

# Analysing efficiency and performance universities by combining composite indicators and Data envelopment analysis

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## Abstract

The purpose of this paper is to analyse universities by using a novel combination of methodologies, which allows the joint use of a multicriteria reference point technique and the data envelopment analysis from different compensatory scenarios. Therefore, all the aspects considered relevant for the assessment of university performance and efficiency are considered in the analysis. The findings of this research highlight the convenience to assess university performance by using both compensatory scenarios, allowing the decision maker to detect improvement areas, rather than just giving an overall performance measure. The analysis is illustrated using data of 47 Spanish public universities for the academic year 2016-2017. Specifically, the results show that 18 universities are efficient in the compensatory scenario, and 17 in the non-compensatory one, while only 14 are efficient in both scenarios. In general, most universities tend to be less inefficient when the overall performance is considered (21 out of 47).

**Key words:** Multicriteria analysis; Composite indicators; Data Envelopment Analysis; Compensation; Spanish Public University System.