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Educational disparities across regions: A multilevel analysis for Italy and Spain

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Abstract

In this paper, a multilevel analysis is applied to the OECD-PISA2006 data with the aim to compare factors affecting students' achievement across Italy and Spain. The findings show that both countries are affected by strong internal regional heterogeneity, where some regions have achievement scores well above the OECD mean and other are placed among the worst performers in the OECD area. Although regional governments are more autonomous about educational policy-making in Spain, regional indicators exert a higher influence on educational results in Italy where educational system is strictly regulated by the national government.

Keywords: Education; Regional divergences; Cross-country comparison; Federalism; PISA

JEL classification: I21; R58

1. Introduction

In recent years, the European Commission has emphasised the necessity to strengthen the educational systems in the (European) Area. Among the many objectives, efficiency and equity are assumed as clear priorities (EU Commission, 2006). For both these objectives, it is crucial to understand the factors behind students' and schools' results. A recent stream of economic literature is aimed at identifying factors that can explain international variations of students' outcomes

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(Cabus & De Witte, 2012; Fuchs & Woessmann, 2007; Hanushek & Woessman, 2011; among others). The primary objective of these studies is to estimate an "international" (country-level) education production function, to find out which educational characteristics are associated with higher average performances. The main datasets employed in this type of research are the OECD-PISA data (hereafter, PISA), which are based on standardised tests compiled by representative samples of 15 years old students. The most recent evidence suggests that while many variables (students and schools' characteristics, home inputs, teachers' quality, etc.) do play a role in explaining students' performances, a major part of international variation is due to different "institutions" and policies.

However, these studies do not look at specific situations of single countries. In particular, they do not investigate potential differences in the educational production within single countries, and they treat them as a whole unit of analysis. It is questionable, however, that education production processes are really homogenous in the different countries, and past literature showed that actually regional variations do exist. In this paper, the analysis focuses on Italy and Spain, two Mediterranean countries with similar characteristics in terms of wealth, customs and levels of educational achievement, where there is a substantial economic divide among regions (Mauro, 2004; Murias, Novello, & Martínez, 2012). According to OECD PISA 2006 and 2009 results, Italy and Spain are placed at the bottom of the EU ranking in terms of educational attainment, as both were performing clearly below the OECD average of 500 points. However, behind the average score at the country level we can find a common feature in both countries: the existence of strong internal divergences across regions, as shown in Table 1.

It is worth noting that the students from some Italian and Spanish regions perform as well as students from countries placed at the top of the EU ranking. Those regions are Friuli Venezia, Bolzano, Trento and Veneto in Italy and Castile Leon and La Rioja in Spain. The literature emphasises the problem associated with these territorial differences (see Section 3). Indeed, given the importance of human capital for the socio-economic development of countries (Asteriou & Agiomirgianakis, 2001; Hanushek & Kimko, 2000; Hanushek & Woessman, 2009), it is important to identify what contributes to the divergence in the achievement scores among regions. As a matter of fact, the inequality in educational results tends to increase the socio-economic inequality of countries themselves (Checchi & Peragine, 2010). Rodriguez-Posè and Tselios (2009) showed that education can impact on economic inequality also at regional levels. These authors conducted a study about 102 regions in Europe and found that the relationship between income and educational inequality is positive. Also, the contribution of education to local (regional/state) development has been widely demonstrated and some authors showed as different levels of education affect differently the productivity of a territory (e.g. Carlino & Voith, 1992).

The idea of this paper relies upon previous contributions about regional economics of education. For instance, Brasington (2002) underlined the importance of a focus on the regions, as they differ not only on the basis of the educational outcomes, but also on the way they "produce" education. As a matter of fact, there is still low attention to the within-countries analyses of educational efficiency and equity, especially when concerning international (European) comparisons. Moreover, as pointed out by Rodriguez-Posè and Tselios (2011): "Given the total absence of data on the quality of education at regional level, (...) analysis focuses exclusively on the educational attainment of individuals as measurement of human capital" (p. 360). Trying to fill this gap, the present paper compares educational results of Italian and Spanish students by paying a special attention to the regional dimension. On another side, the paper takes advantage of the PISA survey as it measures the competences of students through comparable and standardised tests and provides wide information about multiple educational factors that can have influence on