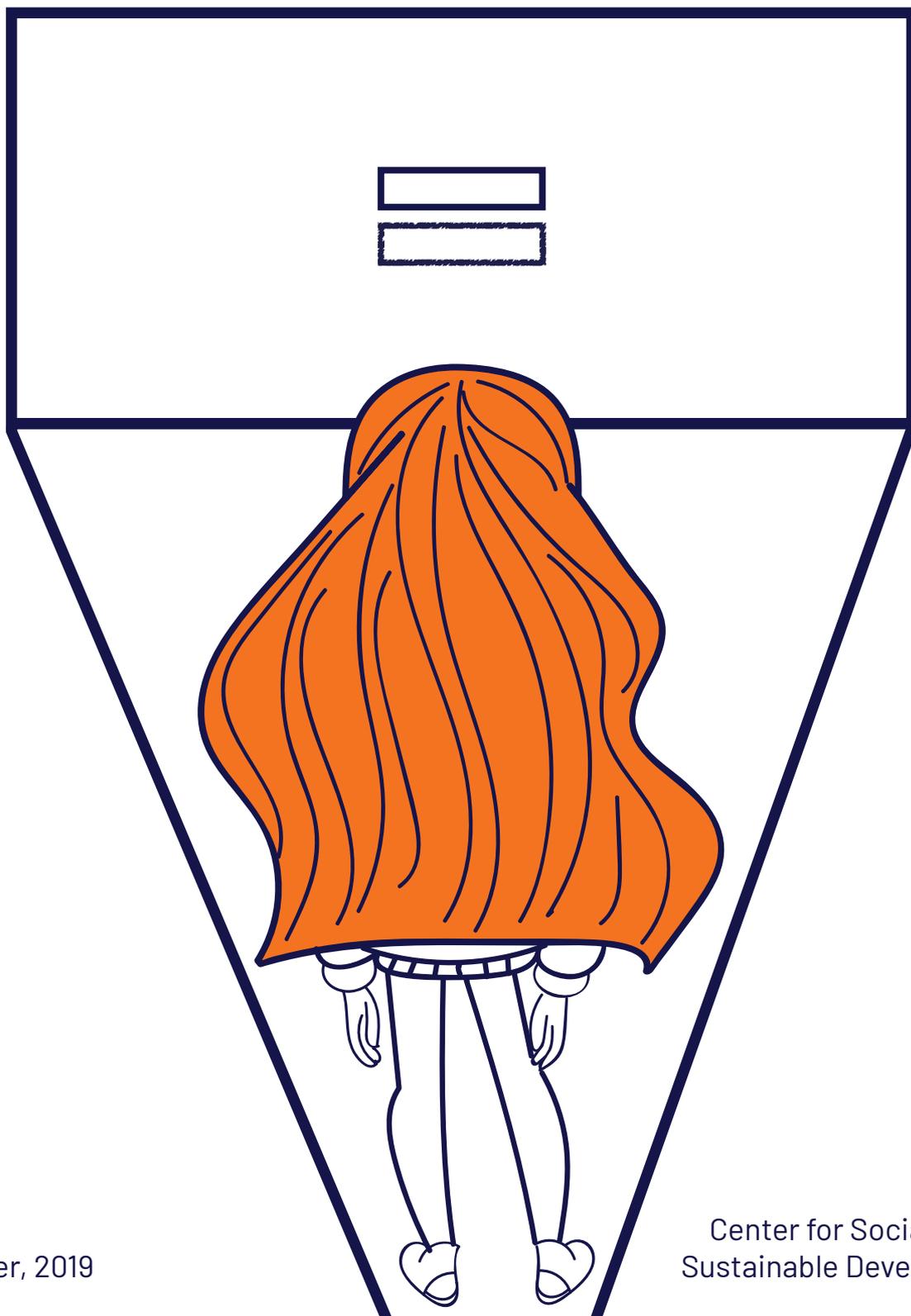


# GENDER STEREOTYPES AND EDUCATIONAL CHOICES IN KOSOVO



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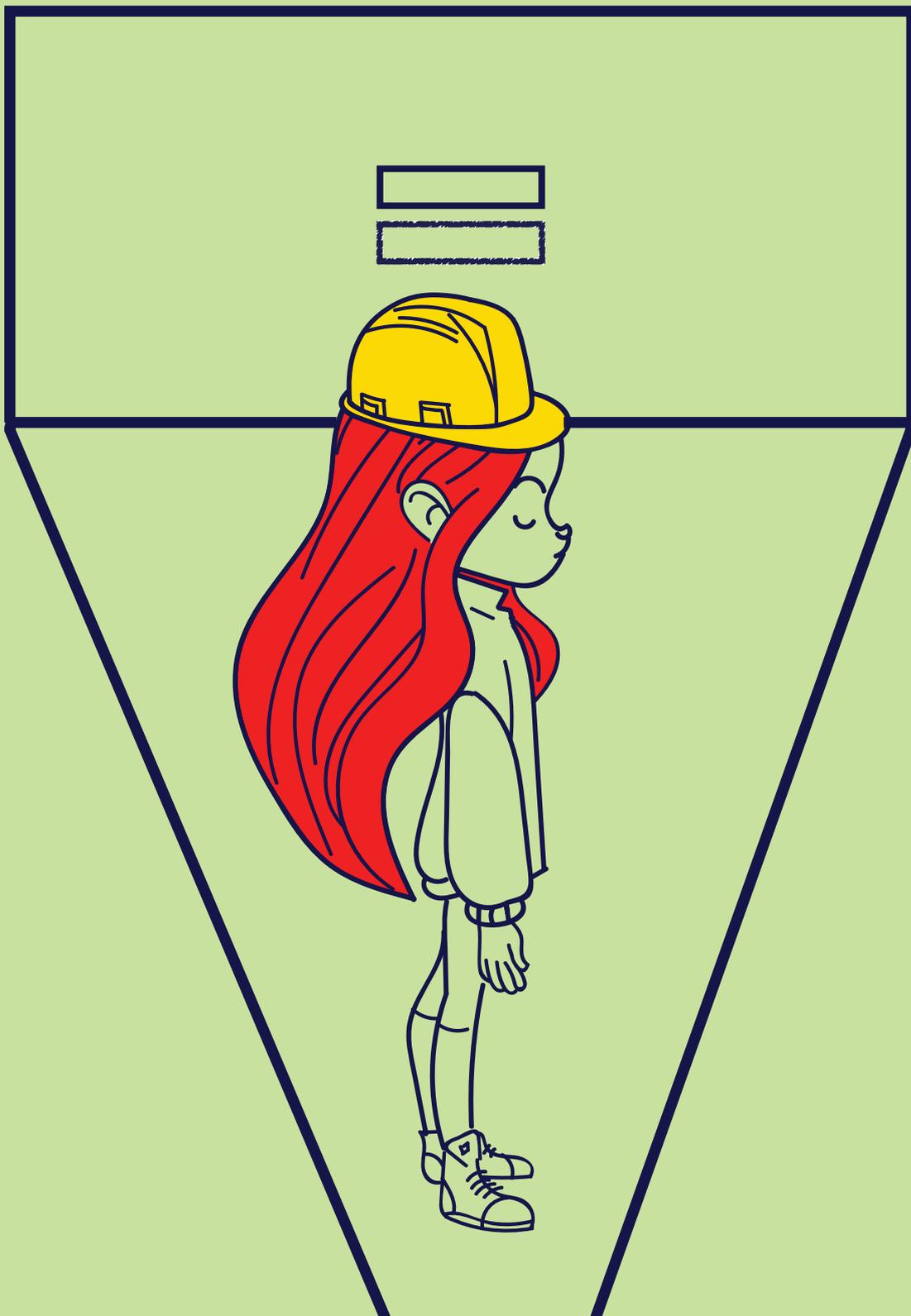
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Women in general work in jobs that have to do with **"people"**, while men work with **"things"** (Su, Rounds, & Armstrong, 2009).





# 1: Introduction

Global evidence suggests that today's labor markets are gender segregated (European Commission 2014). Women in general work in jobs that have to do with "people", while men work with "things" (Su, Rounds, & Armstrong, 2009). Gender differences are also evident in superior or leadership positions across sectors where men dominate higher job positions and get paid more than women (Blackburn, Jarman, & Racko, 2014). According to Eurostat (2019), women in the European Union earned on average 16.0 % less than men based on gross hourly earnings in 2017. The Western Balkans are no exception to these global trends. Women in the Western Balkans region earn less than men and the magnitude of the gap increases for certain countries after adjusting for labor market characteristics (Avlijas, Ivanovic, Vladislavjevic, & Vujic, 2013).

While there are many factors that contribute to gender pay gap, including seniority in positions, family related responsibilities, hours worked, and education, a portion of this gap is also explained by the occupational segregation between women and men: women choose college majors/professions that are paid less than the college majors/professions generally chosen by men (Chamberlain & Jayraman, 2017). Evidence from a gender pay gap study conducted in five countries (United States, United Kingdom, Australia, Germany and France) suggests that pay gap is predominately attributed to the allocation of men and women into certain professions and industries (Chamberlain, 2016). Although women are increasingly earning more college degrees compared to men, they continue to be significantly underrepresented in college majors that would lead them to high paying jobs (Chamberlain & Jayraman, 2017). In the United States, for instance, out of ten highest paying majors, nine are dominated by men; whereas six out of ten lowest paying majors are dominated by women (Chamberlain & Jayraman, 2017). Evidence in Europe also shows a similar situation: women are generally over-represented in Humanities, Language, Education and Arts, whereas under-represented in Science and Technical degrees (Turner & Bowen, 1999).

A growing body of research indicates that gender segregation in educational choices occurs due to stereotypical beliefs that men perform better in math related subjects, which in turn negatively affect women's confidence and performance in math related tasks and discourage them from pursuing careers in Science and Technical degrees (Bian, Leslie & Cimpian, 2017). For instance, a phenomenon dubbed as "the stereotype threat" (Steele & Aronson, 1995) explains how the negative stereotypes about one's group (e.g., women are bad in math or generally in Science, Technology, Engineering, and Math - STEM) besets members of that devalued group to perform poorer and achieve less because of the induced threat that the negative stereotype triggers.

Negative stereotypes about women being bad in math or science in general start as early as elementary school (Weinhardt, 2017). Boys self-report that they are more competent in mathematics than in languages as opposed to girls who think that their competencies in languages are stronger than they are in mathematics (Weinhardt, 2017). These differences in self-perceptions start to become evident between the 5th grade and 12th grade (Weinhardt, 2017). When comparing competencies in adults, school children view adult men as being far better in mathematics than adult women (Steel, 2003). This positive link between men and mathematics persists even later in life (e.g., among college students) where an implicit link is made between males and mathematics (Nosek, Banaji, & Greenwald, 2002). Parents and teachers also show gender bias in evaluating mathematical competencies of children. For instance, previous findings show that parents (both, mothers and fathers) think their sons have higher abilities in mathematics compared to their daughters (Furnham, Reeves, & Budhami, 2002), while teachers rate their male students as having higher mathematical abilities than female students (Li, 1999).

Studies on mathematical performance indicate that gender gap in mathematics is consistently smaller (Lindberg, Hyde, Petersen, & Linn, 2010; Wilder & Powell, 1989); however, there is still a significant gender discrepancy among the highest achieving students in advanced math tests (Ellison & Swanson, 2010). Likewise, results from PISA<sup>1</sup> (OECD, 2018: 4) show that while gender gap on science performance is small on average across all countries “[...]in 33 countries and economies, the share of top performers in science is larger among boys than among girls”. The results also show that, on average, there is no gender gap in students’ expectations to work in a science related occupation across OECD countries (OECD, 2018). However, these expectations diverge when identifying the type of science related work: girls identify themselves more with the health related professions whereas boys see themselves working more in the Information and Communications Technology (ICT) sector (OECD, 2018). These preferences seem to mirror the tendency that women are indeed more likely to pursue jobs that require working with “people” while men with “things” (Su, Rounds, & Armstrong, 2009).

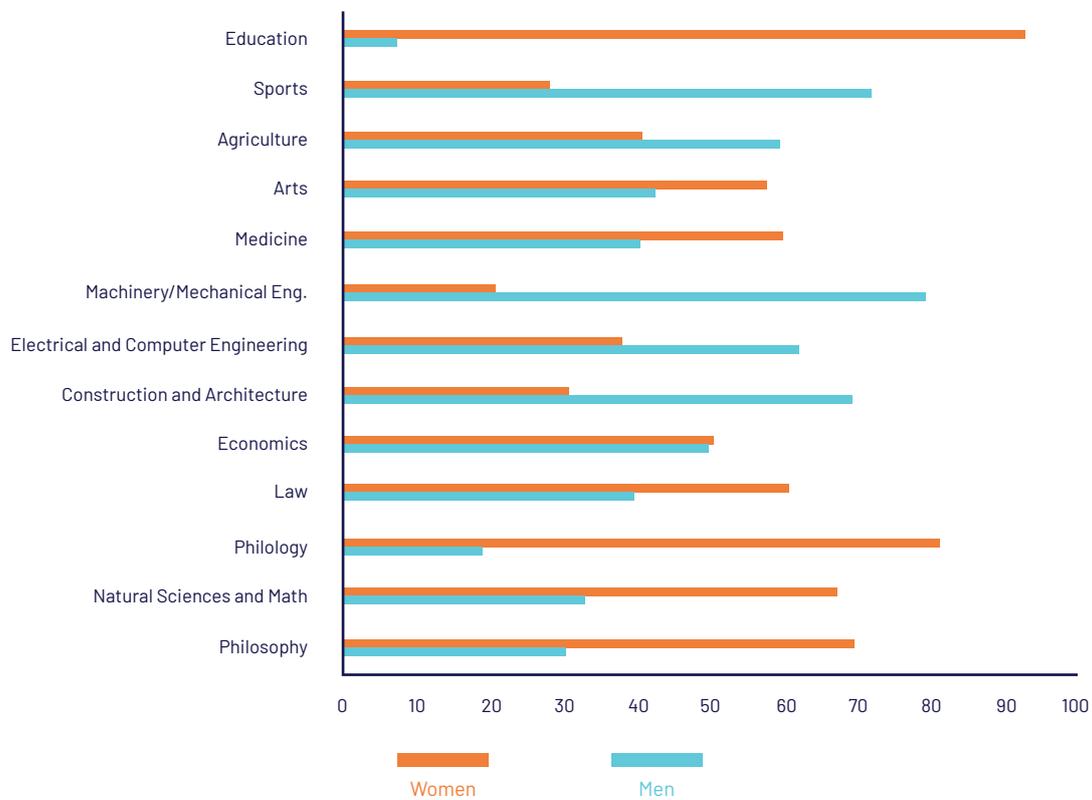
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<sup>1</sup>Program for International Students Assessment (PISA), launched by the Organization for Economic Co-operation and Development (OECD) in order to assess knowledge and skills of 15-year old students near the end of their compulsory education. The last PISA assessment (in 2015) covered 72 countries and education systems (PISA Results in Focus, OECD, 2018), link: <https://www.oecd.org/pisa/pisa-2015-results-in-focus.pdf>

## 1.1 Contextual background: How gendered are educational choices in higher education in Kosovo?

Data from 2017/2018 on the number of students at one of the oldest and largest universities in the country – University of Prishtina – show that women outnumber men in higher education (58% to 42%). When disaggregated by the field of study, the data confirms global trends in occupational segregation by gender. As shown in Figure 1, women dominate fields of studies like Education (93%), Philology (81%), and Philosophy (69%) whereas men, dominate fields of study like Mechanical Engineering (79%), Sports (72%), and Architecture and Construction Engineering (69%).

**Figure 1. Gender distribution of students at the University of Prishtina 2017/18 (%)**



**Source: Statistical Agency of Kosovo (SAK), 2018**

While women tend to choose more majors within the Department for Natural Sciences and Math compared to men (67% to 33%), they are still underrepresented in high paying Technical majors such as Electrical and Computer Engineering (38% to 62%).

## 1.2 The current research

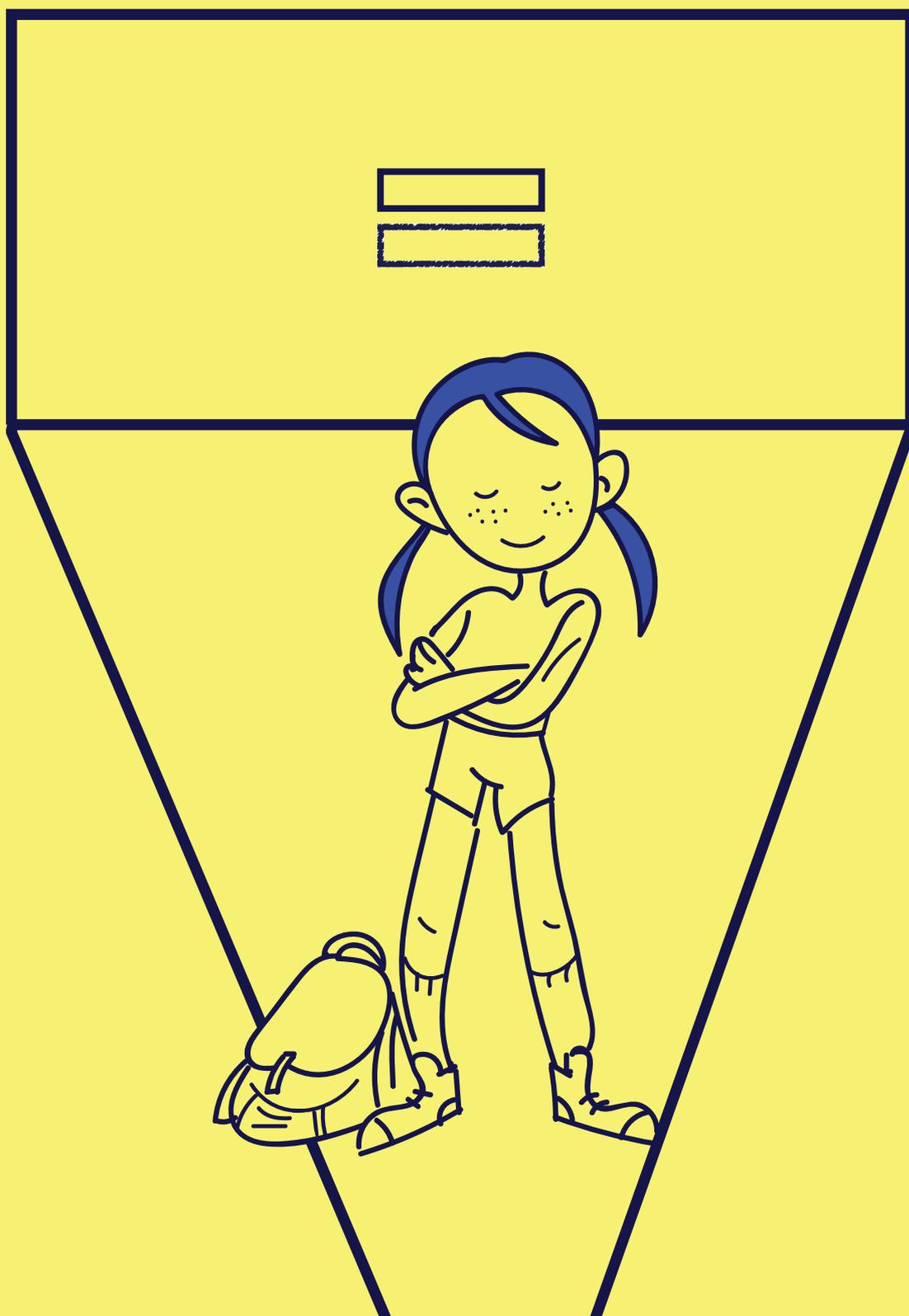
The basic question we ask in this study is why do girls continue to study fields that are “people” oriented and lead to lower profile jobs, while boys prefer those that are “things” oriented and lead to high profile jobs? Although there has not been a comprehensive analysis on this topic in Kosovo, it is implied that “traditional perceptions of the jobs best suited to men and women” are an important explanatory variable (World Bank, 2002: 3). Our study reported here analyzes preferences of young Kosovar students in choosing their major field of study at higher levels of education, in grades 11 and 12. It specifically identifies factors driving educational choices of youth through three aspects: their school experiences and academic self-concept; discussions/consultations (or lack thereof) with parents and career guiding centers; and perceptions about gender specific professions. To our knowledge, this study represents the first exploratory study that specifically examines the relationship between gender stereotyping and educational choices made by young girls and boys in Kosovo<sup>2</sup>.

The study has significant contextual importance as empirical evidence shows that limited earning capacity of women does not only perpetuate women poverty and inequality in the society, but it also makes it difficult for societies to break out of the vicious cycles of low-income, low productivity (Todaro and Smith, 2012).

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<sup>2</sup> Kačaniku (2015) analyzed this aspect but the focus of the study was rather narrow, in Prishtina district only.

The study included a nationwide survey (**N=1,050**) with boys and girls in upper secondary education (grades 10 and 11) and four focus groups consisting of **students** in high schools and **freshmen** university students in social sciences or natural sciences. Both survey and focus group analyses included students from **majority and non-majority communities** in Kosovo.





## 2: Methodology

To understand the factors influencing educational choices of youth in Kosovo, we conducted a mixed-method study with high school and university students of both genders. The quantitative portion of the study was a nationwide computer-assisted survey with boys and girls in upper secondary education, followed by four focus group discussions with high school and university students of both social sciences and natural sciences.

Data collection was outsourced to a local company (UBO Consulting) who were in charge of field work across the country.

### 2.1 Survey: Description and Size of the Sample

The study reported here included a sample of 1,050 respondents from a total of 99 high schools (see Table 1 for the percentage of each type of school). The number of students selected in gymnasiums and professional schools was decided based on the distribution of those schools in the given municipality.

**Table 1. Types of schools included in the sample**

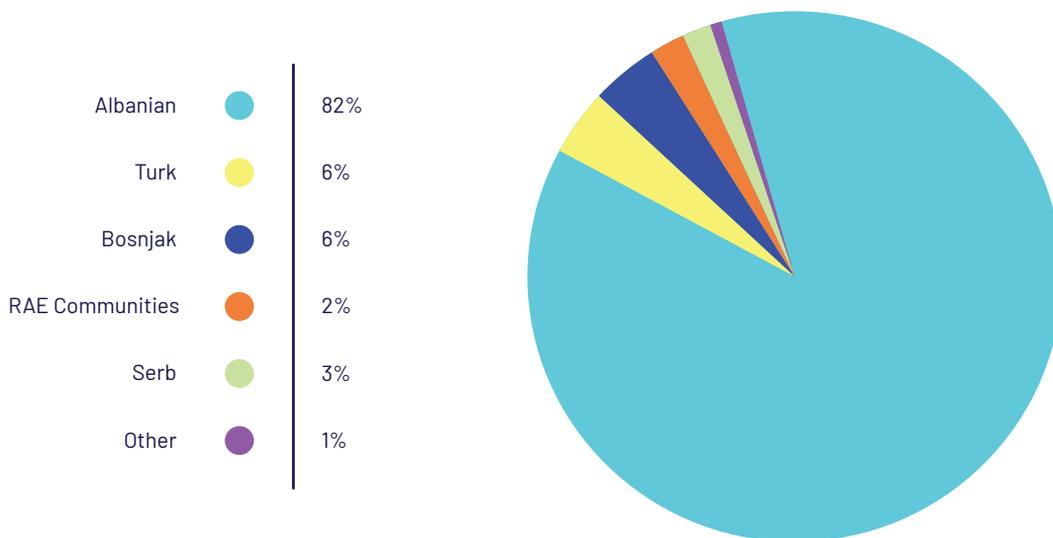
Type of School	Frequency	%
Gymnasium	487	46.4
Professional School	563	53.6
<b>Total</b>	<b>1050</b>	<b>100</b>

**Source: LEAP, July 2018**

The sampling was done based on the education statistics 2015/2016, which reflect population size, gender, ethnic and geographical distribution of the student population in Kosovo.

Sampling was broken down by quota: gender (52% girls; 48% boys)<sup>3</sup> and ethnic belonging (82% Albanians; 6% Turks; 5% Bosniaks; 3% Serbs; 2% RAE communities; and 1% other). Although, the official data from Ministry of Education, Science and Technology (MEST) show that minority inclusion in Kosovo’s high schools is less than 3% (MEST, 2015), our strategy was to over-sample the ethnic proportion of the quota so that we could statistically gauge inter-minority comparisons as well (not just majority vs. minority comparisons).<sup>4</sup> Therefore, in terms of ethnic composition of the sample, non-majority communities represent about 18% of the sample (188 respondents). At the onset of the study, we aimed for a higher representation of the non-majority communities but over the course of the survey completion, the sample was changed since the data collection assistants found difficulties in identifying students based on their ethnic affiliation.<sup>5</sup>

**Figure 2: Study sample broken down by ethnic groups**



**Source: LEAP, July 2018**

The sample was also stratified based on the grade level, i.e., the respondents were split in half between grade 11 and 12; after data collection this division between the two groups of respondents was well maintained (48% in grade 11 and 52% in grade 12). We focused on grades 11 and 12 as these are final years before students finish their high school and decide about their college majors. The classes from grades 11 and 12 were selected with the random number generator application. The sample was drawn from 28 municipalities. The greatest number of respondents comes from Prizren region; this is because of overrepresentation in the sample of students from Prizren due to high presence of the non-Albanian communities (see Table 2).

<sup>3</sup> Statistics for gender representation in Kosovo’s high schools according to MEST (2015) are 47% females and 53% male. However, because the focus of our study is on young girls more specifically, we slightly over-represented them in the sample.

<sup>4</sup> Data from MEST (2015) do not include minority students from the parallel education system.

<sup>5</sup> It is a school regulation that students are not required to state their ethnic belonging when registered with the school.

**Table 2. Respondents' place of birth**

Place of birth	Frequency	%
Prishtinë/Prishtina	136	13.0
Mitrovicë/Mitrovica	35	3.3
Gjilan/Gnjilane	36	3.4
Pejë/Pec	67	6.4
Prizren	213	20.3
Gjakovë/Djakovica	46	4.4
Podujevë/Podujevo	37	3.5
Vushtrri/Vucitrn	32	3.0
Skenderaj/Srbica	14	1.3
Junik/Junik	3	0.3
Klinë/Klina	19	1.8
Istog/Istok	27	2.6
Deçan/Decani	13	1.2
Dragash/Dragash	17	1.6
Suharekë/Suva Reka	30	2.9
Rahovec/Orahovac	23	2.2
Viti/Vitina	24	2.3
Kamenicë/Kamenica	22	2.1
Lipjan/Lipljan	24	2.3
Shtime/Stimlje	16	1.5
Mamusha/Mamus	26	2.5
Ranillug/Ranilug	23	2.2
Ferizaj/Urosevac	65	6.2
Kaçanik/Kacanik	13	1.2
Fushë Kosovë/Kosovo Polje	22	2.1
Obiliq/Obilic	6	0.6
Novobërdë/Novo Brdo	1	0.1
Zubin Potok	1	0.1
Zveçan/Zvecan	1	0.1
Glllogovc/Glogovac	24	2.3
Malishevë/Malisevo	30	2.9
Hani i Elezit/General Jankovic	3	0.3
Graçanica/Graçanica	1	0.1
<b>Total</b>	<b>1050</b>	<b>100.0</b>

**Source: LEAP, July 2018**

In the survey, we also asked information about the respondents' family members, including parents' level of education and status of employment. Frequency results show that level of education of respondents' mothers mimic the general position of women in the Kosovar society: mothers have lower levels of education, are considerably more unemployed, and are involved into housekeeping activities as housewives (see Tables 3 and 4). Parental level of education compared by gender shows that men (fathers) have more years of schooling compared to women (mothers). About 40 percent of respondents reported that their fathers have more years of education than their mothers do, whereas more than 50 percent of respondents have parents with the same level of education. Only 6 percent of respondents reported that their mothers have higher educational attainment than their fathers do.

**Table 3. Parents' level of education**

	Mother		Father	
	Frequency	%	Frequency	%
Has not completed primary school	74	7.0	26	2.5
Completed primary education	390	37.1	160	15.2
Completed secondary education	424	40.4	565	53.8
Current student in College/University	22	2.1	47	4.5
Completed College/University	101	9.6	158	15.1
Current student at the Master's level	4	0.3	5	0.5
Completed Masters degree	11	1.0	37	3.5
Completed Phd	2	0.2	6	0.6
<b>Total</b>	1027	97.8	1005	95.7
N/A	23	2.2	45	4.3
<b>Total</b>	1050	100.0	1050	100.0

Source: LEAP, July 2018

**Table 4. Parents' status of employment**

	Mother		Father	
	Frequency	%	Frequency	%
Employed in private sector	123	11.7	445	42.3
Employed in public sector	71	6.8	217	20.7
Self-employed (own-business)	40	3.8	166	15.9
Employed abroad	10	0.9	53	5.0
Retired	4	0.4	14	1.3
Student	1	0.1	1	0.1
Unemployed	777	74.0	109	10.4
<b>Total</b>	1027	97.8	1005	95.7
N/A	23	2.2	45	4.3
<b>Total</b>	1050	100.0	1050	100.0

Source: LEAP, July 2018

## 2.2 The Questionnaire

The questionnaire consisted of four sections (see Annex 1):

- **Demographical section.** This section gathered information about students' age, gender, ethnicity, type of school, past school performance (GPA); information about respondents' family members (parents plus siblings who are older than 18 years) and their level of education and employment status.

- **School experience and academic self – concept.** Students were asked about their preferred school subjects; self-perceptions about math and languages; as well as their perceptions about gender differences in math, language, and sports' abilities. We focused on math and languages as previous studies suggest they are typically reflective of gender stereotypes in educational choices (Cheryan, Master, & Meltzoff, 2015; Weinhardt, 2017). Students' overall academic performance was reported based on the current grading system in high schools in Kosovo, ranging from 1-5, where 1=insufficient; 2=satisfactory; 3=good; 4=very good; and 5=excellent. Given this grading system, we have also used the same scale (1-5) to measure students' perception about their academic abilities and experiences. Questions about math self-concept are adapted from OECD (2013).

- **Educational choices.** In this section, the students were asked whether they have decided about their future studies; what were their preferred majors/fields of study; and what has been or is the role of their parents, teachers, friends, and career-guiding centers in the decision-making processes of the educational choices that they plan to make.

- **Gender stereotypes.** Students were asked about how they perceive gender specific roles in typical women vs. men perceived domains of work –three roles from Healthcare, Early Education, and Domestic Roles (HEED), typically perceived to be congruent with women, and three from Science, Technology, Engineering and Math (STEM), typically perceived to be congruent with the roles of men. We also asked students, about their perceptions on current situation when it comes to occupational segregations and then we asked them a normative question, such as "who should work as a nurse/architect/Information Technology (IT) specialist". The questions have been adapted from UCOM study (Understanding Communal Orientation in Men, <https://ucom2017.wordpress.com/>) currently running in 58 countries in the world, to which the second author of this report is a country representative for Kosovo. See Annex 1 for the sample of the questionnaire. The three professions included in HEED were: elementary school teacher; nurse; and social care worker (the latter was substituted with "cashier" as it was a better fit with the context in Kosovo), while those included in STEM professions were: IT specialist; electrical engineer; and architect.

The finalized version of the questionnaire reflects input from the representatives of the Enhancing Youth Employment (EYE) project and UBO consulting researchers. The overall response rate in the survey was high (97.7%). In numbers, this meant that out of 1,075 respondents approached, data collection assistants completed 1,050 computer assisted personal interviews.

## 2.3 Estimation technique

The results were analyzed and presented with a cross tabulation technique. The focus of cross-tabulation analysis was to highlight gender and ethnic differences among respondents' answers. To tests for statistical significance of these differences, we ran ANOVA and t-tests. All analyses reported here were run in STATA and SPSS.

## 2.4 Focus Group Discussions

After the survey was completed and the first results were analyzed, four (4) focus group discussions were conducted to collect in-depth qualitative information about students' educational choices. Focus group discussions were organized with high school students from grades 11 and 12 studying natural sciences and social sciences, as well as university students in their freshmen year enrolled in STEM and non-STEM programs. Participants in these focus groups were boys and girls from the majority and non-majority communities in Kosovo including Albanian, Serb, Roma, Ashkali, Egyptian, Bosniac, Gorani and Turkish communities. In general, focus group participants were actively engaged in the discussion.

**Table 5. Composition of the Focus Groups**

Focus Group Participants	Composition of Focus Groups
Focus Group with 12 boys and girls from Albanian community	<ul style="list-style-type: none"> <li>- grades 11 and 12 in high school studying social sciences and natural sciences (grade 11 and 12)</li> <li>- first year in University, STEM and non-STEM programs</li> </ul>
Focus Group with 12 girls from Albanian community	<ul style="list-style-type: none"> <li>- grades 11 and 12 in high school, studying social science and natural science</li> <li>- first year in University, STEM and non-STEM programs</li> </ul>
Focus Group with 12 boys and girls from Serbian community	<ul style="list-style-type: none"> <li>- grades 11 and 12 in high school studying social science and natural science</li> <li>- first year in University, STEM and non-STEM programs</li> </ul>
Focus Group with 12 boys and girls from Roma, Ashkali, Egyptian, Bosniac and Turkish communities	<ul style="list-style-type: none"> <li>- grades 11 and 12 in high school studying social science and natural science</li> <li>- first year in university, STEM and non-STEM programs</li> </ul>

Source: LEAP, November 2018

The topics of focus group discussions reflected the content/sections of the survey, and followed the same sequence of discussion points:

- Self-reported subject preferences at school and self-assessment of competences in math and languages;
- Fields of study/educational choices and factors influencing such choices;
- Educational choices and gender stereotypes: occupational values; gender divisions in the labor market; and gender divisions in leadership positions.

All focus groups discussion were moderated by a trained moderator of UBO consulting and conducted with a Focus Group Guide that was structured specifically for this purpose (See Annex 2).

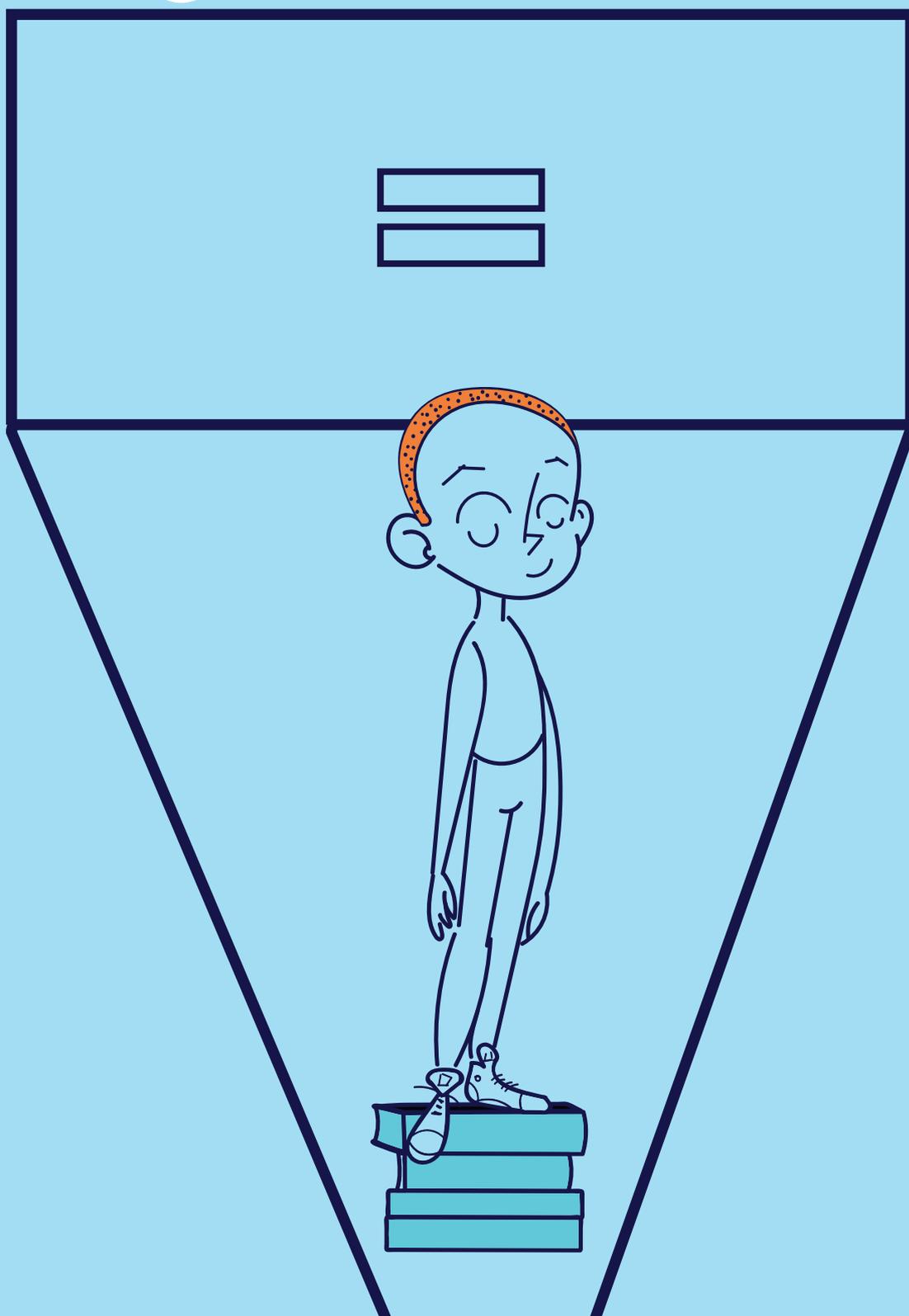
The following section presents the main results combined from both quantitative (i.e., the nation-wide survey) and qualitative (i.e., focus groups) segments of the study.

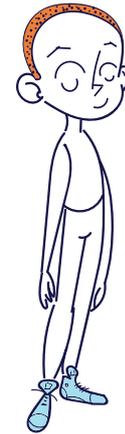
"I also value humanity more than income because you have to deal with people all the time and why not help them."

- Participant from the focus group with girls of Albanian community

"To me as a programmer, it is important first and foremost that I acquire financial gains through my profession."

- Boy participant from the mixed gender group of Albanian community





## 3: Research Results

### 3.1 Are there gender differences in the overall academic performance?

Results showed that the self-reported performance (GPA) of students gets lower as they move towards higher levels of education. As shown in Figure 3, while the share of excellent students in the 5th grade is close to 70 percent of the respondents (or 720 students out of a total of 1040), in grades 9 and 10 the share of excellent students falls to about 56% and 36% accordingly. The share of decreased excellent grades is distributed among the “very good” and “good” grade categories. Although the overall grade performance of excellent students decreases at higher levels of education, **girls’ share with excellent grades remains higher across the board**. The percentage of girls with excellent performance is already higher in the 5th grade and the gap that favors girls increases further in high school (grades 9 and 10 respectively).

**Figure 3: Students’ overall performance (GPA) over the years (%)**

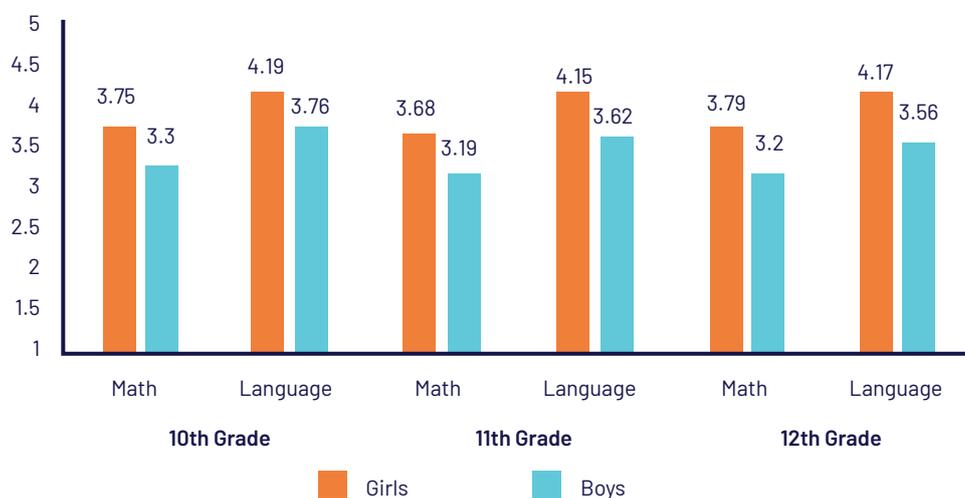


**Source: LEAP, July 2018.** Note: academic performance is students’ self-reported GPA. The grade range is 1 to 5, where 1=insufficient and 5=excellent

Along ethnic lines, the highest share of excellent students in grades 5, 9, and 10 is reported among Albanians, followed by Bosniac and Turkish students; the highest share of very good students is reported by Serbs and Goranis. While only a small share of students report to have lower GPA (“satisfactory” or “insufficient”), this share increases by few percentage points in grade 10. The highest percentage of students with “satisfactory” result in grade 10 is among Ashkali (15.4%), followed by Egyptians (9.1%) indicating that poor performance is particularly present among these stigmatized and educationally marginalized ethnic groups.

When comparing the grade means in math and native language in upper secondary education (Figure 4), the results show that compared to boys, girls’ academic performance in these two subjects is again higher in all three grade levels (10, 11, and 12).

**Figure 4. Math and language performance in upper secondary education**



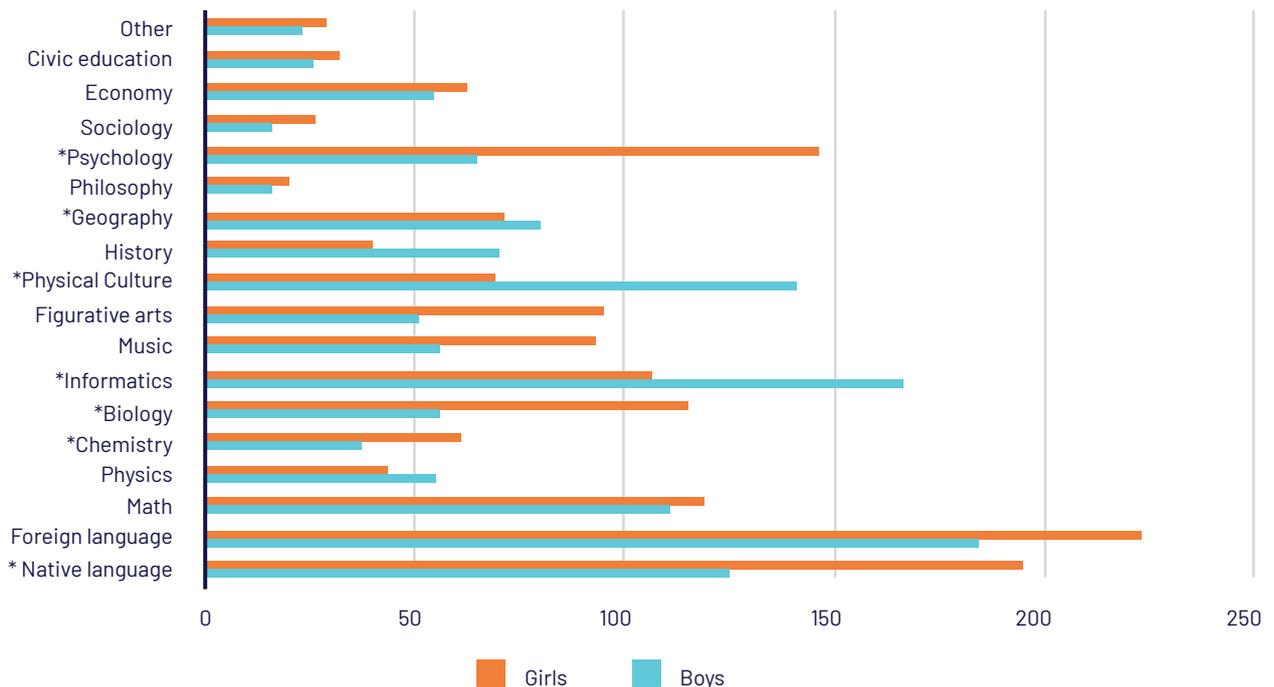
**Source: LEAP, July 2018.** Note: academic performance is students’ self-reported grade in math and native languages. The grade range is 1 to 5, where 1=insufficient and 5=excellent.

Students were also asked to choose the subjects in which they have best grades. On this question, girls reported significantly higher grades in native language, psychology, and biology; while boys reported significantly better grades in informatics, physical culture and geography. Again, the percentage of girls having the best grades in “all the courses” is more than twice higher than that for the boys (6.9% boys and 16.3% girls).

### 3.2 Are there gender-preferred subjects in school?

Although girls reported to perform equally well in social and natural sciences, their first-order preferences were subjects that involve more verbal skills (see Figure 5). When asked to choose up to three most preferred school subjects, **girls preferred more languages and less math**. Their preference was considerably lower for science subjects such as physics and geography and it was statistically higher for languages and psychology. Out of the natural sciences group, girls tended to like biology and chemistry more than boys did; which could explain their preference toward medical studies when enrolled in college. It is interesting to highlight however that unlike boys, girls give a lower order of preference for physics although the share of girls that have better grades in this subject is higher than that of boys (12.1% to 9.5%). **Boys, on the other hand report higher preferences for subjects like informatics, physical culture, and geography**. When it comes to preferences for math, although the means are higher for this subject than for other natural sciences (e.g., Physics and Chemistry), the differences were not statistically significant between boys and girls.

**Figure 5. Gender and the preferences for school subjects (frequencies)**



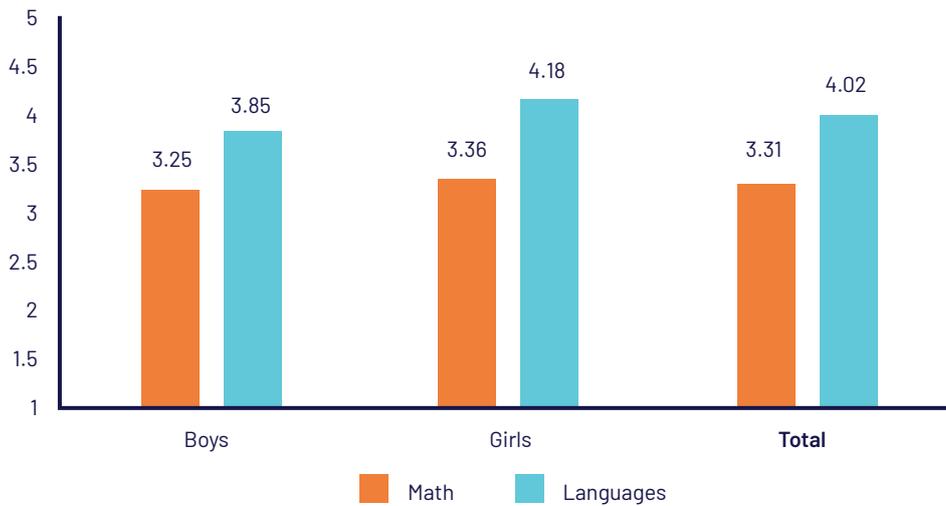
**Source: LEAP, July 2018.** Note: Student could choose up to three school subjects; all statistically significant differences are marked by a star (\*)

In the context of ethnic differences, and regardless of the gender, focus group discussions showed that English language was among the most favorite subjects for Albanian and other non-majority communities, except for Serbs, who favored Serbian and Russian languages.

### 3.3 Are there gender differences in academic performance and perceived self-ability?

In line with their overall academic performance, girls reported to have significantly more abilities in math and even more so in languages compared to boys whose means on self-reported abilities are lower (see Figure 6).

Figure 6. Students' academic self-perceptions by gender

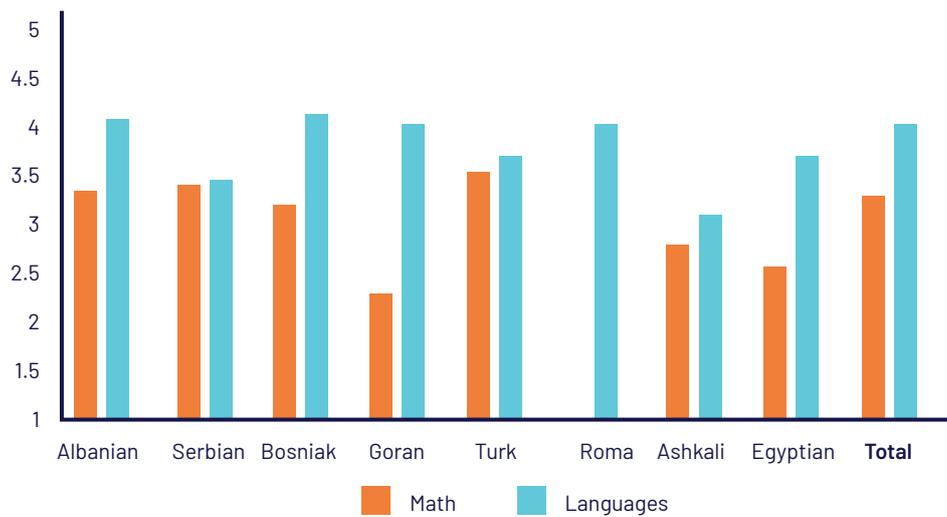


Source: LEAP, July 2018; Scale: 1=not at all to 5=very much

However, it is interesting to compare girls' self-reported grades in math (actual grades) with their self-perceived ability in this subject (Figure 4 and Figure 6). The results reveal a **discrepancy** between the two; the average mean on girls' self-perceived ability in math (mean=3.36) is lower than the average mean on their self-reported grade throughout upper secondary education (mean<sub>GRADE10</sub>=3.75; mean<sub>GRADE11</sub>=3.69; mean<sub>GRADE12</sub>=3.79). Boys, however, report different perceptions: their average mean on self-perception about being good in math (mean=3.25) is very close or sometimes higher than the average mean of their self-reported grade (mean<sub>GRADE10</sub>=3.31; mean<sub>GRADE11</sub>=3.19; mean<sub>GRADE12</sub>=3.21). These findings replicate previous evidence from other countries where girls' self-reported ability in math is lower than their actual performance in this subject (see Weinhardt, 2017).

Results also revealed significant differences between ethnic groups. The highest self-ability in math was reported among Turkish students and the lowest among Gorani, Roma, Egyptians and Ashkali communities (see Figure 7). While the total mean on self-reported ability in languages was higher for the whole sample (3.98), it was reported to be the lowest among Ashkali community. This reflects previous findings that show that members of stigmatized groups in a society (e.g., minority groups) are more likely to experience the effects of "stereotype threat" in academic achievement (Steele and Aronson, 1995). Stereotype threat persistence therefore has many facets and does not apply only to gender.

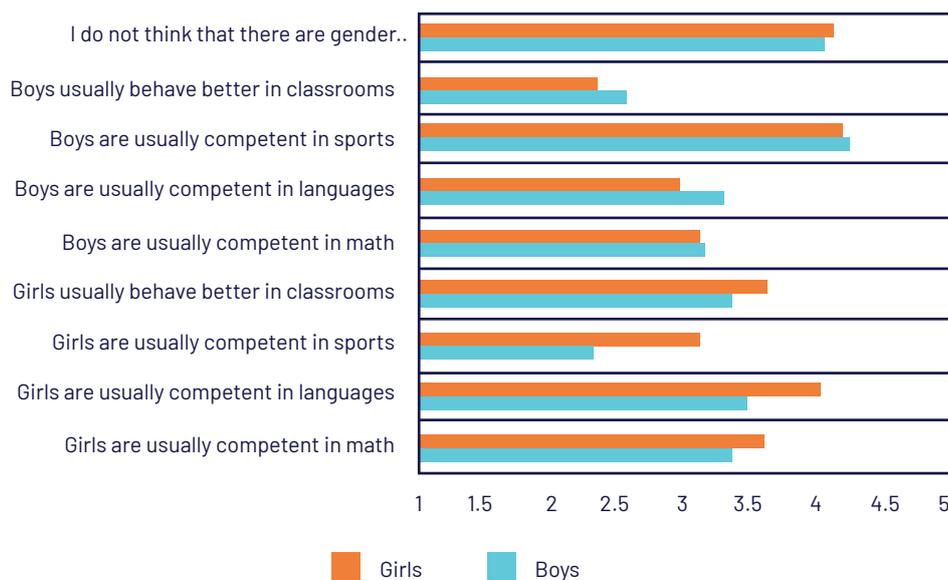
**Figure 7. Students' academic self-perceptions by ethnic belonging**



**Source: LEAP, July 2018;** Scale: 1=not at all to 5=very much

Gender biases for the other group (or the outgroup) abide when it comes to academic self-perceptions. Figure 8 confirmed gendered stereotype perceptions, where boys reported significantly lower perceptions of girls' competency in all three subjects compared to girls' self-perception about their own level of competence. However, girls' perception about boys' level of competence in math and sports was not significantly different from that on how boys perceived their competence in these two subjects themselves, except for languages where girls reported significantly lower perceptions on boys' competence.

**Figure 8. Gender stereotypes and subject performance**



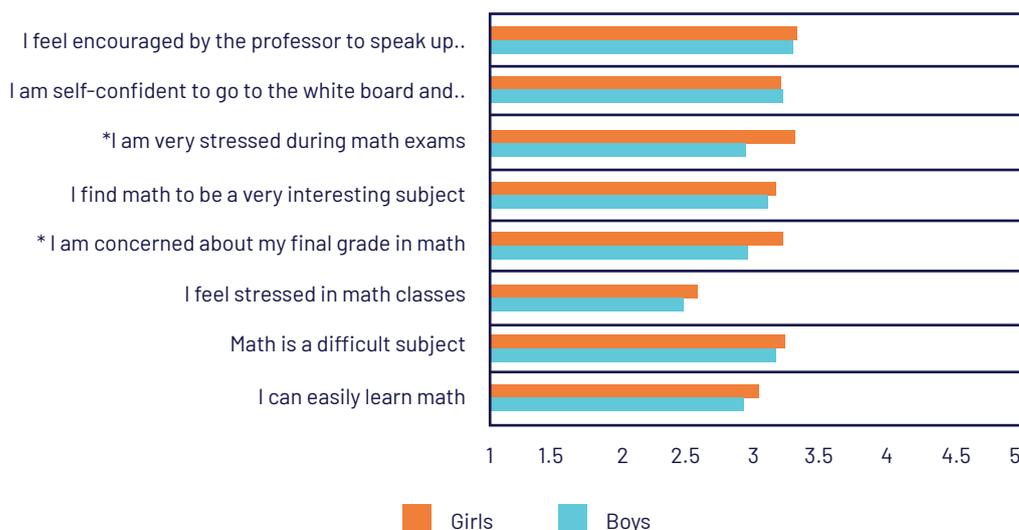
**Source: LEAP, July 2018;** Scale: 1=totally disagree to 5=totally agree

While girls' lowest mean about boys' competence was in languages, girls' self-reported level of competence was the highest in languages. On the other hand, boys' lowest mean about girls' competence was in sports, whereas boys' self-reported level of competence was highest in sports. It can be inferred that when comparing themselves with boys, girls feel most capable and confident in languages. This is also reflected upon their future educational choices where girls have more preferences to study social sciences and less STEM.

### 3.4 Do girls and boys have different experiences with the math subject?

The results show no statistically significant difference between girls and boys when it comes to speaking up in class and go to the white board to solve math problems. However, **girls report more stress and concern when taking a math exam** compared to boys. The mean score on "feeling stressed during math exams" and "feeling concerned about the final grade in math" was significantly higher for girls than for boys (at  $p < 0.05$ ), suggesting presence of stereotype threat among girls.

**Figure 9. Students' experiences with math during classes and exams**



**Source: LEAP, July 2018;** Scale: 1=totally disagree to 5=totally agree

Note: All statistically significant differences are marked by a star (\*)

Our qualitative inquiry showed that girl participants in the girls-only focus group, reported that they experienced more stress and anxiety during math classes and exams (Box 1). Note that this concern was shared by girls only when they were among a girls-only group. Participants from other focus groups reported that math exams were not as stressful for two reasons, either because they were good in math or because they did not study and did not deem it important.



### Box 1. Experiences with math classes and exams

“Math is not very tiring for me. I try to do what the professor tells us to do but when it comes to exams, I am completely blocked. I cannot even explain the amount of stress I get. I feel like everything I have ever learned was for nothing.”

- Participant from the group with girls from the Albanian community

“I am always stressed before Math exams. It caused difficulties in learning for me. I am always scared that I will forget everything I have learned.”

- Participant from the group with girls from the Albanian community

“I think people are more focused on languages because they need them and use them. On the other hand, we do not use mathematics that is why we have problems with it”

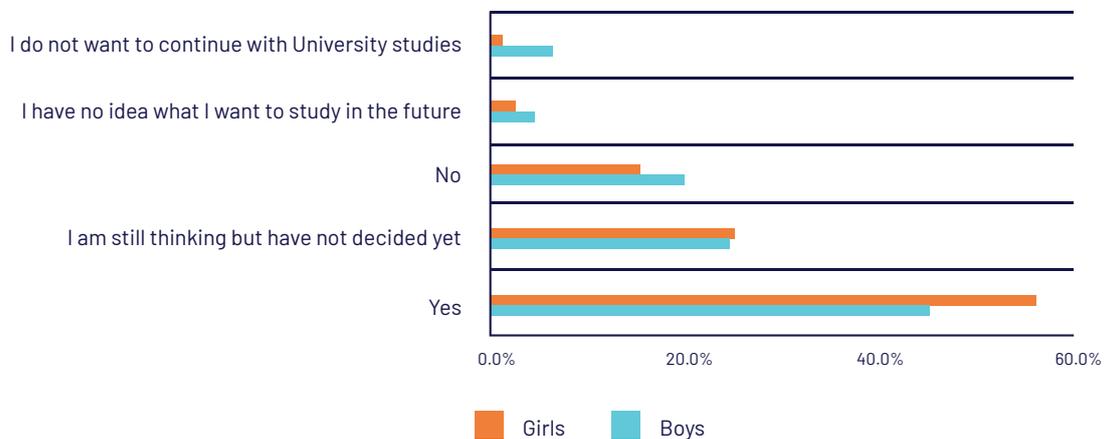
- Girl participant from the group with non-majority communities.



## 3.5 Are there gender differences in preferred fields of study?

Around half of the students reported to have decided what they want to study in University whereas the other half were either still thinking about it or had no idea about their future plans/studies. Statistically, girls reported to have decided more about what their future fields of studies when compared to boys.

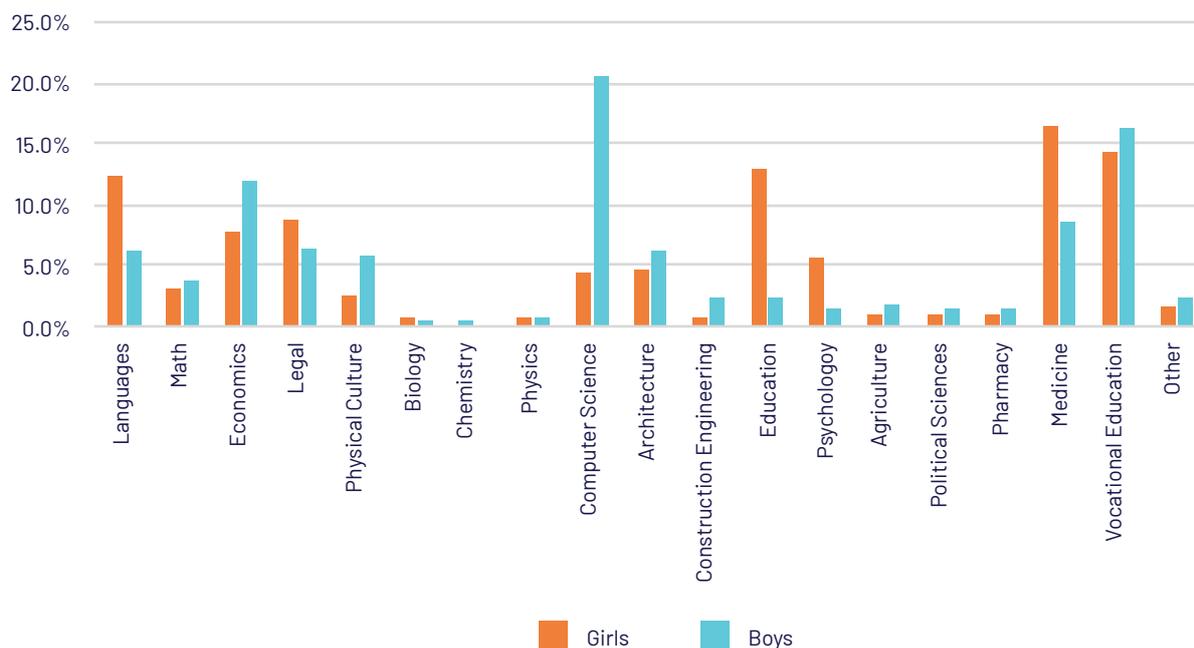
Figure 10. Students’ decisions about future studies, by gender (%)



Source: LEAP, July 2018

Among the different ethnic groups, the highest percentage of those who have decided about their field of study were Serb students (68.8%) followed by Albanian ones (51.3%). The lowest percentages were, again, among Roma, Ashkali and Egyptian communities.

**Figure 11. Educational choices by gender (%)**



**Source: LEAP, July 2018**

Note: Those who have chosen option “Other” wish to pursue a career in Army or Security, or have specified certain professions such as pilot, stomatology, production.

Students who had decided or were still thinking about their field of study, were subsequently asked to circle their chosen/preferred field of study from a non-exhaustive list as represented in Figure 11. Since a large share of students came from professional schools, not surprisingly vocational education was among the most preferred options (11.5%), followed by Medicine (10%), and Computer Science (8.7%).

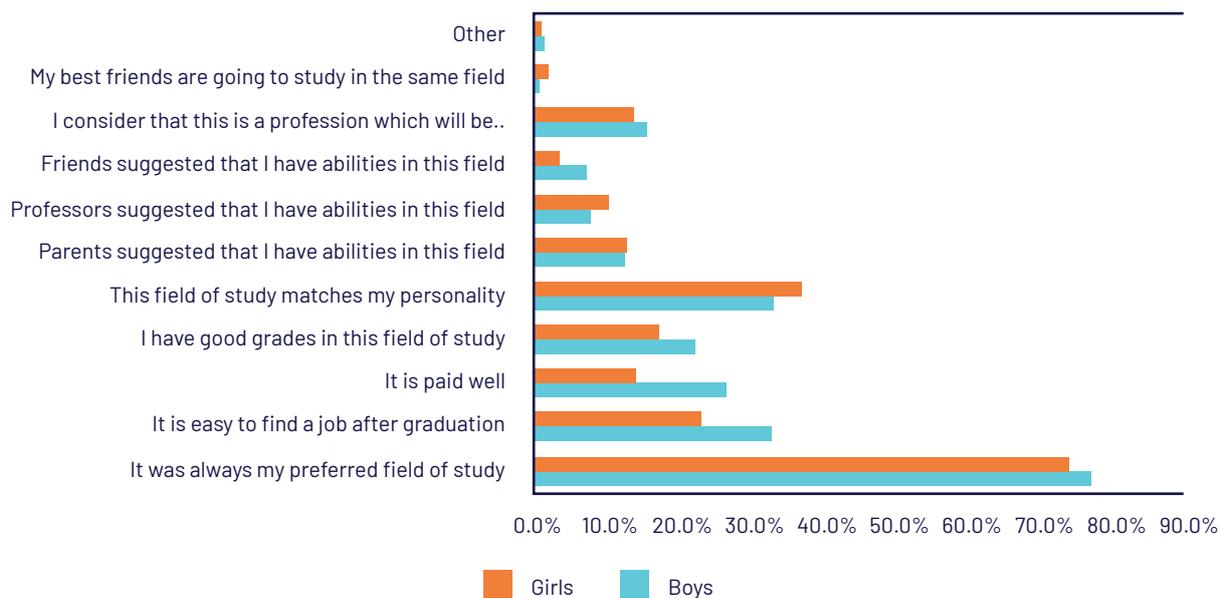
The survey results showed that in terms of gender differences, boys choose more majors that typically require more math skills and/or place them better in the labor market, such as Computer Science, Economics, and Construction Engineering; and/or match their “masculine traits” such as Physical Culture and Agriculture.

Girls on the other hand chose majors that involve less math and more verbal skills, such as Languages; and/or professions which match with their “caring nature”, such as Medicine, Education, and Psychology. This gender difference persist even when students are asked to state their second preferred major i.e., what would their second choice be if they would not get accepted in their most preferred major. Again, girls prefer more Education, Psychology, and Medicine, whereas boys prefer Computer Science and Agriculture.

Along ethnic lines, Medicine was the most preferred major among the majority of the ethnic groups (Albanian, Serbian, Turkish and Bosniac). For Albanian students, other most preferred fields of study were Vocational Education and Computer Science, whereas languages is highly preferred by Egyptians, Serbs, and Bosniacs.

The reasons as to why youth in Kosovo prefers certain fields of study are listed in Figure 12. The main factor, which drives educational choices of Kosovo youngsters is that the chosen field of study was always “their preferred one” (75%); followed by the “personality match” (35%) and the “possibility to find a job in the future” (27%). Boys were more focused on fields of study, which will place them better in the labor market: are paid well, it will make it easier for them to find a job, and is demanded in the future. Unlike boys, girls were more focused on fields of study that were in line with other people’s preferences (best friends’ choices) and that matched their personality traits.

**Figure 12. Reasons for choosing a major field of study by gender (%)**



**Source: LEAP, July 2018**

Note: the respondent could choose more than one option.

Statistical tests (ANOVA) show that grades can also be related to students’ educational choices. For example, girls who decide to study Medicine report on average significantly higher grades (GPA) in 5<sup>th</sup> and 10<sup>th</sup> grade compared to girls who choose some other field of study (5<sup>th</sup> grade:  $t = -3.5665$ ; 10<sup>th</sup> grade:  $t = -4.9132$ ). Girls with lower grades preferred majors such as Education, Psychology or Languages. As expected, girls who decide to study Computer Science report on average higher math grades compared to girls who choose some other field, and the difference is statistically significant (10<sup>th</sup> grade:  $t = -2.7801$ ); however, for the boys who decide to study Computer Science, the math grade difference is not statistically significant ( $t = -0.9628$ ).

### 3.6 Parental role in students' educational choices: is it gendered biased?

Parents' role seems to be pivotal for students' decisions about their future career. Students reported to consult their parents quite often when it comes to making their career choice decisions. On a scale from 1=never to 5=very often, the mean score of the total sample was 3.98. Gender-wise, girls were significantly more open to seek consultations with parents and accordingly declare more than boys that: "parents' suggestions about future studies match with their plans and dreams for the future".

Results from the focus group discussions confirmed that family in general, and parents in particular, played a major role in students' decisions. However, participants revealed different experiences in this aspect, as some had mere discussions and consultations with parents, whereas some others experienced direct interferences in their future plans. In general, girls reported that family's influence was decisive for their career choices and that in many cases this influence was gender biased (Box 2).

Besides parents' suggestions and interferences, parents' profession played a role, too. In each focus group discussion, there were participants who confirmed that their parents' occupations influenced their decision about future profession. More specifically, the majority of the participants from the focus group organized separately with girls revealed that the occupation of their parents influenced the choice of their future profession. For some of these girls their decision about the future career was influenced by their mother's profession (e.g., doctor, nurse, or tailor). The members from the focus group with other non-majority communities were less conclusive about the influence of parents' profession into their future choices.

While parents and family were important players in students' decision-making processes when choosing a profession, career-guiding centers on the other hand played a limited role in this respect. Overall, only 20.6% of the students confirmed to have received advice from these centers. The rest of the respondents (or about 79%) have not received any advice from these centers; or have never heard of them. For those who have received the advice, the advice seemed useful as respondents mean level of satisfaction was 3.85 on a scale from 1=not at all useful to 5=very much useful. In terms of ethnicity, while Serbs reported the highest received advice from these centers, the lowest advice received was reported among Albanian students. This finding suggests that although the role of the career guidance centers seems to be limited overall, it seems to be particularly useful for minority groups.



## Box 2. Family's influence

"Everyone was against it saying how real estate profession was not fit for me because you need to know tricks to play people and I'm not that type of person. I was told that I was very "soft" as a person and a profession like nursing would allow me to help people."

- Participant from the group with girls from the Albanian community

"I wanted to become a cook and open my own restaurant in the future. But, no one in my family supported my decision. I wanted to go to agriculture school because it offered the cook major but, my father did not let me because he didn't want me to lose my potential in other subjects so I was encouraged to study something else."

- Participant from the group with girls from the Albanian community

"My parents were the main reason behind why I studied Medicine in high school. They wanted to see me do well in life, in social position and financial rewards."

- Girl participant from the mixed gender group of Albanian community

"I always liked to study Medicine, but my parents did not support me so much because they thought I would not have enough time to do things that concern me at a personal level"

- Girl participant from the mixed gender group of Albanian community

"Business Management. I think that I was always been business-oriented. I never liked things that were highly limiting. I like to be involved in many things at once"

- Boy participant from the mixed gender group of Albanian community

"I am still not in university, but I will be studying Computer Sciences. I decided to study this field due to the evolving nature of technology and my love for it."

- Boy participant from the mixed gender group of Albanian community

"There are two types of parents: those who support their children's decisions and those who force their preferences upon their children"

- Boy participant from the group with other non-majority communities

"...not many of us can communicate with our parents regarding university, and many of us have stagnated educationally."

- Boy participant from group with other non-majority communities



### 3.7 Are there gender differences in academic performance and perceived self-ability?

Survey results showed that about 60 percent of Kosovo youngsters agree that more women work as a nurse and more men work as IT specialists. A more interesting perspective was on the set of normative questions, “who should work” in certain professions. In this section, we identified gender differences on how youth in Kosovo perceives the role of women and men in certain professions. Boys reveal more stereotypical attitudes as they tend to agree less than girls that “men and women [should work] equally” as an IT specialist, electrical engineer and architect, respectively. In contrast, they perceive these professions more as male professions and agree more than girls with the notion that “more men” should work in these three fields. Similarly, when it comes to women dominated professions such as a nurse, a school teacher and cashier, boys again agree more than girls that “more women” should work in these professions.

Our qualitative inquiry examined why the IT sector is considered less suitable for girls and what can be done to change it. For some participants, the main reason for this gap was due to gender roles in family as men have traditionally been the breadwinners and are expected to choose professions that provide them with greater financial benefits, whereas “women tend to look for flexible professions that allow them to have personal life and create a family as well”. Other factors were related to the nature of the girls with some participants considering that boys are more exposed to technology through game gadgets very early on in their childhood, whereas girls play with dolls and learn how to take care of them. Some other participants also mentioned that women lack confidence to enter this sector (Box 3).



### Box 3. Gender and Information Technology (IT) Sector

"It is because we have not seen any women working in the IT sector here in Kosovo, that is why we are not used to this fact"

- Boy participant from group with other non-majority communities

"Up until recently, men were expected to be the providers for the family. The man was the one that took care of the chores and duties outside the house. Consequently, men are more driven of achieving success because they have to take care of the whole family."

- Boy participant from the mixed gender group of Albanian community

"This is more of a character issue. Not a lot of women care about the hardware of the computer. As such, not a lot of women are interested. Men are more exposed to technology because of games."

- Participant from the group with girls of Albanian community

"We have to show statistics to the people and show them that the IT sector is constantly looking for employees, regardless of whether they are men or women."

- Boy participant from the group with other non-majority communities

"I know a woman who is the leader of an IT company. She is the strongest woman I know and a role model to me. In order to empower women to study more in this field, successful women in this industry should share their experiences and encourage women to study this field."

- Girl participant from the mixed gender group of Albanian community

"Maybe with a relevant story...Something interesting"

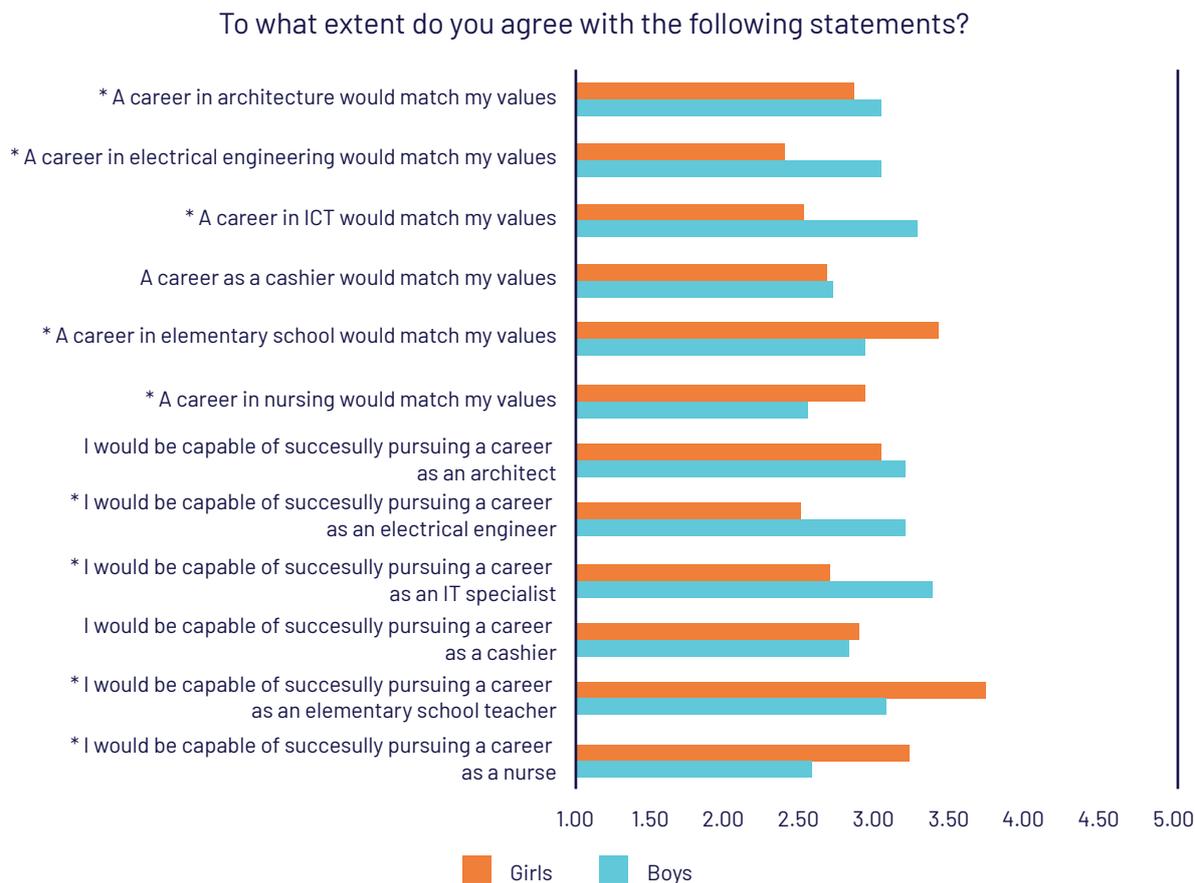
- Girl participant from the group of Serbian community



Comparing students' perceptions about the most gender-congruent professions with their perceptions of the actual gender distribution in different occupations reveals that the results are highly similar. That is, for the majority of the participants and regardless of gender, their perceptions about normative gender roles and occupations are shaped by how they perceive these norms applied in the existing segregated labor market, which can further influence educational choices of youth in Kosovo. This is clearly portrayed in Figure 13: more boys agreed that a career in "architecture" "electrical engineering" and "ICT" would match their values and that they would be capable in pursuing a career in these three areas. On the other hand, more girls agreed that a career in "elementary school teaching" or "nursing" would match their values and that they would be capable of successfully pursuing a career in these professions. In terms of highest and lowest mean values on respondents' self-perceptions about their capabilities in pursuing successfully a certain career path, boys reported the highest mean for pursuing a career as an IT specialist (mean=3.35) whereas girls' highest mean was for pursuing a career in elementary school teaching (mean= 3.68). These results were in line with respondents' self-perceptions about their "value matches" with certain professions. Girls reported the highest mean on the statement that "a career in elementary schooling matches [her] values" whereas boys reported the highest mean on the statement that "a career in ICT matches [his] values".

At the other end of the spectrum, girls reported to feel the least capable in pursuing successfully a career as an electrical engineer (mean=2.54) whereas boys reported to feel the least capable in pursuing successfully a career in “nursing” (mean=2.59). The t-tests showed that except for the profession “cashier” and “architect”, the gender mean differences for other four professions were significant (all  $ps < 0.01$ ).

**Figure 13. Perception about gender roles: STEM vs HEED**



**Source: LEAP, July 2018;** Scale: 1=totally disagree to 5=totally agree  
 Note: All statistically significant differences are marked by a star (\*)

In our qualitative analysis we elaborated further on gender differences with respect to occupational values, i.e., the extent to which financial gains; power; and the possibility to help others drive students educational choices. Box 4 highlights some feedback from this discussion, based on community/ethnicity and gender.

Qualitative results confirmed that when choosing a profession girls attached more importance to helping others than boys did. From the focus group organized with girls separately, only one of the participants expressed more preference for professions that would give her financial security. All other members from this group (i.e., girls) argued that **it is more important to choose profession through which they will be able to help others.** However, in a mixed gender group, girls believed that helping others and achieving social status do not have to be mutually exclusive. Boys on the other hand expressed that when choosing a profession it is more important for them to attain status in the society and/or gain financial security (see Box 4). In terms of ethnic differences, gaining power was more important for boys from Serbian community whereas financial security was more important for boys from Albanian community.



**Box 4. Gender and Occupational Values: financial security; power/status in society; helping others**

"I liked medicine a lot because I would be able to help people but because of my sensitive nature, I could not choose it. I value humanity before personal benefit."

- Participant from the focus group with girls of Albanian community

"I would like to help others because I would feel good but, it doesn't mean you can't generate income from those professions that help people."

- Participant from the focus group with girls of Albanian community

"I also value humanity more than income because you have to deal with people all the time and why not help them. "

- Participant from the focus group with girls of Albanian community

"I am very sensitive and I value humanity more than financial gains. You feel better when you perform humanitarian services."

- Participant from the focus group with girls of Albanian community

"I find it very difficult to believe that someone chooses a profession due to the sole reason of helping others."

- Boy participant from the mixed gender group of Albanian community

"To me as a graphic designer, financial gains are more important"

- Boy participant from the mixed gender group of Albanian community

"To me as a programmer, it is important first and foremost that I acquire financial gains through my profession."

- Boy participant from the mixed gender group of Albanian community

"I am willing to help others only if I can afford to do so. I want to take care of myself first and secure financial stability and wealth, and then give back if I am in a position to do so."

- Boy participant from the mixed gender group of Albanian community

"...there is certainly a reciprocal relationship between helping others and generating income"

- Girl participant from the mixed gender group of Albanian community

"I would choose a profession through which I could help others"

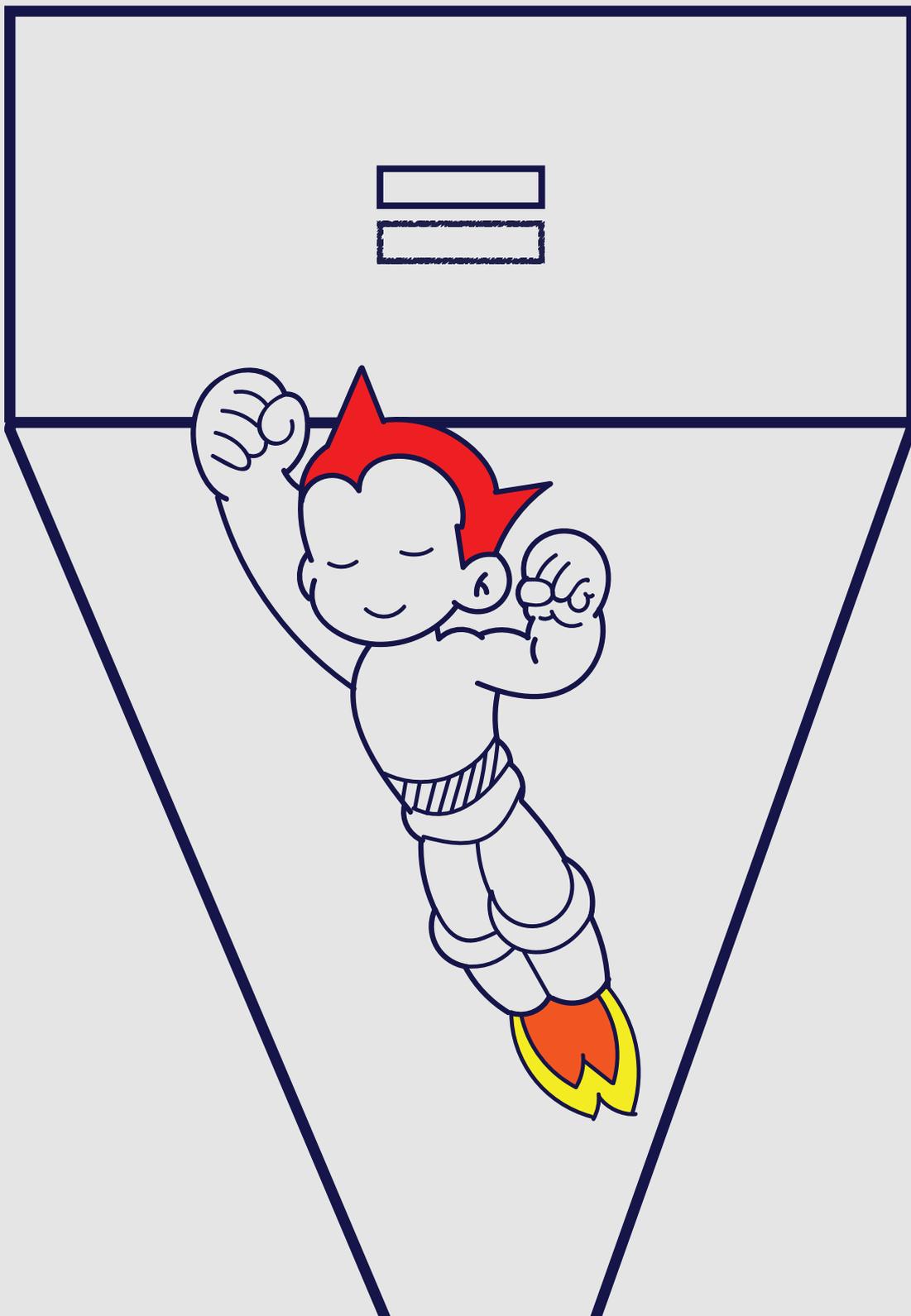
- Girl participant from the group with other non-majority communities

"I think both, but first to gain status and then to help others"

- Boy participant from the group with other non-majority communities



Educational choices are made based on **stereotypical beliefs** of what is gender-congruent with future professions: girls prefer professions such as Medicine, Education and Psychology, which require less math skills and reflect more **"helping-oriented"** values; whereas boys prefer professions like Computer Sciences, Physical Culture and Agriculture, which require more **math skills** and seem to better fit the perceived **masculine traits**.





## 4: Summary of Research Findings

This study explored the relationship between educational choices and gender stereotypes among youth in Kosovo. It specifically analyzed the factors that explain educational choices of Kosovar students in three aspects: students' school performance and academic self-concept; students' consultations with parents/family/career guiding centers; and students' perceptions about gender specific professions and gender roles in society at large.

The study included a nationwide survey (N=1,050) with boys and girls in upper secondary education (grades 10 and 11) and four focus groups consisting of students in high schools and freshmen university students in social sciences or natural sciences. Both survey and focus group analyses included students from majority and non-majority communities in Kosovo.

Taken together, the main research findings were as follow:

- **Girls report to have better grades than boys across all years of schooling.** In line with their overall academic performance, girls report to have significantly higher academic performance in math and even more so in languages compared to boys whose means on their self-reported academic performance are lower.

- **However, there is a discrepancy between girls' self-reported performance and their perceived academic self-ability.** On average, girls' self-perceived ability in math is lower than their self-reported grade throughout the upper secondary education. These findings replicate previous evidence from other countries where girls' self-reported ability in math is found to be lower than their actual performance in this subject (see Weinhardt, 2017). It suggests that girls are particularly prone to perceive their abilities in math as discrepantly lower than they actually are.

- **There are indications of a presence of "stereotype threat" among girls in general.** Compared to boys, girls reported to have better grades in math and yet they report experiencing more stress when taking a math exam, or are more concerned about their final grade in math. Our qualitative inquiry showed that girls were also more open to discuss these obstacles when they were in an all-girls' focus group, suggesting that when their gender identity is not an issue, they can talk about their concerns more openly compared to gender-mixed groups in which girls tend to minimize these effects. For most of the participants from other groups, math exams were not as stressful for two reasons, either because they are good in math or because they did not study and do not deem it to be an important subject.

- **Results also revealed significant differences in perceived self-ability between ethnic groups.** The highest perceived self-ability in math was reported among Turkish students and the lowest among Gorani, Roma, Egyptians and Ashkali communities. Likewise, while the total mean on self-reported ability in languages was higher for the whole sample (3.98), it was reported to be the lowest among the Ashkali community. This finding suggests that similar to girls as a stigmatized group that does not do well in math, members of ethnically stigmatized groups such as Roma, Ashkali and Egyptian communities in Kosovo are also more likely to experience “stereotype threat” in academic achievement (Steele and Aronson, 1995).

- **Girls and boys of upper secondary education in Kosovo reveal gender stereotypical preferences about school subjects and future professions.** The most preferred subjects by girls are Languages, Chemistry, Biology, and Psychology whereas the most preferred subjects for boys are Informatics, Physical Culture, and Geography.

- In the context of ethnic differences, and regardless of gender, qualitative findings show that **English language is among the most favorite subjects for Albanian and other non-majority communities, except for Serbs**, who favored Serbian and Russian languages. Although not specifically measured in this study, this particular finding can be explained in terms of the high ethnic identity threat that Serbs in Kosovo feel and so cherishing their language might be a way to deal with this threat and potential identity loss they might feel (see Maloku, Derks, Van Laar, & Ellemers, 2018, for details on identity in Kosovo).

- **More importantly, educational choices are made based on stereotypical beliefs of what is gender-congruent with future professions:** girls prefer professions such as Medicine, Education and Psychology, which require less math skills and reflect more “helping-oriented” values; whereas boys prefer professions like Computer Sciences, Physical Culture and Agriculture, which require more math skills and seem to better fit the perceived masculine traits.

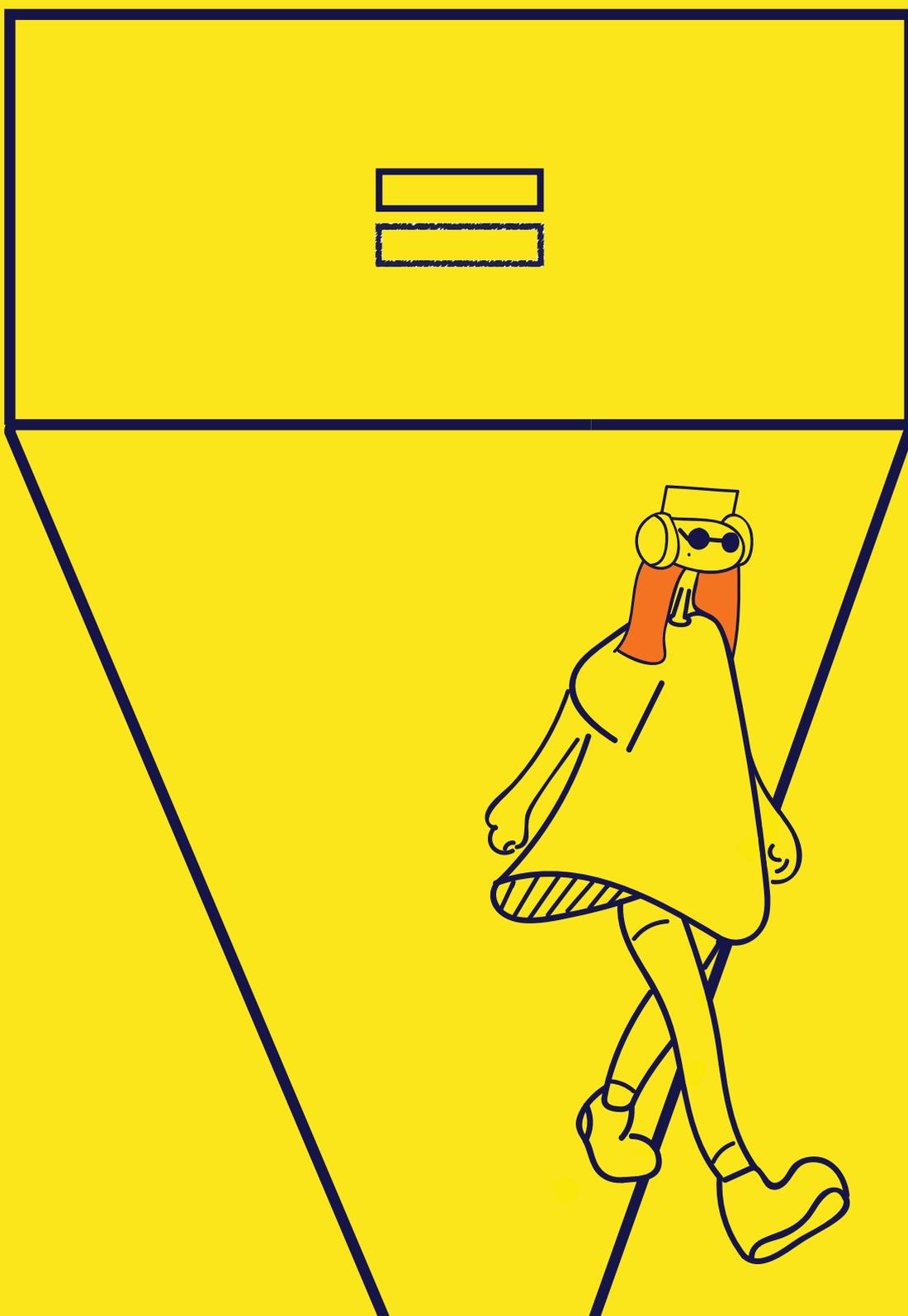
- Grades matter for students’ educational choices. **Girls who prefer to study Medicine reported significantly higher overall success in grades 5th and 10th** as compared to girls who choose other fields of study. As expected, **girls who prefer to study Computer Sciences reported significantly higher grades in math.** Unlike girls, the difference was not statistically significant for boys who preferred Computer Sciences versus those who preferred other fields of study.

- **Parents’ role in the students’ decision-making processes is crucial.** Combined quantitative and qualitative results suggest that families, in general, and parents in particular, play a pivotal role in the educational choices that Kosovar students make. In so doing, girls are significantly more open to seeking consultations with parents than boys are. At the same time, they are also particularly affected by acting upon their parental suggestions compared to boys. For girls, parental advice seems to be decisive in their future educational choices. **Parental input is also gender biased:** girls are often told to choose a profession that offers more employment security but that also provides flexible time for having a family and raising children. In contrast, boys are advised to choose their education and occupation based on future labor market opportunities. As can be expected and regardless of gender, **parents’ own professional background also influences the advice they give to their children.**

- **When choosing a profession, girls place more importance to professions that are based on “helping” or “people” values than boys do.** Girls prefer more the kinds of professions that enable them to “help others” and “care for the other”. The majority of boys on the other hand, preferred professions that will secure them status/power in the social context and financial independence.

- **Students’ perceptions about “who should work” in stereotypical professions/jobs in the labor market are reflective of the current gender representation of “who already works” in these types of professions/jobs.** Boys consider that STEM professions match their own values and they perceive themselves as capable of successfully pursuing a career in this area. In contrast, girls perceive themselves as more capable and best suited for professions in HEED areas. More specifically, boys perceive themselves to be best suited in working as “an IT specialist” whereas girls believe that they are best suited for “elementary school teaching”.

The findings from this study show that gender stereotypes influence educational choices of youth in Kosovo's high schools and that there is a clear gender difference between preferences for **STEM vs. non-STEM** fields of study. Indeed, educational choices reported by girls and boys confirm the actual gender differences in the labor market and leadership positions in the Kosovar society. Taken together, we find that educational choices made by girls and boys are **strongly shaped** by the social **norms and values**.





## 5: Conclusions & Recommendations

Overall, this study finds that young girls from a representative sample of Kosovo's high schools report higher academic performance compared to boys. However, they lack confidence about having strong abilities in STEM fields: they show discrepantly lower academic self-concept than their actual performance is, and they report experiencing more stress and anxiety during math exams. We argue that this stems from the prevalent negative stereotypes that "girls just don't do good in math". Being aware of such stereotypes has been shown to cause "stereotype threat" whereby members of stigmatized groups often perform worse because they are aware of the negative stereotypes that persist about their groups (e.g., women, members of minority groups, etc.). This negative effect is maintained further in the educational preferences and choices that girls make as they move further in higher education and the labor market. Unlike boys, high school girls in Kosovo show higher preference for school subjects that involve less math skills/background and also seek to pursue non-STEM fields of studies in their higher education plans. However, girls who prefer to study fields that are perceived as "difficult", such as Medicine or Computer Sciences, report statistically higher grades in their previous years of school. Girls also prefer more the types of professions that are based on "helping others" value system compared to boys who seek more professions that fit their "masculine traits". Girls are also more influenced and seem to act more upon the suggestions given by parents, siblings and friends, compared to boys.

The findings from this study show that gender stereotypes influence educational choices of youth in Kosovo's high schools and that there is a clear gender difference between preferences for STEM vs. non-STEM fields of study. Indeed, educational choices reported by girls and boys confirm the actual gender differences in the labor market and leadership positions in the Kosovar society. Taken together, we find that educational choices made by girls and boys are strongly shaped by the social norms and values.

Apart from effects of stereotypical beliefs based on gender, the results also point out another important finding about how particular ethnic groups are also stereotyped and/or self-stereotyped. These findings show that poor academic performance and low perceived self-ability is particularly pronounced among highly stigmatized ethnic groups like the Roma, Ashkali and Egyptian communities. Overall, these communities report to not only constitute the greatest share of students with the lowest performance in math and language subjects, but also report to have among the lowest perceived self-abilities in these particular subjects as well.

To support and increase girls' engagement in STEM education, the following recommendations are proposed to key educational stakeholders at central and local level:

**1. Provide targeted and user friendly information to high school girls about the importance of STEM education and STEM programs for the labor market opportunities and benefits.** This can be done by collecting and disseminating information through online platforms, newsletters, brochures, and billboards. Through these channels of information, Kosovo's youth can learn about the most in-demand professions; the importance of STEM education; existing accredited programs in STEM fields offered in private and public higher education institutions; application requirements; funding alternatives; and scholarship opportunities.

In addition, parents should also be targeted to raise their awareness about the role that they play in their daughters' educational choices and how this can be best used to reflect their daughters' skills and abilities not the stereotypical beliefs that are based on societal gender roles. For example, previous work shows that students, whose parents were informed about STEM education and its importance, were more likely to take more courses in STEM fields and pursue a career in STEM (Rozek, Svoboda, Harackiewicz, Hulleman, & Hyde, 2017).

**2. Provide mentorship programs with successful women role-models in STEM fields.** Another option through which young girls could be affected about the importance of STEM education is through mentorship programs – meetings, workshops and forums – with successful women in STEM fields in Kosovo and beyond. These events could be organized in high schools, whereby girls would have the opportunity to meet and learn about the successes and achievements of the women mentors. In addition, mentorship programs could also be delivered in the fashion of e-mentoring or online mentorship opportunities. Regardless of the chosen format, mentorship programs have been shown to influence positive changes that resulted in a stronger sense of self-concept, STEM oriented goal-setting, and a change in self-stereotypical assumptions that young girls face when they perceive themselves as ill-fitted for STEM education (Cheryan, Drury, & Vichayapai, 2013; Deaux & Lewis, 1984; Evans, Whigham, & Wang, 1995; Stout, Dasgupta, Hunsinger, & McManus, 2011). Moreover, those girls and women who choose to pursue a STEM oriented education or career have also emphasized the importance that successful role-models have played in their decision-making processes (Eccles, 1987). Well-designed mentorship programs are therefore essential not just in terms of increasing girls' participation in STEM education but also retaining them in such fields later on in their career pursuits.

**3. Forge on-going relationship building focused on resource and capacity building for girls in STEM.** A mentoring relationship between the student (mentee) and the mentor (women role-models in STEM) would provide guidance and support to young girls who would like to pursue careers in STEM education. To our knowledge, a mentoring program ("Mentoring our Future") has been put in place for students and graduates of the University of Prishtina. However, the focus of the program is to support student growth and career orientation in general and is not aimed at supporting girls in STEM education in particular. A specific mentoring program that targets girls' enrollment in STEM education was piloted by the LEAP Center in municipalities of Gjakovë and Kamenicë (funded by the Canadian Embassy). Future programs need to adapt and expand to other municipalities in Kosovo as well as open up for a more ethnically-rich program. For now, all of the mentors from this pilot STEM mentorship program come from the Albanian ethnic community.

In order to have the benefits of mentorship speak to other communities as well, the programs need to offer ethnically diverse backgrounds which would help young girls relate, and identify with, women role-models of their own ethnic group. Special focus should be given to the Roma, Ashkali and Egyptian communities who show the least achievement and the least belief that they can do well academically.

**4. Offer scholarship programs for girls in STEM and target all ethnic communities in Kosovo.** The scholarship programs can attract young women who have talent in mathematics and science related fields to continue their careers in these areas and become successful specialists/scientists in the future. These merit-based scholarships should be targeted at potential college students from all over Kosovo.

**5. Increase communication and collaboration between parents, educators/teachers and school administrators about girls' interest and performance in STEM fields.** These activities could be organized through existing Parent-Teacher School Councils or by establishing new bodies in school settings where they lack thereof. Through this collaboration, school educators and administrators could take a more active role in meeting with parents and informing them about the importance of STEM related activities in their schools. In parallel, parents awareness-raising about the benefits of STEM education as well as the concrete school activities that are aimed to foster those benefits could also influence them to serve as a support base for their daughter's potential interests and future engagement in STEM related activities, such as membership in STEM clubs, mathematics and science contests, etc., (see Wiest, 2014; on strategies for parents to support daughters in STEM).

**6. Develop a "Parent Guidebook for Career Planning".** Developing a parent guidebook, on how parents can help their children with their career choices, would ease the process of parents providing help and increasing the awareness and exploration sense among their children, and also encourage youngsters (especially girls) to diverse career pursuits. Such guide should be developed in collaboration with relevant responsible institutions, and cover a range of topics and tools to help parents in the process of guiding.

**7. Promote a pedagogical philosophy whereby school materials, textbooks, and classroom activities are designed and portrayed in gender-neutral terms.** As gender stereotypes set at very young age, it is crucial that children are **not** exposed to school activities and materials that are stereotypical in their portrayal of gender specific, and overall, a patriarchal society. For example, materials where women are the "soft" ones and men are the "powerful" ones, where images of scientists are always typical of "men" while those of caring professions are portrayed by "women", should be brought to the awareness of teachers, parents and the school broader communities. This issue of problematic stereotypical portrayal of men and women in school textbooks has already been raised by a number of gender experts in the country, however the content of textbooks and school mentality has not changed much in this regard. Therefore, it is of utmost importance that this issue be finally addressed by education authorities and stakeholders at the central and local level, including Ministry of Education, Science and Technology (MEST), Office of the Prime Minister for Gender Equality, Directorates of Education at the municipal level, school administrators and teachers.

**8. Promote and help foster equality at the family and communal level.** Given that stereotypical beliefs are shaped early on and the norms of the social context describe and prescribe how members of each gender should behave, it is important to tackle positive changes systemically. Parents should be made aware that the way they see stereotypical professions as pertaining to one or the other gender plays an essential role in how they influence their children to pursue educational and career goals and that this effect is particularly pronounced for girls. To the extent possible, awareness raising campaigns, TV shows and school-based activities should point out to parents the potential drawbacks that stereotypical beliefs have on their child's educational choice, attainment and financial independence in the future. In particular, parents should be taught how to increase self-confidence of their daughter/s and motivate them by sparking interest about STEM related subjects. The school community should also support this role by teaching children, especially girls, critical thinking skills; teaching them to adopt a growth mindset that allows their skills and knowledge to progress and move away from a fixed mindset where children are taught to think of their skills and abilities as being static and unchangeable.

**9. Hold high expectations for girls about their educational and career outcomes.** Contexts where parents, teachers, and the communities convey the expectation that girls are confident, that they are aspirational, do well in science projects and excel in their careers should be fostered and promoted throughout. More importantly, that maintaining these expectations is not in conflict with the girls' family or communal oriented goals. Believing that girls and boys do equally well in STEM fields can eventually lead towards decreasing the real gap that exists in this respect (Wiest, 2014).

Taken together, these recommendations provide a list of the main issues raised by the study reported here and suggest concrete steps that can be taken to address those issues. Recommendations 1 to 6 specifically address the gender gap in STEM from a remedial perspective and as such their implementation can be designed within a short to medium term period. Recommendations 7 to 9 address gender stereotypes as socially constructed and offer ways to mitigate their effects in a full-cycle systemic approach that helps shape attitude development among all children very early on, especially among girls. Given that these recommendations are cross-sectoral and multi-perspective based, their design and implementation should be planned over a long haul. More importantly, these interventions should be evidence-based in order to accurately present their effectiveness and potential drawbacks in the long-run.

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## ANNEX 1. SURVEY QUESTIONNAIRE



Hello,

We kindly invite you to be part of a study which analyzes the decision-making of Kosovo students in choosing their future professions. We would like to know how these decisions are made by students and the role played by family, school, teachers, and society in general. There are no right or wrong answers. We are interested in your sincere opinion. The surveying process will last for about 15 minutes.

Your personal data are confidential and your name will not be used in the survey. Data from this study will be used by the authors for scientific research purposes.

Should you have questions about this study or would like to receive more information about it, you can contact the authors of the study at: [center.leap@gmail.com](mailto:center.leap@gmail.com).

If you agree to participate, please say

1. YES – I want to take part in this study (Approval)

If you do NOT want to take part in this study, then say

2. NO – I do not want to take part in this study (Disapproval)

(Note: Approval or disapproval should be written down by the interviewer)



## PART 1 (A): TO BE FILLED OUT BY THE INTERVIEWER

No. of the questionnaire:

Name of the interviewer:

Date:

Place and Municipality:

A. General Information	
A1. Gender	1. M      2. F
A2. Age	Write the number: _____
A3. Birthplace (place where you were grown up)	Municipality _____ Please specify if 1. Rural 2. Urban
A4. Ethnicity	
A5. Which type of school do you go to, (note: choose one option only)	1. Gymnasium 1.1 General 1.2 Natural Sciences 1.3 Social Sciences 1.4 Math-Informatics 1.5 Languages 1.6 Other (specify) _____ 2. Professional Schools 2.1 Technical 2.2 Economy 2.3 Agriculture 2.4 Medicine 2.5 Music 2.6 Trade 2.7 Theology 2.8 Art 2.9 Center for Competence 2.10 Other (specify) _____
A6. Which year you are in:	1. 11th    2. 12th
A7. Overall performance (GPA) in <u>5th grade</u>	1. Insufficient 2. Satisfactory 3. Good 4. Very good 5. Excellent 6. I do not know / I do not remember
A8. Overall performance (GPA) in <u>9th grade</u>	1. Insufficient 2. Satisfactory 3. Good 4. Very good 5. Excellent 6. I do not know / I do not remember
A9. Overall performance (GPA) in <u>10th grade</u>	1. Insufficient 2. Satisfactory 3. Good 4. Very good 5. Excellent 6. I do not know / I do not remember
A10. Final grade in <u>math</u> in upper secondary education, until now (write down the number)	1. Grade 10: _____ 2. Grade 11: _____ 3. Grade 12: _____ 3.1 Not applicable (note: if the student is in grade 11; then grade 12 is not applicable)
A11. Final grade in native <u>language</u> in upper secondary education, until now (write down the number)	1. Grade 10: _____ 2. Grade 11: _____ 3. Grade 12: _____

## A12. INFORMATION ABOUT FAMILY

In the following section, we would like to collect information about your close family members: i.e., mother, father, as well as brothers/sisters at the age of 18 and above

(Note: do not include family members below 18 years)

(Note: In Column 1 are written down close family members: mother, father, brother1, brother 2, sister1, sister2 and so forth., depending on the number of family members. Then, Column 2 shall include their level of education; Column 3, their employment status, and in Column 4 are written down their respective professions. For those with undefined profession, you can write NA=not applicable)

Column 1	Column 2	Column 3	Column 4
	Level of education: 1. Completed primary education 2. Completed secondary education 3. Current student in College/University 4. Completed College/University 5. Current student at the Master's level 6. Completed Masters degree 7. Current student at the PhD level 8. Completed PhD	Employment status: 1. Employed in private sector 2. Employed in public sector 3. Self-employed (own-business) 4. Unemployed 5. Retired 6. Student	Profession: (for example: teacher, medical doctor, professor, architect, accountant etc.)
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**PART 2 (B): SCHOOL EXPERIENCE AND ACADEMIC SELF-PERCEPTION**

B1. Which are your 3 most favorite school subjects? (Note: circle the stated subject by the respondent; he/she can choose up to three school subjects):

1. Native language
2. Foreign languages
3. Math
4. Physics
5. Chemistry
6. Biology
7. Informatics
8. Music
9. Figurative Art
10. Physical Culture
11. History
12. Geography
13. Philosophy
14. Psychology
15. Sociology
16. Economy
17. Civic education
18. Other (specify) \_\_\_\_\_

B2. The subject/s you chose is/are preferred by you because (Note: Read the options and let the respondent choose more than one option):

1. I find the content of the subject interesting
2. I like the way how professor teaches it
3. It is an easy subject to comprehend
4. I like to challenge myself
5. I have always had abilities for such subjects
6. I do not have ability/talent for other subjects
7. Other (specify): \_\_\_\_\_

B3. In which of the following courses/subjects you have the best grades (Note: circle the subject stated by the respondent; he/she can choose more than one subject with exception of options 16=all of them and 17=none of them)

1. Native language
2. Foreign languages
3. Math
4. Physics
5. Chemistry
6. Biology
7. Informatics
8. Music
9. Figurative Art
10. Physical Culture
11. History
12. Geography
13. Philosophy
14. Psychology
15. Sociology
16. Economy
17. Civic education
18. All of them
19. None of them
20. Other (specify): \_\_\_\_\_

B4. How much do you think you have abilities (you are good) in math? (1=not at all 5=very much)

1.....2.....3.....4.....5

B5. How much do you think you have abilities (you are good) in languages? (1=not at all 5=very much)

1.....2.....3.....4.....5

B6. Do you agree with the following statements (1=totally disagree; 5=totally agree)

Statement:	1	2	3	4	5
1. I can easily learn math					
2. Math is a difficult subject					
3. I feel stressed in math classes					
4. I am concerned about my final grade in math					
5. I find math to be a very interesting subject					
6. I am very stressed during math exams					
7. I am self-confident to go to the white board and solve problems during math class					
8. I feel encouraged by the professor to speak up during math classes					

Adapted from OECD (2013).

B7. Do you agree with the following statements (1=totally disagree; 5=totally agree)

Statement:	1	2	3	4	5
1. Girls are usually competent in math					
2. Girls are usually competent in languages					
3. Girls are usually competent in sports					
4. Girls usually behave better in classrooms					
5. Girls are usually more noisy in classrooms					
6. Boys are usually competent in math					
7. Boys are usually competent in languages					
8. Boys are usually competent in sports					
9. Boys usually behave better in classrooms					
10. Boys are usually more noisy in classrooms					
11. I do not think that there are gender differences when it comes to specific subject performance in school					

**PART 3 (C): EDUCATIONAL CHOICES (ROLE OF FAMILY, SOCIETY AND CENTERS FOR CAREER GUIDANCE)**

C1. Have you decided yet about your major field of study in University?

1. Yes
2. I am still thinking but have not decided yet
3. No
4. I have no idea what I want to study in the future
5. I do not want to continue with Univeristy studies

FILTER QUESTION: If option 1) Yes; or option 2) I am still thinking but have not decided yet, are chosen; the following question should be asked:

FC1-A: Which major field of study you want to choose? (Note: Choose 1 option only)

1. Languages
2. Math
3. Economy
4. Law
5. Physical culture
6. Biology
7. Chemistry
8. Physics
9. Computer Sciences
10. Architecture
11. Construction Engineering
12. Education
13. Psychology
14. Agriculture
15. Political Sciences
16. Pharmacy
17. Medicine
18. Vocational, specify \_\_\_\_\_
19. Other (specify):\_\_\_\_\_

FILTER QUESTION: If option 4) I have no idea what I want to study in the future is chosen; the following question should be asked:

FC1-B: Why haven't you decided yet?

1. Because I do not have information about fields of study
2. Because my family suggests I should study one field and I prefer to study another field
3. Because my preferred field of study costs a lot
4. At this moment I do not like any of them
5. Since my close friends have not decided yet
6. Because the field I like is not paid well (clarification: salary is not good)
7. Other (specify): \_\_\_\_\_

C4. Why do you prefer this major field of study? (Note: Respondent may choose more than 1 one option)

1. It was always my preferred field of study
2. It is easy to find a job after graduation
3. It is paid well
4. I have good grades in this field of study
5. This field of study matches my personality
6. Parents suggested that this is the right profession for me
7. Professors suggested that I have abilities in this field
8. Friends suggested that I have abilities in this field
9. I consider that this is a profession which will be demanded in the future
10. My best friends are going to study in the same field with me
11. Other (specify): \_\_\_\_\_

C5. If you do not get accepted into this Faculty/major field of study, what would be a second choice (Note: Choose 1 option only)

1. Languages
2. Math
3. Economy
4. Law
5. Physical culture
6. Biology
7. Chemistry
8. Physics
9. Computer Sciences
10. Architecture
11. Construction Engineering
12. Education
13. Psychology
14. Agriculture
15. Political Sciences
16. Pharmacy
17. Medicine
18. Vocational, specify \_\_\_\_\_
19. Other (specify): \_\_\_\_\_

C6. How often have you talked to your parents about your major field of study/future profession? (1=never; 5 = very often; 6=I do not know/No answer)

1.....2.....3.....4.....5; 6

C7. Do your parents' suggestions match with your plans and dreams for the future?

1. Yes
2. No
3. To some extent
4. I do not know/No answer

FILTER QUESTION: If option 2) No, or option 3) To some extent, are chosen; the following question should be asked:

FC7. What makes your plans for future profession differ from your parents' suggestions? (Note: Respondent may choose more than 1 one options):

1. They suggested I should choose a major field, which I do not like
2. They suggested I should choose a major field, in a school that does not cost that much (cheaper)
3. They suggested I should choose a major field which is considered to be easy
4. They suggested I should choose a major field which is considered to be difficult
5. They suggested I should choose a major field which will make it easier for me to find a job
6. They suggested I should choose a major which matches my personality since I am a gentle and caring person
7. They suggested I should choose a major which matches my personality since I am a very ambitious person
8. They suggested I should choose an elite profession (to become someone in society)
9. Other (specify): \_\_\_\_\_

C8. When deciding about your major field of study/future profession, did you have a chance to receive advice from career guiding enters?

1. Yes
- a) No
- b) Never heard of them

FILTER QUESTION: If option 1) Yes is chosen; the following question should be asked:

FC8. Was this advice useful for making your career decision? (1=not at all; 5=very much)

1.....2.....3.....4.....5

**PART 4 (D): GENDER STEREOTYPES – SELF-PERCEPTIONS AND PERCEPTIONS ABOUT GENDER SPECIFIC PROFESSIONS**

In the end, we have several questions on how do you perceive yourself and others in certain aspects.

D1. Do you agree with the following statements (1=totally disagree; 5=totally agree)  
 (Note for the authors: Personal beliefs- communal beliefs, power, achievements; HEED vs. STEM adapted from UCOM, 2018)

Statement:	1	2	3	4	5
1. Helping others is important					
2. Caring for others is important					
3. Attending to others is important					
4. Having power is important					
5. Having status is important					
6. Demonstrating superiority is important					
7. Being accomplished is important					
8. Being competent is important					
9. Being succesful is important					

D2. If you imagine people working in the professions listed below, do you think that there are more men, more women or that men and women work equally in these professions?  
 (Note: read all the categories to the respondent)  
 (Note for the authors: Own perceptions about gender-specific subjects/professions; HEED vs. STEM adapted from UCOM, 2018)

Statement:	1	2	3	4	5
	only men	more men	men and women equally	more women	only women
1. In Kosovo, who works as a nurse?					
2. In Kosovo, who works as an elementary school teacher?					
3. In Kosovo, who works as a cashier?					
4. In Kosovo, who works as an IT specialist (ICT sector)?					
5. In Kosovo, who works as a electrical engineer?					
6. In Kosovo, who works as an architect?					

D3. Who do you think should work in the following professions?

(Note for the authors: Own injunctive norms {what ought to be} for HEED and STEEM fields, adapted from UCOM, 2018)

Statement:	1 only men	2 more men	3 men and women equally	4 more women	5 only women
1. Who do you think should work as a nurse ?					
2. Who do you think should work as an elementary school teacher ?					
3. Who do you think should work as a cashier?					
4. Who do you think should work as an IT specialist (ICT sector)?					
5. Who do you think should work as an electrical engineer ?					
6. Who do you think should work as an architect ?					

D4. Do you agree with the following statements (1=totally disagree; 5=totally agree)

(Note for the authors: Personal evaluations - self-efficacy and value fit; 3 questions from each HEED vs. STEM adapted from UCOM, 2018)

Statement:	1	2	3	4	5
1. I would be capable of successfully pursuing a career as a nurse					
2. I would be capable of successfully pursuing a career as an elementary school teacher					
3. I would be capable of successfully pursuing a career as a cashier					
4. I would be capable of successfully pursuing a career as an IT specialist (in the ICT sector)					
5. I would be capable of successfully pursuing a career as an electrical engineer					
6. I would be capable of successfully pursuing a career as an architect					
7. A career in nursing would match my values (clarification: values = beliefs, principles)					
8. A career in elementary school teaching would match my values					
9. A career as a cashier would match my values					
10. A career in ICT would match my values					
11. A career in electrical engineering would match my values					
12. A career in architecture would match my values					

D5. Do you agree with the following statements (1=totally disagree; 5=totally agree)  
(Note for the authors: Traditional gender roles; adopted from UCOM, 2018)

Statement:	1	2	3	4	5
1. In groups that have both male and female members, it is more appropriate that leadership positions be held by males					
2. Men make better leaders					
3. A woman's place is in the home					

**DEBRIEFING:**

That was it! Thank you for your participation and for your answers. We would like to remind you that if you have questions about this study or would like to receive more information about it, you can contact the authors of the study at: [center.leap@gmail.com](mailto:center.leap@gmail.com)

## ANNEX 2: GUIDELINE FOR FOCUS GROUPS

### 1. Introduction

Welcome! We would first like to thank you all for your willingness to participate in this discussion. We would like to discuss about your decision-making process when choosing a career for your future. It is very important to us to have you here today and hear your opinions on the subject. We want to understand how you make these decisions and how they're generally affected by family, school, teachers, and society. In the first part of the discussion, we would like to talk about your favorite subjects at school and the reasons behind your preferences. In the second part, we would like to discuss the factors that influenced your current field of study, and your future preferred field of study (for the ones that are still in high school). In the very end, we would like to focus more on the types of professions and your perceptions about them from the gender perspective.

Together, we will discuss for about an hour and a half. Before we begin, we would like to familiarize you with the Basic Rules of the Focus Group, which do not necessarily need to be strictly respected, since it more important to us that you understand that you are the leaders of today's discussion.

The Basic Rules of the Focus Group

We want to hear from each one of you. Do not expect us to personally ask you to speak.

Do not feel like you need to raise your hand. Please, feel free to express your opinion on each question. There is no right or wrong answer.

Respect everybody's opinions and do not interrupt each-other while talking.

Please, speak one person at a time and raise your voice when you speak so that every one can hear you.

If we notice that someone has not talked yet, it is likely that we personally ask them to share their opinion.

In order for us to clearly understand your opinions and to be able to write the report after the meeting, we will have to record the discussion. However, we assure you that your opinions will be kept entirely anonymous and will be used ONLY for study purposes.

Please, turn off your mobile phones and do not leave until the meeting is over.

If we are all ready, then I would like to hear a short introduction from each one of you, by telling us your name/school grade(year)/field of study and then we will continue with other questions.

### 2. Discussion

Introduction question:

1. Can you tell us which two subjects do/did you consider to be your favorites in school?

Probe questions:

- What are the reasons for these two subjects being your favorites? (e.g. Content, Difficulty Level, Usefulness for future studies/profession, etc.?)

Discussion question:

2. If we specifically refer to Math class, how would you rate your skills in this subject?

Probe questions:

- What is this rating based on?
- Can you tell us how you felt/feel during Math class?
- How about during Math exams?
- How important is/was your final Math grade to you?

3. What about language classes. How would you rate your overall skills in these subjects?

Probe questions:

- What is this rating based on?
- Can you tell us how you felt/feel during language classes?
- How about during language exams?
- How important is/was your final grade to you in language classes?

4. If someone were to tell you that girls are better at Social Sciences compared to boys (e.g.), while boys are better at natural sciences (e.g.), what would you tell them? Please justify your opinion.

- In your opinion, what do you think about the academic performance of girls and boys in social and natural sciences?

5. What is your current field of study (for those in university) / your future chosen field of study (for those in high school)?

(Note: High school students that haven't decided their study fields yet should pick a field of study that they think they might choose in the future)

6. Can you please tell us which factors have influenced your choice about the field of studies?

Probe questions:

- During this process, did you consult anyone /get advice?

The moderator: mention the following groups to start the discussion

- a) Close family/Relatives
- b) Friends
- c) School/Academic staff
- d) Career Counseling Centers (how informed are they and how much do they use them?)

7. How much do you think that your chosen field of study meets the expectations of family members, friends or others?

Probe questions:

- a) How often have you had the chance to talk to your parents about your future field of study / profession?
- b) How helpful were those conversations with them?
- c) Do your parents' suggestions appeal to your future plans and dreams?
- d) What is the most common advice you have received from them?
- e) How much were your parents leaning towards a specific field of study?
- f) What were their reasons for the specific field of study/profession?

8. How compatible do you think different classes/professions are with your personal nature and future ambitions? Please justify your opinion.

Probe questions:

- In this case, what would be the main reasons behind your choice?

9. Now, in the cards you will be given, please write your parents' academic achievements (mother's and father's), and also your field of study (high school students should write the field which they wish to study)?

Probe questions:

- a) Do you think that your parents' occupation influences your future choice of studies/profession? If yes, how do you think this happens?

10. In which profession would you like to work in the future?

11. In the Kosovar society, which professions do you think are more suitable for a girl, and which professions do you consider to be more suitable for a boy? Please justify your opinion.

(The moderator should consider the focus group attendants' opinions regarding the following professions)

- Nurse
- Primary school teacher
- Secretary
- Treasurer
- Informative Technology Specialist
- Electrical Engineer
- Architect
- Doctor
- Dentist
- Kindergarten teacher

12. Despite your opinions about the suitable professions based on gender, which professions do you think are currently dominated by girls and vice versa? (repeat list of professions)

Probe questions:

- Why do you think this happens?

13. When you think about your future profession, would it be more important to you to choose a profession through which you could help others, or a profession that would grant you status/power in society? Please justify your opinion.

14. To what extent is your chosen profession influenced by future financial opportunities?

Probe question:

- What influence do you think you will have in the society through your profession?

15. Generally, what gender do you think is more suitable for leadership and management positions, men or women? Please justify your opinion.

Probe question:

- According to you, should there be more women or men in leadership positions?

Please justify your opinion.

- What can we do to accomplish this?

16. The Information and Technology sector is one of the sectors that offer many job opportunities and highest financial returns. However, based on statistical data, the number of men studying and working in this sector is substantially higher than the number of women.

Probe question:

- Why do you think this gender gap exists?

- What could be possibly causing girls to have less preferences towards this field and choosing a profession in Information and Technology?

- In your opinion, how can this change?



