

Physics and Chemistry of the Earth, Part A/B/C

Analysis of the determinants of household's water access and payments among the urban poor. A case study of Diepsloot Township

Fhulufhelo Phillis Tshililo^{a,b,e}, Shingirirai Mutanga^{b,g}, Keneiloe Sikhwivhilu^c, John Siame^d, Charles Hongoro^e, Lavhelesani R. Managa^f, Charles Mbohwa^a, Daniel M. Madyira^b

^a University of Johannesburg, Department of Quality and Operations Management, Faculty of Engineering and Built Environment, Johannesburg, South Africa

^b University of Johannesburg, Department of Mechanical Engineering Science, Faculty of Engineering and Built Environment, Johannesburg, South Africa

^c DSI/MINTEK Nanotechnology Innovation Centre, Advanced Material Division, Mintek, Johannesburg, South Africa

^d Department of Chemical Engineering, School of Mines and Mineral Sciences, Copperbelt University, Kitwe, Zambia

^e Developmental, Capable and Ethical States, Human Sciences Research Council, Pretoria, South Africa

^f Africa Institute of South Africa, Human Sciences Research Council, Pretoria, South Africa

^g Council for Scientific and Industrial Research (CSIR), Smart Place Cluster, Holistic Climate Change-Climate Services Group, Pretoria

<https://www.sciencedirect.com/science/article/pii/S1474706522000766>

Abstract

Currently, 91% of the world population has access to clean and safe water. Despite this encouraging development exclusion and marginalisation of the poor appear not only to be deepening but fast spreading. Low-income communities in urban areas are increasingly grappling with issues of reliability, sufficiency, and affordability of potable water. Attaining SDG 6 and its targets goal is a daunting task for most developing nations and limited evidence provide an intrinsic look at water systems for marginalised urban communities. This study investigates factors influencing household water access, its reliability and affordability among the low-income communities. The study administered a structured questionnaire to 500 households to determine key predictors of household water access. Findings show persistent high unemployment levels with most of the people surviving on less than R 3000 (198 USD) a month. Around 66% of households had access to tap water either inside the house or yard, but the water supply was irregular, and most households were not paying for the water. Household water access and payment for water services were influenced by house type, household size and water source with a p value of 0.00, 0.035 and 0.042 respectively. Other variables such as education, employment, and income were not significant predictors of household's water access. The study observed that income, employment, education, gender, drinking tap water, water interruptions, and satisfaction levels did not have a significant relationship with household water payment for water services. The findings of this study highlight the importance of policy in driving water service provision for the successful attainment of Sustainable Development Goal 6.1.