



Multilevel Modelling Applied to the Evaluation of Research Centres

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Most scientific research conducted in Portugal takes place in R&D institutions financed and evaluated by the Fundação para a Ciência e Tecnologia (FCT), the Portuguese funding agency for science, technology and innovation. According to FCT, there are currently more than 300 R&D institutions involving all scientific fields. The research funding is conditioned on the institutional assessment that is conducted by the FCT each five years. The criteria defined are: (1) Productivity and contribution to the scientific and technological system; (2) Scientific and technological merit of the research team; (3) Scientific merit and innovative nature of the strategic program; (4) Feasibility of work and reasonableness of budget; (5) Impact of scientific, technological and cultural production. The process consists of two phases so that the institutions selected in the first phase will have access to higher funding levels. The first phase is mainly based on the analysis of bibliometric indicators. For those institutions whose ranking is not sufficiently “prestigious”, there is a concern that such type of research assessment is producing a “Matthew Effect” or a cycle of disadvantage. The Matthew effect in science has been discussed in the literature since 1968. We describe how multilevel models can be used to model the relationship between the productivity and the score at the end of the first phase. We then show how these models can be used to the hypotheses tests underlying the Matthew Effect.

Keywords: Multilevel model; research assessment; bibliometric indicators.