How much the Universities are Entrepreneurial leaders?

Introduction

In the last years universities have assumed a prominent role in the science and technology – based economic development.

The concept of Entrepreneurial University, a central concept of the Triple Helix Model developed by Etzkowitz (1993) and Etzkowitz and Leydesdorff (1995), well explain this change in the university role. The Triple Helix model is based on the idea that the potential for innovation and economic development in a Knowledge Society, lies in a more prominent role for the university and in the collaboration and hybridisation of the three pillars of innovation: university, industry and government. In the triple Helix model, necessary for the transition to a Knowledge Society, university and other research institutions promote partnership with industry and government and even take the role of leader in joint initiatives (Etzkowitz and Leydesdorff 2000). Furthermore Universities can express their entrepreneurial spirits, not only in conjunction with existing companies, but also promoting entrepreneurial academic spin-offs. The creation of academic spin-off is a widespread phenomena in US and EU and in Italy too this form of Technology transfer process has become more and more popular (Netval, 2014). Before 2000 there were only 89 spin-offs in Italy; this number increased to 1,102 in 2013. In order to support the creation of academic spin-off many universities, not only in Italy, have promoted several initiatives and activities. The effectiveness of these activities and the results obtained vary among universities and regions.

The objective of the paper is to develop an index to measure the capability of university to promote and lead entrepreneurial projects. Using this "Entrepreneurial Attitude Index (EAI)" we tried to rank a group of Italian Universities. Finally, we compare the EA Index with other

kinds of Academic-based and Economic-based indexes in search of potential explanations of their ranking status.

Entrepreneurial university and Triple Helix Model

The Entrepreneurial University is a central concept of the Triple Helix Model developed by Etzkowitz (1993) and Etzkowitz and Leydesdorff (1995). The Triple Helix model is based on the idea that the potential for innovation and economic development, in a Knowledge Society, lies in a more prominent role for the university and in the collaboration and hybridisation of the three pillars of the virtuous circle of innovation: university, industry and government.

In the triple helix model each actor of the system has to play a specific role but should work in close synergy with the others: Universities produce new knowledge and technologies that can have an industrial application; Government acts as a public entrepreneur in addition to its traditional regulatory role in setting the rules of the game; Venture capital and large companies act as engines of innovative system, bringing capital, managerial skills and a network of relationships that foster the development of innovative businesses.

Universities, in particular, must become entrepreneurial universities, combining the more traditional functions of teaching and researching with a new role in the economic development, through specific forms of technology transfer and economic exploitation of research results (Brett et al., 1991; Blair & Hitchens, 1998; Piccaluga, 2001; Bonaccorsi and Deraio, 2007).

The central role of universities in many Triple Helix studies is based on the assumption that this system is more adaptive than the others because of the continuous flux of students and researchers (Shinn, 2002).

Universities can express their entrepreneurial spirits, not only in conjunction with existing companies and stimulating interactions among others two helices of the Triple Helix model

but also promoting entrepreneurial academic spin-offs, a specific category of New Technology Based Firms that can be seen as a mean for technology transfer from University to Business (Bonaccorsi and Daraio, 2007). These new ventures are founded by academic inventors with the aim to exploit technological knowledge that originated within a University.

Entrepreneurial leadership and support mechanisms

With the aim of supporting technology transfer processes and to assume a leading role in the economic development, in the last years, many universities have promoted policies and specific supporting activities to the business projects of academic teams.

The set of support mechanisms that universities have developed is quite rich (Fini et al., 2012). A first set of policies is targeted at the emergence of entrepreneurial ideas among faculty and students, to increase their awareness about the possibilities of starting a new business and pursuing an entrepreneurial career (Mustar and Wright, 2010). Among these, there are initiatives such as Business Plan Competitions and Technology Transfer Services (Siegel et al., 2007). In the last years start-up competitions are booming all over the world. In Italy too in the last few years new start-up competitions have been added to the oldest one. The business plan competitions could represent the first test for academic entrepreneurial projects and the first step in the process of formation of reputation among potential stakeholders, reputation that is a key resource for success of a new firm (Fisher and Reuber, 2007).

University incubators on the other side are booming (Mian, 1996; Rothaermel and Thursby, 2005). In addition to the typical incubator services (shared office services, business assistance, access to capital, business networks, etc.), university incubators offer some university-related services, such as faculty consultants, student employees, library services, access to R&D facilities, etc. (Mian 1996; Von Zedtwiz and Grimaldi 2006).

Another policy directly targeted at providing specific resources to academic spin-off is the institution of university venture funds, fully or partly funded by university resources, and generally acting at the seed start-up stages (Fini et al. 2011).

In order to offer support to academic spin-off many universities have promoted the creation of Technology Transfer Office (TTO). Technology transfer offices have been generally included in the university organizational structure but sometimes have been established as an independent structure outside the university, but operating in its name, with the common aim to facilitate the passage of knowledge and know-how from academia to business.

Measuring the entrepreneurial spirit of universities

The number of Universities offering support to entrepreneurial projects and academic spin-off is growing in recent years but results obtained are very different among universities and regions.

Starting from this point of view the aim of the paper is to develop an index, we call it Entrepreneurial Attitude Index (EAI), to measure the capability and effectiveness of university to promote and lead entrepreneurial projects.

The EA Index is the results of two type of factors: input factors and output factors.

Input factors comprise:

- Educational efforts towards the acquisition of Entrepreneurial capabilities;
- Services offered to would be Academic Entrepreneurs;
- Networking efforts with relevant stakeholders.

Output factors includes:

- Number of start-up and spin-off (academic and student entrepreneurship);
- Number of project presented to local and national start-up competition;
- Number of awards obtained.

Using this “Entrepreneurial Attitude Index (EAI)” we tried to rank a group of 10 Italian Universities, located in different areas of our Nation.

Finally, we compare the EA Index with other kind of Academic-based and Economic-based indexes in search of explanations of their ranking status.

In particular, we compare the EA index with:

- The academic rankings;
- The extension of the Labs Facilities;
- The age of university;
- The EU capability Index of the regions

Conclusions

The results of research shows that the Innovation Rankings of the Region are rather mimic with the EA Index. Some Academic rankings too are mimic with EA Index. In particular, quality of research products of the main research groups seems important. Furthermore, EA Index is quite in line with the absolute size of labs facilities of the Universities.

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