

Utilities Governance, Incentives, and Performance: Evidence from the Water Sector in India

EPRG Working Paper 1832

Cambridge Working Paper in Economics 1861

Sai Amulya Nyathikala, Tooraj Jamasb, Manuel Llorca, Mukul Kulshrestha

Network utilities across the world need to achieve a diverse set of social, economic, and environmental performance objectives. However, managing the trade-offs between these objectives in developing countries, in the context of weak institutions and independent regulatory tradition, is a difficult task. Utilities often face constraints over achieving reform objectives as they operate under disjointed set ups. Indian urban water supply sector provides a suitable case to examine the performance of utilities operating in such environments.

During the past decade and a half, India has sought major economic and institutional reforms in the water sector. These reforms are based on principles of full cost recovery, rationalisation of tariffs, introduction of public-private partnerships and establishment of regulatory authorities to achieve universal and equitable access to clean and safe drinking water. Despite major efforts, no major improvements in service delivery can be seen across states. An absence of national level regulator and the prevalence of fragmented governance structures made it difficult for Indian water supply sector to achieve various reform objectives across different states.

In this paper we analyse the performance of Indian urban water supply utilities and considering the socioeconomic and environmental aspects of their activities. Water supply utilities provide a suitable case to analyse the performance and examine the conduct of utilities as these are natural monopolies and share important underlying technical and economic features with other utility networks.

We use Stochastic Frontier Analysis (SFA) approach to estimate a multi-input multi-output distance function of 304 utilities which operate in 3 Indian states for the period from 2010-11 to 2015-16.

We find no significant change in average performance of water supply utilities along the analyzed period indicating lack of progress in efficiency improvements. The results show that an increase in supply reliability, service efficiency and financial viability of utilities improves their performance. In addition, the results also show that utilities need to focus on reducing non-revenue water, which has a negative impact on the utilities' performance. The results also show the dependence of water utilities on the finite groundwater sources a practice which is unsustainable in the long run.

Our findings show that, focusing on economic factors and environmental dimensions would not only help utilities achieve their social objectives, but also helps the financial and environmental sustainability of the sector. This also holds in the case of other utility networks operating in politically dominant environments. Furthermore, the utilities should reduce their dependence on groundwater sources and develop action plans to better manage water bodies.

Policymakers should consider these factors and design economic incentives to improve the performance of utilities. Specifically measures to improve cost recovery, billing efficiency and reduce losses would help the utilities to enhance service delivery, expand coverage and induce efficiency in the sector. The paper further stresses on the need to strengthen the institutions and governance capacities as a prerequisite to achieve the above-mentioned potential improvements. Measures to incorporate performance and benchmarking systems and mandate national level regulatory authorities can help developing countries a long way in improving performance of utilities.

Contact
Publication
Financial Support

saiamulya32166@gmail.com

October 2018

We are grateful to the Commonwealth Scholarship Commission for funding the collaboration between Durham University and National Institute of Technology, Bhopal