Student Evaluations of a Greek University[1]

Iannis Konstantinidis, University of Macedonia

Summary

The aim of this study is to measure student satisfaction from staff and services of the University of Macedonia as part of the project of Methodological Expansions of the Data Envelopment Analysis and Application in the Evaluation of Greek Universities[2]*. Second and fourth-year students were invited to participate in this attempt to measure their satisfaction over the services provided by the Institute. In the beginning of this article the purpose of student satisfaction surveys is discussed, shedding some light in the way research could help ameliorate Greek University services. A short description of the methodology employed follows and at the end of this article we focus on some of the results.*

Key words

Student satisfaction survey, Greek University

Introduction

Student satisfaction surveys are used from different universities across the world to collect student feedback for various reasons. As Harvey (2003,p.3) explains universities gather student feedback for internal and external purposes.

Internally student feedback has been used as an attempt to improve the quality of teaching and learning (Wiers-Jenssen, Stensaker & Gr⊘gaard 2002, p.183).Although, routine collection of students' evaluations does not

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[2] For more information and a short description of the project: http:// excellence.minedu.gov.gr/thales/en/thalesprojects/380419

directly lead to any improvement in the quality of teaching (Kember *et al.*, 2002, p.423), it may help in the professional development of the academic staff (Roche & Marsh 1993; Piccinin et al. 1999; Stevens & Aleamoni 1985).More specifically, in the UK academics usually refer to student feedback "to enhance the effectiveness of their teaching and to support applications for appointment, tenure or promotion" (Richardson 2005, p. 401).

Therefore, student feedback is used internally for improvement and accountability (Williams and Cappuccini-Ansfield 2007, p.160). If universities know what students think of their services, they might be able to adapt and, as a result, increase satisfaction levels (Thorsten, Fuß, Voss, and Gläser-Zikuda 2010, p.108). At the same time, when universities take into account student feedback they can also attract and retain quality students (Elliott & Shin 2002, p.197).

Externally it is useful to potential students and parents, as it helps them gain information about the universities and programs of interest (Richardson 2005, p.401; Williams and Cappuccini-Ansfield, 2007, p.167).In countries where most universities take part in national student satisfaction surveys, the results can also be used for benchmarking (Williams and Cappuccini-Ansfield, 2007, p.165) and for comparisons between and within institutions (Williams and Cappuccini-Ansfield, 2007, p.167).In addition, student feedback "can provide insights into socio-economic, political and cultural impacts on the student experience and it can indicate what students' consistent concerns are and what priorities have changed over time" (Kane, Williams & Cappuccini-Ansfield 2008, p.135, 136).

As we can understand, student satisfaction data can be used for different purposes and from different people. Unfortunately, very few of these data are publicized (Williams and Cappuccini-Ansfield, 2007, p.160), as it happens in Greece.

Objectives

Our research aims at gathering evaluation data from current students at the University of Macedonia. In the following sections we analyze all the steps involved in the research and we present part of our findings.

We made an effort to unveil the factors that affect overall student satisfaction for second and fourth-year students, while trying to pin down any possible differences or similarities between them. Initially we expected to find a few individual underlining dimensions of satisfaction (i.e. satisfaction from teaching staff, satisfaction from the organization, satisfaction from resources and infrastructure, etc.) that would have an effect on overall satisfaction. Proof of underlining dimensions would also confirm that our questionnaire design.

In case there is no evidence of underlining dimensions affecting overall student satisfaction, further investigation of individual parameters would be attempted. The main goal of our research is to specify the factors that have the strongest effect on overall student satisfaction in the University of Macedonia.

Methodology

The Hellenic Quality Assurance and Accreditation Agency has produced, since its establishment in 2006, a series of evaluations of the Greek Higher Education Institutions. Prior to the external evaluations, internal ones were conducted during which student satisfaction data (from the tutor and course) were collected. Unfortunately, the data are for internal purposes only (http://www.hqaa.gr/en/inteval-data-forms.php) and are not made widely available. Therefore the data we collected from the student evaluation surveys could not be compared against any other.

The design, execution and analysis were produced based on prior international research and tested through a pilot study. All data manipulation in this paper has been produced with the help of SPSS (version

21). The next section of this paper constitutes a summary of the process followed, before we move onto the analysis.

Data Collection

Our study was conducted at the University of Macedonia in Thessaloniki, Greece. The University has eight (8) Departments in the fields of Economic and Social Sciences[3], accepting new students every year. The duration of studies is for a minimum of four years.

We decided to conduct both the pilot and main survey electronically, by contacting all students via email[4]. The email contained an invitation to participate in the survey[5,6] along with a link to it.

In order to conduct an online survey we first need to make sure that the respondents are able to use a computer and the internet (Couper 2008, p.4). Both of these conditions are met since the population of our survey mostly consists of young students who have email accounts.

Before conducting an online survey, we should be aware of the evidence regarding response rates. Kaplowitz et al. (2004, p.100) have found that online survey results are comparable to those of postal surveys. In addition, research shows that the response rates of telephone surveys decline with time (Pew Research 2012).

There is a series of scholars who have conducted similar research to oursby distributing questionnaires in person (i.e. Wiers-Jenssen, Stensaker

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[3]For more information you can visit the University's webpage, http://www.uom.gr/modules.php?op=modload&name=Statikes&file=index&newlang=eng&stid=54&categorymenu=1.

[4] The Computers and Networks Centre made a new email address from which all invitations were sent. In addition, the Computers and Networks Centre put together the list of emails to which the invitations were sent. The conductors of the survey did not have access to students' emails or the email account built for sending the invitations.

[5]When students register with the University they get an email address from the institution. This is the address we sent the invitation to participate.

[6] This type of surveys are called server-side Internet surveys. For more information: Couper 2008, p.3.

and Grogaard 2002, p. 110;), but evidence shows that data drawn from online surveys has smaller variance than that who were collected with the physical presence of the respondent (Salmon et al. 2004).

Researchers usually need to take into account the cost of conducting a survey, as most of the times funds are limited. In our effort to keep the cost to a minimum[7] and get the highest possible response rates we decided to conduct our survey online.The online platform we used to distribute our questionnaire is called Forms and is provided free of charge by Google Docs[8].

Description of Sample

As the study design focused on second and fourth-year students, we had to ran the pilot study with a different sample. The pilot study was conducted with third year students some months prior to the final study (autumn 2014) and was available for a two-week period. After taking into consideration the response rate and results, we made some alterations in both the invitation and questionnaire before proceeding to the main study.

The main study questionnaire was circulated among all second and fourth-year students registered with the University. We did not ask from any first year students to express their views as they may not have had any experience of some of the available services (Thorsten, Fuß, Voss and Gläser-Zikuda 2010, p.110) or might not have yet had an established opinion. Students in their second year of study are expected to have formed

[7]The cost of conducting surveys in person is much higher than the online one. Distributing and coding questionnaires raises the total budget (printing, distributing, gathering and coding questionnaires), which we tried to avoid.

[8] The tool is Google Forms and allows users to personalize any questionnaire. For more info visit http://www.google.com/forms/about/?gclid=CjwKEAiAmqayBRDLgsfGiMmkxT0SJADHFUhP3dn0O54V_4MLHh83QKERVgX9ugkwcCHRsYblCZg7uhoCNOrw_wcB

a view of what the university has to offer, while by their fourth year their views should have been crystallized[9].

For second-year students the survey was available for a month, whereas for the fourth-year students it was available for almost two months[10]. Both surveys were conducted in the academic year 2014-2015 (spring 2015).

Description of questionnaire design

Having completed a thorough literature review of the questionnaires used worldwide to measure student satisfaction, we constructed a questionnaire based on our needs and the Greek reality. We tried to include questions for all the services provided by the University of Macedonia and to group them together in a cohesive way. We also included questions on student engagement to find out whether it affects overall satisfaction. In addition, respondents were given the chance to express any other point of concern through an open question at the end of the questionnaire. The categories of questions as they appear are as follows:

- General/Screening questions
- Satisfaction from the teaching staff
- Satisfaction from assessment and feedback
- Satisfaction from the overall organization
- Satisfaction from personal development
- Satisfaction from the available resources (including the library, sports

[9]Some scholars express the view satisfaction surveys should seek feedback at the end of a course or program of study (Richardson 2005, p.403). Nevertheless, Narasimhan notes that such practice would not benefit the respondents and that feedback during the earlier study stages could also benefit students themselves (2001, p.189). Other scholars have also suggested that the benefits of completing an academic program cannot be immediately realized, and thus surveys should be conducted after graduation (Richardson 2005, p.404).

[10] We gave fourth-year students more time to complete the survey, as they are in their final year and their schedule is more demanding. We tried to make the survey available for as long as possible in order to attract as many respondents as possible.

hall, availability of computers, lecture halls, etc.)

- Student Engagement
- Overall satisfaction from the course
- Further Comments (positive or negative)
- Demographics

For almost all of the questions the possible answers were on a five-point Likert scale[11]. Likert scales are particularly useful for categorical data, as they provide the respondent with a range of options covering both extreme and mainstream opinions/feelings. The middle category of a Likert scale can express neutral feelings or people who do not pay particular attention to the questions[12].

Factors and Reliability Analysis

The questionnaire was designed to gather student satisfaction on a number of categories. After the main study, we tried to check whether the questions grouped together could reveal a common structure. Thus we used principal components analysis with varimax rotation in SPSS to identify theunderlying dimensions or factors. The factorial analysis helps reduce the dimensions, grouping items together into factors that explain the
majority of the variance observed in a greater number of variables (Marzo-Navarro, M., Pedraja-Iglesias, M., & Rivera-Torres, M.P. 2005, p. 57).

We ran the same technique for both our samples, to find out whether the results validate our design. The two samples produce results revealing different underlining factors that do not denote the categories we wanted. The only dimension that is the same in both samples is that of overall

[11] Respondents were given the option “Don’t Know/Don’t Answer(DK/DA)”, in addition to the Likert scale.

[12]DeVellis, R. (2012) *Scale Development. Theory and Applications*, Los Angeles: Sage, p.93,94, deVaus, D. (1985) *Surveys in Social Research*, Australia: Routledge, p. 102.

satisfaction[13]. Thus, after running a factor and reliability analysis we store the factor analysis scores as a new variable describing overall satisfaction.

One possible explanation for the varying results might be the size of the sample. Not all scholars agree on the effect sample size has on factor analysis, and therefore we cannot be certain[14]. In case this survey could be repeated we could also reconsider the questions included.

Response Rate

Having had the experience of the pilot study we were aware of the low response rate. In total, 306 invitations were sent for the pilot study and only 36 students completed the survey in full (11.8% response rate). We made an effort to improve our questionnaire, as well as the invitation for participation in order to have a higher turnout. We took into account the most widely accepted methods of increasing the response rate and ended up employing the following:

1. **Survey promotion:** Students received a personal invitation in their e-mail account containing –among other thing- a link to the survey (Ballantyne 2005).
2. **Survey completion email reminders:** Reminders to participate in the survey can help improve the response rate (Kaplowitz et al. 2004). Unfortunately we could not sent reminders only to the students who hadn't participated in the survey and therefore all the students were receiving them (Nulty 2008, p.303). We sent out three reminders in

[13] More specifically, in the second-year students sample all questions designed to capture the overall satisfaction appear to , in fact, belong in the same factor (reliability was also checked). For the fourth-year students sample one of the questions had to be removed as it did not fit in the factor and the reliability rises after its removal.

[14]There are two categories of general recommendations in terms of minimum sample size in factor analysis. One category says that the absolute number of cases (*N*) is important, while the another says that the subject-to-variable ratio (*p*) is important. Arrindell and van der Ende (1985), Velicer and Fava (1998), and MacCallum, Widaman, Zhang and Hong (1999) have reviewed many of these recommendations (https://www.encorewiki.org/display/~nzhao/The+Minimum+Sample+Size+in+Factor+Analysis).

order to avoid disturbing our participants[15].

3. **Reassurance that their answers will be taken into account:** In the invitation message we tried to reassure the students that their answers will be taken into account by the universities authorities (Zúñiga 2004) and by the respective professors (Nulty 1992). We also made students aware of the research for the purposes of which this survey was conducted.
4. **Motives for completing the survey:** We made students aware that four lucky participants would be given a gift-card after a draw (two winners per year of study) (Zúñiga 2004; Nulty 2008, p.303).
5. **Survey aiming at constructive criticism:** At the end of the questionnaire students were given the option to comment further on any topic that we might have not touched. An open question gathered all their positive and negative comments (Nulty 2008, p.304).
6. **Reassurance for survey anonymity:** We do not request from the respondents to give their names. We also reassure them that their details (emails, age, gender, etc.) won't be used for anything other than the research (Dommeyer, Baum & Hanna 2002).
7. **Extend the duration of the survey:** We tried to keep the survey live for as long as possible. There is evidence suggesting that the longer a survey is active, the more participants it attracts (Nulty 2008, p.305)
8. **Limit the length of the questionnaire:** An effort has been made to limit the questions to only the vital ones. There were some questions removed after the pilot survey.

The aforementioned methods act cumulatively (Ballantyne 2005) and this is the reason why we introduced all of them. Unfortunately, the response rates were not as high as we would hope. For the main study, 1854 invitations were sent to second-year students and 1498 to fourth-year

[15]for more thorough discussion on the ideal number of: Zúñiga 2004; Kittleson 1995; Cook et al. 2000.

students. The response rates were 12.2% (chart 1) and 14.4% (chart 2) respectively.

Chart 1. Second-Year students response rate

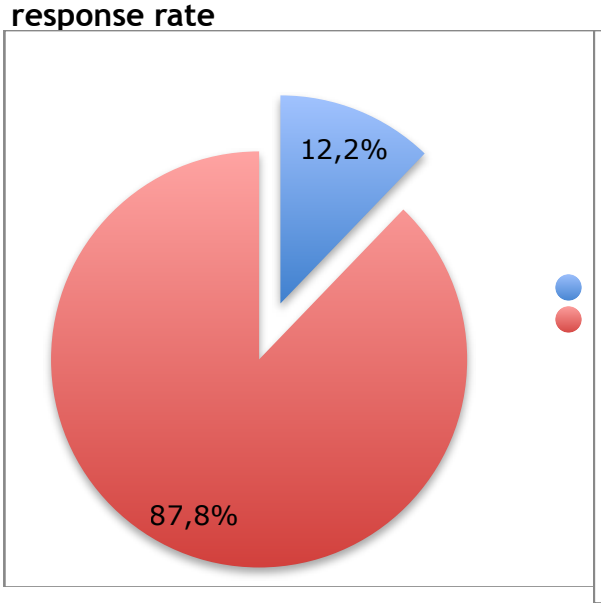
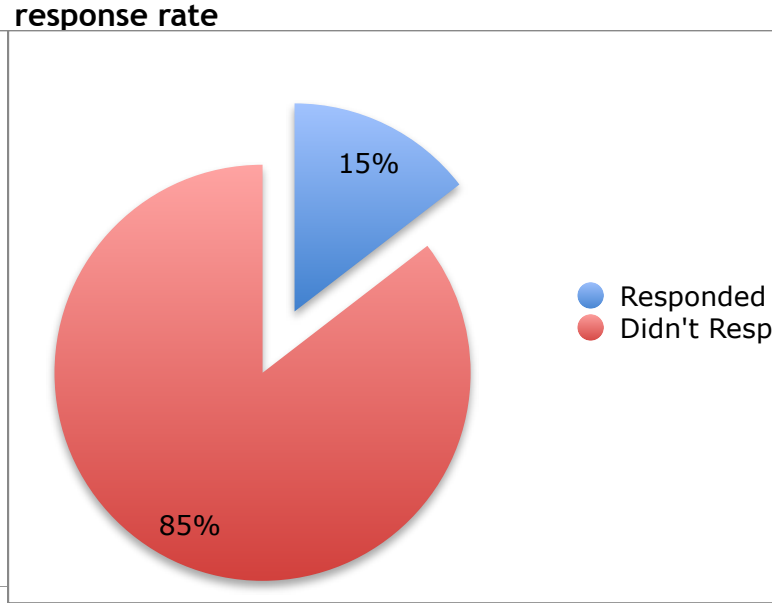


Chart 2. Fourth-Year students response rate



There is a series of possible explanations of the low response rates. It is possible that some of the students do not use their university provided e-mail accounts at a regular basis and thus did not even become aware of the existence of the survey.

In addition, students in Greek universities are not acquainted with the satisfaction surveys. In case this or similar surveys are conducted on an annual basis a culture of participation might be established, leading to a higher response rate (Ballantyne 2005).

We should also consider the possibility that the free nature of education in Greece could inhibit participation. In many of the countries where student satisfaction surveys are conducted, students have to pay fees and are therefore more demanding. Following this line of thought students might think that paid universities want to improve their reputation and «customer» satisfaction. On the contrary students in free universities might think that public universities do not need to act accordingly. As a result a student satisfaction survey might not seem a viable way to make a difference and a student might think that his participation will not be taken into account.

Further investigation of low response rates is of vital importance, but beyond the purposes of this research.

The effects of a low response rate

For the current research, we made an effort to approach the whole relevant population (all second and fourth-year students in the University of Macedonia).Therefore we did not target a specific sample. Despite the fact, students who responded to the survey could still be perceived as a sample for our statistical analysis. The first and most important question we have to answer for any sample is whether it is representative of its population and to what extent the results can be generalized to the population.

In any survey, sampling error is always expected and can be accounted for. In market (Richardson 2005, p.405) or public opinion research a common strategy is to weight the responses. In case, though, there are systematic differences between our sample and the population (Nulty 2008, p.307), we will not be able to account for them and generalize to the population. To minimize the possibility of error and systematic differences we can increase our sample and response rate. Unfortunately, these are not viable solutions for our research, and thus we can only investigate how the systematic differences might have occurred.

All those who completed the survey are a non-random population sample (Nulty 2008, p.307). People who respond in an online survey might be systematically different in their demographics from those who would possibly answer in a face-to-face survey (Nulty 2008, p.307). In addition, research has shown that those who answer in surveys are systematically different from those who choose not to answer in regards to age and social class (Richardson 2005, p.406). People who participate also differ from those who do not as far as it concerns their attitudes (Goyder 1987, Chapter 7); the ones who complete questionnaires were found to have higher levels of dissatisfaction than students who decide not to fill in the questionnaires (Williams & Cappuccini-Ansfield 2007, p. 168). Last but not least, they differ in their attitudes and experience of higher education (Astin 1970,p. 447).

In similar surveys, response rates start as low as 16% (Nutly 2008, p.303) and can reach 30% (MacDonald *et al*. 2007, p. 3) or even higher (Nutly 2008, p. 303). In our survey the rates are at the lowest end (12.2% and 14.6%

respectively)[16]making generalizations to the population difficult to achieve.

If we accepted that our sample is representative of the population, then we could generalize according to the following criteria:

- For second year students, the confidence interval is 6.11 at a 95% confidence level, for a sample of 226 out of 1854 students.
- For second year students, the confidence interval is 6.14 at a 95% confidence level, for a sample of 218 out of 1498 students.

Overall Satisfaction

In this section we are going to investigate which factors affect overall student satisfaction.

Second-Year Students

As mentioned previously we have checked for underlining dimensions with the help of Factor Analysis in SPSS. As we can understand from the following table (Table1) there is only one factor in the "overall satisfaction" category of questions. We have also checked the reliability of this dimension (Table 2,3) and the results reveal that all the variables included measure consistently the same thing (Field 2005, p,666).We saved the factor analysis scores as a new continuous variable and our next step was to identify which, if any, variables affect overall satisfaction.

Table 1. Total Variance Explained

[16]A low response rate was also observed at a post-graduate satisfaction survey, reaching only 12.3% (Butler&Jackson 2011, σελ.1).

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.864	47.728	47.728	2.864	47.728	47.728
2	.961	16.012	63.740			
3	.716	11.935	75.675			
4	.589	9.823	85.498			
5	.523	8.722	94.220			
6	.347	5.780	100.000			

Extraction Method: Principal Component Analysis.

Table 2. Reliability Statistics

Cronbach's Alpha	N of Items
.767	6

Table 3. Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
E1	18.074	13.194	.384	.766
E2	18.333	12.986	.413	.759
E3	18.093	12.698	.659	.704
E4	18.116	12.670	.535	.727
E5	17.843	12.412	.549	.723

E6	17.759	11.356	.577	.715

Regression Results

The results in tables 4 and 5 demonstrate the final model we constructed for second year students. Our model accounts for 50% (R Square) of the variability in overall satisfaction (our dependent variable). After testing the effect of a series of variables, we found out that only seven variables appear to have an effect on overall satisfaction. The variables are:

- B2, Satisfaction from the extent to which the tutors explain the subjects,
- B3, Satisfaction from the extent to which the tutors make their classes and subjects interesting,
- B6, Agreement with the statement "the marking criteria are precise",
- B12, Satisfaction with schedule alteration updates,
- B13, Satisfaction from the improvement of communication skills
- B17, Satisfaction from the development of justification skills
- D1.7, Agreement with the statement "I use ideas and concepts from other subjects in class or to complete an assignment"

All the variables are positively related with overall satisfaction; thus, as satisfaction or agreement improves so does overall satisfaction.

Table 4.Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.707	.500	.480	.72439020

a. Predictors: (Constant), Gender, B2, B3, B6, B12, B13, B17, D1.7

Table 5. Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-4.782	.386		-12.374	.000
	B2	.200	.080	.160	2.513	.013
	B3	.262	.074	.221	3.544	.000
	B6	.118	.054	.119	2.206	.028
	B12	.166	.045	.189	3.677	.000
	B13	.206	.070	.182	2.938	.004
	B17	.162	.066	.146	2.450	.015
	D1.7	.256	.068	.192	3.777	.000
	Gender	.193	.101	.095	1.910	.058

a. Dependent Variable: REGR factor score 1 for analysis 1

Fourth-Year Students

Table 6 helps us realize that there is only one factor in the "overall satisfaction" category of questions. For the fourth-year students two dimensions could be derived from the "overall satisfaction" questions category. We chose to focus on the one that explain the variance.We have also checked the reliability of this dimension (Table 7,8) and the results reveal that all the variables included measure consistently the same thing. We saved the factor

analysis scores as a new continuous variable and our next step was to identify which, if any, variables affect overall satisfaction.

Table 6. Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.345	58.617	58.617	2.345	58.617	58.617
2	.674	16.860	75.477			
3	.562	14.048	89.525			
4	.419	10.475	100.000			

Extraction Method: Principal Component Analysis.

Table 7. Reliability Statistics

Cronbach's Alpha	N of Items
.763	4

Table 8. Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
E3	11.02	6.417	.578	.701
E4	11.08	6.396	.511	.733
E5	10.52	6.109	.529	.725
E6	10.43	5.384	.638	.662

Regression Results

Table 9. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.696[a]	.484	.463	.72149568

a. Predictors: (Constant), Gender, B7, B5, B14, B2, B8, B3, B9

Table 10. Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-3.961	.328		-12.064	.000
B2	.230	.075	.182	3.044	.003
B3	.299	.082	.247	3.634	.000
B5	.142	.065	.140	2.203	.029
B7	.126	.053	.129	2.374	.019
B8	-.180	.072	-.198	-2.501	.013
B9	.176	.069	.208	2.567	.011
B14	.245	.065	.237	3.789	.000
ΣT1	.311	.109	.150	2.846	.005

a. Dependent Variable: REGR factor score 1 for analysis 1

The results in tables 9 and 10 demonstrate the final model we constructed for fourth-year students. Our model accounts for 48.4% (R Square) of the variability in overall satisfaction (our dependent variable). After testing the effect of a series of variables, we found out that the following eight variables have an effect on overall satisfaction. The variables are:

- B2, Satisfaction from the extent to which the tutors explain the subjects,
- B3, Satisfaction from the extent to which the tutors make their classes and subjects interesting,

- B5, Satisfaction with the guidance provided by the tutors,
- B7, Agreement with the statement “the marking & assessment criteria are fair”,
- B8, Agreement with the statement “I have received detailed comments for my work”,
- B9, Agreement with the statement “the comments I received have helped me improve”,
- B14, Satisfaction from the development of critical thinking
- Gender.

All the variables are positively related with overall satisfaction; thus, as satisfaction or agreement improves so does overall satisfaction. For the case of gender, being a female appears to have a positive effect on overall satisfaction[17], therefore for fourth-year female students are generally more satisfied than male ones.

Discussion

It becomes clear that student satisfaction changes through the years of study and gets influenced by different factors. The only variables that appear to have an effect on both second and fourth-year student satisfaction are B2-Satisfaction from the extent to which the tutors explain the subjects and B3-Satisfaction from the extent to which the tutors make their classes and subjects interesting. Taking these results into account, tutors should try to go the extra mile to explain their courses and make them as interesting as possible.

Although, it is always beneficial for tutors to know how they can satisfy their students, our results should be approached with great caution. Our response rates were very low and this could indicate that our sample is unrepresentative of the population.

In the future, if such research should be repeated, the questionnaires

[17] The gender variable was coded as follows: 1-male, 2-female.

should be tested again and the results should ideally be compared to ours. Establishing an annual student satisfaction survey would bring higher response rates, while also benefiting the institution and its students (both potential and current).

Since little is known about response rates in electronic surveys, it would also be beneficial to provide the survey in a variety of formats for students who have disabilities (Richardson 2005, p.406, 407) or who prefer traditional surveys. Despite the fact that the cost would rise, it would be certain that the response rate would rise.

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