عنوان مقاله:

Estimation of the Demand Function of Water for the Industrial Sector Using Translog Cost Functions (Case Study: (Zahedan City

محل انتشار:

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خلاصه مقاله:

The main objective of the current study was to estimate the demand function for water in the industrial sector of Zahedan city based on the methodology of duality premise. To this end, the trans-log cost function which is considered as a more robust framework for the analysis of production relationships was utilized to estimate the demand function of water in the industrial sector instead of using conventional production methods. This is an applied survey in which the trans-log cost function and the cost share equations using Iterative Seemingly Unrelated Regressions (ISUR) approach. After the estimation of the model, the production infrastructure technologies, the substitution and price elasticity were calculated and homothetic, constant return to scale and Cob-Douglas hypotheses for the production function were tested using Eviews software. The data of the study refer to 30 active production units located in the industrial clusters of the Zahedan city during the period from 2011 to 2012. Data were collected through questionnaires. The determination coefficient of the model was equal to 97 percent which indicated the goodness of fit. On the other hand, the results of the model estimation represented water as a non-elastic commodity because the price elasticity calculated for water was less than 1 (-0.07). Moreover, the calculated values for Allen-Uzawa and Morishima elasticities indicated a strong substitution relationship between water as a production input and machinery (6.69) and building (1.30) inputs. On the other hand, there was a weak substitution effect between water and land inputs (0.65) and a complementary relationship existed between water and labor inputs (-0.43). However, it should be mentioned that the homotheticity, constant returns to scale, and the Cob-Dagoulas form .(of the cost function hypotheses were rejected based on the Maximum Likelihood Ratio (Wald-Statistic

کلمات کلیدی:

Demand for Water,Price Elasticity for Water,Translog Cost Functions,Zahedan City