

hSNS – Portuguese Public Hospital Performance Assessment using a Multi-Criteria Decision Analysis Framework

Summary

There is not a single Performance Model that characterizes the hospital performance, accounting simultaneously for objective and subjective criteria (resources, production, mortality, relapses vs perceived quality, patient's satisfaction). In general, one can assume that the patient's satisfaction with the healthcare provision is the best quality proxy. Moreover, such satisfaction is usually measured through several criteria. Therefore, a multicriteria analysis seems to be the most appropriate one to deal with them. One should also note that most studies that crossbreed quality and efficiency use frameworks where only objective and quantitative dimensions can be employed. Besides, those tools do not allow the entities' classification by performance categories.

Accordingly, the development and employment of coherent healthcare provision services performance assessment models is our main goal. Such models shall account for both objective and subjective criteria and characterize the units' performance by categories. Particularly, those models will be applied to the Portuguese hospital case, since these entities represent most of the National Health Service's financial charges.

Performance measures are commonly expressed as scores, which depend on the model mathematical formulation and consequently are fragile measures, exposed to several 'noise' effects and to the imperfect knowledge of the technology. Moreover, they do not classify entities into performance-like groups, e.g. very efficient and very effective, very efficient and ineffective, inefficient and very effective, and inefficient and ineffective, which seems to be the best way to classify units according to their performance in several dimensions. Scores do not usually account for the model's criteria relative importance, and, if they do, the results' interpretation is not direct, leading to biased conclusions. To overcome such drawbacks of standard methods, a multicriteria decision framework is proposed; in particular, the methods of ordinal rating that allow the classification of units by groups.

This is an innovative approach in the research areas of benchmarking and performance

evaluation, making it an appropriate tool for this project. From those methods, the family of methods based on prevalence relationships is noteworthy, particularly the Electre Tri-like methods. These methods are recent and have a difficult computational implementation, which is why they have not reached the desired visibility in the literature, though they can be characterized by several strengths, in comparison with other alternatives.

In addition, a Maturity Model will be developed for the same domain (the capability of a health care unit to perform its performance characterization considering both objective and subjective factors), which will facilitate the evaluation of the results, as also the dissemination of these results. Accordingly, this project seeks the literature enrichment at this level, as well as to provide robust tools to improve the Portuguese hospitals' performance as a strong incentive to the improvement of hospital management models. This kind of analysis will be done over statistical data (e.g. epidemiologic and demographic data), and hospital services' specific inputs (resources), outputs (production) and outcomes (quality). Since this is a complex and debatable problem, its resolution should be analysed based on multiple criteria, so that all stakeholders can see their preferences included into the model. This, however, constitutes a considerable gap in the literature and in the practical application in healthcare. More than just ensuring the sustainability of hospital services, this project will be very important to ensure quality and efficiency in the public funds' exploitation.

To cover all this project objectives, researchers from different scientific concerns will properly constitute the research team. The Principal Investigator along with all project members and consultants have a significant scientific background in benchmarking and multicriteria decision making tools and in the Portuguese public health system, as well as the capacity of technological realization in the development of applications and information systems.



Project Reference

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Leading Institution

CEGIST – Centre for Management Studies of Instituto Superior Técnico (Portugal)

Partners

IST-ID – Associação do Instituto Superior Técnico para a Investigação e Inovação (Portugal), CERIS – Civil Engineering Research and Innovation for Sustainability (Portugal), INESC-ID – Instituto de Engenharia de Sistemas e Computadores - Investigação e Desenvolvimento (Portugal)

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CERIS

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