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Regional Human Capital and University Orientation: A case study on Spain

Abstract:

The role of Higher Education Institutions (HEIs) in regional economic development continues to be at the forefront of the debate in various areas of scholarly research. From the perspective of economic geography, human capital (HC) is a prime source of innovation, economic growth and regional competitiveness (Glaeser et al., 1995; Glaeser, 2005; Uyerra, 2010; Goddard et al., 2012). While universities are portrayed in this literature as key hubs for the generation and circulation of high-skilled workers (Florida et al., 2008; Abel, 2012), no clear explanation is offered on the roots of persistent differences in the ability to accumulate and use knowledge across regions. On another front, studies on the economics of university articulate in great detail the historical determinants of higher education and the changing relation of the latter with the attendant societal context (Geuna, 1999; Wittrock, 1993; Youtie and Shapira, 2008). The contribution of HEIs is conceptualized here as flowing through three main channels coinciding with the apocryphal “missions”, namely (and concisely): the provision of teaching and training; scientific research; and the promotion of university-society synergies. This approach offers a rich characterization of the constellation of HEIs’ activities but, arguably, overlooks the dynamics that influence demand for skills at regional level. To be sure, the foretold traditions strive to emphasize different aspects of the same phenomenon rather than being in opposition with one another, and indeed they share common ground. First, both streams portray universities as strategic hubs entertaining a wide spectrum of formal and informal relations with various other actors within their regions. Secondly, both approaches concur in understanding HEIs as a knowledge-creating entity and in acknowledging the sheer diversity of forms of knowledge and of pathways through which this can be put to use.

Our claim is that the gaps identified above have a common root, namely the lack of operationalization of key concepts such as Human Capital and University Mission which are treated, at best, only in abstract terms. The present paper seeks to analyze the impact of HEIs’ mission orientations on the HC endowment of their regions. It will do so on the basis of a critical assessment of some consolidated notions. On the one hand we argue that since the opportunities and the challenges at play in different regional contexts have a strong effect on the path of development of individual HEIs, the prototypical “one-size-fits-all” approach to university mission falls short. Is it realistic, or even desirable, that all universities are expected to engage all missions at once (Sánchez-Barrionuengo, 2013)? We argue that regional factor bias may trigger selection effects on mission engagement, and that the extent of this relation has not been analysed in depth so far. Second, and relatedly, prolonged commitment towards a particular university mission can be either a catalyzer or a barrier for the developmental path of a region. As a result, local labor markets may or may not reflect the pattern of the regional HEIs due to cyclical or technological forces (Beaudry, et al, 2010; Autor and Dorn, 2013). On the whole, we argue, the literature on regional

economic development has disregarded the complementarity (or lack of thereof) between regional specialization, factor endowment and traditional indicators of employment dynamics such as skill intensity and wages.

This paper will tackle the foretold gaps by means of an empirical study of the relation between regional demand and supply of skills. In particular it will focus on three questions:

- How does the university mission orientation contribute to competitive advantage in a region?
- What is the role of university in forging the supply of regional human capital?
- Do local labor markets reflect the pattern of specialization of regional universities?

Our empirical study focuses on 17 regions in Spain and the 47 public universities that operate within them over the period 2002-2012. To address the foretold questions it will elaborate novel empirical constructs and operationalize them in two steps. First, using data on 22 indicators (i.e. total enrolled students, research and third stream funding, scientific production, knowledge-transfer activities) we compute an index of regional university orientation that will allow measuring individual university performance in each of the three “missions”. This novel index captures in a synthetic way the relative importance of university engagement by assigning key HEIs activities to a particular mission construct. Second, we compute an index of regional skill intensity that reflects both quantitative and qualitative features of local human capital as debated in recent literature on labour market dynamics (see e.g. Spitz-Oener, 2006; Goos and Manning, 2007; Autor and Dorn, 2013). The second index is built by merging employment data from the Spanish Labor Force Survey (2-digit occupations) with data on the skill content of occupations (source: O-NET). Additionally, and coherent with the conceptual framework laid out above, we control for a range of region-specific characteristics (Boschma, 2004), namely: number of firms, %R&D on GDP, Number of High-Technology manufacture firms and % of ICT use.

Preliminary results show that university orientation is a good predictor of regional skill endowment, while overall educational attainment is not. This is in line with literature showing that traditional measures of educational stock have less connection to economic performance (e.g. Rodríguez-Pose and Vilalta-Bufí, 2005). We also observe differential engagement of university missions across regions, and that these are significantly influenced by region-specific characteristics. On the whole this initial analysis corroborates the conjecture that university orientation plays a strong role in the process of regional economic development. From this we derive preliminary policy implications. First, our results point to the weakness of the ‘one-size-fits-all’ model that is usually employed in the debate on university missions. Acknowledging, rather than ignoring, these differences is a first step towards the full exploitation of university potential on the basis of the revealed pattern of specialization. Second, our analysis of the skill content of the workforce affords the opportunity of a concrete assessment of the types of know-how that are relevant to regional economic development. Skill intensity as a unit of analysis is not knowledge in abstract terms but, rather, an empirical measure of supply and demand forces filtered by the reality of the regional labour market. Last but not least, the present study offers a more nuanced view of the connection between demand and supply of knowledge as mediated by institutional processes such as education, employment and economic performance.