Competitiveness Factors of Higher Education Institutions, with Particular Respect to Hungarian Cities

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1 ABSTRACT[1]

The world is in a continuous change. People lived according to different norms in different periods, with the development of technology, the accelerated time people's learning and knowledge have required/demand a continuous change. Learning and knowledge have played/play an accentuated role in the development and everyday life of mankind. Education, and especially tertiary education is still in a key position today, when in its strategies Europe is laying emphasis on the fact that knowledge and innovation could be the driving force of competitiveness. (Tamándl 2012)

The world's tertiary education – including the Hungarian tertiary education system as well – has undergone a huge change in the last two decades. Functions which are said to be traditional have changed significantly, the supply range has transformed – it is offering new things for both the students and the teachers -, it is playing different roles in the life of people, professions, careers, as well as in that of the regions. (Fábri 2005) The carriers of knowledge are the institutions of higher education. Encouraging innovation and innovation have priority, because they contribute to development. That is the reason why it is necessary to create harmony between the needs of companies and the output of educational institutions. (Filep 2009) The domestic regional science is increasingly turning towards tertiary education; moreover, competition as a new factor has appeared in the life of universities. New institutions have shown up on the supply side (private, religious, non-profit, foreign), while on the demand side professions, trade groups are being created, or are disappearing from the "spotlight". (Rechnitzer 2010) Institutions, performers are multiplying knowledge as well as innovation have begun decentralization, and they are more and more integrating into the local, regional economies, as a result of which the structures of this process have also entered the phase of transformation. (Grosz-Rechnitzer 2005)

Taking he above ideas into account, it can be declared that the alteration of the economy and the society, namely the phenomenon of globalisation has impacted the segment of tertiary education and it has resulted in its transformation. There is a competition going on for the free capital, more exactly today it is a crucial issue which region or area can attract the capital necessary for the production of products and high technology (Barakonyi 2009), in the process of which higher education institutions can play a significant role.

One of the most important structural problems of the national tertiary education is the weakness and disability of the relationship between the education and the labour market, the inadequate nature of the information flow between the two spheres. The demands of the labour market are not built in the content, output expectations and requirements of courses offered by universities and colleges, although there is a need for the information systems revealing the labour market position of graduates, for objective ranking methods and for conveying information about the labour market to the students. Efficiency, economy, transparency and traceability are irreplaceable elements of the operation of higher education institutions in the 21st century. The Hungarian higher education institutions can become competitive in the uniform European Higher Education Area only if they necessarily employ the latest ICT-based (Information and communication technology) services. The planned activities make possible to modernize the control and management systems of the institutions in order to make them efficient and flexible, with the support of IT devices, moreover, they can help the efforts aiming at the introduction of modern, integrated services.

In recent years several experts have analysed and presented that in Hungarian tertiary education the geographical location of institutions can mean an advantage and a disadvantage as well, namely the capital represents the leading role from every aspects (number of students, range of courses, etc.) Until now there have not been any rankings or indicators with the help of which institutions could have been compared. In order to be able to decrease the differences of the above analysis, the causes of the difference have to be explored. By setting up the competitiveness model, we are presenting the indicators, the categories according

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to which the institutions on the countryside can be as competitive, or even more competitive than universities in the capital.

Due to their huge numbers, the competition between the institutions – both in space and size – is definitively considered to be lively on the relatively small Hungarian higher education market. The regional commitment of the institutions on the countryside are supposed to be higher than those in Budapest where the institutions have significant national scope and they also have needs to appear at an international level. (Kovács 2012)

2 RESEARCH METHODOLOGY

With the research we are trying to find the answer to questions like how the present position, competitiveness of European universities can be connected to their role in the region, how rankings can be used in determining the quality of institutions, how the results of graduate career tracking researches (output indicators) can be interlinked with university rankings, and what kind of positive effect can be derived from such a new kind of ranking.

In the last years, decades – similarly to more fields – rankings have appeared in the tertiary education as well, which make international comparison possible. (Shanghai Academic Ranking of World Universities – ARWU, Times Higher Education World University Ranking, World's Best Universities Ranking – US News and World Report, CHE University Ranking, U-Multirank ranking, Performance Rankings of Scientific Paper for World Universities, Webometrics Ranking of World Universities) University rankings have and can have an important role in justifying or confuting the governmental, institutional, corporate and family decisions made on the supply and demand side of tertiary education services. The appearance of rankings have been followed by numerous debates, which mainly questioned the methodology, criteria and indicators of these lists, although most of them have agreed in the fact that at present this is the best method to measure the competitiveness of higher education institutions from a professional and scientific aspect. Besides these, the rankings can be fixed in value in the long run only if they represent the institutional quality, prove to be capable of comparing the scientific level of institutions, can reflect the position of universities in the competition for students and resources; moreover, they provide exact information about graduate feed-backs and the value of the degree.

More and more theoretical and practical research is dealing with the competitiveness of countries, regions, both internationally and nationally. There are several examples showing that – besides enterprises and nations – the question of competitiveness is present in today's tertiary education. There is a competition for the students, teachers, R&D work and for the finances necessary for the education. In the previous year I tried to set up a model suitable for the measurement of university competitiveness on the basis of a special methodology, the pyramid model of competitiveness by Lengyel (2010). The third chapter is presenting the further consideration, methodological elaboration and test of the model. In the model I mostly relied on the textual accounts of the NEFMI, the AVIR, the Educatio Nonprofit Kft., the OTDT, the TEMPUS Public Foundation, the OH, the FTT[2] and the higher education institutions. While setting up the model, from a methodological point of view I found it important to base it on an economic theory, to make it consequent from a mathematic-statistic point of view, to direct it to the method of achieving competitiveness and the future development of competitiveness. Among the further aspects I considered the fact that it should be suitable for the comparison of higher education institutions, and should be useful for the purposes of scientific research and practical application. From a technical aspect I considered transparency, extensive nature, authenticity, usability (informal and research) and proportionality important. The tertiary education competitiveness model has a greater spectrum than the existing – either Hungarian, or international – rankings. Taking the above points into account I classified the 42 indicators into 3 basic categories and 5 basic factors in which the indicators of the trifold unity of education, research and service. The basic categories contain the student-, alumni- and labour market satisfaction, and I characterized each of the basic categories and the basic factors with more indicators. We carried out the examination with nine selected institutions. The three basic categories and the five basic factors were each characterized by more indicators. We summed up and took the average of the standardised (transformed to a scale between 0 and 1) values of

[2] NEFMI – Ministry of National Resources, AVIR – Data Warehouse-based Management Information System, OTDT – Council of National Scientific Students' Association, OH – Educational Authority, FTT – Higher Education and Research Council

the indicators belonging to the same basic category (and basic factor). The final static measurement of competitiveness was carried out by considering the indicators of the basic categories and basic factors with the methodology specified weighting, and then the final result was developed by transforming the resulting values between 0 and 100 once more.

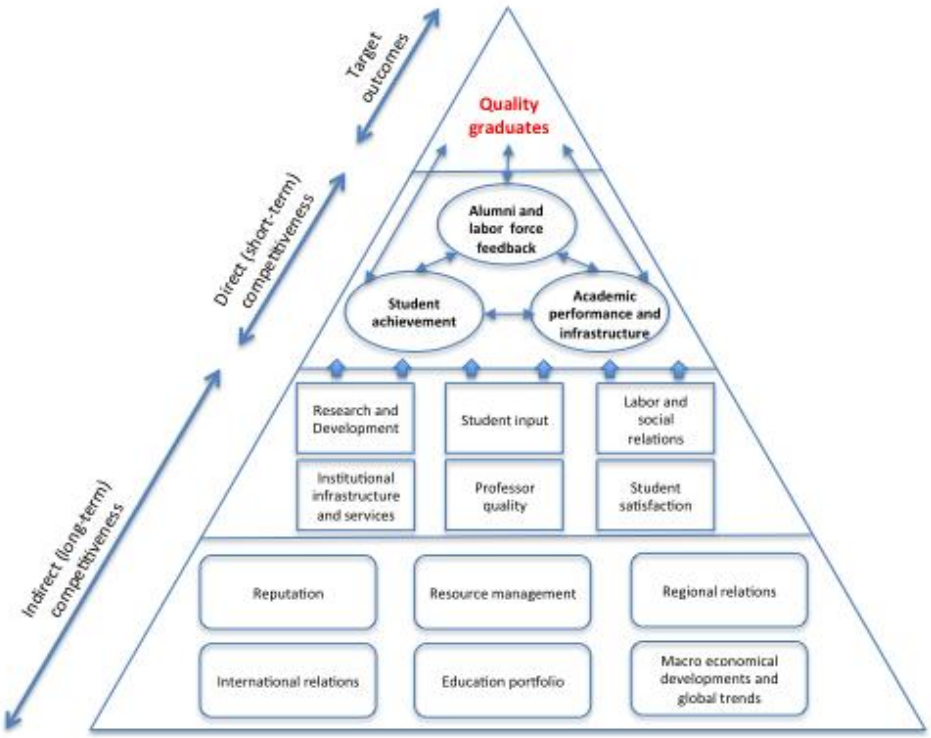

Fig. 1: Ranking of higher education institutions on the basis of the competitiveness model. Source: Filep-Kovács-Tamándl 2010.

Although no comparative examination of universities, higher education institutions have been made on the basis of the method, we still consider it a model which can have results in national and international researches as well by collecting the data if it is used systematically All this can mean the possibility of the comprehensive expansion of the research.

3 RESULTS OF THE RESEARCH

In recent years, similarly to other sectors, competition has also appeared in tertiary education. It is marked by the fact that besides state institutions more institutions (mainly private, non-profit, and religious ones) have been established. Institutions have made attempts to refresh the range of their courses with new methods (distance learning, e-learning). Parallel with this, as a result of socio-economic trends majors, professions have been appreciated and depreciated, new fields of professions have been given more attention. Students' expectations have been transformed and institutional services, institutional infrastructure, distance from the place of living, and future possibilities of work close to the institution have appeared with greater emphasis in the selection of institutions.

Institutions on the countryside have to struggle with the additional difficulty of a bigger significance given to institutions in the capital by the professionals. What aspects could or can be behind this statement? The number of institutions on the countryside has decreased while the number of state instituions has remained practically the same, the number of institutions in the capital has slightly increased, which can be explained by the integration. The leading role of institutions in the capital is permanent concidering the number of students (nearly 40 % of students study in the capital) and the diversity of courses, furthermore they can put pressure on politics forming tertiary education due to their importance. (Rechnitzer 2009)

Under the above circumstances, I have undertaken the task to verify with the competitiveness model the fact that rural institutions can compete and sometimes stay ahead in the competition of the universities in the capital.

Previously we had a review of the competitiveness indicators of the 9 selected universities in detail; furthermore, their positions on the basis of the tertiary education competitiveness model can also be seen. The cumulated results are included in Table no. 1 and Figure no. 2.

Name[3]	BCE	BME	DE	ELTE	NYME	PE	PTE	SZE	SZTE
Basic categories	5.	4.	3.	1.	9.	7.	6.	8.	2.
Basic factors	5.	1.	2.	4.	9.	8.	6.	7.	3.
Competitiveness (total)	*5.*	*1.*	*3.*	*4.*	*9.*	*8.*	*6.*	*7.*	*2.*

Table 1: Position of higher education institutions on the basis of the competitiveness model

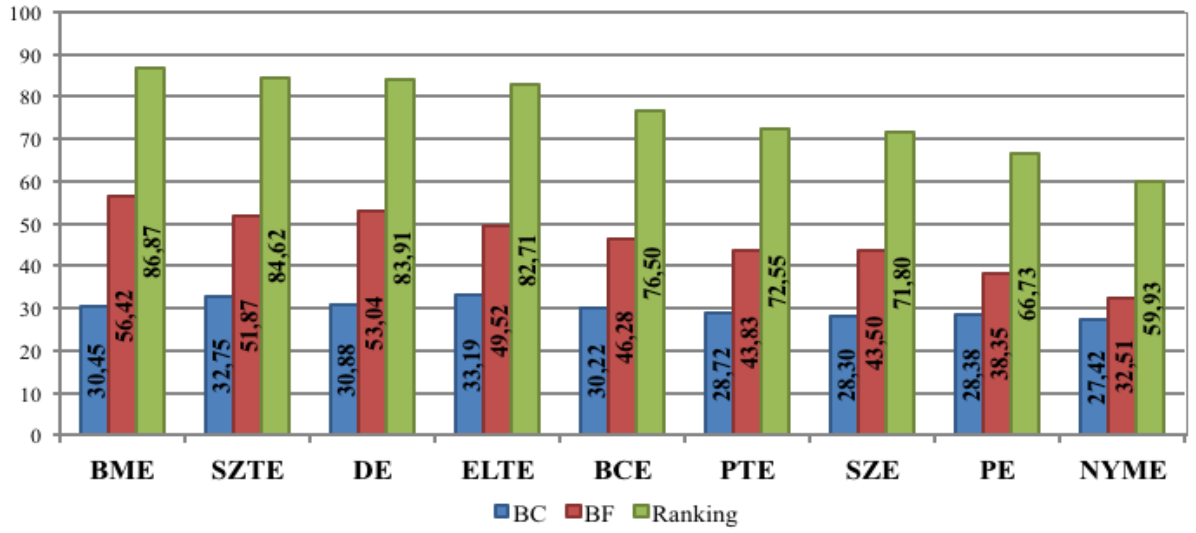

Fig. 2: Ranking of higher education institutions on the basis of the competitiveness model

The basic categories and the basic functions of competitiveness verified the asumption. By four out of the eight categories of competitiveness rural institutions had the best performance. In relation to the basic categories and the basic factors, we can tow-two rural institutions among the three best ones. In the first three places of the final ranking there are again two rural universities (SZTE, DE), with their final points just slightly less than the leader of the ranking, the BME (2-3 points less).

To sum up, rural universities can compete with the institutions in the capital regarding tertiary education indicators and competitiveness. Hungarian institutions, independently of their geographical location (either in the capital or in a rural city) can be equally competitive, namely the regional position does not always adversely influence the competitiveness.

4 CONCLUSION

The higher education institutions are taking an increasingly bigger role in the development of their regions and cities, in turn, the the cities and regions are also making attempts to do their best for the economic, social and cultural development of tertiary education. From the point of view of the university regional role-taking is important because in this way it has the opportunity to show its contribution to the civil society, and can verify its values formed by education and research with which it repays the investments of society. However it must be noted that not every Hungarian higher education institution has only regional embeddedness. The greater institutions in the capital (ELTE, BME, BCE) have nationwide coverage and relationships, while regional binding is characteristic of the rural institutions (SZTE – Szeged, SZE – Győr, DE – Debrecen, PE – Pécs).

Collecting data was the most difficult task during the application of the tertiary education competitiveness model set up on the example of the pyramid model. Many data cannot be found at institutional or national level, which makes the analysis and the testing of the model more difficult. The time series study, related to a longer period, would provide more information about the processes, but in that case less data can be taken

[3] BCE – Corvinus University of Budapest; BME- Budapest University of Technology and Economics; DE – University of Debrecen; ELTE – Eötvös Loránd University; NYME – University of West Hungary; PE – University of Pannonia; PTE – University of Pécs; SZE – Széchenyi István University; SZTE – University of Szeged

into consideration and the data selection at the suitable level has to be well devised. Thus the resulting analysis reflects a static state, which shows the given state projected to the nine higher education institution, but the time series study is necessary and it has to be carried out in the future.

There have been and there are still studies abot competitiveness carried out in a lot of fields (comparison of countries, regions, cities, professional fields, enterprises, etc.) in both national and international literature, but it is a novel attempt to compare universities, higher education institutions on the basis of indicators, and to define and determine their competitiveness despite the existence of several tertiary education rankings.

It is clear on the basis of the data of higher education institutions that the increase and competitiveness of the Hungarian tertiary education differs from institution to institution and it changes unevenly. On the basis of these ideas I believe that it is especially important for experts and certain offices and administrative organizations (NEFMI, Educatio, ÁSZ, KSH) to cooperate in the interest of the success of future comparisons, as exact and extensive samplings, surveys and analyses are inevitable in order to get authentic data.

In summary it can be said that the modell and the GCTS survey offer a unique possibility to reveal the labour market position of young graduates, it has an indisputable national significance, and it points at young people's social background and lifestyle, labour market opportunities, intention of further trainings, and with the annual repetition of the survey, there will be a possibility to follow up on the tendencies. It is not easy to find a way as it requires considerable efforts from leaders, teachers and researchers as well. (Szekeres 2008)

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