

Efficiency analysis of public hospitals in Colombia between 2017-2021 and the influence of different variables.

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Abstract

The 23 public institutions providing health services (IPS) in Colombia serve a population of approximately 48 million, with a healthcare cost of 50 million dollars.

Objective: To analyse the efficiency of public hospitals in Colombia between 2017 and 2021 and to determine the influential variables.

Methodology:

Information was gathered from the Colombian Health Ministry on the IPS for the period 2017-2021. The methodology used was data envelopment analysis with input orientation, using the basic radial model with variable returns to scale. Inputs were: the number of hospital beds (non-discretionary variable) and the cost of the general social security system. Outputs were: the number of external consultations; the number of hospital emergencies; the number of hospital discharges and rate of readmission in less than 15 days (unwanted variable). The data panel included the production and resource values of the IPS throughout the period under study.

Results:

The number of efficient IPS varied each year between 2 and 7. It was noted that 4 IPS obtained efficient results in 3 out of the 5 years of the study. 7 IPS achieved a higher average efficiency rating over the whole 5 years. 22% of the IPS are close to the efficient frontier and need to reduce all their inputs by between 2% and 13%, while 69% of the IPS need to reduce all inputs by between 18% and 55% in order to be on the efficient frontier. Finally, the 9% of IPS furthest from the efficient frontier need to reduce all their inputs by between 70% and 83%.

Regarding the evolution of efficiency between 2017 and 2021, it was noted that the average efficiency of all the IPS increased between 2017 and 2019, but decreased between 2020 and 2021.

Conclusions:

Of the 23 public hospitals (IPS) none remained on the efficient frontier for the 5 years of the study.

While efficiency increased over the first three years of the study, it decreased in the last two.

The findings of this study can help to understand certain aspects that make public healthcare providers efficient and to identify some actions for improvement.

Key words: Efficiency – data envelopment analysis – clinics and hospitals – public healthcare.