

## Higher Education and Social Cohesion

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**Supported by** the Project PTDC/CPE-PEC/103727/2008 - Rebuilding the Portuguese higher education system's network: challenges from demographics, economic growth and regional cohesion.

**JEL Codes:** D61, H52, I24, R12.

Received 1 January 2012; accepted 22 March 2012.

### Abstract

The education level that characterizes the population of a certain country is intrinsically linked to its level of economic and social development, being the correlation between these two factors generally significantly positive. Taking into account not only the economic and social impacts of higher education institutions on any territory, but also the change in the qualification structure of the population, this paper focuses on the contribution of the higher education network to the promotion of social cohesion by means of a cost-benefit analysis.

**Key words:** Higher Education; Social Cohesion; Territorial Development

Conceição Rego, Maria da Saudade Baltazar, António Caleiro (2012). Higher Education and Social Cohesion. *Higher Education of Social Science*, 2(2), 17-24. Available from: URL: <http://www.cscanada.net/index.php/hess/article/view/j.hess.1927024020120202.1432>  
DOI: <http://dx.doi.org/10.3968/j.hess.1927024020120202.1432>

### INTRODUCTION

Families have traditionally played a significant role in the education system, making decisions on both the

qualification type and size and the training standards in their children's career planning. Investment in education is, therefore, of inter-generational nature, the results of which will become apparent only when young adults enter the labour market.

The relationship between higher wages and academic training, namely the one provided by higher education institutions, has strongly influenced the families' decision-making, as training is believed to pay-off the opportunity cost of encouraging their children to proceed on to further studies. In times of economic recession, this opportunity cost is smaller, as it is usually more difficult to enter the work force. However, when economies undergo crises and unemployment rates increase, families find it more difficult to support their children's education. Consequently, the economic and social trade-off faced will affect the quality of life of both current and future generations.

Several international organizations (e.g. the European Commission, 2008; the OECD, 2007; UNESCO, 2004; the World Bank, 2008) have already highlighted the need of cost-benefit analyses to determine the (real) importance of higher education institutions to achieve, among others, objectives of social and/or territorial cohesion. However, and paradoxically as it may seem, there has been a lack of academic interest in these matters (yet see Harris, 1997).

This paper focuses on the contribution of the higher education network to the promotion of social cohesion by means of a cost-benefit analysis, being structured as follows: section two presents a brief literature review on the important role played by education, namely by higher education institutions, in the process of development and territorial cohesion; section three highlights some methodologies adopted to measure cohesion at economic, social and political levels; section four discusses the relevance of cost-benefit analyses, and section five presents some final remarks.

## 1. HIGHER EDUCATION INSTITUTIONS AS MEANS OF COHESION.

Education and training are key factors in the development of any country (Lopes, 1996). By investing in education, individuals are expected to be equipped with a range of skills and to improve their labour market position (Budría & Pereira, 2009, p.165), as well as their income, particularly through the higher education wage premium (OECD, 2011). Studies in economic theory (e.g. Becker, 1993; OECD, 1997, 1998) have shown that there is a direct correspondence between a country's level of development and the levels of education and of research and development it provides. In other words, developed countries normally present a higher level of education or spend relatively more on education and on R&D. Conversely, any weakness in this area is an obstacle to development.

In the long run, the accumulation of both physical and human capital will underpin sustainable economic growth and will lead to a reduction of income differences among countries. In any region, in general, and in less developed ones, in particular, the structure of local activities and the career opportunities provided by education strongly influence, either favourably or unfavourably, people's interest in it (Neave, 1979).

The interdependence between education and the socio-productive system underlies and strengthens the very nature of employability. The qualification of human resources geared to the needs of the labour market is, undoubtedly, one of the distinctive features of competitiveness and of the innovative capacity of industry, which is supported by the education and training system, with Higher Education Institutions (HEI) playing a major role (Lopes, 2001). In fact, the quality of life of a territory is positively affected by the local level of human capital and by the relevant contribution of higher education institutions (Winters, 2011).

The achievement of higher development levels have, indeed, led to higher levels of economic and social competitiveness and cohesiveness. Being an essential factor for development, cohesion has long been promoted by the European Union, namely through the establishment of an economic and monetary union, which aims at a convergence in the levels of quality of life among the member states that integrate it. The existence of strong development asymmetries in economic areas with advanced levels of integration within the European Union could result in processes of 'resistance' by less developed countries and regions, where the economic actors have fewer opportunities to take advantage of the global market. This is the reason why several measures underlying the objectives associated with cohesion

defined in the Treaty on European Union, signed in 1992, shortly after the fall of the Berlin Wall in 1989, are now being enforced in a more explicit way, as it is the case of a new financial instrument – the Cohesion Fund – which was created to support projects in the fields of environment and trans-European networks, in countries whose GNP per capita was less than 90% of the EU average, at the same time that it reinforced the principle that all Community policies should contribute to economic and social cohesion. The Protocol Annex of that same Treaty, dedicated to the issue of the Economic and Social Cohesion, in which the member states reaffirmed that “the promotion of economic and social cohesion is vital to the full development and enduring success of the Community”<sup>1</sup> cannot be ignored for the purpose either. In 2008 and 2009, the debate on cohesion was relaunched via the public discussion held on the Green Paper on Territorial Cohesion (European Commission, 2008). This document highlights the importance of territorial and social cohesion to achieve the harmonious development of all these territories and to provide its residents with the opportunity to take advantage of the best features of each. Territorial cohesion can, therefore, convert existing differences into benefits, that is, it can take advantage of territorial differences to enhance the quality of life of individuals, thus contributing to sustainable development within the EU (European Commission, 2008). In fact, the structural policy that has been implemented since the mid-1980s has been insufficient to promote a real convergence among the regions: while some lost, some others increased their economic importance and population; some regions have attracted young residents, whereas others saw the emigration of its assets. The EU regions have, thus, become more 'distant' (McCann, 2010). The notion of territorial cohesion implies more balanced and sustainable development levels, and regions will, consequently, allocate their economic resources more efficiently. Issues such as density and crowding, distance, division, low-density and depopulation raise several questions which require different public policy measures to promote global convergence within the European Union.

The discussion held on territorial cohesion within the European Union also reflects the integration of Central and Eastern European countries, to the extent that their average level of development, particularly at the time of their integration, was significantly lower than the average level of other countries was. When the European Union has already begun to prepare another global framework for the period 2014-2020, the debate on the objectives of cohesion seems to focus on the many challenges that cohesion policy has yet to face and overcome (McCann, 2010).

The reform of the cohesion policy is expected to

<sup>1</sup> <http://eur-lex.europa.eu/en/treaties/dat/11992M/htm/11992M.html#0093000017>

allow the regions to participate and compete in the European internal market, which is currently the best way to help regions and countries in Europe face the challenge of globalization and the best way to ensure that, in 2020, Europe will achieve a scenario of smart, sustainable and inclusive growth (McCann, 2010). To overcome this challenge, McCann (2010) states that, in the future, cohesion policy should focus on the increasing interconnections between European regions and the strengthening of polycentric urban networks and on the effects of dissemination of knowledge. In this area, HEIs play a key role in developing both knowledge and skills useful for the introduction of higher levels of innovation in both European and global markets, simultaneously reinforcing knowledge transference between them and the industries (especially multinationals), this being one of the best ways to encourage entrepreneurship and the growth of small and medium-sized enterprises (McCann, 2010). HEIs are, thus, important agents of development and cohesion in countries and regions, as stated for example, by OECD (2007):

“In the past, neither public policy nor the higher education institutions themselves have tended to focus strategically on the contribution that they can make to the development of the regions where they are located. Particularly for older, traditional HEIs, the emphasis has often been on serving national goals or on the pursuit of knowledge with little regard for the surrounding environment. This is now changing. To be able to play their regional role, HEIs must do more than simply educate and research - they must engage with others in their regions, provide opportunities for lifelong learning and contribute to the development of knowledge-intensive jobs which will enable graduates to find local employment and remain in their communities. This has implications for all aspects of these institutions’ activities - teaching, research and service to the community and for the policy and regulatory framework in which they operate.”

The new perception of the contribution of HEIs to the development process of territories is based on different mechanisms that can impact on economic development, which have recently been summarized in eight different functions or outputs (Drucker & Godstein, 2007):

- knowledge creation;
- creation of human capital;
- transfer of know-how;
- technological innovation;
- capital investment;
- regional leadership;
- knowledge production infrastructure;
- local and regional environment influence.

The success of the interrelationships established between HEIs and the territory may be explained by arguments of intangible nature (OECD, 2007). Bearing in mind the functions performed by HEIs (namely, education, R&D

and service to community) and considering the core functions of regional development (culture, community sustainability, and innovation and knowledge), these interrelations are crucial to the generation of new sources of sustainable added value in the territories. To meet this objective, HEIs can take advantage of their national and international contacts and purposes, thus being able to encourage the global integration of the local economy, which is an essential condition to improve the competitiveness of the territory.

## 2. THE EFFECTS OF EDUCATION UPON SOCIAL COHESION: A CONTRIBUTION TO THEIR MEASUREMENT

### 2.1 Relevance of Indicators

In the past decades, the use of indicators has become increasingly important, as they are a useful means to reveal the complexity and diversity of social reality, as well as the territorial range of phenomena (at global, national, regional or local levels). In fact, it was from the 1960s onwards that the development of social indicators gained more momentum in the support to the planning of public sector activities, namely in such international organizations as the OECD, UNICEF, UNESCO, The United Nations, among others, given the recognized failure of economic indicators – e.g. the per capita GDP indicator – in measuring the conditions of social well-being. Being tools to measure reality, which synthesize and simplify complex phenomena, preserving the essence of the original data and making use of the variables that best meet the objectives outlined for that purpose, the indicators integrated into systems of varying complexity have, therefore, become crucial in scientific, technical and political domains for the formulation and implementation of public policies. Their widespread use as tools to support policy-making is, thus, justified by the need to monitor a certain phenomenon /reality, to formulate goals and targets and to monitor the results achieved or planned, always being adapted to the realities that need to be known and followed.

Indicator systems have also been used worldwide to study the development, quality and performance of national education systems. According to the OECD (2006), for instance, there are some indicators that may be adopted in the analysis of higher education systems. The first to be considered is “The Broader Context”, which includes: Total population, Population growth rates, Ageing societies, Broadband connections, Gross domestic product per capita and Labour productivity. Next, the issues related to “Access, Participation, Progression” are measured through Educational attainment, Number of science graduates, Survival rates in university-level education, Students with disabilities in higher education,

Higher education R&D expenditure by field of study, Higher education researchers and Women researchers. “Expenditure on Higher Education”, in its turn, comprises: Expenditure per student, Changes in expenditure per student, Cumulative expenditure per student, Expenditure on educational institutions as percentage of GDP, Public subsidies in higher education, Research and development in higher education and Higher education R&D financed by industry. In this system of indicators, another component is “The Returns on Higher Education”, which corresponds to Education and earning, Differences in earnings between females and males, Private internal rate of return of higher education, Education and work status (25-to-29-year-olds), Situation of the youth population with low levels of education, Participation in continuing education and training (25-to-64-year-olds). Finally, special emphasis is given to “Internationalisation of Higher Education”, whose main dimensions are: Foreign students in higher education; Foreign students in higher education by country of destination; Migration of the highly educated and Foreign scholars in the United States.

Simultaneously, some international organizations such as the UNESCO, the European Commission and the OECD have also adopted systems of indicators which are structured into three domains: i) inputs and / or resources, ii) processes and iii) outputs and / or results, in order to obtain a holistic and meaningful view of the education system. Input indicators correspond to the resources – human, financial or technological – aimed at education; process indicators refer to the pedagogical and organizational context, while output indicators refer to the intermediate and ultimate purposes of education, which take into consideration the impacts on economic and social development.

It is within this framework that the concept of social cohesion acquires greater importance, revealing its fundamental nature in the systemic approach to development, in which the three basic pillars of social cohesion are often identified as: opportunities (productive), development of skills (education) and social protection.

Considering the proliferation of different approaches to this concept, it is important to note that cohesion encompasses both the existing mechanisms of social inclusion and exclusion and the way these mechanisms affect the individuals’ perceptions and behaviours in the society / community they integrate. Furthermore, this concept has to be redefined in the light of public policies, being social cohesion, thus, understood as the capacity institutions have to reduce social differences in a sustainable way with the citizens’ support (Feres, 2010).

In our opinion, the diversity of approaches to social cohesion stimulates the development of studies that enable the causal verification of the proposed models of analysis. The model presented by Green, Preston and Sabates (2003), which is briefly mentioned below, is one such

example.

The centrality of this model, which discusses the learning effects on social cohesion, lies in the learning process, which influences both socialization and income dispersal. Although framed by a level of analysis that is previous to these effects, the context of the labor market structures (union density and compass; reach of collective agreements and minimum wage) affects income dispersal, and in which, in turn, the interaction established between dispersal of outcomes and income dispersal tends to promote different levels of social cohesion. Moreover, one of the main characteristics of this model lies in the retroaction established among some of the analysis dimensions proposed, namely the ones between social cohesion and income dispersal and between social cohesion and socialization, which allows us to infer that this model is grounded on a complementarity of processes with or without the intervention of external regulators. Given the multidimensionality inherent to social cohesion, notwithstanding the existence of components which denote auto-regulatory effects, in this model there are other components that introduce hetero-regulatory effects, as it is the case of the learning process which here assumes particular importance (Green, Preston & Sabates, 2003).

In other words, although competences and qualifications are important, it is the way they are distributed that mainly affects social cohesion. Should its validity be demonstrated, this model of education effects on social cohesion would have significant political implications.

The OECD has repeatedly drawn attention to this issue, namely through the emphasis given to the Programme for International Student Assessment (PISA). Since 2000, and every three years, this programme has surveyed 15-year-old students near the end of compulsory education to assesses their skills in reading, mathematics and sciences, and “to what extent students have acquired some of the knowledge and skills essential for full participation in society” ([www.pisa.oecd.org](http://www.pisa.oecd.org)). In other words, PISA aims to help countries compare their school systems rankings against other countries in terms of quality, efficiency and equity.

The results of some of the main PISA’s indicators /2009, for example, show that academic performance can be very different in countries with the same level of economic prosperity, *i.e.* there is, indeed, a correlation between the GDP per capita and the performance of the education system, which, nevertheless, is only explained in 6%, being the remaining 94% dependent on expenditure per student, relative poverty and the percent of students from immigrant families (OECD, 2010).

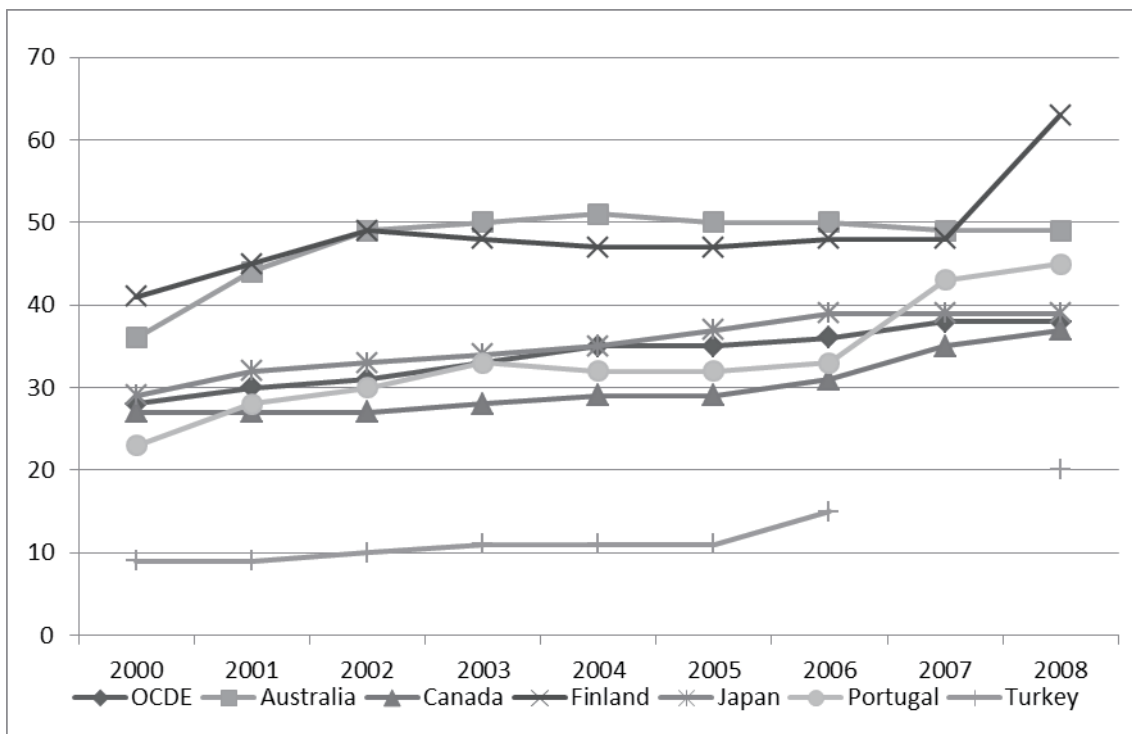
In this context, the PISA index of economic, social and cultural status is of particular interest. In fact, the data collected reveal the existence of a significant number



of students who are doubly penalized: they are from disadvantaged socio-economic backgrounds and attend schools of lower quality, which means that the socio-economic profiles of the students and of the schools have an important impact on academic performance. However, PISA's findings also show that some countries have been more successful than others in mitigating the impact of the socio-economic background on students' reading skills, in general. The so-called 'resilient' students (those ranked at the bottom quartile of national income and at the upper quartile of educational performance) in Korea, Finland, Japan, Canada, Portugal and Turkey rank higher than the average of the OECD countries. Yet, in the majority of OECD countries, the economic, social and cultural standard of education institutions has a greater impact on

the variation of academic attainment than the students' socioeconomic profile. The conclusion that can be drawn is that schools are the main places of learning: i) by direct influence or ii) by the influence of resources, policies and practices approved by the upper echelons of the administration of the education system in the educational environment (OECD, 2010).

Given the importance assigned to the role played by education institutions, it is worth focusing on the evolutionary trends in tertiary graduation rates in OECD countries for the 2000-2008 period (Figure 1), which clearly reveal a growing tendency in the number of graduates, despite the differences in the total number of graduates among the countries under analysis: Finland and Australia are at the top, while Turkey is at the bottom.



**Figure 1**  
**Trends in Tertiary Graduation Rates (2000-2008)**  
 Source: OECD (2011), [www.oecd.org/edu/eag](http://www.oecd.org/edu/eag)

## 2.2 Generic Analysis of Indicators Used to Measure Cohesion

As mentioned above, the debate on the role played by education in the promotion of higher levels of cohesion has been examined by major international institutions, namely by the World Bank. The strategy for the education sector for the next decade presented in Washington, on 12 April 2011, is based on the assumption that a better learning provision for all students worldwide should lead to increasing levels of development, which are dependent on the knowledge and skills acquired rather than on the years spent in school. The World Bank's new strategy

reaffirms its commitment to support countries to ensure that all children attend school until 2015 - the deadline set for the achievement of the Millennium Development Goals – and underscores the need countries have to respond to the challenges they face caused by the rapid change in the world, in particular the significant growth in the number of students in secondary and tertiary levels of education in the Middle East, as well as, in some emerging economies, the appearance of mechanisms to boost their economic competitiveness, by means of a more skilled and more adapted workforce to the context of current work. This new vision of education for 2020

is premised on “invest early, invest wisely and invest for all”, and its main objective is set under the title: “Learning for All” (World Bank Group, 2011).

The World Bank’s strategy aims to ensure that the students obtain the knowledge and the skills they need to get a job and succeed in life, thus enabling the promotion of development. To meet these objectives, the World Bank adopts the theoretical frameworks of knowledge economy and ‘*learning economy*’, favouring intervention instruments that may improve the education systems and build a society based on advanced knowledge. The concept of ‘*learning economy*’ takes knowledge as a fundamental resource in contemporary economies and learning as the most important process.

The reforms now identified as necessary to prepare individuals for the labour market require a committed involvement of governments, donors, community leaders and employers. Consequently, the main objectives for education (defined in 2000) would be achieved through interim targets. Thus, if in 2000 the objective was that all individuals should have a quality education, in 2005 that objective evolved qualitatively, highlighting the fact that education should meet the needs of the knowledge economy. For 2020, it is recommended that all individuals have access to learning (*‘learning for all’*), that is, it is assumed that societies will privilege the attributes of the *learning economy*. In fact, according to this concept, knowledge and learning imply different premises: while knowledge requires the replication of routines and traditions passed down through generations, learning enhances the know-how. The transformation of knowledge in learning results from the knowledge infrastructure, in which HEIs play a key role.

“Learning for All” is a strategy based on the assumption that economic and social cohesion of any territory will only be successful if there is a continued commitment to learning. “A successful driver of development is what people learn, both in and out of school, from their very first years of life all the way through school, into the jobs market, and throughout their working lives,” says Robert B. Zoellick, President of the World Bank Group. “For developing countries to fully reap the benefits of education—both by learning from ideas and through innovation—they need to unleash the potential of the human mind. And there is no *better tool for doing so than education*.” (News Release No2011/414/HDN; <http://web.worldbank.org>)

### 3. THE COST-BENEFIT ANALYSIS OF HIGHER EDUCATION INSTITUTIONS

The various effects exerted by HEIs, particularly by universities, are generally not restricted to the region where they are located. In fact, being fundamental for the qualitative training of human resources, besides making

an important contribution to the economy of the region where they operate, HEIs are also an important vehicle for regional development via the spatial dissemination of knowledge acquired by students, who may pursue a career in regions other than the one where they graduate (Rego & Caleiro, 2010).

The spatial mobility of skilled human resources, namely when it contributes to additional asymmetries associated with graduates’ migration from the areas where HEIs are located, cannot be ignored by the policy-makers responsible for the achievement of social cohesion objectives, for the simple reason that education and training are critical in building social benefits (Behrman & Stacey, 2000; Becker, 2003).

Similarly, it cannot be ignored that, even in strictly economic terms, *i.e.*, at the level of output, income and employment, HEIs exert both direct effects, which reflect the size of the institutions, and subsequent indirect ones, which depend on the economic structure of the regions where they are located. From this point of view, policies aiming at territorial cohesion cannot ignore the catalytic role of HEIs on their territory of influence either.

Focusing on the economic impact, several authors are unanimous in identifying the effects that HEIs cause in the location in which they operate. For example, for Woodward and Teel (2001), the economic impact of universities can be organized into three categories, according to:

1. direct effects, *i.e.* the contribution to overall economic activity;
2. indirect effects, *i.e.* the contribution to employment;
3. induced effects, *i.e.* the contribution to households’ income.

The characteristics of the input-output methodology make it one of the most appropriate to determine the economic impacts of universities, through a multiplier mechanism that results from all those three kind of effects (Turner, 1997). In particular, a regional version of the input-output analysis has the virtue to make it possible to take into account the way the effects (direct, indirect and induced) are propagated throughout the territory, which is a crucial aspect for social/territorial cohesion policies.

As it is known, considering  $X$  as the vector of output,  $A$  as the matrix of technical coefficients  $a_{ij}$ , which represent the consumption by sector  $j$  of intermediate goods produced by sector  $i$ , and  $Y$  the vector of final demand, it is possible to estimate the direct and indirect effects on output resulting from a change in final demand  $\Delta Y$  as:

$$\Delta X = (I - A)^{-1} \Delta Y, \quad (1)$$

which, in turn, propagate to the use of primary factors such as wages, taxes and imports and, where appropriate, the creation of new jobs.

In simple terms, the use of expressions like (1) makes it possible to compute the economic impacts, direct and indirect, on output, wages and employment that can be associated with the presence of a HEI in a particular territory (Goldstein, 1989). Moreover, one must take into account that the importance of HEIs must be inferred from the comparison between the real situation and the one which admits the extinction / absence of these HEIs. Clearly, this allows us to conclude what should be obvious, *i.e.*, for example, that a relatively small university located in an economically/socially depressed territory may be more important than a big university located in an economically strong territory<sup>2</sup>.

In fact, given the multiplier nature of HEIs' effects, in terms of social and/or territorial cohesion, it is well known, by means of an input-output analysis, that a particularly negative effect on the remaining multipliers is to be observed when, in a productive network already sparse, some productive sector or institution disappear<sup>3</sup>.

Thus, the nature of costs, but above all of the benefits (direct/indirect, internal/external) associated with HEIs, as investment projects in its broadest sense, requires a social analysis, *i.e.*, a cost-benefit one, to underlie any social/territorial decision. This is so because only the proper discount (in social terms), for a time horizon that goes beyond myopia, of all costs and benefits associated with having a university in a region can/should support any policy decision of higher education that aims to foster social/territorial cohesion.

To put it clearer, when comparing the total expected costs (C) of creating or shutting down a HEI against the total expected benefits (B) of those two policy decisions, the computation of a Net Present Value (NPV) must be done, acknowledging all the costs and benefits, socially discounted, of those two decisions over time. This fact is given by computing the NPV as:

$$NPV = \sum_{t=0}^T \frac{B_t - C_t}{(1+i)^t}$$

where  $T$  is the time horizon and  $i$  is the social rate of discount.

## CONCLUSION

We have discussed the relevance of education, particularly of higher education, for both human and economic

development and social cohesion, being able to conclude that if knowledge is to be available to all, territories are required to establish a network of higher education institutions, which have to be committed to teaching, research production and knowledge transfer. The characteristics of the territorial intervention of HEIs were also considered according to the cost-benefit analysis presented.

In sum, any policy decision on social and/or territorial cohesion must not be based solely upon a financial analysis, as this ignores the social effects of universities, as well as the effects on regional cohesion.

In doing so, the consideration of a regional input-output matrix makes it possible to determine the real effects of universities on the regions where they are located, through the computation of the difference between the economic activity in the region with the presence of the HEIs and the level that this variable would assume if the institution did not exist (Beck et al., 1995).

Given the characteristics of HEIs, the computation of the totality of their effects, in terms of social and/or territorial cohesion, should be done using a cost-benefit analysis, as it accurately captures all those effects.

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<sup>2</sup> This situation, even if purely theoretical, shows that the importance of some universities located in economically and/or demographically depressed regions resemble, in metaphoric terms, the trees. These, in general, contribute to the development of plant and animal life, for example, by preventing soil erosion and by constituting a habitat for other living species. Similarly, a university may be crucial in areas where human/economic desertification is eminent by preventing the loss of human and economic resources and/or by allowing the establishment of (new) resources of that nature. Therefore, as for trees, it is also true that a relatively small university may be (far) more important to a desertified area than a large university located in a highly populated area.

<sup>3</sup> Without going into mathematical details, the  $A$  matrix of technical coefficients, which reflects the productive structure, gives rise to the matrix of multipliers  $(I - A)^{-1}$  in expression (1). In general, when some sector of activity is extinguished, all the remaining sectors see their multipliers diminish, and this becomes more evident when that sector is more closely related to the others.

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