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# Drinking water demand determinants: Evidences from Vlora city

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#### Abstract

In Albania there are plenty of natural water resources, a fraction of these reserves cover the need of population for fresh, clean drinking water. But this sector presents several critical problems related with water suppliers. It seems they have not completed the decentralization process; they depend on state subsidies to cover losses from uncollectible bills. Literature shows traditional forms of financing of water supplier in different economies (developed or not). One of the classic financial forms is to increase the rate paid bills. The water should be seen as product that has its own market and an equilibrium price. But do the citizens of Vlora city perceive in adequate way this concept? Should be an economical problem for them if the water tariffs increase or are they using alternative resources of drinking water?

The article aims to give a descriptive overview of water industry and suppliers in Albania and especially empirically conclusions about of the situation in Vlora city, focusing on the perceptions of citizens. Are the accumulated financial losses of water supplier correlated with the citizens' perception about water as a public good? It's been used data through a structured questionnaire (Zeneli F., WP-Questionnaire, 2015) about 160 families, were part of the survey; also data from General Directorate of Water in Albania; elaborated using statistical software IBM SPSS 21, to identify link between determinants of drinking water demand in the sector.

The main conclusion is that citizens see the water provider service a public good, while from water suppliers water distributed is their product that provides their market position and their economic sustainability.

Let this paper be one of the first in the topic to determine drinking water demand determinants in Vlora city.

Keywords: water supply, alternative resources, financial sustainability, public perception;

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#### 1. Introduction

Drinking water and sanitation services are part of a large industry today: the water industry. In Albania there are 57 companies that operate actually<sup>b</sup>. According to Rapport of Albanian Regulatory Authority of the Water Supply and Waste Water Disposal and Treatment Sector, during 2015, over 25 companies have applied for license or license renovation and only 10 of them got the license. The company of Vlora Water Supply and Sewerage Services hasn't respected procedure's deadline for the license renovation; administrative penalty is in process.

During 2014 costs are increased with 5% compared to 2013 and revenues with 2%, resulting in financial lose for the operators of the sector. For the Vlora Water Supply and Sewerage Services Company during the same period the revenues are decreased with 10% per connection and the costs are decreased with 3% per connection<sup>c</sup>.

At the moment the rate coverage of population with drinking water from the companies is 81% of population of jurisdiction areas of operation, with sewerage services only 51% of population and for the waste water treatment services only 10% of population.

The New Administrative National Reform that legitimates 61 municipalities will play a crucial role especially in the water sector; the water suppliers will be under the management and monitoring of local government institutions. This reform has reduced the number of local entities shareholders of water companies, facilitating the management process.

Tariffs for the drinking water and sanitation services are approved fulfilling four main principles:

- Tariffs are increased gradually until incomes exceed costs (including amortization and interest payments);
- Tariffs are consequence of an efficient technical and financial performance;
- Tariffs should be affordable (not more than 5% of family incomes);
- Tariffs should preserve water resources and ensure stable consuming level.

Water and sanitation services tariffs are the main source of incomes for the companies in water sector. Tariffs for water and sanitation services are 2.6 times higher in 2014 compared with those in 2006<sup>d</sup> for the Vlora Water Supply and Sewerage Services Company. But how the change's tariffs affect welfare of citizens of Vlora? How is the perception of citizens about the quality of service of water sector and are they behaviors correlated with the financial loses of Vlora Water Supply and Sewerage Services?

The article aims to give an empirical answer to the questions above. In the section two is summarized the literature consulted for the empirical part, in the section three is formulated the methodology and empirical findings followed by the final conclusions of the article.

#### 2. Literature review

Identifying the determinants of water consumption requires taking in consideration classical factors such as: population's incomes and other characteristic, household features and other factors, such as weather conditions, geographical position. Starting from 1980s, there are many empirical works on this topic.

Arbués and Villanua (2006) and Worthington and Hoffmann (2008) identified water price and average per-capita water consumption as the main determinants of water demand. Water price is one of the most used instruments for monitoring water demand. According to the literature a price increase in water causes a decrease in per-capita water consumption (the influence of water quantity demand's price elasticity). Worthington and Hoffmann (2008) calculated that that price elasticity has a range between -0.25 and -0.75 (water has no a substitute good for basic uses). Average consumption (per-capita) was much higher in Australia and the US than in Europe, due to a higher

<sup>&</sup>lt;sup>b</sup> Rapport of Albanian Regulatory Authority of the Water Supply and Waste Water Disposal and Treatment Sector, 2015

<sup>&</sup>lt;sup>c</sup> Calculations of the author, data of AGDWS, Vlora Water Supply and Sewerage Services Indicators for years 2006-2014

<sup>&</sup>lt;sup>d</sup> Albanian General Directorate of Water and Sanitation (AGDWS), Vlora Water Supply and Sewerage Services Indicators for years 2006-2014

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