

# Factors Influencing Sustainable Household Domestic Water use in Nzoia River Basin, Kenya

## Abstract.

A comprehensive understanding of the factors influencing domestic water use is necessary for effective and efficient design of water management strategies. Despite global efforts to identify the factors that influence domestic water use, those related to domestic water use in rural regions such as Nzoia River Basin in Kenya have not been sufficiently studied. To address this gap, we investigated 403 households in three counties of Nzoia River Basin (Trans Nzoia, Kakamega and Busia) between May, 2017 and September, 2017 with a view of assessing various socio-demographic, economic, cultural and geographical factors influencing domestic water consumption/use. Data was collected from households using multi-stage random sampling technique and analyzed with SPSS (Statistical Package for Social Sciences) software. Household water consumption was found to be correlated with socio-demographic, economic, cultural and geographical factors. Results show that domestic water consumption (liters per capita per day) was positively correlated with; age of household head, gender of household head, household income, amount paid for water per month, number of functional water sources available, hours of water service in 24 hrs., volume of water stored/number of water storage containers, vegetable gardening and yard area and possession of livestock. A negative correlation was observed with education of household head, household size, main dwelling in terms of roofing materials, main dwelling in terms of walling materials, main dwelling in terms of flooring materials, total time taken to walk to get water and back and distance covered to reach water source. It is important to note that some of the independent variables are endogenous; that is, they are influenced by some of the same variables that determine domestic water consumption. Statistical analysis has been done utilizing a Pearson correlation matrix with a view of minimizing complexity and simplifying the interpretation of data. It would be desirable to extend this work to cover other un-surveyed counties of Nzoia River Basin on different seasons of the year and also to include investigations on water quality. Further research that considers a wider range of socio-demographic, economic and cultural factors influencing domestic water consumption such as gender of the household head, ethnicity, traditional habits and cultural background of water consumers, religion, residential tenancy arrangements, water use characteristics of each member of the household and climate conditions are recommended.