

Gendered Water Insecurity: a Structural Equation Approach for Female-Headed Households in South Africa

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Abstract : Water crises have the fourth most significant societal impact after weapons of mass destruction, climate change, and extreme weather conditions, ahead of natural disasters. Intricacies between women and water are central to achieving the 2030 Sustainable Development Goals (SDGs). The majority of the 1.2 billion poor people worldwide, with two-thirds being women, and mostly located in Sub Sahara Africa (SSA) and South Asia, do not have access to safe and reliable sources of water. There exist gendered differences in water security based on the division of labour associating women with water. Globally, women and girls are responsible for water collection in 80% of the households which have no water on their premises. Women spend 16 million hours a day collecting water, while men and children spend 6 million and 4 million per day, respectively, which is time foregone in the pursuit of other livelihood activities. Due to their proximity and activities concerning water, women are vulnerable to water insecurity through exposures to water-borne diseases, fatigue from physically carrying water, and exposure to sexual and physical harassment, amongst others. Proximity to treated water and their wellbeing also has an effect on their sensitivity and adaptive capacity to water insecurity. The great distances, difficult terrain and heavy lifting expose women to vulnerabilities of water insecurity. However, few studies have quantified the vulnerabilities and burdens on women, with a few taking a phenomenological qualitative approach. Vulnerability studies have also been scanty in the water security realm, with most studies taking linear forms of either quantifying exposures, sensitivities or adaptive capacities in climate change studies. The current study argues for the need for a water insecurity vulnerability assessment, especially for women into research agendas as well as policy interventions, monitoring, and evaluation. The study sought to identify and provide pathways through which female-headed households were water insecure in South Africa, the 30th driest country in the world. This was through linking the drinking water decision as well as the vulnerability frameworks. Secondary data collected during the 2016 General Household Survey (GHS) was utilised, with a sample of 5928 female-headed households. Principal Component Analysis and Structural Equation Modelling were used to analyse the data. The results show dynamic relationships between water characteristics and water treatment. There were also associations between water access and wealth status of the female-headed households. Association was also found between water access and water treatment as well as between wealth status and water treatment. The study concludes that there are dynamic relationships in water insecurity (exposure, sensitivity, and adaptive capacity) for female-headed households in South Africa. The study recommends that a multi-prong approach is required in tackling exposures, sensitivities, and adaptive capacities to water insecurity. This should include capacitating and empowering women for wealth generation, improve access to water treatment equipment as well as prioritising the improvement of infrastructure that brings piped and safe water to female-headed households.

Keywords : gender, principal component analysis, structural equation modelling, vulnerability, water insecurity

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