

Efficiency of Management in Public Schools. Analysis in a Context of Budgetary Restrictions.

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Abstract

This thesis is concerned about the development of innovative models for the assessment and monitoring of performance using non-parametric efficiency approaches such as Data Envelopment Analysis, conditional order-m, and Malmquist Total Factor Productivity Change Index. The models are applied to the evaluation of public schools performance in Catalonia (Northeast of Spain) with the aim of promoting the efficiency of the public education sector following different empirical approaches and bearing in mind the economic context. The empirical part of the thesis contributes to the definition of better public policies through the identification of best practice examples and areas with more potential for improvements. The thesis includes four main research topics. The first topic discusses how to implement changes in the public education network in order to adapt resources to the allocated budget without losing outputs. This chapter presents an alternative model to globally assess the efficiency of the public education network and to reallocate human resources. The empirical approach is based on an extension of the so-called Centralized Data Envelopment Analysis. Then, an iterative procedure capable of reallocating resources without jeopardizing the level of efficiency is proposed. The second topic analyzes the impact of environmental factors on students' achievement by using a robust conditional order-m approach. In this chapter we develop two efficiency estimations, namely unconditional and conditional models and then, non-parametric regressions are done to disentangle the effect of environmental factors on school performance. The third topic provides evidence on strategic interaction among public schools. It employs a two-stage estimation procedure to assess whether competition among public schools influences the demand for places in them. A robust conditional order-m approach is used to estimate the efficiency of each school. Subsequently, a spatial econometric framework is applied to explain the correlation in the demand for places due to the existence of strategic interaction. The last topic develops a framework to assess the effectiveness and efficiency of a specific quality improvement program recently applied in public schools in Catalonia. To do that, difference-in-differences approach together with Malmquist total factor productivity change index is applied. Overall, this thesis contributes to the development of robust tools to assess and promote the quality of education provided by public institutions, with a view to foster efficiency and equity within the system.