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Improve metropolitan competitiveness through innovation. The critical and moderating role of university spin-offs

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Abstract

The paper aims to explore if University spin-offs (USOs) can contribute to the innovative performance of metropolitan areas, as well as, positively, moderate the relationship between innovative performance and competitiveness in metropolitan areas. Based on a sample of 247 USOs, located in 11 Italian metropolitan areas, the results show that spin-out activities stimulate the innovative capabilities of metropolitan areas, which seem not to be influenced by their extent. Additionally, the innovative performance of metropolitan areas seems to increase their competitiveness. Nevertheless, the moderating role of USOs, in the relationship between innovation and competitiveness of the metropolitan area, is positive but slight.

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1. Introduction

Improving city competitiveness is a central issue. Indeed, it is essential to rise the welfare and prosperity of inhabitants and companies, generating employment. Therefore, it is imperative to increase the understanding of economic growth prospects in metropolises. In this regard, novel growth sectors such as biotechnology, ITC and environmental technology are becoming key elements in the academic context as well as for urban/metro managers (van den Berg et al., 2014). Nevertheless, there is a lack of a systematic knowledge about critical success factors that define the economic development of the cities and metropolitan area, with a few empirical evidence about the

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related policy actions (Nijkamp, 1999; van den Berg et al., 2014). However, several signals indicate competitiveness as emerging from successful collaboration among economic actors who form innovative facilities of companies and other organizations. Innovation has constantly been at the core of competitiveness. Investigation, exploration and an effort to exploit resources are as crucial for companies as they are for urban/metro regions (Denton, 1999). In this view, the pursuit of competitiveness through innovation is a praiseworthy objective of local and national policy, since innovation is a key function in the current modern knowledge-driven economy, mainly for urban/metro areas that start behind and wish to catch up (Cantwell, 2005). In this context, the university spin-offs (USOs) are included among the best entrepreneurial initiatives which offer effective and gainful ways for the dissemination of new technologies and innovation (Berbegal-Mirabent et al., 2015; Etzkowitz et al., 2000; Rodríguez-Gulías et al., 2015).

Additionally, they are considered among the more proactive instruments to foster the birth and growth of knowledge-based economies, contributing to competitive development of certain urban/metro area (Benneworth and Charles, 2005; Sternberg, 2014). In line with the above configuration, several studies (Kennedy and Patton, 2011; Micozzi and Iacobucci, 2015) have emphasized that the creation and dissemination of knowledge by universities should be incorporated among the key driving forces for social and economic development, both at urban, metropolitan and national level (Müller et al., 2004). Further, it was also noted that the model of open innovation, of which are widely pervaded the current organizational and entrepreneurial paradigm (Tödtling et al., 2011; Dahlander and Gann, 2010), provides a suitable model to drive innovation internally generated for the revitalization and improvement of the external environment (Villasalero, 2014). Open innovation proposes that companies can pursue new knowledge from anywhere, inside the city region and outside, within the nation and abroad, but generally, the external environment is more central and the city region is a significant part of it (Van Geenhuizen and Soetanto, 2013). Regarding the spin-off phenomenon in Europe, it has been explored (Smith and Ho 2006); though, the same, in most European urban/metro regions, is expected to differ from that in more established high-tech context (as Silicon Valley and the Boston area) (Nicolaou and Birley 2003). This requires assessing the efficiency of USOs in European urban/metro regions, being open to the idea that their impact deviates considerably if changes, in the urban/metro contexts, are considered. Hence, this paper aims to fill this knowledge gap, by exploring the extent that the USOs can successfully contribute to the innovative performance of metropolitan areas, as well as their central role in moderating the metro competitiveness through innovative performance, continuing in part the studies about the economic impact of USOs starting by Benneworth and Charles (2005) and Iacobucci and Micozzi (2014).

To this purpose, the study analyses a longitudinal sample of 247 USOs located in 11 Italian metropolitan area. Italy is one of the major European countries reporting a rapid development of the USOs phenomenon (Fini et al., 2011; Iacobucci et al., 2015). Actually, according to the latest report Netval (Netval, 2015), at 31.12.2014 the spin-offs, from public research surveyed in Italy, are 1102 and that about 87.4% of the 1102 spin-off companies, today recognized and active on the national territory, has been formed over the past ten years. Additionally, Italian urban system faced several changes in the last 10-20 years, especially in term of the urban governance, which require the introduction of inter-institutional forms of cooperation among various levels of government and the involvement of private sector institution, with the aim to improve the Italian cities competitiveness (Governa, 2010). The paper aims to provide a contribution to the knowledge – both in term of theoretical and practical perspective - about the role of innovation in fostering urban/metro competitiveness, with particular reference to the proactive and moderating role of university start-ups. Similarly, the paper wants to stimulate suitable policy actions to rise the urban/metro evolution, with the purpose of contributing to the economic diffusion of innovation and driving the competitiveness growth of the cities.

2. Literature Background

The progressive enrichment of the university identity as generating opportunities for innovative forms of entrepreneurship - a phenomenon called entrepreneurial university - has altered the socio-economic role of universities in many urban/metro area (Etzkowitz, 2004). The creation of spin-off firms constitutes a central tool for the commercialization of the knowledge/technologies therein generated and, therefore, sustaining innovative activities (Shane, 2004; Wright et al., 2007). Indeed, these forms of business provide direct support to the development of the socio-economic urban/metro area, especially in terms of innovative impact (Martinelli et al., 2008). The claim is laudable considering that a greater entrepreneurial university orientation could significantly

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