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Educational Choice Regarding Technical Education: Research with Case Study

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ABSTRACT
In first part, the models, theories, mechanisms and presumptions, as well as the ideas of educational choice' discourse have been scrutinized. In the second part, the survey on educational choice at Vilnius Gediminas Technical University, Lithuania has been presented. The methodology used in this research is a survey of respondents and survey interpretation. The goal of questionnaire is to identify the main trends in the choice of studies at a technical university. An additional goal is to identify which educational choice theory reflects in the best way students' real decisions when choosing a specific study program. The survey shows that the following study programmes are enough feminine: "Environmental Protection Engineering", "Bioengineering" and "Biomechanics". Nearly 80 per cent of students in those programs are females. "Electronics Engineering", "Information Systems Engineering" and "Transport Engineering" tends to be fully masculine (90-100 per cent of students are males). A technical university deals with such masculine subjects as technology, engineering, and mathematics usually have been mostly chosen by the mails. Choosing a study programme, the decision depends on the social class of a young man (woman). We can speak also about such factors of educational choice as the social, the cultural, and the creative capitals.
Keywords: technical education, educational choice, technical university, rational decision, study programme

INTRODUCTION

The educational choice presupposes that it is a rational action. As a result, the scholars (Gabay-Egozi et al. 2010; Boudon 1974; Breen and Goldthorpe 1997; Glaesser, Cooper 2014) appeal to Rational Action Theory. In general, an educational choice presupposes some factors that influence one or another decision. In the case of a technical university, we face the so-called masculine subjects (technology, engineering, and mathematics) that have been mostly chosen by the mails. Here, the causality between gender gap and the educational choice is not clear enough. Other problem is how to correlate and explain the social class belonging and an

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State of the literature

- A technical university deals with such masculine subjects as technology, engineering, and mathematics usually have been mostly chosen by the mails. Women chose mainly degrees of Humanities, Experimental Sciences, Social Sciences and Law and Health Science (Guzman and Martinez, 2012).
- Choosing a study programme, the decision depends on the social class of a young man (woman) (Tunc, 2011).
- The decision could be emotional. All students want to do something interesting and fulfilling using their talents and abilities (Cerinsek et al. 2013).
- Personal preferences, career development, independence and professional stability were the most significant factors that students had taken into account when considering about their educational choices (Christopoulou and Kounenou 2011).

Contribution of this paper to the literature

- The survey at Vilnius Gediminas Technical University (Lithuania) shows that there are engineering study programmes which attract specifically mails or femails."Environmental Protection Engineering", "Bioengineering" and "Biomechanics" are enough feminine. Nearly 80 per cent of students in those programs are females. "Electronics Engineering", "Information Systems Engineering" and "Transport Engineering" tends to be fully masculine (90-100 per cent of students are males).
- About 70 per cent of students from all study programs wanted to study in capital city. This shows that students choose not only a particular study program but also a place of study. It is much easier to find a job and make a career in the capital city.
- Approximately 60 per cent of students wish to do an exciting and challenging job when the studies are completed. To earn a competitive salary is less important.

educational choice. Since the scholars speak about the social (Bourdieu 1977, 1986), the cultural (Bourdieu and Passeron 1977, 1979), and the creative (Florida 2002) capitals, we can analyse these factors in the educational choice, too. Additionally, rational choice in education leads to the most general question of what is rationality. It is not enough to treat it as a positivistic maximisation principle (Elliott 2006; Sen 2002). On the one hand, our decision is often emotional or even not rational. On the other hand, our choice depends on our social contexts. As result, we can speak not only about the limits of rationality but also about ecologic rationality (Wilkins 2011) in the case of educational choice. Last but not least, the educational choice has been influenced by such factors as political factor (Pless 2014) and social prestige (Oosterbeek, Webbink 1999). However, the educational choice including one in a technical university is first of all an individual decision inseparable from the existential aspirations. That is why the sources by analysing the existential choice are also existential philosophy (Heidegger 1996) and existential pedagogy (Ozmon, Craver 2012). On this base, the scholars speak about life as a reflective project (Pless 2014; Giddens 1991) and about "doing yourself" biography (Pless 2014; Beck and Beck-Gernsheim 2002).

Table 1. Presumptions, models, theories and mechanisms used in educational choice's discourse

Author and reference	Models, theories, mechanisms, presumptions
Gabay-Egozy et al. 2015	STEM-fields as masculine territory; RCM (Rational Choice Model); Classification of study fields
Gabay-Egozi et al. 2010	RCT (Rational Choice Theory); RRA (Relative Risk Aversion) mechanism
Gabay-Egozi et al. 2010; Breen and Goldthorpe 1997	BGM (Breen and Goldthorpe's model)
Haller 2001	RCT
Haller 2001; Becker 2000	Structural (institutional) factor (variable) of Becker (SF)
Jaeger M. M., Holm A. 2012	RRA
Pless 2014	The class' factor (CF) of education; political factor (PF)
Pless 2014; Giddens 1991	Life as a reflective project
Pless 2014; Beck and Beck-Gernsheim 2002	'Do-it-yourself' biography
Stocké et al. 2011; Bourdieu 1986	SC (social capital); CC (cultural capital)
Tunç 2011	RCT; Social class and educational choice
Elliott 2006; Sen 2002	Presumption of 'objective knowledge' Positivistic maximisation principle
Glaesser, Cooper 2014; Boudon 1974, Breen and Goldthorpe 1997	RAT (Rational Action Theory)
Glaesser, Cooper 2014; Bourdieu 1977, 1986; Bourdieu and Passeron 1977, 1979	Habitus Theory (HT)
Hatcher 1998	Class differences (CD) in education; Institutional factor (IF); CC; CD and RC; RAT
Oosterbeek, Webbink 1999; Bourdieu 1988	Social prestige effect
Rochat, Demeulemeester 2001	Age factor by choosing Engineering
Wilkins 2011	Limits of rationality; Ecological rationality
Caves 2002	The principle "nobody knows"
Baltrėnas et al. 2015; Pruskus 2015	The concept of creative society

In first part of article, the models, theories, mechanisms and presumptions, as well as the ideas of educational choice' discourse have been scrutinized.

In the second part of article, the survey on educational choice at Vilnius Gediminas Technical University, Lithuania has been presented. It consists of: methodology used, sample of questionnaire, survey of students who admitted to study program of technological sciences/engineering field with comparative table, and conclusions regarding students' choice.

MODELS AND THEORIES USED IN DISCOURSE OF EDUCATIONAL CHOICE

Educational choice questions explore many scientists in over the world. Research in this area are carried out and publications are published for many years already.

Table 1 shows what presumptions, models, theories and mechanisms have been used in the discourse of educational choice. First of all, educational choice presupposes that it is a rational action. In other words, the young men are the conscious decision makers whose choices are influenced by a cost-benefit calculus (Gabay-Egozi et al. 2010). As a result, the scholars (Boudon 1974; Breen and Goldthorpe 1997; Glaesser, Cooper 2014) develop Rational Action Theory (RAT) and its version Rational Choice Theory (RCT) or Rational Choice Model (RCM). However, the questions we face here are as follows: what is rationality and what is women's rational choice? Because of their dual social role, the women's rationality is "different". The women pay "special attention to career 'utilities' that will elevate their performance in the labour market as well as at home" (Gabay-Egozy et al. 2015: 286). It is obvious by choosing the technical study programmes at the technical universities. The subjects and study programmes at technical universities could be called science, technology, engineering, and mathematics (STEM) set. As a rule, it is treated as a masculine territory around the world. STEM is a hard nut to crack for theoreticians of equal genders and feminists (Irigaray 1977; Butler 1990) who argue that the gender inequalities follow from cultural environment and educational roles instead of nature. However, some scholars refer to the different brain structure, i.e. to the difference of men's and women's nature that determines, in turn, educational choice. According to the „hardness" (as a result, to masculinity) the educational field could be classified into hard-core math-related STEM-subjects and study programmes (physics and computer sciences), into "light" STEM non-math-related subjects and study programmes (biology and chemistry), and non-STEM subjects and study programmes, i.e. humanities and social sciences (Gabay-Egozy et al. 2015). So, the causality between gender gap and different educational choice is not clear – does certain gender determine educational choice or vice versa certain educational choice pushes to certain sex-role. STEM field and educational choice concerning it highlights since D. Hume's time old-fashioned discourse of causality in feminist reasoning.

Other problem is how to correlate and explain the social class belonging and an educational choice. The dominant attitude is as follows: children try to reach at least their parents' education and finally work and status position. This class factor (CF) appeals to the Bourdieu table of prestigious if not to Marx' class grouping and clashes. Although some scholars speak about disappearance of class differences at least in Western societies, there is no reason to speak about homogeneous society without any classes. Here, one of class attributes is namely education. As a result, education (including technical) is both the factor of abolition of the gap between the classes[1] and the factor of class differences. Additionally,

[1] Some scholars (Gabay-Egozi et al. 2010; Hatcher 1998) pay attention to the educational challenge for the children from less prestigious classes and vice versa to the reluctance of the children from prestigious classes to reach university education.

education signifies the transformations in social structure. For example, education (once again, including technical) contributes to such a new social formation as creative class (Florida 2002)[2].

CF in educational choice is inseparable from Bourdieu's (Bourdieu 1977, 1986; Bourdieu and Passeron 1977, 1979) habitus theory, as well as cultural capital (CC) and social capital (SC) theories. The habitus theory refers to "feel for the game" instead of mechanical calculus of decisions' future outcomes. On the one hand, both CC and SC function analogically to financial capital being in a system of exchange. On the other hand, both of them are different from the financial capital by ignoring financial or even material plane including correspondent calculus. The SC refers to the social relations that help to survive in certain social environment and to get certain educational achievements. However, the SC also blocks thinking and doing beyond social system including educational one. That is why some scholars (Florida 2002) speak about creative capital (CrC) that accumulates not as much knowledge obtained in educational system as susceptibility to novelty that inseparable from non-traditional thinking. In some cases, the educational choice including the choice to study in a technical university expresses such non-traditional thinking if other decision results from certain CC and SC. We face here a paradox as follows: non-rational decision can push to most rational study.

Finally, rational choice theory leads to the most general question of what is rationality. If we understand rationality in tautological way as ability for cost-benefit calculus, mentioned educational decisions could illustrate that it is not the case. Such concept of rationality is incompatible also with the theories of CC, SC and CrC that appeal to the field beyond material benefit. Here, we have a case when practical issues (educational choice) falsify the theoretical concept (rational choice). The question of rationality is inseparable from other fundamental question of what is objective knowledge and positivistic maximisation principle towards it (Elliott 2006; Sen 2002). Having in mind CC and SC, there is no such thing as "objective knowledge" since every knowledge (more or less valuable) stems from different social environment and could be used only in certain social context. If the values of knowledge are variable in different social contexts, it is impossible to speak also about maximisation principle of the knowledge in educational choice. By the way, the institutional factor (Hatcher 1998) is a kind of social variables. However, the "objective knowledge" and maximisation principle towards it is impossible also for other reasons. The principle of "nobody knows"[3] follows from the concept of creative society. It means that most valuable knowledge is not the one that could be educated and measured but the one that emerges in a new way as a new result. A kind of

[2] Creative class could be treated as a factor of a new social formation called creative society. First, it includes not only artists in narrow sense but also the engineers, businessmen, and financiers (Florida 2002). Second, the representatives of all classes could be creative. Beside this, we can speak about creative education (Mitkus 2013; Juzefovič 2015) that covers all subjects including technical ones.

[3] Caves (2002) defines the principle "nobody knows" in two ways: 1) nobody knows if a creative product will have request; 2) the author does not know about his or her future creative product.

such "irrationality" could be the women's educational choice that refers to women's social role.

As result, we can speak not only about the limits of rationality but also about ecologic rationality (Wilkins 2011) in the case educational choice. Additionally, we can speak about the choice's ecology that is inseparable from creative ecology (Juzefovič 2015; Kačerauskas, Zavadskas 2015). Both (educational) choice's ecology and creative ecology deal with recognized limits that is a kind of rationality, too. In paradoxical way, we have come back to rationality through the gates of ethics.

If we speak about the educational choice in a technological university, the creative capital and a creative choice are inseparable from the creative issues in technologies (Kanišauskas 2016). Beside this, the concept of creative society (Reimeris 2016; Pečiulis 2015) presupposes the creative environment (Baltrėnas et al. 2015) even in technological universities.

Finally, educational choice has been influenced by political factor (Pless 2014) including political marketing (Pruskus 2015) and social prestige (Oosterbeek, Webbink 1999). Usually, technical education is the task of any political educational orientation. Despite this orientation and social prestige of the engineers, most of young people (more than 50 per cent) choose the study programmes in social sciences, at least in Lithuania. Political orientation can be very effective if it has been accompanied by certain financial levers. Political orientation and certain social prestige are inseparable. However, the most prestigious professions such as medics' are not the task of educational education. It rather witnesses the convenience of the politicians that the society could be and must be formed, ruled and controlled. In other words, the desirable transparency of society to be controlled in order to avoid any chaos is a rational strategy since the Enlightenment age.

Nevertheless, the educational choice is first of all an individual choice inseparable from existential aspirations. The approach towards life as a reflective project (Pless 2014; Giddens 1991) and concept of "doing yourself" biography (Pless 2014; Beck and Beck-Gernsheim 2002) presuppose existential philosophy (Heidegger 1996) and existential pedagogy (Ozmon, Craver 2012). In this perspective, an interesting phenomenon is the elder age as negative factor by choosing engineering (Rochat, Demeulemeester 2001). It appeals to the approach that engineering is a "young" field, i.e. a changeable and innovative field available rather for young people. The choice of technical education as creative one correlates with R. Florida's (2002) idea that the engineers play a special role in the structure of creative class.

Table 2 shows the main ideas of educational choice's discourse regarding technical education in recent years. While some authors (Atakok et al. 2014; Margolis, Simonnet 2002; Brahimi et al. 2013) just declare the preferences of technical education, other scholars appeal to the mentioned above models, theories, mechanisms (see **Table 1**).

Table 2. The ideas of educational choice' discourse

Author and reference	Ideas
Atakok et al. 2014	Preferences at technical secondary schools in Turkey
Gabay-Egozy et al. 2015	Boys are more oriented towards physics and engineering, while girls – biology and chemistry; the "feminine fields" are related to emotional and nurturing tasks; STEM-fields as masculine territory; Women's "rational" choice is inseparable from special attention to career 'utilities' in the labour market as well as at home; the girls perceive STEM-fields as less instrumental for their dual role and prefer subjects and programmes that require emotional and nurturing skills (humanities and social sciences); classification of fields: hard-core math-related STEM-subjects (physics and computer sciences), 'light' STEM non-math-related subjects (biology and chemistry), and humanities and social sciences; sex-role stereotypes are more pronounced, and thus socialization and rational choice mediate the gender gap.
Gabay-Egozi et al. 2010	Choices between long-term utility and short-term risk: educational choice was affected by subjective utility and failure expectations, but not by class maintenance motivations rational-choice theory in education; individuals are conscious decision makers whose choices are influenced by a cost-benefit calculus; the different beliefs as motivations including the ones about the relative utility of available alternatives, the ones about the relative odds of success or failure in each alternative, and their motivation to avoid downward mobility
Haller 2001	The parents choose an educational alternative that most benefit promises after calculus of expenses and benefits; the possible false way of RCT: confusion of the priorities of questions and dimensions
Jaeger M. M., Holm A. 2012	Why children with the same level of academic ability but with different social class backgrounds choose systematically different levels of education? The agent reaches at least the same social position as that of her parents; RRA affects educational decision making
Margolis, D. N., Simonnet, V. 2002	Technical and professional tracks allow students to establish more effective networks to support them in their carriers;
Pless 2014	Educational choice is viewed as a 'rational' one, which is based on information about admission requirements and job prospects; the gap between political objectives and young people's actual pathways; the class's factor of education; life as a reflective project; 'do-it-yourself' biography
Stocké et al. 2011	Two factors of educational decisions: 1) weight of different actors changes over the life course and child's parents; 2) different learning environments; social capital for favourable educational outcomes; SC refers to the relations of trust and effective social norms; SC encompasses differences in the quality and quality and quantity of resources; SC increases achievement motivation; Cultural capital and its 3 forms: 1) objectified cultural capital (pictures, musical instruments, and books), 2) embodied CC (cultural knowledge and linguistic competences), and 3) institutionalized CC (educational certificates and degrees)
Tunç 2011	The choice of technical education as a rational one (rational investment); relationship between social classes and educational life and educational choices in their studies

Table 2 (continued). The ideas of educational choice' discourse

Author and reference	Ideas
Brahimi et al. 2013	The cooperative education option in the department of Industrial Engineering and Management at the University of Sharjah, UAE; students who choose the co-op option have higher cumulative grade point average and show better achievement of program outcomes
Elliott 2006	Educational research: practical intention to realize educational values in action; "research on education" appeals to "objective knowledge" about the practice in classrooms and schools; positivistic maximisation principle in education; a principle of practical reasoning in terms of the maximization of utility leaves no space for the rational scrutiny of goals and values
Glaesser, Cooper 2014	RAT: Costs of education against expected benefits; the rationality of any goals is relative to individuals' starting situation; habitus: a system of lasting dispositions acquired through past experience; cost-benefit reasoning and class habitus
Hatcher 1998	Social selection results both from institutions' decisions and from self-selection by students and their parents; middle-class students are more likely to study language or science and less likely to study technology than working-class students; voluntary extra-curricular activity differentiated by class as a factor of choice; two mechanisms of parental cultural capital: 1) one of education system, which facilitates strategic behaviour; 2) one of more effective help that middle-class parents are able to give with their children's school work; non-economic parental factors related to children's parents' occupation; cost-benefit-probability calculations; middle-class orientation as "rational choice"; not all benefits could be evaluated in terms of monetary reward; rational choice defined by RAT is neither necessary one nor a sufficient one. It should be released from rigid frames of RAT; irrational and non-rational action
Jensen 2000	Strategy of technical university
Oosterbeek, Webbink 1999	Scientific disciplines can be ordered on a scale with scientific prestige and social prestige; the effect of gender and family income on choosing a technical study
Rochat, Demeulemeester 2001	Is orientation towards social and human sciences irrational? Rationality of students and their "irrationality" by having low-return orientation; the choice orientation in a high school; being more aged reduces the probability of success in Engineering
Wilkins 2011	"Rationality" as result of resource limitations (time, evidence, and cognitive limitations of memory and processing); ecological rationality as "cue" correlates with the "right" outcome, or correct target; social bounded rationality (norms); education is the key for understanding of rationality

SURVEY ON EDUCATIONAL CHOICE AT VILNIUS GEDIMINAS TECHNICAL UNIVERSITY, LITHUANIA

Research methodology

The methodology used in this research is a survey of respondents and survey interpretation. The goal of questionnaire is to identify the main trends in the choice of studies at a technical university. An additional goal is to identify which educational choice theory reflects in the best way students' real decisions when choosing a specific study program.

The questionnaire is as follows.

1. What is the cycle of your studies?

Answer Options:

Undergraduate studies

Graduate studies

Other

2. What is your faculty?

3. What is your study program?

4. What is your gender?

Answer Options:

Female

Male

5. What is the city you came from?

Answer Options:

Vilnius

Kaunas

Klaipėda

Other city/town

6. When did you start to take interest in what and where to study? (You can select multiple options)

Answer Options:

I was interested from the 9 (1 gymnasium) class

I began to take interest from 10 to 11 (2-3 gymnasium) classes

I began to take interest in the 12 (4 gymnasium) class

I began to take interest after passing CSE exams

Other

7. Which universities have you considered to be enrolled to? (You can select multiple options)

Answer Options:

I wanted to study in VGTU only

Vilniaus Gediminas Technical University (VGTU)

Vilnius University (VU)

Kaunas University of Technology (KTU)

Mykolas Romeris University (MRU)

Vytautas Magnus University (VDU)

Other

8. What is the relationship you had with Vilnius Gediminas Technical University before joining the University? (You can select multiple options)

Answer Options:

I attended activities/clubs organized by VGTU

University's representatives visited my school

I visited VGTU during the event of "open door"

I visited the Lithuanian Exhibition and Congress Centre LITEXPO and VGTU exposition during the fair "The Studies"

I was studying in VGTU class

I did not have any relations

Other

9. Why did you choose VGTU? (You can select multiple options)

Answer Options:

I wanted to study at VGTU, because I always liked this university

There studied my parents and (or) other relatives

I was advised by parents and (or) other relatives

I was advised by friends

Only in this university there was a desired study program

I wanted to study in Vilnius

I was advised by school career counsellor

I have not joined to a desired high school

Other

10. On which communication channels you have seen or heard about VGTU? (You can select multiple options)

Answer Options:

Press

TV

Radio

Internet portals

Social networks (Facebook, YouTube)

Other

11. What do you think you could run when undergraduate studies at VGTU are completed? (You can select multiple options)

Answer Options:

To be easy-employed according to education

To work in an exciting and challenging job

To receive a competitive salary

To start my own business

To continue postgraduate studies at VGTU

Do not think what to do after completing undergraduate studies yet

Other

Interviewing of the first course students admitted to study programs of technological sciences and engineering field is designed. Then questionnaires are processed, the results and interpretations are presented.

Survey of the engineering students and its results

For the survey, the first year students of Vilnius Gediminas Technical University (VGTU) were chosen (mostly first cycle) who admitted to the following study programs (technological sciences and engineering field): Aviation Mechanics Engineering (15 respondents), Environmental Protection Engineering (13 respondents), Building Energetics (11 respondents), Electronics Engineering (6 respondents), Bioengineering (18 respondents), Information Systems Engineering (12 respondents), Biomechanics (5 respondents), Mechanical Engineering (12 respondents), Civil Engineering (22 respondents) and Transport Engineering (30 respondents).

After the interview of the first course students (admitted in year 2015 to Civil Engineering study program) of VGTU (Faculty of Civil Engineering) the following results are obtained.

1. Which cycle is your studies?

Answer Options	Response Percent	Response Count
Undergraduate studies	90,9%	20
Graduate studies	9,1%	2
Other	0,0%	0
answered question		22
skipped question		0

2. What is your faculty?

Answer Options	Response Percent	Response Count
Civil Engineering	100,0%	22
answered question		22
skipped question		0

3. What is your study program?

Answer Options	Response Percent	Response Count
Civil Engineering	100,0%	22
answered question		22
skipped question		0

4. What is your gender?

Answer Options	Response Percent	Response Count
Female	36,4%	8
Male	63,6%	14
answered question		22
skipped question		0

5. What is the city you came from?

Answer Options	Response Percent	Response Count
Vilnius	22,7%	5
Kaunas	0,0%	0
Klaipėda	4,5%	1
Other city/town	72,7%	16
answered question		22
skipped question		0

6. When did you start to take interest in what and where to study? (You can select multiple options)

Answer Options	Response Percent	Response Count
I was interested from the 9 (1 gymnasium) class	0,0%	0
I began to take interest from 10 to 11 (2-3 gymnasium) classes	36,4%	8
I began to take interest in the 12 (4 gymnasium) class	54,5%	12
I began to take interest after passing CSE exams	22,7%	5
Other	0,0%	0
answered question		22
skipped question		0

7. Which universities have you considered to be enrolled to? (You can select multiple options)

Answer Options	Response Percent	Response Count
I wanted to study in VGTU only	23,8%	5
Vilniaus Gediminas Technical University (VGTU)	71,4%	15
Vilnius University (VU)	33,3%	7
Kaunas University of Technology (KTU)	52,4%	11
Mykolas Romeris University (MRU)	9,5%	2
Vytautas Magnus University (VDU)	9,5%	2
Other	0,0%	0
answered question		21
skipped question		1

8. What is the relationship you had with Vilnius Gediminas Technical University before joining the University? (You can select multiple options)

Answer Options	Response Percent	Response Count
I attended activities/clubs organized by VGTU	9,5%	2
University's representatives visited my school	14,3%	3
I visited VGTU during "open door" event	23,8%	5
I visited the Lithuanian Exhibition and Congress Centre LITEXPO and VGTU exposition during the	38,1%	8
I was studying in VGTU class	4,8%	1
I did not have any relations	57,1%	12
Other	14,3%	3
answered question		21
skipped question		1

9. Why did you choose VGTU? (You can select multiple options)

Answer Options	Response Percent	Response Count
I wanted to study at VGTU, because I always liked this university	42,9%	9
There studied my parents and (or) other relatives	19,0%	4
I was advised by parents and (or) other relatives	14,3%	3
I was advised by friends	38,1%	8
Only in this university there was a desired study program	33,3%	7
I wanted to study in Vilnius	71,4%	15
Recommended school career counselor	4,8%	1
I have not joined to a desired high school	0,0%	0
Other	4,8%	1
answered question		21
skipped question		1

10. On which communication channels you have seen or heard about VGTU? (You can select multiple options)

Answer Options	Response Percent	Response Count
Press	35,0%	7
TV	20,0%	4
Radio	5,0%	1
Internet portals	85,0%	17
Social networks (Facebook, Youtube)	65,0%	13
Other	5,0%	1
answered question		20
skipped question		2

11. What do you think you could run when undergraduate studies at VGTU are completed? (You can select multiple options)		
Answer Options	**Response Percent**	**Response Count**
To be easy-employed according to education	44,4%	8
To work in an exciting and challenging job	61,1%	11
To receive a competitive salary	33,3%	6
To create own business	27,8%	5
To continue postgraduate studies at VGTU	33,3%	6
Do not think what to do after completing undergraduate studies yet	22,2%	4
Other	5,6%	1
answered question		18
skipped question		4

Next, the results of students interviewing from other study programs are presented (see **Table 3**). **Table 3** presents the answers only to the questions which are significant when choosing a study programme.

CONCLUSIONS AND DISCUSSION

A technical university deals with such masculine subjects as technology, engineering, and mathematics usually have been mostly chosen by the mails. Guzman and Martinez (2012) made the research which results show that women chose mainly degrees of Humanities, Experimental Sciences, Social Sciences and Law and Health Sciences and their main reasons were because they like them as a vocation and to help others, while the men would prefer to study a degree of Technical Education to earn a good salary.

Choosing a study programme, the decision depends on the social class of a young man (woman). Tunc (2011) investigated the social class basis of the technical education choices with reference to the students' socio-economic features. Results shows that almost all of the students come from families whose incomes are below the poverty threshold. Accordingly, the students are mostly lower socio-economic rooted. Oosterbeek and Webbink (1997) imply that a substantial number of technically talented people choose non-technical studies. Especially female students and students from high income families are unlikely to attend a technical study. A large part of these technically talented students are attracted to medical studies and law schools.

Although many scholars treat the educational choice as a rational decision and appeal to Rational Choice Theory, namely rationality in educational choice could be discussed. For example, the decision could be emotional. Cerinsek *et al.* (2013) in their study demonstrate that all students want to do something interesting and fulfilling using their talents and abilities. Mothers and good teachers were found to influence females' choice of studying science, technology, engineering and mathematics (STEM) significantly, while popular science television channels and programmes were found to have a considerable influence, especially on males' educational choice.

Table 3. Students' survey results on nine of the study program

		Aviation Mechanics Engineering	Environmental Protection Engineering	Building Energetics	Electronics Engineering	Bioengineering	Information Systems Engineering	Biomechanics	Mechanical Engineering	Transport Engineering
1. Which cycle is your studies?										
Undergraduate studies		80,0%	84,6%	72,7%	50,0%	94,4%	83,3%	80,0%	75,0%	73,3%
Graduate studies		20,0%	15,4%	9,1%	50,0%	5,6%	16,7%	20,0%	25,0%	16,7%
Other		0,0%	0,0%	18,2%	0,0%	0,0%	0,0%	0,0%	0,0%	10,0%
4. What is your gender?										
Female		26,7%	84,6%	18,2%	0,0%	77,8%	8,3%	80,0%	33,3%	0,0%
Male		73,3%	15,4%	81,8%	100,0%	22,2%	91,7%	20,0%	66,7%	100,0%
5. What is the city you came from?										
Vilnius		26,7%	16,7%	54,5%	50,0%	50,0%	45,5%	0,0%	50,0%	56,7%
Kaunas		0,0%	8,3%	0,0%	0,0%	5,6%	9,1%	0,0%	0,0%	6,7%
Klaipėda		6,7%	8,3%	18,2%	0,0%	11,1%	0,0%	0,0%	8,3%	6,7%
Other city/town		66,7%	66,7%	27,3%	50,0%	33,3%	45,5%	100,0%	41,7%	30,0%
6. When you started to take interest what and where to study? (You can select multiple options)										
I was interested up to 9 (1 gymnasium) class		13,3%	0,0%	9,1%	0,0%	5,6%	0,0%	0,0%	9,1%	10,3%
I began to take interest from 10 to 11 (2-3 gymnasium) classes		40,0%	45,5%	27,3%	16,7%	50,0%	54,5%	20,0%	54,5%	41,4%
I began to take interest 12 (4 gymnasium) class		33,3%	27,3%	36,4%	33,3%	33,3%	27,3%	60,0%	36,4%	41,4%
I began to take interest after passing CSE exams		20,0%	27,3%	45,5%	66,7%	16,7%	9,1%	20,0%	18,2%	3,4%
Other		0,0%	0,0%	18,2%	0,0%	0,0%	27,3%	20,0%	9,1%	10,3%
9. Why did you choose VGTU? (You can select multiple options)										
I wanted to study at VGTU, because I always liked this university		26,7%	36,4%	18,2%	33,3%	22,2%	50,0%	50,0%	30,0%	44,4%
There studied my parents and (or) other relatives		0,0%	9,1%	9,1%	0,0%	16,7%	30,0%	75,0%	10,0%	3,7%
I was advised by parents and (or) other relatives		0,0%	18,2%	27,3%	16,7%	16,7%	0,0%	0,0%	10,0%	3,7%
I was advised by friends		6,7%	9,1%	9,1%	33,3%	16,7%	0,0%	50,0%	20,0%	11,1%
Only in this university was desired study program		66,7%	27,3%	54,5%	50,0%	55,6%	40,0%	50,0%	60,0%	33,3%
I wanted to study in Vilnius		80,0%	72,7%	63,6%	83,3%	72,2%	80,0%	75,0%	60,0%	77,8%
Recommended school career counselor		6,7%	9,1%	0,0%	0,0%	11,1%	0,0%	0,0%	0,0%	0,0%
I have not joined to a desired high school		6,7%	9,1%	9,1%	0,0%	38,9%	20,0%	0,0%	0,0%	0,0%
Other		0,0%	9,1%	0,0%	0,0%	5,6%	20,0%	0,0%	10,0%	11,1%
11. What do you think you could run when undergraduate studies at VGTU is completed? (You can select multiple options)										
To be easy-employed according to education		63,6%	20,0%	45,5%	33,3%	56,3%	50,0%	25,0%	40,0%	25,9%
To work in an exciting and challenging job		72,7%	50,0%	27,3%	50,0%	75,0%	70,0%	50,0%	40,0%	51,9%
To receive a competitive salary		45,5%	30,0%	36,4%	50,0%	37,5%	30,0%	0,0%	40,0%	22,2%
To create own business		9,1%	10,0%	18,2%	0,0%	12,5%	20,0%	0,0%	30,0%	29,6%
To continue postgraduate studies at VGTU		27,3%	50,0%	63,6%	33,3%	18,8%	30,0%	100,0%	50,0%	22,2%
Do not think what to do after completing undergraduate studies yet		36,4%	20,0%	27,3%	33,3%	12,5%	20,0%	25,0%	30,0%	29,6%
Other		9,1%	20,0%	0,0%	0,0%	0,0%	10,0%	0,0%	20,0%	14,8%

Nevertheless, the educational choice including the one in a technical university is first of all an individual decision. Christopoulou and Kounenou (2011) examined the demographic characteristics of adolescents who choose General or Technical high schools as well as the parameters and reasons that relate to students' decisions in choosing either type of school. Results showed that students' choice was not directly related to their family. Personal preferences, career development, independence and professional stability were the most significant factors that students had taken into account when considering about their educational choices.

The survey at Vilnius Gediminas Technical University (Lithuania) shows that the following study programmes (3 out of 10) are enough feminine: "Environmental Protection Engineering", "Bioengineering" and "Biomechanics". Nearly 80 per cent of students in those programs are females. "Electronics Engineering", "Information Systems Engineering" and "Transport Engineering" tends to be fully masculine (90-100 per cent of students are males).

Approximately 80 per cent of students from 8 study programmes (out of 10) began to take interest in what and where to study in the 10-12 school forms. This suggests that at least one year students are considering what studies to choose. This is a rational choice of the students.

About 70 per cent of students from all study programs wanted to study in Vilnius (capital city of Lithuania). This shows that students choose not only a particular study program but also a place of study. It is much easier to find a job and make a career in the capital city.

Approximately 60 per cent of students from 8 study programs (out of 10) wish to do an exciting and challenging job when the studies are completed. To earn a competitive salary is less important.

Conclusions above are based by research performed at single university in Lithuania. To draw a plausible trend for whole country or region one should perform in-depth inter-university investigation.

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