Measurement of the Urban Water and Sewerage Authorities in Tanzania: A Data Envelopment Analysis

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Abstract

This paper attempts to measure the efficiency of Urban Water and Sewerage Authorities (UWSAs) in Tanzania for the years 2005/06 and 2006/07 using input oriented measures by utilizing Data Envelopment Analysis (DEA), as well as Malmquist Productivity Index (MPI). The study utilized financial data for the 19 UWSAs taking two inputs (total own operating expenditure and amount of water produced); and outputs (revenues generated and total number of connections) measures. The results indicate that category A authorities, which are self-sufficient, are the least efficient when compared to other categories that receive government support to run their activities. The result indicates that the increase in the performance of the UWSAs is not a result of technological change; rather, it is from operational efficiency. The study calls for a close monitoring of UWSAs, especially those with decreasing returns to scale as well as apply more sophisticated techniques to monitor the efficiency of UWSAs.

Keywords: DEA, Urban Water Authorities, Efficiency measurement.