


The Water Services Barometer Study 2022

User perceptions of the current provision of water services in South Africa










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This report emanated from Water Research Commission (WRC) research project C2022/2023-01035 titled "Barometer study: users' perceptions on the state of water services".

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Executive summary

Background

In 2011 and 2015, the Water Research Commission (WRC), in collaboration with the South African Local Government Association (SALGA), undertook national surveys to establish users' perceptions of the current provision of water services in South African municipalities.

After a gap of seven years, the 2022 study was initiated. It afforded the opportunity to track consumer perceptions as they developed over the ten years since 2011. In addition, it gained insights from questions about service quality. Lastly, it established a national baseline for customer satisfaction with water and sanitation services and the tariffs that municipalities charge for these services.

The methodology was similar to that of previous studies. The final twelve (12) questions were put on the OMNIBUS survey of NielsenIQ South Africa, which is one of the syndicated studies that are conducted by the major market research houses. The OMNIBUS survey covers adults, aged 16 years and over, from all race groups. An area-stratified, probability sample of 3302 households was drawn from NielsenIQ's customised research computerised dwelling unit. The 2022 study included a rural sample of 738 households. Personal at-home interviews were conducted using a structured questionnaire on a CAPI (Computer Assisted Personal Interview) machine as well as show cards.

Fieldwork commenced the end of June 2022 and was completed by the end of July. The final data tables were received on 27 September 2022.

The 2022 perception study confirmed the 2015 finding that consumers' area of residence and living standard (according to the Living Standard Measure [LSM]) have the biggest impact on consumer perceptions of water and sanitation services:

1. Consumers living in Metros are more satisfied with their municipality's water and sanitation services than consumers in other urban areas.
2. Consumers living in Metros perceive they get safer tap water, less interruptions and better water and sanitation services than consumers in other urban areas.
3. Consumers living in Metros also have more confidence than consumers in other urban areas in the effectiveness of their municipalities to manage Free Basic Water, and deal with a water crisis, non-payers, illegal connections, and corruption.

Key findings

The 2022 perception study found that two key findings of the 2011 and 2015 studies are still valid:

1. The majority of South Africans are confident that municipal tap water is safe to drink.
2. The organoleptic properties of tap water (appearance, smell and taste) and the fact that nobody got sick are the main drivers of these perceptions.

Across LSM groups another pattern was confirmed: the higher LSM groups perceive to get safer tap water, less interruptions and better water and sanitation services than the lower LSM groups. They are also more satisfied with their water and sanitation services. It should be noted that LSM is associated with service level: the lowest LSM groups have communal toilets, pit latrines or mobile toilets, and they get their drinking water from communal taps, water trucks or a river or dam, while the highest LSM groups have multiple taps inside their homes and flushable toilets.

The following trends are of concern:

The analysis shows that consumers living in Metros and other urban areas are less positive about their drinking water quality in 2022 than they were in the preceding study years. For example, in 2015, 70% drank tap water without boiling, filtering, or cleaning it first; in 2022, this figure dropped to about 50%. 15% on average now boil, filter, or clean their drinking water in comparison with an average of 5% in 2015. The percentage of consumers who only drink bottled water have increased from 4,4% in 2015 to 8% in 2022.

This trend is supported by consumers' perception that their water supply has become less reliable. In 2015, 82% of consumers in Metros and other urban areas said that they seldom (less than once a month), or never, experienced interruptions in their water supply. In 2022, this figure dropped to 67%.

Less people reported that they pay for water in 2022 than in 2015. The percentage of consumers who indicated that they don't pay for water increased from 12% in 2015 to 20% in 2022. The percentage who said they don't pay because they don't have to, stayed the same (6% in 2022 versus 5% in 2015).

On the positive side, consumers living in Metros and other urban areas have become more aware of water scarcity and more of them actively try to use less water.

The 2022 study was the first to include a rural sample. The study found that rural consumers are significantly[1] more negative about all aspects of water and sanitation services than consumers living in Metros and other urban areas, as captured in the service quality and customer satisfaction indices. Rural consumers are also the least satisfied with water and sanitation services.

Recommendations

The main concerns from the perspective of consumers are water quality and reliability of supply. These two concerns are also raised as reasons for dissatisfaction with water tariffs. It is recommended that municipalities address these two concerns as a matter of urgency.

On the other hand, it was evident that South African consumers are becoming increasingly aware of water scarcity and that they are prepared to actively reduce their water use. It is recommended that public campaigns of the Department of Water and Sanitation (DWS) and other organisations strengthen this resolve with targeted messaging.

As rural consumers perceive themselves to be lagging behind in all aspects of water and sanitation services, it is recommended that municipalities actively work to improve water and sanitation services to their rural consumers and address their specific needs as described in this report.

The findings of the Customer Satisfaction Index provide a valuable baseline. It is recommended that municipalities use the mean Customer Satisfaction Index scores as a baseline against which the impact of national, provincial, or local initiatives can be measured.

A barometer of trends in water services

The study can be regarded as a barometer of trends in water services in South Africa over the past 10 years from the perspective of the consumer. The results provide SALGA and municipalities insight into the level of customer satisfaction or dissatisfaction with water services in South Africa, and the drivers of customers' perceptions of the quality of water services. The recommendations of the study provide guidance on the aspects that the water sector and municipalities need to focus on to improve customer satisfaction and payment for services, and to enhance water conservation and demand management.

[1] The term "significantly" here and elsewhere in the report, refers to statistical significance at a confidence level of 95%.

Acknowledgements

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- SALGA for its financial support of this study
- Mr William Moraka of SALGA and Mr Jay Bhagwan for their support and guidance, and
- Mr Nkateko Kubayi for his excellent administration of the project.

List of acronyms and abbreviations

AMCOW	African Ministers Council of Water
CAPI	Computer Assisted Personal Interview
CAR	Cognitive Action Research
CPSS	Customer Perception and Satisfaction Survey
CSI	Customer Satisfaction Index
DHI	Danish Institute of Applied Hydraulics
DIFD	UK Department for International Development
DWS	Department of Water and Sanitation
EC	Eastern Cape
FBW	Free Basic Water
FS	Free State
GP	Gauteng
HSRC	Human Sciences Research Council
KZN	KwaZulu-Natal
LP	Limpopo
LSM	Living Standard Measure
MDG	Millennium Development Goals
MTSF	Medium-Term Strategic Framework
MP	Mpumalanga
NBI	National Business Initiative
NC	Northern Cape
NM Bay	Nelson Mandela Bay
NW	North West Province
SAARF	South African Advertising Research Foundation
SALGA	South African Local Government Association
SDGs	Sustainable Development Goals
SFWS	Strategic Framework for Water Services
SQI	Service Quality Index
UN	United Nations
WC	Western Cape
WRC	Water Research Commission
WSCNS	Water and Sanitation Compulsory Norms and Standards

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1 Introduction

In 2011 and 2015, the WRC, in collaboration with SALGA, undertook national surveys to establish users' perceptions of the current provision of water services in South African municipalities. These surveys investigated the following:

1. How South Africans evaluate the quality of water services
2. The correlation between perception and various realities, such as the source of drinking water, Blue and Green Drop status and trust in the municipality
3. The influence of demographic and geographic variables on perception of water services
4. Outliers such as very positive and very negative perceptions, and
5. Drivers of perceptions such as media, experience, or word of mouth.

The 2022 study investigated these same aspects, plus current user satisfaction with municipal water services in view of contextual changes, such as the impact of Covid-19, and compared the findings with those of the previous studies, where it was relevant.

The study can, therefore, be regarded as a barometer of trends in water services in South Africa over the past 10 years from the perspective of the consumer. The results provide SALGA and municipalities insight into the level of customer satisfaction or dissatisfaction with water services in South Africa, and the drivers of customers' perceptions of the quality of water services.

The study aimed to:

1. Review local and international literature on customer satisfaction of water services, and conduct a trend analysis
2. Establish how South Africans perceive and evaluate their municipal water services, and
3. Identify correlations, the impact of demographic and geographic variables, outliers, drivers of perceptions, and trends of the past 10 years.

The project had four deliverables: an inception report, a syndicated survey, survey analysis and a final report.

2 Consultation with SALGA and WRC

The research team met with Mr William Moraka from SALGA, and the research manager of this project, Mr Jay Bhagwan, on 16 February 2022.

Below is a summary of the key decisions:

1. Repeat Q1-Q6 from 2011 and 2015 for trending purposes
2. Do not repeat Q8 (awareness of use) and Q9 (awareness of cost) from 2015
3. Ask the questions to all respondents but use the demographic information to distinguish between:
    a. Consumers with piped and without piped water
    b. Consumers with onsite sanitation and those with communal sanitation
4. The questions must separate water and sanitation services
5. Questions should address the following aspects of customer satisfaction:
    a. Trust in the metering and billing processes
    b. Satisfaction with the pricing/tariff structure for water and sanitation
    c. Affordability
6. Ask Q10 (competence) more generally: Competent to deal with a crisis (such as a drought or a pandemic)
7. Find out what aspects of water and sanitation services consumers would like to see improved, and
8. Repeat the index calculation from 2015.

3 A review of relevant literature

3.1 Background

Masiya et al. (2019) cites Islam and Mahmud (2015) when they state that "in most of the developing countries, including South Africa, service delivery has become one of the most debated issues in municipal governance."

Masiya et al. (2019) refers to service delivery protests in primarily black communities across the provinces including Bekkersdal, Khutsong, Diepsloot, Zamdela, Tlokwe, Khayelitsha, Khutsong, Sasolburg and Ficksburg among other service delivery protest hotspots and cites Mathlala and Aboobaker (2013), in this regard. Grant (2014) as cited in Masiya et al. (2019) revealed that the top sources of grievances centred on poor quality of housing, water and sanitation, and electricity.

Another reason for dissatisfaction is described as having a water connection that is not functional (Dodds, 2014). Dysfunctionality may relate to infrastructure failures or breakdowns due to various reasons. Cox (2016), cited in Masiya et al. (2019), refers to cases of sewage flowing around houses for up to a year as a result of burst pipes.

3.2 Models of consumer (customer) perception and satisfaction

According to Mutyambizi et al. (2020), satisfaction with basic services is a function of consumer experiences and expectation regarding service delivery.

In terms of expectation disconfirmation theory (Van Ryzin, 2004; Yi & Zeithaml, 1990)., the customer's satisfaction results from the extent to which the customer's experience of the institution's performance confirms or disconfirms their expectation.

The model of the American Customer Satisfaction Index (ACSI) (Fornell et al., 1996), which is still being used today, depicts the relationship between expectation, perceived quality or performance and perceived value as follows.

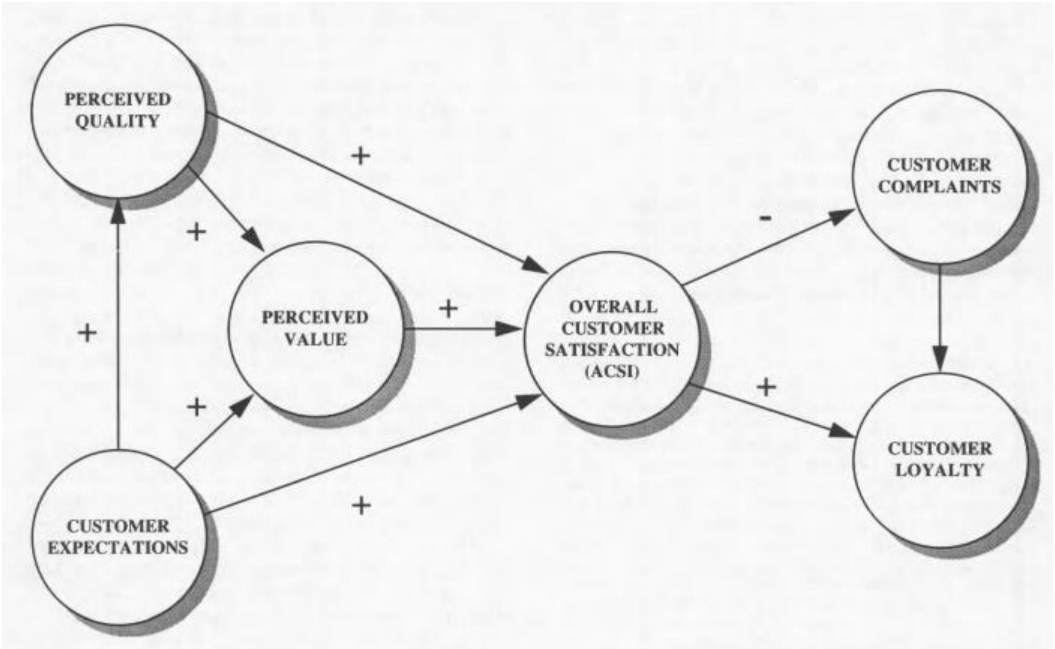


Figure 3.1: The relationship between expectation, perceived quality and perceived value (Fornell et al., 1996)

The figure depicts the relationship between these factors as follows:

- Perceived quality or performance is based on the consumers recent experience of 1) the degree to which the product or service meets customer needs and 2) the degree to which the product or service is reliable and functional (free of deficiencies).
- Perceived value refers to the product or service that the customer gets for the price they pay.
- Expectations are formed from previous experience, word-of-mouth comparisons and the customer's perception of the institution's ability to deliver the product or service.
- Negative customer satisfaction leads to complaints and, in the South African context, to service protests, unauthorised connections and vandalism, and an unwillingness to pay. Positive customer satisfaction leads to loyalty, trust and willingness to pay. (Fornell et al., 1996)

In the literature, perceived quality and expectations are often linked. For example, Poulsen et al. (1996) said that the perceived quality (consumers' overall quality evaluation) is both the result of the expected quality and the experienced quality.

Denantes and Donoso (2021) describes the interrelationship between perceived water quality and perceived service quality as follows.

- Perceived water quality is influenced by each user's organoleptic perceptions (taste, odour, visual aspects), and perceived health risks. This was discussed in depth in the two previous perception studies (Slabbert, 2011 and 2015). This is also discussed in Levêque and Burns, 2017; Onufrak et al., 2021; Anadu and Harding, 2000; and Doria et al., 2009.
- In turn, perceived health risks are influenced by perceived water quality and trust, as discussed by Doria et al., 2005; Doria, 2010; Alexander et al., 2008; and Pierce and Gonzalez, 2017.
- Overall satisfaction with water and service quality is a composite of perceived water quality, perceived service quality and perceptions about the water services provider (Hu et al., 2011; Turgeon et al., 2004; Wright et al., 2012; García-Rubio et al., 2016; and Romano and Masserini, 2020).

Roos and Lidstrom (2014) use different terms for the same concepts. They relate customer satisfaction at local government level to consumers' perceptions of, what they call, the "input and output legitimacy" of public institutions. Input legitimacy relates to perceptions of policies, and perceptions of the ability and legitimacy of institutional representatives and staff. Output legitimacy relates to perceptions of the quality of the welfare services (like cultural and recreational services) and basic services delivered.

De Hoog et al. (1990) adds a factor not mentioned in the previously discussed literature when they note that "citizens' personal background, social status values, and circumstances can influence their satisfaction or dissatisfaction with service delivery".

3.3 Measuring consumer perceptions and overall satisfaction

The methodologies for measuring consumer perceptions and overall satisfaction with water and sanitation services range from questions about general satisfaction to multi-item scales and indices that express satisfaction in terms of perceptions and experiences of product or service quality.

Van Ryzin (2004) found that multi-item scales perform better in terms of reliability than single item scales when measuring customer satisfaction.

StatsSA's analysis of the 2016 Community Survey used a three-dimensional composite index, made up of an average from three individual indices: These indices are the infrastructure quality index, the infrastructure efficiency index, and the accessibility index (StatsSA, 2016). The composite index is based on a methodology used by Van der Walt and Haarhoff (2004). The 2016 Community Survey also asked a general satisfaction question for water services and for sanitation services. The results are compared with the indices in the analysis (StatsSA, 2016).

Weighted indices are also used in some studies (J.D. Power, not dated). For example, the J.D. Power Water Utility Residential Customer Satisfaction Study, which measures satisfaction with water utility companies in four U.S. regions: Northeast, Midwest, South, and West, creates an index that quantifies the relative impact of a set of factors and their attributes on customer satisfaction. The overall index is a roll up of performance scores, weighted relative to the contribution of each factor to overall satisfaction. The figure below depicts the relationship between factors, attributes, and the performance index.

Figure 3.2: Factors and attributes that comprise the customer experience

Identifying 'factors' that contribute to consumer/customer satisfaction is not new. It was also the topic of Parasuraman, Zeithaml & Berry's 1994 model of measuring service quality known as SERVQUAL. Parasuraman et al. (1994) identified five factors: tangibles, reliability, responsiveness, assurance[2], and empathy.

3.4 Studies measuring consumer perceptions of water and sanitation services in South Africa

Several consumer/customer perception and satisfaction studies of water and sanitation studies have been conducted in South Africa since 1994:

1. The introduction of this report mentions the SALGA/WRC perception studies of 2011 and 2015. This study tracked the findings of those two studies. Both studies asked consumers' perceptions of water quality and a general consumer satisfaction question. In 2015, consumers' perceptions of a number of service factors contributing to service quality were asked and a composite index was subsequently calculated.
2. Reference has already been made in the previous section to the StatsSA consumer satisfaction analysis of the 2015 Community Survey (StatsSA).
3. Between 2003 and 2016, the Human Sciences Research Council (HSRC) conducted a perception study to test the quality of municipal services. The data was subsequently further analysed by Masiya et al. (2019). According to the analysis, satisfaction with water and sanitation services dropped from 61% (satisfied and very satisfied) in 2003 to 53% in 2016 (56% on average) (Masiya et al. (2019).
4. In 2004, the Department of Water Affairs and Forestry and the UK Department for International Development (DIFD) commissioned a study of local and international best practice in the context of water services customer care and protection (DWAF & DIFD, 2005/6). The study included a national survey that

[2] Assurance refers to the ability of the organisation's employees to identify and meet customers' unique needs and deliver the services accordingly.

asked questions on consumer expectations of different aspects of water and sanitation services, including customer care.

5. A national survey initiated by the National Business Initiative (NBI, 2019) included a general customer satisfaction question to a sample 2689 survey respondents from across South Africa. The question asked was: *On a scale of 1 to 5, where 1 is extremely dissatisfied and 5 is extremely satisfied, how satisfied would you say you are with the following: the water services you currently receive from your municipality?*

   The figure below reports on the provincial results.

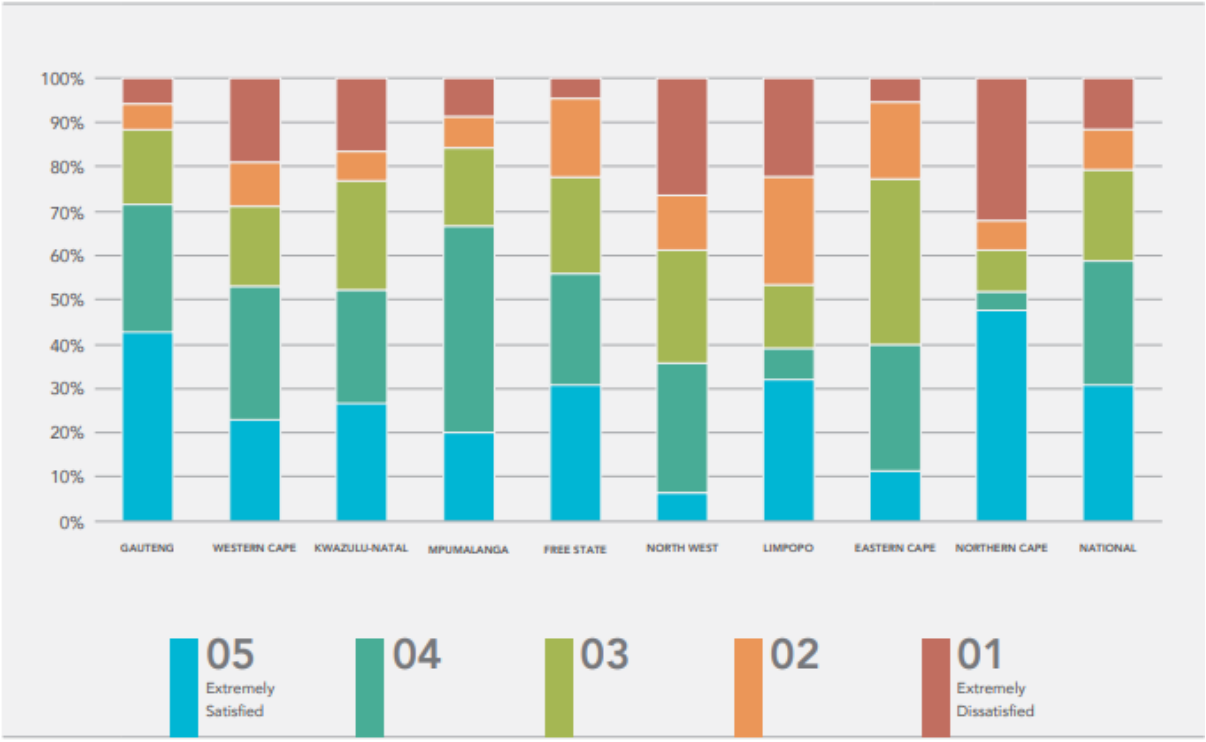


Figure 3.3: Satisfaction with current municipal water service provision per province

   The overall result was that 81% of respondents scored their satisfaction with municipal water services as either a 3, 4 or 5. The SALGA/WRC perception study of 2015 found that 84% of respondents rated their municipal water and sanitation services as excellent, good, or both good and bad.

   It should be noted that the NBI survey was conducted in 2017, which was during the drought in the Western Cape that almost led to the Day Zero. That might explain the comparative lower 5s and 4s in the Western Cape at the time.

6. Some municipalities in South Africa regularly conduct their own customer perception and satisfaction studies. The City of Cape Town is an example. The 2017/2018 Customer Perception and Satisfaction Survey (CPSS) included the following findings:

   Leaks, supply disruptions (availability), pressure management and drinking water quality were identified as key factors contributing to customer satisfaction in terms of water services.

   Overflowing manholes, blocked drains/sewers, infrastructure maintenance, and the condition of shared toilet facilities emerged as key factors influencing satisfaction with sanitation services.

   Although the majority of respondents were positive that the City's water-related metering and billing are accurate, residents and businesses want metering to be undertaken more frequently, and billing should be made easier to understand (City of Cape Town, 2019).

7. In addition to these regular customer perception and satisfaction studies, there are also several standalone studies on consumer perceptions of water and sanitation services. Most of these studies have been undertaken for a postgraduate qualification. Two of these will be discussed below:
    a. Nxumalo (2017) undertook a Masters study in which she investigated consumer satisfaction with the Water and Sanitation Unit of eThekwini Metro. The sample was drawn from 211 visitors to walk-in centres. The study found that most expectations were met in terms of five service quality (SERVQUAL) dimensions (observable features of the service [tangibles], reliability, responsiveness, assurance, and empathy).
    b. Seate (2016) wrote a PhD thesis on a study that investigated consumer perceptions and satisfaction in a community in Mangaung, Free State. The study found a lack of effective customer service and communication as a major factor contributing to negative perceptions and general dissatisfaction with services.

4 South African norms and standards

Post 1994, South African norms and standards for water and sanitation services focused initially on basic services with the aim of redressing the inequalities of the past and making sure that all South Africans have access to at least basic services. The National Norms and Standard for Domestic Water and Sanitation Services (DWS, 2017) provides however for levels of service beyond and below basic services.

The South African norms and standards (DWS, 2017) are aligned with the Sustainable Development Goals of 2030. They are also aligned to the targets that have been set by the African Ministers Council of Water (AMCOW), which, in turn, are the same as the global goals (DHI, 2016).

4.1 South African norms and standards for water services

The National Norms and Standards (DWS, 2017) defines a basic water supply facility, and a basic water supply as follows:

A basic water supply facility is defined as the infrastructure necessary to supply potable water to a formal connection at the boundary of a stand or site of a public institution (school, clinic, hospital etc.).

A basic water supply is the provision of a basic water supply facility, the sustainable operation of the facility (available for at least 350 days per year and not interrupted for more than 48 consecutive hours per incident) and the communication of good water-use, hygiene and related practices.

The different levels of service are depicted as a service ladder:

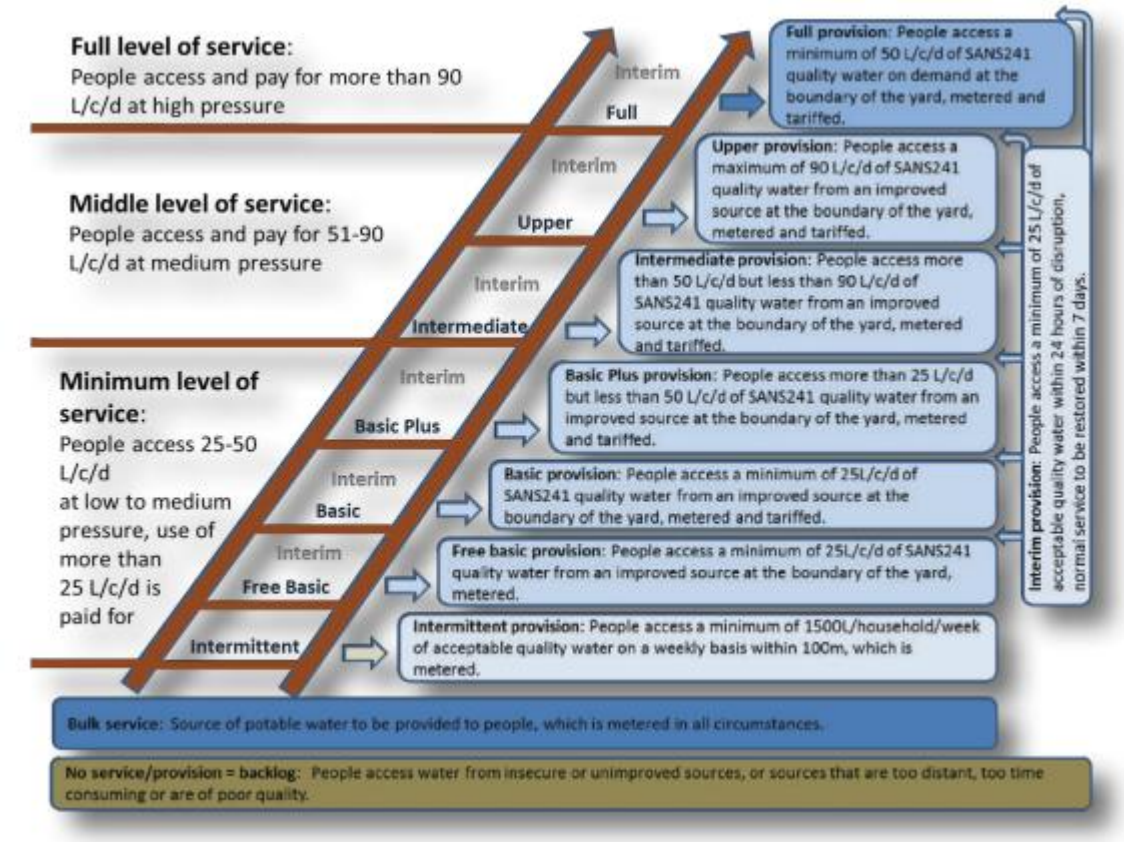


Figure 4.1: The water services ladder (National Norms and Standards for Domestic Water and Sanitation Services, 2017)

4.2 South African norms and standards for sanitation

The National Sanitation Policy (DWS, 2016) defines a basic sanitation facility and basic sanitation services as follows:

A basic sanitation facility: "The infrastructure which considers natural (water; land; topography) resource protection, is safe (including for children), reliable, private, socially acceptable, skilled and capacity available locally for operation and maintenance , protected from the weather and ventilated, keeps smells to the minimum, is easy to keep clean, minimises the risk of the spread of sanitation-related diseases by facilitating the appropriate control of disease carrying flies and pests, facilitates hand washing and enables safe and appropriate treatment and/or removal of human waste and wastewater in an environmentally sound manner".

Basic sanitation services: "the provision of a basic sanitation facility which is environmentally sustainable, easily accessible to a household and a consumer, the sustainable operation and maintenance of the facility, including the safe removal of human waste, grey-water and wastewater from the premises where this is appropriate and necessary, and the communication and local monitoring of good sanitation, hygiene and related practices".

The definitions in the National Norms and Standards for Domestic Water and Sanitation Services (DWS, 2017) follow the National Sanitation Policy (DWS, 2016). Similar to water services, the National Norms and Standard (DWS, 2017) defines a ladder of service levels for sanitation service as depicted in the figure below:

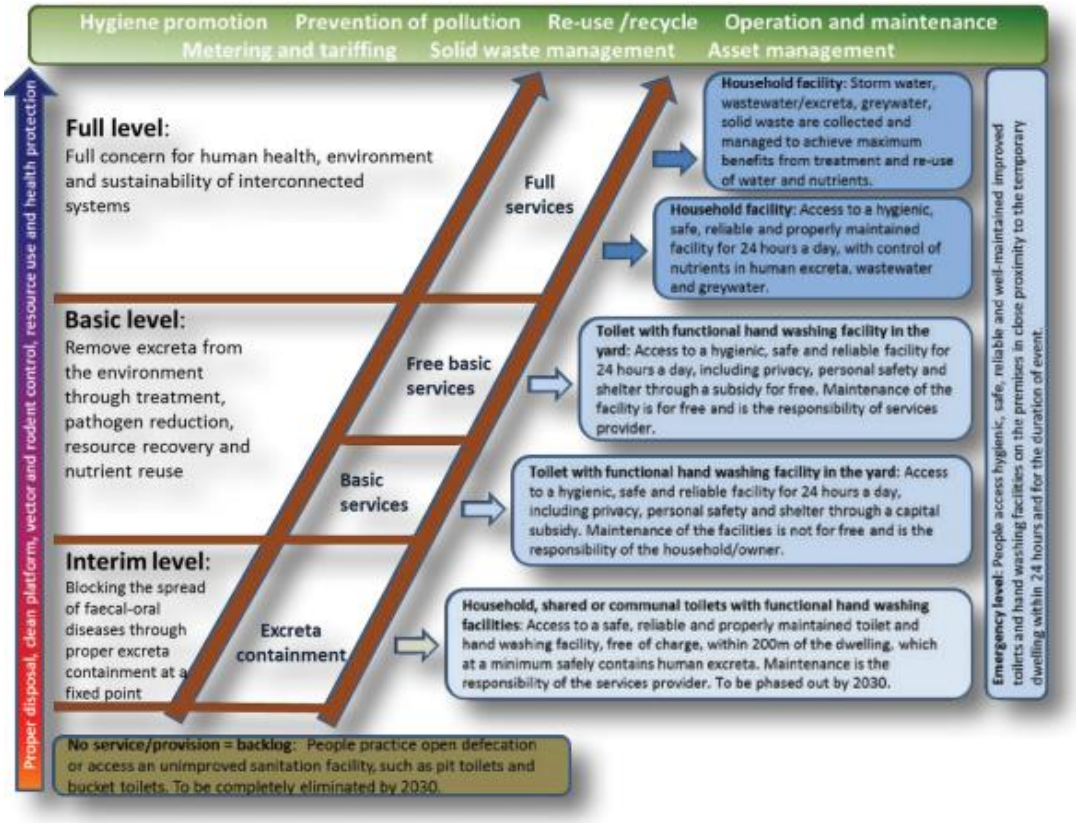


Figure 4.2: The sanitation services ladder (National Norms and Standards for Domestic Water and Sanitation Services, 2017)

According to DWS (2017), the household or owner of the sanitation facility is fully responsible for all operation, maintenance and refurbishment actions and costs pertaining to on-site sanitation, unless it is provided as a free basic sanitation service in which case the local institution is responsible for these actions and costs.

5 Survey sample and methodology

5.1 Survey methodology

A national syndicated survey was used to achieve the aims of this study. Twelve (12) questions were put on one of the existing syndicated studies[3] that are conducted by the major market research houses. The OMNIBUS survey of NielsenIQ South Africa was used.

The details of the survey methodology are appended in 15: Omnibus technical specifications.

Interviews were conducted using NIQ syndicated Omnibus Survey which ''covers a scientifically drawn, representative sample of adults (15+ years) living in urban and rural areas nationwide. Interviews were conducted in the homes of respondents using a structured questionnaire on CAPI, in the preferred language of the respondent'' (NielsenIQ: Omnibus technical specifications).

It is NielsenIQ's practice to systematically select 15% of each individual interviewer's work for checking. See 15 for more details.

[3] A syndicated survey is a shared research instrument with shared costs: multiple clients buy space (questions) on a national survey, sharing the cost of the sampling and the fieldwork. Each client gets its own results for the questions that they have asked.

The sample was post-weighted to reflect estimated population in 000's.

The analysis was done by specified demographic breakdowns:

- Province
- Sex
- Age
- Race
- Living Standards Measure (LSM)[4]
- Highest level of education
- Socio-Economic Measure (SEM)[5]
- Community (Metro, urban, rural). Results have been further detailed for each of the eight Metros.

5.2 Statistical significance

NielsenIQ uses the t-test to calculate statistical significance at a 95% confidence interval. A 95% confidence interval is a range of values that is expected to contain the true population parameter (e.g., the mean) with 95% probability.

The t-test calculates the t-value, which represents the difference between the means of two groups divided by the standard error of the difference. The higher the t-value, the greater the difference between the means of the two groups, and the more likely it is that the difference is statistically significant.

5.3 Distribution of the sample

A nationally representative 15–99-year-old probability sample of 3 302, was drawn from Nielsen Media GeoFrame (household census) of more than 6 million addresses (NielsenIQ: Omnibus technical specifications).

The distribution of the sample (number of respondents) was as follows:

Table 5.1: Distribution of the sample

Province								
WC	**EC**	**KZN**	**FS**	**NW**	**NC**	**MP**	**LP**	**GP**
534	348	570	160	204	80	224	244	938

Race			
Black	**Coloured**	**Indian**	**White**
1976	735	158	793

Age						
16-18	**18-24**	**25-34**	**35-44**	**45-54**	**55-64**	**65+**
282	516	723	734	525	328	194

[4] The Living Standards Measure (LSM) has been developed by the South African Advertising Research Foundation (SAARF). It is a segmentation tool based on access to services and durables as determinants of standard of living. The tool uses 29 variables. These include water in home/on plot, hot running water and a flush toilet. There are 10 LSM groups, 10 being the highest living standard and 1 the lowest.

[5] The 2022 results were also analysed according to ten Socio-Economic Measures (SEM) categories. As this variable was not used in 2011 and 2015, the report only refers to LSM.

Living Standard Measure (LSM)			
Group 1-3	**Group 4-5**	**Group 6-7**	**Group 8-10**
131	754	1487	930

Education			
Up to primary complete	**Some high school**	**High school complete**	**Post grade 12 / University**
136	853	1463	846

Metro	Urban	Rural
1637	927	738

5.4 Fieldworker briefing

The research team briefed the fieldworkers on 23 June 2022.

5.5 Fieldwork and data tables

The study went late into the field. Fieldwork commenced the end of June 2022 and was completed by the end of July. The research team received the final data tables on 27 September 2022.

5.6 Final questionnaire

For details of how the questionnaire was developed and how it compares with the questionnaires used in the 2011 and 2015 studies, see the Appendix.

The final questionnaire the 2022 study appears below. The green highlighting shows the questions that were included in the calculation of Service Quality Index. The pink highlighting shows the question that was included in the calculation of the Customer Satisfaction Index.

PERCEPTION STUDY

P1 **ASK ALL**
Is the tap water that your household uses: (SA)
READ OUT. SHOWCARD
IF RESPONDENT IS UNSURE, PROBE – "BASED ON YOUR EXPERIENCE, WOULD YOU SAY THE WATER IS…."

Rating		
4	Very safe to drink	1
3	Safe to drink	2
2	Unsafe to drink	3
1	Very unsafe to drink	4
NA	We don't get water from a tap – We get it from the river or a well	5

P2 **Ask if 1 or 2 in P1**
Why do you say it's (**insert response from P1**) (MA)
DO NOT READ OUT.

Nobody gets sick	1
The water looks clean	2
The water smells good	3
The water smells of chlorine	4
The water tastes good	5
The municipality cleans the water	6
The municipality tests the water to see if it is safe to drink	7
People say the water is safe to drink	8
I heard in the media (radio, TV, newspaper) that the water is safe to drink	9
Our municipality has a Blue Drop	10
Other (Specify)	11

P3 **Ask if 3 or 4 in P1**
Why do you say it's (**insert response from P1**)? (MA)
DO NOT READ OUT.

Some people got sick from the water	1
The water looks dirty	2
The water smells bad	3
The water smells of chlorine	4
The water tastes bad	5
The tap is communal OR the tap is on the street	6
The municipality does not clean the water	7
The municipality does not test the water to see if it is safe to drink	8
The river or dam where we get our water from is dirty and polluted	9
People say the water is unsafe to drink	10
The municipality told us that the water is unsafe to drink	11
I heard in the media (radio, TV, newspaper) that the water is unsafe to drink	12
Our municipality does not have a Blue Drop	13
Other (Specify)	14

Ask all

P4 How do you drink water at home? (SA)
READ OUT. SHOWCARD

I don't drink water on its own; only drink coffee, tea or cool drink	1
I sometimes drink tap water and sometimes bottled water (that I buy from the shop)	2
I only drink tap water and don't boil, filter, or clean it first	3
I only drink tap water, but boil, filter or clean it first	4
I only drink bottled water (that I buy from the shop)	5
Other (Specify)	6

Ask all

P5 Does your municipality… (SA PER STATEMENT)
READ OUT. SHOWCARD

	Always	Most of the time	Sometimes	Never	Not applicable	Don't know
Rating	**4**	**3**	**2**	**1**	**NA**	**NA**
a. Repair leaking or broken water or sewage pipes in the street within 1 to 2 days?						
b. Clean up sewage spills within 1 to 2 days?						
c. Empty full pit latrines regularly?						
d. Maintain or keep a strong water pressure in the tap(s)?						
e. Repair broken water meters?						
f. Read water meters every month?						
g. Send out clear and accurate bills?						
h. Answer the phone and emails?						
i. Respond to complaints and queries about water or sanitation?						
j. Solve water and sanitation issues in the community						

Ask all

P6 How often do you experience interruptions in your water supply (your water supply is off)? (SA)
READ OUT. SHOWCARD

Rating		
4	Never	1
3	Seldom – less than once a month	2
2,5	At least once a month	3
2	At least once a week	4
1	At least once a day	5

Ask all

P7 I am going to read you a few statements. Please tell me how you feel about each statement: Your municipality… (SA PER STATEMENT)
READ OUT. SHOWCARD

	Totally agree	Agree	Disagree	Totally disagree	I don't know
Rating	**4**	**3**	**2**	**1**	**NA**
a. Gives Free Basic Water to the people who need it.					
b. Is able to deal with a water crisis (like a drought or flooding).					
c. Deals effectively with people who don't pay their water bills.					
d. Deals effectively with people who connect illegally to the main water pipes.					
e. Deals effectively with corruption.					

Ask all

P8 What does your household water cost you per month on average? (SA)
DO NOT READ OUT. SELECT RESPONSE FROM BELOW BASED ON RESPONDENTS ANSWER

I don't know (for example if person is not responsible for paying the bill).	1
Nothing. We don't have to pay for water. PROBE FOR REASON: We use a communal tap. OR We are indigents (registered poor people)	2
Nothing. We don't pay for water.	3
Pays, but don't know exact amount: If the person gives a vague, estimated amount. For example, less than R100 per month. Or, more than R500 per month.	4
Pays, and knows exact amount: If the person can say, with confidence, how much they pay for water per month. For example, this month we paid R298. Or the fixed amount is R80; for use, we pay between R100 and R150 per month.	5

Ask all

P9 How satisfied are you with… (SA PER STATEMENT)
READ OUT. SHOWCARD

	Very satisfied	Satisfied	Satisfied and not satisfied	Not satisfied	Not satisfied at all	Don't know
Rating	**5**	**4**	**3**	**2**	**1**	**NA**
A. Your municipality's water services (water quality, water supply, maintenance of pipes, meter readings)?						
B. The amount that your municipality charges for water?						
C. Your municipality's sanitation services (the toilets they supply, maintenance of sewage pipes, sewage treatment)?						
D. The amount that your municipality charges to collect and treat sewage?						

P10 **Ask respondents who coded 1-5 in P9 B (The amount that your municipality charges for water)**
You said you are …….. (SCALE ANSWER IN P9) with the amount that your municipality charges for water. Why did you say that? (OE)
PROBE FOR REASONS.

P11 **Ask respondents who coded 1,2,3 for P9 C (Your municipality's sanitation services (the toilets they supply, maintenance of sewage pipes, sewage treatment)**
You said you are not satisfied with your municipality's sanitation services. Why are you not satisfied? (MA)
READ OUT. SHOWCARD

The municipality did not give us toilets	1
The municipality gave us pit toilets that fill quickly	2
The taps are often dry (without water) so we cannot flush the toilet	3
The community toilets are far	4
The community toilets are dirty	5
The municipality does not treat the sewage properly	6
The sewage pipes are not maintained properly	7
Other reason (Specify)	8

Ask all

P12 What does your household do to use less water? (MA)
DO NOT READ OUT. SELECT RESPONSE FROM BELOW BASED ON RESPONDENTS ANSWER

Nothing	1
We already use as little water as possible. (For example, if the household fetches water with a bucket)	2
Re-use our greywater (water used to bath, shower, wash dishes or washing)	3
Collect rainwater	4
Try to use as little water in the garden as possible (plant indigenous plants, only give water at night, have a drip irrigation system, etc.)	5
Take a shower instead of a bath	6
Make sure that it is a full load before we switch on the washing machine or dishwasher	7
Repair leaking taps	8
Don't leave open taps running	9
Other (Specify)	10

6 Overview of insights

The study delivered the following insights:

6.1 Tracking consumer perceptions across 2011, 2015, and 2022

The table below summarises the focus of the three respective studies.

Table 6.1: The focus of the three perception studies (2011, 2015, 2022)

2011 study	2015 study	2022 study
Focus on perception of drinking water quality only	Has there been any change in perception of drinking water quality since 2011? How do urban South Africans experience the water and sanitation services that they receive from their municipality?	Has there been any change in perception of drinking water quality since 2015? How do urban and rural South Africans experience the water and sanitation services that they receive from their municipality? How satisfied are consumers with their water and sanitation services?

These comparative insights are based on the questions that were the same in the three years. Two aspects could be compared over the three studies:

- Water quality (and the attributes of safe and unsafe drinking water), and
- Reliability of service (interruptions).

6.2 Comparing insights from 2015 with 2022

Assessing perceptions of service quality was introduced in the 2015 study with new questions. A Service Quality Index (SQI) was calculated on the basis of these 14 attributes (number of attributes in brackets):

- Water quality (1)
- Reliability of service (interruptions and water pressure) (2)
- Maintenance of water and sanitation infrastructure (4)
- Clear and accurate billing (2)
- Customer service (3)
- Competence (2)

In addition, questions were asked in 2015 about the cost of water and behaviour to save water. These questions were repeated in 2022.

6.3 Insights based on new questions in the 2022 questionnaire

The 2022 questionnaire gave more nuanced insights into consumer perceptions for the following reasons:

1. The Service Quality Index (SQI) of 2015 was revised and expanded.
   - It included the 14 attributes of 2015 but added attributes to measure service quality experiences and respondents' perceptions of the effectiveness of the service provider.
   - The questions about municipal competence were replaced by questions on consumers' perceptions of their municipality's effectiveness in implementing Free Basic Water (FBW), managing a water crisis, and dealing effectively with non-payers, illegal connections, and corruption.
   - More weight was added to perceptions of water quality the reliability of service.
2. A new question asked how satisfied consumers were with:
   - Water services
   - Sanitation services
   - Water charges, and
   - Sanitation charges

   Follow up questions explored the reasons for satisfaction or dissatisfaction with water charges and sanitation services.

7 Trends and comparisons: 2011, 2015 and 2022 (Metro and other urban consumers)

7.1 Water quality

7.1.1 Question

The question below was repeated in all three studies (2011, 2015 and 2022):

Is the tap water that your household uses:

Very safe to drink
Safe to drink
Unsafe to drink
Very unsafe to drink
We don't get water from a tap

7.1.2 Summary of findings

Urban consumers still have confidence in the quality of municipal water as the table below illustrates, but since 2015, confidence has declined. Rural consumers have significantly less confidence in the safety of municipal tap water as the table below illustrates.

Table 7.1: Trend in perceptions of the safety of municipal tap water

2011	2015	2022
81% of urban* South Africans believed their tap water is safe or very safe to drink *Metro and other urban areas	88% of urban* South Africans believed their tap water is safe or very safe to drink	79% of urban* South Africans believe their tap water is safe or very safe to drink 64% of rural South Africans believe their tap water is safe or very safe to drink (12% said that they don't get water from a tap, they get it from a river or a well.)

7.1.3 Demographic profiles

By community size

People in Metros have consistently more confidence in the safety of their drinking water than consumers in other urban areas.

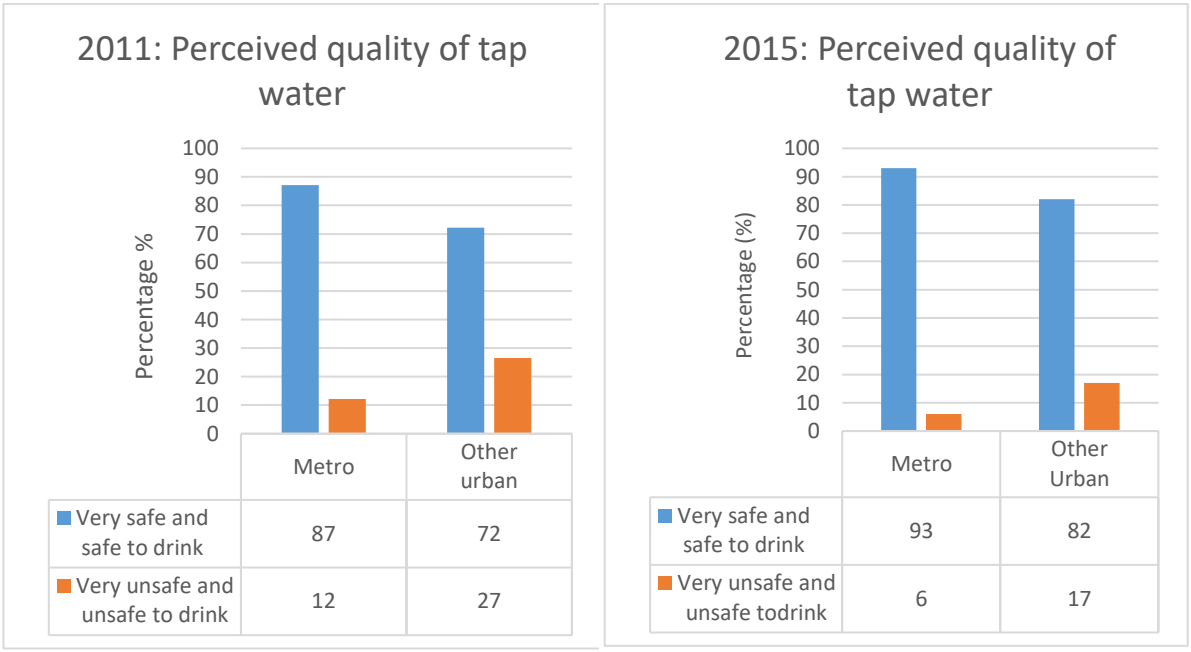


Figure 7.1: 2011 & 2015: Comparison of the perceived safety of tap water according to community size

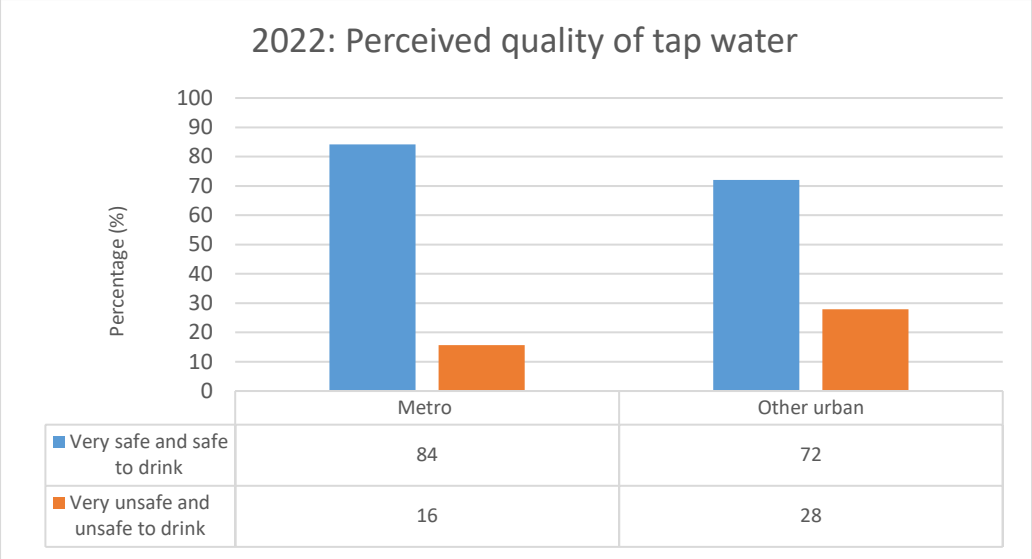


Figure 7.2: 2022: Comparison of perceived safety of tap water according to community size

By Metro

The figures below rank the composite scores of "safe to drink" versus "unsafe to drink" for eight Metros.

In 2011, there was a gap of nearly 25% between the best perceived performance (eThekwini) in terms of drinking water safety and the weakest (Mangaung). The gap flattened in 2015, but in 2022, it increased again. The relative position of the respective Metros changed over time, with Nelson Mandela Bay and Buffalo City in the last position in both 2015 and 2022.

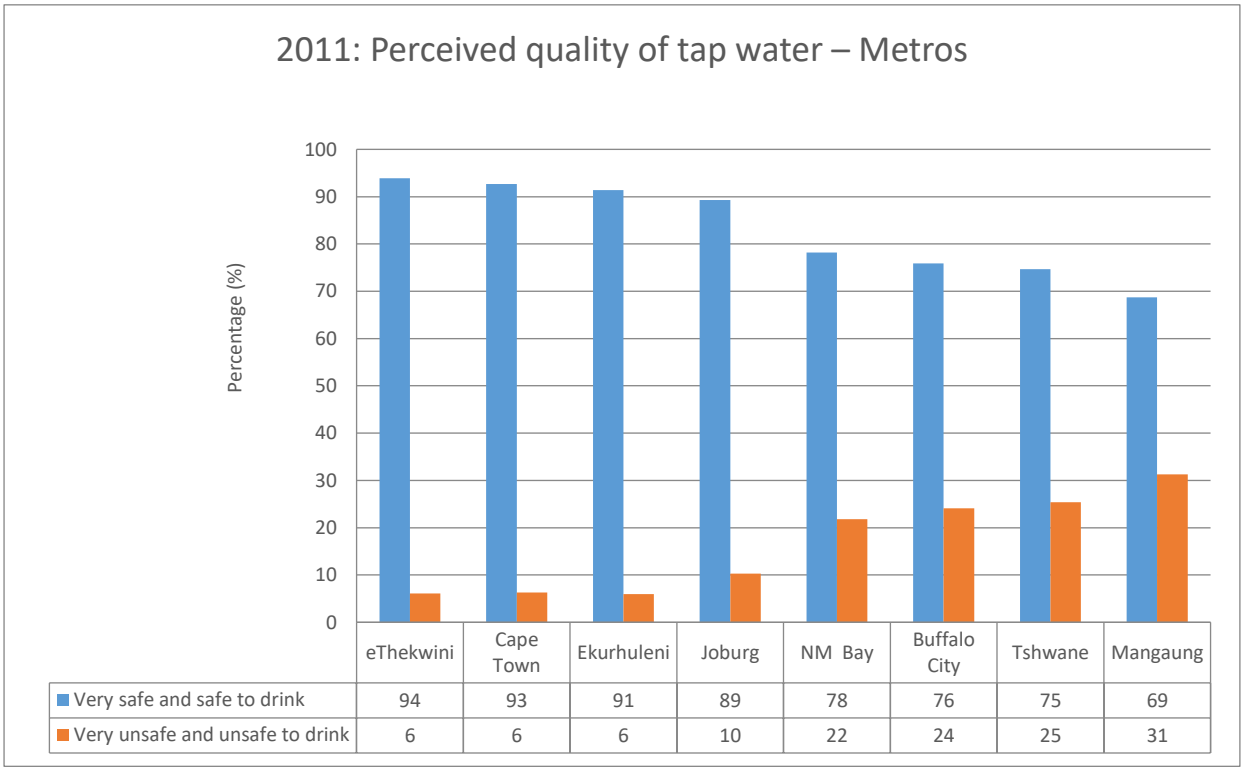


Figure 7.3: 2011: Comparison of perceived safety of tap water according to Metro

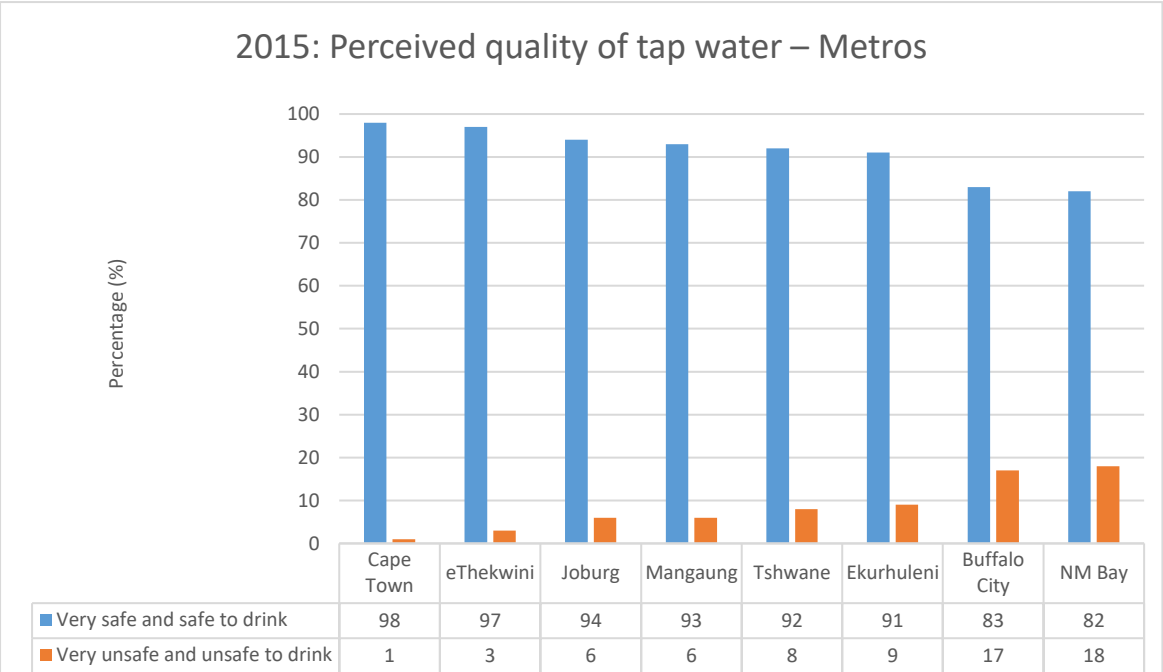


Figure 7.4: 2015: Comparison of perceived safety of tap water according to Metro

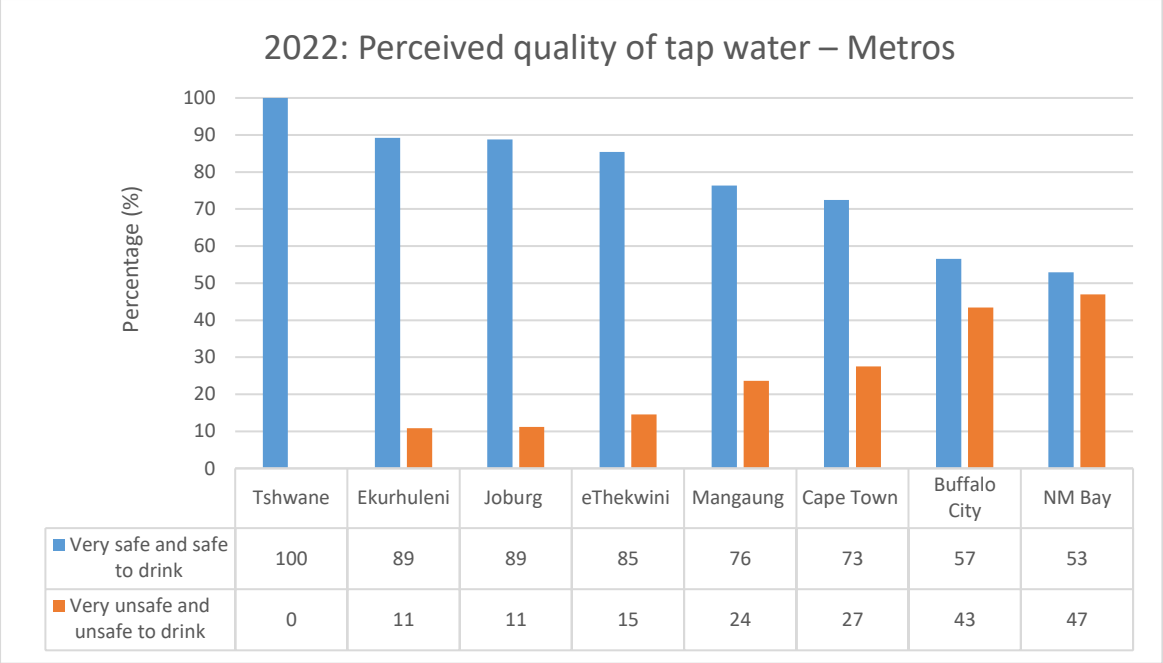
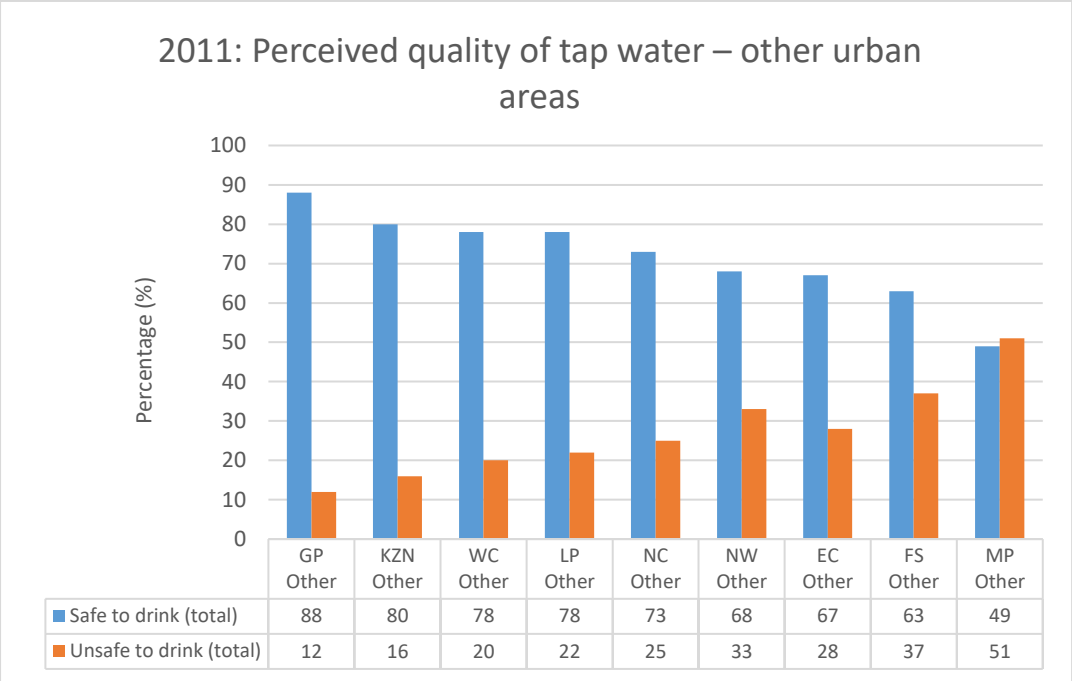


Figure 7.5: 2022: Comparison of perceived safety of tap water according to Metro

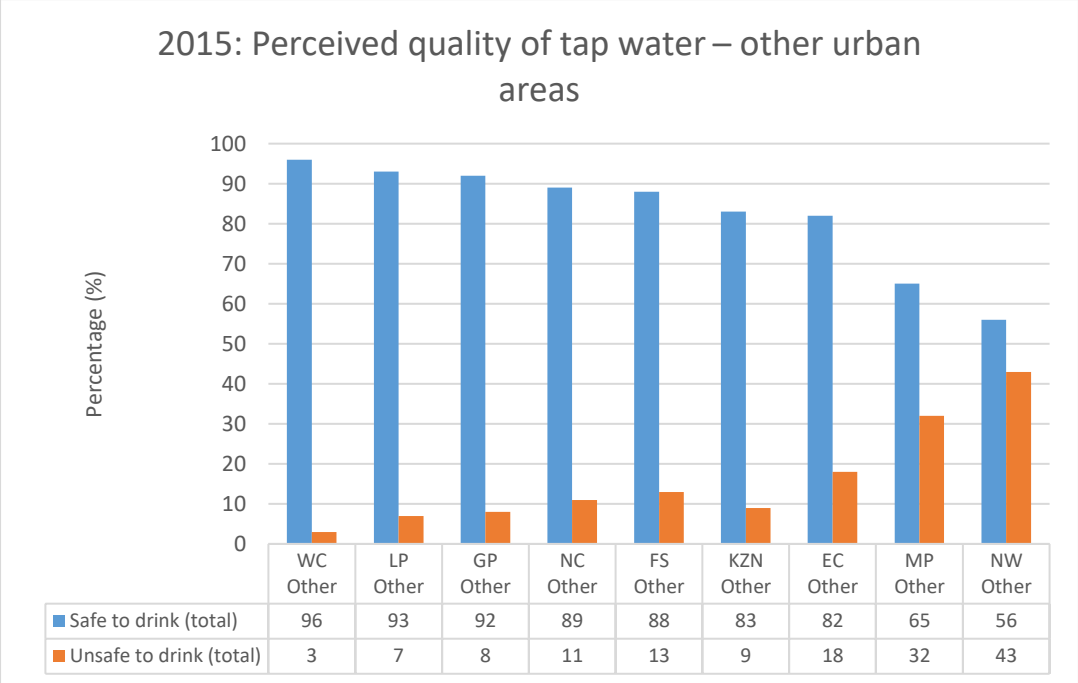
Perception in other urban areas per province

The figures below compare the perception of the safety of drinking water in other urban areas (non-Metro). ''Safe (total)'' and ''Unsafe (total)'' refers to the total of Very safe and safe / Very unsafe and unsafe.



	GP Other	KZN Other	WC Other	LP Other	NC Other	NW Other	EC Other	FS Other	MP Other
Safe to drink (total)	88	80	78	78	73	68	67	63	49
Unsafe to drink (total)	12	16	20	22	25	33	28	37	51

Figure 7.6: 2011: Comparison of perceived safety of tap water according to other urban areas



	WC Other	LP Other	GP Other	NC Other	FS Other	KZN Other	EC Other	MP Other	NW Other
Safe to drink (total)	96	93	92	89	88	83	82	65	56
Unsafe to drink (total)	3	7	8	11	13	9	18	32	43

Figure 7.7: 2015: Comparison of perceived safety of tap water according to other urban areas

In Mpumalanga and KwaZulu-Natal, 3% and 8% respectively, said that they do not get water from a tap. This explains why the percentages for these two provinces do not add up to 100%. The Limpopo sample was small (48 respondents in 2015) and further research would be needed to confirm the result for this province.

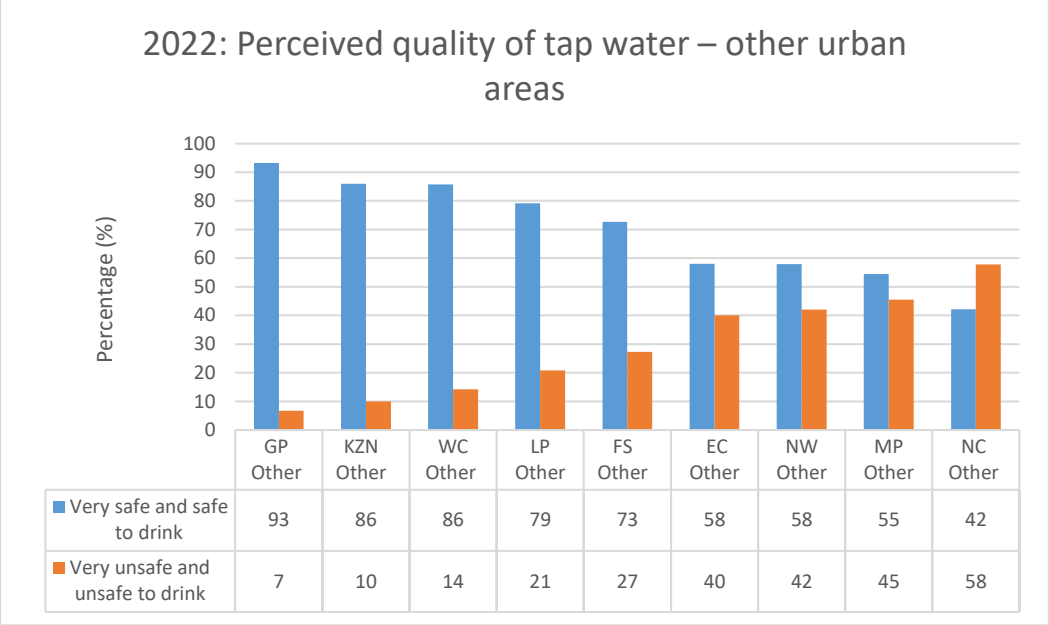


Figure 7.8: 2022: Comparison of perceived safety of tap water according to other urban areas

The general trend remains the same: although the sample sizes are relatively small in comparison with the Metros, consumers in smaller urban areas (towns) are less confident about the safety of their tap water than consumers in Metros. In Mpumalanga and KwaZulu-Natal, 2% and 4% respectively, said that they do not get water from a tap.

The 2022 study found that consumers in smaller urban areas (towns) are less confident about the safety of tap water than they were in 2015. In four provinces the percentage of consumers who believe their tap water is very safe, or safe, to drink dropped to below 60%.

7.2 Drivers of risk perceptions

Respondents' perception of drinking water quality was further explored with a follow-up question about the reasons for their perception. Respondents could give multiple answers. The question included an Other (Specify) option.

The figures below compare the main drivers of the perception that tap water is safe to drink with the main drivers of the perception that tap water is unsafe to drink.

The results confirm international findings as cited in Doria (2010:14) that the public's perception of drinking water quality is "based on a combination of multiple factors”.

7.2.1 Drivers of perceptions that tap water is safe to drink

The figures below compare the relative impact of these drivers over the three study years (2011, 2015 and 2022). The results are very similar.

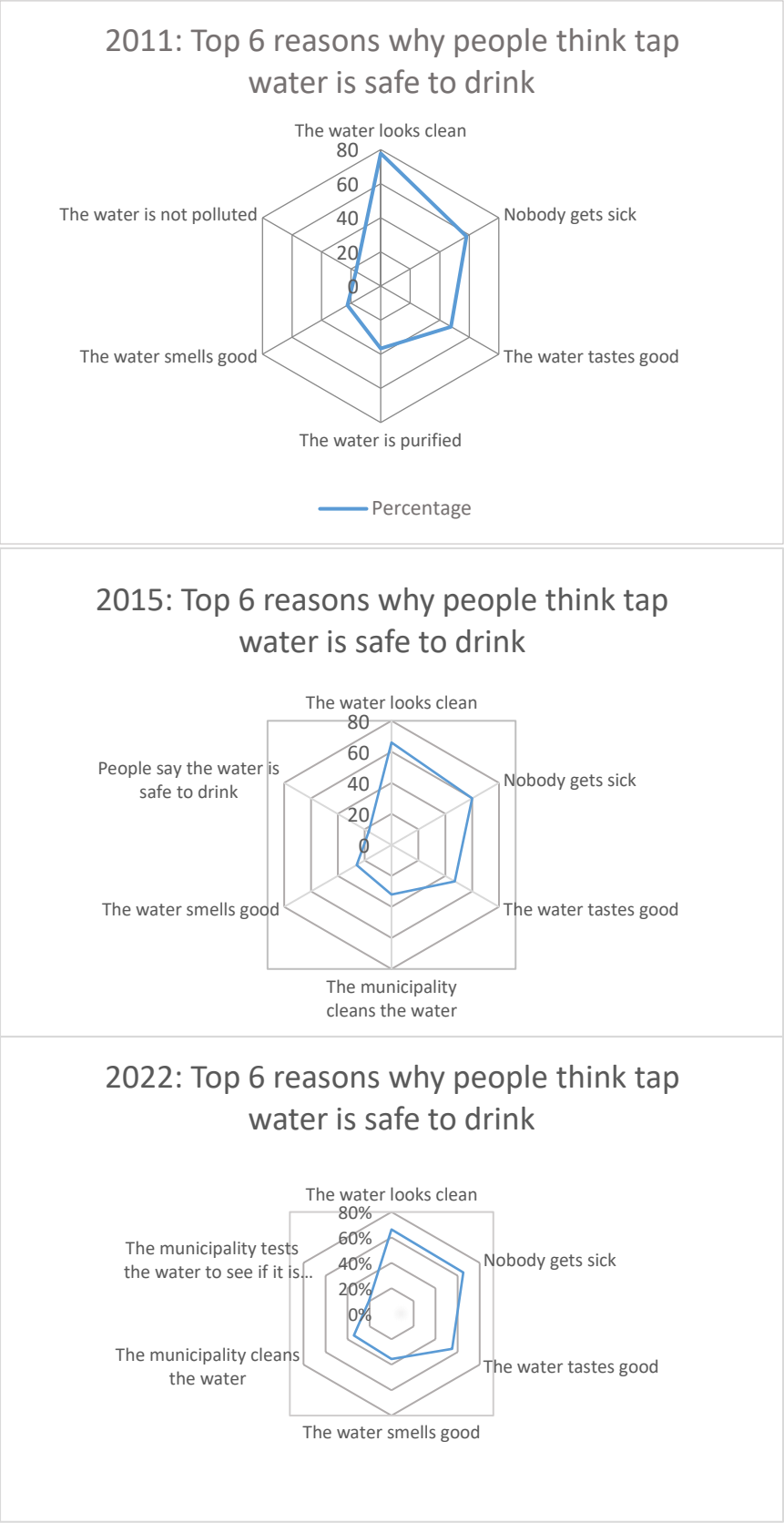
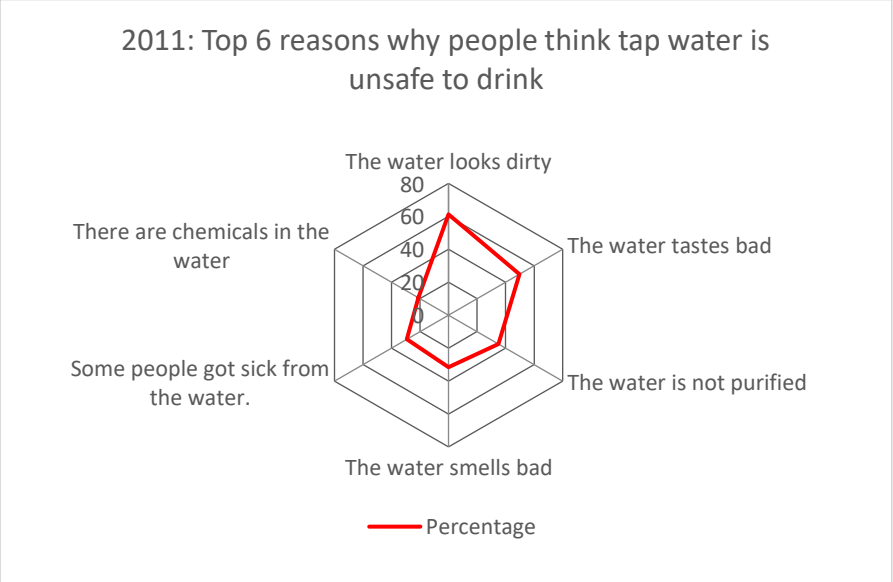
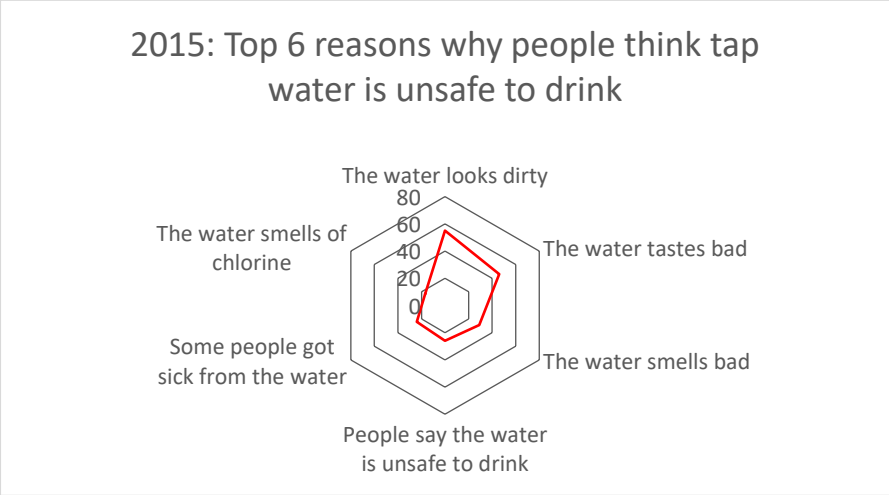


Figure 7.9: A comparison of drivers of perceptions of safe drinking water, 2011, 2015 and 2022

7.2.2 Drivers of perceptions that tap water is unsafe to drink

The figures below show that the reasons why people think tap water is unsafe to drink remained similar.





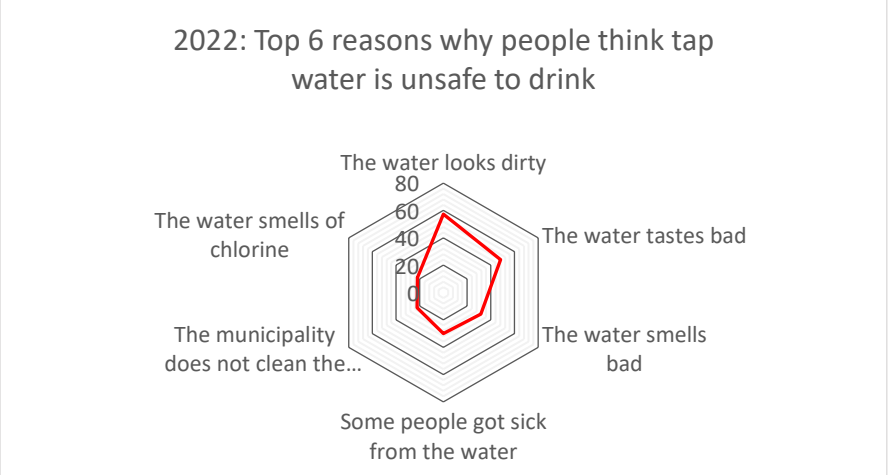


Figure 7.10: A comparison of drivers of perceptions of unsafe drinking water, 2011, 2015 and 2022

7.2.3 Conclusions

South Africans' risk perception of the safety of tap water is mainly guided by the appearance of the water. Taste is in the second place and odour in the third place as organoleptic or sensory drivers of perceptions about the safety of tap water.

This differs from the international results discussed above, which found taste to be main indicator that tap water is safe to drink.

Consumers rely on their municipalities to treat their drinking water and to test that it is safe to drink.

The study confirmed again that personal experience of people getting ill is a major driver of perceptions of water safety. In 2022, 65% of consumers in Metros and other urban areas were positive that tap water is safe to drink because “nobody got sick”.

In 2022, perceptions about chlorine in drinking water echoed those found in the 2011 and 2015 studies. The smell of chlorine in tap water could either induce a positive perception that the water is safe to drink (15%) or a negative perception that it is unsafe to drink (22%). However, water which smells of chlorine is more likely to be perceived as rendering water unsafe to drink.

The Blue Drop status of municipalities remains very low on the list of drivers of perceptions. Only 4% of consumers in Metros and other urban areas gave "Our municipality has a Blue Drop" as a reason for their perception that tap water is safe to drink.

Doria (2010:14) points out that, although the influence of media reports on perception might be statistically weak, the impact of a single negative report could be significant. The impact of the media on perceptions, although still below 10%, has almost tripled since 2011. This will have to be investigated further, but it is likely that interpersonal interaction on social media is having an impact.

Impact of media reports on perception that water is safe to drink	2011	2015	2022
I heard in the media (radio, TV, newspaper) that the water is safe to drink	3,4%	4%	9%

Impact of media reports on perception that water is unsafe to drink	2011	2015	2022
I heard in the media (radio, TV, newspaper) that the water is unsafe to drink	2.7%	4%	9%

Figure 7.11: The impact of media reports on perceptions about the safety of drinking water

As in 2011 and 2015, no significant sex differences were found in 2022 for the contribution of organoleptic qualities to the perception of drinking water quality.

7.3 Drinking water behaviour

7.3.1 General

In comparison with 2011 and 2015, the 2022 report found that consumers' drinking water behaviour reflects that their confidence in the safety of tap water has diminished.

In 2011, 75% of consumers drank only tap water without boiling, filtering or cleaning it first.

The figure below shows that the percentage of people in Metros and other urban areas who drink tap water without boiling, filtering or cleaning it first, dropped from almost 70% in 2015 to just under 50% in 2022. 15% on average now boil, filter, or clean their drinking water in comparison with an average of 9% in 2015. The percentage of urban consumers who only drinks bottled water has increased from 4% in 2015 to 8% in 2022.

Drinking water behaviour	2015	2022
I only drink tap water and don't boil, filter, or clean it first	68%	49%
I only drink tap water, but boil, filter or clean it first	9%	15%
I sometimes drink tap water and sometimes bottled water (that I buy from the shop)	15%	24%
I only drink bottled water (that I buy from the shop)	4%	8%
I don't drink water on its own, only drink coffee, tea or cooldrink	4%	3%

Figure 7.12: A comparison of drinking water behaviour – 2015 versus 2022

7.3.2 Per province

The 2015 study found that "Reported drinking water behaviour seems to be a combination of perceptions of drinking water quality and affluence. The less confident people are about how safe it is to drink their tap water, the more likely are they to boil or filter tap water or to use bottled water if they could afford it" (Slabbert, 2015).

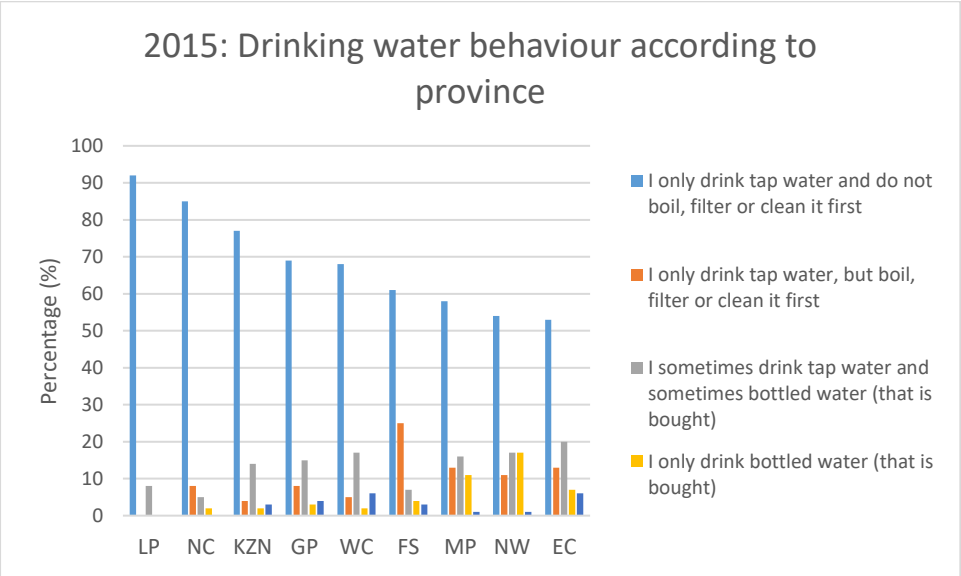


Figure 7.13: 2015: Drinking water behaviour according to province

The behaviour pattern in 2022 is “flatter” than in 2015 as the figure below illustrates, with higher percentages boiling, filtering or cleaning tap water, and higher percentages using bottled water. In Limpopo, more people claim to drink water that they have bought than tap water.

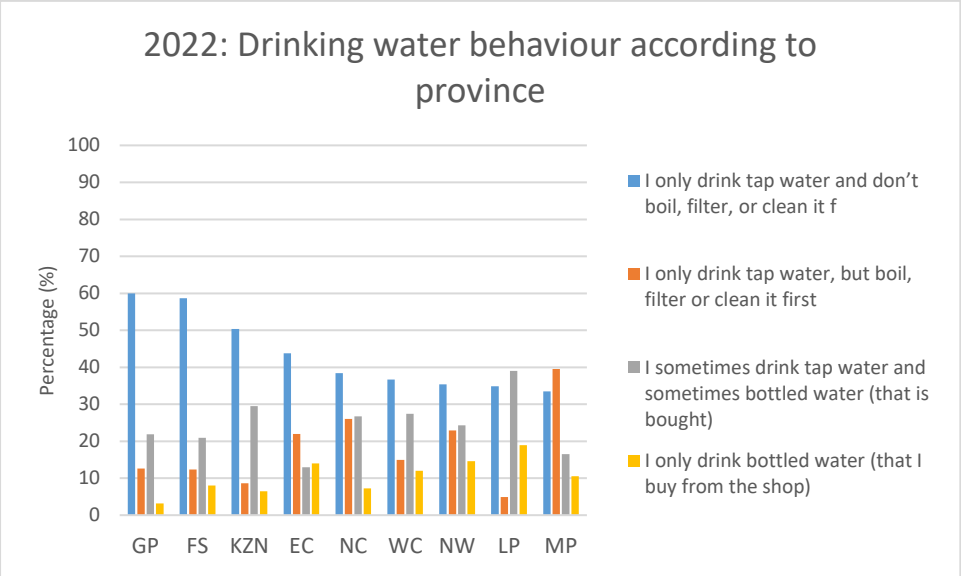


Figure 7.14: 2022: Drinking water behaviour according to province

On the other hand, confidence in the safety of drinking water is not the only driver of drinking water behaviour. For example, 89% of the City of Johannesburg's consumers are confident that tap water is safe to drink, but only 63% drink water straight from the tap.

7.3.3 According to LSM

The 2022 perception study confirmed the findings of 2011 and 2015 that consumers in the higher LSM groups and with high incomes drink bottled water irrespective of their perception of the safety of tap water. 82% of consumers in LSM 9-10 believe that their tap water is very safe, or safe, to drink. Yet only 34% drink water straight from the tap. See the figure below.

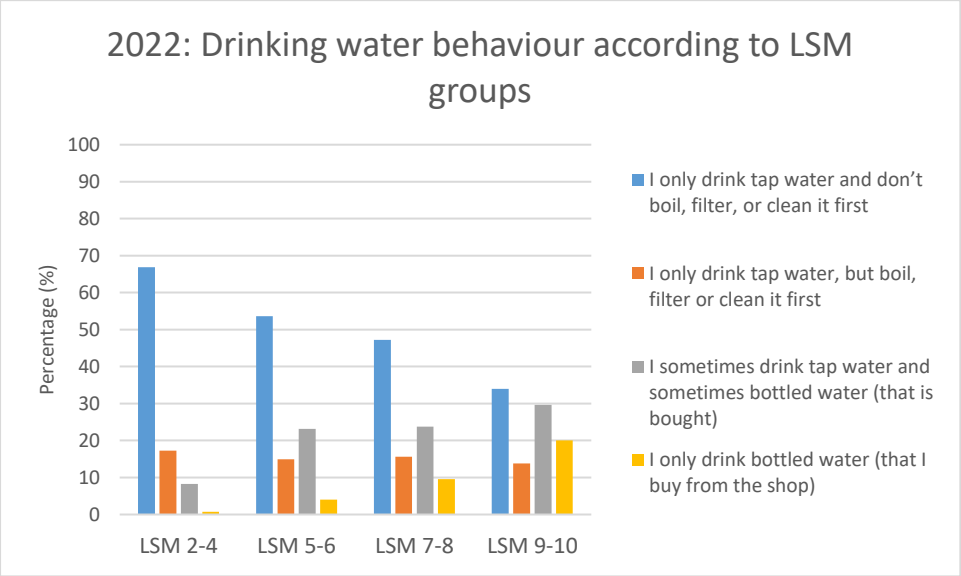


Figure 7.15: 2022: Drinking water behaviour according to LSM groups

7.3.4 Drinking water behaviour and other demographic variables

In 2022, the study found that, compared to the average, drinking bottled water only was significantly higher among the oldest age group (65+), as well as White and Coloured people.

In 2011, sex differences were noted. For example, females were significantly more likely to boil, clean or filter drinking water than males. However, no significant sex differences were found in 2015 or 2022 in perceptions about the safety to drink tap water, nor were there any significant sex differences in behaviour.

7.4 Interruptions of supply

According to Doria (2010), "most people in countries with a reliable water supply perceive tap water as having a low safety risk".

In 2015, 82% of consumers in Metros and other urban areas said that they seldom (less than once a month), or never, experienced interruptions in their water supply. In 2022, this figure dropped to 67%.

The figures below show a similar trend for provinces. Between 2015 and 2022, the reliability of water supply declined distinctively in the Northern Cape (38% less reliable) and the Free State (33%), according to the perceptions of consumers in Metros and other urban areas.

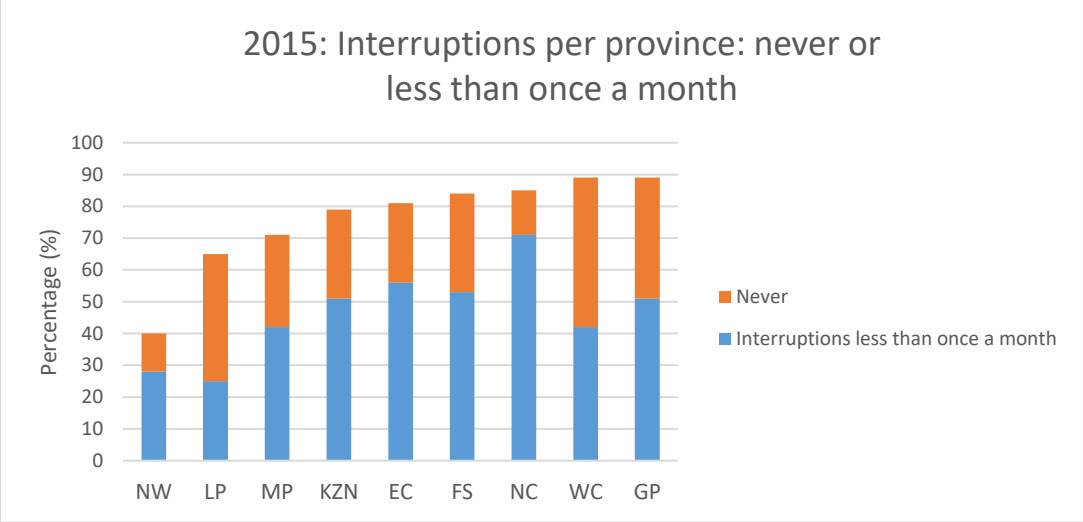


Figure 7.16: 2015 Interruptions per province – never or seldom

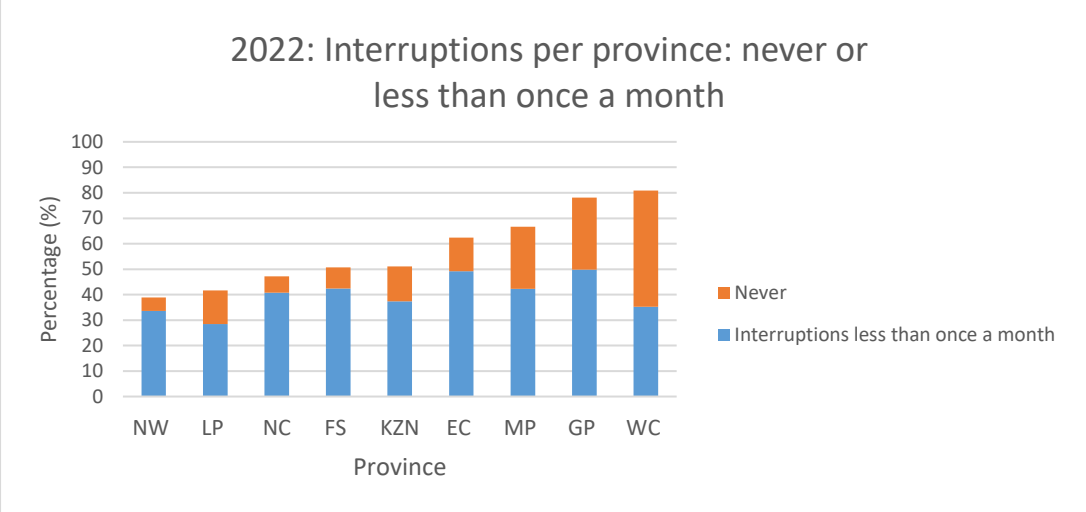


Figure 7.17: 2022 Interruptions per province – never or seldom

23% of urban consumers in Limpopo said that they experience water interruptions at least once a week, while a further 22% said that they experienced interruptions at least once a day.

7.5 Perceptions of service quality

7.5.1 The 2011 study

In the 2011 study, respondents were asked to rate the quality of municipal services on a 5-point Likert scale, where 1=very bad and 5=very good. The question aimed to get a general rating of municipal services; it did not focus on water and sanitation services specifically. The mean score was 3,14. The top scorers were KwaZulu-Natal, Western Cape, Gauteng, and North West — in that order.

7.5.2 The 2015 study

The limitation was addressed in the 2015 study. In the additional questions, respondents were asked to rate the quality of the water and sanitation services that they receive. The questions tested both general perceptions and specific aspects of these services.

1. The three questions about general perceptions were:
    - How would you describe the municipality's water and sanitation service (anything that has to do with water, toilets and sewage) in the area where you live?
    - Do you think your municipality is competent to deliver a good water and sanitation service?
    - Do you think your municipality will be able to deal with water scarcity in the event of a drought?
2. The specific service aspects covered reliability of service, maintenance, clear and accurate billing, and customer service. Questions were asked on each aspect. For questions b-d, the respondent could answer “not applicable” or "don't know” if they had no experience of this aspect of the municipality's service.
    a. Reliability of service (interruptions and water pressure)
        - Does the municipality maintain or keep a strong water pressure in the tap(s)?
        - How often do you experience water interruptions?
    b. Maintenance
        - Does the municipality repair leaking, or broken water or sewage pipes in the street within 1 to 2 days?
        - Does the municipality clean up sewage spills within 1 to 2 days?
        - Does the municipality empty full pit latrines regularly?
        - Does the municipality repair broken water meters?
    c. Clear and accurate billing
        - Does the municipality read water meters every month?
        - Does the municipality send out clear and accurate bills?
    d. Customer service
        - Does the municipality answer the phone and emails?
        - Does the municipality respond to complaints and queries about water or sanitation?
        - Does the municipality solve water and sanitation issues in the community?

The answers to each of the 14 service quality questions were given a rating between 1 and 4 (Hardly ever/never=1; Some of the time=2, Most of the time=3; All of the time/always=4).

A service quality perception tool calculated **a composite score out of 10** for respondents' perceptions across these 14 aspects of municipal water and sanitation services.

The perceived Service Quality Index (SQI) scores were interpreted as follows:

- 9 or more out of 10 = outstanding
- 7 or more, but less than 9 = very good
- 6 or more but less than 7 = good

- 5 or more but less than 6 = adequate, and
- less than 5 = disappointing/requires urgent improvement.

Key findings

1. The perceived SQI for the total urban population was 6,34 out of a possible 10.
2. Consumers in Metros were more positive about their municipality's quality of service than consumers in other urban areas and towns.

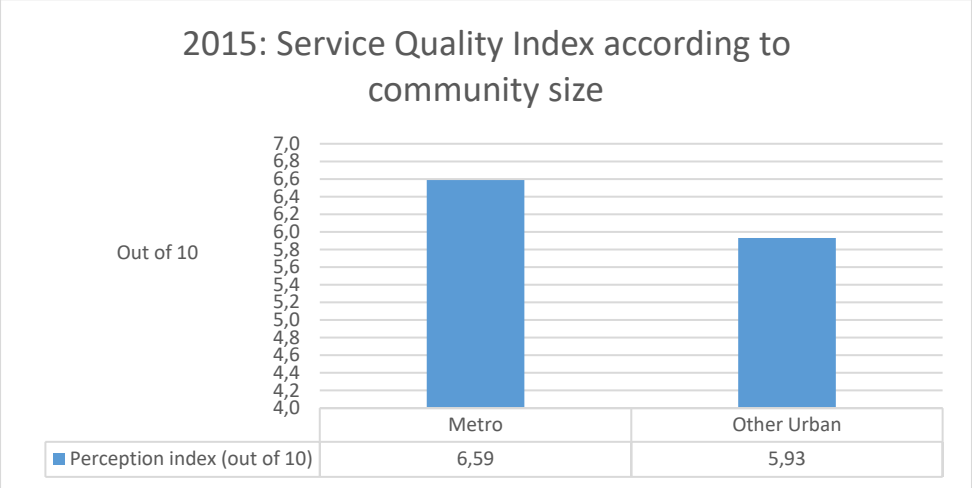


Figure 7.18: 2015: Service Quality Index score of Metros versus other urban areas

3. For the Metros, the service quality scores were as follows:

City of Cape Town	7,01
City of Tshwane	6,97
City of Johannesburg	6,77
Mangaung	6,62
eThekwini	6,53
Ekurhuleni	6,41
Nelson Mandela Bay	5,83
Buffalo City	5,6

4. Gauteng and the Western Cape got the highest Service Quality Index scores; Mpumalanga, the Eastern Cape and North West received the lowest scores.

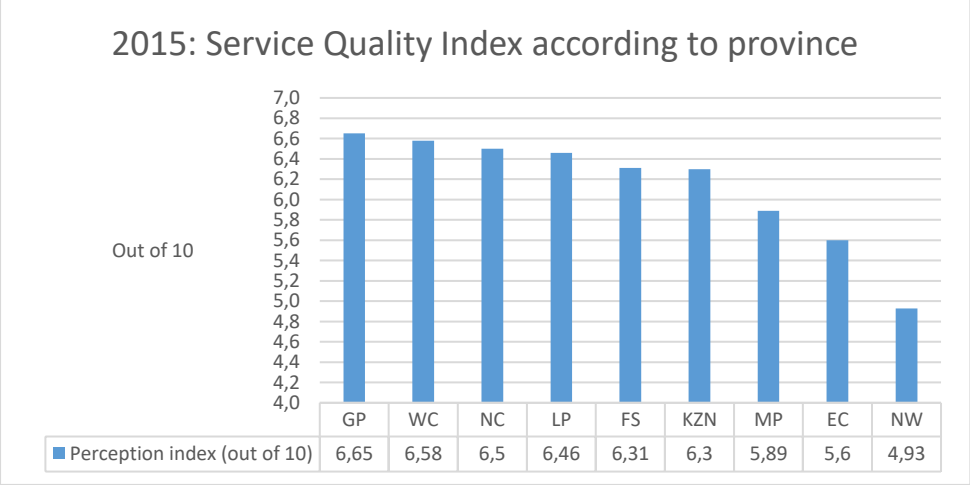


Figure 7.19: 2015: Service Quality Index scores according to province

7.5.3 The 2022 study

7.5.3.1 How the index was calculated

The Service Quality Index (SQI) was expanded in the 2022 study to give a more nuanced picture. The Service Quality Index of 2022 is, therefore, not directly comparable with the one of 2015.

The revised Index reflects two dimensions of customer perceptions:

1. Service quality (based on responses to questions P1 [water quality], P5 [interruptions] and P6 [the same aspects of water and sanitation services that were asked in 2015]), and
2. The effectiveness of the municipality (question P7, which asks the respondent's perception of how effectively their municipality deals with FBW, a water crisis, non-payers, corruption, and illegal connections). This question replaced the question that asked about the municipality's competence in 2015.

The Service Quality Index scores for each of the relevant questions are highlighted in GREEN on the questionnaire: see questions P1, P5, P6 and P7.

Formula for Service Quality Index:

$$Index = \frac{Total\ score}{68 - (sum\ of\ NAs\ x\ 4)} \times 10$$

Total score = ∑ (Ratings for each aspect of P1, P5, P6, P7)

NAs are the Not-Applicables or Don't Knows

By excluding the Not-Applicables and Don't-knows in the calculation, the index is sensitive to the fact that not all consumers experience all aspects of a municipality's water and sanitation service. Some consumers have never contacted the municipality; some consumers do not have a water meter; some consumers do not have on-site sanitation.

7.5.3.2 Findings

The main issues that consumers in Metros and other urban areas have with their municipality's water and sanitation services are:

- Responding to complaints and queries
- Solving water and sanitation issues in the community
- Repairing leaking or broken water or sewage pipes, and
- Cleaning up sewage spills.

50% of consumers in Metros and other urban areas feel their municipality never attends to these issues or only sometimes.

The figure below captures consumers' perceptions about the responsiveness of their municipality's customer service:

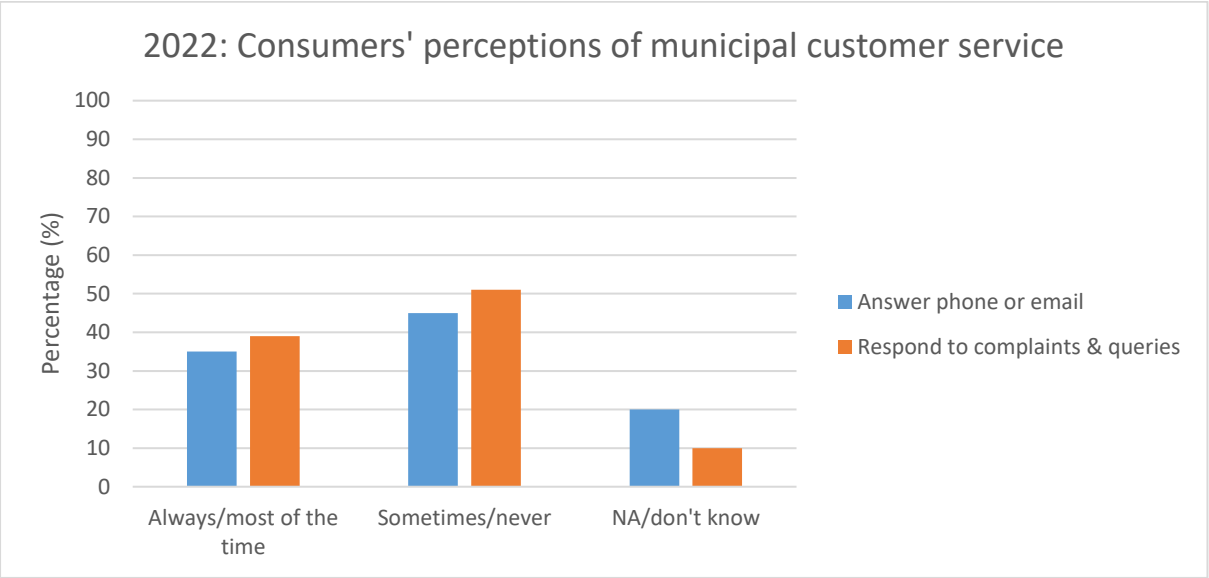


Figure 7.20: 2022: Consumers' perceptions of municipal customer service (Metro and other urban)

In terms of effectiveness, most urban consumers agree that their municipality gives FBW to people who need it (67%) and is able to deal with a water crisis like a drought or flooding (63%). They are less confident that their municipality deals effectively with non-payers (48%), illegal connections (46%) and corruption (41%).

The trend with regard to community size is the same as for the 2015 Index: Consumers in Metros perceive to receive better service than consumers in other urban areas. They also have significantly more confidence in the effectiveness of their municipalities to manage FBW and deal with a water crisis, non-payers, illegal connections, and corruption.

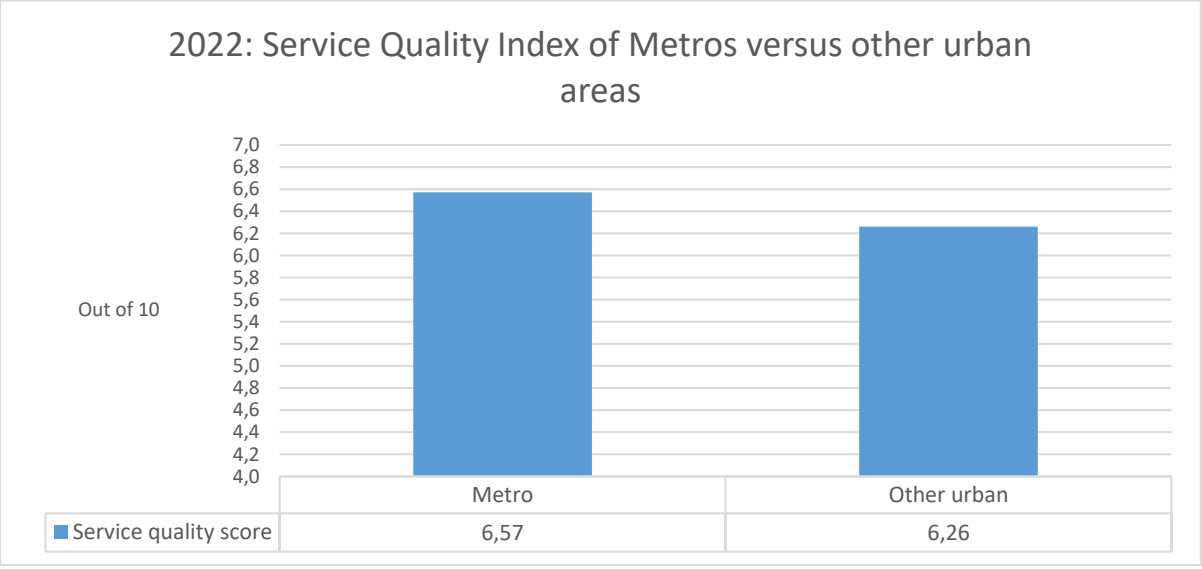


Figure 7.21: 2022: Service Quality Index scores of Metros versus other urban areas

The figure below depicts the mean scores of the eight Metros.

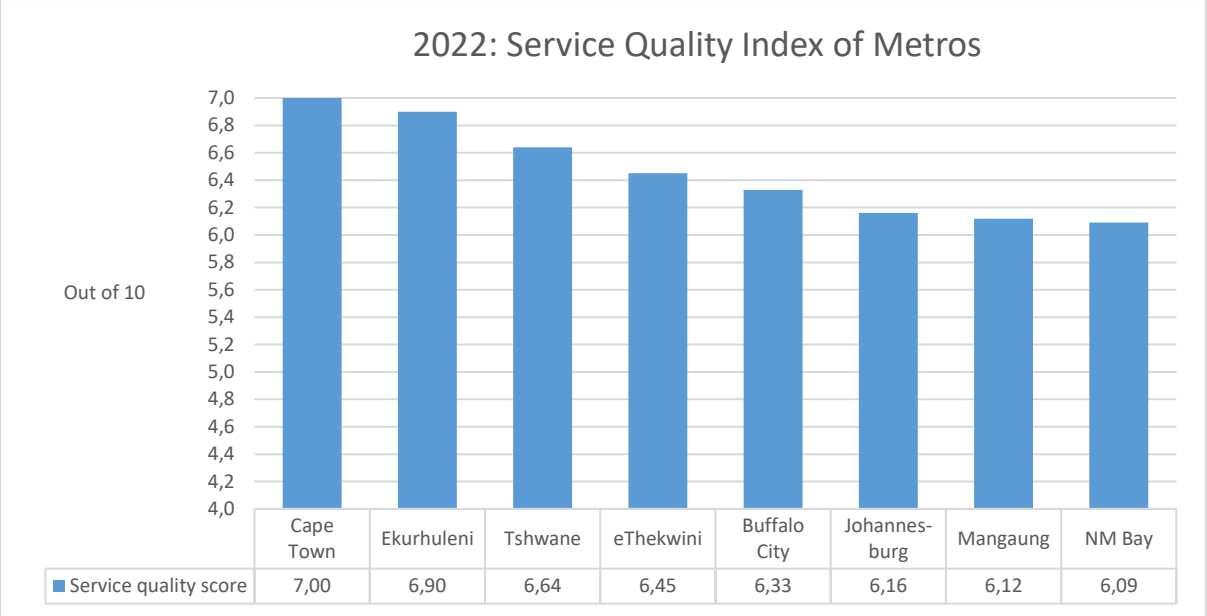


Figure 7.22: 2022: Service Quality Index scores of Metros

For the provinces, Gauteng and the Western Cape stayed among the three top positions in comparison with 2015, whereas North West continued to get the lowest mean service score.

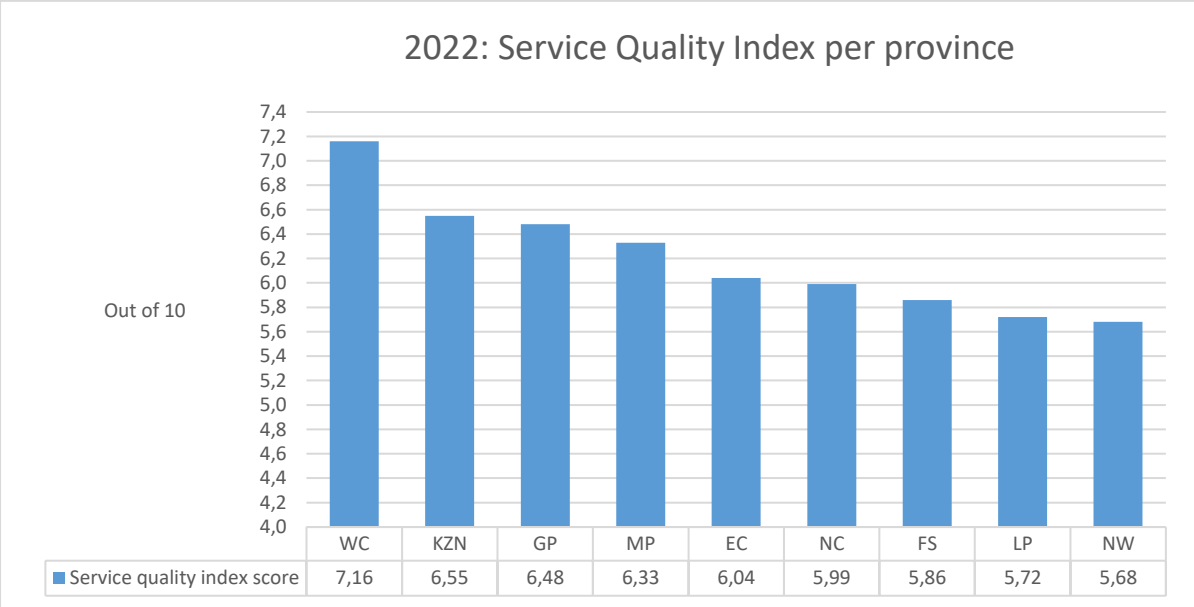


Figure 7.23: 2022: Service Quality Index scores per province (Metro and other urban)

The study found no significant differences in perceptions between urban males and females. Perceptions differed across age groups: the youngest group (below 18) were significantly more positive about water and sanitation services (index score = 6,87) than any other age group. The oldest group (65-99) were the most negative (index score = 6,15).

As in 2015, the higher LSMs groups in Metros and other urban areas perceived to get better service from their municipalities than the lower LSM groups. Note: LSM 2 and 3 show the same trend although the sample size for these two groups was relatively small.

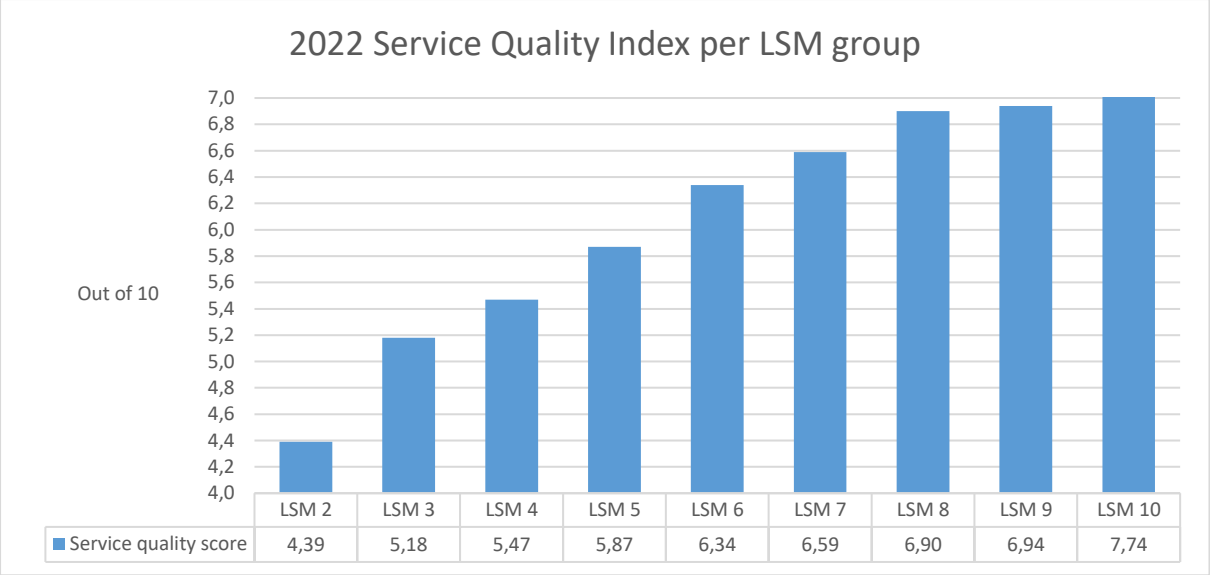


Figure 7.24: 2022: Service Quality Index scores per LSM group (Metro and other urban)

7.6 Water conservation and demand management

7.6.1 Do urban people know how much they pay for water?

This question was introduced in 2015. The figure below shows the results:

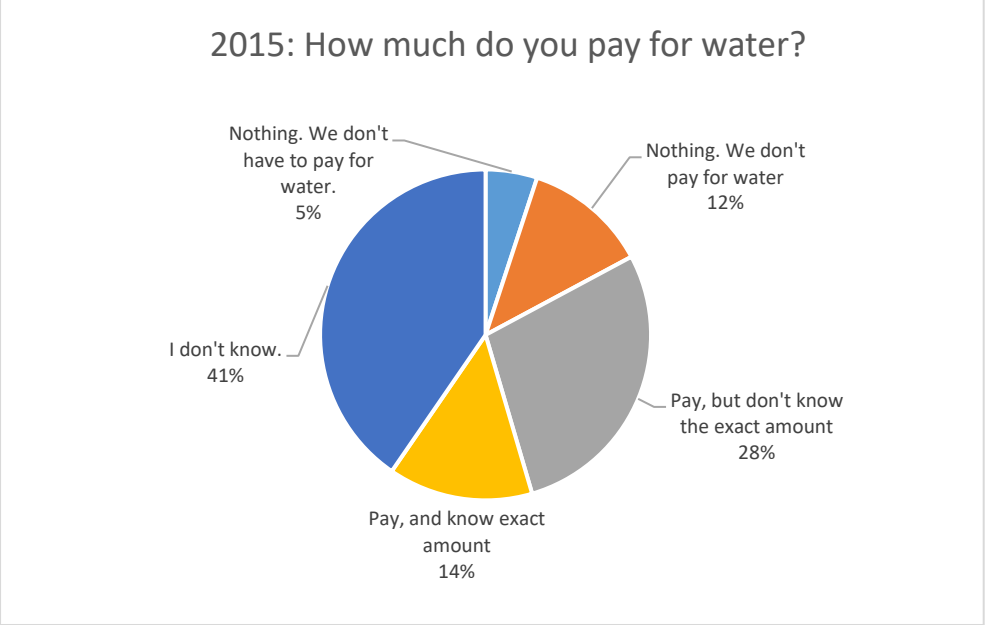


Figure 7.25: 2015: Do urban people know how much they pay for water?

The 2022 figures changed as the chart below shows. The percentage of urban consumers who indicated that they don't pay for water increased from 12% in 2015 to 20% in 2022. The percentage who said they don't pay because they don't have to, stayed about the same (6% in 2022 versus 5% in 2015).

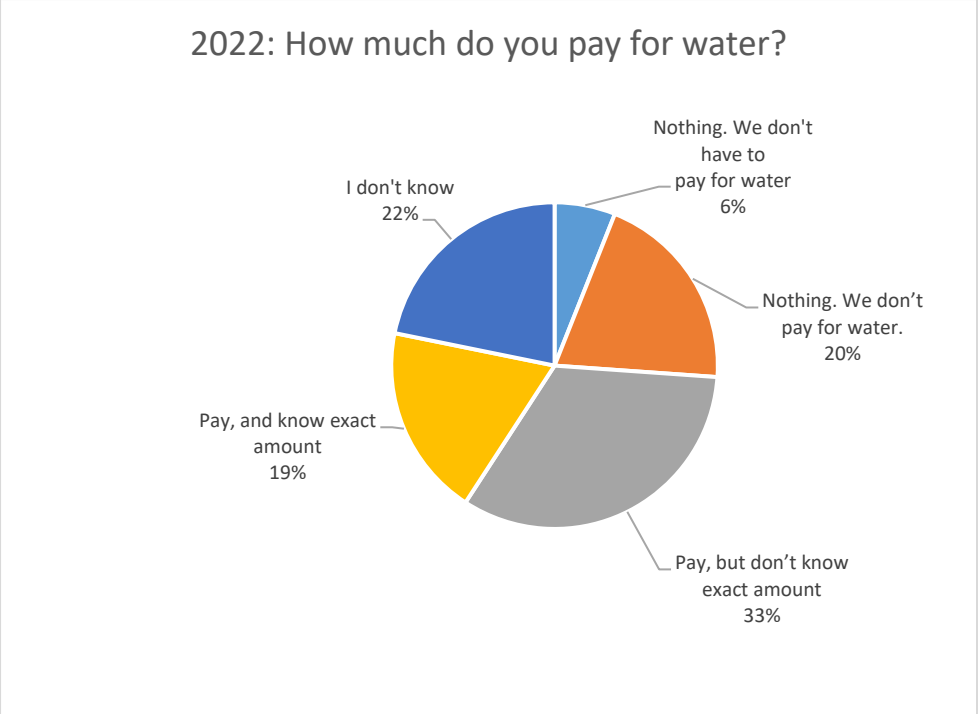


Figure 7.26: 2022: Do urban people know how much they pay for water?

30% of urban consumers in the Western Cape said that they pay for water, and they knew the exact amount. This figure is 10% higher than for any of the other provinces. The difference is significant for all provinces except for the Northern Cape. Of the Metros, the City of Cape Town also has the highest percentage of consumers who pay and know the exact amount (35%). Consumers in the Metros are significantly more likely to know exactly how much they pay than consumers in other urban areas.

7.6.2 Do urban people save water?

The findings for this question were encouraging and reflect an increasing awareness of water scarcity and the need to use water efficiently.

Respondents could give multiple answers. In 2022, 86% of consumers (versus 79% in 2015) mentioned that they actively save water. The measures that people said they used, and the frequency of mention, appear in the table below:

Table 7.2: Do urban save water? Comparing the findings of 2015 with the findings of 2022

Actions to save water	2015	2022
Don't leave open taps running	50%	57%
Repair leaking taps	41%	54%
We already use as little water as possible. (For example, if the household fetches water with a bucket)	27%	19%
Try to use as little water in the garden as possible (plant indigenous plants, only give water at night, have a drip irrigation system, etc.)	18%	16%
Take a shower instead of a bath	14%	20%
Make sure that it is a full load before we switch on the washing machine or dishwasher	12%	16%
Re-use our grey water (water used to bath, shower, wash dishes or washing)	9%	12%
Collect rainwater	6%	14%

Nothing	21%	14%

8 Customer satisfaction in 2022 (Metro and other urban consumers)

8.1 Customer Satisfaction Index

A new question was added to the 2022-questionnaire to measure customer satisfaction. Question P9 asked respondents to rate their satisfaction with four aspects of water and sanitation services on a 5-point Likert scale:

1. Your municipality's water services (water quality, water supply, maintenance of pipes, meter readings)
2. The amount that your municipality charges for water
3. Your municipality's sanitation services (the toilets they supply, maintenance of sewage pipes, sewage treatment)
4. The amount that your municipality charges to collect and treat sewage.

The question included the option "I don't know" to provide for consumers who don't pay for water and sanitation services and for whom satisfaction with charges is, therefore, not applicable.

The ratings for the questions that were used to calculate the Customer Satisfaction Index are highlighted in PINK on questionnaire – question P9).

Formula for Customer Satisfaction Index:

$$Index = \frac{Total\ score}{20 - (sum\ of\ NAs\ x\ 5)} \times 10$$

Total score= ∑ (Ratings for each aspect of P9)

NAs are the Not-Applicables.

8.2 Findings

This section only refers to consumers in Metros and other urban areas. The findings for rural consumers are discussed in the section 9.

8.2.1 The impact of geographical and demographic variables

It is important to note that question P9 asked directly for an emotional response: "How satisfied are you…?" The index scores reflect this emotional response. In contrast, the Service Quality Index is a composite score, based on consumers' service experiences of a number of water and sanitation aspects. **The scores of the two indices are, therefore, not directly comparable.** However, there was a close match between the two indices:

- Consumers in Metros experience better water and sanitation services than consumers in other urban areas. They are also more satisfied with services.
- Provinces that scored low on the Service Quality Index also scored low on the Customer Satisfaction Index.
- Consumers in the higher LSM groups experience better water and sanitation services than consumers in the lower LSM groups. They are also more satisfied with services.

The findings of the study indicated that customer satisfaction is mainly a function of LSM group, the type of municipality that provides the service, and province.

The figures below illustrate trends for these demographic variables.

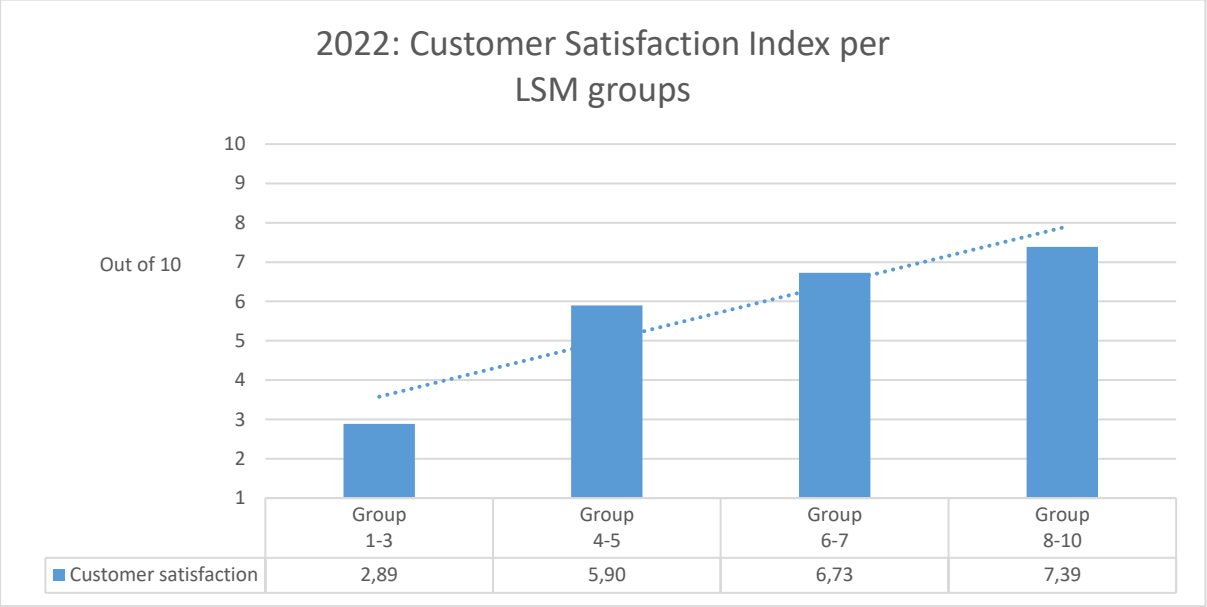


Figure 8.1: 2022: Customer Satisfaction Index scores for LSM groups

Note: only a small number of the consumers in Metros or other urban areas fell into LSM group 1-3. This probably affected the Customer Satisfaction Index score for this group.

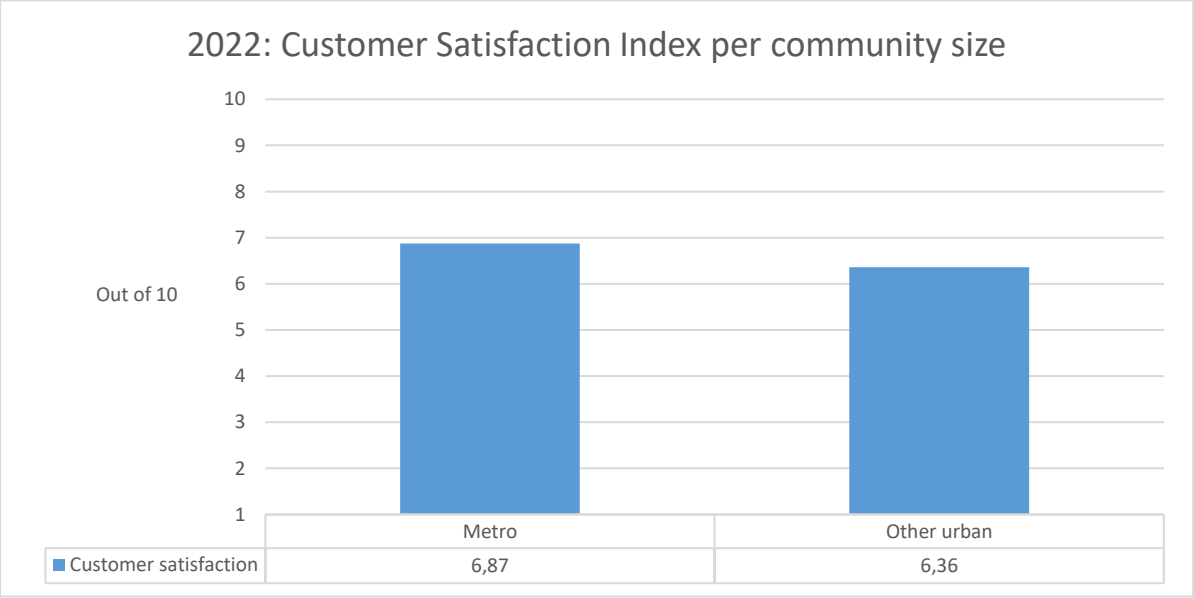


Figure 8.2: 2022: Customer Satisfaction Index per community size

Consumers living in a Metro are generally more satisfied with their water and sanitation services than consumers in smaller towns, although the difference is not statistically significant.

The variance in customer satisfaction across the eight Metros is also not major, with index scores ranging from 7,32 for the City of Ekurhuleni to 6,69 for the City of Tshwane. It was interesting that the City of Tshwane ranked lower on customer satisfaction than on service quality. In contrast, Buffalo City ranked higher on customer satisfaction than it ranked on service quality.

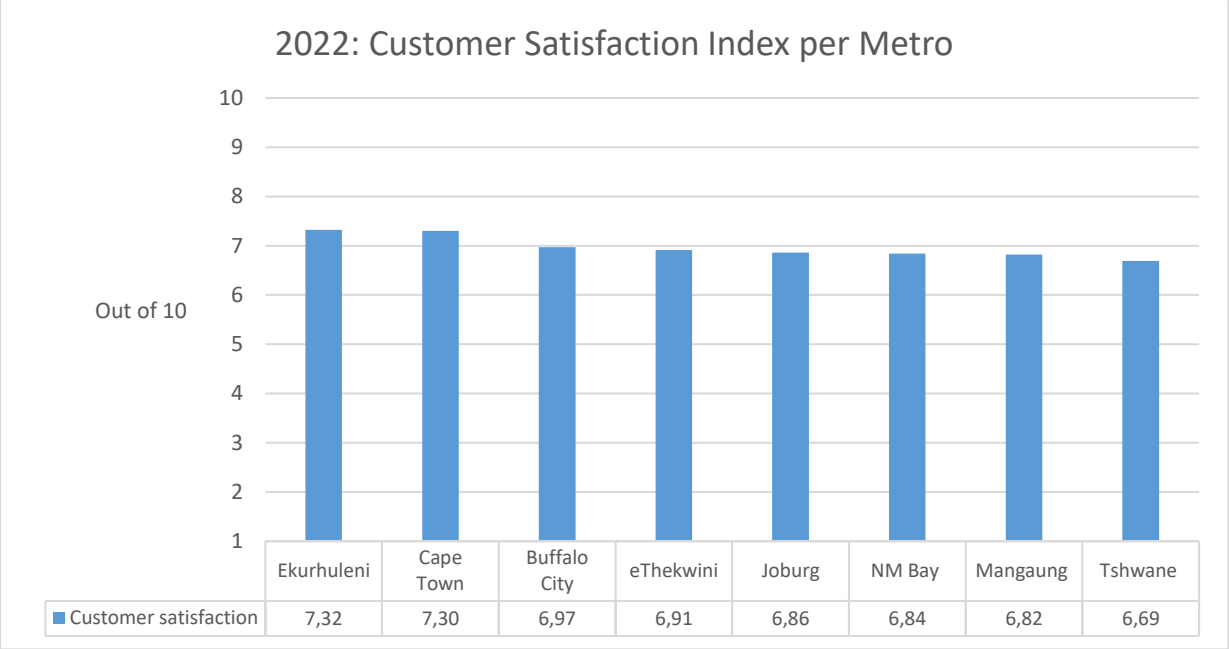


Figure 8.3: 2022: Customer Satisfaction Index scores per Metro

Differences are more marked across provinces.

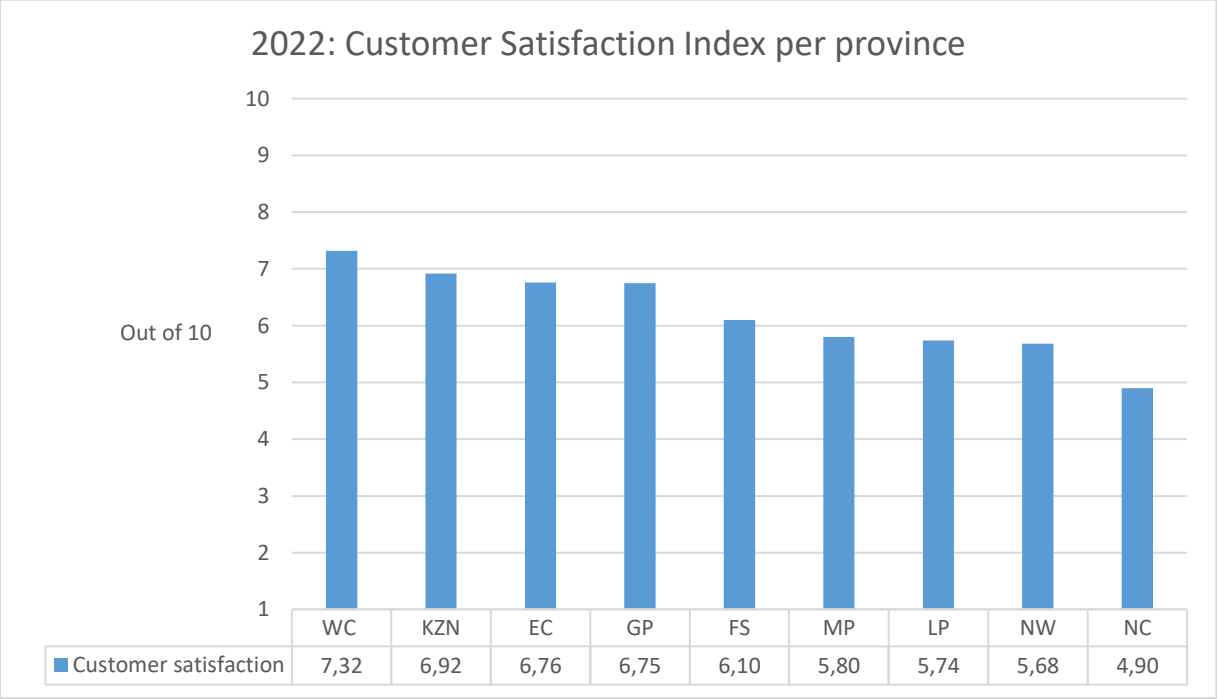


Figure 8.4: 2022: Customer satisfaction index scores per province

The Western Cape scored the highest on urban customer satisfaction, with KwaZulu-Natal and the Eastern Cape second and third respectively. It was notable that the two provinces with the biggest decline in water supply reliability also scored the lowest on customer satisfaction, except for North West, which did not do well on any of the service perception indicators.

The results for customer satisfaction show little variance across demographic groups:

- Sex: males (6,70); females (6,62)

- Age groups: index scores range from 6,45 to 6,89. The age group 45-54 is the least satisfied with an index score of 6,45. The age group 55-64 is the most satisfied with an index score of 6,89.
- Race: there were racial differences, but the researchers concluded that this difference could be better explained by LSM and area of residence.

8.2.2 Reasons for dissatisfaction with sanitation services

Dissatisfaction with sanitation is high for the lower LSMs (48% and 60% for LSM 2 and 3 respectively; 31% for LSM 4). From there it drops gradually to 8% for LSM 10.

In the metropolitan areas, dissatisfaction is the highest in Mangaung. 38% of consumers in this Metro are not satisfied with sanitation services.

Dissatisfaction with sanitation services was the highest in the Northern Cape (40%), Free State (43%) and North West (34%).

The reasons for dissatisfaction with sanitation services was further unpacked in a new question. Respondents were given seven options plus an open "Other reasons (Specify)".

Table 8.1: 2022: Reasons for dissatisfaction with sanitation services

Reasons for dissatisfaction with sanitation services	Percentage
The sewage pipes are not maintained properly	58%
The municipality does not treat the sewage properly	50%
The taps are often dry (without water) so we cannot flush the toilet	25%
The community toilets are dirty	16%
The municipality did not give us toilets	14%
The municipality gave us pit toilets that fill quickly	13%
The community toilets are a long way away (far away)	7%

For urban consumers, lack of maintenance of sanitation infrastructure and inadequate wastewater treatment are by far the main reasons for dissatisfaction.

In the Northern Cape (63%), North West (53%), Limpopo (44%) and KwaZulu Natal (30%) the lack of water to flush toilets was a prominent reason for dissatisfaction with sanitation services.

Mentions in the "Other" category included:

- ''Sewage water in the street smells bad''
- ''They take too long to repair any sanitation faults''
- ''Don't have sanitation services''
- ''The pipes are sometimes blocked'', and
- ''We don't have properly structured sewers''.

8.2.3 Customer satisfaction with water tariffs

Paying consumers living in Metros and other urban areas are generally more satisfied than dissatisfied with the amount their municipality charges for water. See the figure below.

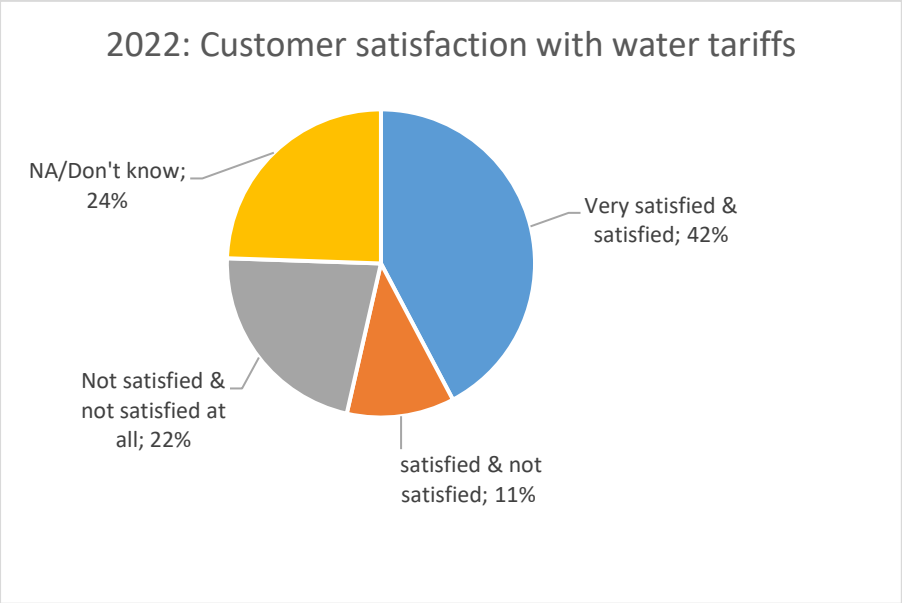


Figure 8.5: 2022: Customer satisfaction with water tariffs

The main reasons for satisfaction with water tariffs were affordability, value for money (water quality and reliability of the service), and accurate billing, as the table below illustrates.

Table 8.2: 2022: Reasons for satisfaction and dissatisfaction with water tariffs

Main reasons for satisfaction with water tariffs	Main reasons for dissatisfaction with water tariffs
Affordable; not expensive; a fair amount; reasonable	Cannot afford it; charges us too much
Water is clean or drinkable	Poor water quality
We never had a problem; satisfied with service	Poor services; interruptions; poor value for money; leaking pipes
The amount we pay matches usage	They do not do readings regularly; estimates
No hidden costs	Inaccurate, irregular, or unclear billing

9 Rural consumers in 2022

The 2022 sample included rural respondents. The findings for rural consumers were very different from those for consumers in Metros and other urban areas. For this reason, the report describes these findings in a separate section although reference will be made to the findings for urban consumers.

9.1 Water quality

In comparison with consumers in Metros and other urban areas, rural consumers are significantly less confident that tap water is safe to drink (64% believe their tap water is safe to drink versus 79% in Metros and other urban areas). It should be noted that 12% of rural consumers said they don't get water from a tap; they get it from the river or a well, in contrast to 0% and 1% of consumers living in Metros and other urban areas respectively. Even if this figure is considered in the calculation, the confidence of rural consumers in the safety of tap water is still significantly less than the confidence of consumers living in Metros and other urban areas.

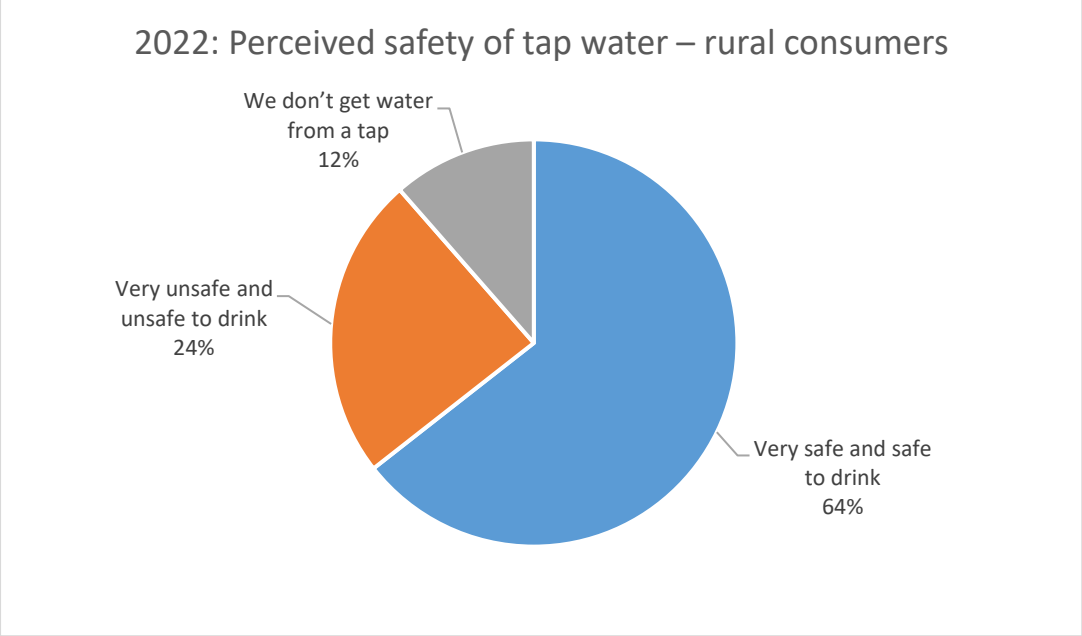


Figure 9.1: 2022: Perceived safety of tap water – rural consumers

9.2 Drivers of risk perceptions

The figure below shows that the reasons for perception that water is safe to drink are the same as for urban consumers: the water looks clean, and nobody gets sick.

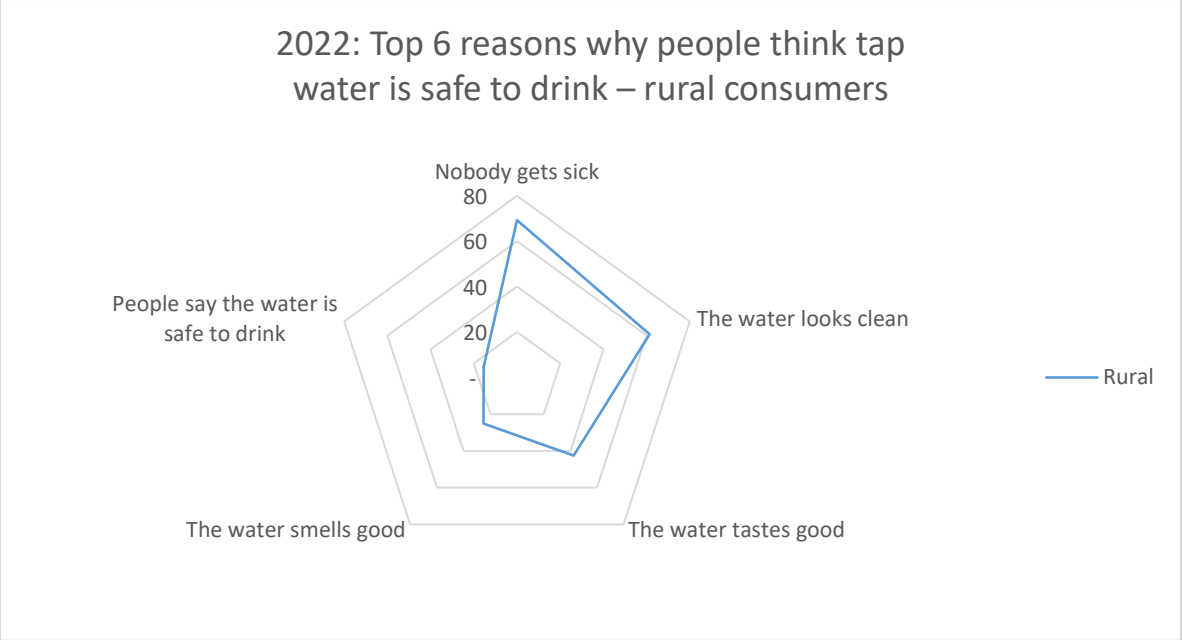


Figure 9.2: 2022: Main drivers of rural perceptions that tap water is safe to drink

The main drivers of rural perceptions that tap water is unsafe to drink are the physical appearance of the water and the way it smells.

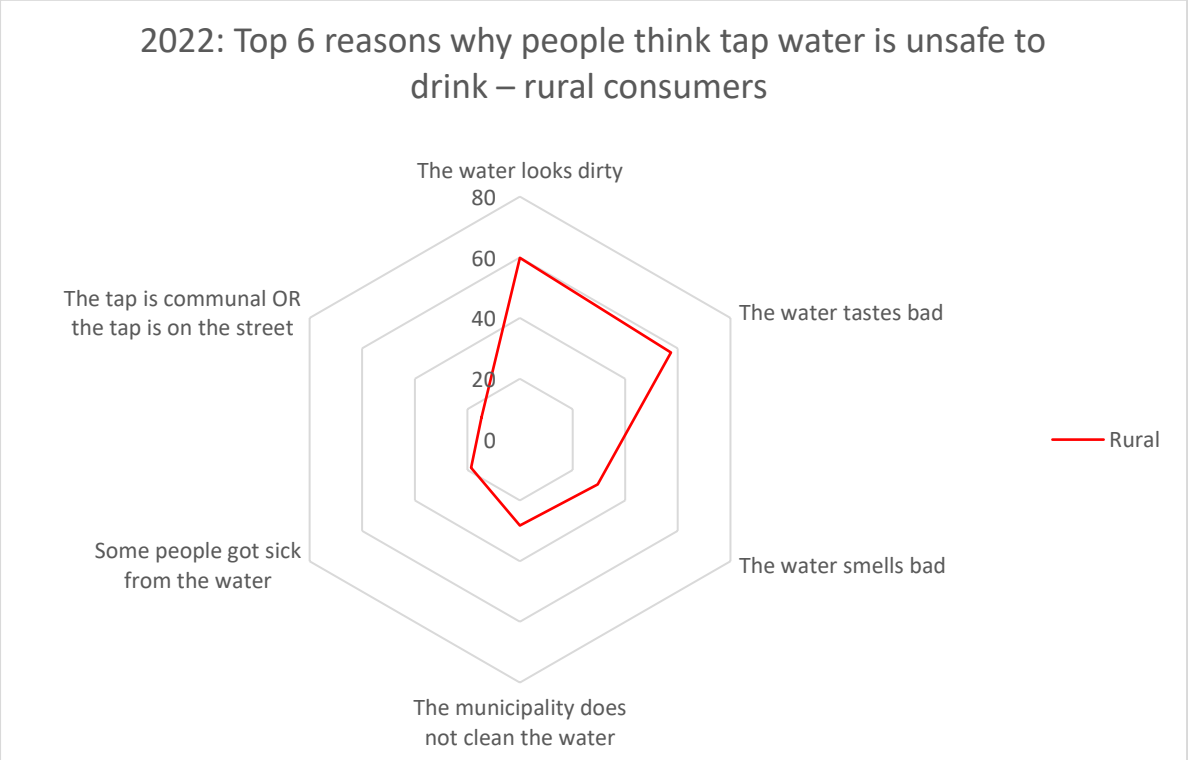


Figure 9.3: 2022: Main drivers of rural perceptions that tap water is unsafe to drink

9.3 Drinking water behaviour

54% of rural consumers said that they only drink tap water and don't boil, filter, or clean it first. 13% said that they boil, filter, or clean it first.

9.4 Interruptions of supply

Rural consumers experience more interruptions of water services than consumers in Metros or other urban areas. Only 35% seldom (less than once a month) or never experience interruptions.

29% of rural consumers experience water interruptions at least once a day; 24% experience interruptions at least once a week.

9.5 Service Quality Index

Rural consumers have a significantly more negative experience of water and sanitation services than consumers in Metros and other urban areas.

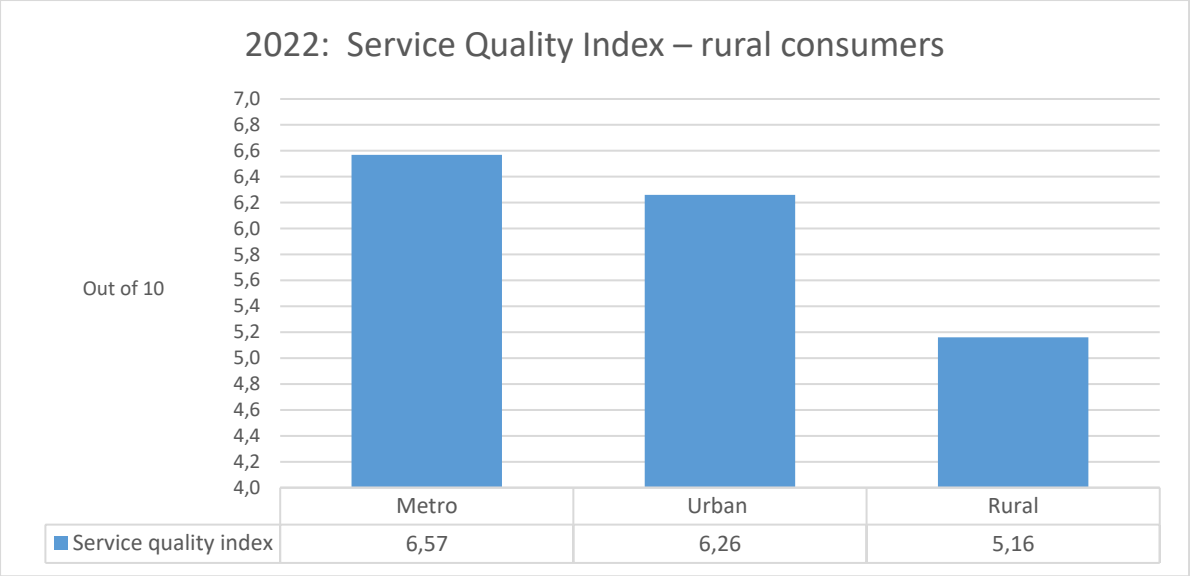


Figure 9.4: 2022: Service Quality Index of rural consumers in comparison with urban consumers

It should be noted that many of the service aspects tested in question P5 were not applicable to rural respondents who do not get piped water. Since the index calculation considered Not-Applicables, it should, therefore, not have affected the index score.

Rural consumers are also more negative about the effectiveness of their municipality than consumers in Metros or other urban areas:

- 33% of rural consumers disagree that their municipality gives FBW to the people who need it. This figure is significantly higher than the figure for Metro (20%) and other urban consumers (21%).
- 51% of rural consumers do not believe their municipality is able to deal with a water crisis like a drought or flooding. In comparison, the figure is 28% for consumers in Metros and 35% for consumers in other urban areas.
- They are also less confident than consumers in Metros and other urban areas about their municipality being able to deal effectively with non-payers, illegal connections and corruption.

The figure below compares the percentage of consumers (Metro vs. other urban vs. rural) who believe that their municipality deals effectively with these five aspects.

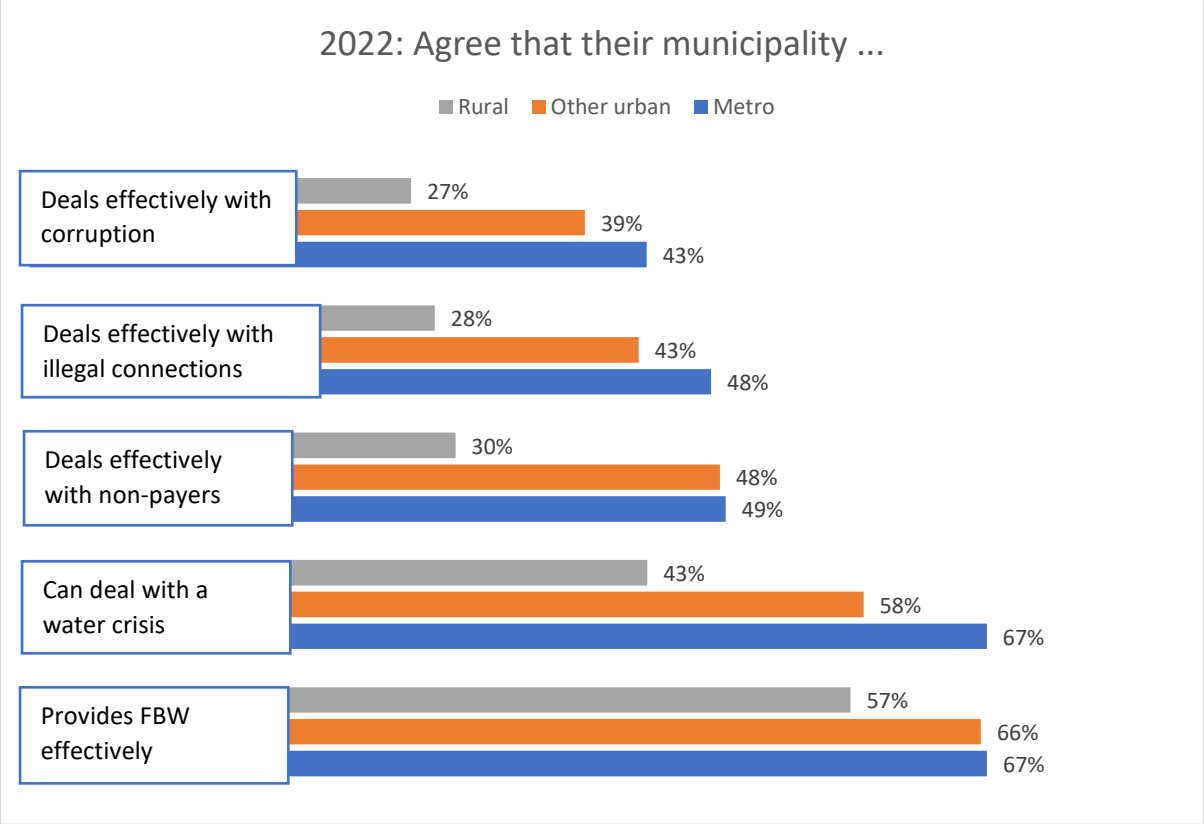


Figure 9.5: 2022: Rural consumers' confidence in their municipality's effectiveness in comparison with urban consumers

9.6 Do rural people save water?

The actions that rural people take to save water reflect their living conditions, as the table below indicates.

Table 9.1: 2022: Actions that rural people take to save water

Actions to save water	Percentages
Collect rainwater	37%
Don't leave open taps running	34%
We already use as little water as possible.	32%
Nothing	25%
Repair leaking taps	25%
Re-use our greywater	13%

9.7 Customer satisfaction

9.7.1 Across demographic variables

The figure below illustrates that rural consumers are significantly less satisfied with the water and sanitation services they receive than Metro and other urban consumers:

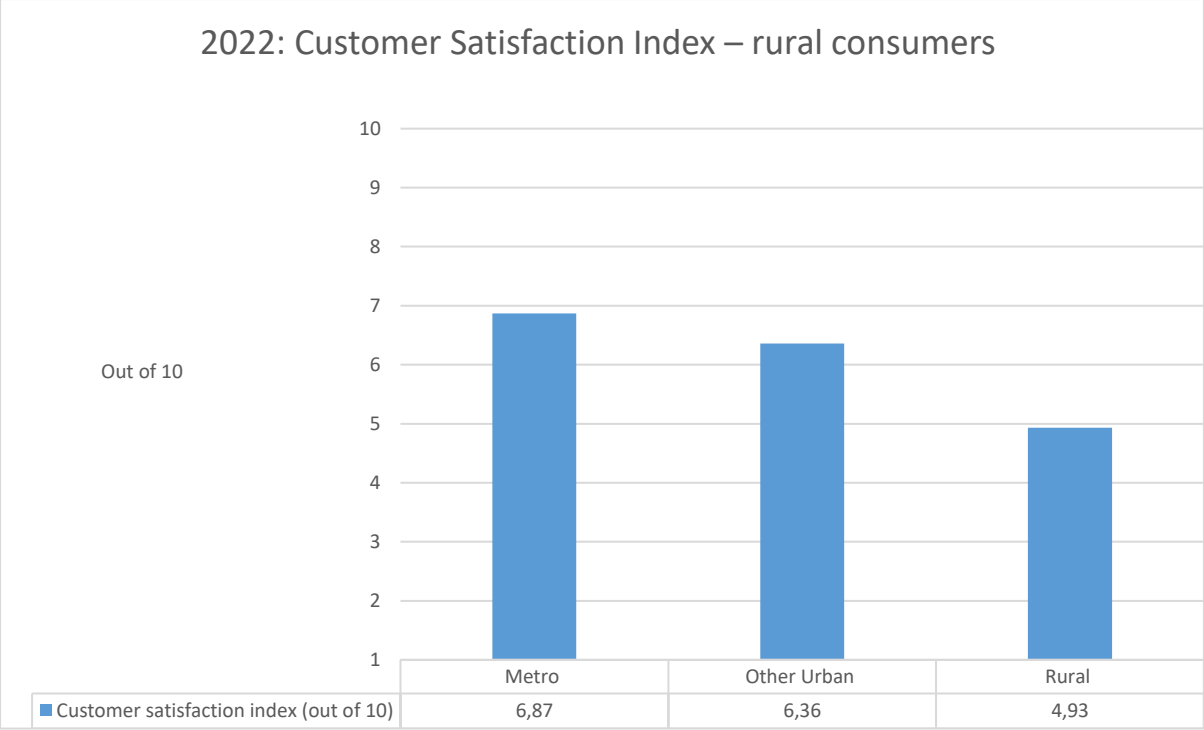


Figure 9.6: 2022: Customer Satisfaction Index of rural consumers in comparison with urban consumers

9.7.2 Reasons for dissatisfaction with sanitation

The reasons why rural consumers are dissatisfied with sanitation services are different from urban consumers and reflect problems with on-site sanitation, communal sanitation, and an unreliable water supply.

Table 9.2: 2022: Reasons why rural people are dissatisfied with sanitation services

Reasons why rural people are dissatisfied with sanitation services	Percentage
The municipality does not treat the sewage properly	31%
The municipality did not give us toilets	31%
The taps are often dry (without water) so we cannot flush	31%
The municipality gave us pit toilets that fill quickly	28%
The sewage pipes are not maintained properly	24%
The community toilets are dirty	12%
The community toilets are a long way away	5%

10 Service quality and customer satisfaction according to service level (all consumers)

10.1 Service Quality Index scores according to service level

The measure of living standard (LSM) includes the level of water and sanitation services that a household receives. The relationship between water and sanitation service levels and Service Quality Index scores follows a similar pattern as for LSM groups: the higher the service level, the better the quality of service that consumers perceive to experience.

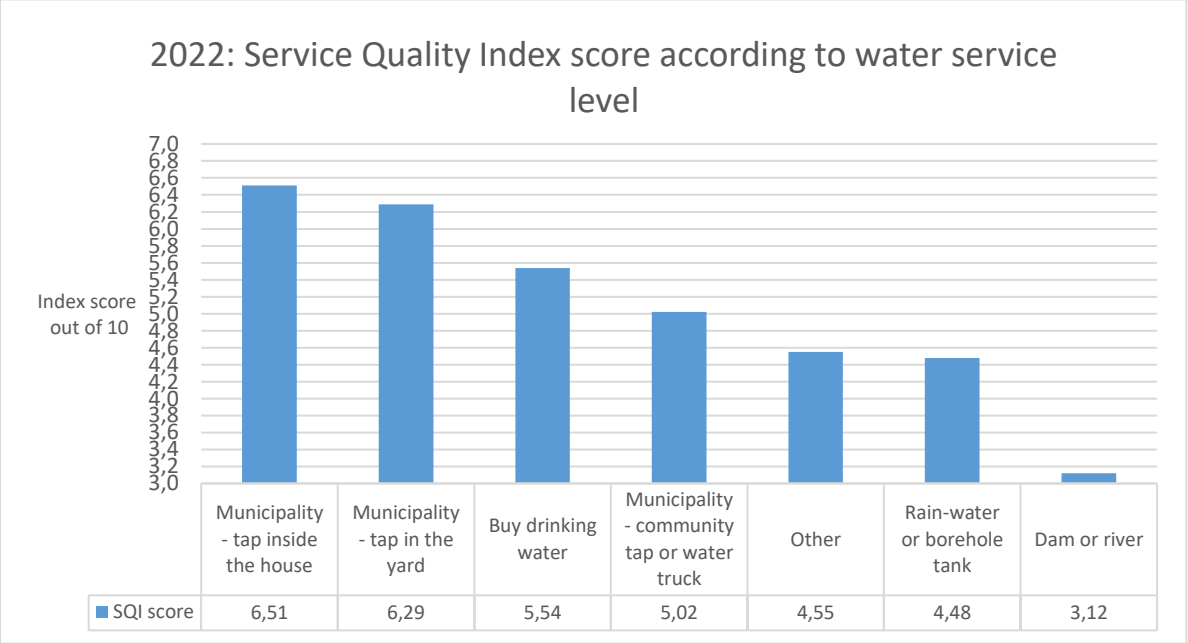


Figure 10.1: 2022: Service Quality Index score per water service level (all consumers)

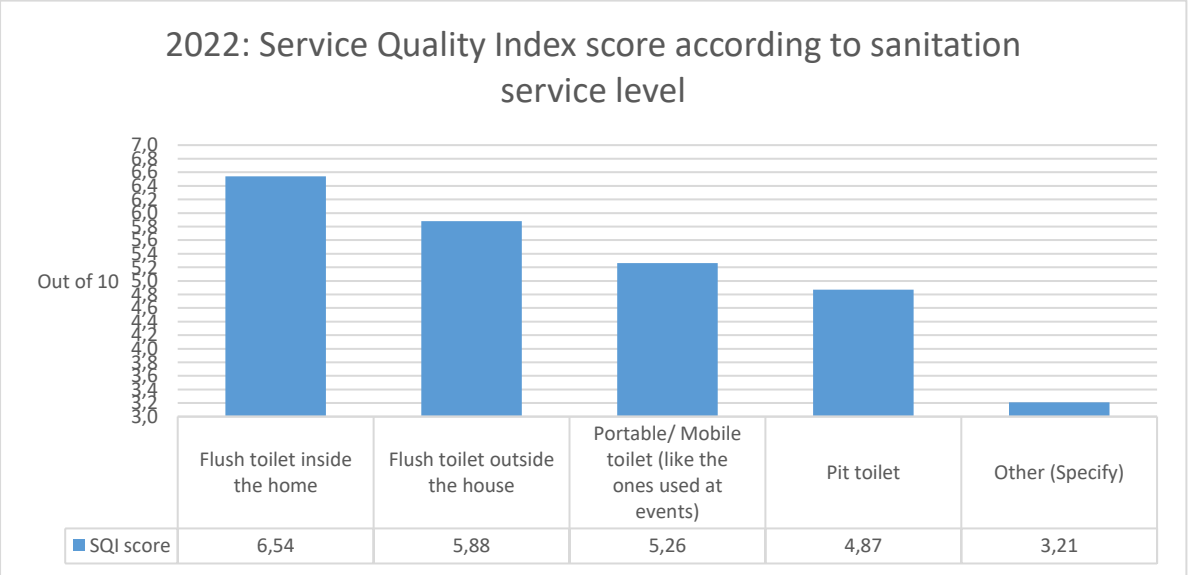


Figure 10.2: 2022: Service Quality Index score per sanitation service level (all consumers)

10.2 Customer satisfaction per water source

The figure below shows that customers' satisfaction with water and sanitation services also correlates with the main source of their drinking water.

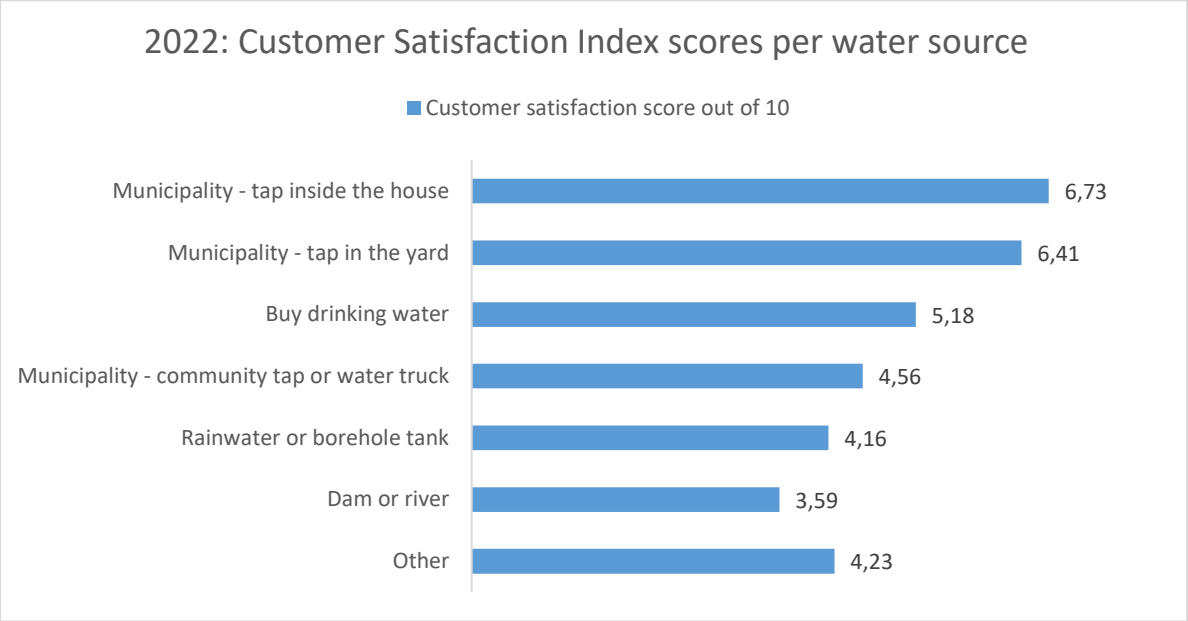


Figure 10.3: 2022: Customer Satisfaction Index scores per water source (all consumers)

11 Conclusions

11.1 Similar findings

The 2022 perception study confirmed two key findings of the 2011 and 2015 studies:

1. The majority of South Africans are confident that municipal tap water is safe to drink.
2. The organoleptic properties of tap water (appearance, smell and taste) and the fact that nobody got sick are the main drivers of these perceptions.

The 2022 perception study also confirmed the 2015 finding that consumers' area of residence (Metros vs. other urban areas) and LSM group have the biggest impact on consumer perceptions of water and sanitation services:

1. Consumers living in Metros perceive to get safer tap water, less interruptions and better water and sanitation services across all the tested aspects than consumers in other urban areas.
2. Consumers living in Metros also have more confidence than consumers in other urban areas in the effectiveness of their municipalities to manage FBW and deal with a water crisis, non-payers, illegal connections, and corruption.
3. Consumers living in Metros are more satisfied with their municipality's water and sanitation services than consumers in other urban areas.
4. Across LSM groups, another pattern was confirmed: the higher LSM groups perceive to get safer tap water, less interruptions and better water and sanitation services than the lower LSM groups. They are also more satisfied with their water and sanitation services. It should be noted that LSM is associated with service level. The lowest LSMs have pit latrines or mobile toilets, and communal taps or water from a river or dam; the highest LSM groups have multiple taps inside their homes and flush toilets.

11.2 Negative trends

As the charts in the report illustrate, consumers living in Metros and other urban areas are however less positive about their drinking water quality in 2022 than they were in the preceding study years. The percentage of people who drink tap water without boiling, filtering or cleaning it first, dropped from almost 70% in 2015 to about 50% in 2022. 15% on average now boil, filter or clean their drinking water in comparison with an average of 5% in 2011. The percentage of consumers who only drink bottled water has increased from 4,4% in 2011 to 8% in 2022.

This trend is supported by consumers' perception of the reliability of water supply. In 2015, 82% of consumers in Metro and other urban areas said that they experienced interruptions in their water supply less than once a month. In 2022, this figure dropped to 67%.

Less people reported that they pay for water in 2022 than in 2015. The percentage of consumers who indicated that they don't pay for water increased from 12% in 2015 to 20% in 2022. The percentage who said they don't pay because they don't have to, stayed the same (6% in 2022 versus 5% in 2015).

The main reasons for dissatisfaction with water tariffs were affordability, poor services, and inaccurate billing. However, paying consumers living in Metros and other urban areas are generally more satisfied than dissatisfied with the amount their municipality charges for water.

11.3 Positive trends

On the positive side, consumers living in Metros and other urban areas have become more aware of water scarcity and more of them actively try to use less water.

11.4 Rural consumers

The 2022 study was the first to include a rural sample. The study found that rural consumers are more negative about all aspects of water and sanitation services than consumers living in Metros and other urban areas. Rural consumers are also the least satisfied with water and sanitation services as the figures in section 9 depict.

12 Recommendations

The 2022 study pointed out alarming trends in consumers' perceptions of water and sanitation services. The main concerns from the perspective of consumers are water quality and reliability of supply. These two concerns are also raised as reasons for dissatisfaction with water tariffs.

It is recommended that municipalities address these two concerns as a matter of urgency.

On the other hand, it was evident that South African consumers are becoming increasingly aware of water scarcity and that they are prepared to actively reduce their water use.

It is recommended that public campaigns of the Department of Water and Sanitation and other organisations strengthen this resolve with targeted messaging.

Rural consumers perceive themselves to be lagging behind in all aspects of water and sanitation services. **It is recommended that municipalities actively work to improve water and sanitation services to their rural consumers and address their specific needs as described in this report.**

Lastly, a Customer Satisfaction Index was added as a new feature to the 2022 perception study. The findings provide a valuable baseline. **It is recommended that municipalities use the mean Customer Satisfaction Index scores as a baseline against which the impact of national, provincial or local initiatives can be measured.**

13 List of references

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14 Appendix 1: Questionnaire development

14.1 Comparison of 2011 and 2015 questions

The table below compares the questions asked in 2011 with the questions asked in 2015.

Table 14.1: Comparison of 2011 and 2015 questions

2011	2015
Q1 – ask all READ OUT. SHOWCARD Is the tap water in your household: 1. Very safe to drink 2. Safe to drink 3. Unsafe to drink 4. Very unsafe to drink 5. Unsure or don't know (NOT ON SHOW CARD) 6. I don't get water from a tap (NOT ON SHOW CARD) IF RESPONDENT IS UNSURE, PROBE – "BASED ON YOUR EXPERIENCE, WOULD YOU SAY THE WATER IS…."	**Q1 – ask all** READ OUT SHOWCARD Is the tap water that your household uses: 1. Very safe to drink 2. Safe to drink 3. Unsafe to drink 4. Very unsafe to drink 5. We don't get water from a tap – We get it from the river or a well IF RESPONDENT IS UNSURE, PROBE – "BASED ON YOUR EXPERIENCE, WOULD YOU SAY THE WATER IS…."
Q2 – ask if 1 or 2 in Q1 READ OUT. MULTIPLE ANSWERS. What makes you say …? (ANSWER IN Q1) 1. The water looks clean 2. The water smells good 3. The water tastes good 4. The water is purified 5. The water is tested for harmful bacteria 6. The water is not polluted 7. Nobody gets sick 8. People told me the water is safe to drink 9. There are chemicals in the water 10. The water smells of chlorine 11. The municipality told us that the water is safe 12. I heard in the media (radio, TV, newspaper) that the water is safe to drink 13. Our municipality has a Blue Drop 14. Other (SPECIFY)	**Q2a – ask if 1 or 2 in Q2** DO NOT READ OUT Why do you say it's …? (ANSWER IN Q1) CODE: 1. Nobody gets sick 2. The water looks clean 3. The water smells good 4. The water smells of chlorine 5. The water tastes good 6. The municipality cleans the water 7. The municipality tests the water to see if it is safe to drink 8. People say the water is safe to drink 9. I heard in the media (radio, TV, newspaper) that the water is safe to drink 10. Our municipality has a Blue Drop 11. Other (Specify)
Q3 – ask if 3 or 4 in Q1 READ OUT. MULTIPLE ANSWERS. What makes you say …? (ANSWER IN Q1) 1. The water looks dirty 2. The water smells bad 3. The water tastes bad 4. The water is not purified 5. The water is not tested for harmful bacteria 6. The water is polluted by mines or factories 7. Some people got sick from the water. 8. People told me the water is unsafe to drink 9. There are chemicals in the water 10. The water smells of chlorine	**Q2b – ask if 3 or 4 in Q2** DO NOT READ OUT. MULTIPLE ANSWERS. Why do you say it's …? (ANSWER IN Q1) CODE: 1. Some people got sick from the water 2. The water looks dirty 3. The water smells bad 4. The water smells of chlorine 5. The water tastes bad 6. The tap is communal OR the tap is on the street 7. The municipality does not clean the water

2011	2015
11. The municipality told us that the water is unsafe to drink. 12. I heard in the media (radio, TV, newspaper) that the water is unsafe to drink 13. Our municipality does not have a Blue Drop 14. Other (SPECIFY)	8. The municipality does not test the water to see if it is safe to drink 9. The river or dam where we get our water from is dirty and polluted 10. People say the water is unsafe to drink 11. The municipality told us that the water is unsafe to drink 12. I heard in the media (radio, TV, newspaper) that the water is unsafe to drink 13. Our municipality does not have a Blue Drop 14. Other (Specify)
Q4 – ask if 1, 2, 3, 4 or 5 in Q1 READ OUT. SHOWCARD. When at home, do you: 1. Always drink tap water. 2. Drink tap water, but sometimes boil, filter or clean it 3. Drink tap water, but always boil, filter or clean it 4. Sometimes drink tap water and sometimes bottled water (that is bought) 5. Only drink bottled water (that is bought)	**Q3 – ask all** READ OUT. SHOWCARD. How do you drink water at home? 1. I don't drink water on its own; only drink coffee, tea or cool drink 2. I only drink tap water and do not boil, filter or clean it first 3. I only drink tap water, but boil, filter or clean it first 4. I sometimes drink tap water and sometimes bottled water (that is bought) 5. I only drink bottled water (that is bought) 6. Other (Specify)
Q5 – ask all READ OUT. SHOWCARD. In the area where you live, the municipality gives: 1. Very good service 2. Good service 3. Good and bad service 4. Bad service 5. Very bad service	**Q4 – ask all** READ OUT. SHOWCARD. EMPHASISE THAT THIS QUESTION DEALS WITH WATER AND SANITATION SERVICES ONLY, NOT ROADS OR RUBBISH REMOVAL. How would you describe the municipality's water and sanitation service (anything that has to do with water, toilets and sewage) in the area where you live? 1. Very good/Excellent 2. Good 3. Good and bad 4. Bad 5. Very bad 6. I don't know
Q6 – ask all PROBE FULLY Why do you say that the municipality gives …? (ANSWER IN Q5)	**Q5 – ask all** SHOWCARD. PROBE FULLY AND MAKE SURE THAT ANSWERS RELATE TO WATER, TOILETS OR SEWAGE Why do you say that the municipality's water and sanitation service is … (ANSWER IN Q4) (not exactly the same as in 2011)
	Q6 – ask all READ OUT. SHOWCARD (grid style) Does the municipality… 1. Repair leaking or broken water or sewage pipes in the street within 1 to 2 days? 2. Clean up sewage spills within 1 to 2 days? 3. Empty full pit latrines regularly? 4. Maintain or keep a strong water pressure in the tap(s)? 5. Repair broken water meters? 6. Read water meters every month?

2011	2015
	7. Send out clear and accurate bills? 8. Answer the phone and emails? 9. Respond to complaints and queries about water or sanitation? 10. Solve water and sanitation issues in the community? Options: • All of the time/ Always • Most of the time • Some of the time • Hardly ever/ Never • Not applicable • Don't know
	Q7 – ask all READ OUT. SHOWCARD How often do you experience interruptions in your water supply (your water supply is off)? 1. Never 2. Seldom – less than once a month 3. At least once a month 4. At least once a week 5. At least once a day
	Q8 – ask all DO NOT READ OUT How much water does your household use per day or per month, on average? CODE: 1. I don't know 2. Vague estimate If the respondent gives a vague estimated quantity. For example, less than 10 000 litres (10 kilolitre) per month. Or, between 20 000 and 60 000 litres (20-60 kilolitre) per month. 3. Accurate figure If the respondent can say, with confidence, how much water the household uses per day or per month. For example, one 20 litre bucket and two 9 litre buckets. Or, between 15 000 and 17 000 litres per month (15-17 kilolitres). Or, 20 000 to 25 000 litres in winter and 30 000 to 35 000 litres (30-35 kilolitres) per month in summer.
	Q9 – ask all DO NOT READ OUT What does your household water cost you per month on average? CODE: 1. I don't know. 2. Nothing. We don't have to pay for water. PROBE FOR REASON: We use a communal tap. OR We use less than 6 kilolitre per month OR We are indigents (registered poor people) 3. Nothing. We don't pay for water.

2011	2015
	4. If the person gives a vague, estimated amount. For example, less than R100 per month. Or, more than R500 per month 5. If the person can say, with confidence, how much they pay for water per month. For example, this month we paid R298. Or the fixed amount is R80; for use, we pay between R100 and R150 per month.
	Q10 – ask all READ OUT. SHOWCARD (grid style) Do you think: 1. Your municipality is competent to deliver a good water and sanitation service? 2. Your municipality will be able to deal with water scarcity in the event of a drought? Options: • Yes • I am not sure • No
	Q11 – ask all DO NOT READ OUT What does your household do to use less water? CODE: 1. Nothing 2. We already use as little water as possible. (For example, if the household fetches water with a bucket) 3. Re-use our grey water (water used to bath, shower, wash dishes or washing) 4. Collect rainwater 5. Try to use as little water in the garden as possible (plant indigenous plants, only give water at night, have a drip irrigation system, etc. 6. Take a shower instead of a bath 7. Make sure that it is a full load before we switch on the washing machine or dishwasher 8. Repair leaking taps 9. Don't leave open taps running 10. Other (Specify)

14.2 The 2022 questionnaire

For the 2022 survey, the following changes were made to the 2015 questionnaire:

1. Questions 1-4; 6-7, 9 and 10 were repeated in the 2022 study.
2. Question 5 was changed from an open question to a grid question to save on cost.
3. Question 8 (awareness of water use), shaded in grey above was not repeated. The 2015 survey found low awareness across all demographic groups. It was unlikely that the results would be different as there had not been any serious intervention since.
4. Question 10 (2) was made more general to refer to a crisis and not a specific event like the Cape Town 2018 drought or the 2020/2021 pandemic.
5. New questions were added to separate perceptions about water and sanitation services.

14.3 Pilot

The new questions in the draft questionnaire were tested in a pilot in Limpopo.

Dr Josephine Letsoala from the Department of Geography and Environment Studies of the University of Limpopo and a group of her Masters students piloted the draft questionnaire, with the assistance of the research team.

The research team trained Dr Letsoalo and the students on the methodology of Cognitive Action Research (CAR) (Slabbert & Green, 2021) and fieldwork methodology. The pilot was subsequently conducted in Polokwane on 3 and 4 March 2022 and comprised two rounds of testing and improvement. 16 respondents participated in the first round of testing, and ten in the second round.

The two rounds of testing got the following results:

- Respondents were municipal consumers. Most of them receive basic water and sanitation services and they do not pay for services.
- Some of the terminology (water treatment, wastewater treatment, tariffs, non-payers, illegal connections) fieldworkers had to explain in Sepedi. The terminology was subsequently simplified for Round 2.
- It worked well to split water and sanitation services. Several respondents were satisfied with water services, but not satisfied at all with sanitation services.
- There was one case of a respondent with a flush toilet who was not satisfied with sanitation services because the water supply was unreliable (satisfaction with water and sanitation services is intertwined in this case).
- The statement about water treatment was interpreted as a statement about water quality: if the water quality is perceived to be good, the municipality treats water effectively.
- The statement about wastewater treatment was not well understood. Most of the respondents have dry sanitation and they are not connected to the municipal sewage system, hence they have no knowledge or experience of sewage treatment.
- The first competency question: *To what extent do you agree with the statement that the municipality is competent to deliver a good water and sanitation service,* did not work well for several reasons. Respondents confused the metaphorical “deliver” with the literal “delivery of water with trucks”. Respondents did not consider the competency of the municipality, plus they also had no knowledge of the municipality’s competency. They based their answers on the service quality issues that they experience. These are mainly poor water quality and inadequate sanitation. The competency questions were subsequently replaced by questions about the perceived effectiveness of the municipality.

15 Appendix 2: Omnibus technical specifications

Nielsen IQ’s Omnibus:

NIQ’s syndicated Omnibus studies are specifically designed to offer our clients the full benefit of research amongst consumers on a cost-effective basis.

The National Omnibus coverage is representative of 99% of the urban, and 95% of the total, adult population aged 18-99.

Methodologies:

Interviews are conducted using NIQ syndicated Omnibus Survey which covers a scientifically drawn, representative sample of adults (15+ years) living in urban and rural areas nationwide. Interviews are

conducted in the homes of respondents using a structured questionnaire on CAPI, in the preferred language of the respondent.

Fieldwork centres:

National, urban and rural.

Age range:

15 to 99. The 2022 main sample parameters covers adults 15-99 years.

Sample:

A nationally representative 15-99 year old probability sample of 3 300, will be covered, drawn from Nielsen Media GeoFrame (household census) of more than 6 million addresses.

The sample will be disproportionately stratified by race, and within race representatively drawn across area within community size within region.

The sample considers adults as 15-99 years old.

The Omnibus sample includes South African citizens only and excludes mine workers living in hostels, live-in domestic workers and those who are institutionalised.

- In order to obviate a degree of sample skew in terms of age within sex that we have experienced in previous waves, NIQ will ensure the following:
- Interviewers are trained/retrained rigorously
- Apply close monitoring of distribution during the course of data collection, with focus given to collect the desired number of interviews in the respective age groups, particularly females.
- Highly trained team to collect strata samples which deviate
- Stratification on the Omnibus is designed on the basis of race, ensuring that people from all races are well represented and that interviews are collected across all strata (races).

Sampling methodology

<u>Selection of Communities:</u>

All metropolitan areas and urban communities with a total population of 100 000 or more are automatically included in the sample.

Within province, other urban communities are first listed, in alphabetical order, within the size categories “30 000-99 999”, “8 000 – 39 999”, “4 000 – 7 999”, “500 – 3 999” and “less than 500” and their cumulative populations listed. From each stratum so formed, a sample of communities will be drawn, using a standard random start, fixed interval technique.

The sample required in rural areas is allocated to the regions and within regions, to magisterial districts pro-rata to population, on the basis of latest population estimates.

<u>Selection of addresses:</u>

The Nielsen GeoFrame is used to select the actual addresses or geographical co-ordinates.

The residential addresses in most (but not all) urban communities are listed in the Nielsen GeoFrame – the file comprises over 6 million addresses which are arranged alphabetically by suburb and, within suburb, by street name. For such communities, addresses are drawn using a random start, fixed interval technique. Three other addresses are then selected in the immediate vicinity of each address drawn from the register, to provide four interviews at a point.

The GeoFrame contains houses, individual flats, townhouses and cluster houses, hostel “beds” and non-transient informal dwellings.

For areas not covered in the address register, GPS co-ordinates are provided.

Selection of respondents:

Each address is pre-designated as one which is to provide a male or female respondent, in equal proportions.

At each address, the individual to be interviewed is determined by means of a Random grid, using the number of adults of the relevant sex within the household and their age order.

Interviewers are instructed to interview respondents at the selected addresses irrespective of language.

Substitution is allowed after three unsuccessful calls – all calls are made at different times and days of the week to maximise success. Alternately, the address to the left and to the right of the originally selected dwelling. At the substitute address, the individual to be interviewed is determined by means of a Random grid, using the number of available persons at home 15 years old or older, and of the same sex as the originally designated respondent. Other allowable reasons for substitution are:

- No male/female
- Vacant house/flat/room/plot/stand
- On leave/ill/in hospital/mentally disturbed/deaf
- Sensitive occupation
- Interviewed less than 6 months ago
- Refusal to complete interview
- Language barrier
- Security/not allowed in for security reasons/gate locked/inaccessible/dogs

Although our sample is drawn within traditionally racially "segregated" areas, we do not substitute for "wrong race" and the selected respondent at a specified address is included into the appropriate population group sample. The gain is skewed towards the black sample.

As earlier reported, Nielsen will put in place additional and all measures to ensure adherence to the sample household and respondent selection procedures.

When evaluating the age within sex yields thus please take into consideration that the Omnibus sample is purposefully designed to be disproportionate - for practical purposes and to cater for the weighting and analysis of key variables.

The designed disproportions are chiefly across race (where blacks are under-, and the other population groups over-represented) and across community size (where rural is under-, and urban over-represented). This means that where age profiles differ within race and community size (for example, blacks and rural have a much younger age profile than do remaining population groups, and urban), their under or over representation introduce a skew in the overall age distribution, on the unweighted sample. These disproportions likewise can warrant the heavier weights for some of the strata e.g. blacks and rural being under-represented in the sample design, require heavier weights to balance proportions in the weighted data.

In short, the Omnibus is designed to provide an efficient and scientific sample including boosts or disproportions where necessary, to ensure effective sub-sample yields for analysis purposes – a sample which is to be weighted, and the weighted data only, analysed.

Weighting

- The sample is post-weighted to reflect estimated population in 000's.
- Weighting cells used are province, community size, sex, age.

Quality Control Procedures in NielsenIQ

In NielsenIQ we view quality as the value of information that fulfils the needs of the client. Below are some of our processes and guidelines to ensure that we produce top quality information.

Interviewer Training & Briefing

Apart from proper sampling design and procedure, survey accuracy is dependent on good fieldwork. NielsenIQ maintains the largest network of fieldwork services, structured and trained to ensure a very high standard of fieldwork quality.

Supervisors are assigned to projects, which are best suited to their expertise and experience.

Before starting to work with NielsenIQ, all interviewers undergo an intensive training program, designed to acquaint them with:

- The principle of sampling procedures and the importance of these procedures

- Fieldwork methods and questionnaire design

- Interviewing techniques, including initial approaches and probing

Interviewers are required to demonstrate how they will ask the questions through a pilot interviewing session. On a first assignment, each interviewer is accompanied by one of the fieldwork supervisors.

Training, however, is continuous, and interviewers are given a personal detailed briefing on the questionnaire and any special requirements before fieldwork.

For each project, a fieldwork supervisor is assigned. He or she is responsible for training & supervising the interviewers, as well as monitoring the progress and quality of project.

After the first few days of fieldwork, interviewers are gathered for a debriefing session in the office to discuss any problems encountered and to clarify any points that may have arisen. At the same time, completed questionnaires are checked to ensure that there are no misunderstandings. Timely corrective actions can be taken, should misunderstandings or problems arise.

Interviewer & Questionnaire Auditing

NielsenIQ quality control procedures, like its fieldwork procedures, are rigorous. NielsenIQ Quality Control Department is independent of the Fieldwork Department to ensure objectivity.

NielsenIQ systematically selects 15% of each individual interviewer's work for checking. These quality checks are conducted to ensure that:

- Interviews were carried out with properly selected respondents,

- Interviews were conducted in accordance with the company's instructions, and

- Show cards and other materials to be shown to respondents were used correctly (face-to-face interviews).

A number of questions, normally questions of fact rather than opinion, are re-asked to establish consistency of response.

In instances where a particular interviewer's selection of respondents or quality of interviewing appears dubious, a much larger proportion of the interviewer's work will be examined. If it is established that the interviewer's work is poor, his/her entire assignment will be rejected and replaced at NielsenIQ's cost.

These Quality Control procedures are used to ensure that only data of the highest standard are included in NielsenIQ survey findings.