

Water Demand Modelling Using Artificial Neural Network in Ramallah

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Abstract : Water scarcity and increasing water demand especially for residential use are major challenges facing Palestine. The need to accurately forecast water consumption is useful for the planning and management of this natural resource. The main objective of this paper is to (i) study the major factors influencing the water consumption in Palestine, (ii) understand the general pattern of Household water consumption, (iii) assess the possible changes in household water consumption and suggest appropriate remedies and (iv) develop prediction model based on the Artificial Neural Network to the water consumption in Palestinian cities. The paper is organized in four parts. The first part includes literature review of household water consumption studies. The second part concerns data collection methodology, conceptual frame work for the household water consumption surveys, survey descriptions and data processing methods. The third part presents descriptive statistics, multiple regression and analysis of the water consumption in the two Palestinian cities. The final part develops the use of Artificial Neural Network for modeling the water consumption in Palestinian cities.

Keywords : water management, demand forecasting, consumption, ANN, Ramallah

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