SZENT ISTVÁN UNIVERSITY
DOCTORAL SCHOOL OF MANAGEMENT AND BUSINESS ADMINISTRATION

THE ROLE AND DEVELOPMENT OF THE QUALITY ASSURANCE IN HIGHER EDUCATION INSTITUTIONS AND ITS INTERPRETATION BY STUDENTS IN PRACTICE

THESIS OF DOCTORAL (PHD) DISSERTATION

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1. INTRODUCTION

Nowadays quality is getting to play key role in almost every area of life from production to service. Both quality work and quality assurance are today a sufficient condition of an organization for standing in the intensifying competition. Maybe it is not accidental that many people are looking for the real meaning of quality in education systems as well as the opportunity of quality insurance and integration.

1.1. Relevance of the topic

Like in the countries with the world's most developed higher education, the need for reformation and transformation of higher education has emerged again and again in Hungary during the last decades. Several external or internal factors, political, economic and social changes generate the change of higher education. In the changed external and internal environment of higher education the overview of the well-proven "traditional" means, procedures and methods is essential, and if necessary, they could be changed so as the standard of education, the quality of higher education should be ensured in the future. Due to the growing number of students, the growing expectations of students, the dynamically changing needs of the labour market, the higher education crossing national borders due to the European integration and the Bologna process, the new education forms working mostly as profit-oriented enterprises, the new institution types (religious, foundation, private, foreign), the spread of information technology, the significant transformation of professions and the professional structures present powerful challenges for higher education and institutions.
Besides the changes in higher education there is a stronger competition among the institutions which they cannot miss at their operations. Nowadays institutions should have such service offer, individual training profile to be in competition with other institutions. In favour of their role in the market, maintaining their students and attracting new students **they should provide well-marketed high quality service which guarantees competitive and beneficial knowledge in the long run.** Therefore it is essential to reinterpret, analyze and transform the role and operation of higher education which cannot miss the systematic interpretation and the creation of an up-to-date quality concept in higher education. Thus in this new situation those institutions can survive whose primary objective is to continuously improve the quality of education.
The importance of quality assurance in higher education is underlined because an element of the Bologna Process dominant in Europe (Bologna Declaration, 1999) refers to the start of an active quality developing policy. According to the regulations of the national higher education (Act LXXX of 1993) **the institutions should build up and work a quality assurance system;** this was detailed and fortified by Act CXXXIX of 2003. During the last years a new substantial change appeared in directing higher education: these changes are included in Act CCIV of 2011, and in its modification, Act CXXIII of 2012. The binding law hence handles quality underlined, and interprets the European Standard and Guidelines in the European Higher Education Area (ESG) of the higher education quality assurance as the norm to be observed for the national higher education institutions.

Due to higher education regulations, all national higher education institutions have their own quality assurance system these days, which are frequently handled as not a passive mean but actively and recognizing that

- Knowing the applicants' motivations for selecting an institution, a course and higher education also contributes to the creation of an institutional strategy concerning the maintenance and/or improvement of the institution's competitive position.

- It is easier to maintain the student already studying in the institution than “to get” a new applicant from the competitive market.
- From the society’s point of view it is an important question what content and standard the training programmes offered by the higher education institutions have and what quality additional knowledge is generated there.
- In training development considering the proactive revelation of the changing labour market needs increases the competitiveness of the given course.

Into the focus of my PhD dissertation I have laid **one of the most important partners, stakeholders of higher education, namely the student**. From the student's side I examine the questions concerning quality of higher education. My PhD dissertation research focuses on the comprehensive assessment of the students' needs, satisfaction covering input factors, the examination of the processes and results inside education so as the higher education service process should work in a more efficient way, consequently at a higher level with an increasing service standard, the institution's competitiveness should be growing, and should provide training range competitive and suitable for the labour market expectations.

1.2. Objectives of the research

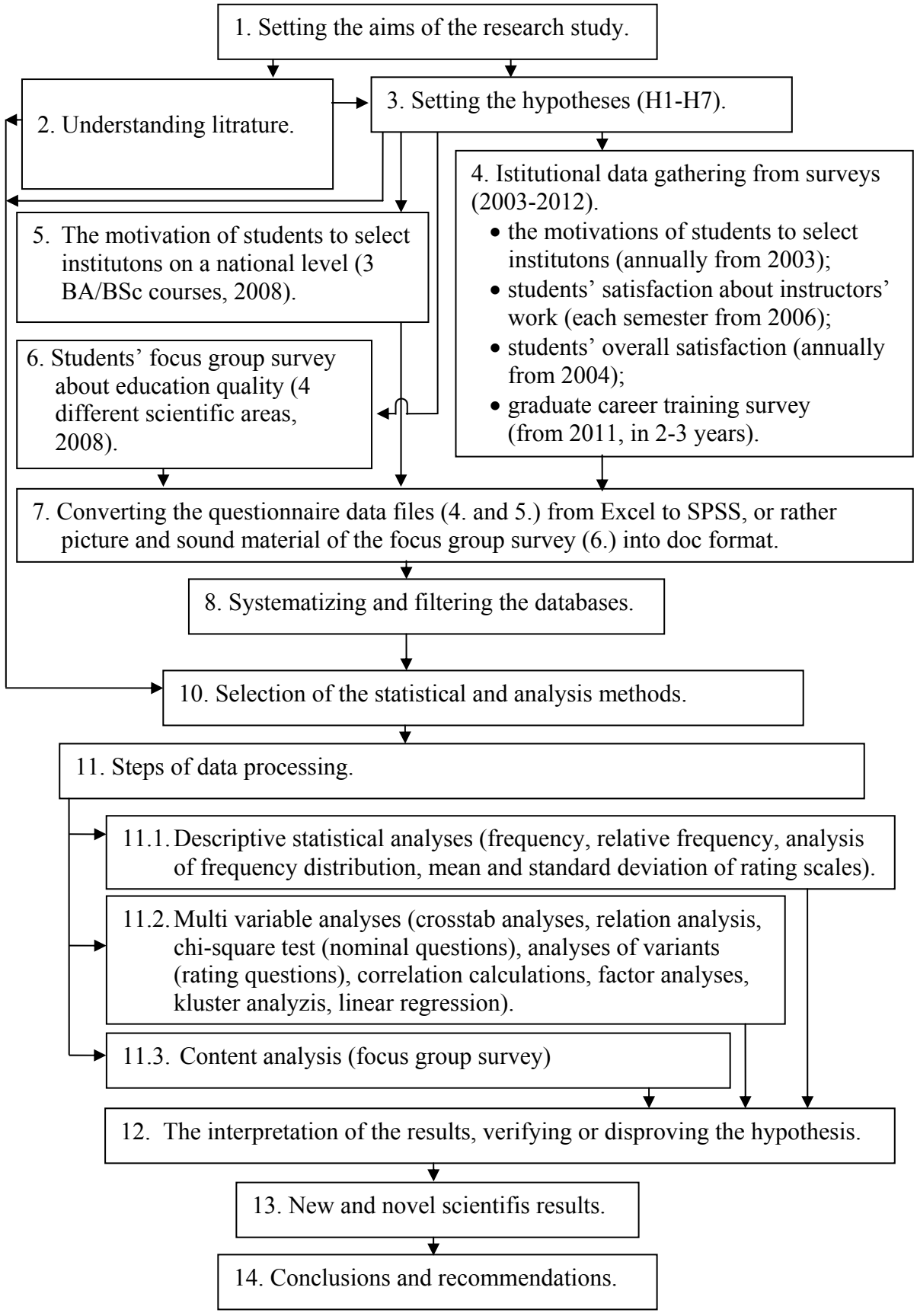
With my dissertation my goal is to support and justify that applying quality assurance is crucial in higher education in keeping and maintaining higher education institutions’ competitiveness in the long run. The main objectives of my dissertation are made specific with describing subgoals as follows.

1. The **first objective** of my research is to interpret quality in the service sector with a special focus on **defining and interpreting the concept of higher education service quality**, and evaluating the different determining quality assurance theories, models appearing in the service sector comparatively, establishing their key points with a special regard to higher education and the peculiarities of systems applied in higher education.
2. The **second objective** of my research is to evaluate and systematize the economic and social processes, and the challenges of higher education leading to the qualitative view strengthening in higher education and becoming central. **To analyze the situation of the quality issue of higher education**, to reveal the institutions' role and tasks in the new, quality-conscious higher education environment. To determine the external and internal partners of the higher education institutions based on qualitative and stakeholder views.
3. The **third objective** of my research is **to develop a system model supporting quality evaluation based on students’ information**, and to apply that in practice as a model in a given higher education institution. In this framework my goal is to determine the critical points in education where the assessment of the students’ opinions is necessary and rational; to work out and to develop the necessary measuring means (questionnaires), and to evaluate their application with scientific methods while examining their insertion into the organization's quality assurance system.
4. The **fourth objective** of my research is to reveal how the students of different scientific areas interpret the concept of education quality.

The practical utilization of the results appeared as an important viewpoint in the course of my examinations.

I present the content relations and the process of compiling the research study in Figure 1.

Figure 1.: The process and the structure of the research study



Source: own composition

1.3. Hypotheses of the research

I expressed my research hypotheses on five areas to my primary examinations based on the research objectives.

I. Hypotheses of the motivations of students to select institutons survey:

Hypothesis 1 (H1): In the background of the students' seelcting institutions, majors and training types there are well-observed relations which the higher education institution inevitably should take into consideration for attracting secondary school students with as high knowledge as possible and in the recruiting strategy for the sake of its successful operation.

Hypothesis 1a (H1a): Considerable differences can be seen in full time and part time students' motivation factors for selecting institutions.

Hypothesis 1b (H1b): As a result of the growing spread of information technology the Internet (the institution website) has an increasing role in the selection of institutions leaving the traditional types of information sources behind (for example the admission information booklet, career advisor, secondary school teachers).

Hypothesis 1c (H1c): The family, the continuation of family traditions and the family's financial background play a determining role in in the selection institutions and courses.

Hypothesis 1d (H1d): The distance between the student's place of residence and the selected higher education institution location is an important factor in students' seelcting institutions and courses in their final decision.

II. Hypotheses of the students' satisfaction with the instructors' work survey:

Hypothesis 2 (H2): In case of the students' satisfaction with the instructors' work survey the time of conducting the questionnaire (before or after getting the final grades) and handling the questionnaire data (the lecturer instructing the given subject receives the aggregated results of the questionnaires before or after the exam, and the instructor may take a look at the individual questionnaires filled in or only receives aggregated assessment) all influence the responding skills and the content of the answers.

Hypothesis 3 (H3): Some of the numerous influencing factors of the students' general satisfaction with the instructors' work concerning a subject influence it notably.

III. Hypotheses of the graduating students' satisfaction with training survey:

Hypothesis 4 (H4): The students prefer simpler, less complex testing types in the course of checking their knowledge, and at the same time they condemn the usage of the non-allowed, unethical means ensuring unfair advantages during testing.

Hypothesis 5 (H5): The students' satisfaction with training is markedly influenced by the administrator and the supervisor activity.

IV. Hypotheses of the graduate career tracking survey:

Hypothesis 6 (H6): The graduated and employed students' opinion and satisfaction with training are influenced by the financing form of their study (state-funded or fee paying), training type (full time or part time), the course itself inside the institution.

V. Hypotheses of the focus group survey:

Hypothesis 7 (H7): In different scientific areas (agricultural, economist, technical and philosophy of arts trainings) the students' quality interpretations concerning education show differences.

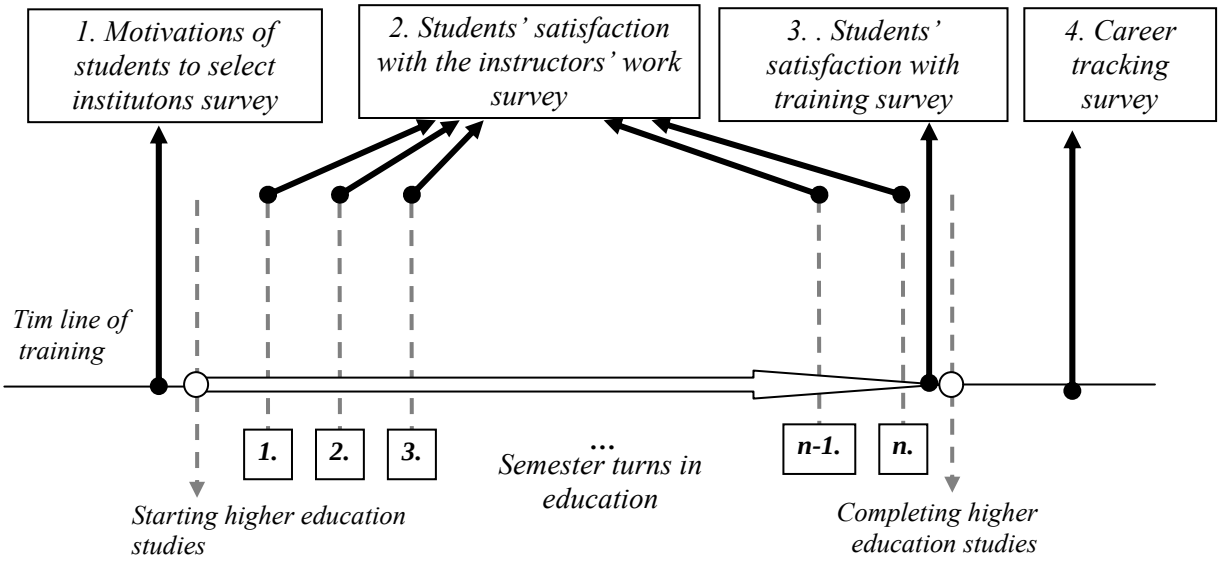
2. MATERIAL AND METHOD

To reach the goals of my research as a first step I studied and critically evaluated **the national and foreign literature concerning the topic** with a systematic approach based on **secondary data** presenting the approaches applied in the subparts during my work. I used comparisons, document analysis, comparative analyses, and model creation meanwhile studying literature.

During the study of literature I understood the quality concept in higher education from the general to the specific one in the sector. With quality issue approach but in different views I systematized and interpreted the subjects and participants of the education process as a kind of service. Later I made the quality issue evaluation of the complex macro environment of higher education with the help of PEST analysis method. I evaluated the quality models applicable in the higher education service sector defining their advantages and disadvantages as well as the key points. For the sake of analytical exploration of the goal system of higher education I reviewed and systematized the scope of partners and stakeholders determining higher education quality, the goals and relationships of those taking part in the system.

Based on studying literature and using the essence I **expressed my hypotheses**, started and kept on **collecting primary data**. This latter covered the period between 2003 and 2013. I was supported by my supervisor in collecting data since with his help I could get into the faculty's quality issue assessments, developments and starting them in new areas and making a comprehensive system as well (Figure 2.). During my research I made several individual assessments and questionnaires, thus in 2008 in case of three courses we could raise the motivation studies to national level; I also made focus group analyses in order to have a deeper revelation of students' quality interpretation.

Figure 2.: The model of the quality evaluation system applied



***Note**:*

- *college training n=6*
- *university training n=10*
- *bachelor course n=6+1 v. 6+0*
- *master course n=4*

Source: own composition

The different primary data collections and the examinations were taken place at different examination levels as follows:

- **Institutional and course level:** Based on the established institutional quality evaluation process-based system model (Figure 2.) and with the help of questionnaire method I regularly studied the motivations for the institution selection of the incoming (enrolled) students, the attending students' satisfaction with the instructors' work, the graduating students' satisfaction with the whole training system, and the graduated students' career tracking. The structured questionnaires used in the course of quantitative data collection with the application of PDCA logic were developed with the help of my supervisor and a professional team. Table 1. shows the number of questionnaires returned evaluable during individual surveys.
- **National and course level:** Based on the experience at the institutional level we also made the **students' institution selection survey at the national level** in September 2008. All institutions were involved in the research where economics and rural development agricultural engineer courses take place. As a comparison among business courses Commerce and Marketing as well as Management and Business Administration BA were examined. The survey was extended for both full time and part time students at 14 faculties of 9 institutions (universities and colleges) of higher education. 2448 questionnaires reached all the registered students. **1499** of them returned could be evaluated.
- **Scientific area level:** I made the **qualitative surveys** with **focus group in 2008.** I analysed the quality interpretation –perception of students doing studies in different (agriculture, economics, engineering and humanities) fields of study in higher education.

Table 1.: The checked point in the institutional level survey and the main parametres of the surveys'

Survey	Start of the survey (academic year)	Frequency of the survey	Number of the questionnaires (peaces)
Motivations of students to select institutons	2003/2004	per year	5 645
Students' satisfaction with the instructors' work	2006/2007	per semester	12 338
Students' satisfaction with training	2004/2005	per year	971
Graduate career training	2011/2012	2-3 years	37
Total			**18 991**

Source: own research

The data of questionnaires used in **the quantitative research** were recorded with **Microsoft Excel** programme and the questionnaire database was processed (statistically analyzed) by **SPSS** 10.0 statistic programme. Data analysis was conducted by **one variable** statistical methods (frequency, relative frequency, frequency distribution analysis, the mean and the standard deviation of rating scales) and **multi variable analyses** (crosstab analyses, relation analyses, chi-square test (nominal questions), variance analysis (rating questions), correlation calculations, factor analysis, cluster analysis, linear regression). In case of groups and variables the differences were considered significant up to the value of $p=0.05$.

The directed talks of **the qualitative research** were recorded textually and digitally (sound and pictures); **the text of more than 100 pages** was considered as the base for the material of the analyses. I made the focus group analysis with **the method of content analysis** without any content analyzing programmes.

3. RESULTS

3.1. Motivations of the students to select institutions surveys results

Throughout the research according to my Hypothesis H1 my object was to identify the deeper relations of the students' selecting institutions, courses and training types which a higher education institution has to bear in mind so as to operate successfully and to get secondary school students with as much knowledge as possible in the course of the schooling strategy at all. My examinations were based on **institution time series** data and the **nationwide** motivation (for selecting institutions) **survey**.

Factors influencing application to a university

Comparing the individual years between 2003 and 2011 I can declare that among the factors influencing university application the same 5 factors out of the examined (24) parameters were among the most important 5, and the same 5 factors among the less important 5 parameters each and every year. The only difference was in the order of their importance. Examining the training types separately the difference between full time and part time trainings can be pointed out every year. The analyses of the individual years show that the **students consciously select a higher education institution** taking into consideration their own interest, personality as well as the standard of the courses at a particular institution.

The students applying for **full time training** think about their future at selecting an institution because they take much more care of selecting courses guaranteeing high salary and good employment possibilities after graduation, and continuing their studies at master (MA/MSc) level. External factors such as "to escape from home" or "the decision was made at random" or "this institution was popular in my secondary school" or "to continue the family traditions" or "this was the nearest to my home" modified the applicants' decisions the least or not at all. A full time student prefers remaining a student longer, or several applications from my former school, low entrance scores, and admission without any entrance requirements.

Those in **part time training** see the importance of profession prestige definitely higher, the factors such as "possibility of a students' hostel", "sporting facilities and cultural programmes" or "just get away from home" were notably less important. This can be explained by the fact that these students continue their studies parallel with their work, thus they spend only short time in the institution where they can go easily and quickly, and it is close to their home and workplace. They prefer practical training less since they are working in the meantime, and based on practical experience they can build well.

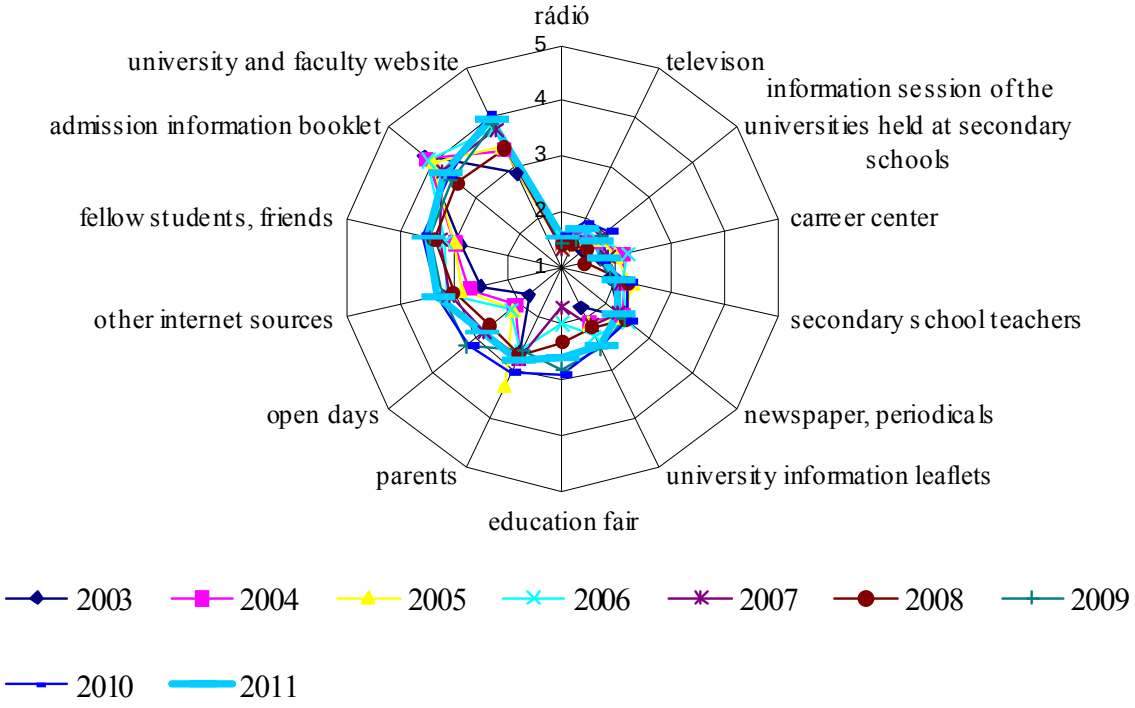
According the nationwide survey data the examination of the inner coherences of the answers to the factors determining the choice of higher education institutions was done by factor analysis from which **6 factors** were differentiated. These factors explained the 56.43% of variance in total. The shares of the individual factors in details can be represented by the following results: ***"reputation and information"*** 10.94%, ***"personal orientation"*** 9.52%, ***"education quality"*** 8.62%, ***"students' hostel, free time"*** 7,91%, ***"home is near"*** 6.88%, ***"family backgrounds"*** 6.60% and ***"prestige"*** 5.94%.

According to the motivation factors **5 segments of students answering** were determined with **cluster analysis** (k-means method), namely students motivated by ***"university life"***, a group motivated by ***"family"***, those motivated by ***"the level of training"***, students motivated by ***"personality and prestige"*** and those ***"without any motivation"***. Examining the segments according to the basic variables it can be stated that belonging to a cluster was significantly determined by the institution, the course and the form of training, the time of decision, gender, the secondary school, and the average of the final exam scores (Sig.=0.000-0.04).

Information sources used during the application to the higher education institution

According to the time series analyses the importance and the ranking of different information sources as well as their relative importance to one another during the admission process have been constantly and radically changed due to the economic and social environment changes during the last 9 years. Analyzing data between 2003 and 2011 the Admission information booklet (of higher education) has been regarded as one of the most important information sources; however, its dominance has definitely decreased. The significance of the electronic information sources (university website, other internet sources) is growing continuously. Those questioned greatly rely on their friends' opinion, and the services of the telecommunication means (TV, radio) is of less importance. (Figure 3.)

Figure 3.: The importance of the informational sources for full-time students (MSc in business economics (2003-2005) and MSc in agricultural economics and management (2006-2011))



Source: own research

Between training types the importance **differences** of the internet sources used during the higher education entrance process are **really significant**. **Full time** students felt more importance of the events organized by higher education institutions (information session held in secondary schools, open days), and of the opinions of their parents, friends or fellow students than part time students. Personal contacts maintain their outlined role for those applying for full time training. They also have found four information sources more important: newspaper, the admission information booklet, university information leaflets and higher education fairs.

According to the **nationwide survey** data of 2008 the **four most important information sources** are ***university and faculty websites, the admission information booklet; other internet sources; fellow students and friends***. Full time students gave a value around 3 to three further information sources such as university/faculty open days, parents and university information leaflets.

The inner coherences of evaluating the information sources were explored by factor analysis. Examining the factors of **the individual years' data** I could get a **different structure of factors**. That proves **the frequency of using information sources**, the importance of their evaluation, **their relative weight and role to one another show a continuous change during the period of time**.

Based on the **national survey** results I can mention that during the month before the application deadline besides the admission information booklet, media (TV, radio, newspaper, periodical) the direct visits to the institutions and close friends definitely have an important role.

The effect of the applicants' place of residence on selecting an institution and a course

On the basis of the institution's six-year database I took note that **the distance between the applicants' place of residence and the higher education institution** has radically decreased since the introduction of the Bologna system (2006).

The nationwide survey pointed out that the distance between the applicants' place of residence and the higher education institution was also influenced by the following factors:

- how many institutions have the given course in the country, and how these institutions are scattered in the area relatively to one another;
- the market role, strength, prestige and standard of the institution having the given course.

While examining the students' motivations for selecting institutions I could separate two types of institutions: the market leader of the given course and non-market leader. As opposed to the non-market leader ones, the **market leader institution** has a much wider and larger area of schooling. These institutions draw their applicants from a much wider area, namely from the whole country. In case of non-market leader institutions the location of the selected higher education institution and the applicants' place of residence are the same, or the distance is very short (occasionally less than 30 km). It is true for every non-market leader institution that 80% of the applicants come from the distance of 50-60 km from the institution. The regional effect is felt here that is only local students or those living nearby can be attracted.

3.2. Students' satisfaction with the instructors' work survey results

Throughout the research according to my Hypotheses H2 and H3 my object was to reveal with the help of the inner relation analysis beyond descriptive statistical analyses what further results a working system of the students' satisfaction with the instructors' work can give and to point out when and how to make the questionnaire survey in a reasonable way.

Factors influencing the students' overall satisfaction with the subject

As a result of regression analysis of either **training type** (applying linear regression with stepwise entry) and based on Beta (β) coefficients I can refer to the fact that in case of **part time students 3 factors** out of 25 on the questionnaire **influence more significantly** the students' overall satisfaction with the instructors' work concerning the subject. In case of **full time students** 13 factors were put into the model, however, only **6 factors** (Table 2.) have the largest power ($\beta \geq 0.100$). These questions should be treated as outlined by the instructor and the supervisor, and if there is a possibility of correcting, the focus should be put on these characters.

Table 2.: The parameters of the linear regression model in case of the overall satisfaction with the subject (applying the method Stepwise)

Description of the variables	Part time		Full time	
	Un. St. β	St. β	Un. St. β	St. β
What he instructed could be understood and written down as notes			0.137	0.138
As compared with other semester subjects the requirements were easier to meet			0.121	0.131
The structure of the subject is logical being adjusted to the objectives of the subject			0.128	0.118
The subject build up was rational and with good timing			0.127	0.116
The evaluation during the semester and the final test were objective	0.354	0.371	0.108	0.104
The testing system gave an appropriate opportunity for the students to demonstrate their knowledge of the subject			0.104	0.100
During the semester checks the tests covered the material of the lectures/practices and compulsory literature	0.339	0.328		
He had a good time management of the lectures	0.336	0.291	0.073	0.064
Constant	-0.333	-	-0.553	-
Adjusted R Square	0.728		0.674	

Note: Un. St. β - UnStandardised coefficient; St. β – Standardised (β) coefficient
Source: own research, N=1517

The effect of the examination time and the person conducting the examinations

The preparation, organization, accomplishment and evaluation of the students' opinion about the instructors' work survey all needed huge time and energy use. During the first years the students were asked to fill in the questionnaires only after completing the subject (directly after the test) in question, however, this method made the questionnaire papers reaching the students hard. Great attention was paid to the fact that enough students could fill in the questionnaires and with as much care as possible. That is why we also analyzed how much the students' opinions are influenced by (our) examinations done during the last weeks of the study period and how the opinions are affected by the fact that the questionnaires and their results are seen by the instructor.

The effect of the examination time

In case of certain subjects I made examinations in a group of students before getting the final grades during the last week of the study period and in another group after getting the final grades.

We can state that those answering during the study period gave lower values than the average to the questions concerning the subject while significantly higher values to the questions concerning the instructor. As a matter of fact the time of filling in the questionnaires influences only those questions where the problems occasionally appearing at a close relationship between the instructor and the students, and the concern can occur as a feedback in other communication channels or with other techniques of communication. In well-working system there should be a feedback concerning situations like these. Based on the examinations we cannot generally say that the time of the survey influence the results but can prove that the examinations can also be made **during the last two weeks of the study period**. Thus the rate of the questionnaires filled in can be increased, time and resources can be saved in arranging

the questionnaires and the feedback returns to the supervisor sooner, so there will be a chance to interfere if needed (when necessary) during the exam period.

The effect of the person making the examinations, confidential handling the questionnaire data

In certain subjects I made examinations in a group of students during the study period in a way that the instructor could also see the questionnaires before giving the final grades and in another group where the instructor could see the overall results after the final grades, and there is no chance for him to identify the students.

I can conclude that there is a main difference between the two groups at around the third of questions. If the students filled in the questionnaires being aware that the instructor could see the results, they gave significantly higher and better evaluations at these questions.

The examination proved that **the time of filling in the questionnaires does have an effect**, namely when the instructor gets informed about the examination results how he can track back the students giving the answers etc. that is why the supervisor should put a large emphasis on the organization and communicating towards the students that the instructor would only receive the finalized results concerning him after closing the tests.

3.3. Graduating students' satisfaction with training survey results

Throughout the research according to my Hypotheses H4 and H5 my objects were to evaluate the testing types, the work of the supervisor and the dean's office where the results in a general sense can give relevant information and implications concerning other courses, institutions as well, and to reveal the inner and deeper relations at certain questions.

The students' evaluation of activities concerning the course

Based on the differences of importance and satisfaction values in the students' opinions the activities concerning the course are the areas that should be corrected and developed, the factors of great importance but low satisfaction the faculty management, especially the supervisor should pay greater attention to.

The importance of the supervisor's availability and helpfulness is significantly (Sig.=0.008) different **for each course**. It is statistically proven that full time students (Sig.=0.008) see the supervisor's availability and helpfulness more important than their part time fellows.

In examining the **gender** differences of the questionnaires we can state justified that women see the professionalism (Sig=0.028) and contact details (Sig.=0.006) of the instructors in the course, their availability and helpfulness (Sig.=0.002) more important than men. Nonetheless men are significantly satisfied with book supplies (Sig.=0.006).

It can be affirmed based on analyses that the students at the institution headquarters are more satisfied with the availability (Sig.=0.009) of the instructors in the course and the supervisor's activity (Sig.=0.029). This should raise the institutions' attention to the fact that in case of the instructors working outside the headquarters among other factors these should be focused on.

Students' evaluation of the dean's office work

Inside higher education change the place of the dean's office and its system of means also change. According to the examinations we can comment that the opinions are similar during the years.

The **gender** differences here were proven, women see personal contacts more important than men. Women find the length of office hours significantly more important (Sig.=0.000) and are more dissatisfied with the staff's politeness (Sig.=0.018), treating students equally (Sig=0.013) and the speed of administration (Sig.=0.035) than men.

Since the gender differences can be proven in evaluation of both activities concerning the course and the dean's office work, so it is important to pay attention to that consciously. If necessary, verbal communication should be fortified with a special regard to that the ratio of women is greater and still growing among students.

Differences **for each training type** can also be explained. For part time students the most important things are the speed of study administration and receiving study information. Regarding that part time students have narrower mobility, it is harder for them to adapt to a given period of time, so they see the length of office hours more important than full time students (the gap is not justified with statistics). Due to their continuous stay in the institution during the whole semester practically, the full time students evaluate treating them equally and the staff higher. If the economies of scale make it possible, this difference proves separating the dean's office for full time and part time students.

To determine the factors determining the students' satisfaction with the dean's office I applied linear regression with Stepwise entry. According to the linear regression model as a result the **direct and personal contact** with the students is of great importance unchanged and mainly determines the dean's office work even in our digitalized world. The satisfaction with receiving information and the possibility of administration (deadlines, office hours) also got into the model and they influence the students' overall satisfaction proven with the help of statistics.

Factors determining the students' overall satisfaction

To determine the factors determining the students' overall satisfaction I used linear regression with Stepwise entry. Based on the examinations we can declare that out of the (40) factors determining quality **4 factors have the most important role** (Table 3.) in determining the students' overall satisfaction mostly.

In the model as a result it is not surprising that the students' overall satisfaction is greatly influenced by the standard of the students' work since these mean a synthesis of theoretical and practical knowledge. However, it is unexpected that the supervisor's work and the book and periodical supplies of the library can influence the students' overall satisfaction a lot. For a higher education institution from these two factors raising the standard of the supervisor's work needs relatively less expenditures but the result outlines that even in today's economic situation higher education institutions should pay special attention to the standard of their library services and increasing the book and periodical supplies. Furthermore in the linear regression model the students' need for a professional practice abroad also appears. According to the model the decreased duration of the professional practice abroad influences the students' satisfaction in the negative direction. (Thus in case of increasing the students' overall satisfaction could increase.)

Table 3. The linear regression model of the students' overall satisfaction with training (applying Stepwise entry)

Description of variables	Un. St. β	St. β	Sig.
Standard of lecture work	0.548	0.569	0.000
Supervisor's availability, helpfulness	0.338	0.412	0.001
Duration of professional practice abroad	-0.208	-0.277	0.005
Book and periodical supplies of the library	0.157	0.198	0.048
Constant	1.099		

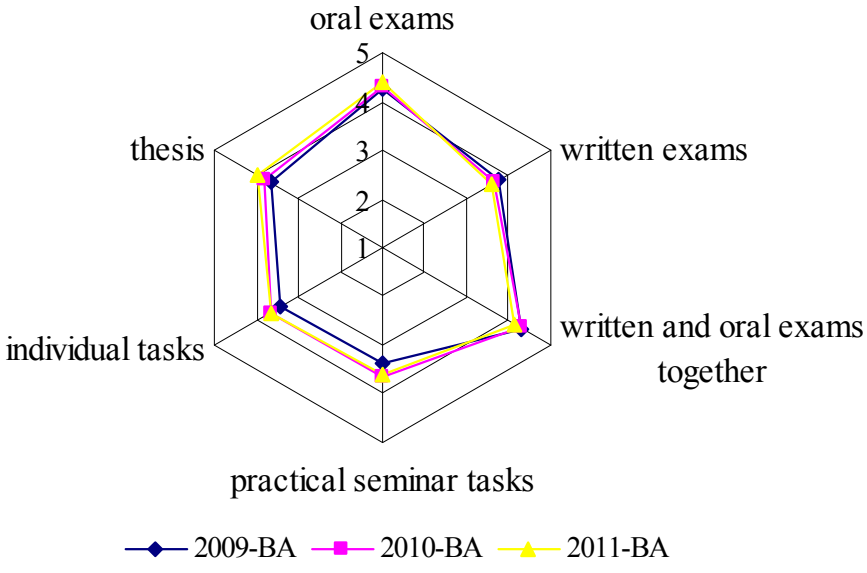
Note: Un. St. β - Unstandardized coefficients; St. β – Standardized coefficients (Betas); Sig.-significance; Adjusted R Square: 0.849

Source: own research, 2012 N=66

Testing types and handling them confidential

Graduating students in every course examined and every year saw the oral exams and a complex type of exams, namely oral and written exams together as the best exam types (Figure 4.). In their opinions these are more suitable to assess the real knowledge than written exams as well as assignments. Knowing these relations it may be useful for the supervisors continuously track the semester subject requirements and put the complex exam types in the foreground.

Figure 4. Students' opinions about applying testing types, their efficiency (full time BA course, between academic years 2009/2010 and 2011/2012)



Source: own research

According to those giving answers from non-allowed means students apply cheating the most frequently during exams, and they only partly reject its use. Using any other means is rejected by most of the students. During the last two years (2011 and 2012) students reject cheating significantly (Sig.=0.045) more than in both 2009 and 2010. I make a note here: beyond my expectations the ratio of rejection of applying non-allowed means does not decrease with the years. Fewer examples for the loosened social norms appear inside the institution walls. Avoiding the occasional empowering problems of the value system in the society needs a special and topic-based attention from the institution.

3.4. Graduate career tracking survey results

Throughout the research according to my Hypothesis H6 my object was to highlight the inner cross relations among the variables examined, and their importance, also to point out the possibility of applying the relations proven statistically and their feedback.

Generally speaking that students choose not only a higher education institution and a course consciously (See 3.1.) but they are also characterized by **a conscious way of thinking in their job search**. They paid special attention to the following three factors in their job search: interesting work, opportunity for building a career, professional development.

In case of a faculty with a well-working course system according to the career tracking survey results between individual courses there is a difference in loyalty to a certain one although in the courses 20-40% of the subjects instructed are the same and similarly the same instructors give lectures.

Differences can be observed in the establishment of **full time and part time** students' choosing institutions and courses as well as in their wishes for continuing their studies. It is important to see that **part time students**' choice of an institution/course seems to be more founded (the gap cannot be proven statistically anyway), 89.5% of them would choose the same course at the faculty while only two thirds of full time students giving answers. One reason can be that in case of part time students the decision of selecting a course is more determined because of e.g. working experience, and that is why during their training they show more openness for the actual studies recognizing their importance and practicality.

In the new system examining employment we found that among others company practice introduced at business BA courses is definitely successful especially in case of full time students. Regarding practice around 33% of full time students could get employed. So this practice helps receiving and broadening studies as well as getting employed according to our expectations.

Regardless of courses and types the majority (75.6%) of the students is planning to get another degree so as to increase and maintain their own competitiveness, or to have a deeper and specialized knowledge at a special course or training. After these it is pretty obvious that **graduated students are also potentially new students** for a higher education institution, so getting to know their opinions is essential because of this reason. As we expected full time students want to have a deeper knowledge, however, the difference from part time fellows cannot be justified with the help of statistics.

Like the motivation for selecting institutions survey here we could find that **knowledge motivates students in both choosing institutions and their job search.** Nonetheless public opinion as well as the media often present that having a degree has a primary role in labour market and 30-40% higher average salary can be reached with a degree, during last years the fact was fortified by which people study further not only for having a degree but also for knowledge itself. This is definitely apparent in case of people both with a degree and work experience. Thus graduated students choose a given course, institution in order to have a degree but to have knowledge certified with that degree.

Based on a deeper examination of graduate career tracking data I found that students of courses preferring language teaching could use business language more efficiently in their work and are significantly (Sig.=0.023) more satisfied with their studies of this area in the institution. Graduated students of courses with less or not any business language in their schedules recommend that more foreign language studies should be available inside their course.

Like students' opinions about the instructors' work survey results the current examination reveals that students need **visiting instructors' lectures** and find them important in their studies as well as applicable in their work at courses where this is an option. Inviting company experts to education is on the one hand a sort of strengthening the importance of studies from outside, and on the other hand it gives an opportunity for students to compare and contrast their knowledge with experts from outside, what is more, students can have a confirmation why certain areas are important and they are really important in company practice.

Based on the examination graduated students saw the importance of knowledge and studying as good (4), those full time ones financed by the state agree more significantly (Sig.=0.033) with statement #3 "You should learn how to learn because you should have new knowledge constantly in your life." They having practical experience saw both contacts and having a degree only as satisfactory (3) opposing my expectations. The examination shows that graduated students (full time students above all) **need having a contact with the higher education institution**. Most of the higher education institutions in Hungary make less use of the opportunities lying in having a contact with alumni students as opposed to the Western European and the overseas Anglo-Saxon higher education institutions.

Regarding the funding forms (based on chi-square test) there is a significant difference in having opinion about the importance of teamwork: unexpectedly more graduated students in courses funded by the state marked it than those fee-paying.

3.5. Quality interpretation in education with focus group survey

Throughout the research according to my Hypothesis H7 my object was to point out the differences in students' quality interpretation due to scientific area variations. During my examinations, group talks focusing on quality I tried to reveal the opinions of students with differences in qualifications, scientific areas and training types in connection with the operations of the higher education system being in a transformation nowadays.

For the students **quality** is basically **composed of several factors**. Quality means well-prepared instructors, meaningful lecture and study material, books, a kind of testing on utilized knowledge, wanted and competitive qualifications and professional knowledge. We can say that concerning quality interpretations students **think in a complex way**.

Based on the focus group survey it can be declared that unexpectedly **essential differences of the areas** in students' quality interpretations and expectations **could not be justified** with the method applied, however, **professional features can be observed**. Students see quality interpretations in higher education equal with the ones typical for their scientific area. Nevertheless in evaluating quality assessments, selecting instruction and test types of the subjects and their development it is important to consider the character of the course itself. To confirm or disprove this statement there should be done (institutional and later national level) a comprehensive questionnaire survey relying on statistical analysis expectations.

3.6. The comprehensive evaluation of verifying or disproving the hypotheses

To the overview of the primary research results of my dissertation I present the statements concerning the hypotheses in Table 4. below as a summary.

Table 4.: Verification or disproving the hypotheses

Number of hypothesis	Content of hypothesis	Assesment of the hypothesis
Hypothesis 1 (H1)	In the background of the students' seelcting institutions, majors and training types there are well-observed relations which the higher education institution inevitably should take into consideration for attracting secondary school students with as high knowledge as possible and in the recruiting strategy for the sake of its successful operation.	**Verified**
Hypothesis 1a (H1a)	Considerable differences can be seen in full time and part time students' motivation factors for selecting institutions.	**Verified**
Hypothesis 1b (H1b)	As a result of the growing spread of information technology the Internet (the institution website) has an increasing role in the seelction of institutions leaving the traditional types of information sources behind (for example the admission information booklet, career advisor, secondary school teachers).	**Verified**
Hypothesis 1c (H1c)	The family, the continuation of family traditions and the family's financial background play a determining role in the seelction of institutions and courses.	**Verified**
Hypothesis 1d (H1d)	The distance between the student's place of residence and the selected higher education institution location is an important factor in the seelction of institutions and courses in their final decision.	**Partly verified**
Hypothesis 2 (H2)	In case of the students' satisfaction with the instructors' work survey the time of conducting the questionnaire (before or after getting the final grades) and handling the questionnaire data (the lecturer instructing the given subject receives the aggregated results of the questionnaires before or after the exam, and the instructor may take a look at the individual questionnaires filled in or only receives aggregated assessment) all influence the responding skills and the content of the answers.	**Verified**
Hypothesis 3 (H3)	Some of the numerous influencing factors of the students' general satisfaction with the instructors' work concerning a subject influence it notably.	**Verified**
Hypothesis 4 (H4)	The students prefer simpler, less complex testing types in the course of checking their knowledge, and at the same time they condemn the usage of the non-allowed, unethical means ensuring unfair advantages during testing.	**Partly verified**
Hypothesis 5 (H5)	The students' satisfaction with training is markedly influenced by the administrator and the supervisor activity.	**Verified**
Hypothesis 6 (H6)	The graduated and employed students' opinion and satisfaction with training are influenced by the financing form of their study (state-funded or fee paying), training type (full time or part time), the course itself inside the institution.	**Partly verified**
Hypothesis 7 (H7)	In different scientific areas (agricultural, economist, technical and philosophy of arts trainings) the students' quality interpretations concerning education show differences.	**Disproved**

Source: own research

4. NEW AND NOVEL SCIENTIFIC RESULTS

After presenting literature and primary research results I will conclude the new and novel scientific results of my dissertation concerning my examinations in four points as follows.

1. I overviewed and evaluated quality interpretations in higher education in a complex way and in a system-like approach, their influencing macro environment factors and the applicable quality issue models, so
   - I meant the term of quality in a broader sense for the service sector and I matched that with the special interpretation of higher education service;
   - Based on defining key elements of different quality assurance theories and models appearing in the service sector I compiled the character map of quality models with a special regard to higher education and peculiarities of the systems applicable in higher education;
   - I interpreted and defined the scope of external and internal partners of higher education institutions influencing stakeholder approach higher education quality.

2. At four assessment types of the process-like system model supporting quality evaluation based on students' information at institutional level (a period of 9 years) applying time series data analyses and proving with modern mathematical and statistical methods (with multi-variable regression analysis, factor analysis, cluster analysis among others) I made the following main statements:
   - In the background of students' selection of institution, a course and a training type certain relations can be observed namely the students' choice of an institution is conscious; during the period of my examinations the weight and ranking of information sources used in application has changed.
   - Factors influencing students' overall satisfaction with the instructors' work concerning a subject are different for full time and part time students.
   - The assessment of the instructors' work concerning a subject can be done in the last two weeks of the study period or after the exam period if the training and its quality issue system are in operation.
   - Graduating students' overall satisfaction is mainly affected by the supervisor's activity.
   - For the students the most suitable testing types are complex exams (of oral and written parts) and oral exams.

3. Based on the nationwide students' motivation for selecting an institution survey I proved with both graphs and calculations that the distance between the applicants' place of residence and the location of the higher education institution fundamentally influences the applicants' choice of an institution.

4. With a focus group survey I explained that there are no differences in quality interpretations of students of different scientific areas proven with statistics, however, professional features can be observed.

5. CONCLUSIONS AND RECOMMENDATIONS

Today's fast changing economic and social environment does not only demand fast adaptation from economy's stakeholders and organizations but maintaining competitiveness and its intensification also need their intentional and proactive preparation for the change. The **philosophy of quality** is just about that.

In a broader sense I reviewed quality interpretations by the most important authors and researchers regarding the topic and evaluating them I can sum up that there is no generally accepted **interpretation of quality in higher education** so far due to the sector features.

Incidents during the macro environment analysis of higher education concerning quality issue draw the attention to **the conscious application of quality assurance in education**. It became essential that quality issue should be dealt emphasized in higher education, however, quality needs to be interpreted and handled **in a more complex way** than before. When planning, executing and analyzing the quality assurance activity of a higher education institution, the sector features originating from the special character of higher education, the features of factors influencing stakeholders or determining needs should be taken into consideration. Its realization is also supported if the institution applies a certain quality model such as ISO, TQM, EFQM, or a sectoral or institutional one. A well-built, documented and appropriately worked quality assurance system means guaranteeing the stakeholders that the institution is able to undertake assignments, to match the partners' expectations, constantly repair and develop its operation. In my thesis I interpreted quality in multi dimensions broadening it to the institution's training and research basic processes, managers' activity and the processes supporting the basic processes, instructors, staff, students, infrastructure and higher education environment.

The most important conclusion as well as recommendation of my thesis is the following: it is essential to operate an efficient quality assurance system so as a course, a faculty or an institution could preserve and maintain its competitiveness, practice-based operations, and close contacts with companies in the long run. A system like this should continuously track the operations and the standard of the activities inside the organization, and if necessary, it is capable of signalling the alternations from the desired goals immediately, interpreting the stakeholders' opinions towards training and the institution in an efficient way, and adapting to the expectations of the students and labour market faster and more successfully.

The main **statements and conclusions** regarding students' opinion model of quality issue supporting to assess and develop the quality of training and activities, processes closely connected to it:

- Based on the institutional time series (in a period of 9 years) and the nationwide survey data of the students' motivation for selecting an institution and a course survey it can be mentioned that there are apparent and statistically proven relations in the background of the students' choice of an institution, a course and a training type. The reputation of the given course or institution, location, infrastructure, the instructors' proficiency etc. of the institution all play a crucial role in the applicants' selection a course; these factors have different weights and changing with time for different training types. I found that applicants' information gathering practice and method are in a dynamic transition.
- With the help of the students' opinions about the instructors' work we can affirm that some elements of the education process have a greater role in the overall satisfaction with the subject; anyway these elements are different for training types. By accomplishing assessments the process of the instructors' work concerning the subject can be tracked

back and its efficiency and standard can be improved via feedback but the results can also be (and should be) utilized among others in developing curriculum and study material in the long run, giving precise requirements and weighting the course materials.

- The graduated students' satisfaction survey shows that there is a significant difference between the students' gender, training type and location in evaluating the work of the supervisor and the dean's office so this should be thought over by the institutions. These results must be apparent in developing courses, subjects and students services.
- Graduate career tracking survey data highlight observable differences among courses inside a given institution in loyalty to the course and the role of business language; between training types in the consciousness in selecting an institution, its public opinion and in the consciousness of studying a subject. Furthermore, differences can be observed between different financing forms of a course in viewing the importance of teamwork. The results should be utilized in developing the curriculum in the long run, having new studies in the curriculum, developing subjects, modifying the structure of the curriculum in order to meet fast changing needs and expectations of the labour market as efficiently as possible.
- The students' feedback reveals that they need drawing guest lecturers and business experts into the training, they see this fact important and useful in their studies and work.
- Focus groups surveys point out that the students partly identify quality interpretation in higher education with quality interpretation typical for their scientific area.

Important recommendations regarding the primary research:

- In scheduling PR activities and applying marketing tools it is recommended to take into account the differences in the students' motivations of selecting an institution at training types, differences in their family, social and financial backgrounds, and the changing of use of information sources.
- The instructor and the supervisor should pay attention to the factorss determining the students' general satisfaction in the first place and handle them separately by training types.
- In case of a course with a well-operating education, course and quality assurance system the students' opinions about the instructors' work survey can be accomplished during the last two weeks of the study period or even at the beginning of the upcoming semester due to much higher return rate and less expenditure needed.
- To create a consistent testing system the supervisors should constantly follow the requirements of the subjects of the actual semester and prefer complex testing types by which real knowledge can be tested better.
- Taking into consideration the differences in communication channels, means and needs applied by male and female students can make the communication between the supervisors, the dean's office staff and the students more efficient and effective.
- The institutions and courses should consciously build closer contact with the business sector, that uses their output, through graduated students.

6. RELATED PUBLICATIONS

Academic book chapter

In foreign language

1. Illés, B. Cs., Dunay, A., **Kozma, T.** (2012): Dilemmas of Labour Market Needs and Higher Education: The Hungarian Case Study. In: Illés, B. Cs. (ed.) SMEs' Management in the 21st Century: Challenges and Solutions. Czestochowa, Poland, pp. 245-259. (ISBN:978 83 63500 16 0)

Articles in scientific periodicals

In Hungarian

2. Gyenge B., **Kozma T**. (2006): A minőségirányítás szerepe a vállalati szervezeti struktúrában. Vezetéstudomány, XXXVII. évf., 3. szám, pp. 41-47. (ISSN 0133-0179)

In foreign language

3. Illés, B. Cs., **Kozma, T.**, Komáromi, N. (2005): Factors of motivation to select institution among applicants to the faculty of economisc and social sciences. Bulletin of the Szent István University, Gödöllő, pp. 237-246. (ISSN 1586-4502)
4. Illés, B. Cs., **Kozma, T.** (2009): Motivating factors influencing institution and programme selection among first year bachelor students of agribusiness in Hungary. SERiA, ANNALS of the Polish Association of Agricultural and Agribusiness and Economist, Warsawa - Olsztyn, Poland, Vol. XI, No. 6, pp. 50-55. (ISSN 1508-3535)

Presentation or paper published in scientific conference proceedings

In Hungarian

5. **Kozma T**. (2003): Minőségbiztosítás a kontrolling tükrében. XLV. Georgikon Napok, Új stratégiák az agrárgazdaságban - EU csatlakozás 2004., Keszthely, CD, p. 4 (ISBN 963 9495 263)
6. **Kozma T**. (2004): A minőségbiztosítás szerepe a vállalati versenyképességben. Within the European Union - Menedzsment és marketing kihívások a regionális agrárgazdasági- és vidékfejlesztésben. Mosonmagyaróvár, CD, p. 6 (ISBN 963 9364 40 1)
7. Hágen I. Zs., **Kozma T**. (2005): A minőség és kontrolling. AVA 2 Agrárgazdaság, vidékfejlesztés, agrárinformatika. Nemzetközi Konferencia, Debrecen, CD, p. 11
8. **Kozma T**. (2005): Az ISO 9000 rendszer adaptálhatósága a felsőoktatásban. XLVII. Georgikon Napok és 15. ÖGA Találkozó, Közép Európa mezőgazdasága - Lehetőségek és kockázatok. Keszthely, CD, p. 5 (ISBN 9639639036)
9. Gyenge B., **Kozma T**. (2005): Minőségirányítás a vállalati szervezetben. XLVII. Georgikon Napok és 15. ÖGA Találkozó, Közép Európa mezőgazdasága - Lehetőségek és kockázatok. Keszthely, CD, p. 5 (ISBN 9639639036)
10. Gyenge B., **Kozma T**. (2005): A logisztika és a minőség kapcsolata. V. Regionális Tanácsadási Konferencia, Nyertesek és vesztesek - Az EU csatlakozás 1,5 éves tapasztalatai. Miskolc, CD, p. 6 (ISBN 963 661 694 9)
11. Illés B. Cs., **Kozma T**. (2009): Az elsőéves Gazdálkodási és menedzsment, illetve Kereskedelmi és marketing alapszakos hallgatók intézményi és szakválasztási motivációi. VII. Nemzetközi Konferencia. II. kötet, Miskolc-Lillafüred, pp. 268-274. (ISBN 978-963-661-892-6)

In foreign language

12. **Kozma, T.** (2003): The connection of the quality-direction system and the controlling in case of a big enterprise. Proceedings of 4th International Conference of PhD students, University of Miskolc, Miskolc, Hungary, Economics I., pp. 133-137. (ISBN 963 661 585 3 ö, ISBN 963 661 588 8)
13. **Kozma, T.**, Illés, B. Cs. (2004): The motivation of secondary school students in choosing of higher education. International Conference on New Business Opportunities in the context of EU Enlargement, Cluj-Napoca, Romania, pp. 386-389. (ISBN 973-656-760-5)
14. Illés, B. Cs., **Kozma, T.**, Komáromi, N. (2004): The Motivation Of Secondary-School Students To Select Institutions Of Higher Education – A Hungarian Case Study. Proceedings of 7th European Conference on Higher Agricultural Education, Copenhagen, Denmark, pp. 35-42. (ISBN 10: 87-7611-147-4, ISBN13: 978-87-7611-147-2)
15. **Kozma, T**. (2004): Roles and key factors of the quality management in the service sector, especially in the case of education. 3rd International Conference for Young Researchers, Gödöllő, Vol. I., pp. 361-367. (ISBN 963 98483 42 7ö, ISBN 963 9483 43 5)
16. **Kozma, T**., Gyenge, B. (2004): Quality in Logistics. MendelNet 2004, Sborník abstraktu z konference studentu doktorského studia, Brno, CD, p. 5 (ISBN 80-7302-088-2)
17. **Kozma, T**. (2005): The renewal of quality management in higher education. AVA2 International Conference on agricultural economics, rural development and informatics, Debrecen, Abstract: pp. 87., Full paper: CD, p. 9
18. **Kozma, T**. (2005): Inqury of motivation in institution selection and its methodological problems. Efficiency and Responsibility in Education, Kostelec nad Cernymi lesy, Czech Republic, pp. 141-148. (ISBN 80-213-1349-8)
19. **Kozma, T.**, Illés, B. Cs. (2008): Effects of the Bologna process on the motivation of secondary school-leavers behind their choice of higher education institutes – Hungarian case study. 4th International Barcelona Conference on Higher Education Higher Education: New Challenges and Emerging Roles for Human and Social Development, Barcelona, Spain, http://www.guni-rmies.net/media/posters-k2008/g_kozma.pdf
20. **Kozma, T**., Illés, B. Cs. (2009): Effects of the Bologna process on the motivation of applicants to hungarian higher education instituties. 5th International Conference on Business, Management and Economics, Ýzmir, Turkey pp. 337-347. (ISBN:978-975-6339-23-7)
21. **Kozma, T.**, Dunay, A., Illés, B. Cs. (2012): University degrees versus requirements of the labour market: What should be the students prepared for in higher education? International Conference on Management of Human Resources. Gödöllő, Vol. II., pp. 355-361. (ISBN:978-963-269-295-1)
22. Gyenge, B., **Kozma, T.** (2013): The role of quality management in a company's organisational structure. In: Horska, E., Ubreziova, I. (szerk.) Proceedings of the International Scientific Conference „Business Management – Practice and Theory in the 21st Century, Nitra, pp. 239-248. (978-80-522-1026-1)