

# Research regarding the enclosure on the market labor and the level of professional involvement of the graduates of the Technical University of Cluj-Napoca

Chiorean Lia<sup>1</sup>, Stoenoiu E. Carmen

<sup>1</sup>Technical University of Cluj-Napoca

e-mail: Chiorean.Lia@staff.utcluj.ro, carmen@j.academicdirect.ro

**Abstract:** *The present work analyzes, according to the annexed questionnaires applied to the graduates of the Technical university of Cluj-Napoca, their level of involvement on the market labor, and also the level of their professional satisfaction as a result of the knowledge fulfilled during the academic studies as well as their intention for continuous improvement. The study was drawn up by processing a large number of information collected from 1613 graduates, between the period 2005-2007. In order to centralize and process the information a FoxPro application has been created. The analysis of the results shows the fact that between 80 and 93% of the Technical university of Cluj-Napoca's students have been employed the moment they completed the questionnaire, and 75% of the questioned ones have been employed in the field they studied and at the level of the obtained qualification.*

*Key words: graduates, work, studies, satisfaction, qualification*

## 1. INTRODUCTION

The mission of each university is to create competent specialists, ready to adapt to the economic environment and to respond to the economic, social and political major challenges. "The role of the university is primordial regarding the professional experience of the future labor market expectations [5].

"The responsibility of the higher education institutions towards the quality of the training services offered cannot be seen only from inside, but, must be centered mainly on the graduates, meaning on the study results and the competencies and performances assayed in work after the graduation." [4].

Training the human resources in order to integrate them in the knowledge based society implies having a vision that integrates the whole cycle of life by adapting the means and methods specific to each level of development in tight connection with the science and culture's evolution, or knowledge in general. The educational system's orientation towards creating abilities and improving capacities of innovation and creation, of stimulating curiosity and the will to research represents a need in the context of the education and research globalization.

Nowadays we assist to a harsh competition among companies which are fighting to conquer and maintain the market rate. "The companies discover that they are in a race in which the signs and the traffic rules are continuously changing, the finish line is not there, and the permanent success is uncertain. The race must be on, and, in the best case, directed towards the public's expectations" [2].

In order to face the competition and offer quality services, the university must be permanently preoccupied with evaluating its performances according to the market labor's requests and assuring the resources through which they may be improved.

Panaite Nica [3], in the chapter 4 of his work, entitled "A possible system of classifying the Romanian universities in a

hierarchy" proposes that one of the criteria used in the hierarchy would refer to the performances of the students and graduates. In this context, it is emphasized the fact that, with regard to the "statistical weight of the graduates employed according to their field of specialization", respectively "the statistical weight of the graduates employed, irrespective the field of specialization", as well as "the specific instruments for evaluating the students' satisfaction with regard to the knowledge attained at the time of graduation", the "information are more difficult to obtain for most of the universities have not been preoccupied with this aspect". In the final part of this chapter, the author states: "although nowadays we do not have information about these indicators, we appreciate that maintaining it in the evaluation system of the performances would determine an essential change in the orientation of the managerial strategies of the universities".

In order to support the universities in this purpose, the Government Decision No. 1.418 dated 11<sup>th</sup> of October, 2006, approved "The Methodology of internal evaluation of the standards, of the reference standards and a list of indicators for performances of Romanian Agency for Quality Assurance in Higher Education (ARACIS)" [1]. This document has a chapter entitled "Reevaluating the higher education qualification attained", which explains in what manner the "knowledge, competencies and abilities attained in the university are sufficient for the graduates to be employed on the labor market, to start a business or to continue their studies at the next level and extend their knowledge by learning" [1].

During his studies in the university, the student learns to attain knowledge and to be a specialist. At times, the student is ready to create, but rarely is he prepared to live in the real society and face the competition, innovating, rationally assuming responsibilities for his own good and for the progress of the society. The students, as well as the academic staff, learn to have options, affinities and individual liberties.

According to the methodology elaborated by ARACIS [1] with regard to the quality assurance, the functioning authorization and the accreditation of the curricula of higher education institutions, the B2 criteria (The Learning Results) presumes fulfilling the following performance indicators:

- *Revaluation by the capacity to be active on the labor market* (minimum acceptable 50%; reference level recommended: more than 70%- of the graduates are employed during the period of two years after the graduation, accordingly to the qualification obtained.
- *Reevaluating the qualification by continuing their academic studies* (minimum: 20% of the last two years graduates of Bachelor studies are admitted to Master studies, regardless of the field of study; reference level recommended: at least 50%).
- *Level of satisfaction according to the professional and personal development offered by the university*

(minimum:50%, reference level recommended: 75%-of the students appreciate as positive the study/development environment offered by the university and their own learning aims).

The minimum level of the indicators correspond to the conditions assessed by ARACIS for temporary authorization or accreditation, while the maximum values lead to making the difference between the universities from the quality point of view.

## 2. MATERIALS AND METHODS

Starting from the performance indicators proposed by different national forums (The National Council for Higher Education Financing, the Romanian Agency for Quality Assurance in Higher Education) as well as the ones used in organizing the universities' hierarchy by different international structures, the development of an application that would resolve this desideratum was considered necessary. In this purpose, an "inquiry-questionnaire" was created and the graduates are asked to complete it when they come to receive their degrees of graduation. The degrees are issued 6 months after the graduation; therefore the moment is proper for obtaining these kinds of information. The questionnaire also assures the ulterior permanent contact with the graduates by using the contact information provided (phone number, e-mail address) useful to the Technical University of Cluj-Napoca Graduates Association (AD ABSOLUTUM).

In order to centralize and process the information, a software application was created in FoxPro, based on the following elements:

- the population studied: graduates of the Technical University of Cluj-Napoca during the period 2005-2007
- the method of data obtained: inquiry-questionnaire handled to the graduates to complete it when receiving the degrees of graduation (6 months after finalizing their studies);
- analyzed variables:
  - The graduate's status of employment at the moment of receiving the degree;
  - The moment of the employment (if he found work in the first 6 months after the graduation, respectively in the first two years);
  - The status of the employment in accordance to the qualification attained in the university;
  - Placing the work location in relation to the home residence;
  - The degree of satisfaction in relation to the salary obtained;
  - The modality of obtaining the job;
  - The degree of satisfaction in relation to the professional and personal development offered by the university;
  - The intention of continuing the studies to the next level;
  - Other studies attained.
- reports:
  - by university
  - by faculties
  - by specializations

The present application contains a stage of inserting the data, another stage of processing them and finally one that synthesizes them. Finally, FoxPro reports are exported in Excel, helping the user to generate relevant graphics for the analyzed situations. Depending on the interest shown, the analysis may be done at the level of university, faculties or even specializations.

Taking into account the great number of the graduates questioned, the issue of increasing the sampling was not brought into consideration.

## 3. RESULTS AND DISCUSSIONS

The inquiry-questionnaire was implemented at the beginning of 2007, and until this moment a number of 1613 graduates were questioned, according to the information presented below in the Table 1.

Table 1 The number of graduates and questioned subjects

FAC.	2005			2006			2007		
	No. grad.	No. grad. quest.	%	No. grad.	No. grad. quest.	%	No. grad.	No. grad. quest..	%
ARH.	34	17	50	80	37	46	68	0	0
A.C.	146	31	21	244	184	75	243	102	42
C.M.	195	31	16	155	105	68	170	48	28
C.I.	254	53	21	247	165	67	301	111	37
E.T.T.I	129	24	19	166	115	69	144	53	37
I.E.	118	27	23	104	71	68	104	36	35
MEC.	120	41	34	113	72	64	127	33	26
S.I.M.	93	20	22	102	70	69	87	28	32
COL.	278	13	5	241	89	37	233	37	16
<b>TOTAL TUC-N</b>	<b>1367</b>	<b>257</b>	<b>19</b>	<b>1452</b>	<b>908</b>	<b>63</b>	<b>1477</b>	<b>448</b>	<b>30</b>
Grad.	graduates; quest. – questioned subjects								
FAC.	Faculty								
ARH.	Faculty of Architecture								
A.C.	Faculty of Automation and Computer Science								
C.M.	Faculty of Machine Buildings								
C.I.	Faculty of Civil Engineering								
E.T.T.I	Faculty of Electronics, Telecommunication and Information Technology								
I.E.	Faculty of Electrical Engineering								
MEC.	Faculty of Mechanics								
S.I.M.	Faculty of Material Science and Engineering								
COL.	Technical, Business and Administration College								
TUC-N	Technical University of Cluj-Napoca								

Comparatively analyzing the number of the employed graduates for the last three years, one can observe a variable of the percent between 93 and 80%, slightly decreasing. From the total number of questioned subjects, 81 and 84 % have been employed in the first six months after the graduation, and in the first two years after the graduation 83 and 89% have been employed. A percent of 75-76% of the questioned graduates were employed at the level of qualification obtained in the university (Fig. 1).

If we take into account the level of reference followed by ARACIS, we can observe that the reference value is strongly exceeded (minimum: 50%, recommended: 70%), which represents a valuable "presentation card" for our graduates and also an important recommendation to be taken into

consideration at the time of employment.

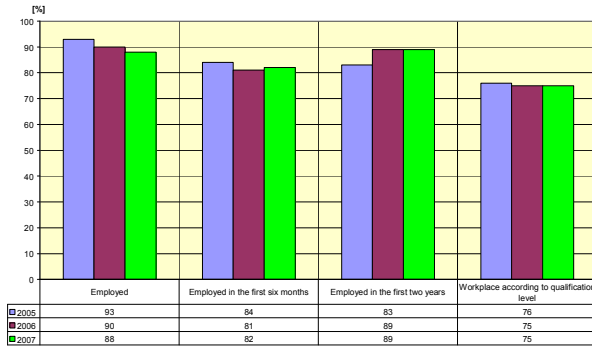


Figure 1- Employed graduates

In the same idea, it is interesting to follow the level of salary obtained after employment, which is considered to be “very good” by 16-20% of the graduate employees, “decent” by 62-67% and “insufficient” by 6-11% of them (Fig. 2).

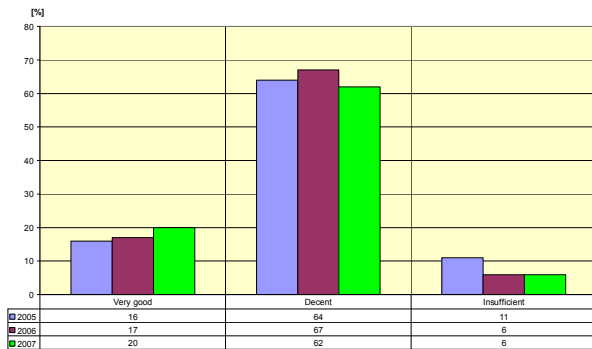


Figure 2- Salary received after employment

An aspect that is not to be neglected is fact that only a small percent of the questioned subjects consider their salary as being insufficient, which, in general terms, means that most of the graduates are satisfied with their income.

If we look at the modality of obtaining the job, we can observe (Fig. 3) that a large number of graduates obtain their job during the studies, and most of them find it through their friends or by internet. With regard the role of the Employment Agency, the numbers show that its influence in this aspect is nonexistent: 0-1%.

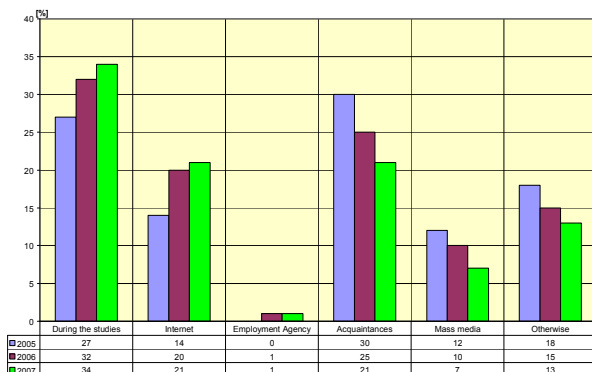


Figure 3 - The modality of obtaining the employment

A question about the work location in connection with the home residence was introduced, in order to see if this location is placed in the home town or abroad (Fig. 4).

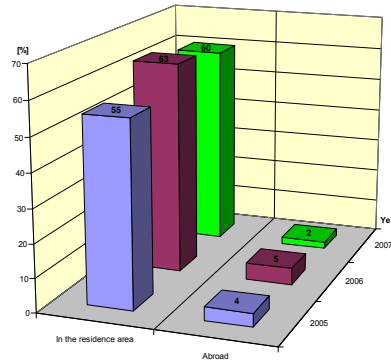


Figure 4 - Location of the employment

The results highlight the fact that 55 and 63% of the graduates work in the home town and between 2 and 5% abroad (Fig. 4).

Another set of questions refer to the graduates intentions with regard continuing their studies, and giving information about other studies they might have attended and/or graduated already. It is to be mentioned the fact that all the answers to these questions reflect the option of the graduates at the moment of completing the questionnaire.

With regard the intention of continuing the studies, one may observe (Fig. 5) the high increasing of the percent representing the ones that consider necessary an improvement of the knowledge obtained in the university, by attending advanced studies. This option of the graduates should be taken into consideration with high interest before planning the curricula for master and PhD studies.

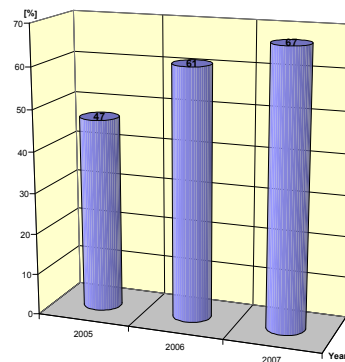


Figure 5 - Intention of continuing the studies

Figure 6 and 7 present the comparative situation for the 3 analyzed years of the students that have finished other forms of graduate or postgraduate studies, respectively the ones that attend, at the time of completing the questionnaire, either of these above mentioned studies.

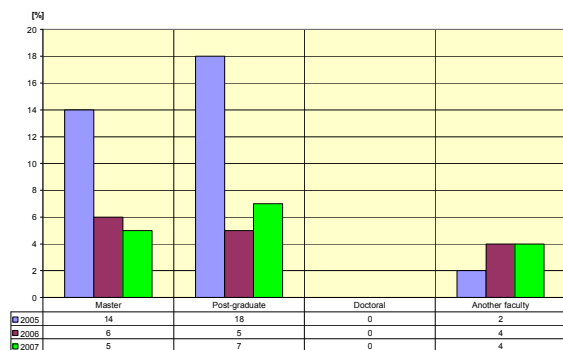


Figure 6 - Other studies attended

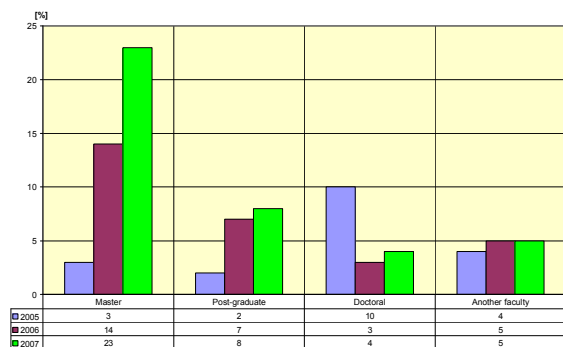


Figure 7- Other studies in process

The questionnaire is also set to show the level of satisfaction of the graduates with regard the professional and personal development assured by the Technical University of Cluj-Napoca. The ARACIS criteria give, in this case also, reference values, between 50 and 75% (positive answers). The results for the Technical University of Cluj-Napoca are presented in Figure 8.

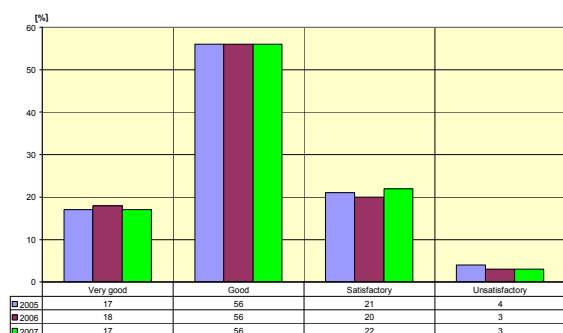


Figure 8 - The level of satisfaction of the graduates in accordance with the professional and personal development assured by TUC-N

I have presented above the results of the study applied for the graduates of the Technical University of Cluj-Napoca as a whole, but the analysis also showed the results spread accordingly on each faculty. The database and the programs developed in FoxPro permit the extension of the analysis to the level of specializations, respectively domains.

In the table 2 are synthetically presented the results obtained for the graduates from 2006.

Table 2. The statistic situation of the graduates of the Technical University of Cluj-Napoca in 2006

	UTCN	Arh.	A.C.	C.M.	C.I.	ETTI	I.E.	Mec.	SIM	Col.
	%	%	%	%	%	%	%	%	%	%
Employed	90	92	95	90	96	88	82	90	81	84
Employed in the first 6 months	81	95	91	83	93	80	76	75	57	56
Employed in the first 2 years	89	95	94	90	95	91	80	86	77	78
Workplace according to qualification level	75	92	91	88	92	73	61	69	44	53
Salary	17	24	28	16	14	24	13	11	3	10
very good	6	5	1	7	6	7	14	6	9	6
decent	67	65	66	70	75	60	55	71	69	67
insufficient	27	30	33	23	19	33	31	24	21	27
Modalitatea de obtinere a locului de munca	32	54	49	21	33	27	30	15	21	24
the faculty	20	3	27	29	7	37	23	18	9	10
Internet	1	0	1	2	2	1	0	1	1	2
Employment Agency	25	30	21	19	33	18	27	26	29	21
acquaintances	10	0	7	25	7	8	15	21	11	3
mass media	15	14	12	9	20	15	8	15	14	28
others	63	68	66	65	68	56	54	56	51	70
Locul de munca este	5	3	8	4	2	9	3	1	14	3
in the residence area	6	3	4	10	1	6	10	11	24	0
abroad	0	0	0	0	0	0	0	0	1	0
Alte studii absolvite	4	5	6	5	2	3	3	3	10	2
master	14	0	26	8	13	20	23	8	10	0
post-graduate	7	16	1	7	4	12	13	19	3	2
doctoral	3	5	4	4	3	2	3	0	4	0
another faculty	5	0	4	4	1	4	4	6	1	24
Alte studii in curs	61	70	60	55	62	60	65	63	51	66
Intention of continuing education	18	11	18	17	17	14	17	18	19	28
Satisfaction related to the education provided by TUCN	56	43	58	58	58	61	48	61	57	52
very good	20	35	20	21	20	17	27	15	13	19
good	3	8	3	2	2	4	4	3	4	0
satisfactory	3	8	3	2	2	4	4	3	4	0
unsatisfactory	3	8	3	2	2	4	4	3	4	0

The inquiry questionnaires were created in such way as to provide information and data with regard the workplace of the graduates. For example, 30 graduates of the 2006 were employed at "SIEMENS", 22 at the Technical University of Cluj-Napoca, 10 at BECHTEL and also 10 at "EON GAZ", 9 at ENERGOBIT, 8 at EMERSON, 7 at „RMB INTERAUTO” and also 7 at "ALCATEL”

#### 4. CONCLUSIONS

Integrating the graduates in the labor market is a complex social process that reflects the interaction between the graduate and the employer, but also the way in which the obtained qualification is considered important on the labor market.

Philip Kotler [2] affirms that the client's satisfaction or lack of satisfaction depends on the "balance between the performances of the offer and his personal expectations".

The study presented above was drawn up having as basis a vast number of information obtained from the graduates of the Technical University of Cluj-Napoca and represents a valuable database that may provide information to the ones interested in a reflection of the level of professional training of the students, the level of satisfaction concerning the knowledge attained during the study years spent in the university, correlated to the employers' expectations towards the professional training of the graduates, materialized through the high percent of employments, and also through the salaries offered.

The method proposed in this study may be used as a analysis and diagnosis instrument, as well as one of self improving, offering the possibility of comparing the results between similar universities, or faculties, with the purpose of finding new methods to improve the didactic activities, so that all the graduates would benefit of the chance of integrating into society.

The research referring students' availability to continue their studies, highlighted by the high percent of graduates, offer a solid support for the new strategies and future plans.

## 5. REFERENCES

- [1] Romanian Agency for Quality Assurance in Higher Education, *The Methodology of internal evaluation of the standards, of the reference standards and la list of indicators for performances of Romanian Agency for Quality Assurance in Higher Education*, Bucharest, 2006
- [2] P. Kotler, *Management of Marketing*, ISBN 973-601-365-0, Teora Publishing House, 1997
- [3] P. Nica, *The Quality Management and Organizing the Romanian universities into hierarchies*, Universitas 2000, ISBN 973-8064-59-7, Paideia Publishing House, Bucharest, 2000
- [4] The Ministry of National Education, *The Higher Education in a Society of Learning*, Phare Universitas Program, 2000, ISBN 973-9216-57-9, Bucharest, 1998
- [5] N.,D. Paina, *Stategic and general Management*, ISBN 973-8445-29-9, Accent Publishing House, 2003