

New challenges for the universities in context of regional development

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Abstract

In our paper we are considering new challenges for universities in European Union, with respect to the role of universities in regional development. Increasing number of universities fulfils, apart from their traditional tasks such as providing education and research, also economic and social functions. We study the role of university in regional development and describe possible impacts of universities on the development of regions.

Key words: universities, relationships of universities, development of regions

1 Introduction

Universities nowadays fulfill, apart from their traditional tasks such as providing education and research, also economic and social functions. For the purposes of this paper, we refer to “university” for all higher education institutions, with no regard to their form or creation aspects. We therefore include in our studies true universities, but also other professional higher education institutions (e.g. polytechnics).

Universities currently face new challenges and changes in their environment, that are influencing their objectives and their missions. One of the challenges includes their influence on the region of their location. This topic is becoming more interesting not only for universities and researchers, but also the institutions of public administration and European union. This article examines available literature on the role of a university in regional context.

The following questions are addressed in this article:

1. What kind of new challenges are the universities facing?
2. What tasks do the universities fulfill with regard to their role in regional development and what is the possible impact of universities on the development of regions?
3. Who should take the initiative in cooperation between regional institutions?

2 New challenges for the universities

The first important factor influencing all institutions, including universities, is globalization and establishment of world market [1]. Globalization introduced changes in education, as well as changes in international research. Changes in global economics have raised the importance of universities as producers of knowledge in an economy, as well as faced universities with the goal of bridging the global and local [2]. The result is internationalization of education and research, aided by use of new information and communication technologies.

European union by itself poses a great influence to universities. The attempts to unify and enhance the European system of education has led to the drafting of Bologna declaration in 1999 about the creation of European Higher Education Area till 2010. Some examples of European Commission publications related to this topic include *Towards a European research area* [3], *The regional dimension of the European Research area* [4], *The role of Universities in the Europe of Knowledge* [5], *The role of universities in local and regional development within the context of a Europe of knowledge* [6].

The European union has set the goal of becoming the most competitive and dynamic knowledge society in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion. Universities are playing important role in realization of this goal due to the fact, that they are responsible for 80% of the fundamental research conducted in Europe and they employ 34% of active researchers. The unemployment rate of their graduate output stood at only 3,9% in 2001.”[7].

On the other hand, Zelený [8] warns that there is pressure to rely to a great extent on the official EU documents and bureaucratic solutions, which in essence do not put sufficient pressure on practical application of these visions.

The role of university research within EU is supported by the Seventh Framework Programme, which is the EU's main instrument for funding research and will run from 2007-2013. FP7 is also designed to respond to Europe's employment needs, competitiveness and quality of life. The core of FP7 and also its largest component is the Cooperation programme, which supports collaborative research across Europe and other partner countries [9]. FP7 also allows establishment of new Regions of Knowledge, that bring together various research partners within a region (universities, research centers, businesses and regional authorities). EU also supports teaching and mobility of students as well as teachers through programs Tempus, Erasmus or Leonardo da Vinci.

Other changes faced by universities include:

- ❑ increased competition between universities and between countries, growing number of knowledge-producing institutions,
- ❑ increasing demand for higher education,
- ❑ transition from elite to mass system of higher education,
- ❑ emergence of new needs in education,
- ❑ emphasis on life-long education,
- ❑ new ways for transfer of knowledge, the use of ICT (information and communication technologies), including e-learning and distance learning,
- ❑ pressure on universities to play a greater role in stimulating regional economic development,
- ❑ larger autonomy of universities, influence on multiple-source financing,
- ❑ better student and academic staff mobility,
- ❑ development of long-term relationships between universities and businesses, university participation in commercial research,
- ❑ quickly changing demands of employers, as well as changes in labor market.

These changes and challenges are faced by universities, which change their goals accordingly. Apart from traditional goals in areas of education and research, there are other tasks in the area of systematization of new knowledge and its transfer to businesses and society, more application-focused research, social and cultural role, the role in regional development and others.

In next section we focus only on selected changes in financing, mission and internal structure of the university. All these lead to change in focus on the region where university is located.

According to the analysis of the mission of universities published by Zelený [8], the original mission of universities was the conservation and distribution of information and knowledge. This made them exclusive, but strongly dependent on state financing. They satisfied the needs of national labor market and provided the capacity needed for national research and the needs of technological development [10]. This was a consequence of a dominant position of large employers, as the interest on small and medium sized enterprises and local labor market was only minor. This model has changed in recent years. From the beginning of the 20. century universities started to transform to knowledge-producing institutions [8]. Today they have more autonomy and they operate more flexibly. The system of financing of universities changed, thus allowing the universities to acquire non-budgetary financial sources and perform business activities. They are usually forced by governments to look for alternative financial sources and exploit multiple-source financing. This has led to the concept of entrepreneurial university, having stronger ties between universities and businesses, emphasis on commercialization of research, introduction new study programs corresponding to the demands of local economy, consultation services for businesses and others. Some authors emphasize the conflict, which may arise between academic and market values, replacing research with consultancy, more attention paid to commercial education instead of academic goals and the emphasis of university management on purely financial criteria.

The changes in university environment lead to organizational as well as cultural changes within the university. Slaughter and Rhoades state, that „we must imagine a new university with organizational structures, incentives, and rewards for the kind of society we want and then create the new circuits of knowledge, interstitial organizations and intermediating networks to achieve it.” [11]

Currently, the role of universities reaches far beyond their basic mission of education and research. Universities play an important role as an employer in a region, with significant budget, emphasis on applied research and cooperation with local companies. They are running special research centers, hospitals, housing, accommodation for students, sports, cultural facilities and sometimes are associated with science and business parks, as well as business incubators. The most successful cases of the role of universities in regional development, which are frequently mentioned in papers similar to ours, are Massachusetts Institute of Technology (MIT) and Harvard university and their role in Route 128 surrounding Boston, Stanford university with its role in Silicon Valley in Santa Clara, as well as Cambridge in the United Kingdom.

3 Role of the universities in regional development

3.1 Literature review

Contribution of universities to the region of their location has been studied for almost 30 years. There are many regional economic impact studies of universities, but interest in the contribution of universities to regional economic development has still grown substantially in recent years. Authors studying the impact of universities on region and regional development include Goddard [10], Kitagawa [12], Thanki [2], Stones and Coomes [13], Felsenstein [14], Reháč [15], Urbančíková [16] and others.

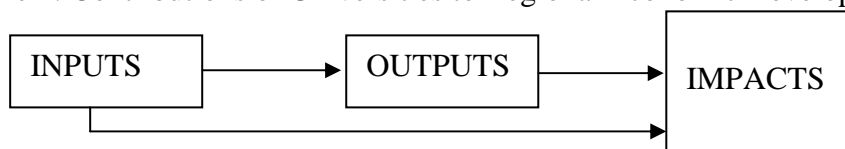
According to Felsenstein [14], a university may play an important role in economic development. Felsenstein understands a university as an organization receiving inputs in order to generate outputs. Inputs come from households, government and businesses. University inputs can be described in terms of salaries and other expenditures (e.g. equipment and services). These expenditures represent backward linkages of the university with local economy [14]. Forward linkages represent the output of a university, such as human capital formation, production of knowledge, expert advice to local development agencies and other institutions. Universities customize courses for firms located in their region and develop new products. Existence of a university gives incentives for firms to expand in the area and enhances cultural and economic attractiveness of a region for firms and skilled workers who might decide to stay in the region [17]. Apart from these facts universities play an important role in creation of regional networks, they provide new employment opportunities in the region and contribute to social, cultural and environmental development (they provide the space for sport activities and other facilities – e.g. catering, public access to university library, theatres, museums, galleries, botanical gardens, medical services through faculty hospitals etc).

In general there are three approaches to analyse the role of a university in regional economic development [14]:

1. Spatial approach, which attempts to correlate the concentration of high technology activity with various location factors perceived as inducing this spatial clustering.
2. Focus on specific economic growth process and role of university in it. Studies show how university affects local labour markets, new firm formation, service sector and e.g. effects of human capital base on local industry investment patterns.
3. University impact studies. These are generally performed for individual universities and attempt to estimate regional economic development impacts.

The role of universities in regional development can be seen in Figure 1.

Figure 1: Contributions of Universities to Regional Economic Development



Source: modified according to [18]

University, as any other organization, needs inputs for its operation. Inputs represent material, equipment, services, labour etc. These inputs represent university expenditures. Existence of a university in a region stimulates additional expenditures, for example spending of non-local students and visitors. All these expenditures have direct and indirect impacts on employment and economic development in the region. These effects are usually described as

short-term effects. Long-term effects are determined by university outputs, classified into areas of education, research and other services (see Table 1).

Table 1. Classification of university outputs

Teaching	Research	Other outputs and services
<ul style="list-style-type: none"> - graduates - PhD. students - courses - number of courses, course hours - courses for businesses - courses for other institutions, e.g. public administration - life-long learning - public lectures 	<ul style="list-style-type: none"> - scientific graduates (associate professors, professors) - scientific results (scientific publications, patents, innovations, technology development) - scientific projects - research (scientific) parks - research cooperation with industry or government institutions 	<ul style="list-style-type: none"> - libraries - sport facilities - food facilities - other facilities (e.g. culture) - student, staff and financial administration - expert advice and consulting - alumni relationships - business incubators - capital investments - support to non-profit organizations - expert analyses - proposals for regional problems - spin-off companies

Source: authors

Long-term effects represent economic effects of increase in productivity and wages of workforce due to their higher qualification, creation and transfer of knowledge, innovation and introduction of new products based on research and development, new business start-ups, increased supply of qualified workforce in the region and increased quality of life [19]. A complete study of university impacts requires a combination of short-term and long-term effects. Apart from economic impact universities also have social, cultural and environmental impacts.

Measuring university impact on the region of its location also contributes to understanding of the links and relations between university and regional stakeholders.

3.2 Relationships of universities with other institutions in a region

In order to understand the role the universities have in a region, it is necessary to analyse their activity and relationships with regional partners. This role is emphasized also in the so-called triple helix model, which includes cooperation between university, industry and government.

Relationship between universities and their region can be complex. They are also represented by relationships between universities and other institutions in a region, namely from

- ❑ private profit sector
- ❑ non-profit public sector
- ❑ non-profit private sector
- ❑ households.

These relationships are bi-directional and are described in more detail for example by Valenčáková and Žigová [20]. In general, the positive effects of universities described above outweighs negative impacts, represented for example by direct competition with small and

medium enterprises in providing sport, food, housing and other facilities or by negative environmental or traffic effects.

There are also differences between universities. Some of them are more research oriented (conducting national and international research), and therefore are able to contribute to regional development with research. This can be done in cooperation with local businesses, by creating spin-off companies or science parks. Other universities are less research, but more teaching oriented. They may be more concerned with businesses and their role in the region. These universities contribute more to the creation of human capital in the region, increase in productivity of labour through increased qualification, increased supply of consulting services, life-long learning, etc. The way the universities contribute to regional development is also different, depending on the nature of education. The contribution of technical faculties is different from humanities and socially oriented ones. Funding of universities and the role of regional authorities in higher education also varies between countries.

Relationships between universities and their regional partners are affected by many factors, for example the degree of decentralization of national territorial governance system, the extent to which the activities are regionalized, European and national regional policies, government research policies, existing business structures and economic condition of the region [14]. OECD recommends that greater autonomy and better incentives should be given to universities and their staff to engage with small and medium-sized enterprises. It also recommends that countries should provide a more supportive environment for university-enterprise co-operation, including regulatory and tax environment. Countries should develop business demand for university interaction; universities should be more entrepreneurial and address the needs of businesses [21].

3.3 Who should be the initiator of relationships in the region?

The remaining key issue is about who should be the initiator of these relationships in the region. Following the model applied by Tomáš Baťa, Zelený says that „business sphere has to satisfy its needs for business-managerial education by itself, as in the Baťa model“ and not „leave it on the state“ [8, p.199]. The report of OECD also states that the cooperation should not be initiated from the supply side (the universities), but should be demand driven (the businesses) supported by the government. Universities should present more “business spirit” to follow trends in the regional economy more closely.

OECD report includes experiences from 12 countries and states that “the potential of higher education institutions to contribute to the economic, social and cultural development of their regions is far from being fully realized (only 10% of UK firms currently interact with universities)“. According to Thanki [2], universities (not polytechnics) largely failed to respond to social and economic problems in their region during 1970s and 1980s, undervaluing connections with industry.

An important aspect of the problem of designating the initiator of mutual cooperation in triple-helix model is the fact, that universities as a part of public sector share a certain amount of inflexibility. Accepting the statements about the predominant role of flexible private sector in building the relationships with universities, a question still remains about the initiator for relationships with institutions of local and regional self-government. In relation to the establishment of its autonomy within the framework of reform of public administration in Slovak republic it is clear, that local government institutions should come to terms with this new activity quickly. The government is responsible for creation of suitable environment, capable of supporting these relations. The problem remains, that institutions of public administration are more marked by their inflexibility and often inefficiencies in their

operation. Thus, it is even more important to pay attention to these problems within the triple helix model in the context of establishment of regional networks.

Very useful, as well as underdeveloped in Slovak republic, are the relationships of universities with non-profit sector. This space could be used by the universities, which are not business oriented. This sector deals with often very narrowly specified and marginalized problems, which could be very beneficial to the area of education and research.

An important factor in these relationships is also the fact, that the demand for university products is significantly dependent on the quality of product the university offers, marketing and the attitude of the university towards the region. Many universities feel the responsibility for regional economic development. This can be seen in the missions of many universities.

An interesting aspect in the given problem is the effect of “mass-production”, that presents a very sensitive area. Current globalized world was marked by enormous impact of ICT, which should not by itself replace individual access to primary university client – the student, who represents workforce for businesses. If two conditions - that the employer is locally based in the region and the student received proper education at the university – are satisfied, it can be assumed that the student will be an initiator for further university-industry cooperation. The graduate will become not only the recipient of the education, but also a partner for the university to build its relationships within the region (as well as further cooperation in research, analysis, expertise and consultations).

4 Conclusion

With respect to the changes that force universities to re-evaluate their current position and portfolio of products, we consider it as important to perceive these challenges together with universities’ traditional and main objectives – education and research. The possibilities that the universities have as a participant in regional development present an important platform for establishment of new relationships and cooperation. First of all, there are the often cited and influential relations with local businesses, significantly contributing to regional development. The main objective in coordination and securing regional development belongs to the institutions of regional or local self-government. In case of an university, performing its classical role of education and research at a required level increases the demand for its products, which allows for growth in business sector but also has effects on public administration.

To the best of our knowledge, there is currently no complex report that would monitor these topics in Slovak republic. A report of OECD has mapped the situation in the area of university cooperation in 12 countries, but Slovak republic was not included in the research. The paper presents the basis for our future research on the role of universities in regional development, ahead of a planned survey mapping the relationships of Slovak universities with other present and potential partners within their region.

Acknowledgements

This paper was prepared within the grant VEGA 1/4639/07 „ Role and status of universities in creation of regional networks as an assumption for regional development “.

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