Research Article

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A Quality Perspective of Sustainable Management of Water Services: Insights of Citizens' Perceptions in Five Albanian Municipalities

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Abstract

This paper aims to explore citizens' perceptions of water services to inform policy-making and pressure service providers to improve efficiency and service quality using innovative solutions. Despite abundant water resource endowments, ongoing infrastructure upgrades, and technological advancements implemented for sustainable service management, the industry failed to deliver the expected results. However, more than 60% of produced water goes unbilled, service coverage disparities persist, service quality falls short of goals, and low water meter readings worsen resource utilisation and financial sustainability. As a result of poor and unsustainable social, environmental, and economic management of services, the industry witnessed a significant restructuring process, shifting from municipal to regional-level governance, overlooking citizen perceptions of water services as an element that may directly impact the sustainability and future developments of the water sector. The latter, coupled with research findings highlighting deficiencies of municipalities in Albania in local public services provision, triggered the in-depth investigation of water sector governance in Albania (from the citizens' point of view). The research sets a baseline in exploring citizens' perceptions of water services, using a representative sample-based survey in five Albanian municipalities and along five dimensions of service management: access and quality of the services, transparency and communication, satisfaction with services, value for money, and willingness to pay (WTP) for improved services. Our findings suggest a low satisfaction with water services offered by municipally-owned water utilities, primarily related to water supply duration and quality. Despite lacking trust in service improvement, WTP for improved services is positive.

Keywords: *citizen perceptions, public services, water services, quality perspective, sustainable service management*

1. Introduction

Access to clean and reliable water services is a fundamental human right and a cornerstone of sustainable development (van den Berge et al., 2020; Spijkers, 2020). At the same time, ensuring the sustainable management of water resources and services is essential for human well-being, safeguarding public health (Bakir et al., 2017), and achieving broader socio-economic and environmental goals (Shevah, 2015). Water services are an integral component of a worldwide imperative, encapsulated into the framework of the United Nations Sustainable Development Goals (SDGs), in particular SDG 6, addressing "Clean Water and Sanitation" (U.N., 2023), including aspects of affordability, accessibility, reliability and quality within the domain of water services (Ocholla et al., 2022). Attaining these multifaceted objectives calls for a range of essential activities to be incorporated, including efficient resource utilisation (Londoño et al., 2020), infrastructure development (Venkatesh & Velkennedy, 2022), and the establishment of governance mechanisms that exhibit a pronounced commitment to long-term sustainability (Bauy et al., 2020). Pursuing the SDGs related to the water sector or, in general, the success of the Agenda 2030 calls for collective and individual action and responsibility (de Lazaro Torres et al., 2020). Incorporating citizens' views, perceptions, and expectations regarding water services can support policy-making and help policymakers make informed decisions (Yang, 2010). Citizens' perceptions and evaluations of public service, being inherently subjective variables rooted in their beliefs, expectations, and lived experiences during service delivery (Francis et al., 2015), regardless of their alignment with objective reality, manifest themselves through tangible behaviours that significantly influence the acceptability and long-term sustainability of water services (Sherry et al., 2018; Contu et al., 2005). Concurrently, shaped by factors such as their level of satisfaction (a function of customers' experience and expectations related to service provision according to Mutyambizi et al. (2020)) and trust in service providers, these perceptions assume a central role in the evaluative framework for water services (Deichmann & Lall, 2003). Acquiring an in-depth understanding of citizen perceptions and feedback becomes fundamentally significant, as it can cultivate heightened responsiveness and accountability in water service management (Deichmann & Lall, 2003). In turn, better responsiveness and accountability in water management can stimulate demand for service quality and governance enhancements, thereby augmenting overall citizen satisfaction with water services (Erdiaw-Kwasie et al., 2020; Tian et al., 2021). The latter is critical in the case of public services, where service providers operate under monopolistic conditions. Lacking competition, citizens–customers of the service providers such as Water Utilities (WUs) have limited bargaining power if the services provided are inadequate or do not fulfil their expectations (Deichmann & Lall, 2003). Sanchez-Hernandez et al. (2021) highlight the citizens' important role and contribution to improving the management of municipal water systems, and Vásquez et al. (2011) suggested their particular relevance in improving water services in countries where service beneficiaries do not have a voice in the matter and lack affordable alternatives to cope with low quality. Therefore, exploring and voicing citizens' perceptions on public service provision, satisfaction, and *WTP* are considered mechanisms to exert pressure for service improvement, empowerment of communities, informed policy-making and policy dialogue, and sustainable services management.

1.1 State of play and background in the water services sector in Albania

Water sector governance is a challenge in Albania, involving multiple stakeholders at different levels of government (central, local and independent authorities), processes, and capacities. Over the last two decades, water services governance has been subject to significant changes imposed by rapid and scattered (formal and informal) urbanisation, ageing infrastructure, inefficient use of financial resources, and poor performance of the sector (ERRU 2023). In particular, there have been two consecutive waves of reforms concerning the water sector within less than ten years, one from the other. Following the Territorial Administrative Reform in 2014, which paved the way for other

decentralisation efforts (Toska & Gjika, 2018), water services were reorganised as an exclusive competence exercised by municipalities and provided through 58 municipally owned WUs, based on the subsidiarity principle. The regulatory framework established a division of roles where central government institutions were responsible for policy and sectoral strategy[1], and the Water Regulatory Authority (WRA) as an independent institution aiming at ensuring the protection of public interest (having the right to license and approve tariff changes in the water sector). Local government authorities (61 municipalities in Albania) were assigned service provision through 58 municipally owned stock companies (the WUs). The advancement in vertical decentralisation (the devolution of power from the centre to local governments) was grounded by a well-established theoretical framework, being built upon two main hypotheses: (i) first, local authorities possess an information advantage vis-à-vis central authorities due to their proximity to citizens, therefore their ability to provide local public services efficiently (Musgrave, 1959; Oates 1973, 1993; Rodrígues-Pose & Krøijer, 2009); (ii) second, due to the informational advantages local authorities are in a favourable position to shape the supply of public services aligned to consumer-citizens preferences (Tiebout, 1956; Cantarero & Perez Gonzales, 2009; Yushkov, 2015). Failing to meet expected results regarding sustainable water services management, low levels of service and incipient wastewater treatment (Table 1), and poor financial performance of WUs, the Government of Albania (GoA) decided to rethink the business model for water services. In addition, demands stemming from the European Union (EU) integration negotiation process (Abazi, 2008; Biraci et al., 2011), coupled with the unwavering commitment of the Albanian government to contribute to the SDGs delineated in Agenda 2030, underscore the imperative for policymakers to maintain a heightened awareness of the ongoing restructuring and modernisation initiatives aimed at enhancing the efficacy of the country's water supply services. Therefore, a new business model, shifting from municipal to regional-level governance of water services, was introduced by the second half of 2022.[2] The organisational change included re-arranging services provision through 15 regional joint stock public companies, with regions being an artificial construct for service delivery purposes.[3]

Table 1. The water sector selected performance indicators

Indicator	Tiranë	Shkodër	Elbasan	Vlorë	Pukë	Overall performance	WRA Targets	Danube Best
Non-revenue water	60%	69%	70%	76%	76%	64%	30%	19%
General collection rate	93%	72%	61%	67%	82%	97%	82%	100%
Water meter reading	90%	72%	78%	68%	84%	83%	85%	100%
Continuity (hours/day)	17	22	13	13	23	16	18	24
Coverage with sewerage service	93%	46%	57%	66%	27%	54%	75%	
Coverage with water supply service	100%	57%	71%	92%	42%	78%	100%	

Source: ERRU (2023) & https://www.iawd.at/eng/about/dwp/

The GoA adopted an integrated approach to water management, including a vision statement:

[1] *Ministry of Finance and Economy - MoFE, National Agency of Water Supply, Sewerage and Waste Infrastructure - NAWSSWI*

[2] *DCM No 302, dated 11.05.2022, "On the National Policies for Reorganization of Water Supply and Wastewater Treatment and Processing".*

[3] *Joint stock companies co-owned by local and central government authorities at predefined control rights and with a two-tier governance system. While being called regional companies, the activity of these companies does not delineate with the 12 regions boundaries (qarks) and neither the 4 development regions established in Albania.*

"provision of water supply, removal and treatment of wastewater to the entire population in optimal quality and standards" (MIE, 2019, p. 15). About 659 million Euros are expected to be allocated until 2030 (31% in water supply network extension and rehabilitation and 69% in wastewater services), aiming to fulfil the objectives laid out in Albanian policy priorities.[4] Studies on citizens' perceptions of water services are discontinued, an aspect neglected in the two reforming processes (2014 and 2022). Hoxha et al. (2012) suggested low satisfaction with water services and considerable challenges for service improvement. In the same realm, The World Bank (2015) highlights the critical water and sanitation challenges concerning improving water quality and efficiency, providing universal access services, and enhancing water sector workforce capacity. CDI (2015) suggested the presence of human resource management problems, including employee ageing, gender disbalances (men-dominated sector), high staff turnover at key positions, anaemic training programs and restricted dedicated resources. Toska et al. (2022) highlight the low satisfaction level with water services and its listing among the most important services to be improved. It is noteworthy that, apart from being a municipal-owned company or, as of 2022, a joint stock company with a shared proprietorship structure between central and local levels of governance, WUs *de facto* have largely operated autonomously. In addition, the WUs provide water services under monopolistic conditions in the defined territory, protected from the threat of competition, new entrants and, to some extent, the threat of substitutes. Therefore, customers have little negotiating power in the case of inadequate service access, service quality and dissatisfaction. In a competitive market, dissatisfaction with the service and the perception of a non-just contract would determine a loss of competitiveness and gradual exit from the market of the service providers if no timely action is taken to address the matter. Under the current monopolistic conditions, customers can only mildly exert pressure on service providers for better services, and interventions in this direction would take a long time to implement.

2. Theoretical Background

Water services quality, water quality and citizen satisfaction. Clean and reliable water access is crucial to public health and well-being (WHO, 2019). As governments and service providers strive to enhance water service quality, understanding its impact on citizens' satisfaction and *WTP* is essential for sustainable water resource management. Users' perceptions of water service quality are the results of multiple factors, as Doria et al. (2009) suggested. According to Doria et al., 2009, among factors affecting perceptions of water services quality include the perceived risks (Debbeler et al., 2018; Levêque & Burns, 2017; Doria, 2010); sensory qualities, including taste, colour and odor (Debbeler et al., 2018; Francis et al., 2015; Hu et al., 2011); water quality (Park et al., 2022; Turek et al., 2011; Scherzer et al., 2010) and continuity of water services provision (DuChanois, et al., 2019; Kaminsky & Kumpel, 2018), social – economic characteristics such as age, education and income levels (Brouwer et al., 2020; Ochoo et al., 2017; Francis et al., 2015). Satisfaction with water services, among others, is affected by consumers' perceived water quality (Denantes & Donoso, 2021; Ellawalaa & Priyankara, 2016; Hu et al., 2011) and the typology of service providers, public or private companies (Romano & Masserini, 2020; García-Rubio et al., 2016; González-Gómez et al., 2010). Using a structural equation model on survey data for Chile, Denantes & Donoso (2021) found that satisfaction with water service

[4] *Objectives include water supply service coverage in urban areas at 99% and rural areas at 85%; continuity of water supply 24/24 both in urban and rural areas; reduction of non-revenue water to 45%; water meter reading levels reaching 100%; sewerage services coverage 93% in urban and 26% in rural areas; and, wastewater treatment at 26% at the national level (DCM No 88/2023 "Për Miratimin e Strategjisë Kombëtare për Zhvillim dhe Integrim Evropian 2022- 2030".*

quality is a function of perceived water quality, health risks, service quality, and payment services. In the same realm, Odwori (2020), using chi-square tests, found that perceived water quality significantly determines *WTP* for improved services in Kenya. Ochoo et al., (2017) argue that satisfaction with tap water is not necessarily related to the quality of the water since it is mainly related to the norms set by the regulators. Findings from Sarkar (2022) suggest that households receiving communications from their WUs on water quality are more satisfied.

Citizens' satisfaction with water services, socio-demographic characteristics, and WTP. Studies carried out aiming at exploring the determinants of citizens' satisfaction with water services from Hormann (2016) for Portugal and Vasquez et al., (2011) for the city of Leon in Nicaragua found that consumer satisfaction was driven by specific services aspects and found socio-demographics unrelated to satisfaction. Tian et al., (2023) investigated the relationship between customer satisfaction in water services (and waste services) and its demographic characteristics. Age represents an influential factor in satisfaction, with customer satisfaction being higher among older respondents (Tian et al., 2023). Perceived citizens' satisfaction has been consistently linked to citizens' *WTP* for improved water services. In a study of Bengkulu City in Indonesia using contingent evaluation methods and logistic regression analysis, Adiprasetyo & Cahyadinata (2020) found that the only factor affecting WTP was the monthly tariff for water services provision, while socio-demographic characteristics did not affect WTP for improved services. Ahmed et al., (2022), in their cross-sectional study for Pakistan, highlight that WTP is correlated to income levels (among other factors).

Billing transparency and communication, satisfaction and WTP. Billing transparency in the water supply is critical in shaping citizens' perceptions of the services provided, influencing their satisfaction levels and WTP for water services. Ong (2023), Tian et al., (2021) and Mahlasela et al., (2020) argue that, among other factors, accurate water bills matching customer consumption contribute to increased satisfaction with the services. On the contrary, Hormann (2016) found no relevant monotonic correlation between billing transparency and satisfaction with water services and a weak correlation with sewerage services. Higher transparency in water billing is associated with improved WU performance, which could improve its financial sustainability (Adeoti & Fati, 2022) and WTP (Tian et al., 2023).

WTP for improved services and socio-demographic characteristics. Examining the intersection of socio-demographic characteristics and citizens' WTP reveals nuanced patterns. Regression modelling results by Bui et al., (2022) suggest that WTP is significantly affected by gender, age, income, and payment methods. Makwinja et al., (2019), using the contingent valuation techniques, found that WTP was significantly correlated to gender, age and literacy level. Findings from Odwori (2020) affirm that socio-demographic characteristics (age, gender, education and income levels) are significantly positively correlated and determinants of WTP for improved water supply. Employing the contingent valuation methods in selected areas of Lahore, Akhtar et al., (2018) found that WTP was most significantly affected by the income level of households rather than other socio-demographic characteristics (gender or family size).

2.1 Research questions and the conceptual framework

This study delves into the critical dimension of water service management in five Albanian municipalities, explicitly focusing on citizens' perceptions of water services (access, quality, transparency), WTP for improved services and their role in shaping the quality of these services. After thoroughly investigating the literature, it was noticed that the mentioned relationships have not been studied in the Albanian context so far. Beyond an overarching exploratory objective of citizens' perceptions of water services, we try to respond to three main research questions:

- Is there a relationship between the perceived satisfaction level with water services and the socio-demographic characteristics of respondents?
- Is there a relationship between satisfaction level with the water services and billing transparency?

- What drives the WTP for improved services (service quality dimensions and socio-demographic characteristics)?

Grounded on the raised research questions, the conceptual framework of this study is presented in Figure 1.

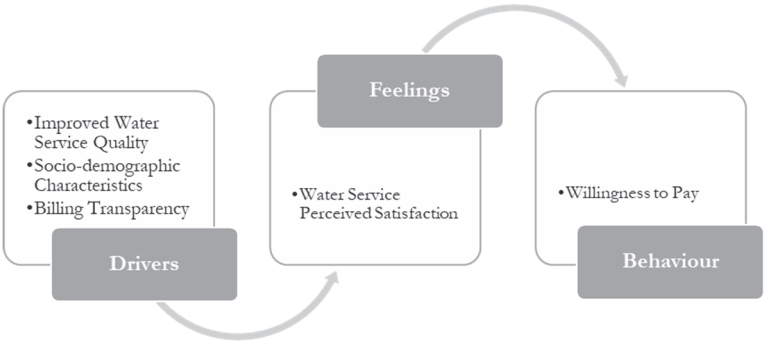

Figure 1. The conceptual framework
Source: Authors' processing

3. Methods

The research employs a mixed methods approach, combining secondary and primary data analysis. Secondary data help set the background and the targets for service provision. Primary data aim at capturing citizens' perceptions of the services as an aspect neglected in the decision-making process for the re-organisation of water supply and sewerage services (using the as a statistical instrument the survey). Primary data are collected through a structured questionnaire administered to a representative sample in the municipalities of Tiranë, Elbasan, Pukë, Vlorë and Shkodër. The selected municipalities represent about 34% of the total population in Albania and have an average population density of 364 inhabitants per km² (Table 2).[5]

Table 2. General information on the municipalities

Municipality of:	Service offered by:	Population (Census, 2011)	Population density	No of water connections	No of sewerage connections
Tranë	CWSS Tiranë	557,422	732	265,159	251,080
Shkodër	CWSS Shkodër	135,612	236	33,166	27,033
Elbasan	CWSS Elbasan	104,827	325	40,060	32,482
Vlorë	CWSS Vlorë	141,714	242	60,083	46,199
Pukë	CWSS Pukë	11,069	31	1,854	1,214
Total		**950,644**	**364**	**400,322**	358,008

Source: INSTAT, Ministry of Internal Affairs[6], MoFE and author's calculations

[5] *LevizAlbania, a project of SDC, financed the design and implementation of the survey. In this framework, the selection of municipalities relied on a set of factors, including population, service coverage, performance, and accessibility. The full dataset used in the paper is available upon request to the corresponding author of this paper.*
[6] *Letter of the Ministry of Internal Affairs no. 3556/1 Prot., dated 30.11.2017, available at: https://ama.gov.al/wp-content/uploads/2015/04/Popullsia-sipas-ndarjes-administrative-ne-fuqi-.pdf*

The survey uses a probabilistic sampling technique (simple random sampling representative at the municipal level, stratified proportionally to account for urban and rural areas), described in detail in a previous study on citizens' perceptions of local taxation in selected municipalities by Toska et al. (2022).[7] The reasons to account for the urban-rural nexus rely on findings from Toska et al. (2022) on pronounced disparities in service provision between urban and rural areas, diverse lifestyles, family size and water consumption patterns. The target population is the household category of subscribers (excluding businesses and institutions), and the targeted respondent is the head of the household (as the person dealing with utility payments and is +18 years old). The stratification in urban and rural administrative units follows the classification suggested by Shameti and Leçini (2014), representing the sampling framework (and a minimum of 10 interviews per rural administrative unit was established).[8] Three interviewing attempts were performed to substitute the non-responding observations (using a rule for the next adjacent household on the left). For a confidence interval of 95% and a margin of error of 5%, the sample size resulted in 1,012 observations, distributed in 85% of the total administrative units constituting five municipalities and proportionally distributed in the urban and rural areas, as presented in Table 3.

Table 3. Number of observations by municipality

	Tiranë	Elbasan	Vlorë	Shkodër	Pukë	Total
Urban	242	83	112	102	50	589
Rural	183	70	50	70	50	423
Total	**425**	**153**	**162**	**172**	**100**	**1,012**

Conceptualised under a circularity approach as suggested in Blidar et al. (2023) (starting with the access to services, their quality and wastewater treatment), a structured questionnaire was prepared, tested and used in the surveying process. The questionnaire included 50 questions (non-symmetric and symmetric Likert scale, dichotomous, and open-ended) organised into six sections.[9] In addition, the questionnaire included an introductory section presenting the scope of the survey, the voluntary participation and the receipt of informed consent. The questionnaire was prepared and administered in Albanian and tested with a restricted number of observations to ensure a better understanding and flow between sections (test questionnaires were destroyed and are not included in the analysis). The survey was implemented simultaneously in all municipalities by a team of 25 trained interviewers in the local language from May – June 2023 using a paper and pen system through face-to-face interviews. The digitalised information (after codifying the information and data cleaning) was processed with IBM SPSS Statistical Software Version 20 and summarised using frequencies, simple

[7] *Simple random sampling representative at the municipal level, stratified proportionally to account for urban and rural areas.*

[8] *The study employed an indirect method to reach the targeted population since there are no public databases of water service subscribers. Assuming that one household lived in one dwelling, using the Geospatial Information System (GIS), we extracted the list of buildings at the administrative unit level for the 5 municipalities. Each building was assigned a unique code, and the list was transferred into an Excel file where a simple random sample was extracted. The sampled units were transferred to GIS and mapped, ensuring compatibility with Google Maps (accessible from mobile phones, enabling the interviewer to reach the designed observation).*

[9] *Section 1 included 13 questions aiming at exploring the socio-demographic profile of the respondents; section 2 included 10 questions assessing the access to water supply and sewerage services; section 3 including 5 questions assessing the perceived quality and satisfaction with water services; section 4 including 9 questions assessing billing transparency; section 5 including 7 questions gathering feedback on water utility image, customer care and satisfaction; section 6 which explores current payments and willingness to pay for improved services (including wastewater treatment)*

averages and correlation analysis.

4. Results

This section includes the detailed results presented at two levels: (i) at the municipality level, broken down into urban and rural areas; (ii) at the aggregate level of 1,012 observations accounting for urban and rural areas.

4.1 Socio-demographic profile of the respondents.

The socio-demographic profile characteristics of respondents are presented in Table 4. From a gender point of view, about 53% of respondents are women (about 59% in Shkodër); 43% of respondents fall in the 45-69 age group, and about 30% are in the 30-44 age group. About 43% of respondents have completed a university education, a percentage higher in Shkodër (58%) and Vlorë (49%).

Table 4. Demographics of the respondents

	Frequencies	Tiranë	Elbasan	Vlorë	Shkodër	Pukë	Total
Gender	Men	49%	46%	50%	41%	48%	47%
	Woman	51%	54%	50%	59%	52%	53%
Age	18-29 years	21%	8%	15%	15%	6%	15%
	30-44 years	32%	27%	34%	28%	20%	30%
	45-69 years	37%	50%	41%	44%	58%	43%
	+69 years	10%	15%	9%	13%	16%	12%
Education	up to 8/9 years	14%	20%	14%	8%	40%	17%
	high school	45%	47%	37%	34%	27%	40%
	university +	41%	33%	49%	58%	33%	43%
Employment status	Private sector	66%	46%	35%	36%	32%	48%
	Public sector	11%	24%	34%	35%	41%	25%
	Retired & other	18%	20%	21%	22%	15%	19%
	Students & unemployed	4%	10%	10%	6%	12%	7%
Household income	up to 50,000 ALL	20%	24%	21%	19%	41%	23%
	50,001-75,000 ALL	26%	35%	23%	18%	24%	25%
	75,001-100,000 ALL	13%	20%	21%	29%	5%	17%
	+100,001 ALL	12%	16%	14%	21%	3%	14%
	Other	29%	5%	23%	14%	27%	21%

The private sector accounts for the largest share in the employment of about 48% of respondents, registering a higher percentage in Elbasan (46%) and Tiranë (66%). Employment in the public sector is affirmed by 25% of respondents, which is higher in Pukë (41%), Shkodër (35%) and Vlorë (34%). The prevalence of public sector employment in these municipalities aligns somehow with business demographics, mainly concentrated in the triangle of Tiranë – Durrës – Elbasan municipalities. On average, two members contribute to the household's monthly income, which, for about 23% of the respondents, amounts to about 50,000 (25% higher than the minimum salary in the country). Average monthly household income ranges between 50,001 and 75,000 ALL for about 25% of the respondents. It stands above ALL 100,000 for 14% of respondents (the lowest share of the category registered Pukë).

4.2 Access to water supply and sewerage services

Access to water supply and sewerage services is a fundamental right of citizens and an obligation to comply with for water services providers in Albania. Survey results show good coverage with water supply services (97% of respondents) and access to sewerage services (94% of respondents) in the urban municipal areas. Nevertheless, there is still ample room for improvement in accessing the water supply network in Shkodër and sewerage services in Vlorë. In rural areas, service coverage is lower, with only 79% of respondents accessing the water supply network. Pukë and Elbasan have the lowest water supply access levels, as affirmed by 58% and 66% of respondents. Similarly, rural areas' access to sewerage services is affirmed by 64% of respondents, and Pukë, Elbasan and Shkodër present the lowest access levels. Piped water is the primary water source in all municipalities, affirmed by 95% of urban and 66% of rural areas respondents (Table 5). The second most important water source for households is wells (affirmed by 33% of respondents), particularly in rural areas. Wells constitute the most important water source, Pukë and are less common in the rural area of Shkodër.

Table 5. Access to water services and sources of water in the household

Frequencies		Access to services				The primary source of water		
		Water supply		Sewerage				
		Yes	No	Yes	No	Network	Well	Purcheased
Tiranë	Urban	98%	2%	96%	4%	98%	2%	1%
	Rural	83%	17%	81%	19%	67%	32%	1%
Elbasan	Urban	100%	0%	99%	1%	100%	0%	0%
	Rural	66%	34%	56%	44%	64%	36%	0%
Vlorë	Urban	97%	3%	88%	12%	90%	9%	1%
	Rural	94%	6%	74%	26%	67%	25%	8%
Shkodër	Urban	90%	10%	92%	8%	89%	6%	5%
	Rural	86%	14%	63%	37%	86%	11%	3%
Pukë	Urban	96%	4%	96%	4%	100%	0%	0%
	Rural	58%	42%	6%	94%	38%	60%	2%
Total	**Urban**	**97%**	**3%**	**94%**	**6%**	**95%**	**2%**	**3%**
	Rural	**79%**	**21%**	**64%**	**36%**	**66%**	**31%**	**3%**

Water supply continuity has improved over the last decade, but service dependability remains challenging (service interruptions). Dependability presents significant differences between municipalities and within municipalities in the urban-rural context and falls below the national performance target (ERRU, 2023). About 47% of respondents in urban areas affirm receiving water from the network based on a schedule registering the highest level in Elbasan municipality (Table 6). Respondents from urban areas in Pukë affirm the continuity of water supply. About 68% of respondents in rural areas affirmed the scheduled water supply, with higher percentages in Tiranë, Elbasan, and Vlorë.

Table 6. Continuity of water supply

Frequencies		On schedule	Continuos	Do not know
Tiranë	Urbane	39%	41%	20%
	Rurale	79%	4%	17%
Elbasan	Urbane	89%	5%	6%
	Rurale	89%	6%	4%
Vlorë	Urbane	43%	46%	11%
	Rurale	77%	17%	6%
Shkodër	Urbane	5%	85%	9%
	Rurale	42%	45%	12%
Pukë	Urbane	0%	100%	0%
	Rurale	35%	65%	0%
Total	**Urbane**	**47%**	**40%**	**13%**
	Rurale	**68%**	**21%**	**11%**

4.3 Perceived quality and satisfaction with water supply and sewerage services

While broadly affirming of not being formally informed on the water quality (more than half of respondents both in urban and rural areas), 35% of respondents in the urban area and 37% of respondents in rural areas perceive good quality water (clear, no colour, no odour) and consider it drinkable (Table 7). Such a percentage is higher in the municipalities of Pukë (higher in rural areas) and Shkodër (higher in urban areas). Water quality is perceived as of average quality (for other uses rather than drinking) by 50% of total respondents in urban areas, a percentage higher in the municipalities of Vlorë and Tiranë. Poor water quality is perceived by about 39% of respondents in rural areas (a percentage which is exceptionally high in the case of Tiranë) and 15% of those in urban areas (the highest in Tiranë).

Table 7. Perceived water quality

Frequencies		Good quality water (clear, no colour, no odour, drinkable)	Average quality (for other uses, not drinkable)	Poor quality water (most of the time, not drinkable)
Tiranë	Urban	7%	65%	28%
	Rural	5%	29%	66%
Elbasan	Urban	55%	39%	6%
	Rural	63%	17%	19%
Vlorë	Urban	18%	74%	8%
	Rural	45%	38%	17%
Shkodër	Urban	95%	4%	1%
	Rural	72%	18%	9%
Pukë	Urban	80%	20%	0%
	Rural	100%	0%	0%
Total	**Urban**	**35%**	**50%**	**15%**
	Rural	**37%**	**25%**	**39%**

Respondents affirm the scarcity of formal information regarding water quality, contributing to the low use for drinking purposes, as presented in Table 8. Only 14% of urban and 13% of rural respondents affirm using tap water for drinking purposes, a percentage higher in Shkodër and Pukë (13% in rural areas). About 87% of respondents affirm that water from the water supply network is suitable for uses other than drinking (other uses include cooking, cleaning and hygiene, irrigating gardens and flowers, car washing, and others).

Table 8. Uses of piped water

Frequecies		Drinking	Cooking	Cleaning and hygiene	Other
Tiranë	Urban	5%	30%	50%	15%
	Rural	3%	35%	39%	22%
Elbasan	Urban	18%	24%	34%	23%
	Rural	20%	24%	26%	29%
Vlorë	Urban	6%	27%	46%	21%
	Rural	2%	23%	28%	47%
Shkodër	Urban	23%	28%	28%	20%
	Rural	23%	29%	33%	15%
Pukë	Urban	20%	20%	20%	39%
	Rural	45%	45%	3%	7%
Total	**Urban**	**14%**	**27%**	**37%**	**22%**
	Rural	**13%**	**31%**	**32%**	**25%**

Uncertainty about water quality has triggered the flourishing of creative solutions for households to fulfil their needs for drinking water. More than 65% of the respondents fulfil their drinking water needs by buying bottled water or from dedicated water tracks. That is mainly a widespread practice in Elbasan, Tiranë and Vlorë municipalities. To a lesser degree, some respondents affirm using filters to treat water for drinking purposes (and filtered water is privately tested to certify its suitability for drinking purposes). In addition to their hesitation to use tap water for drinking purposes, respondents voiced their concerns about paying twice for the same service, the water bill and all drinking water costs. In line with perceptions on the quality of water services, respondents are mildly satisfied with water supply and sewerage services (Table 9).

Table 9. Level of satisfaction with aspects of water services

Average assessment on a scale from 1 very unsatisfied to 5 very satisfied		Tiranë	Elbasan	Vlorë	Shkodër	Pukë	Total
Piped water supply	Urban	3.6	3.5	3.9	4.3	4.4	**3.8**
	Rural	2.2	2.1	1.7	3.2	3.6	**2.4**
Sewerage services	Urban	3.4	3.4	3.5	4.1	4.0	**3.6**
	Rural	2.2	2.2	1.7	2.7	3.0	**2.2**
Quantity and pressure	Urban	3.6	3.1	3.5	4.0	4.7	**3.7**
	Rural	2.2	2.1	1.6	3.2	3.4	**2.4**
The quality of piped water	Urban	2.3	3.0	3.0	4.0	4.6	**3.0**
	Rural	2.1	2.5	1.4	3.4	4.9	**2.5**
Frequency of supply	Urban	3.5	3.1	3.5	4.2	4.5	**3.7**
	Rural	2.1	1.9	1.8	3.1	3.4	**2.3**
Solutions to problems reported	Urban	3.5	2.8	2.9	3.7	3.6	**3.3**
	Rural	2.1	2.1	2.1	3.1	3.1	**2.3**
Fee applied for water services	Urban	3.1	2.8	3.2	3.5	4.0	**3.2**
	Rural	2.1	2.1	1.8	3.0	3.0	**2.3**
Value for money	Urban	3.0	2.8	3.2	3.3	3.8	**3.1**
	Rural	2.1	1.9	1.9	3.0	3.0	**2.2**

Respondents in urban areas are generally satisfied with their network water supply, with an average assessment of 3.8. However, satisfaction levels with water supply vary among municipalities, with the highest levels reported in Pukë and Shkodër and lower levels in Elbasan and Tiranë. Satisfaction with sewerage services is higher among respondents in urban areas, particularly in Shkodër and Pukë. On the other hand, respondents residing in rural areas are generally unsatisfied with sewerage services, with an average assessment of 2.2 (the lowest registered in Vlorë).

Water quantity, pressure and supply frequency got an average assessment of 3.7 from respondents in the urban area, with the highest levels in Shkodër and Pukë. On the contrary, respondents in rural areas are unsatisfied with the quantity, pressure, and supply frequency. Urban and rural residents in Tiranë, Elbasan, and Vlorë are less satisfied with water quality, while those in Pukë and Shkodër are satisfied (both in urban and rural areas). Urban respondents are slightly satisfied with water service fees, except for Elbasan. Rural respondents are generally unsatisfied, especially in Elbasan (the highest dissatisfaction rates in urban and rural areas) and Vlorë. Elbasan municipality has the highest dissatisfaction rates. The low level of satisfaction with fees for the services expressed by respondents is corroborated by a perceived low satisfaction in the value for money (slightly higher in Pukë and Shkodër urban areas). In other words, citizens perceive that they are paying more for services vis-à-vis the quantity and quality of the services justified. The Spearman's rho is used to explore the correlation between the perceived satisfaction level with water services and the socio-demographic characteristics of respondents (Table 10).

Satisfaction with water services is weakly monotonically correlated to gender, income levels, dwelling ownership, and being born or transferred in the municipality. A moderate strength monotonic relationship can be noticed between the water supply service satisfaction and education level in Tiranë (correlation coefficient 0.340) and Pukë (correlation coefficient 0.463). That means the higher the respondents' education level, the higher the satisfaction level. On the contrary, satisfaction level with water services is negatively correlated with the age in Pukë, meaning that the older, the less satisfied (correlation is moderate at -.412). Satisfaction with sewerage service at the municipal and aggregated level does not present significant monotonic correlations with the socio-demographic characteristics of the respondents.

Table 10. Spearman correlation: satisfaction with water services and socio-demographic characteristics

Spearman's rho correlation coefficient		Gender	Age	Education level	Income level	Ownership of the dwellling	Born or transferred
Tiranë	Satisfaction with water supply	.0517	-.173**	.340**	-.0395	.0420	.105
	Satisfaction with sewarage	.0220	-.0518	.244**	-.1018	-.0132	.058
Elbasan	Satisfaction with water supply	.183*	.0489	.221**	.1187	.0401	.093
	Satisfaction with sewarage	.1164	.0064	.240**	.161*	-.0658	.069
Vlorë	Satisfaction with water supply	.228**	-.1087	.253**	.1104	.0216	-.043
	Satisfaction with sewarage	.1261	-.1002	.173*	.0697	-.0098	-.165
Shkoder	Satisfaction with water supply	.168*	.0089	.0351	-.0630	.0570	-.174*
	Satisfaction with sewarage	.1093	.0276	-.0024	-.1517	.1386	-.182*
Pukë	Satisfaction with water supply	.1524	-.412**	.463**	-.0311	.299**	-.076
	Satisfaction with sewarage	.0811	-.286*	.1216	.2590	.0763	-.099
Total	Satisfaction with water supply	.131**	-.081*	.265**	.0113	.0427	.005
	Satisfaction with sewarage	.086*	-.0289	.201**	-.0327	.0098	-.046

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

4.4 *Billing transparency and payments*

Billing transparency, clear water bill content, correct meter readings, and diversification of payment methods are essential for building a good relationship between customers and service providers. In urban areas, most respondents have a formal contract with the water utility (95% and lowest level in Shkodër) and a water meter installed (85% and lowest levels in Shkodër and Vlorë), as shown in Table 11. Alongside differences between municipalities, differences are higher within the urban–rural context. About 82% of respondents in rural areas affirm having a contract with WUs, and 65% have a water meter installed. About 18% of respondents in the rural context affirm not having a contract with WU, a percentage reaching about 37% in Elbasan and about 17% in Tiranë. About 35% of respondents in the rural area affirm not having a water meter installed, a percentage higher in Pukë (97%), Vlorë (58%) and Elbasan (56%). The high number of missing water meters damages the relationship and confidence with service providers, leading to increased service dissatisfaction.

Table 11. Relationship with W.U.

Frequencies		Contract with water utility		Water meter installed		Water billing	
		Yes	No	Yes	No	Water meter reading	Other (flat rate, estimated consumption)
Tiranë	Urban	95%	5%	88%	12%	72%	28%
	Rural	83%	17%	82%	18%	68%	32%
Elbasan	Urban	100%	0%	92%	8%	71%	29%
	Rural	63%	37%	44%	56%	33%	67%
Vlorë	Urban	96%	4%	77%	23%	68%	32%
	Rural	82%	18%	42%	58%	30%	70%
Shkodër	Urban	89%	11%	72%	28%	47%	53%
	Rural	91%	9%	82%	18%	71%	29%
Pukë	Urban	100%	0%	100%	0%	100%	0%
	Rural	92%	8%	3%	97%	4%	96%
Total	**Urban**	**95%**	**5%**	**85%**	**15%**	**69%**	**31%**
	Rural	**82%**	**18%**	**65%**	**35%**	**54%**	**46%**

Lacking equipment with water meters makes water consumption metering a difficult and discussable task. Water billing relies broadly on water meter readings (affirmed by 69% of urban and 54% of rural area respondents). However, in the urban area of Shkodër, around 53% of respondents report being billed through other methods. Unconventional water billing methods like flat rate and consumption estimation are widely used in urban and rural areas. These methods are prevalent in Pukë (96%), Vlorë (70%) and Elbasan (67%).

Table 12. Equipment with water bills

Frequencies		Water bill is sent regularly:		Water bill sent with a frequency:	
		Yes	No	Monthly	Other
Tiranë	Urban	72%	28%	71%	29%
	Rural	84%	16%	85%	15%
Elbasan	Urban	90%	10%	90%	10%
	Rural	44%	56%	39%	61%
Vlorë	Urban	92%	8%	88%	12%
	Rural	48%	52%	48%	52%
Shkodër	Urban	86%	14%	86%	14%
	Rural	86%	14%	78%	22%
Pukë	Urban	100%	0%	100%	0%
	Rural	88%	12%	80%	20%
Total	**Urban**	**83%**	**17%**	**82%**	**18%**
	Rural	**74%**	**26%**	**70%**	**30%**

Independent of being equipped with water meters, the water bill reaches customers regularly (monthly), as confirmed by 83% of urban and 74% of rural respondents (Table 12). However, the water bill is provided irregularly (quarterly, yearly or even never) for about 18% and 30% of respondents in urban and rural areas, respectively. Non-regular frequency on the provision of the water bill is exceptionally high in the rural areas of Elbasan (affirmed by 61% of respondents) and of Vlorë (affirmed by 52% of respondents). Despite the irregularity in frequency and clarity on the content, the water bill is generally paid with regular monthly frequency, as affirmed by 95% and 81% of respondents in urban and rural areas, respectively (Table 13). Regular payment is consistently higher in urban areas, reaching its maximum in Pukë. In contrast, in the same municipality, respondents in rural areas (85%) do not regularly pay their water bill due to the billing being based on estimated consumption (no water meters are installed). On payment methods, the W.U. cash desk and the post office are preferred, driven to some extent by lower transaction costs (compared to bank ones). The use of bank transfers, online payments, and other payment methods remains limited in both urban and rural areas.

Table 13. Payment frequency and method

Frequencies		Frequncy of water bill payment		Payment methods			
		Regularly (monthly)	Other	WU cash desk	Post office	Bank tranfer	Other
Tiranë	Urban	97%	3%	31%	46%	12%	11%
	Rural	89%	11%	27%	59%	3%	10%
Elbasan	Urban	99%	1%	43%	45%	12%	0%
	Rural	81%	19%	52%	39%	0%	9%
Vlorë	Urban	91%	9%	68%	19%	6%	6%
	Rural	84%	16%	66%	30%	2%	2%
Shkodër	Urban	88%	12%	45%	32%	10%	13%
	Rural	85%	15%	54%	31%	6%	9%
Pukë	Urban	100%	0%	100%	0%	0%	0%
	Rural	15%	85%	19%	77%	0%	4%
Total	Urban	95%	5%	52%	37%	10%	9%
	Rural	81%	19%	44%	53%	3%	9%

The bivariate correlation analysis reduced results in Table 14, indicating a significant positive monotonic relationship at 0.01 level between satisfaction with water services and transparency in service billing. At the aggregate level, the higher the billing transparency, the higher the satisfaction level with water supply service (correlation coefficient 0.710 significant ant 0.01 level). The same is valid in the case of sewerage services, but the strength of the relationship is moderate (correlation coefficient 0.656 significant at 0.01 level)

Table 14. Spearman correlation: satisfaction with water services and billing transparency

Spearman's rho correlation coefficient		Satisfaction with transparency in billing for water supply	Satisfaction with transparency in billing for sewarage
Tiranë	Satisfaction with water supply	.692**	
	Satisfaction with sewarage		.576**
Elbasan	Satisfaction with water supply	.682**	
	Satisfaction with sewarage		.690**
Vlorë	Satisfaction with water supply	.745**	
	Satisfaction with sewarage		.719**
Shkoder	Satisfaction with water supply	.569**	
	Satisfaction with sewarage		.610**
Pukë	Satisfaction with water supply	.679**	
	Satisfaction with sewarage		.498**
Total	Satisfaction with water supply	.710**	
	Satisfaction with sewarage		.656**

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

4.5 *Public relations and communication*

A good relationship and communication between the customers and service providers can better understand customer needs and improve service quality.[10] Survey results presented in Table 15 show that the presentation of complaints for water services is infrequent in urban areas (64% of respondents ever presented a complaint for water supply, and 77% never presented a complaint for sewerage services).

Table 15. Complaint management, response rate[11] and time to address complaints

Frequencies, number of days as specified		Presentation of complaints in general:				Complaints presented in the last year			Average no of days to address a complaint	
		Water supply		Sewerage		Water services			Water supply	Sewerage
		Yes	No	Yes	No	Yes	No	Response rate*		
Tiranë	Urban	48%	52%	23%	77%	41%	59%	69%	4	5
	Rural	60%	40%	60%	40%	53%	47%	37%	12	18
Elbasan	Urban	16%	84%	11%	89%	17%	83%	86%	6	6
	Rural	33%	67%	23%	77%	37%	63%	38%	10	8
Vlorë	Urban	46%	54%	35%	65%	30%	70%	77%	3	4
	Rural	65%	35%	57%	43%	23%	77%	50%	12	12
Shkodër	Urban	21%	79%	16%	84%	35%	65%	74%	2	2
	Rural	54%	46%	22%	78%	35%	65%	61%	5	4
Pukë	Urban	20%	80%	32%	68%	32%	68%	100%	5	6
	Rural	58%	42%	0%	100%	4%	96%	100%	3	0
Total	Urban	36%	64%	23%	77%	33%	67%	75%	4	4
	Rural	55%	45%	45%	55%	40%	60%	42%	8	9

On the contrary, presenting complaints for water and sewerage services is more frequent in rural areas. Resolving water supply and sewerage complaints takes 4 working days in urban areas; resolving these complaints in rural areas requires almost twice the time.

Table 16. Accessibility and communication

Frequencies in %		Getting in touch with WU for the presentation of complaints:				WU office accessibility:		Communication with customer care staff is easy:	
		WU offices	Phone call	Personal contacts	Other	Yes	No	Yes	No
Tiranë	Urban	58%	29%	8%	5%	84%	16%	95%	5%
	Rural	22%	41%	12%	24%	64%	36%	53%	47%
Elbasan	Urban	60%	17%	19%	4%	82%	18%	82%	18%
	Rural	66%	12%	9%	12%	51%	49%	71%	29%
Vlorë	Urban	69%	13%	13%	6%	84%	16%	88%	13%
	Rural	67%	23%	0%	10%	70%	30%	56%	44%
Shkodër	Urban	41%	36%	20%	2%	98%	2%	99%	1%
	Rural	74%	3%	12%	12%	82%	18%	80%	20%
Pukë	Urban	94%	0%	6%	0%	100%	0%	68%	32%
	Rural	12%	48%	40%	0%	92%	8%	100%	0%
Total	**Urban**	**61%**	**23%**	**12%**	**4%**	**88%**	**12%**	**90%**	**10%**
	Rural	**44%**	**27%**	**12%**	**16%**	**67%**	**33%**	**65%**	**35%**

[10] The WRE in Albania uses the number of customer complaints (as a ratio to the number of connections) as a direct indicator of service quality and protection of customers' interests (ERRU, 2023). In 2022, the indicator registered a value of 2.8%, with the highest level registered in Shkodër and Vlorë (11.67% and 11.22%); in Elbasan, the indicator stands at 2.45%, in Pukë at 2.16% and in Tiranë at 0.13%.

11 Calculated as a ratio of the number of respondents affirming to have received a response to those who affirm to have presented a complaint over the last year.

Over the last year, only 33% of urban and 40% of rural respondents affirm having filed a complaint for water services (the highest level is registered in Tiranë). The average response rate for the complaints presented in the last year is about 75% in the urban and 42% in the rural areas (the highest in Pukë). Complaints are usually presented in person in WU offices or via phone calls (Table 16). About 12% of respondents claim that complaints are solved through personal contacts. However, WU offices are more accessible in urban rather than rural areas. In general, communication with customer care staff is perceived as more accessible by respondents in urban areas and, to a lesser extent, in rural areas. The survey participants assessed the degree of satisfaction with different aspects of customer services. For all aspects considered, the highest satisfaction level is affirmed by respondents in Shkodër and Pukë, both the urban and rural areas (Table 17).

Table 17. Satisfaction with customer services

Average assessment in a scale from 1 less satisfied to 5 very satisfied		Tiranë	Elbasan	Vlorë	Shkodër	Pukë	Total
General attitude of the personnel	Urban	4.0	3.7	3.7	4.4	3.4	3.9
	Rural	2.5	3.3	2.8	3.5	4.4	3.0
Easiness to have information/response	Urban	3.6	3.2	3.1	4.1	3.6	3.6
	Rural	2.4	2.8	2.4	3.2	3.5	2.7
Access in information and update	Urban	2.9	3.0	2.9	4.0	3.8	3.2
	Rural	2.3	2.3	2.0	3.1	3.1	2.5
Follow up on complaints	Urban	3.2	3.0	2.8	3.7	3.9	3.3
	Rural	2.3	2.3	1.8	3.0	3.2	2.4
Measures introduced based on complaints	Urban	3.3	3.0	2.9	3.6	4.0	3.3
	Rural	2.3	2.4	1.7	3.2	3.2	2.5
Payment methods (in person, on line)	Urban	4.1	4.1	3.7	4.2	4.4	4.0
	Rural	2.5	3.0	2.7	3.5	3.6	2.9

Nevertheless, there is a persistent gap in perceived satisfaction levels between respondents in urban and rural areas. In urban areas, satisfaction is higher with payment methods applied, the general attitude of the personnel, and ease of accessing information/response. On the contrary, respondents in rural areas are broadly unsatisfied with all aspects of customer services (lowest values registered in Tiranë and Vlorë).

4.6 WTP for improved services

Respondents in the survey affirmed dissatisfaction with the fees applied vis-à-vis services received in exchange.

Table 18. Average water bill and spending for drinking water

in Albanian Lek		Average value of the water bill:			Average monthly spending for drinking water:		
		Min	Max	Average	Min	Max	Average
Tiranë	Urban	600	9,000	2,208	150	6,000	2,164
	Rural	700	3,800	2,659	1,000	22,000	3,588
Elbasan	Urban	700	3,000	1,554	500	5,000	1,833
	Rural	500	2,500	1,269	500	4,000	1,375
Vlorë	Urban	450	9,500	1,922	400	10,000	2,170
	Rural	700	15,000	6,331	800	7,000	2,953
Shkodër	Urban	500	7,000	1,693	200	30,000	2,938
	Rural	1,000	9,000	2,361	200	50,000	8,514
Pukë	Urban	500	2,000	1,140	200	1,500	859
	Rural	400	1,200	724	800	800	800
Total	Urban	450	9,500	1,884	150	30,000	2,020
	Rural	400	15,000	2,773	200	50,000	4,075

While paying for the water bill, additional costs are incurred to guarantee drinking water in the household and maintain and operate the related infrastructure (water tanks, pumps, water filters, septic tanks). Respondents affirm paying an average monthly bill of about 1,884 ALL in urban areas and 2,773 ALL in rural areas (Table 18). Households bear an additional average spending for drinking water of about 2,020 ALL in urban areas and about 4,075 in rural areas. Cumulatively, an average family in the urban area would spend about 3,904 ALL per month (48% for water bill and 52% for drinking water) and in the rural area, about 6,848 ALL (40% for water bill and 60% for drinking water). The lower costs for fulfilling water needs are encountered in the municipality of Pukë (about 1,999 ALL in urban and about 1,524 in rural areas). With water supply subject to limitations and lack of connection to a sewerage system, households have adopted practical solutions, like the placement of water tanks (easily notable on top of the buildings), the use of water filters to improve water quality and the use of septic tanks (Table 19). The costs for maintaining the enabling infrastructure are relatively high, and these solutions are not sustainable in the medium-long term.

Table 19. Additional cost for water services

in Albanian Lek		Water tank cleaning			Water filters			Septic tanks		
		Min	Max	Average	Min	Max	Average	Min	Max	Average
Tiranë	Urban	1,000	10,000	3,841	200	50,000	9,373	1,000	5,000	3,800
	Rural	1,000	10,000	6,000	3,500	10,000	6,750	5,000	10,000	7,667
Elbasan	Urban	1,000	7,000	3,478	1,500	5,000	2,667			
	Rural	1,000	3,000	2,278	2,000	20,000	11,000	700	5,000	3,910
Vlorë	Urban	200	60,000	3,440	1,000	1,500	1,167	500	80,000	24,143
	Rural	400	50,000	12,131	100	100,000	33,856	100	100,000	25,331
Shkodër	Urban	1,000	5,000	2,262	1,700	2,000	1,850	1,000	5,000	2,500
	Rural	20	50,000	13,069	2,000	100,000	19,854	30	100,000	42,502
Pukë	Urban	1,000	7,000	4,400						
	Rural	1,500	8,000	5,688	5,000	8,000	6,100	6,000	8,000	6,800
Total	Urban	200	60,000	3,480	200	50,000	7,615	500	80,000	11,278
	Rural	20	50,000	10,111	100	100,000	20,643	30	100,000	17,080

Service improvement requires resources, and the primary financing source for WUs is the activity's revenues (fee applied for cubic meters of water supplied and sewerage). The level of fees and any requested change is subject to approval from the RWE, with particular attention to affordability (no more than 5% of a household's average income for the households with the lowest income levels). Any change in fee level must obey the affordability requirement and account for customers' reactions. Survey participants expressed WTP for improved services in the respective municipalities. About 57% of urban respondents are willing to pay more for improved water supply and 55% for sewerage services (Table 20).

Table 20. WTP for improved services

Frequencies		Water supply		Sewarage	
		Yes	No	Yes	No
Tiranë	Urban	69%	31%	66%	34%
	Rural	49%	51%	48%	52%
Elbasan	Urban	69%	31%	70%	30%
	Rural	84%	16%	83%	17%
Vlorë	Urban	91%	9%	84%	16%
	Rural	89%	11%	80%	20%
Shkodër	Urban	0%	100%	1%	99%
	Rural	76%	24%	62%	38%
Pukë	Urban	14%	86%	28%	72%
	Rural	50%	50%	56%	44%
Total	**Urban**	**57%**	**43%**	**55%**	**45%**
	Rural	**65%**	**35%**	**61%**	**39%**

WTP is higher in rural areas: 65% of respondents agree to pay more for better water supply and 61% for sewerage services. Urban respondents in Pukë and Shkodër do not agree to pay more for improved water and sewerage services due to the factual duration of water supply and connection to sewerage services. In Vlorë, a touristic destination, many respondents agree to pay more for improved water services. In the rural areas of Tiranë and Pukë, the high disagreement on additional payment is assessed to be broadly related to the scepticism and lack of trust in the promised improvement happening once the fee is increased. All respondents prioritise the main improvements needed vis-à-vis a possible increase in payment for the services having 24 hours of running water, good water quality (drinkable) and water supply at an appropriate quantity and pressure (so that all water tanks, pumps and other related items to be removed). WTP does not monotonically correlate significantly with socio-demographic variables (gender, age, education and income levels), as presented in Table 21. Nevertheless, a moderate monotonic correlation exists between WTP and satisfaction level with water quality at the aggregate level and Elbasan (correlation coefficient 0.242 and 0.355). In Elbasan, WTP is positively correlated with the satisfaction level with the resolution of complaints, the fee applied for services, and the perceived value for money.

Table 21. Spearman correlation: WTP and listed variables:

Spearman's rho correlation coefficient		Gender	Age	Education	Income	Satisfaction level with water services:							
						Water supply	Sewarage service	Quantity & pressure	Water quality	Frequency of supply	Resolution of complaints	Fee applied	Value for money
Tiranë	WTP water supply	-.096	.205**	-.090	.251**	-.002		.005	.040	-.027	-.058	-.125*	-.112*
	WTP sewerage	-.070	.219**	-.085	.246**		.019				-.052	-.115*	-.140**
Elbasan	WTP water supply	-.025	.127	-.042	-.152	.268**		.228**	.355**	.254**	.326**	.286**	.302**
	WTP sewerage	.009	.165*	-.016	-.177*		.266**				.339**	.301**	.325**
Vlorë	WTP water supply	-.027	.061	-.234**	.133	-.035		-.051	-.143	.020	-.024	-.006	.009
	WTP sewerage	-.137	.196*	-.213*	.032		.145				.105	.045	.067
Shkodër	WTP water supply	.301**	.055	.029	-.286**	.274**		.185*	.135	.265**	.141	.025	.003
	WTP sewerage	.261**	.065	-.024	-.361**		.264**				.115	.088	.003
Pukë	WTP water supply	-.115	.061	.151	-.157	.207		.242*	-.140	.067	.046	.163	.037
	WTP sewerage	-.043	.063	.136	-.118		.261				.051	.096	.076
Total	WTP water supply	.010	.140**	-.027	.046	.173**		.186**	.242**	.186**	.145**	.088**	.082*
	WTP sewerage	.008	.160	-.018	.042		.195				.148	.085	.065

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

5. Discussions on Findings and Limitations

While fundamental for healthy living, access to quality water services in Albania lags behind national and international standards and targets. The performance of the bottled water industry indirectly signals the failure of water sector governance worldwide and questions the objective of universal access to water services for all (SDG6).[12] While under continuous reforming driven by a persistent failure to deliver qualitative water services in Albania (ERRU, 2023), consumer perceptions and expectations were neglected. Such an approach contrasts the fundamental role of periodical service performance monitoring in the international literature (García-Rubio et al., 2015; Hughes, 2019; Bazaanah et al., 2023).

The survey results on access to services are somehow encouraging and, at the same time, inform on gaps in service provision. As both secondary and survey findings suggest, access to water services has progressed at a different pace in water supply and sewerage services and at the urban-rural nexus,

[12] *Source: https://www.sciencedirect.com/science/article/abs/pii/S0959652620306405?via%3Dihub*

raising questions about distributional justice and decentralisation process outcomes. The negative gap in service provision in the urban-rural nexus is common in public service provision, as suggested by Ochoa-Rico et al., (2024) and Molinos-Senante et al., (2019). That is particularly accentuated in rural areas where wells and septic tanks are used due to the lack of connection to water supply and sewer systems. Despite investments in the sector, results failed to meet expected water supply and sewerage services objectives: only 35% of billed wastewater is treated in wastewater treatment plants, and the rest is discharged into rivers (not treated).[13] A decade later, findings from the survey corroborate those of Hoxha et al. (2012) and W.B. (2015), highlighting the same sectoral needs and problems: investments in network infrastructure for water services, wastewater treatment facilities for qualitative, closure of the urban-rural gap for safe and sustainable long-term water sector management.

Water quality remains a challenge for the surveyed municipalities, with the non-adequacy of tap water for drinking purposes triggering the consumption of bottled water, equipment filtering systems, and other solutions. It can be argued that perceptions of water quality are important in pushing households towards bottled water consumption, as Sarkar (2022) suggested. Transparency in water billing, bill content and water meter reading builds trust and confidence in water services provision and providers. Nevertheless, water meter readings for billing purposes remain relatively low, and other not-so-transparent methods, such as flat rates or estimated consumption levels, persist. Billing transparency and satisfaction present a positive significant monotonic correlation in the case of surveyed municipalities in Albania, consistent with the findings of Tian et al., (2023), Mahlasela et al., (2020), Ong et al., (2003). After some progress in digital payments prompted by the COVID–19 pandemic, the use of bank transfers, online payments, and other digital methods remains limited, which aligns with Albania's low financial and digital literacy (Toska et al., 2021). Respondents are significantly dissatisfied with water services (excluding Shkodër and Pukë), particularly in rural areas. Low satisfaction with water services is mainly linked to the duration of the water supply and the perceived value for money. The higher the duration of water supply and its quality and an adequate perception of value for money, the higher the satisfaction with water services. Therefore, ensuring safe access to water services is of great importance for citizens, increasing safety and alleviating household financial burdens simultaneously. At the aggregate and municipal levels, satisfaction with water services presents a positive monotonic correlation with education level and, to a lesser extent, gender and age. The positive correlation between satisfaction with services and age aligns with the findings of Tian (2023), while the correlation to the educational level contrasts those from Hormann (2016) and Vasquez et al., (2011). While dissatisfied with the services, WTP for improved services is relatively high. WTP does not monotonically correlate to socio-demographic characteristics (in contrast with findings from Bui et al., (2022) and Makwinja et al., (2022). Meanwhile, a positive correlation can be observed with the dimensions of water services quality.

5.1 Limitations of the study

Despite its potential, the study has limitations that warrant consideration for future research endeavours. A primary limitation is the restricted number of municipalities surveyed (5 out of 61),

[13] *Looking back to the National Water Supply and Sewerage Master Plan 2012-2040, 80% of investment needs identified regarded wastewater management and 20% water supply management. However, apart from projections, implemented investments in the sector have prioritised mainly water supply networks in urban areas, putting water supply in rural areas and sewerage services areas at a second level. The NSWSSS 2020-2030 includes projections for investments by all sources till 2030, and about 69% are to be allocated to wastewater management and 31% for the extension and rehabilitation of the water supply network infrastructure. Source: Source of data: Institute of Statistics (latest for year 2017)*

which prevents the generalisation of findings nationwide and represents a one-time event.[14] Surveys inherently face the challenge of bias, primarily attributable to subjective perceptions, experiences, or political opinions, that could impact the accuracy of the results. Respondents may opt to provide answers perceived as socially desirable rather than candidly expressing their authentic opinions, which can complicate the interpretation by introducing a layer of response distortion influenced by societal expectations. Despite the outlined limitations, the results and findings presented in this study provide a solid baseline shedding light on water services management through the citizen's lens. The current practice could be used as a footprint to develop a regular instrument for monitoring citizens' perceptions of water services as a tool for bottom–up, inclusive service improvement. Future research is particularly needed to investigate water consumption patterns, water saving, perceptions of wastewater treatment and its use as a trend in water saving and sustainable water governance.

6. Conclusions and Recommendations

Findings suggest low satisfaction with water services in 5 municipalities subject to the survey, both in access and quality. The satisfaction level broadly reflects the availability of running water in the household and its quality. The higher the number of hours of water supply in the household, the higher the stated satisfaction level with the services, as in the case of Shkodër and Pukë. Access to sewerage services calls for immediate attention at the urban and rural levels. The minimum requirement is access to the public sewage system and advancement in wastewater treatment to ensure the long-term sustainability of the services. Therefore, a first recommendation for authorities is to streamline efforts to ensure continuity with water supply and access to the sewerage system as a first measure for service improvement in rural and urban areas. There is a persistent wide gap in service provision in the urban-rural nexus, with respondents in rural areas perceiving they lag behind their urban peers for water services. The inequality in service provision is perceived and reflected in a persistently lower level of satisfaction with water services. Therefore, closing this gap and improving service performance in rural areas is highly recommended for the authorities, therefore addressing their needs.

On a positive note, there is still a WTP for improved services, but respondents affirm some lack of trust. In addition, more than the high tariff level, respondents perceive that they do not receive a justified level of service for the price they pay. That might also explain the lack of regular payment of bills, as a way to contrast it. As a result, service providers must shift from the citizen-based model (passive and with no particular requests) to a consumerist, market-oriented model (an expert consumer with access to information) and establish a fair relationship (Brewer, 2007; Sanchez-Hernandez, 2021). Surveys of citizens' perceptions like the one presented in this paper exemplify engaging and embedding their views on water services governance. On a practical level, the study's contribution lies in aiding political and organisational decision-makers in evaluating and selecting the most pertinent factors for enhancing water sector governance and sustainability.

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[14] *In the case of public services, it is valuable for performance improvement to regularly monitor the citizen satisfaction level at a defined frequency (using a standardised questionnaire) and cover all 61 municipalities in Albania (guaranteeing rural and urban coverage, ensuring comparability and performance tracking).*

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