AN EMPIRICAL ANALYSIS OF THE EFFICIENCY IN REDUCING CHILD MORTALITY (MILLENNIUM DEVELOPMENT GOAL 4)

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Abstract

The Millennium Development Goals (MDGs) provide development priorities and a set of targets to be attained by developing countries in 2015. These goals include commitments to poverty eradication, to improve education and health, and to promote gender equality and sustainable development. This paper focuses on one of the health-related MDGs: to reduce child mortality (Goal 4, MDG 4). At a conceptual level, in order to achieve this goal, developing countries can either increase the resources they allocate to this objective, and/or increase the efficiency with which they use their available resources. In this context, the main aim of this study is to analyze why some countries are more efficient in converting inputs into health-outputs and -outcomes. Moreover, this study aims to analyse the main determinants of the technical efficiency levels reached by countries in their efforts towards increasing immunization against measles and reducing under-five mortality, two official indicators for monitoring progress towards MDG 4. With this aim, this study uses two-step Data Envelopment Analysis (DEA)/Tobit analysis. The logic of this methodological approach is that if efficiency is to be improved, we need to know what factors influence on it, and this requires distinguishing the influences of the potential determinants from that of the inputs and outputs themselves. Firstly, in order to obtain countries' technical efficiency scores using DEA, two inputs have been considered (physician density and total health expenditure) and one output (measles immunization coverage) and one outcome (under-five mortality rate). After that, a Tobit analysis is employed in order to estimate the

cross-sectional causal effects of a set of socio-economic and institutional factors on these technical efficiency scores. The sample used in the estimations is composed by 43 developing countries in 2000, 2005 and 2010. Research findings suggest that countries with lower income inequality have achieved better efficiency levels in increasing immunization against measles and reducing under-five mortality rates. Some other control variables are also shown to matter, including the nature of the institutions. Thus, this study could be useful for policymakers when making decisions related to improved health indicators. On this regard, the main challenge in many developing countries may be less to raise overall public health spending than to promote that public resources are spent effectively and efficiently in order to improve infant immunization and to reduce infant and child mortality.

Key words

Millennium Development Goal Four (MDG4), Under-five mortality rate, Immunization against measles, Efficiency, Data Envelopment Analysis (DEA), Tobit analysis, Developing countries.