

ABSTRACT

Access to improved drinking water and improved sanitation are essential public services that play an important role in improving people's quality of life. Sustainable Development Goal (SDG) 6 emphasizes achieving universal access to improved drinking water and improved sanitation by 2030. However, the achievement of these basic services in Indonesia has not yet reached the established targets. Therefore, this study aims to analyze the efficiency of public expenditure in the improved drinking water and improved sanitation sectors and to identify the factors affecting such efficiency.

This study employs panel data from 34 provinces in Indonesia during the period 2015–2024 using a two-stage analytical approach. The first stage applies an output-oriented Data Envelopment Analysis (DEA) model under the Variable Returns to Scale (VRS) assumption to measure efficiency levels. The second stage employs Tobit regression to examine the determinants of efficiency.

The results indicate that the efficiency of public expenditure in the improved drinking water and improved sanitation sectors varies across provinces. DKI Jakarta, Bali, Central Java, and the Special Region of Yogyakarta were relatively consistent in achieving high efficiency levels throughout the study period. The Tobit regression results reveal that GRDP per capita has a significant negative effect on efficiency in both sectors. Urbanization and mean years of schooling have significant positive effects on the efficiency of both improved drinking water and improved sanitation sectors. Industrialization has a significant positive effect on sanitation efficiency, while PDAM performance has a significant positive effect on drinking water efficiency.

Keywords: Efficiency, Improved Drinking Water, Improved Sanitation, Data Envelopment Analysis, Tobit Regression.