

## The Modern Universities as a Regional Development Factor

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**Abstract:** The article deals with the contribution of the higher education institutions to the development of the regions. In the present, the role of universities has evolved from their traditional field - education and research - to more active participation in regional development processes. The new context of global financial crisis and climate changes needs global approach. Higher education institutions need to engage in external collaboration to promote social impact of innovations, transfer of knowledge and increase the quality of education. Universities are also becoming important actors in regional innovation system. Nowadays the regional authorities, the business and the people expect the universities' participation in economic and regional development.

**Keywords:** Higher education, regional development, university, globalization

### 1. Introduction

*The universities* are active on a global scale, contributing to innovation and sustainable economic development. According to the theory there are three knowledge bridges:

- Education and lifelong learning - it supports learning opportunities from childhood to old age in every single life situation and was designed to enable people, at any stage of their life, to take part in stimulating learning experiences, as well as developing education and training across Europe<sup>1</sup>;
- Business and lifelong learning - entrepreneurship activities concern both the role of commercializing findings and also the role of educating students in entrepreneurship. It includes also interactions between some universities and their surrounding business life environments;
- Research and development – collaboration relates to the role of having collaboration projects concerning research between higher education institutions and private companies but also other public actors.

The two major tasks of universities are to provide education and research. A third task has been

added, which in general terms focuses on the cooperation with the society. In an OECD report (2007)<sup>2</sup> the tasks have been termed knowledge transfer (through education and human resources development), knowledge creation (through research and technology transfer) and cultural and community development. As Arbo (2003) stated, higher education institutions have always had an impact on their "region": as well as producing trained and educated manpower, university research and innovations are often seen as engines of growth and regional development<sup>3</sup>.

### 2. Material and Methods

A Theoretical Type of Research was used in the research process studying some of the published works (researching through published academic journals and Internet sources). Qualitative Research Method with exploratory aim was used involving individual interviews with university teachers and administrators (to collect different opinions and motivations), analyzing different surveys and observations (to uncover trends in thought and opinions) concerning higher education. The data collection methods use unstructured techniques. In the research process the methods of analysis and synthesis, and system analysis methods have been used as well.

<sup>1</sup> [http://eacea.ec.europa.eu/llp/index\\_en.php](http://eacea.ec.europa.eu/llp/index_en.php);  
[http://ec.europa.eu/education/tools/llp\\_en.htm](http://ec.europa.eu/education/tools/llp_en.htm)

<sup>2</sup> Higher Education and Regions: Globally Competitive, Locally Engaged, OECD, 2007

<sup>3</sup> Arbo, P., What the literature tell us, Karlstad University, Sweden, 2005

### **3. Results and Discussion**

#### **3.1. Universities' Role in the Process of Regional Development**

According to Garlick (1998) Universities play a highly significant role in regional development:

- they are major contributors to regional economies and regional development. They are often the major regional employer and purchaser of services;
- they provide cultural, sporting and physical infrastructure in the regions;
- they provide community leadership in regional development in conjunction with state and local government and local industry.<sup>4</sup>

The regional and rural universities and campuses are important education and service providers for their regions offering entrepreneurship programs, up skilling and life-long learning modules. These universities, whilst primarily teaching and research institutions, fulfil roles beyond the realm of education. They are highly significant financial and social institutions in the regions in which they operate, offering their communities educational, research, economic, cultural and social opportunities which would otherwise not be available in the region.

The OECD has recently published the report *Higher Education and Regions: Globally Competitive, Locally Engaged*. The common goal of various regional projects is: "to transform each higher education institution into an engine for growth" to respond at the local level to the global economic challenge.<sup>5</sup>

The report therefore examines and assesses the capacity for universities and colleges to effectively contribute to regional economic development through their multiple dimensions and activities: knowledge creation through research and technology transfer; knowledge transfer through education and human resources development;

and, cultural and community development, which they argue can contribute to the conditions in which regional innovation thrives. The internal and external barriers and constraints that prevent universities from furthering this regional economic agenda need to be identified and should be provided general recommendations for higher education institutions as well as regional and national governments to overcome these obstacles, particularly in terms of governance, management, and capacity building for innovation.

Unlike other recent higher education policy documents, that seek to balance the multiple missions of the sector, this report unequivocally frames the purpose of higher education as primarily – if not solely – serving an economic objective.

Nevertheless, higher education institutions should contribute not only to economic development, but should include social, cultural and environmental considerations. This requires greater cooperation between institutions and with their communities and changes within the institutions, allowing that regional development activities are put on the same level as research and teaching.

The Europe 2020 strategy<sup>6</sup> highlights the key role of innovation in contributing to smart, sustainable and inclusive growth. Regions are important sites for innovation because of the opportunities they provide for interaction between businesses, public authorities and civil societies. In meeting major societal challenges, which have both a global and local dimension, universities and other higher education institutions have a key role to play in knowledge creation and its translation into innovative products and public and private services, a process that can engage the creative arts and social sciences as well as scientists and technologists. This role has been highlighted in the agenda adopted by the Commission in September 2011 for the modernisation of Europe's higher education systems.<sup>7</sup>

At a time of public budget constraints, major demographic changes and increasing global

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<sup>4</sup> Garlick, S., *Creative associations in special places: enhancing the partnership role of universities in building competitive regional economies*. Department of Employment, Education, Training and Youth Affairs, Canberra, Australia, 1998

<sup>5</sup> *Higher Education and Regions: Globally Competitive, Locally Engaged*, OECD, 2007

<sup>6</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:2020:FIN:EN:PDF>

<sup>7</sup> *Connecting Universities to Regional Growth: A Practical Guide*, EU Regional Policy, 2011

competition, Europe's competitiveness, the capacity to create millions of new jobs to replace those lost in the crisis and, overall, the future standard of living depends on our ability to drive innovation in products, services, business and social processes and models. This is why innovation has been placed at the heart of the Europe 2020 strategy. Innovation is also the best means of successfully tackling major global challenges, such as health and ageing, climate change, energy and resource scarcity. The modern theory focuses on three knowledge and policy domains – education, research and innovation - the so called knowledge triangle as described in Innovation Union [COM(2010)546]<sup>8</sup>. The starting point for the Innovation Union is to create an excellent, modern education system in all Member States.

Considerable effort has been devoted to the preparation of regional innovation strategies in which universities are seldom mentioned – the focus has been on just one side of the triangle. While universities undertake research and can contribute to its development the guide situates this activity in the context of the other functions of the university, particularly teaching.

In order to effectively engage universities, public authorities need to understand the principles underlying why universities can be important agents in regional development. The role of public actors is to facilitate interactions by providing arenas and funding. There is also a range of mechanisms available to support engagement, many of which are already being deployed. However it is the strategic coordination of these within a wider policy context that will produce the maximum impact.<sup>9</sup>

### **3.2. Contribution of the universities to the development of regional strategies of innovation**

In regard to the role that universities perform in regional innovation systems, there are two dominant approaches to conceptualization: a) the triple helix model of university, industry, government relations and b) the literature on the engaged university. Both bodies of thought highlight that universities are increasingly linked to place but they offer different analyses of the

driving forces shaping that relationship. The first model is focused on the role of universities in regional economies, pointing to the anticipation of hybrid university, industry, government relationships that involved the multiplication of resources and capital formation projects, such as real estate development in science parks and firm formation in incubator facilities. The second model highlights the third role of universities (cooperation with the society) in regional development, but it puts the emphasis on adaptive responses by universities, which embed a stronger regional focus in their teaching and research missions.

According to an OECD research, the contributions of the universities can be broken down into four areas – *business innovation* which is closely linked, although not exclusively, to the research function of the university, *human capital development* linked to the teaching function and *community development* linked to the public service role of universities. The fourth area is the contribution of the university to the *institutional capacity of the region* through engagement of its management and members in local civil society.

There are a number of ways in which universities can contribute to the development of their regions' strategies for innovation, growth and sustainable development. Higher education has impact in many different areas but the most important are:

- a. *Economic development* – match between the education offered and the regional labour force demand; higher education institutions contribute to: involvement in local and regional partnerships; links with local business and industry through targeted training and research consultancies; student placements in local businesses and the tying of student projects to the needs of businesses and local community groups; the establishment of research incubators, of science parks, of research and development companies and the commercialisation of higher education research; and through universities' wider role as part of a network of knowledge industries, a feature which itself is used in

<sup>8</sup> [http://ec.europa.eu/research/innovation-union/pdf/innovation-union-communication\\_en.pdf](http://ec.europa.eu/research/innovation-union/pdf/innovation-union-communication_en.pdf)

<sup>9</sup> Connecting Universities to Regional Growth: A Practical Guide, EU Regional Policy, 2011

local and regional promotion to attract inward investment. The universities are major contributors to regional economies and regional development. Universities will often have some kind of “business engagement” office or centre, where companies can request specialist support in overcoming what is usually an immediate problem which requires a short term solution. Regional, national or European funding mechanisms can be used to subsidize the cost of the intervention. Enterprise programmes aimed at students have a number of possible benefits for the region. In some cases the focus is on teaching students to be more “enterprising”, which is helping them to develop life and non-formal skills that will make them more productive and innovative in their future careers. This is good for the region regardless of the sector in which they work. For the region are important also the people who understand and can operate in both the academic, public sector and business worlds, and even across the triple interface of the sectors. In addition to promoting the development of entrepreneurial skills and providing students with an opportunity to try the entrepreneurial “experience”, higher education institutions often contribute to the development of the business base in the region by supporting staff and students to start a business. The emphasis should be put on applied and need/user driven research connected to companies in the region. The university could also act as a catalyst or facilitator in the development of network and cluster organisations. A higher education institution may function as a platform for building networks which can be used for branding the region and making the region more attractive to external investors. By their presence in a region and through their research activities universities can also stimulate the development of intellectual property among businesses in the region as empirical evidence shows a positive

correlation between numbers of people with higher education in a region and patent applications.<sup>10</sup>

- b. *Social development* - it is well evidenced that societies where the gap between the wealthy and least well off are narrowest and there is above average participation in higher education and cultural activities, they are most likely to also experience stable and sustainable economic growth. Universities have a key role to play in this process as they find ways to unlock the intellectual and financial resources of the regions for the benefit of the whole society. Working with their regions, universities can help to address the substantial issues of unemployment and low skills in the population, primarily through activities aimed at widening access - raising aspirations and participation in higher education among local people. Regional development is about social as well as economic cohesion within as well as between regions. Universities can play a key role in this domain through access programmes designed to widen local participation in higher education. In the process they can increase the supply of skilled labour as local people are more likely to remain within the region compared with those joining the university from elsewhere. Also as businesses undergo technological transformations current workers can upgrade their skills through university lifelong learning programmes or attain new qualification. The region’s population can be a “living lab” for researchers in the universities and business to identify new market opportunities and evaluate service as well as product innovation. Establishment of facilities, such as laboratories, connected to companies in the region for joint research projects. Science parks are a tool for education, research and cooperation with the surrounding society. They facilitate the cooperation between companies, public actors and higher education institutions. Nowhere is this truer than in relation to

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<sup>10</sup> Connecting Universities to Regional Growth: A Practical Guide, EU Regional Policy, 2011

those innovations relevant to sustainable development. In this domain as elsewhere academic interventions need to embrace the social as well as the technological. The existence of regional universities offers students in the regions the opportunity to study within easy access of their families and support structures. The opportunities and the employment these institutions create help to keep the regions alive.

- c. *Human capital development* - the traditional role of the universities is to create knowledge and develop human capital through education and research. Even today, the main function of universities is to develop human capital through education of students and researchers. The development of skills and knowledge assets in the workforce is, for many regions, one of the most critical tools in achieving their regional innovation strategy for smart specialisation objectives. Universities can act as a powerful magnet for attracting talented students and staff into the region from other parts of the country and abroad. Promoting exchanges between university staff, students and different enterprises can be an extremely effective way of not only exposing the companies to the benefits of employing graduates, but also helps establish links and breaks down barriers between the university and the private sector which may lead to future collaborations in other areas (e.g. research, consultancy). An important tool to achieve this goal is the project or problem-based learning and student outplacement. In addition, through their teaching at undergraduate and postgraduate level, universities have the potential to add to the stock of human capital by means of graduate recruitment into regional businesses, possibly following work placements as part of the student's degree. More particularly, graduates can provide the gateway or connectivity through which knowledge exchange between researchers and businesses takes place. However teaching programmes respond solely to student demand and a national labour market for graduates particularly when there is no clearly articulated business demand
- d. *Cultural development* – the universities provide cultural, sporting and physical infrastructure in the regions. The “cultural mission” is inexplicitly included as an indicator to assess the achievement of a “new role” of the university. Universities can make a significant impact on their regions through delivering culture based learning programmes, infrastructure (e.g. museums, galleries, music venues) and building infrastructure that improves and enhances the local area which in turn makes it more attractive to populations alike. While these activities might be undertaken as part of the institutions core mission of research and teaching, in less favoured regions in particular where public and private funding is limited, universities can attract investments in ways that can have a beneficial impact beyond the immediate campus.
- e. *Environmental protection* – universities play a key role in the environmental protection and the environmental impact should be managed at all levels. Schemes like the Green Impact recognize and reward sustainable behavior within the workplace. Their aim is to empower individuals and departments to reduce their environmental impact by encouraging, rewarding and celebrating practical sustainable improvements. The following aims should be achieved in the universities: reducing waste and increasing recycling; increasing energy efficiency and reducing carbon emissions; increasing sustainable procurement; increasing sustainable transport; improving communications relating to sustainability; promotion of sustainable travel through public transport discounts and facilities and support for cyclists; satisfying the majority of the universities’

electricity needs from sustainable sources. The researchers from different universities work together in order to reduce the pollution and to deal with the climate change issues and renewable energy sources. Regional environmental research centres have been created with the aim to stimulate and support high quality basic, applied and strategic research in the environmental sciences

through inter-disciplinary exchange and collaborative interaction. Sustainability should be one of the guiding principles of every university in its teaching, learning, research, campus operations and governance.

Table 1 gives a summary of the impact of the higher education institutions in different areas.

Table 1. Contribution of higher education institutions to regional development

<b>Fields of development</b>	<b>HEIs' contribution</b>
Economic development	Regional partnerships; training and research consultancies; student placements; research incubators; using regional, national and European funding mechanisms; development of entrepreneurial skills; development of network and cluster organisations; development of intellectual property.
Social development	Unlocking the intellectual and financial resources; deal with the unemployment and low skills; accessible higher education; upgrading the skills and acquiring of new skills; employment opportunities.
Human capital development	Development of skills and knowledge; attracting talented students and staff; promoting exchanges; collaboration between universities and the private sector; knowledge exchange between researchers and businesses; programmes aimed at retaining graduates in the region.
Cultural development	Providing cultural, sporting and physical infrastructure; delivering culture based learning programmes.
Environmental protection	Green Impact scheme; reducing waste and increasing recycling; increasing energy efficiency and reducing carbon emissions; increasing sustainable procurement; increasing sustainable transport; improving communications relating to sustainability; promotion of sustainable travel through public transport discounts and facilities and support for cyclists; satisfying the majority of the universities' electricity needs from sustainable sources; researchers' teams dealing with global issues; research in environmental sciences; sustainability as a guiding principle.

### **3.3. Regional Problems and Possible Solutions**

The populations in the rural regions may experience some or all of the following disadvantages. They may:

- be isolated and some distance from major capital cities;
- have low socio-economic status and income;
- suffer from poor infrastructure facilities, both physical and technological;
- have traditionally low participation rates in higher education;
- have shrinking population bases as employment concentrates in major capital cities;
- have difficulty in attracting high quality staff in some areas; and
- have limited part-time work opportunities to sustain students financially.

To keep students in the region, it is important to provide them with the necessary skills to find suitable jobs after graduation. As a result, many universities now invite regional stakeholders to participate in the development of educational programs; for example on boards of education, through problem-based learning or as lecturers and associate professors. To enhance the positive attitude towards higher education, many institutions have also become involved in the development of broader regional education infrastructure, ranging from secondary schools to lifelong learning and vocational training. In terms of research, many universities have combined basic with applied research, often in collaboration with large industrial companies in specific disciplines.

Universities can be the basic institutions in local economies as major employers across a wide range of occupations, purchasers of local goods and services, and contributors to cultural life and the built environment of towns and cities. Regional investment in the infrastructure of a university to support its core business of research and teaching can therefore have a significant passive regional multiplier effect even if the university is not actively supporting regional development. In the regions a jointly developed strategy have to be considered in respect of how universities should

best contribute to regional development through the creation of networks of universities, private companies and regional authorities with a view to create a framework for single cooperation projects.

Higher education institutions working with regional authorities have the potential to move from being located in regions to being part of regions through contributions to the design and implementation of smart specialisation strategies in a local learning and capacity building process. Universities can play a key role in helping public authorities build these strategies by enhancing the skills and competencies of their staff working in the field of economic development through consultancy services and training of graduates. This would involve different university departments such as: economics, geography, planning, public administration and business management, health, agriculture, environment and culture. A dedicated unit may bring these academic skills together.

The mechanisms by which universities contribute to regional development are listed below:

- enhancing regional innovation through research activities - the role of universities in regional innovation has evolved over the last twenty years. This evolution has seen the emergence of a third role of universities that has re-shaped and transformed their two traditional functions of teaching and research;
- promoting enterprise, business development and growth;
- contributing to the development of regional human capital and skills;
- improving social equality through regeneration and cultural development.

### **4. Conclusions**

In the process of developing regional specialization strategies, universities have an important role to support innovation by providing knowledge, human capital and global connections even if the direct effects of university activities on regional development remain difficult to prove. It is becoming increasingly important for university management to balance the demand for an international reputation for high academic quality in education and research, with the role of participating in regional entrepreneurship and

innovation activities. From a regional policy perspective, this could be supported, for example, by the formation of regional partnerships, stimulation of cluster development, creation of regional attractiveness and multi-sector policy initiatives. It seems that universities may be important drivers pushing forward regional development, since a regional centre with a university is better off in respect of occupational and demographic development than a regional centre that lacks such a facility.

Higher education institutions have potentially a key role to play in the social and economic development of their regions. They are a critical "asset" of the region, especially in less favored regions. Successful mobilization of the resources of the university can have a greater positive effect on their regional economies and achievement of comprehensive regional strategies.

How to contribute to its community is being focussed upon, while the whole environment surrounding the university has been changing fundamentally, together with economic globalization, development of the information society, declining birth rate and aging society. There are enormous economic, social, technological and cultural gaps among regions and individuals. It is therefore expected for each of the universities to work on various programmes for social contribution depending on the individual case, as well as to enhance a strategy for renewing its "cultural mission" in society. The universities are now requested to legitimate themselves by revitalising their own resources: administrative power, financial sources, knowledge, information and culture, and to identify the "new" roles that are currently needed at national, institutional, disciplinary, regional and local levels.

It is true that universities have increased their contributions to regional development and may continue to do so; however, such contributions should not be restricted to economic development, but should include social, cultural and environmental considerations.

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