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LA ECONOMÍA DIGITAL Y SU IMPACTO  
EN LA GESTIÓN DE LAS ORGANIZACIONES

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**XXIII Congreso Internacional de Investigación en Ciencias Administrativas**

**DETERMINATION OF FACTORS FROM STUDENTS PROFILE WHICH CAN  
AFFECT STUDENT SATISFACTION OF LUTSK NATIONAL TECHNICAL  
UNIVERSITY SERVICES**

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México.

## **2.2. Determination of factors from student's profile which can affect student satisfaction of Lutsk National Technical University services**

**Yuliia Zavalii**

**Paula Odete Fernandes**

**Nelia Herasymiak**

### **Abstract**

In higher education, students are the main customers of universities. As such, providing quality services and satisfying students' needs as well as expectations are vital for universities to succeed from the increasing competitiveness of this industry. This study focuses on inner factors of student profile which can affect student satisfaction of Lutsk National Technical University. To complete this purpose, the research question will be answered: which factors from students' profile affect student satisfaction of Lutsk National Technical University? The object of this research is one of two big higher educational institutes in Volyn region, Ukraine - Lutsk National Technical University. The students that participated in this study enrolled in the academic year, 2017/2018. In order to perform study, survey method applied to collect the data and number of received valid questionnaire were 200. It was decided to use questionnaire method to collect data. Descriptive analysis used to identify profile of respondents, also find satisfaction level. To evaluate differences between groups, built association between variables, find relation between variables and answering to the research hypothesis inferential analysis applied. The result showed that generally students are satisfied, with a low satisfaction level, with service quality offered by Lutsk National Technical University. In addition, research found that there are no differences in overall satisfaction by faculty and gender. However, it was found that there is negative correlation between age of respondents and overall satisfaction.

**Keywords:** *Student satisfaction, Loyalty, Lutsk National Technical University, Ukraine.*

## **Introduction**

With the higher education sector becoming an increasingly competitive market, university student satisfaction has become an important component of quality assurance. Theoretical conceptualizations such as students' satisfaction as a multi-dimensional construct involving the interaction of personal, sociological and contextual factors such and processes affecting their development are addressed in this work.

Main objectives of the study are: to determine student's satisfaction according to different aspects; to reach overall satisfaction of student's within the given service in terms of different aspects; identify loyalty of students. Main research question of the study is which factors from students' profile affect student satisfaction of Lutsk National Technical University?

The research is based on the online survey made in university. The sample consists of 200 students from different age and study area. Then data was analysed due to research hypotheses and conclusions were made. This work is divided into 3 parts. First part covers framework of the research. The concept of assuming a student as a main client of university was presented. It was decided to learn how student's profile affects student satisfaction.

Second section covers the methodology of research. The survey related to the satisfaction level and factors that can affect it was described. There was also presented main objectives of the study and research hypotheses.

The third part is dedicated to results of the survey and its analysis. Inferential analysis and descriptive statistics were presented. This chapter is about estimating the level of student satisfaction of LNTU and determination which factors from student's profile can make impact on it.

## **Framework**

The basic characteristics of education:

- it expands the cultural horizon of the individual and it provides him better life opportunities,
- it contributes to the elastic adaptation to changes which is brought by technological progress,
- it provides active participation in the process of making different decisions at the operational, tactical and strategic level depending on the characteristics of socio-economic relations,
- it increases interest for social cohesion, and it facilitates realization of broader social objectives,
- it provides rational utilization of free time (Dolinsky, 1994).

Higher education institutions must have maximum respect to the current and future needs of the society in order to educate professionals of certain profiles. Concerning that there are three basic tasks higher education institutions have to do:

- scientific-teaching (studying, implementing and promoting the latest scientific and educational achievements),
  - commercial (meeting the needs of the economy for the human resources),
  - social (accomplished through the synthesis of two previously mentioned items)
- (Chadwick & Ward, 1987).

Facing a downfall in the enrolment of new participants, facing increased costs of functioning, nowadays universities started to use marketing to attract students and funds (Andrilic, Budic & Pismis, 2013). Now they define better their target markets, wherewith improving communication and promotion and appropriately meeting the needs and desires of students.

It is important to understand that as student is a main customer of university, to get high level of loyalty all elements of marketing should be used.

Marketing mix for services of higher education includes the following elements:

- product/service (subjects, directions, additional services),

- price (registration fee, school fee, other costs),
- promotion (publicity, public relations, advertising, personal selling),
- place/distribution (location of space, layout),
- people (contactibility),
- process (logistics of services delivery) (Dolinsky, 1994).

According to Kotler and Clarke (1987) satisfaction is a state felt by a person who has experienced a performance or an outcome that fulfil his or her expectation. Devasagayam, Stark and Watroba (2013, p. 3) state that “satisfaction is an ongoing, dynamic process”. To understand deeply the meaning of satisfaction, we need to talk about perception of service quality in higher education. Due to Johnson and Winchell (1988, p. 9) service quality is “the totality of features and characteristics of a product or service that bears on its ability to satisfy stated or implied needs”. A second definition explains service quality as the sum of perceived quality minus expected quality, which in turn, if positive, leads to satisfaction (Grönroos, 1984). However, Theodorakis, Kambitsis, Laios and Koustelios (2001, p. 434) establish that “even quite satisfied spectators can rate service quality generally lower”. Also, “individuals are often driven by the I-have-high-expectations social norm and this creates a bias towards social desirability” (Brandon-Jones & Silvestro, 2010, p. 1295). It means that even when the difference between perceived quality and expected quality may be negative, the customer may still be satisfied with the service.

While talking about student`s expectations of service quality, we need to assume that students consider their past experiences into account when they evaluate their expected service quality. That`s why the results of our research can vary.

In many educational fields students are required to pay tuition fees and this places a greater focus on the value and the quality of the education they receive. In this competitive framework, only those institutions which provide high quality educations and environments for their students can survive (Brandon-Jones & Silvestro, 2010). These effects can be measured by assessing overall student satisfaction.

Despite organizations being subsidized by the state having the tendency to ignore the needs of its targets publics, which is the case of Universities, facing this new and more competitive context, these institutions need to incorporate a better orientation to the market, seeking to obtain competitive advantages over its competitors, as well as the construction of a positive image close to its target market (Machado et al., 2011).

A long term relationship with students can provide an institution with a type of competitive advantage, particularly at a positive word of mouth level concerning potential, present and future students, as well as through the possible collaboration with the institution, especially after graduation, contributing to the (work) placement of recent graduates. The dissatisfaction of students, on the contrary, could have ominous consequences for both the university and the student, namely unsuccessful students (Wiese, Willis & Hutchins, 1994; Walther, 2000), quitting or transferring (Thomas et al., 1996; Astin et al., 2002) and negative word of mouth being harmful to future applications (Walther, 2000).

This study is dedicated to test hypotheses and understand which inner factors affect satisfaction. It was assumed that expectations and age of respondents have influence on level of satisfaction. Also it will be tested if gender affects satisfaction.

Lutsk National Technical University has seven faculties which includes specialities connected with business, IT, building, design and law. It was assumed that students from different areas have differences in perception of satisfaction.

## **Methodology**

This study examines the relationship between level of student`s satisfaction and factors from students` profile that can affect it. Evaluation of student satisfaction of internal performance of universities helps higher education Institutions to meet student expectations.

To answer the main research question if factors from student`s profile affects student satisfaction of Lutsk national university, survey was applied and descriptive and

inferential analysis was made in order to draw inferences regarding the association between the variables and testing the truthfulness of the hypothesis. Does the students' satisfaction varies based on different aspects or not? Study examined whether there is a relation between different demographic factors and aspects.

After understanding the main goals of the study, the objectives of the study were defined. Specific objectives of the research are the following:

- O<sub>1</sub>: To determine student's satisfaction according to different aspects;
- O<sub>2</sub>: To reach overall satisfaction of student's within the given service in terms of different aspects;
- O<sub>3</sub>: Identify loyalty of students.

Based on the objectives of the study, the research hypotheses were developed (Table 1).

Table 1. Research hypothesis of the study.

<b>Label</b>	<b>Hypothesis</b>
H <sub>1</sub>	Overall satisfaction level of LNTU students is equal or more than 4 points.
H <sub>2</sub>	There is negative correlation between age of respondents and overall satisfaction.
H <sub>3</sub>	There are differences in overall satisfaction by faculties of LNTU.
H <sub>4</sub>	There are differences in overall satisfaction by gender.

A target of the study is LNTU, located in Lutsk, Ukraine. Responses were collected from students during April and May of 2018, in the second semester of 2017/2018 academic year. The sample size consists of 200 students. To collect data there were two possible ways to choose: online data collection or paper-based data collection. Paper-based way could cause too many troubles, because of the distance and problems with controlling all the processes. Therefore, online data collection way was chosen.

Survey was applied online using google forms and was distributed to all seven faculties of LNTU by Department of information of Student Council. All data was coded and moved to SPSS Statistics 23. Using this program, it was made further analysis.

The main purpose of the study is to estimate the differences in level of student's satisfaction in LNTU based on variables in student's profile which could influence the total satisfaction. To answer this question, if the students of LNTU are satisfied or not, it has been made a descriptive analysis and an inferential analysis in order to draw inferences regarding the association between the variables and testing the truthfulness of the hypothesis. For the primary data collection questionnaire method was used. A target of the study is LNTU, located in Lutsk, Ukraine. Responses were collected from students during April and May of 2018, in the second semester of 2017/2018 academic year. The sample size consists of 200 students. To collect data there were two possible ways to choose: online data collection or paper-based data collection. Paper-based way could cause too many troubles, because of the distance and problems with controlling all the processes. Therefore, online data collection way was chosen. Survey was applied online using google forms and was distributed to all seven faculties of LNTU by Department of information of Student Council. As a base for the questions, the literature review was used. Questionnaire consists of 3 parts. First part consists of demographic questions. Second part of survey was based on analogous one, described in article "Student satisfaction in higher education: a Portuguese case study" written by De Marie, Cono and Fernandes (2016). It comprised questions related to the students' satisfaction measured on a 5-point Likert scale (1 - 'Strongly Disagree', 2 - 'Disagree', 3 - 'Neutral', 4 - 'Agree' and 5 - 'Strongly Agree');

- First expression of LNTU;
- Satisfaction with the choice of high educational institute;
- If there was a chance, student would choose LNTU again;
- Students' choice of LNTU – right decision;
- Student is happy because of choosing LNTU;
- Student considers his choice of LNTU right;
- Student's happy to attend LNTU;
- Student likes to tell about LNTU his friends;
- Student likes to help future students by giving information about LNTU and its' programs;
- People ask student about programs and studying in LNTU;

- LNTU meets student's expectations.

In the present study it was achieved a Cronbach's Alpha of 0.943 (Table 2), to observe the reliability of the questionnaire including the 11 items to measure the satisfaction. If  $\alpha \geq 0.9$ , it means that internal consistency is 'excellent'. While analysing item statistics, it can be seen that the mean of each item doesn't differ much through all. More we can estimate that the influence of deleting any of items is not significant. In conclusion, the result showed that the score of the Cronbach's Alpha indicates that the measurement scale of the satisfaction construct was stable and consistent.

**Table 2. Reliability statistics.**

<b>Cronbach's Alpha</b>	<b>Cronbach's Alpha Based on Standardized Items</b>	<b>N.º of Items</b>
0.943	0.944	11

The responses were analysed by using different statistical approaches using IBM SPSS Statistics 23. After completing questionnaire, all questionnaires have been coded and were entered into an SPSS spreadsheet for analysing. In respondent profile questions, "yes" and "no" answers questions as coded "1" and "2" respectively. Also other closed questions type coded with the numbers and added to SPSS.

In the Table 3 objectives, research hypothesis, and the techniques were used to analyse the data are presented:

Table 3. Data Analysis Techniques.

Label	Objectives or Research Hypothesis	Data analysis technique
H <sub>1</sub>	Overall satisfaction level of LNTU students is equal or more than 4 points.	t-Student test
H <sub>2</sub>	There is negative correlation between age of respondents and overall satisfaction.	Pearson correlation
H <sub>3</sub>	There are differences in overall satisfaction by faculties of LNTU.	Kruskal-Wallis test
H <sub>4</sub>	There are differences in overall satisfaction by gender.	t-Student test
O <sub>1</sub>	To determine student's satisfaction according to different aspects.	Frequency tables
O <sub>2</sub>	To reach overall satisfaction of student's within the given service in terms of different aspects.	Mean and Standard Deviation
O <sub>3</sub>	Identify loyalty of students.	Graph with relative and absolute frequencies

To decide about corroboration of the research hypotheses it will be assumed a 5% level of significance.

In the Table 4 there is presented the population of 3 958 students from different study areas.

Table 4. Population and sample.

Faculty	Population		Sample	
	N	%	n	%
<b>Business faculty</b>	672	17.0	78	39.0
<b>Faculty of Computer Sciences and Information Technologies</b>	555	14.0	15	7.5
<b>Technological faculty</b>	658	16.6	17	8.5
<b>Faculty of Construction and Design</b>	498	12.6	16	8.0
<b>Faculty of Ecology and Instrumentation and Energy Systems</b>	550	13.9	29	14.5
<b>Faculty of Accounting and Finance</b>	325	8.2	21	10.5
<b>Machine-building faculty</b>	700	17.7	23	11.5

### Presentation of the results

While analysing students profile, there was found that gender structure respondents is balanced. On the Figure 1 it is shown that number of female students is a bit bigger than a male one. 56.28% of the sample is female students, which consists of 112 students and other 43.72% is male students – 87 students.

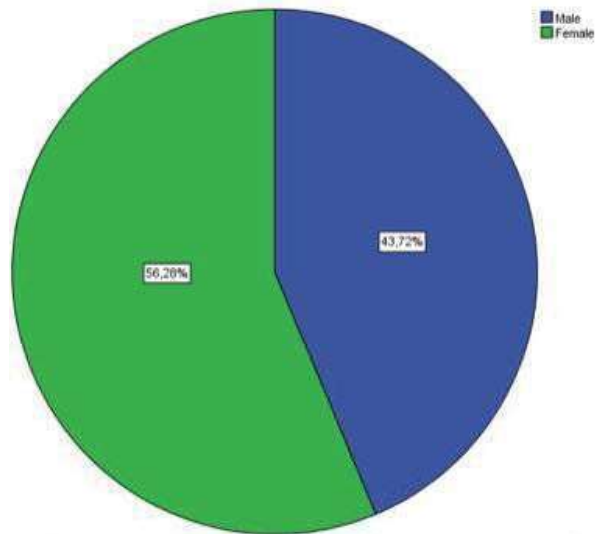


Figure 1. Distribution of students by gender.

This sample is dominated by 18-years old students which make up 32.5% of the sample (65 students) and 20-years old – 20.5% of the sample (41 students). Students, whose age is 19 consists 15.5% of the sample (31 students), 21 – 14.5% (29 students), 17 – 6.5% (13 students), 22 – 5.5% (11 students), 23 – 2.5% (4 students) and only one 25-years old person. All distribution can be seen at the Figure 2.

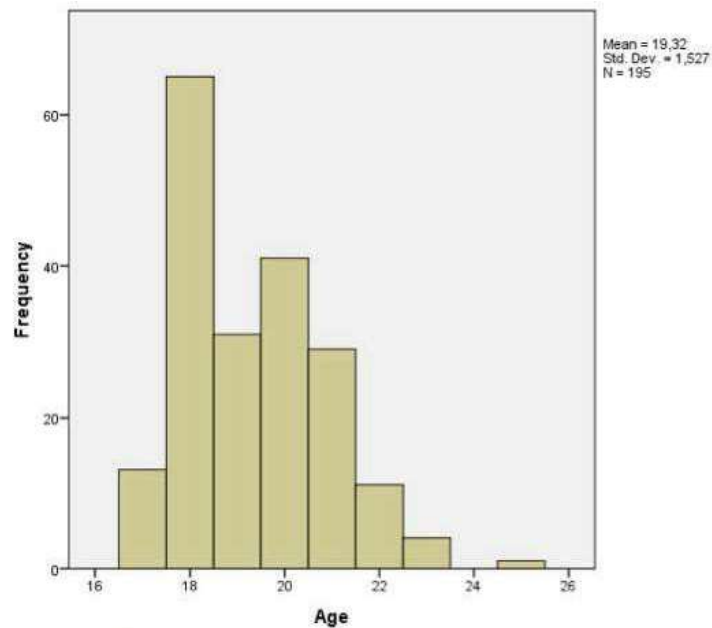


Figure 2. Distribution of students by age.

Respondents who participated in this study belong to different study areas. The main part of students is from Business Faculty – 39.20% (78 students). The second most significant group belongs to the Faculty of Ecology and Instrumentation and Energy systems – 14.57% (29 students). Machine-building faculty contains of 11.56% of respondents (23 students), Faculty of Accounting and Finance – 10.56% (21 students), Technological faculty – 8.54% (17 students), Faculty of Construction and Design – 8.04% (16 students) and Faculty of Computer Sciences and Information Technologies – 7.54% (15 students).

Asked from students` their last finished educational institute. The questionnaire included four answers:

- School: 63.32% (126) of respondents came to LNTU just after school;
- Gymnasium: 11.56% (23) of respondents finished gymnasium before coming to LNTU;
- College: 12.06% (24) of students have additionally finished college;
- University: 13.07% (26) of respondents have already finished university once.

Next questions are related to abroad experience of students. First they needed to estimate how many times they were abroad. 44.44% (88) of students have never left the country. 37.37% of students (74) were abroad up to five times. Only 18.18% (36) of respondents have been abroad more than five times.

Secondly students were asked if they have experience of studying abroad. 45% of students (180) have never been studying abroad and only 9.55% (19) responded “yes”.

Level of education expected was reviewed in the next question. 64.14% of respondents (127) require European level of education and 35.86% of students (71) has no specific level expected.

It was important to ask how students consider usefulness of their knowledge and diploma in the future. 66.33% of students (132) consider their future diploma useful.

However, 33.67% of students (67) think that probably they will not use their diploma in future.

Next question was related to the students' willingness to compete on labour market. 61.93% of respondents (122 of students) consider themselves not ready to labour market competition and 38.07% of students (75) responded "yes".

To answer the O<sub>1</sub> "To determine student's satisfaction according to different aspects", mean (M) and standard deviation (SD) were calculated. The results of calculations are presented in the Table 5.

For all the attributes, mean score is close to 3.50 (except item "People ask me about LNTU", it's mean is 2.90 pints, SD is 1.271). According to the result, it is concluded that satisfaction level is considered as normal.

Table 5. Descriptive statistics of satisfaction items.

Item	n	Mean	SD
First expression of LNTU	198	3.48	0.938
Satisfaction with choosing LNTU	198	3.62	1.092
If there would be a chance, will choose one more time	198	3.28	1.278
Choose LNTU - right decision	199	3.52	1.180
Happy with choosing LNTU	198	3.49	1.200
I did right decision with choosing LNTU	197	3.51	1.168
Happy to attend LNTU	199	3.34	1.195
Like to tell friends about LNTU	198	3.40	1.313
Like to help future students and tell them about LNTU and it is programs	199	3.38	1.361
People ask me about LNTU	199	2.90	1.271
Meets expectations	199	3.36	1.168

In the Table 6 there is presented more detailed analysis of responses to each satisfaction item. To form the information presented in Table 6, the frequency tables of

each item were used. It is summed up the information about how many respondents have chosen each point of Likert scale for every question related to satisfaction.

Table 6. Detailed descriptive statistics of satisfaction items.

Item	1	2	3	4	5
	n (%)	n (%)	n (%)	n (%)	n (%)
First expression of LNTU	7 (3.5)	15 (7.5)	78 (39.0)	72 (36.0)	26 (13.0)
Satisfaction with the choice of high educational institute	9 (4.5)	22 (11.0)	50 (25.0)	72 (36.0)	45 (22.5)
If there was a chance, student would choose LNTU again	24 (12.0)	28 (14.0)	56 (28.0)	49 (24.5)	41 (20.5)
Students` choice of LNTU – right decision	15 (7.5)	21 (10.5)	56 (28.0)	60 (30.0)	47 (23.5)
Student is happy because of choosing LNTU	16 (8.0)	22 (11.0)	56 (28.0)	57 (28.5)	47 (23.5)
Student considers his choice of LNTU right	15 (7.5)	19 (9.5)	59 (29.5)	59 (29.5)	45 (22.5)
Student`s happy to attend LNTU	15 (7.5)	34 (17.0)	58 (29.0)	52 (26.0)	40 (20.0)
Student likes to tell about LNTU his friends	19 (9.5)	32(16.0)	55 (27.5)	35 (17.5)	57 (28.5)
Student likes to help future students by giving information about LNTU and its` programs	25 (12.5)	28 (14.0)	49 (24.5)	40 (20.0)	57 (28.5)
People ask student about programs and studying in LNTU	32 (16.0)	48 (24.0)	54 (27.0)	38 (19.0)	27 (13.5)
LNTU meets student`s expectations	15 (7.5)	29 (14.5)	62 (31.0)	55 (27.5)	38 (19.0)

Note: 1 - 'Strongly Disagree', 2 - 'Disagree', 3 - 'Neutral', 4 - 'Agree' and 5 - 'Strongly Agree'.

To find out the answer to the O<sub>2</sub> “*To reach overall satisfaction of student`s within the given service in terms of different aspects*” calculated mean and standard deviation of overall satisfaction. From the Table 7, it was concluded that overall, students of LNTU are satisfied with the service quality provided.

Table 7. Overall satisfaction

	n	Mean	Std. Deviation
<b>Overall Satisfaction</b>	199	3.3868	0.96172

Regarding to answer the H<sub>1</sub> “Overall satisfaction level of LNTU is equal or more than 4 points”. While we need to testify if everybody is satisfied with LNTU, the t-Student Test was applied. It was compared overall satisfaction level with test value of four (“Satisfied”). Result is presented in Table 8. As it can be seen, the significance level is less than 0.05. Thus, we reject the Null Hypothesis of the mean being equal or more than four points. In other words, we are 95% sure that the average satisfaction level is not equal to four. The mean of overall satisfaction is equal to 3.3868 (SD 0.96172), which is less than four. So, we can conclude that this research hypothesis is not confirmed, but we can still conclude that the students expressed a positive perception about the services provided by the university.

Table 8. t-Student test for one sample.

	Test	Df	Sig. (2-tailed)
<b>Overall Satisfaction</b>	-8.995	198	< 0.001

To answer H<sub>2</sub> “There is negative correlation between age of respondents and overall satisfaction”. As it is shown by the results, the p-value is equal to 0,002, which is less than 5% and it means that there is a significant relationship between overall satisfaction and age of respondents. Pearson correlation is equal to -0,225 (a weak relationship). Thus, there is negative correlation between age and overall satisfaction: higher scores on age are associated with lower scores on overall satisfaction. In addition, the main hypothesis corroborated. This is understandable since with older age we are more demanding about the perception of the services that are offered.

To answer H<sub>3</sub> “There are differences in overall satisfaction by faculties of LNTU”, it was decided to apply One-Way ANOVA. First it was checked the sample size for each study area. In Table 8, it is shown that for some faculties the sample size is smaller than 30. Thus, this test had violated. Therefore, non-parametric Kruskal-Wallis test was applied. As it is presented in Table 9, significance is equal to 0.183, which is bigger than 0,05. So, it was concluded that there is no significant difference between satisfaction level of students from different faculties. The result shows that main hypothesis does not

corroborated. This test showed that there's no difference between perception of satisfaction of students from different departments. Thus, area of studies doesn't affect level of satisfaction and university should take it into consideration.

Table 9. Kruskal Wallis Test to identify differences by faculties.

Overall Satisfaction	
Chi-Square ( $\chi^2$ )	8.835
Df	6
p-value	0.183

In order answer H<sub>4</sub> “*There are differences in overall satisfaction by gender*”. While study had parametric data, it is necessary to check assumed distribution and assumed variance. Two independent samples will be examined, therefore t-student test applied. To apply this type of test, sample distribution should be more than 30 and scores should have homogeneous variances. In the Table 10 it is clarified that for the overall satisfaction sample size more than 30, which proven to apply Student's t-test. To examine homogeneous variances Levene's test was applied.

Table 10. Overall satisfaction by gender.

Gender	Mean	n	Std. Deviation
Male	3.416	87	0.8891
Female	3.364	112	1.018
<b>Total</b>	<b>3.387</b>	<b>199</b>	<b>0.9617</b>

While examining Levene's test in Table 12, the significance of 0.213 was calculated, which is bigger than 0.05. Consequently, for the Table 12, the variances are not significantly different and the upper row of results for t will be interpreted. Table 11 represents t-value of 0.371. The mean difference between male and female group is equal to 0.0512. Significance of 0.711 is bigger than 0.05, which means that the mean difference between these two groups is not statistically significant. Therefore, there are no differences exist in overall satisfaction by gender. Also, the main hypothesis does not corroborate.

Table 11. Student's t-test and Levene's test to identify differences by gender.

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	p-value	t	Df	p-value	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	1.563	0.213	0.371	197	0.711	0.0512	0.13774	-0.22047	0.32279

Table 12. Results of main Hypothesis.

Label	Research Hypothesis	Result
H <sub>1</sub>	Overall satisfaction level of LNTU is equal or more than 4 points.	Not corroborated
H <sub>2</sub>	There is negative correlation between age of respondents and overall satisfaction.	Corroborated
H <sub>3</sub>	There are differences in overall satisfaction by faculties of LNTU.	Not corroborated
H <sub>4</sub>	There are differences in overall satisfaction by gender.	Not corroborated

To answer O<sub>4</sub> "Identify loyalty of students", items related to loyalty were detected and calculated mean and standard deviation. Results presented in Table 13 show that level of loyalty is equal to 3.4295 ("positive") and SD is equal to 1.084. This result means that students are loyal.

Table 13. Descriptive statistics of student's loyalty.

Loyalty		
n	Valid	199
	Missing	1
Mean		3.4295
Std. Deviation		1.0834

To present the results more detailed histogram was created (Figure 3). On the graph absolute frequencies are presented. The data of the study differs from the normal curve. To graphically examine relative frequencies there was created line graph (Figure 4).

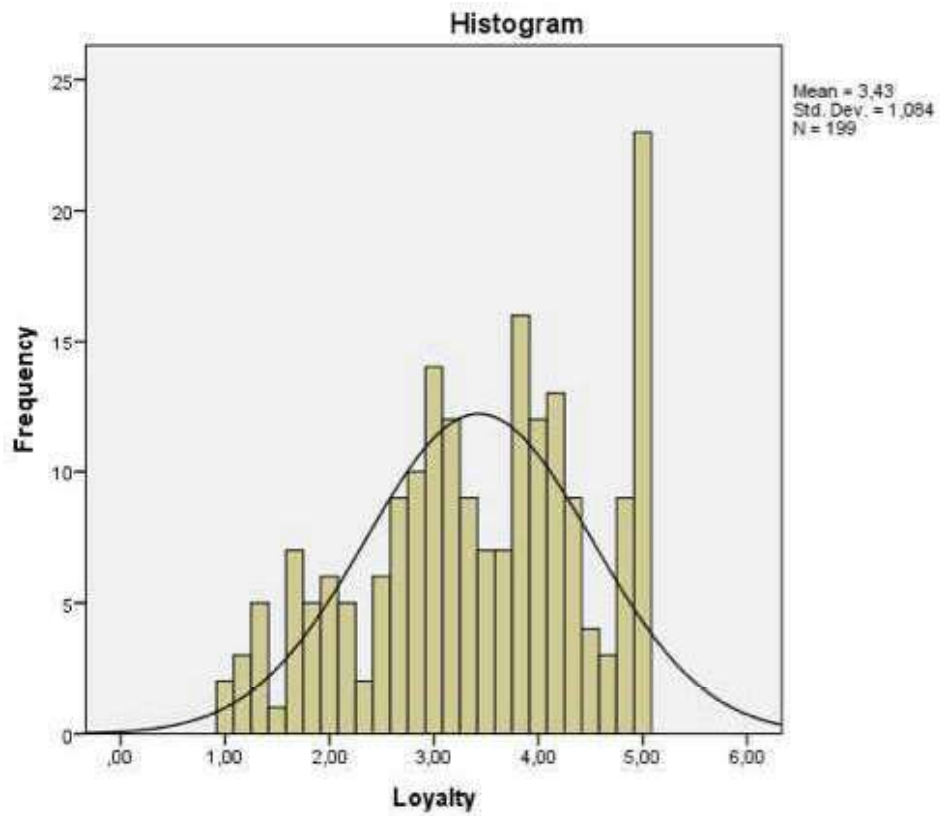


Figure 3. Absolute frequencies of loyalty.

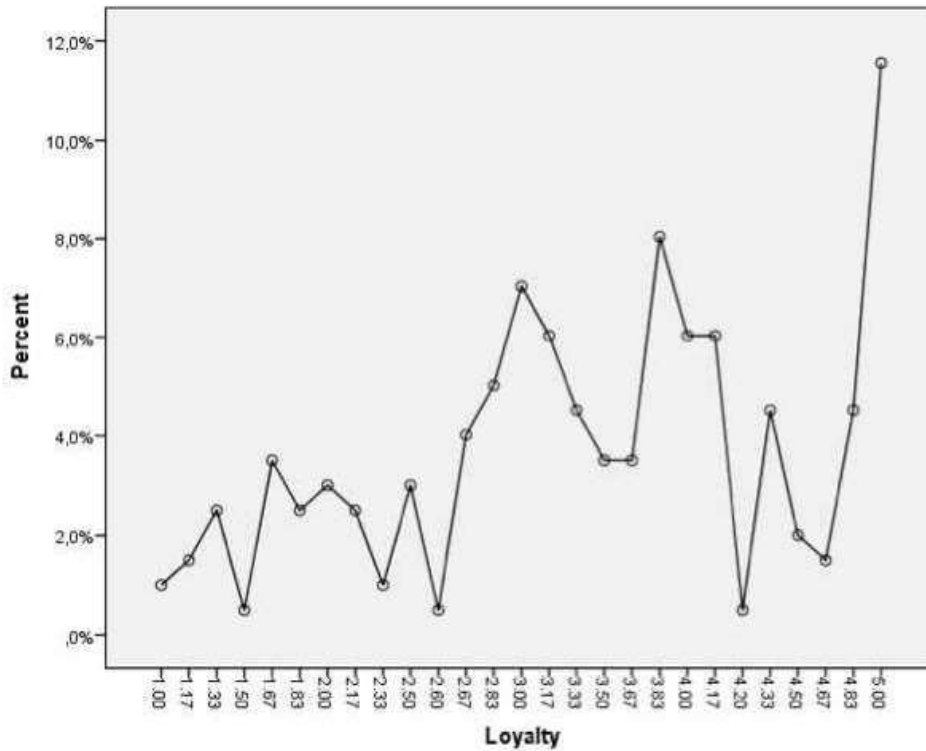


Figure 4. Relative frequencies of loyalty.

## Conclusions

Modern Bologna system locates the student in the centre and offers transparency and quality. Individualization in education is an urgent task, as the more individual the approach is, the more likely it is that each student will reach the desired learning outcomes and will master all subjects more successfully and will acquire knowledge and skills in a larger volume and accordingly will be more satisfied.

While talking about student`s expectations of service quality, we need to assume that students consider their past experiences into account when they evaluate their expected service quality. That`s why the results of our research can vary.

This research is based on Lutsk National Technical University (Ukraine). It was calculated the average level of overall satisfaction in LNTU of 3.4 out of 5 points. It was concluded that students are satisfied, but on low level.

It was assumed that there are differences in overall satisfaction by different faculties. By testing this hypothesis, it was found that level of satisfaction doesn't differ among faculties. Which is bad because it was concluded that there exist problems in each department of university.

It was hypothesized that there are differences in overall satisfaction by gender, but it was found that gender of student has no influence on perception of quality of given educational services. Stated a fact of gender equality in university is a good point for further meeting standards of Bologna system.

In this research only one out of four hypotheses were corroborated. After tests were done, it was found that there is negative correlation between age of respondents and overall satisfaction. Which confirm the statement of influence of expectations and personal experience on student's perception of satisfaction.

It was concluded that student have true interest in studying. This statement is based on the fact that most of students think their diploma will be useful, thus they are interesting in working in their study area. In addition, a lot of respondents consider themselves not ready to compete on labour market, so the responses were honest.

Level of student's loyalty in LNTU is equal to 3,4, which is considered as positive information and the students recognize their loyalty with the university. Based on this research the younger students are, the bigger level of satisfaction is showed. Which can be explained by good first impression caused by university, but inability to maintain this image further.

This study is focused on internal factors from student's profile, but it doesn't touch the external part. The level of satisfaction depends on both parts. Thus, for the future research it will be good idea to compare the importance of each external and internal attribute using IPA matrix to have deeper understanding of the issue.

As a future line it will be interesting to make analysis regarding student`s satisfaction and age of respondents, it will be a good idea to make detailed research and analyse why there is negative correlation index and what exact factors affect it.

## References

- Andrlic, B., Budic, H., & Pismis, V. (2013). *Customer Satisfaction as a Marketing Concept in Higher Education*. Scientific Annals of the "Alexandru Ioan Cuza". University of Lași. Economic Sciences 60, 1-10 DOI 10.2478/aicue-2013-0012.
- Astin, A., Oseguera, L., Sax, L., & Korn, W. (2002). *The American Freshman: Thirty-Five Year Trends*. Higher Education Research Institute. Graduate School of Education and Information Studies. University of California. Los Angeles.
- Brandon-Jones, A., & Silvestro, R. (2010). Measuring internal service quality: comparing the gap-based and perceptions-only approaches. *International journal of operations & production management*, 30(12), 1295.
- Chadwick, K., & Ward, J. (1987). *Determinants of consumer satisfaction with education: Implications for college & university administrators*. College and University, 2, 236-246.
- Devasagayam, P., Stark, N., & Watroba, R. (2013). Laptop Technology in Classrooms: How Student Perceptions Shape Learning and Satisfaction. *Atlantic Marketing Journal*, 2(3), 14-23.
- Dolinsky, A. (1994). A Consumer Complaint Framework with Resulting Strategies: An Application to Higher Education. *Journal of services marketing*, 8(3), 27-39.
- Grönroos, C. (1984). A Service Quality Model and its Marketing Implications. *European Journal of Marketing*, 18(4), 36-44.
- Johnson, R., & Winchell, W. (1988). Educating for quality. *Quality Progress*, 2(1), 48-50.
- Kotler, P., & Clarke, R. (1987). *Marketing for health care organizations*. Englewood Cliffs, NJ: Prentice-Hall.
- Machado, M., Brites, R., Magalhães, A., & Sá, M. (2011). Satisfaction with Higher Education: critical data for student development. *European Journal of Education*, 46(3), 415-432.
- Marie, C., Cono, M., & Fernandes, P. (2016). Student satisfaction in higher education: a Portuguese case study. *Ciencias Administrativas. Teoría y Praxis*, 2, 44-55.

Theodorakis, N., Kambitsis, C., Laios A., & Koustelios, A. (2001). Relationship between measures of service quality and satisfaction of spectators in professional sports. *Journal of Service, Theory and Practice*, 11(6), 431-438.

Thomas, S., Fitzsimmons, L., Jorda, H., Keller, I., Williams, G., & Rauer, H. (2000). Observations of the Trans-Neptunian Objects 1993 SC and 1996 TL66 with the Infrared Space Observatory. *The Astrophysical Journal*, 534, 446-455.

Walther, J. (2000). Psychiatric research and science policy in Germany: the history of the Deutsche Forschungsanstalt für Psychiatrie. *History of Psychiatry*, 11(43), 235-258.

Wiese, R., Willis, K., & Hutchins, M. (1994) Is genetic and demographic management conservation?. *Zoo Biology*, 13(4), 297-299.