Chapter 9

Does Participation in International R&D Networks Enhance Local Dynamism?

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ABSTRACT

This chapter which is in line with the global pipelines-local buzz framework addresses the collaboration dynamics of ICT researchers from universities of an emerging economy who are mostly benefiting from national funds and do not have dominating or core roles in international R&D networks. It provides a novel taxonomy to identify the degree of globalisation versus localisation of ICT scientists in Turkey. Based on international and national project portfolios of Turkish ICT researchers who participated in FP6 and other international projects between 2003 and 2006, four groups (gatekeepers, externally oriented researchers, internally oriented researchers, inactive researchers) were formed in terms of their degree of local or global focus. For the period of 2007–2013, the performance of the same population was traced with respect to its international or national project density, publication output, involvement in decision making processes on academic project funding, and contribution to R&D capacity development in the private sector. Findings show that that most of the researchers who are engaged in international collaboration are also locally active and they seem to be the most productive actors within the four groups. The study also implies that having a strong project portfolio at both national and international levels relates to having a work experience abroad after the PhD fulfilment and being at a university with advanced research ecosystem in Turkey. This chapter concludes with key policy recommendations, highlighting the need on moving beyond one-size-fits-all policies which should take in to account the heterogeneity, differentiation on career levels, national priorities and capacity requirements of the research ecosystem.

DOI: 10.4018/978-1-4666-8598-7.ch009
INTRODUCTION

The particular combination of local buzz and global pipelines generates a dynamic of knowledge creation within a research ecosystem (Bathelt, 2007). In line with the global pipelines-local buzz framework this study looks from the perspective of universities at emerging economies which are participating in international R&D networks formed to conduct frontier research in advanced technology fields. It gives clues about research dynamics of emerging economy universities that are mostly benefiting from national funds and do not have dominating or core roles in international R&D networks. Barnard, Cowan & Müller (2012) analysed global pipelines-local buzz at researcher level on scientific publications, this paper in addition to that adds project based analysis to the literature while also other types of contributions to the local system are also has been taken into account. This type of analysis can be considered as a unique approach, because in fields like biotechnology, pharmaceutical and information and communication technology (ICT) collaboration networks are at the core of new knowledge generation where they are dominated mostly by the advanced country organization, that’s why most studies are about dynamics of developed countries. Considering the lack of studies about research dynamics of emerging economy universities, it is also aimed to contribute to the debate about the internationalization of R&D by putting emphasis on the local impact of international collaboration and derive practical policy recommendations at micro, meso and macro levels.

From evolutionary perspective of innovation, research collaboration and external knowledge flows are seen as important catalyzers for acquiring new capabilities for innovative organizations which cannot rely only on internal knowledge base (Castellani, Zanfei, & Muendler, 2006). The theoretical framework followed in this study is based on contemporary studies on innovation from the perspective of evolutionary economics, the core–periphery model of economic development and recent literature on research networks and sociology and organization of science in emerging economies. Following, Krugman’s core–periphery model of economic geography, this study is grounded on local deployment of knowledge generated from international R&D networks and based on the findings it tries to provide actionable policy recommendations for the countries at the periphery in order to enhance synergies between local buzz and global pipelines.

Network literature implicitly treats the researchers who are involved in different collaboration actions as gateways between different projects. Such researchers may also transmit knowledge gathered from international platforms to the local level, which can enhance the local buzz. On the other hand, rather than contributing to local knowledge spillovers, these gateways may serve to transfer local tacit knowledge into international forums, which may have limited or no positive effects on the local competitiveness level. As a third option, rather than acting as gateways bridging the local and the global, they may have limited local connections while preferring to interact mostly with global players and transmitting all of their gains from international collaboration projects to other foreign partners.

In the light of these statements, the paper is organized around the following research questions: Within the framework of Turkish participation in EU FP6 IST projects and other international collaboration projects does participation in international R&D networks create local buzz in Turkey? How can the profiles of participant Turk-