SATISFACTION WITH QUALITY OF UNIVERSITY EDUCATION AMONG RECENT GRADUATES IN BULGARIA

Authors:

Yana Georgieva*, Prof. Krassimir Kalinov**

* ESTAT Ltd,

** New Bulgarian University

1. Background and Introduction

1.1. The University System in Bulgaria

The change of social context in Bulgarian society after 1989 required an educational reform to be launched. Since its beginning the government has been engaged in legal activities meant to democratize the system and bring it in accord with the new reality.

First of all, the state monopoly over the education system, including higher education, died out. According to the Act of Higher Education higher schools are classified according to the type of ownership as state and private; and according to the number of the subjects taught as "universities", "specialized higher schools", and "independent colleges"(art. 12 and 17). Thus, the number of private universities gradually increased after 1992 – from 5 to 16 in 2006, including 7 universities and 9 colleges (see National Statistic Institute, 2005). In contrast with the increase in the number of private higher schools, the number of state ones decreased: from 84 in 1990 to 37 in 2006, including 36 universities and 1 independent college. The biggest decrease was during the academic year 1995/96 when the number of higher schools decreased by a factor of two. At the same time, a decrease in the number of students was not observed. The reason for this was that higher schools transformed in colleges. Thus, the decrease in the number of higher schools was formal not actual.

The new Act of Higher Education laid down the principles of academic autonomy, decentralization and three-tire system of higher education: "bachelor", "master" and "Ph.D.". The principle of academic autonomy allowed higher schools to design different programs for the same subjects according to the requirements for high education. Thus, a variety of higher schools was promoted. Although, the statistics showed a stable increase

of teaching staff, higher schools suffered from permanent lack of qualified lecturers. It was a common practice that lecturers from University of Sofia “St. Kliment Ohridski”, the most reputable university in Bulgaria, to become visiting professors in other higher schools in order to teach the subjects. This practice has led to devaluation of teaching quality in higher schools. It was a widespread practice a visiting professor from University of Sofia to teach simultaneously (within one academic year) in three other universities within the country. Continuous traveling between universities’ campuses prevented from meeting the high requirements for professional academic performance.

At the same time, the quality of higher schools environment sharply improved in the last 15 years. New teaching technologies were implemented, access to scholarly recourses was provided, and opportunities for participation in student exchange programs became available. Although, the system of higher education is conservative, the Bulgarian one is in a process of transformation and many of the tendencies seem to be contradictory.

The process of further cooperation between businesses and universities is widespread and ubiquitous. The cooperation is recognized to be of great importance for sustainable economic growth and improvement in quality of life. In 2000 the European Council adopted so called Lisbon Strategy. According to which, all member states agreed that the Union must become the most competitive and dynamic knowledge-based economy, in order to achieve a sustainable economic growth. Making this happened a key factor is the cooperation with the business. The Lisbon Strategy and its principals are leading documents for the last three Bulgarian governments’ policy. Although, there are studies concerning higher education in Bulgaria, they are mostly motivated from macro economic point of view. The present article addresses the question of quality of higher education in respect to students’ satisfaction.

1.2. Introduction

The importance of higher education has increased worldwide and societies have become more dependent upon professionals (Metzger, 1987). In this regard, higher education plays a crucial role in supporting macroeconomic growth, and consequently affects the regions' economy (Kane, 2005). The overall purpose of university education is to educate and prepare young people for later realization in the labor market. The common perception is that the quality of education has an impact on the opportunities to find highly desirable job placements. Many scholars, studying the quality of education, focused on the economic outcomes of education, namely the level of earnings. It is rather surprising, that studies which examine the relationship between education and job satisfaction failed to find a strong, positive relationship (Gordon, 1975; Weaver, 1978). One probable explanation is that higher education increases expectations for rewards of work and thus leads to job dissatisfaction when expectations are not met (Wright and Hamilton, 1979).

The assessment of university education has concerned academia, policy makers, current and prospective students, and employers for decades. The quality of university education is important for both individuals and society. Thus, the study of effects of education's quality had to be extended beyond the earning differences (Zhang 2005). One of the main critiques in measuring the quality is that the term does not capture the complexity of higher educational institutions. For instance, Zhang has proved that under different measures of institutions' quality, the same educational institutions can be classified into different categories (Zhang 2005).

The assessment of university quality can be organized into three approaches: reputation, faculty research and student experiences (Brooks, 2005). The student experience approach, in turn, is divided into four categories: program characteristics, program effectiveness, student satisfaction, and student outcome. There are few recent

efforts to examine the students' satisfaction with quality of education (Golde and Dore, 2001; National Survey of Student Engagement, 2001). The authors found that the students' satisfaction with quality of education was contextual, and in this respect confirmed previous findings.

The overall understanding in literature is that student's satisfaction with university education increases with the increase of interaction between students and their teachers (Austin, 1997). However, some recent studies reported mixed findings about the effect of student-teacher contact upon students' satisfaction (Kuh and Hu, 2001). Student-student relations and interactions should also be considered as a factor determining the overall students' satisfaction with the university education (Gregg, 1972).

The primary goal of this paper is to study the satisfaction with quality of university education among recent graduates in Bulgaria. The implemented approach is in accord with the understanding that students' experience and especially their satisfaction is a crucial element in studying quality of university education. Under the term of satisfaction we shall understand the students' subjective evaluation of the quality of their education.

Our hypothesis is that there is a relationship between socio-demographic characteristics of recent graduates and their overall satisfaction with quality of university education. Further, we shall test the hypothesis that there is a correlation between students' satisfaction with education and their expectation for later professional realization, namely their expectations for monthly earnings. The students' satisfaction has been measured through direct questions, as well as, via the calculation of the so-called Index of Satisfaction, which is an indirect measure.

2. Data

In order to study students' satisfaction with quality of university education, a survey among recent graduates was carried out. The sample was two-stage random sample including 750 students, graduated Bachelor degree in 2005 from 25 higher schools in Bulgaria. The response rate was 90.8 %. The survey was carried out in the period from May to June 2005. The data were collected, according to the accepted standards for empirical surveys, following the standard operation procedures of "Estat" Ltd.

The method of registration was face-to-face standardized interview with closed questions. The students were from majors divided into 5 groups according to the difficulties of later professional realization. Each of these groups consisted of 5 different university majors; within a group 30 students were interviewed. The levels of difficulty ranged from "very easy" through "neither easy, nor difficult" to "very difficult". The scale was developed through content analysis of sources of available jobs.

During 30 days 16 sources of information has been studied. Five of them were national newspapers with regional supplement, ten on-line jobs searching engines and job advertisements published by the Bulgarian Employment Agency. The total number of all studied advertisements was 10419. In 11, 4 % of cases or 1188 advertisements requirement for major was included.

In order to achieve unambiguous meaning of codes, two independent researchers recoded the majors simultaneously. All disputes were solved after that through experts' discussions.

Based on the gathered information university majors had been classified according to the difficulty of realization. It is assumed that the frequency of advertisement was in inverse proportional to difficulty of realization. The first group with "very difficult" realization includes majors that had 1 (one) per day published advertisement or no more

then 30 advertisements for the whole period of 30 days. The second group with “difficult” realization includes majors that had between 1 (one) - 2 (two) advertisements per day or up to 60 for the studied period. The third group with “neither difficult, nor easy” realization includes majors with 2 (two) – 3 (three) advertisements per day or up to 90 for the period. The forth group with “easy” realization includes majors with 3 (three) – 4 (four) advertisements or up to 120 for the period. And the fifth group with “very easy” realization includes majors with more than 4 (four) advertisements per day (See Table 1 and Appendix 1).

Table 1. Majors grouping according to difficulties of realization

		Majors	Count	Col%
Realization	Very difficult realization	Humanities	14	1,2%
		Languages	22	1,9%
		Education	21	1,8%
		Arts	21	1,8%
	Difficult	Agriculture, vet	33	2,8%
		Services	33	2,8%
		Law, governing	35	2,9%
	Neither difficult, nor easy	Architecture, constructing	63	5,3%
		Science, maths., computers	71	6,0%
	Easy	Health and welfare	119	10,0%
	Very easy	Economics, business	453	38,1%
		Engineering, manufacturing	303	25,5%

One question (q1) has been used for direct measurement of students' satisfaction and three questions (q2, q3, and q4) for computation of the Index of Satisfaction (See Appendix 2).

The socio-demographic characteristics of students were gender, age, monthly income, students' current employment status, their parents' education, and type of university. The age was recoded in three groups: from 19 to 24 years old; 25-30 years old; and above 31. Monthly income was also recoded for the purpose of the hypothesis testing in two groups: less than 300 lv. and above 300 lv. (approximately EUR 154). All universities were divided in two groups. All state funded higher schools were placed in the first group, and all private in the other one. The variable labeled "place of birth" showed to what extent within-the-country migration was motivated by desire for studying. This is an indirect indicator, which is in synchrony with Bulgarian National Statistic Institute (NSI) findings that the desire for studying is a strong motive for migration for 14% of population (NSI, 2001). The educational level of students' parents was registered in order to examine whether family tradition had any impact on students' satisfaction with higher education. Students' expectations for later professional realization were measured by asking what salary they expected upon beginning work.

3. Statistics

One dimensional frequency distribution for non metric variables, mean value and standard deviation for metric variables were used for descriptive statistics.

Hypotheses testing were carried out through:

- Chi-square and Fisher's exact test for nonparametric approach
- Student's t-test and one-way ANOVA

- Multinomial logit model was applied for data modeling
- The probability of Type 1 error was fixed to be 0.1

Additionally, eta-coefficient was used as a measure of association between direct measure of students' satisfaction and the Index of Satisfaction. The computation of the Index was on the base of q2, q3 and q4.

Question 2 had nine statements – four positive and five negative. The respondents had to answer to each one with "yes" or "no". The responses of q2 were recoded with -1 or 1, according to the fact whether the statement was positive/negative and what the answer was (Table 2). The assumption was that if the respondent had been sorry for studying particular major, for example, this did not contribute to his/her overall satisfaction with education. Therefore, his/her response was recoded with – 1 as it shown in Table 2.

Table 2: Rules for recoding Q2

q2. Now, when you are graduating and starting work is forthcoming, **are you sorry** that you:	yes	no
Studied that major	- 1	1
Studied this curriculum	- 1	1
Studied in this university	- 1	1
Have not studied thoroughly enough	1	- 1
Have worked while studying	1	- 1
Have not worked while studying	1	- 1
Have not established useful contacts	- 1	1
Don't have additional skills (computers, languages, Internet)	1	- 1
Have not had internships, practices, etc.	1	- 1

After recoding all responses they were summed and the sum was weighted according to the answers of questions 3 and 4 (see Table 3). We started with rather obvious assumption that if students had satisfied they would not change their majors during studying and they would intend to study for a Master's degree. Thus, the highest weight (1.10) was assign if the respondent answered negative to q3 and positive to q4 (See the Appendix 2 for exact wording of the questions). A weight of 1.00 was assigned if the

respondent's responses were negative to q3 and q4 or "I haven't thought about it" to q4; a weight of 0.88 was assigned if both answers were positive; and the lowest weight was assigned if respondent answers were positive to q3 and negative to q4 or "I haven't thought about it". Due to the reason that the Index of Satisfaction was a measure on interval scale the information that it carried out was richer than the direct question. Thus, we would use it in our further computations.

Table 3: Computations of the Index of Satisfaction

Q3	Q4	Weight
1	1	0.88
1	>1	0.80
2	1	1.10
2	>2	1.00

We measured students' expectations for later realization by q12 and q13, both of which were metric. Pearson's correlation coefficient between two metric variables was used for estimating the relationship between them.

4. Findings

Six hundred eighty one individuals were interviewed, of them 55.1% were female, 79% were between 19 and 24 years. Two-thirds of all students were enrolled in state funded higher schools, which correspond to the enrollment on national base. Forty four per cent of the sample (see Table 2) had a major within Social Sciences, Business, and Law. The second and third most popular majors were Humanities and Art, and Science, Maths, and Computer Science. Seventy two per cent of all respondents said they had less than 300 lv. monthly incomes. Sixty two per cent of the individuals who were born in the area of studying had less than 300 lv. monthly incomes.

Table 2: Descriptive statistics of socio-demographic characteristics of recent graduates

		Count	Col %
Age	19-24 years old	540	79,5%
	25-30 years old	126	18,6%
	above 31 years old	13	1,9%
Total		679	100,0%
Gender	male	306	44,9%
	female	375	55,1%
Total		681	100,0%
Place of birth	in the area where you are studying	352	52,1%
	in different area	323	47,9%
Total		675	100,0%
Employment status	Yes	326	48.2%
	No	350	51.8%
Total		676	100.0%
Monthly income	less than 300 lv.	485	72,4%
	more than 300 lv.	185	27,6%
Total		670	100,0%
Type of higher school	state funded higher school	504	74,2%
	private funded higher school	175	25,8%
Total		679	100,0%
Parents' education	both have uni. degree	235	34.8%
	one of them is a uni. graduate	224	33.1%
	none of them is a uni. graduate	217	32.1%
Total		676	100.0%
University subject	Social Sci, Business, Law	279	41,4%
	Services	67	9,9%
	Health and welfare	21	3,1%
	Engineering, manufacturing	62	9,2%
	Humanities and Arts	87	12,9%
	Science, maths, computer	69	10,2%
	Education	25	3,7%
	Agriculture, vet science	57	8,5%
	N.A.	7	1,0%
Total		674	100,0%

The descriptive statistics of the direct question, which measures the student satisfaction, showed that only 6.3% of all respondents were not satisfied with their major. The rest of the students were either completely satisfied (47.2%) or partially satisfied (46.5%).

The mean value of the Index of Satisfaction is 0.09 and std. deviation 2.989. The opposite signs of the mean value of the Index for male and female motivated our decision to split the sample and do the hypotheses testing separately for male and female students. Further, we tested the correlation between the direct question of satisfaction and gender. The Chi-square is not statistically significant ($p=0.194$) and thus we cannot reject the hypothesis that the variables are unrelated.

The eta-coefficient for measuring the association between direct and indirect measures of satisfaction was 0.421 but Fisher's exact test was significant and $p< 0.001$, which demonstrated the statistical significance of the relation.

The hypotheses testing showed that there was no strong relationship between the Index of Satisfaction and the socio-demographic characteristics both for male and female. In Table 3 the p-values are reported for all tested relations. Significant relationships were observed between the Index of Satisfaction and variables "place of birth" and "monthly income" for male students. If males were born in the area of studying and had more money they tend to be more unsatisfied. We observed a significant relationship between the Index of Satisfaction and the type of higher university for female students. They tend to be more unsatisfied if they studied in private funded higher school.

The reported p-values showed that the relationships were not very strong and it would be safe to say that socio-demographic characteristics of the recent graduates' do not effect their satisfaction with higher education.

Table 3: Socio-demographic characteristics vs. the Index of Satisfaction (p-value)

Characteristics	Male	Female
Age	.425	.886
place of birth	.059	.496
monthly income	.044	.348
type of higher school	.169	.055
employment status	.446	.671
parents' education	.755	.524

In order further to test our findings that the socio-demographic characteristics did not affect the level of satisfaction we built a multinomial logit model. In the equation were included as dependent variable the direct question for measuring the satisfaction; as exogenous (explanation) variables used were gender, age, place of birth, monthly income, type of higher school, employment status and parents' education. The design of the model was as follow:

$$Satisfaction = a_0 + a_1 * gender + a_2 * age + a_3 * place\_b + a_4 * income +$$

$$a_5 * type\_uni + a_6 * work\_status + a_7 * parents\_edu$$

As it showed in Table 2 the dependent variable had 3 categories. All independent variables had 2 categories except parents' education and age, which had 3.

Using the saturated model was not suitable due to the vast number of parameters, which had to be estimated (1024). Then we used a custom model including only main effects and two-way interactions. The statistical estimations confirm our conclusions that none of these parameters significantly influence the level of satisfaction with higher education. The similar conclusions followed from the direct analysis of the correlation

coefficients of studied parameters, among which there were no a statistically significant values (for all parameters p>0.05).

All these results gave us confidence to say that the exogenous variables, part of the model, were either not correlated with the level of satisfaction with higher education, or if they were then the correlation was not linear.

By the same token, we build a univariate multi-factor ANOVA where a dependent variable was the Index of Satisfaction, instead of the direct question, and factors were the variables outlined previously. From Table 4 it is obvious that only the interaction age*place of birth is statistically significant, but the observed power was 0.7, which was unacceptable level for error from type II. Besides, there was a probability that result to be due to chance. Furthermore, the model can explain only 6.8% of the variance, and the adjusted R squared (variance of the dispersion of the population) was 0.4%. Again, this suggested to us that the correlation had more complicated shape than the linear.

Table 4: tests of Between-Subject Effects

Dependent Variable: Satisfaction

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Noncent. Parameter	Observed Power(a)
Corrected Model	408,905(b)	43	9,509	1,067	,361	45,868	,967
Intercept	13,810	1	13,810	1,549	,214	1,549	,237
sex * age	47,059	2	23,530	2,639	,072	5,279	,525
sex * place_b	11,839	1	11,839	1,328	,250	1,328	,210
sex * income	7,526	1	7,526	,844	,359	,844	,151
sex * type_uni	3,172	1	3,172	,356	,551	,356	,092
sex * work_status	1,105	1	1,105	,124	,725	,124	,064
sex * parents_edu	23,348	2	11,674	1,309	,271	2,619	,284
age * place_b	69,706	2	34,853	3,910	,021	7,819	,705
age * income	23,970	2	11,985	1,344	,261	2,689	,290
age * type_uni	7,707	2	3,853	,432	,649	,864	,120
age * work_status	6,451	2	3,226	,362	,697	,724	,108
age * parents_edu	32,872	4	8,218	,922	,451	3,687	,294
place_b * income	7,220	1	7,220	,810	,369	,810	,146
place_b * type_uni	3,418	1	3,418	,383	,536	,383	,095
place_b * work_status	2,761	1	2,761	,310	,578	,310	,086

place_b * parents_edu	8,283	2	4,142	,465	,629	,929	,126
income * type_uni	16,828	1	16,828	1,888	,170	1,888	,279
income * work_status	4,766	1	4,766	,535	,465	,535	,113
income * parents_edu	52,045	2	26,023	2,919	,055	5,838	,569
type_uni * work_status	,084	1	,084	,009	,923	,009	,051
type_uni * parents_edu	11,980	2	5,990	,672	,511	1,344	,163
work_status * parents_edu	2,258	2	1,129	,127	,881	,253	,069
Error	5580,727	626	8,915				
Total	5992,760	670					
Corrected Total	5989,632	669					

a Computed using alpha = ,05
b R Squared = ,068 (Adjusted R Squared = ,004)

Further, we hypothesized that there was a relationship between students' satisfaction with higher education and their expectations for latter professional realization. This hypothesis followed the assumption that students' satisfaction affected their expectations for later professional realization. The bivariate correlation showed that there was no significant relationship between the Index of Satisfaction and expectations for later realization (see table 5).

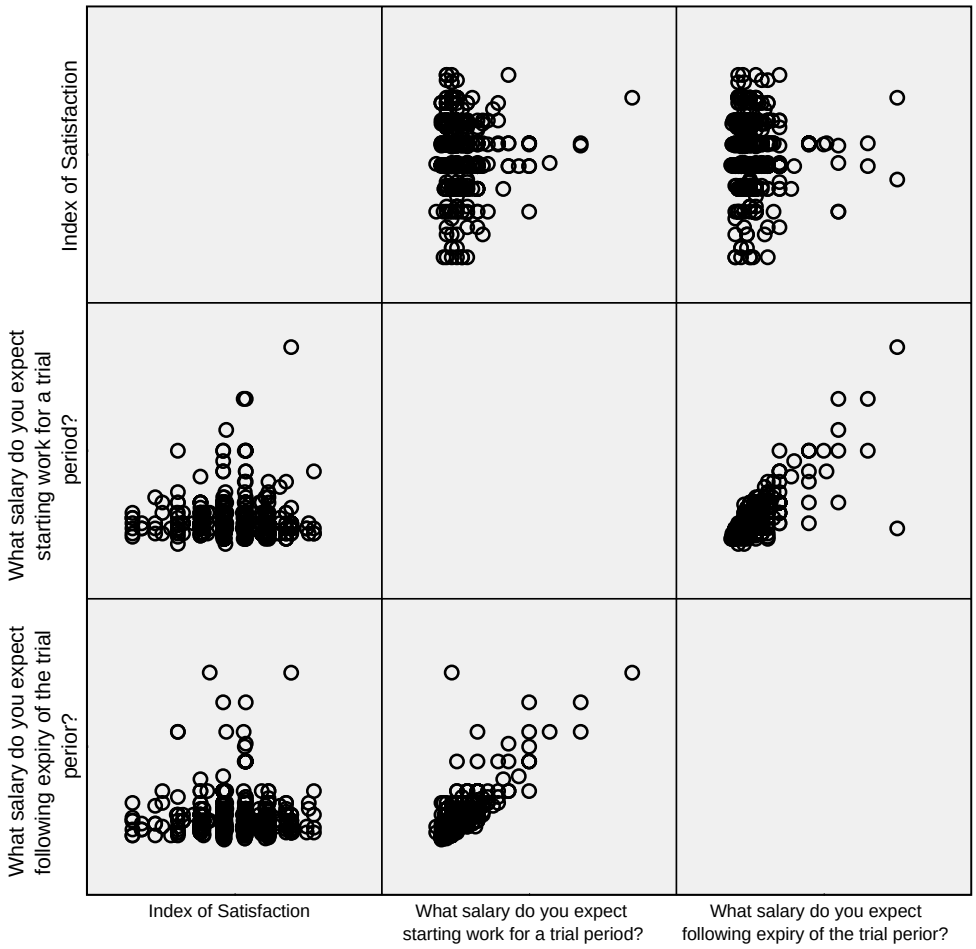
Table 5: Correlation between expectations for latter professional realization (q12, q13) and the Index of Satisfaction

	Q12	Q13
Index of Satisfaction (p-value)	-.042	-.038
Sig.	.307	.361
Q13 (Pearson Correlation)	.797	
Sig.	.000	

We tested whether there is a correlation between questions measuring students' expectation for starting work salary (q12 and q13). For estimating the correlation Pearson's correlation coefficient was used. The results are visualized in Figure 1. There

was a strong linear relation between expectations about salary at the starting of the trial period and the one expected following the expiry of the trial period.

Figure 1: Correlation between Index of Satisfaction and expected salaries – during the trial period and after it



5. Discussion

The findings showed that the socio-demographic characteristics of recent graduates did not effect their overall satisfaction with higher education. We observed no, or weak relationships between socio-demographics and the Index of Satisfaction. This

result sounded in accord with the data on macro level, where an increase of the number of students in higher schools during the last 5 academic years was observed. However, on micro level it was not clear what exactly motivated students to study and respectively satisfied them. We state that the quality of higher education is a complex term and one of its components is student experience. The fact that students' satisfaction is not, on average, affected by socio-demographic characteristic was an important first step towards studying students' satisfaction with higher education in Bulgaria.

However, the registered students' satisfaction was high. Based on these data we could not say what exactly determines the observed levels of satisfaction. The next major task for researchers interested in satisfaction with higher education in Bulgaria is to study students' experiences: program characteristics, program effectiveness, student satisfaction, and student outcome (Brooks, 2005). Further, it is important to know whether there is a relation between the intensity of students-teachers interactions and students' satisfaction with university education.

Contrary to the popular assumption for strong connection between satisfaction with higher education and expectations for latter professional realization, we did not find such a relation. This finding provoked questions about students' motivation for studying and about the causal relation between quality of education and expectations for better opportunities on the labor market.

Acknowledgements: The authors acknowledge financial support from CERGE-EI Foundation for the project "Labor market and perspectives to recent higher education graduates in Bulgaria", 2005

REFERENCES

Agresti, A. and B. Finley. 1997. *Statistical Methods for the Social Science*: Prentice Hall International, Inc. New Jersey

Astin, A. W.. (1997). "The changing American college student: Thirty year trends, 1966-1996". *The Review of Higher Education*, 21, 115-135

Brooks, Rachelle L. (2005). "Measuring University Quality". *The Review of Higher Education*, Fall 2005, Vol.29, No.1, pp. 1-21

Cox, Taylor H. and Celia V. Harquail. (1991). "Career Paths and Career Success in the Early Career Stages of male and Female MBAs". *Journal of Vocational Behavior*, 39, pp. 54-75

Golde, C. M. and Dore, T.M. (2001). Ar cross purposes: What the experiences of doctoral students reveal about the doctoral education (www.phd-survey.org). Philadelphia, PA: A report prepared for The Pew Charitable Trusts.

Gordon, Michael E., Richard D. Arvey. "The relationship between Education and Satisfaction with Job Content". *The Academy of Management Journal*, Dec., 1975, Vol. 18, No.4, pp. 888-892

Gregg, Wayne E. (1972). "Several Factors Affecting Graduate Student Satisfaction". *The Journal of Higher Education*. Jun., 1972, Vol.43, No.6, pp. 483-498

Kane, Thomas J. (2005). "Higher Education Appropriations and Public Universities: Role of Medicaid and the Business Cycle". *Brookings-Wharton Papers on Urban Affairs*, 2005 pp. 99-145

Kuh, G. D. and Shouping Hu (2001). "The effects of Student-Faculty Interaction in the 1990s". *The Review of Higher Education*, 24.3 (2001), 309-332.

Li, Yan (2005). "Contributors to Student Satisfaction with Special Program (Fresh Start) Residence Halls". *Journal of College Student Development*, March/April 2005,-Vol. 46, No. 2, pp. 176-192

Metzger, W.P. (1987). "A spectre is haunting American scholars: The spectre of professionalism". *Educational Researchers*, 16(6), pp.10-19

National Statistic Institute. (2005). *Educational institutions, enrollments and teaching staff*. 04/20/2006, http://www.nsi.bg/SocialActivities_e/Education_e.htm

National Statistic Institute. (2001). "Within-country and international migration of Bulgarian population"
(http://www.nsi.bg/Statistika/SearchFrame.htm?query=%EC%E8%E3%F0%E0%F6%E8%FF&stpos=0&Submit=%D2%FA%F0%F1%E8&stype=AND)

National Survey of Student Engagement (2001). *Improving the college experience: National benchmarks of effective educational practice*. NSSE 2001 Report. Bloomington: Indiana University Center of Postsecondary Research and Planning.

Reichert, S. and Christian Tauch. (2003). "Trends 2003, Progress towards the European Higher Education Area". 05/12/2006, http://www.eua.be/eua/jsp/en/upload/Trends2003final.1065011164859.pdf

Weaver, C.N. a:1978. "Black-White Correlates of Job Satisfaction." *Journal of Applied Psychology*, Apr78, Vol. 63 Issue 2, pp. 255:58

APPENDIX 1: Coding and majors in each group

Realization	Coding	Majors
Very difficult realization	Humanities Languages Education Arts	1. Journalism, 2. Philosophy, 3. Classical and modern philology, 4. Pre-school and Primary School Education 5. Fine arts
Difficult	Agriculture, vet Services Law, governing	1. Agronomy, 2. PR and mass communication, 3. Tourism, 4. Marketing, 5. Law and public administration
Neither difficult, nor easy	Architecture, constructing Science, maths., computers	1. Architecture, 2. Geodesy, 3. Chemistry, physics, mathematics, 4. Computer Science, 5. Informatics
Easy	Health and welfare	1. Medicine, 2. Stomatology, 3. Pharmacology, 4. Kinesitherapy, 5. Nursing
Very easy	Economics, business Engineering, manufacturing	1. Economics, 2. Finance and Accounting, 3. Business administration and Managements, 4. Structural Engineering, 5. Mechanical Engineering.

APPENDIX 2: Variables used for hypotheses' testing

Direct question that measures students' satisfaction:

q1. How satisfied are you with the major you are graduating?
- Completely
- Partially
- I am not satisfied

Questions used for computation of Index of Satisfaction:

q2. Now, when you are graduating and starting work is forthcoming, are you sorry that you:
- Studied that major
- Studied this curriculum
- Studied in this university
- Have not studied thoroughly enough
- Have worked while studying
- Have not worked while studying
- Have not established useful contacts
- Don't have additional skills (computers, languages, Internet)
- Have not had internships, practices, etc.

q3. Have you moved from one major to another?
- Yes, I have
- No, I haven't

q4. Having completed the Bachelor's degree do you intend to study for a Master's degree?
- Yes
- No
- I haven't thought about it

Socio-demographic characteristics:

q6. Are you currently working?
- Yes
- No

q7. You are:
- Male
- Female

q8. Age

q9. You were born:
- In the area, where you go to university
- In another settlement area

q10. Please state, which of the following statements are true if your parents:

- They are both university graduates
- One of them is a university graduate
- None of them is a university graduate

q11. Your available monthly budget is approximately: (open question)

Expectations for later professional realisation:

q12. What salary do you expect starting work for a trial period? (open question)

q13. What salary do you expect following expiry of the trial period? (open question)