

suitable. The idea, put forward for the first time by Feigenbaum and Teeple⁶ (1983), is that this public utility doesn't produce water from factors such as labour and capital. It is, on the other hand, more correct to consider water production as a process that transforms "the location (in space and time) of water and improves upon the quality of water inputs". Each firm is characterised by different typology as far as the inputs and output of water and the service provided are concerned; it is clear that the particular environmental conditions which the firm faces and the quality service affect the cost structure. Therefore the inclusion of " variables along with the physical output makes it possible to homogenise firms which, though equal in terms of the volume supplied, operate in different environmental conditions and produce different services. From an econometric point of view, the problem is the measurement of such factors in order to verify their role in explaining costs.

On the basis of the available data, four hedonic variables have been identified and introduced: the number of consumers (UT), a proxy of density obtained as ratio between population served and length of pipelines (DEN), the percentage of water input purchased by the firm (AA) and of the treatment costs (POT) on total cost. Three inputs have been used: labour, energy and capital-materials. The price of the latter variable has been computed by dividing the sum of depreciation and costs of materials by the length of the network (Km).

The generic cost function is therefore:

$$(3) \quad C = C(Y, Z, P)$$

with Y: volume of delivered water,

Z: vector of the hedonic variables,

P: vector of the input prices.

(3) is approximated with the *Transcendental Logarithmic*:

⁶ These authors follow the pioneering theory put forward by Spady and Friedlander (1978) "Hedonic cost Function for the Regulated Trucking Industry", Bell Journal of Economics n. 9, 1978.