Is your school really better than mine? An innovative proposal to perform school efficiency evaluation in a more fair way

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Abstract

School efficiency evaluation is increasingly needed to provide policy makers and school managers with evidence to learn from best practises and improve performance. In this context, non-parametric techniques have become quite popular to assess school technical efficiency as they allow to deal with multiple-outputs, do not require information about input or output prices and do not assume any distributional form. Quite often student level data from national evaluations or international large-scale assessments are aggregated at the school level to perform the analysis, overlooking the heterogeneity across schools at the risk of unfair assessments.

In this paper, we propose an extension of the traditional DEA formulation to directly take into account the inputs and outputs distribution within each school, without resorting to common aggregate measures such as the average or the standard deviation. The suggested framework allows different specifications to model input and/or output composition and to capture heterogeneity across schools. For illustrative purposes, we apply our proposal to an extensive dataset of more than 600 schools in Spain, coming from the last wave of the international large-scale assessment of PISA 2018. This empirical application shows how this tool could support educational policy making assessment while considering the possibility of a heterogeneous working and learning environment. To model potentially different school input composition, we consider the distribution of the student socio-economic characteristics.

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