Domestic water waste and infrastructure challenges

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Alex Esteban Romero Daza
23405538

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ABSTRACT

This research is focusing on household water consumption in Dublin, as well as their levels of public awareness and perceptions with a system where water usage has historically been without a direct cost. Even though, this policy ensures every resident can access domestic water, it has also increased misconceptions of this valuable resource, reduced public understanding of infrastructure issues and diminished conservation governance efforts in the country (Irish Examiner, 2012). Furthermore, the study investigates the impact of the absence of direct billing affects residents behaviours, conservation attitudes and willingness for a potential reintroduction policy (O'Sullivan, 2021).

This study uses a qualitative method, employing a structured online survey through community networks and social media. The duration of the survey took approximately 5 to 8 minutes to complete, the survey gathered 74 valid responses, from Dublin residents residing in private homes from over 6 months in the country. It investigated demographic backgrounds, daily routines, water use patterns, understanding of infrastructure issues and opinions on water pricing. The data were analysed using Thematic Analysis, guided by Attitude Behaviour Gap, Social Practice Theory, Theory of Planned Behaviour and Environmental Justice to identify gaps between stated values and actual behaviours (Figure 1 Thematic Analysis).

The results highlight a clear disconnection between environmental awareness and daily habits, while most respondents recognised that long showers contribute to wastewater, 67% admitted showering over 8 minutes. In the same way, 72% turned off the tap while brushing their teeth, though, less than half (48%) did the same while washing dishes. On the other hand, knowledge about infrastructure issues was low, with only 27% knowing that leaks in the pipes cause over 40% loss of treated water in the country, likewise, public mistrust is a major concern, with 70% opposed to bringing back water charges as in 2014, because of uncertainty about the allocation of funds, governance transparency and poor knowledge about water conservation (see Graph 4 Questionnaire - question 2.1; Graph 5 Questionnaire - question 2.4).

This research indicates, that perception of water is still seen culturally as an unlimited and abundant resource in the country, causing challenges to sustainability efforts (Murray, 2016). Participants proposed that improving leaks detection, increasing public education in the new generation and

implementing awareness campaigns could reduce water waste rather than imposing charging fees (Table 3 Questionnaire - question 3.8). Nevertheless, lack of knowledge about infrastructure problems highlights the necessity for educational campaigns, transparent and clear governance and better engagement with the Irish residents (De Buitleir, 2014).

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AI Acknowledgment

This section acknowledges the AI tools that were utilized in the process of completing this assignment.

Tool Name	Brief Description	Link to tool
CHAT GPT	Artificial Intelligence	www.chatpgt.com

Description of AI Usage

This section provides a more detailed description of how the AI tools were used in the assignment. It includes information about the prompts given to the AI tool, the responses received, and how these responses were utilized or modified in the assignment. **One table should be used for each tool used**.

[Insert Tool Name] chat gpt	
[Insert Description of use] **I used it to look up synonyms of words in English (more academical or formal) and to avoid conjugations or grammatical mistakes with specific words or context.**	
Synonym of 'rich countries'	Here are some simple synonyms for **rich countries**: • wealthy countries • developed countries • high-income countries

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INTRODUCTION

History and Context

Ireland reflects a unique situation in terms of water consumption within the European Union. For many years, local residents have had access to water supply without any direct payment, as costs have been covered by the general tax system. This has contributed to the belief in public water as a "human right" which, in turn, it has encouraged overuse of water and a lack of investment in infrastructure in Ireland (De Buitleir, 2014). The Environmental Protection Agency (EPA) has expressed concern that roughly 43% of treated water is lost due to leaks in pipelines before reaching households. This percentage is one of the highest in the EU, particularly as urban growth and the effects of climate change worsen (Table 2 Variation in Water Network Losses).

Research Problem

The absence of direct water billing has influenced public behaviour regarding water use, a significant number of Irish people do not fully understand the financial and environmental costs of supplying and wasting water (Naughton, 2014). The controversial policy introduced in 2014 to implement water charges led to widespread protests and ultimately to the suspension of domestic charges in 2017, demonstrating substantial resistance to change (Anon., 2015). This situation also revealed a general lack of awareness or knowledge regarding environmental sustainability, water infrastructure and the need for a durable water system.

With the growing population in cities such as Dublin, water demand is rising, placing further stress on an already inefficient system (O'Sullivan, 2020). Although there have been investments aimed at improving infrastructure, problems persist due to limited funding and low public participation in water conservation. In contrast, countries like Germany and Denmark have implemented effective water billing systems, supported by strong communication strategies and education programs in schools. Currently, Ireland lacks a national strategy to address these problems and promote water-saving habits among Irish citizens. (Ann, 2023)

While many researchers have examined the technical and policy aspects of water consumption, there is a shortage of studies focusing on individual behaviours and understanding of water management, especially in the context of free household access. Understanding public

perceptions and values around water use is essential for developing effective policy and educational strategies, that are not solely based on charges or financial dependency (McDonnell, 2014). This research investigates household water consumption and awareness in Dublin, the capital and most densely populated area in the country. It explores daily habits, public knowledge about water usage, and willingness to adopt sustainable alternatives. Through surveys, (Chapter Questionnaire) this study aims to identify cultural and traditional behaviours, as well as factors that influence water usage among Irish residents. The findings could inform public awareness campaigns, support infrastructure initiatives and provide insights into citizens opinions.

Research Purpose and Objectives

To critically investigate how Dublin residents perceive and use water in their homes, and to evaluate the potential impacts of the absence of direct water charges on consumer behaviour, consumption habits and environmental preservation.

Objectives:

1. To analyse public perception of water as a free household service.
2. To investigate common behaviours that contribute to either conservation or wastage.
3. To evaluate public awareness of infrastructure issues, water scarcity and environmental impacts.
4. To examine the potential for behavioural change in response to education or implementation of pricing strategies.

Research Questions

Main Question

What are Dublin residents' perceptions and water consumption patterns, and how does the absence of direct charges influence their behaviour?

Sub-questions

1. How much do people know about water scarcity and infrastructure problems?
2. Do water use habits vary by education or water billing system?

3. What are the most common water usage practices in Dublin (washing dishes, laundry, showering)?
4. How does Irish Government misinformation influence public trust in the acceptance of water charges?
5. Could primary education help future generations adopt sustainable behaviours?

Scope and limitations

This study focuses on residents of Dublin and excludes water usage in commercial or industrial contexts. The findings are based on qualitative data to explore personal habits and perceptions. While infrastructure and policy issues are considered, the primary focus is on understanding public perceptions and behaviour patterns.

LITERATURE REVIEW

Water Resource

The use of water is a finite resource in the world, essential to human survival, economic development and environmental stability. Access to clean and safe water is internationally recognised as a basic human right. However, ensuring sustainable water management remains a significant challenge, influenced by rapid population growth, industrialisation, and climate change. Water scarcity is a critical concern, as nearly three quarters of global water withdrawals are used in agriculture. Currently, around 2.3 billion smallholders in different countries face regular water shortages (Li, 2023). Despite the abundance of water in some regions, poor management, infrastructure deficiencies, and ineffective policy continue to drive waste and environmental degradation (Table 2 Variation in Water Network Losses).

Water access has historically been free or heavily subsidised in wealthier countries. These practices illustrate the importance of this right within society but also make people less aware of its value (McGee, 2012). This reflects a significant issue. It leads to irresponsible usage patterns. Is the payment of a price necessary to raise awareness? Financial strategies can lead

to important changes for the future, incorporating essential values, environmental protection, and infrastructure improvement.

On the other hand, public water use plays a crucial role in achieving sustainable development goals, including climate action, public health, and responsible consumption. Nonetheless, many countries still struggle to balance cost-effectiveness, social equity and environmental responsibility (OECD CostaRica , 2023). In Ireland, the view of water as a fundamental right often clashes with the need for regulation and investment. This longstanding perception has fuelled national debate and hindered efforts to implement reform. Raising awareness of water's true value- beyond its price is essential for creating meaningful change.

Global views on water pricing

Around the world, policies related to water pricing vary widely, influenced by cultural practices, political benefits and environmental situations. In developed countries, prices vary based on usage. This is a common way to cover supply costs, support infrastructure and promote water conservation. European countries such as Denmark, Germany and the Netherlands have implemented a tariff system that reduce household consumption and enhance infrastructure quality. For instance, Germany has one of the highest water prices worldwide, over 7.8 USD per cubic metre of water (Sarah Ann Wheeler, 2023). Even though this political measure may seem costly, it demonstrates how efficient water use can be in Germany. Its success stems from strong public trust in service providers, transparency about how funds are allocated, and consistent public education, all of which have developed exceptional behaviours (Figure 2 Germany - Litres per capita per day). A similar approach is seen in Denmark, which applies regulations and water charges that account for potential environmental damage and infrastructure challenges throughout the country. According to environmentally related tax revenue data from 2014 (Sarah Ann Wheeler, 2023). Denmark was the leading country in terms of GDP funds to environmental protection.

In contrast, other developed nations have implemented social tariffs or subsidies to guarantee equitable water access, especially for low-income households. (Umweltbundesamt, 2023) For instance, in Latin America a common system used is the tiered pricing model. This system provides the first portion of water is free for low-income people, while the tariff increases with greater usage. Through this alternative non-developed countries ensure water access at

affordable prices for basic needs while also motivating people to use consciously (Calvache, 2019).

Different organizations, such as World Bank and OECD, highlight the importance of setting water prices to support economic value among citizens and to increase funds for environmental solutions. These organizations point out that free or very low cost water access can lead to overuse and create financial problems for government budgets. (OECD, 2010) It decreases the motivation for investment in long-term infrastructure, pro-environmental innovations and improvements. As a result, this lack of funds can harm water systems, leading to poor quality and unfair access to this human right.

Public perception and political practices are key factors in determining whether permanent water prices or other government policies can be successfully introduced. Countries such as South Africa, (Ndlovu, 2025) or India, similar to Ireland, have experienced strong public resistance to the introduction of water charges (Hillenbrand, 2007). That resistance often comes from poor communication, lack of education and low trust in public institutions. These cases highlight the importance of designing new alternatives for citizens with clear commitments and consistent public engagement.

Ireland's tradition of free household water

Ireland's historical model of public water access has been based on free provision, with costs covered through general taxation. (Pender, 2018) Even though this has ensured wide access, it has also contributed to public unawareness about the environmental, infrastructural and water quality risks. As a result, a belief developed that water is an unlimited and free resource, making it difficult to implement new alternatives that promote conservation and increase public understanding of infrastructure issues. Before the creation of Irish Water in 2013, different local authorities referred to as "local councils", were responsible for water supply, resulting in inconsistent service quality across regions. There were no water meters at the time, which made it hard to detect leaks or monitor household usage, additionally the water infrastructure was outdated and highly inefficient (Collins, 2016).

In 2014, the Irish Government introduced domestic water charges to regulate the public water service. This policy aimed to secure funding for infrastructure improvements and fulfil European Union requirements for water conservation. However, the plan failed due to poor

communication strategies and low public trust (Clancy, 2015). the result was widespread protests, opposition to the policy and heightened tension among citizens following the economic crisis.

Studies from 2014 revealed that many Irish citizens viewed water charges as a form of double taxation, believing that they were already paying for water through existing taxes. The lack of clear communication from the government on the reasons behind the new policy caused confusion and opposition (McDonald, 2014). Under such conditions, The Irish government suspended domestic water charges in 2017.

The Weaknesses in Ireland infrastructure strategy and the prolonged avoidance of direct water charges reflect deeper social and political challenges. On one hand, political leaders reversed course in response to public protests, on the other, the outdated and fragile water system remained. Various areas in the country still experience high leakage rates, service disruptions, and difficulties meeting European Union environmental standards. As urban populations grow, the need for policy reform becomes increasingly urgent (OECD, 2020). Reluctance to pay, political failures, and infrastructural issues reveal major concerns about how Ireland manages its water services. A long-term solution is necessary to address environmental concerns, economic needs, population pressures, climate change and compliance with European Union regulations (Barret, 2017).

Public perception and Political Opposition

Public opinion on water consumption in Ireland has been shaped by past experiences, political communication, and mistrust in Government decisions (Clancy, 2015). Additionally, the government's poor communication increased uncertainty, where households believed water was fully covered by taxes. This led to widespread misunderstandings about the true cost of water and the importance of protecting natural resources.

Irish attitudes toward water charges have been influenced by historical facts, political resistance and low trust in institutions. Due to the government's failure to clearly explain the purpose of the 2014 water charges, the public debate focused more on the cost than the broader issues of water conservation and system improvement (Naughton, 2014).

On the other hand, other key factors through the political opposition shaped how the water in Ireland was being run. Civil society groups against the government used the new policy to highlight discontent, creating the Right2Water movement. It basically aimed to express anger through social media and organized widespread protests against the new policy, arguing that the charges were unfair focused on raising money rather than on improving a sustainable water system (Hearne, 2015). Unclear communication from the financial practices, public concerns regarding data privacy, and prioritizing monetary interests over staff bonuses further damaged its credibility. These types of circumstances reinforced suspicion that water charges were only to generate money than improvement infrastructure and awareness about this limited resource (O'Neill Eoin, 2016).

Infrastructure Deficiencies and Investment Gaps

Much of the Irelands water infrastructure was built in the 19th century, for instance, Dublin faces increasing pressure from population growth and higher demand, while rural areas continue to depend on old and inefficient systems. Even though one of the major challenges in Ireland is the inefficiency of its infrastructure. The Environmental Protection Agency reported in 2022 that around 43% of treated water is lost through leaks before reaching households (EPA, 2022). This figure is significantly higher than the European average, although Irish Water announced around €65 million investment in 2020 to upgrade the pipe network and treatment plants across the country, project delays have persisted for over a decade, raising concerns about the government ability to deliver and find a real solution (O'Sullivan, 2020).

Infrastructure failures create a chain of negative effects, beyond the financial loss from wasted water, poor infrastructure also reduces public trust in service quality (Lynn, 2016). Repeated problems such as pipeline leaks and service interruptions lead to public scepticism and critical question: Why should citizens pay at all for such an unreliable system?

Economic and Environmental Impacts

Irelands Inefficient water system has significant economic and environmental consequences, the energy required to treat and distribute water is considerably expensive, considering that there are many leaks along the way, this means the environmental impact represents a double loss (Mccarthaigh, 2024). This inefficiency contributes to increased greenhouse gas emissions,

a critical concern under Ireland's EU environmental commitments, including the Paris Agreement (Nations, 2016).

Economically, is hard to operate at 100% capacity due to high-leakage water through the pipelines, deterioration of the water network limit the quality, capacity and concerns in terms of EU obligations and environmental rules. Without the new payment policy, The Irish Water has been used general taxation for maintenance and repairs, minimizing availability of more resources to develop better sustainable strategies, investment and technological upgrades. Furthermore, The Water Advisory Body has raised concerns related to the failure in Ireland to address and fix inefficiencies in its public service postpone compliance the European Union Water Framework Directive, which is calling constantly for solutions in sustainable water resource management (McGowan, 2022).

In conclusion, Water service inconsistency in Ireland is not just a matter of fixing pipes. It is a critical issue linked to national financial sustainability, environmental responsibility, and international obligations.

Education role in Water Awareness

Educational initiatives play a critical and crucial role in shaping public perception and behaviours regarding water use in Ireland. In European Countries where water is priced, awareness initiatives are often implemented to construct public trust and encourage better habits. Ireland has not maintained a clear visible campaign to increment awareness about water conservation, This gap has contributed to a disconnect between government policies and public attitudes (Waterschool, 2020).

Public Engagement has pivotal role with academic studies and government trust to fulfil in new practices or political decisions, as well as, water conservation remains inappropriate value into the Irish society. Research by Naughton (2014), highlight that the citizens have limited knowledge of the operational and ecological challenges of water management (Sarpong Hammond Antwi, 2022). The absence of awareness minimize the willingness in people to conserve water or openness to next policy initiatives.

On the other hand, primary schools and universities play an important role to promote environmental awareness over the long term worldwide. Campaigns such as, the Northeastern

University's Student Government has implemented an initiative to encourage water usage or habits, it has shown that efforts from schools can influence into communities (Kayata, 2024).

In the case of Ireland, similar initiative have yet to achieve their full power. A correct National Strategy is urgent to improve environmental education in Schools, public support, pro eco-campaigns and allow groups of communities to lead local water conservation projects. Currently, there is an effort in the Green-Schools Programme run by An Taisce, which operates through different steps process. The most significant aspect of this current effort is its achievement of international recognition as part of the EU Eco-Schools framework (Taisce, 2025). In addition, education of adults and the effective propagation of accurate public information are crucial elements of water awareness conservation. Effective campaigns must emphasise on real consequences of water consumption, including government spending, failing infrastructure and environmental consequences, Public education is also essential for correct common myths such as the idea that Ireland's high rainfall guarantees endless supply of clean water (Daly, 2021). However, limited storage, outdated water treatment infrastructure, decline of pipe network and overuse of water affects the whole system.

International Comparative Case Studies

Ireland has conducted studies to improve water management practices, even though, some of these efforts have not been successful, for instance, Denmark uses a combination of volumetric pricing, strong regulation and intense public education, which has led to one of the lowest per capita water consumption rates in Europe. (OECD, 2025) This complex approach has helped Danish citizens to comprehend the financial and environmental costs associated with water use.

Germany is another similar example. Its water management model benefits the financial health of the government, while allowing local authorities to maintain operational control. Transparency and inclusive practices in governance increase public engagement and build acceptance among Irish residents, this makes it easier to implement new water policies in countries like Germany. (Bakker, 2012) These examples show that when the public trusts the system and understand how water services operate, they are more likely to support water charges and conservation efforts.

Water Charges, Investment and Public Trust

The controversy surrounding water charges in Ireland is not only about the cost of a public service, it is a real concern about fairness, public services and environmental sustainability. Supporters of water charges argue that payments help citizens recognise the value of water as a human right and ensures long term funding for critical infrastructure improvements across the country. (DeBuitleir, 2014)

On the other hand, opponents argue that water is a human "right" and should be free, moreover, they consider that charging for water would hit low-income households directly and increase social inequality, especially whether protective mechanism or fair payment systems are missing, (OECD, 2020) This generates deeper questions about how essential services like water should be managed. Many policy analysts suggest a balance approach. One commonly recommended method is the increasing block tariff system, where basic water usage is free or low cost, but rates rise progressively with higher consumption levels. This pricing model has already adopted in countries such as Mexico, Chile and South Korea. Nevertheless, However, this approach depends on having effective systems in place to measure water use and manage data, areas where Ireland still needs improvement (Grafton, 2011).

Another significant issue is public trust in the government, the Irish Water controversy caused substantial loss of trust because the process was never full open or transparent. If the Irish government intends to reintroduce water charges in the future, it will need to provide clear guarantees that all collected revenue will go directly toward infrastructure development (Bolognesi, 2019). This would require regular audits, and strong commitments to accountability and compliance.

In addition, public support could be enhanced through participatory policymaking. Engaging communities, civil society groups, and households in water governance helps build trust and shared reasonability. Clear examples from countries like Germany or Denmark demonstrate that people are more willing to accept water policies when they believe in the system and see that it is fair, effective, and well-communicated (Leeuwen, 2023).

THEORICAL FRAMEWORK

To understand human behaviour in this important context which is water consumption, requires insight from different theories that explain people decision making. This section introduces theoretical perspectives that analyse survey results, consumption patterns, public behaviours and reluctance to changes in Ireland.

Attitude Behaviour Gap

The attitude behaviour gap, it is important because describes the psychological differences between environmental attitudes and actual behaviours. (Wintschnig, 2021) These individuals express big support for water conservation, even though, their practices contradict their behaviours due to daily routines, convenience, lack of knowledge (Gifford, 2011). This value action gap has particular relevance in the Irish context, where water has been free of charge and considered as an abundant resource.

Social Practice Theory

In the Social Practice Theory, explores individual attitudes related to daily behaviours and they are connected between social rules, technological systems and cultural expectations (Shove, 2012). For instance, long showers or frequent other water uses such as laundry or dishwashing use could be normalize in cultural habits. This perspective in the Dublin context, highlight the importances for broader interventions in education, infrastructure and social routines practices to enhance individual responsibility.

Planned Behaviour

This Theory, point that behavioural intention is a combination between personal attitudes, social influences and ability to act, in the context of Irish water conservation, citizens are led to improve their daily practices when there are recognitions for valuable resource, feel confident in their capacity to reduce usage and social sense of water conservation (Mahlaole, 2021).

Environmental Justice framework

The environmental justice framework prioritise that decisions regarding water consumption. This framework emphasizes the socio economic impacts in low income population whether reintroduction of charges or not in Ireland and how this individuals are affected, especially in terms of subsidies mechanisms or infrastructure access. This environmental framework highlight the importance of transparent, inclusive and social equity policies during the designing process and pre implementations (Johan, 2022).

Psychological theory and Climate perception

In this psychological theory suggest why people are less motivated to on environmental impacts, because of misunderstandings on distant in time, space or impact. For instance in Ireland, there is a common belief that due to frequent rainfall, this effect won't ever be a real issue (Cotterill, 2021). This type of perceptions decrease the urgency of behavioural change, despite critical infrastructure and potential impacts of climate change. Reducing the gap with transparent communication, real data and education campaigns might change perceptions effectively.

Theories into Water Behaviour analysis

By combining these theoretical approaches, the research allows to understand households behaviours in Ireland, in terms of water consumption influenced by social habits, personal values, perceptions of justice and system conditions (Mahlaole, 2021). By these frameworks will be easier to analyse collected data from survey and policy recommendations, especially in terms of factors that lead people to act contradicted to their environmental values, social environments and the influence in their daily routines. Moreover, it enhance to characterize types of education and communication strategies that Ireland should be implement.

Water governance Across Ireland and the European Union

Water governance between Ireland and the European Union, refers to the political, institutional and administrative responsibilities guide to the management of water resources. In Ireland, this system has historically been fragmented due to public opposition and tensions between national decisions making and following European Union Environmental obligations. This section investigates Ireland's water governance issues with the scope of EU regulations and

international sustainability principles. In 2000, the European Union launched a Water Framework Directive, which is a key legislation designed to align water policies across member countries, that all water bodies reached a good status by 2015 (Environment, 2023). During that time, the directives prioritize water resource by river basins, encourages public to participate and promote sustainable water usage in a long term period. In contrast, Ireland has struggled to implement the Water Framework Directive due to infrastructure issues, weak enforcement and political dispute to adopt different policies such as water charges. Furthermore, The European Commission has reported many times Ireland's failure to follow regulations, especially in monitoring systems and quality resource (EPA, 2022).

Traditionally, The Irish water governance system has been depended only on local funding that comes from general taxation, and this has reinforced the perception that water is free, resulting to insufficient investment in maintenance, infrastructure and poor public awareness of its real value and cost (Government of Ireland, 2024). Before 2013, in Ireland the water services were managed by 34 independent local authorities, each with different approaches, systems and service. Even though, by this particular way the systems was fragmented due to lack of coordination made national planning and investment difficult. The creation of Irish Water after 2013 marked a new model toward efficiency and standardize, Nevertheless, The new establishment in 2013 faced serious challenges due to lack of communication and transparency, which led to largest protest in the history of Ireland (Hearne, 2015).

In comparison, Countries like Denmark and other EU countries exemplify effective water governance, combining robust regulatory system based on Water Framework Directive and high support levels of transparency and decision-making by public participation. Denmark, for example, operates with "full cost recovery" model, where water pricing reflect not only operational expenses but also environmental impacts and resources (OECD, 2025). This system is reinforced by continuous public communication and independent regulators which make sure the allocation of collected revenues are invested toward water infrastructure, rather than unrelated government budgets.

Ireland's difficulties with adopting comparable water service models are not just financial or technical, also come from political and cultural barriers. The collapse of Irish Water and the suspension of domestic water charges in 2017 showed the profound crisis of credibility and citizen engagement. In 2022, a survey made it from the Environmental Protection Agency, showed a disconnection between citizens and state institutions, with low understanding of

water sustainable and infrastructure problems (EPA, 2022). this shows that fixing water management in Ireland requires more than structural reform. It must also require public education efforts, cultural change and transparency.

In this situation, the Organisation for Economic Cooperation and Development by the 12 principles on Water governance offer a useful guide, promoting inclusive public engagement, governance transparency and policy coherence across the levels of water management (Leeuwen, 2023). To follow these principles effectively in Ireland, requires a clear long-term water strategy that integrates not only technological improvements but also involvement for public dialogue and clear accountability. Without these steps, reform efforts may persist, and Ireland compliance with EU regulations will remain incomplete.

Moreover, climate change complicates Ireland's water governance, while European Green Deal and Ireland Climate Action Plan 2023 highlight the risks to water resource in the world, there is a significant lack of clear action to integrate climate respond into infrastructure planning (Climate, 2023). This creates a gap where strategic goals and environmental concerns, reduce the government capacity for decisive and effective actions.

METHODOLOGY

Research Design

This study adopts a qualitative and exploratory approach using structured surveys with multiple choice questions to understand household water consumption, perceptions, awareness, and behaviours in Dublin. Qualitative approaches are especially effective for interpreting individual attitudes, habits, and cultural factors that influence their behaviours (Clarke, 2013). Moreover, according to Silverman (2024) and Charmaz (2014), the qualitative method is focused on a goal to comprehend the deeper factors behind citizens attitudes. Especially understanding questions such as 'how' or 'why' people's actions, rather than just explain what they do. Furthermore, another purpose of this research is to explore the way household make decisions about water usage, including their motivations, uncertainties and contradictions.

This study includes both closed and open-ended questions, allowing for the identification of common patterns in citizens responses. Using this approach, it also facilitates people's participation and reduces external influence from external pressures especially now in the post pandemic period, face to face contact is important to understand people's thoughts about Irish government.

Methodological framework

The decision to study exclusively on domestic households in Dublin is based on two key reasons. Firstly, the urgent need to understand domestic water consumption in the city, especially given that residential households are the main consumers of treated water in Dublin. (EPA, 2022). Secondly, water consumption patterns in commercial sectors such as hospitality, construction or healthcare are difficult due to restricted access to information, confidentiality concerns, privacy issues and potential public concerns about charges. This only focuses on private residents thus allows for a deeper more specific analysis of people's behaviours, habits and attitudes.

This Study adopts a constructivist epistemology, which focus on people's experiences, beliefs and decisions regarding water usage based on their social, cultural and historical background. In Ireland, this perspective is traditionally based on the perception of water as a fundamental right (DeBuitleir, 2014). This constructivist perspective is particularly useful for exploring cultural stories, public attitudes and resistance to new policies.

Target Population and Sampling method

The target population for this study includes residents of Dublin who live in private households. This includes individuals of all ages: the only requirement is that they reside in the country. A convenience sampling method is used, with surveys distributed online via platforms such as Facebook, WhatsApp, Instagram and among university students. While this method may limit the generalisability of findings, it aligns with the qualitative design of the study, which seeks to explore patterns and perspectives (Patton, 2015). A snowball sampling technique was utilized, with participants encouraged to forward the survey within their social circles, moreover, this approach helps to increase the diversity of responses and perspectives.

Survey Design Structure

The survey was used via Google Forms, due to its user-friendly design, mobile compatibility and sharing. It remained available for a four week period, from July to August 2025 and was created to take no longer than 8 minutes to complete, This participation is completely voluntary and anonymous, with respondents are provided a clear introductory note with purpose details explaining the study's insight and the terms of confidentiality.

The questionnaire was structured into three sections;

1. Demographics: Basic information including age, gender, number of residents, type of residence and tenancy status (tenant or owner)
2. Daily Water Use: Questions about everyday practices such as average shower duration, frequency of using washing machines, whether respondents turn off or not taps while brushing teeth or washing dishes.
3. Awareness and attitudes: Items exploring Knowledge and perceptions of issues such as water leaks, conservation, water charges, educational campaigns, and the concept of water as a human right.

The majority of survey questions used multiple choice formats with between 3 to 6 options, some questions also used rating scales to measure attitudes (e.g., "strongly agree" to "strongly disagree"). A short pilot study with 8 participants was conducted to evaluate the survey's clarity, duration and overall usability, leading to make minor revisions based on participants feedback (Bryman, 2012).

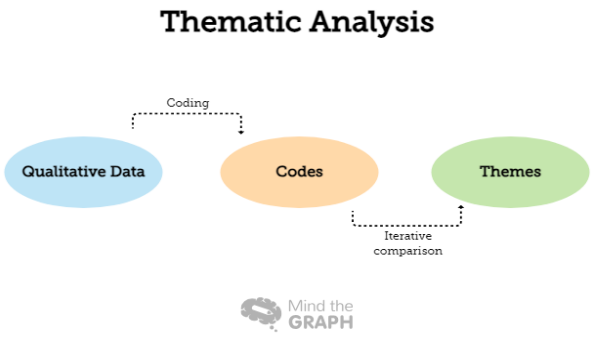
Data Collection

Data were collected online, Google Forms was chosen for its user friendly interface and compatibility with both mobile and desktop devices. The digital approach also helped to keep control of costs and avoid data collection of personally identifiable data.

The final dataset included 74 valid responses, while this is not representative all of Dublin's population, the sample offers a good urban view, especially from people well educated and care about environment, these participants often play a key role in shaping public argues and sustainability.

Data Analysis

While the survey had some closed questions, categorization and frequency analysis were included, the main focus was on qualitative analysis, a thematic responses were used to identify same patterns and repeated ideas from open-ended answers. According to (Clarke, 2006), that emphasises on six-step method, data familiarization, initial coding, theme development, theme review, theme definition, naming and final report production.



https://mindthegraph.com/blog/thematic-analysis/

Manual coding was chosen over digital tools, this manual method supported a more reflexive and engaging with the material, the themes were analysed using the previously discussed theoretical framework, including social practice theory and theory of planned behaviour, this approach get a richer interpretation of the routines, meanings and values and aspects of water consumption.

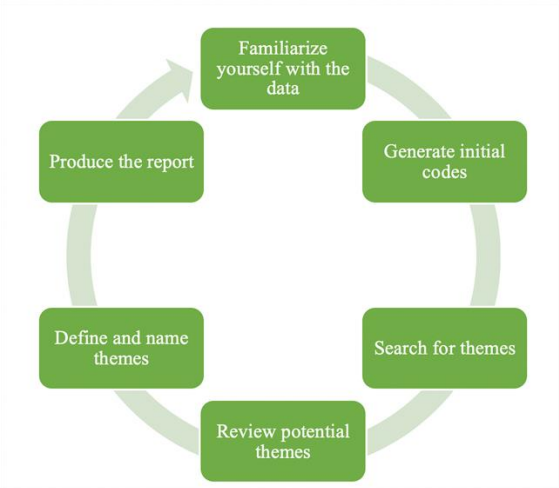


Figure 1 Thematic Analysis

https://www.simplypsychology.org/thematic-analysis.html

Descriptive statistics such as percentages or frequency counts were used in Microsoft Excel and reviewed to identify patterns. Although this study is qualitative, basic descriptive statistics such as percentages and frequencies will be used to categorize the data (Ahmed, 2025). Specific attention will be given to identifying gaps in knowledge, generational differences in habits, and any contradictions in behaviours or attitudes may reveal deeper resistance or misunderstandings related to water charges. No advanced statistical analysis will be conducted, as the purpose of this research is exploratory rather than predictive.

Researcher Consideration

As a postgraduate student from National College of Ireland based on Dublin since 2023 with a strong interest in the environment with strong knowledge in Civil Engineering related to water sustainability, I recognize that people's perspective could influence both the way the survey was created and the qualitative data interpretation to reduce potential personal influence. Moreover, I made an special effort to stay open to alternative views or opinions, especially when responses are not aligned with common attitudes or institutional and political positions.

Ethical Considerations

This research follows University ethical standards and data protection policies. Participants are fully informed at the beginning of the survey that all responses are anonymous and confidential. Participation is voluntary and respondents may skip any questions. All data will be securely stored and used exclusively for academic purposes. No financial incentives or rewards are offered for participation.

Limitations

This study has some methodological limitations, The use of multiple-choice questions limits the depth of insights, compared to interviews or open-ended questions, which could provide more understanding. Additionally, self-reported data may not always reflect actual behaviour, as some participants may forget details or respond based on social norms.

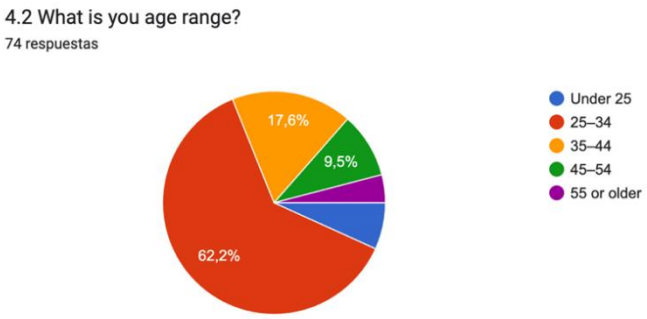
Despite the limitations, the selected methodological approach is appropriate for an exploratory research, allowing for quick data collection and valuable insights into public trends in a short time and behaviours toward water governance and conservation in Ireland. (W, 2013)

RESULTS

This section presents the findings from the survey with perceptions and habits regarding household water use in Dublin. Responses were analysed by Thematic analysis, examined by use of theories such as Attitude behaviour gap (Gifford, 2011), Social Practice Theory (Shove, 2012) and Environmental Justice Framework (Johan, 2022). The results are organised into five key segments: Participant demographics, daily consumption habits, attitudes and awareness, perceptions of fairness, responsibility, and whether they are open to change.

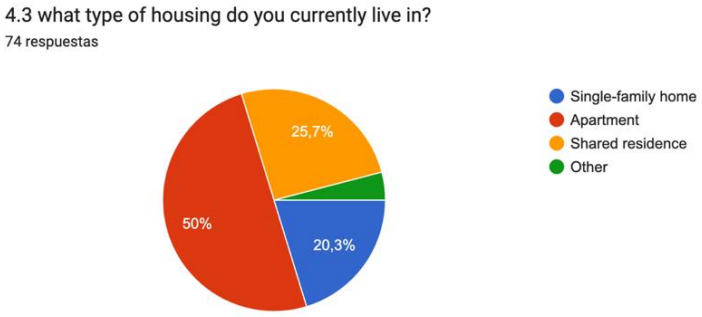
Participant Demographics

This survey collected 74 valid responses from Dublin residents living in private households, the majority were aged between 25 to 40 with a balanced gender representation.



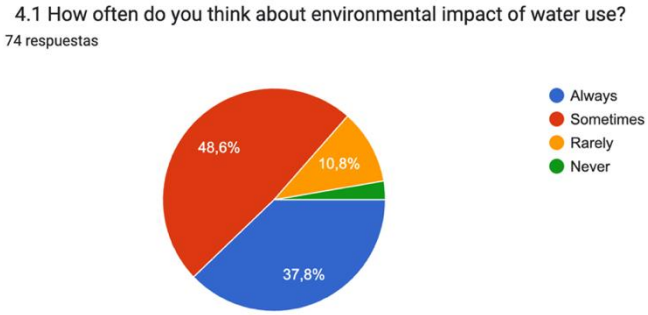
Graph 1 Questionnaire - question 4.2

A large number of respondents reported university qualifications, reflecting the generally well-educated profile. The Participants included tenants and homeowners with a small majority being tenants due to high rental rates in Dublin, especially for students and young employees.



Graph 2 Questionnaire - question 4.3

The most common housing types were apartments. This demographic profile shows that middle income residents tend to care about environmental awareness, however, they often struggle with practical challenges in the adoption of sustainable behaviours into daily activities. (Naughton, 2014)

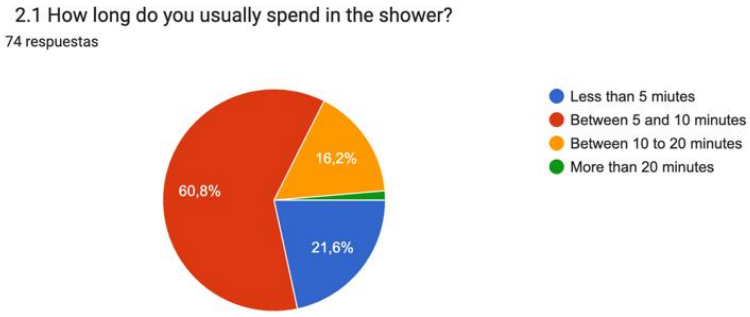


Graph 3 Questionnaire - question 4.1

Daily Habits

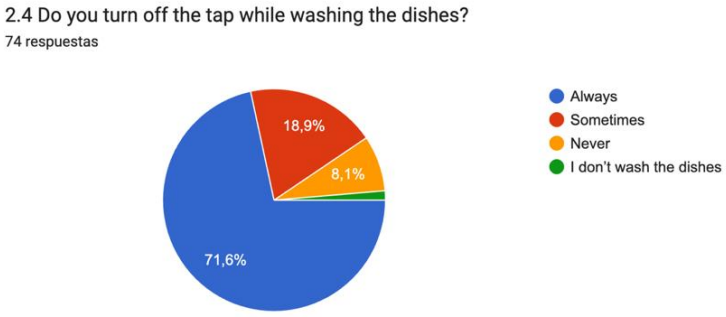
Results showed that daily water habits present inconsistencies between participant's responses about environmental concerns and actual behaviours, for instance:

During the shower time, most respondents (84%) said that long showers contribute to water waste (Carrico, 2016). In this case, around 65% reported showering for more than 8 minutes. Only 21% limited their showers to under 5 minutes, this is a typical standard in water saving.



Graph 4 Questionnaire - question 2.1

There is a clear disconnection between awareness and behavioural attitudes (Gifford, 2011), means that their concerns do not reflect. During the toothbrushing and dishwashing routines, 72% of respondents turn off the tap while they brush their teeth, while only 48% do so when washing dishes. This gap reveals that water saving practices for residents are often shaped by what feels habitual or convenient, rather than consistent awareness of the environment (Shove, 2012).



Graph 5 Questionnaire - question 2.4

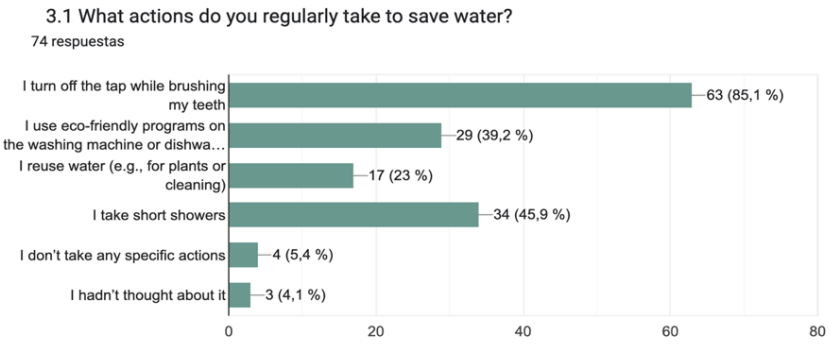
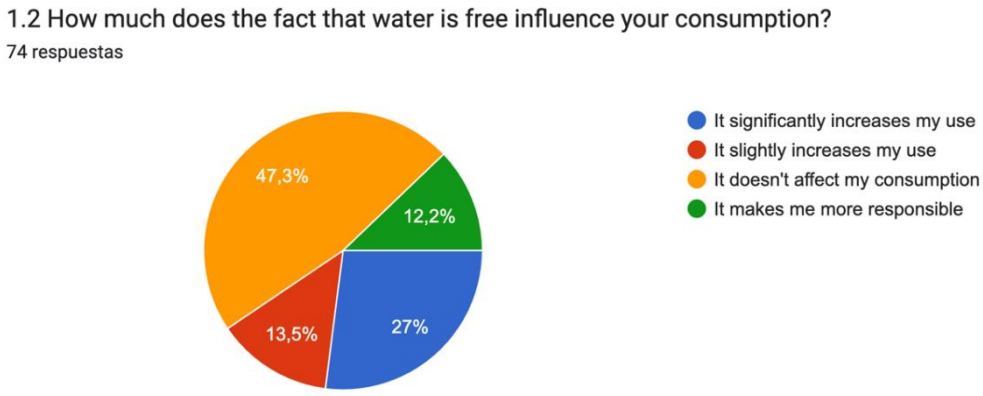


Table 1 Questionnaire - question 3.1

These findings show a gap between awareness and responsible actions, such as taking longer, comfort showers or unawareness of turning off the tap while washing dishes, practices comparable to those in Italy and South Africa (Matikinca, et al., 2020) (Reggiani, 2024).

Awareness and Attitudes toward the system

The belief that water should remain free as a human right was held by 89% of responses. The Irish people aligns with a long-standing conception of public water. However, this Irish perspective may weaken the need for individual and responsible water conservation (De Buitleir, 2014).



Graph 6 Questionnaire - question 1.2

With only 27% of respondents aware that over 40% of treated water in the city is lost to leaks (EPA, 2022), this highlights the disconnection between infrastructure realities and public knowledge, this significant gap shows a high failure in public communication and supports the idea that Ireland's initiatives to increase awareness of water use lag behind, mainly compared to other countries such as Germany and Denmark, where water education is a crucial key point for success Since the education campaign started in Germany in 1975, there has been a significant decrease in litres per capita per day (Hillenbrand, 2007).

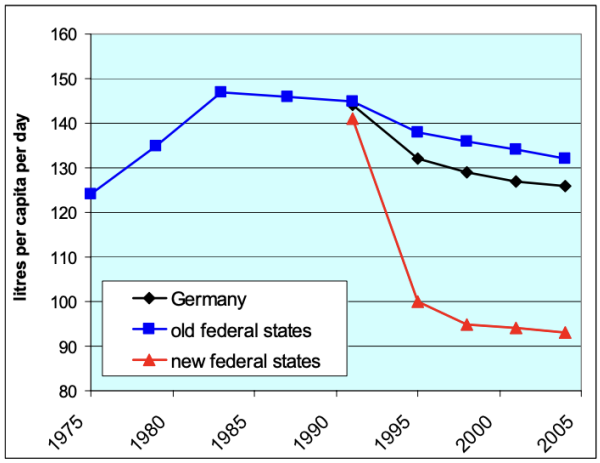
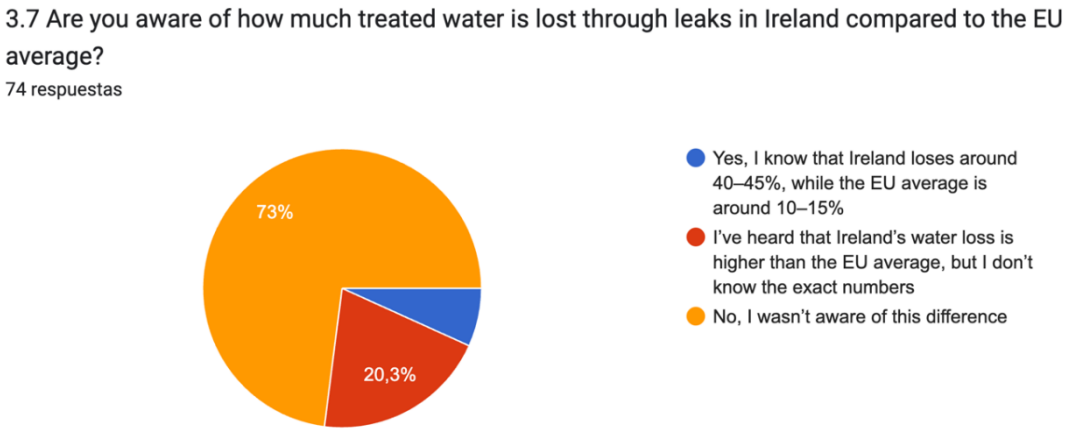


Figure 2 Germany - Litres per capita per day

Source: https://www.econstor.eu/bitstream/10419/28515/1/538778458.pdf



Graph 7 Questionnaire - question 3.7

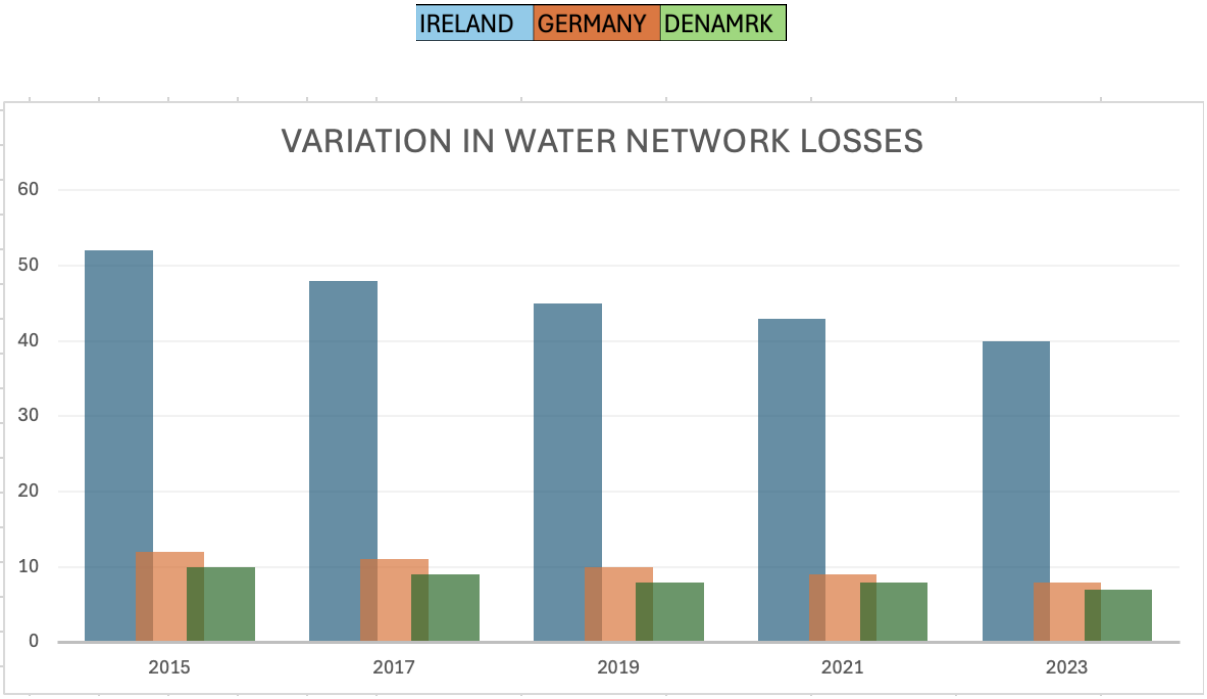
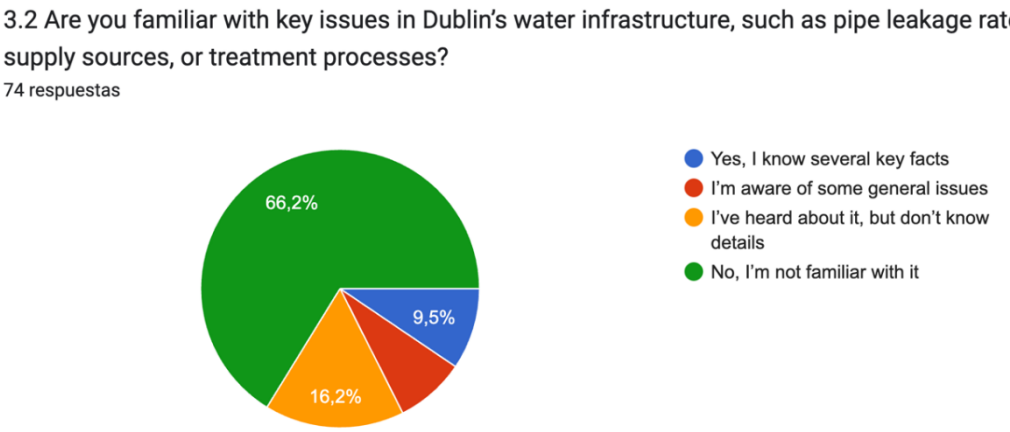


Table 2 Variation in Water Network Losses

Source : https://www.epa.ie / https://www.umweltbundesamt.de / https://www.dst.dk

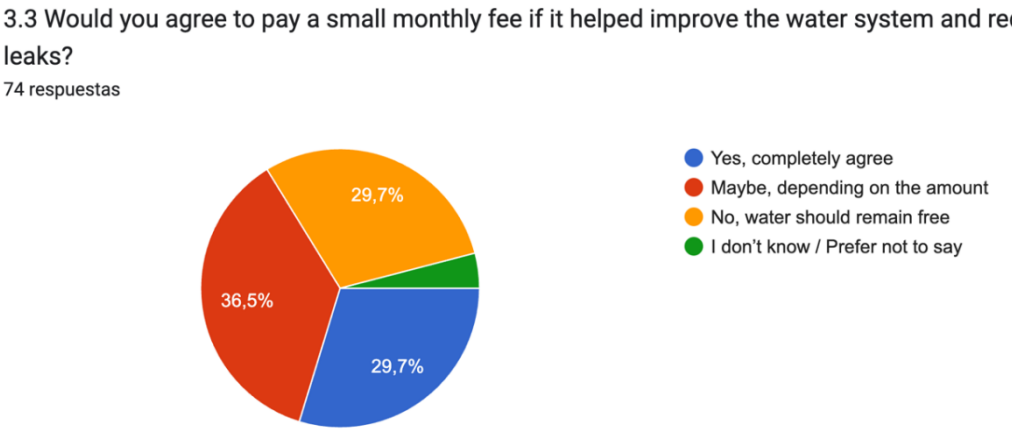
Water loss in supply networks remains an important challenge for Ireland to achieve sustainable water management, it shows a considerable losses compared to Germany and Denmark, based on the EPA annual report 2023 in Ireland, water loss has decreased gradually from around 53% to 40% in 2023. Nevertheless, leaks remain quite high, due to infrastructure issues and no water pricing that limits reinvestment capacity.

In contrast, Germany and Denmark report considerably lower water loss than Ireland. According to Umweltbundesamt (2023), water loss decreased from 12% to 8% in 2023, and Danmarks Statistik (2023), reported losses from 10% to 7%, due to continuous investments in advanced leak detection and efficient water management policies supported by pricing tariffs and transparent governance.



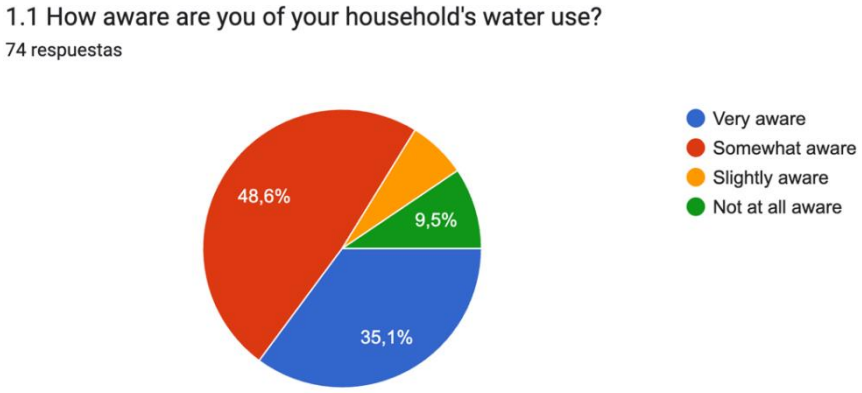
Graph 8 Questionnaire - question 3.2

From graph 8 it shows that only 9.5% of participants are familiar with wastewater infrastructure issues in Ireland, while over 60% reported having poor knowledge of these issues. This highlights a clear lack of understanding of water consumption, which may reflect the widespread belief that water is a public good and a universal right (De Buitleir, 2014).

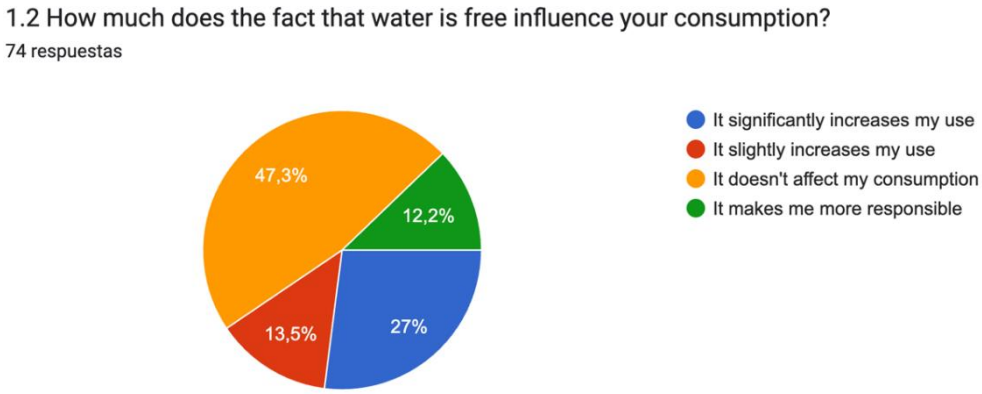


Graph 9 Questionnaire - question 3.3

Only a total of 30% of participants agreed to reintroduce a monthly fee payment, while 70% opposed the reintroduction of water charges, due to fairness concerns and lack of trust in governance. This indicates a clear mistrust if revenue will be clearly directed toward education and infrastructure or not. (O'Neill Eoin, 2016)

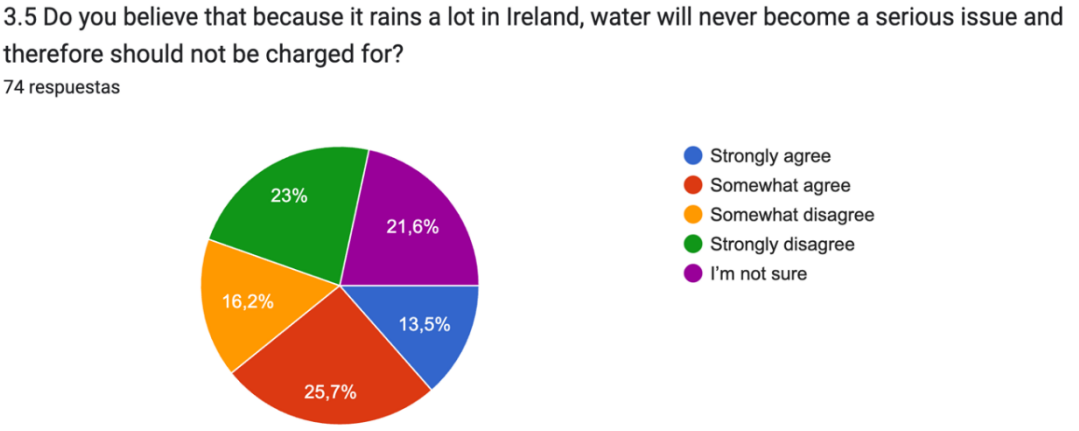


Graph 10 Questionnaire - question 1.1



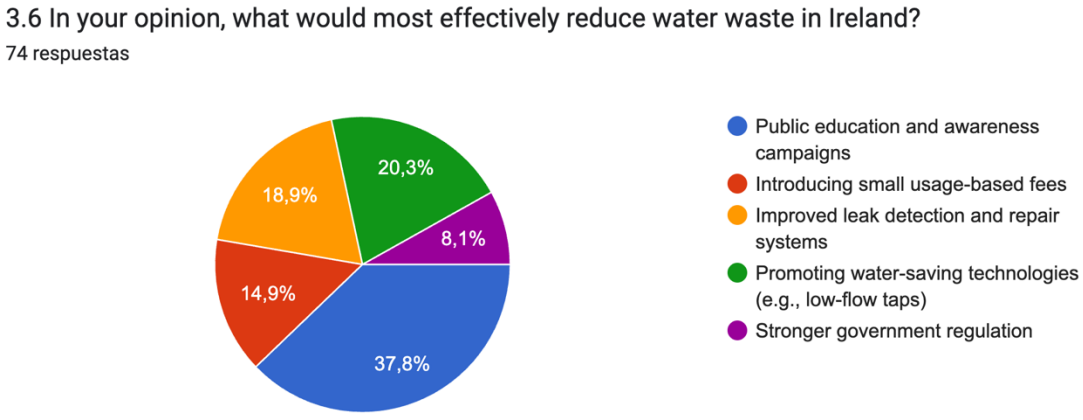
Graph 11 Questionnaire - question 1.2

On the other hand, a large number of the participants believed that water charges would not influence their daily consumption, and the majority reported being aware of water usage in their daily routines. However, this may reflect a fear of potential reintroduction of charges, and limited knowledge of this natural resource, that often perceived in Ireland as a human right.



Graph 12 Questionnaire - question 3.5

This graph highlights a significant ambiguity among Dublin residents about whether, it rains a lot in Ireland, water will never become a serious issue and therefore should not be charge for, the data shows considerable variation, reflecting diverse opinions and a lack of knowledge. According to the Annual rainfall report Met Eireann (2023), Ireland receives between 750mm and over 2500mm of rain annually. Nevertheless, despite this abundant resource, there is significant uncertainty among residents. These perceptions are largely influenced by historical issues related to water management, combined with insufficient clarity and effective communication by the government.



Graph 13 Questionnaire - question 3.6

There is a considerable variation in the data related to whether Ireland's frequent rainfall mitigates water scarcity or not, reflecting uncertainty about the connection between available

resources and climate change. This shows a lack of knowledge about how the water system works and how it is affected by climate change. According to Water governance in Ireland on 2021, the country faces challenges in water sustainability because of public misperception of water abundance (OECD, 2020).

Even though, over 51% of the responses identified infrastructure leaks and lack of public education as one of the main reasons of water waste in the country, while only 13% reported having no understanding of it, this reflects a clear conception of the critical issues related to water consumption, this suggests a significant portion of the population is aligned with the Irish reality of the causes behind water waste.

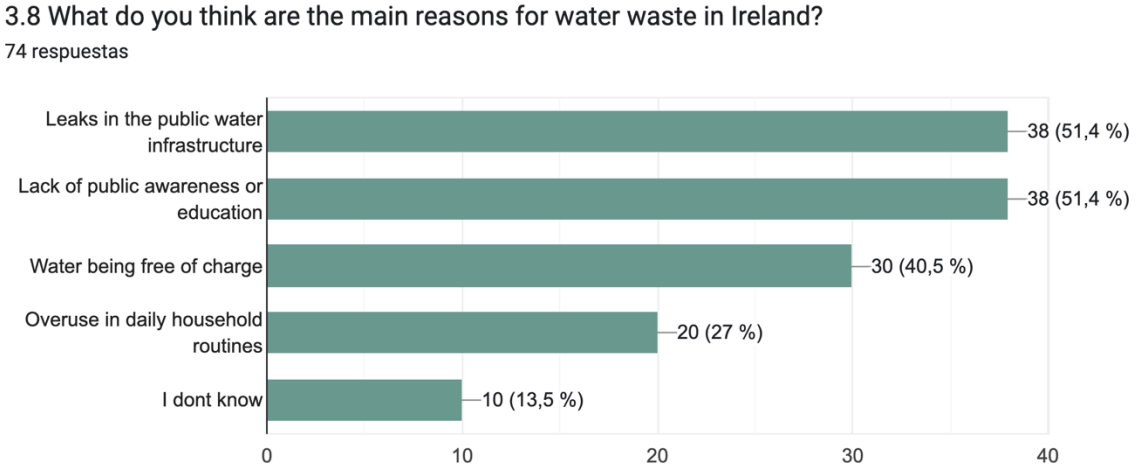
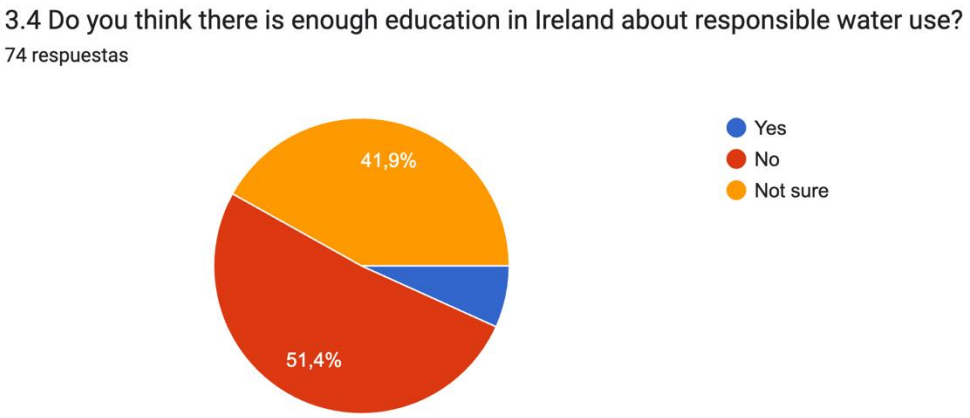


Table 3 Questionnaire - question 3.8

An important key solution for the country is to address this issue through public education (Kayata, 2024); (Wheeler, 2025). However, according to the collected data, the results were highly variable among households, as the responses showed insignificant variation and indicated a lack of clarity regarding whether education is responsible for water consumption or not.



Graph 14 Questionnaire - question 3.4

Perceptions fairness and justice

Irish population believes that government should take the main role in awareness of water conservation, this reflects only a dependence on Irish intervention, influenced by ineffective communication by Irish Water (Clancy, 2015). It also shows a gap between environmental expectations and willingness to individual conservation. On the other hand, concerns about social justice were mainly popular pointed out that pricing structures would only affect different low income groups and increase mistrust. This reflect international examples, like Cape Town, where pricing models lacking equity measures creating social divisions (Abajian, 2025) (Oyen, 2022).

People also mentioned that it is important that decisions related to water consumption must be clear and transparent information, furthermore, they believe that costs and issues with infrastructure are shared fairly, these are key to the Environmental Justice Framework, which focuses on inclusive , transparent and sensitive to social needs (Johan, 2022).

DISCUSSION

This section from the research offers a deeper analysis of the survey results related to perceptions and habits regarding household water consumption in Dublin, and their

willingness and openness to changing behaviours. The discussion connects these insights with global literature, especially from European countries due to their geographical proximity, as well as countries where water is provided at little or no cost, and new policy approaches aim to change public behaviours, during this section the idea is organised into different important factors.

1. Water consumption habits and potential gaps between opinions and daily practices.
2. Public perceptions and awareness of free access to water.
3. Financial and educational role in promoting water conservation.
4. Inequality, issues of fairness and public trust in policy.

Water Consumption habits and potential gaps between opinions and daily practices

The responses from Dublin residents showed a gap between intentions and actions related to water conservation. While many participants report turning off the tap while washing their dishes or turn off while soaping during their shower, they still report excessive shower time. This contradiction aligns with the Value Action Gap theory which is part of the environmental psychology, it describes complete disconnection between sustainable behaviours vs environmental concerns (Gifford, 2011).

Similar evidence from other countries support this Irish behaviours, such as Milan in Italy when a smart meter initiative was implemented in 1000 households for 5 months, and a monthly feedback showed a decrease of 6% in water consumption, it meant around 25 litres/day, The most important reduction was among citizens who paid close attention with the initiative, emphasizing the importance of awareness and motivation (Economics, 2024).

Another similar example occurred in Cape Town, South Africa when during the 2015 to 2018 a large drought season brought its water supply system to nearly collapse and crack down economical and non-economical strategies to reduce water consumption. It showed that non-price measure, like public awareness and water restrictions were incredibly more effective than payment strategies. Citizens behaviours changed particularly in their daily essentials such as showering or dishwashing (Matikinca, et al., 2020).

Both examples demostrated behavioural changes into social awareness and trust in the government system could influence on water use rather than financial penalties. In Dublin, political trust and awareness of consumption remain lacking due to deficient and unclear government communication.

Public perceptions and awareness of free access to water

In Ireland, there is an outdated tradition of free domestic water , that contributes to the dominant belief that water is a right (DeBuitleir, 2014), this public perspective drives a public resistance to water charges and reduces the importance of water saving behaviours.

A similar phenomenon occurred in Cape town, when a "Day Zero" campaign was created due to the threat of imminent water outages, it helped to promote a collective sense of responsible consumption. This direct message created a strong sense of community identity and action, causing a significant shift in societal behaviour (Cameron M, 2022). As a result, these qualitative studies highlight the importance of trust in local authorities and environmental responsibility (Emilie, 2020). By contrast, citizens with low trust in public institutions or who believed their efforts had no impact exhibited minimal behavioural changes.

Based on Dublin situation, this suggests that identity, into environmental values, trust in Irish Water or other public institutions and perceptions related to responsible consumption, may influence Irish willingness to engage in sustainable behaviours, even without pricing mechanisms.

Financial and educational role in promoting water conservation.

There is evidence from Europe and other regions around the world in terms of consumption opinions and social comparisons such as the intervention in Milan, that households with personal consumption feedback, even in the absence of tariff increases, residents can considerably reduce their use, in that case, in Milan the reduction was around 6% (Reggiani, 2024). In other countries, Denmark and Germany, integrating small water fees with strategies

like energy labels, water-efficient appliances and educational initiatives has proven to minimise water usage by 10 to 20 percent (Wheeler, 2025).

Crisis tools and limits work better than prices. Between 2015 and 2018 water crisis highlights in Cape Town and showed that setting a strict daily limit of 50 litres per person combined with public efforts, such as displaying which households conserved water (Dugard, 2021). These rules and strategies resulted in a 50% drop in water consumption and proved more effective than just increasing prices or financial penalties. Moreover, studies point out that raising water prices alone can be unfair, especially low-income families. In contrast, wealthier residents can often get around limits by paying extra or installing private water sources like wells. This leads to long term issues with fairness. (Abajian, 2025)

Inequality, issues of fairness and public trust in policy

Equity plays a crucial role in water usage, important observations include: In Cape Town, water consumption was considerably uneven, wealthier households used about 51% more water, while 62% of the population especially poorer families consumed only 27%. Pricing policies couldn't correct this imbalance, and tariff increases disproportionately affected poorer citizens (Nugent, 2023). After the drought, reforms focused on tried to balance efficiency and equity pricing, however obstacles such as low trust in the system and complicated registration systems led to the exclusion of low income households from available subsidies increasing inequality. These obstacles showed the importance of procedural justice (how decisions are made), distributive justice (who pays and who benefits) and interactional justice (how fair the process feels to people) (Oyen, 2022).

In the case of Dublin, a new water policy needs to be implement toward charging initiatives or public campaigns:

- Financial vulnerability, especially affecting tenants and low income households
- Public trust in governmental institutions such as Irish Water
- The importance of transparency, inclusivity, equitable and accessible policies.

Political Perspectives on Water Consumption in Ireland

Water consumption in Ireland has been significantly shaped by political decisions and public trust in water authorities. The implementation of water charges in 2014 was one of the most controversial decisions in Ireland, sparking an intense and divisive public debate. The plan was led by the Fina Gael, a centre right party with the Labour Party, at that time, they said that the charges were necessary to comply with the European Union regulations from Water framework Directive and to modernize the water infrastructure in the country (De Buitleir, 2014).

On the other hand, opponents expressed strong disagreement, Sinn Fein and the Anti-Austerity Alliance opposed the new water policy, viewing it as the broader context of austerity imposed aftermath of the financial crisis. As a result, these against parties actively participated in massive public protests across the country supported by Right2Water movement, arguing that public water must remain free because it is an essential human right (Hearne, 2015). The opponent party Fianna Fail, which had previously support for the measure during its past governance, even though it changed due to increment of public dissatisfaction.

In contrast, the Green Party took a neutral position, supporting the important need for environmental protection and sustainable water in the country, but emphasized the importance of providing assistance to low-income households, regardless of whether the new policy would be applied or not. Due to these differing points of views among the political parties, public confusion and distrust especially in Irish Water increased, making it difficult to implement a long-term and clear strategy for water services in Ireland (Pender, 2019). as a result, policymaking in this critical area continues to be strongly influenced by political movements, rather than being guided toward real solutions for environmental and sustainable water management across the country (Hearne, 2015).

Implications for Dublin Water Context

Behavioural interventions to reduce water use: Evidence from cities like Cape Town and Milan indicate that the effectiveness of behavioural interventions, through real time feedback in smart meters or social comparison messaging, can positively impact water consumption (Bolognesi, 2020). Awareness of infrastructure losses is crucial, Considering that over 38% of water is lost through leaks in Dublin, educational initiatives should be implemented to visualize and make it easy to understand the environmental costs of water waste promoting more conscious and responsible use (Carrico, 2016).

Fair tariff mechanisms might be adopt charging more for high usage, these changes should be implemented gradually. These pilot mechanisms should incorporate equity and focused measures like, leak detection services and transparent communication strategies to increase public trust and understanding (De Buitleir, 2014). Link infrastructure efforts to transparency, particularly in leak reduction through real time reports and localized updates can enhance engagement and public trust. These measures can help technical improvements into shared civic goals (OECD, 2020).

Future Studies directions & Theoretical Perspectives

Findings from this research align with social practice theory and environmental psychology, these theories suggest that behavioural change is more often shaped by real time feedback, social influence and individual identity than by economic or financial monetary incentives (Gifford, 2011).

In the context of Dublin, conventional economic models based on price seem to be less relevant. Instead, water consumption is largely influenced by routine behaviour, lack of knowledge, and deeply rooted cultural beliefs, to extend this research, future studies might:

- Create different types of strategies by households depending on their demographic profiles such as renters or homeowners.
- Investigate how long the effects of non-economic initiatives such as consumption feedback, awareness campaigns or reminders, continue to influence behaviour.

- Combine both qualitative results with survey data or interviews to deeply understand potential motivate factors or the challenges they face in using water consumption properly.

Summary

This section synthesizes global research to contextualize the patterns seen in the survey, it demonstrates that behavioural campaigns such as personal feedback or non-price initiatives, can help to reduce households water use in terms of awareness and can also minimize use even when water is free (PJ, 2013).

Designing powerful and social water policies to increase equity and public trust as well as, increase investment in infrastructure with participatory public engagement can enhance long-term shifts in people's behaviours toward water sustainable (Bolognesi, 2019). This Important insights will guide to the next part in this research, which provides recommendations for Dublin to reach effective communication strategies, pilot programs and policies that promote equity and inclusion.

CONCLUSIONS

This study examined public perception in Dublin about water consumption habits, perceptions and awareness. Analysing the influence of direct household water fees on behaviours and conservation attitudes. Using an online survey and qualitative Thematic Analysis, the research identified contradictory practices, low awareness of infrastructure problems and strong cultural beliefs of water as an abundant and human right (Gifford, 2011).

Irish society still has the perception that water is a fundamental human right, something that remains in their strong cultural identity (De Buitleir, 2014). However, only a few people understand issues such as 40% of treated water loss due to leaks (EPA, 2022), or the obligations under the European Union Water Framework Directive (Environment, 2023) are critical. Moreover, the findings showed a general distrust of public authorities, especially Irish Water and scepticism about reintroduction of water charges. However, the survey indicates that many

residents would accept financial contributions if there is transparency, equity and infrastructure reinvestment in the country.

Fortunately, there is strong public backing for Ireland in terms of public environmental education, community participation and more approaches successfully applied in Denmark, Milan, different countries in Latin America and Cape Town (Reggiani, 2024). These methods may offer a better real awareness and culturally compatible alternative for water consumption and conservation in the country.

In conclusion, the challenges facing Ireland's water governance are fundamentally structured in historical institutions, political disputes and social expectations. To achieve the goals of the Water framework directive and to meet the European Union regulations, require a renewed public engagement and shift cultural transformation toward water governance, rather than, only implementation of institutional reform. Developing a transparent system, inclusive actions and adaptation to climate change must be seen as a critical national priority, rather than simply a regulatory obligation.

FUTURE RESEARCH

While this study has provided valuable insights into Dublin residents attitudes and behaviours in terms of water usage, there are still important areas to explore, such as approaches to monitor changes in residents and behavioural patterns over specified period of time, mainly with interventions like educational campaigns, smart meters at home or pricing mechanisms, As a result, identify behavioural shifts and patterns in people, these kinds of methods could help design durable water conservation strategies in Ireland (Reggiani, 2024); (Gifford, 2011). Furthermore, these pilot initiatives offer valuable opportunities to examine hypotheses in real time and produce proof to support solutions that can be effective solutions in a short term.

Although this research only uses structured surveys provide important data, exploring water consumption in depth through interviews or focus groups could show real emotions, motivations and social or political factors which might affect attitudes and behaviours in water use, using these two methods approach could help validate results and clarify inconsistencies often hidden in survey responses (Charmaz, 2014); (Silverman, 2024).

Additional research should examine the impact of factors such as whether residents are renters, income level and household size on water usage, different daily practices at home. Due to the fact, renters could be willing to invest in water appliances saving water, while low-income households might see water charges as unfair, so, based on that comparison, it would be vital to develop policies and enhance communication more effectively.

QUESTIONNAIRE

1. General perceptions

1.1 How aware are you of your household's water use?
Very aware
Somewhat aware
Slightly aware
Not at all aware

1.2 How much does the fact that water is free influence your consumption?
It significantly increases my use
It slightly increases my use
It doesn't affect my consumption
It makes me more responsible

1.3 Do you think water is wasted in your home?
Yes, frequently
sometimes
Rarely
Never

2. **Daily Habits**

2.1 How long do you usually spend in the shower?
Less than 5 minutes
Between 5 and 10 minutes
Between 10 to 20 minutes
More than 20 minutes

2.2 How often do you use the washing machine at home?
every day
3 to 5 times per week
1 to 2 times per week
less than once per week
I do not have a washing machine

2.3 Do you turn off the water while soaping during your shower?
Always
Sometimes
Never
I hadn’t thought about it

2.4 Do you turn off the tap while washing the dishes?
Always
Sometimes
Never
I don’t wash the dishes

2.5 Do you turn off the tap while soaping your hands?
always
sometimes
Never

3. **Awareness and Attitudes Toward the System**

3.1 What actions do you regularly take to save water?
I turn off the tap while brushing my teeth
I use eco-friendly programs on the washing machine or dishwasher
I reuse water (e.g., for plants or cleaning)
I take short showers
I don’t take any specific actions
I hadn’t thought about it

3.2 Are you familiar with key issues in Dublin’s water infrastructure, such as pipe leakage rates, supply sources, or treatment processes?
Yes, I know several key facts
I’m aware of some general issues
I’ve heard about it, but don’t know details
No, I’m not familiar with it

3.3 Would you agree to pay a small monthly fee if it helped improve the water system and reduce leaks?
Yes, completely agree
Maybe, depending on the amount
No, water should remain free
I don’t know / Prefer not to say

3.4 Do you think there is enough education in Ireland about responsible water use?
Yes
No
Not sure

3.5 Do you believe that because it rains a lot in Ireland, water will never become a serious issue and therefore should not be charged for?

Strongly agree
Somewhat agree
Somewhat disagree
Strongly disagree
I'm not sure

3.6 In your opinion, what would most effectively reduce water waste in Ireland?
Public education and awareness campaigns
Introducing small usage-based fees
Improved leak detection and repair systems
Promoting water-saving technologies (e.g., low-flow taps)
Stronger government regulation

3.7 Are you aware of how much treated water is lost through leaks in Ireland compared to the EU average?
Yes, I know that Ireland loses around 40–45%, while the EU average is around 10–15%
I've heard that Ireland's water loss is higher than the EU average, but I don't know the exact numbers
No, I wasn't aware of this difference

3.8 What do you think are the main reasons for water waste in Ireland?
Leaks in the public water infrastructure
Lack of public awareness or education
Water being free of charge
Overuse in daily household routines
I don't know

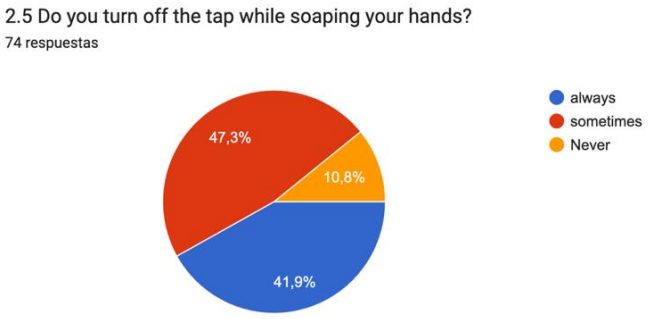
4. **Participant profile**

4.1 How often do you think about environmental impact of water use?
Always
Sometimes
Rarely
Never

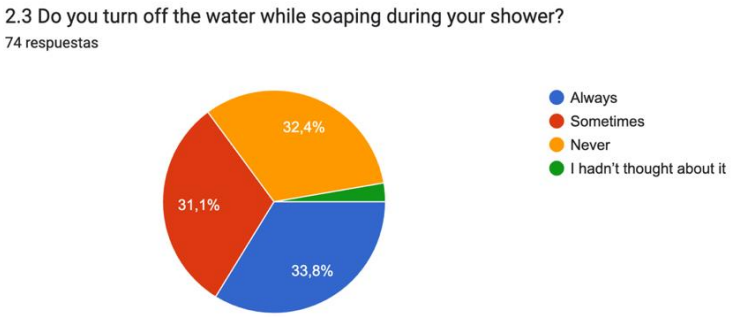
4.2 What is your age range?
Under 25
25–34
35–44
45–54
55 or older

4.3 what type of housing do you currently live in?
Single-family home
Apartment
Shared residence
Other

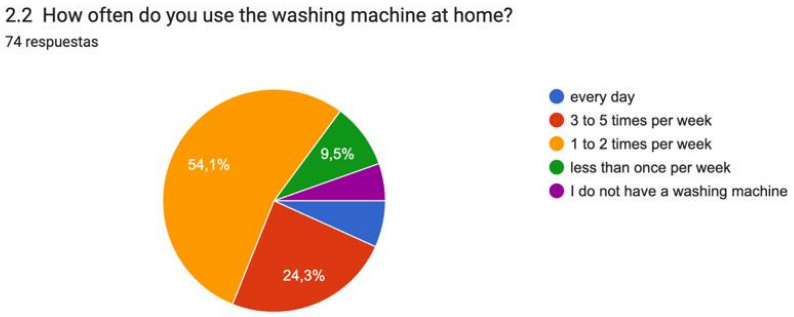
ANNEX



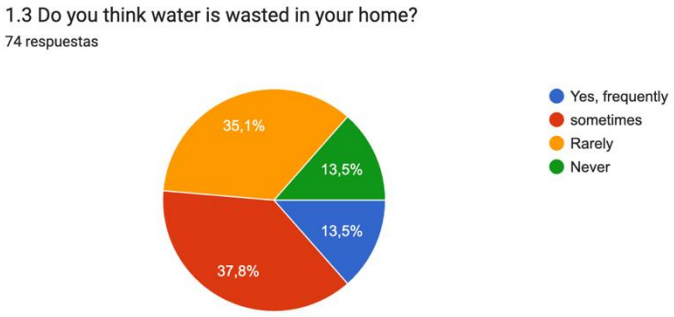
Graph 15 Questionnaire - question 2.5



Graph 16 Questionnaire - question 2.3



Graph 17 Questionnaire - question 2.2



Graph 18 Questionnaire - question 1.3

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