



FACULTY OF ECONOMICS

PHD THESIS IN THE HISTORY AND THEORY OF ECONOMIC

DEVELOPMENT

(ABSTRACT)

**PUBLIC KNOWLEDGE PARTNERSHIPS
WITHIN THE EUROPEAN UNION POLICIES FOR
RESEARCH AND TECHNOLOGICAL DEVELOPMENT**

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ABSTRACT

This paper aims at analysing collaborative relationships among enterprises, universities and research organizations, promoted by the public sector in order to create, share and spread knowledge.

We will refer to this phenomenon as *public knowledge partnerships*, and we will observe how these have come to play a crucial role in the field of research and technological development (RTD) in the European Union.

We will also make special reference to those economic growth theories which have recently highlighted how the (intentional) creation of knowledge deriving from RTD activities is the basis of economic growth. It seems therefore reasonable to consider public knowledge partnerships as a means through which people working in the field of RTD share their experiences to create something new, which, once part of a particular product or process innovation, could be translated into technological progress, therefore representing an incentive towards economic growth.

A crucial element of public knowledge partnerships is represented by the partners, and in particular by their heterogeneity: enterprises, universities and research organizations (these institutional units make up the four institutional sectors of enterprises, public administration, tertiary education institutions, non-profit organizations, which are the foundations of our empirical study).

An expression of public knowledge partnerships are the RTD joined projects funded by the Framework Programme of the European Community for activities in the field of research and technological development.

Figures on collaborative relationships and domestic or cross-country links (resulting from successfully implemented public knowledge partnerships), indicate that their growth is in line with the dimensional increase attained by Framework Programmes in the last fifteen years. The number of total links created over the years is in the range of hundreds of thousands (both

domestic and cross country). The hypothesis behind our research is that these links reveal the channels through which knowledge flows within a country and/ or between member countries. This does not only favour the creativity of those directly involved, and therefore of their country of origin, but it also indirectly helps the whole economy to which these institutions belong.

In order to prove this hypothesis we have carried out an econometric analysis within the theoretical framework of *knowledge production function*. In other words we have represented the creative process of the various institutional sectors of the different countries as the combination of a series of inputs – the resources addressed towards R&TD activities (research and development costs) and the variables showing the interaction between sectors/countries – and a single data referring to the output, in our case the patent applications at the *European Patent Office*.

The results of our analysis, obtained using regression models to calculate data (in particular the Poisson model and the Negative Binomial II distribution, in their two different specifications) have supported the thesis presented, especially for what concerns the economy as a whole and the enterprise sector (main element in economic terms). Encouraging results have also been obtained in other sectors, especially if considering the disaggregated data referring to the research and development costs.

These results are clearly not final as they are subject to certain limitations connected to the hypothesis presented and the lack of data for certain sectors and countries. Therefore the values of the estimated criteria must only be taken as informational. We can, however, draw some positive conclusions regarding the analysed phenomenon. In other words, this could be seen as a valuable intervention in the European perspective in order to favour the creativity of the institutions and countries involved, while at the same time reaffirming the vital role played by the resources addressed to research and technological development activities.