UNIVERSITY OF ECONOMICS IN BRATISLAVA
FACULTY OF BUSINESS MANAGEMENT

Registration number: 101006/B/2025/36146475404647428

IMPACT OF SOCIAL MEDIA SENTIMENT ON STOCK MARKET TRENDS

Bachelor's thesis

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2025 **Gia Bao Tran**

UNIVERSITY OF ECONOMICS IN BRATISLAVA

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Does Environmental Valuation differ between generations?

Bachelor's Thesis

Study programme: Finance, Banking and Insurance
Study field: Economics and Management
Department: Department of Banking and International Finance
Supervisor: Ing. Veronika Piovarči

Bratislava 2025 **Gia Bao Tran**

Declaration

I hereby declare that I have written this thesis independently and that all the sources used are cited in the bibliography.

Acknowledgement

I would like to express my gratitude to Ing. Veronika Piovarči. for her guidance, valuable insights, and support throughout the process of writing this bachelor's thesis.

Abstract

Gia Bao Tran: Does Environmental Valuation differ between generations? – Economic university in Bratislava. Faculty of Economics and Finance; Department of Finance – thesis supervisor: Ing. Veronika Piovarči, Number of pages : 50

The main objective of this thesis is to estimate the perceived monetary value of non-market goods within an environmental context, examining how such valuations differ across generations. By employing the Contingent Valuation Method (CVM), this research investigates how individuals from Generation X and Generation Z assess the value of essential environmental goods such as clean drinking water, biodiversity, and unpolluted air. The results indicate that while both generations express concern for the environment, Generation Z tends to exhibit higher levels of self-reported environmental awareness, more frequent eco-friendly behaviour, and a stronger willingness to financially contribute to environmental protection, particularly at higher contribution levels. These findings contribute to a deeper understanding of generational environmental values and can help inform the development of more targeted and effective sustainability initiatives.

Key words: Contingent Valuation Method, Non-market environmental goods, Willingness to Pay, Generation X, Generation Y, Environmental Awareness

Abstrakt

Gia Bao Tran: Líši sa environmentálne hodnotenie medzi generáciami? – Ekonomická univerzita v Bratislave. Fakulta národohospodárska; Katedra financií – vedúca bakalárskej práce: Ing. Veronika Piovarči, Počet strán: 50

Hlavným cieľom tejto bakalárskej práce je odhadnúť vnímanú peňažnú hodnotu nekomerčných environmentálnych statkov v kontexte životného prostredia a preskúmať, ako sa tieto hodnotenia líšia medzi generáciami. Pomocou metódy podmieneného hodnotenia (Contingent Valuation Method, CVM) výskum analyzuje, ako jednotlivci z Generácie X a Generácie Z posudzujú hodnotu základných environmentálnych statkov, ako sú čistá pitná voda, biodiverzita a neznečistený vzduch. Výsledky naznačujú, že hoci obe generácie prejavujú záujem o environmentálne otázky, Generácia Z vykazuje vyššiu mieru sebahodnotenej environmentálnej informovanosti, častejšie environmentálne správanie a väčšiu ochotu finančne prispieť na ochranu životného prostredia – najmä pri vyšších úrovniach príspevkov. Tieto zistenia prispievajú k hlbšiemu pochopeniu generačných environmentálnych hodnôt a môžu pomôcť pri tvorbe cielenejších a účinnejších stratégií udržateľnosti.

Kľúčové slová: metóda podmieneného hodnotenia, nekomerčné environmentálne statky, ochota platiť, Generácia X, Generácia Z, environmentálne povedomie

Contents

Introduction

In recent years and decades, the concerns about environmental degradation, climate change, and the depletion of natural resources have shown us the importance of understanding the economic value of non-market environmental goods (Pearce,1993; Hanley & Barbier, 2009). These goods, such as clean air, biodiversity, and access to clean drinking water, do not have a direct market price, yet they provide crucial benefits to society and support human well-being (TEEB, 2010). Estimating their value is essential for informed policy-making, environmental conservation efforts, and the design of sustainable development strategies (Freeman III, Herriges, & Kling, 2014).

The main aim of this thesis is to roughly estimate the perceived monetary value of selected non-market goods with an environmental context across two generations: Generation X and Generation Z. By investigating how these two distinct generation value environmental goods, we will understand more about the differences in environmental preferences, priorities, and willingness to pay (WTP) for environmental protection measures. Previous research suggests that different generations act differently towards the environment because they grew up in different times and learned different values (Inglehart, 1995; Twenge, 2017)

A cross-generational approach is particularly relevant today, as different age groups experience and see environmental issues differently, influenced by their historical and social context (Mannheim, 1952). Generation X, typically born between 1965 and 1980, have witnessed the rise of global environmental movements and the emergence of sustainability as a public issue. On the other hand, Generation Z, born in years 1997 and 2012, is already growing up in an era defined by acute climate change awareness, digital information flows, and global environmental activism.

In this thesis we will use the Contingent Valuation Method (CVM), a widely used survey-based technique for estimating the value individuals place on non-market goods (Mitchell & Carson, 1989). By presenting hypothetical scenarios and asking people about their willingness to pay for specific environmental improvements or preservation, CVM allows for the estimation of economic values that are otherwise difficult to capture.

1. Theoretical Background

This chapter provides an overview of the current state of the issue, both domestically and internationally. I begin with a broad discussion about the capital markets, followed by a closer examination of the stock market and its evolving role in the economy. Then, I examine the impact of social media on financial decision-making and introduce the key studies examining the effect of social media sentiment on stock market trends.

1.1. Non-market environmental goods

Environmental goods and services such as clean air, drinking water and biodiversity are essential to human life and economic activity. However, the problem is that these goods do not have a market price, as they are not bought or sold through conventional market mechanisms (Pearce, 1993). These goods are also known as non-market goods and are typically characterised by non-excludability and non-rivalry, which makes them great examples of public goods (Freeman III, Herriges, & Kling 2014).

The lack of direct pricing mechanisms leads to market failure, where the real value of environmental assets is not properly considered when making economic decisions. As a results, non-market goods are often overused and not protected enough, leading to environmental degradation and biodiversity loss (TEEB, 2010).

It is widely accepted that giving economic value to non-market goods is important for shaping environmental policies, creating conservation incentives, and including the environment in the wider economy (Hanley & Barbier, 2009).

1.1.1. Examples of Non-Market Environmental Goods

- Clean Air: Vital for healthy breathing and for helping to regulate the climate
- Biodiversity: Supports ecosystem services such as pollination, pest control, and nutrient cycling (MEA,2005)
- Freshwater: Essential for drinking, agriculture, sanitation, and industry

1.2. Environmental Valuation Methods

In environmental economics, a variety of methods have been developed to estimate the economic value of goods and services that are not traded in traditional markets, such as

clean air, biodiversity, or scenic landscapes. Accurately valuing these non-market goods is essential for supporting informed decision-making and for designing effective environmental policies. Broadly, environmental valuation methods are classified into two main categories, which are revealed preference methods and stated preference methods.

1.2.1. Revealed Preference Methods

Revealed preference methods estimate the value of non-market goods by analysing individuals' actual behaviour in related markets, where their preferences are indirectly expressed through their purchasing decisions or actions (Champ, Boyle, & Brown, 2003)

1.2.2. Hedonic Pricing Method

One of the methods of revealed preference methods is the hedonic pricing method, which is used to estimate the value of specific environmental attributes by examining how they influence the prices of goods sold in traditional markets, most commonly real estate (Rosen, 1974). The main idea is that the price of a marketed good reflects the value of its individual characteristics, including environmental qualities. For instance, the properties located near green spaces, water bodies, or in areas with better air quality typically have higher market prices compared to similar properties without these environmental benefits. By analysing these price differences, researchers can infer the implicit value that individuals place on environmental factors.

1.2.3. Travel Costs Method

The travel cost method is used to estimate the recreational value of natural sites by examining the time and money individuals spend to visit them (Clawson & Knetsch, 1966). The basic idea is that travel expenditures act as a proxy for the price of accessing the site. By analysing the relationship between the number of visits and the cost of travel, researchers can construct a demand curve for the site, such as a national park or a protected area, and thereby estimate its economic value.

While revealed preference methods are valuable tools for estimating environmental values, they are limited in that they can only capture use values and rely on the existence of observable market behaviour. As a result, they are not suitable for valuing non-use benefits, such as the existence value of a remote natural area.

1.3. Stated Preference Methods

Stated preference methods directly ask individuals about their willingness to pay for hypothetical environmental changes by presenting them with carefully constructed scenarios. These methods allow researchers to capture both use and non-use values, making them particularly useful when market behaviour is absent or insufficient.

1.3.1. Contingent Valuation Method (CVM)

The Contingent Valuation Method uses survey to directly ask people how much they would be willing to pay for specific environmental goods or services in hypothetical scenarios (Mitchell & Carson, 1989). It is one of the most widely used stated preference techniques, particularly valuable for estimating both use and non-use values where market data is unavailable

1.3.2. Choice Modelling

Choice modelling, particularly through choice experiments, respondents receive sets of alternatives with varying attributes and costs which they must select their preferred option (Hanley, Mourato, & Wright, 2001). By analysing these choices, researchers can determine the value individuals place on specific attributes of environmental goods and services, making this model flexible and powerful tool for assessing both use and non-use values

Stated preference are particularly valuable because they can capture both use values and non-use values, such as the importance individuals place on preserving endangered species, even when they have no direct interaction with them.

1.4. Use and Non-Use Values

Two main types of economic value that are usually produced by environmental goods are use value and non-use value (Pearce & Turner, 1990). Use values arise from the direct utilization of an environmental resource, such as fishing in a river, hiking in a forest, or enjoying scenic views. Non-use values, on the other hand, are linked to the advantages people experience just by being aware that a species or natural resource exist, even if they never come into contact

with it. Existence value and bequest value are two examples of non-use values, the latter represent the wish to protect natural resources for coming generations. Non-use values can be substantial and are frequently a key motivator for environmental conservation initiatives.

1.5. Contingent Valuation Method

The Contingent Valuation Method (CVM) is among the most widely applied techniques for estimating the economic value of non-market goods, such as ecosystem services, biodiversity, or landscape preservation (Mitchell & Carson, 1989). This method relies on survey-based research, where respondents are presented with a hypothetical scenario – such as the conservation of a natural area or improvement of air or water quality, and are then asked to indicate their willingness to pay (WTP) for such preservation or enhancement of the good, or alternatively, their willingness to accept (WTA) compensation for its loss. Although the scenarios are hypothetical, Contingent valuation method provides us with a better understanding of how individuals value environmental goods, including those they do not use directly. As a result, it serves as a useful tool for informing environmental policy and cost-benefit analysis.

1.5.1. The structure of a Contingent valuation method study

A typical Contingent valuation method survey is composed of several key elements that help ensure the reliability and validity of the results (Carson, Flores, & Meade, 2001)

- Description of the scenario: The survey begins by providing respondents with a detailed and realistic description of the environmental change or project being evaluated. It is important that the scenario is clear, credible and easy to understand, as the quality of information significantly influence the responses
- Payment method: To make the hypothetical situation more believable, the survey specifies a realistic method through which the payment would be made. Common examples include increased taxes, entrance or usage fees, or donations to a conservation fund.

- Valuation format: This part of the survey asks respondents to state their willingness to pay or willingness to accept compensation. Different formats can be used, such as open-ended questions, dichotomous choices (yes/no to a specific amount), or payment cards that offer a range of monetary options
- Debriefing Questions: Following the main valuation questions, debriefing questions are included to assess whether respondents properly understood the presented scenario. They also help identify so-called protest responses, where individuals reject the payment mechanism or the survey's premise itself, rather than expressing their actual valuation of the environmental good.

Despite its limitations, the Contingent Valuation Method (CVM)continues to be widely used and respected in environmental economics. Its credibility was notably reinforced by the endorsement of the NOAA (National Oceanic and Atmospheric Administration) Panel, which concluded that, if carefully designed and implemented, CVM can provide reliable estimates of non-market environmental values for use in legal and policy decision-making (Arrow et al., 1993).

1.6. Generations and Environmental Attitudes

According to generational theory, people who were born within the same historical period and who had comparable social, political, and economic experiences as children are more likely to develop unique worldviews and values (Mannheim, 1952). These shared experiences lead to the formation of generational identities, which can influence attitudes and behaviours across a wide range of areas, including views on environmental issues.

Environmental attitudes are often shaped by these generational characteristics. Research has shown that different generations express varying levels of concern, awareness, and willingness to act in response to environmental challenges (Gifford & Nilsson, 2014). For instance, Generation Z typically defined as those born from the mid-1990s to early 2010s, has grown up in the context of increasing climate change awareness, global environmental movements, and widespread access to digital information (Corner et al., 2015; Twenge, 2017). As a result, Gen Z is often characterized by strong pro-environmental attitudes, higher expectations for government

and corporate action, and are more willing to make sustainable lifestyle choices (Gomes et al.,2023).

In contrast, Generation X, born roughly between the mid- 1960s and early 1980s, came of age during a different historical context, one that was marked by economic uncertainty, the rise of individualism, and the early stages of the modern environment movement. While many Gen X individuals are environmentally conscious, their attitudes may be more pragmatic and shaped by concerns such as economic stability, job security, and balancing family responsibilities.

Understanding these generational differences is important for the design of environmental policies and communication strategies. Tailoring messages and engagement approaches to resonate with the specific values, concerns, and motivations of each generation can lead to more effective public outreach and stronger support for environmental initiatives.

1.6.1. Generation X

Birth years: 1965-1980

Context:

As we all know Generation X came of age during a period marked by significant social, political, and economic transitions. Their formative years were shaped by events like economic recessions, the end of Cold War, the rise of globalization, and major technology advancements such as the introduction of personal computers. At the same time, they witnessed the beginnings of modern environmental movements, including first Earth Day and establishment of important environmental regulations. Growing up in an environment of individualism, economic uncertainty, and rapid society change contributed to the development of a pragmatic and adaptable generational identity (Inglehart, 2018; Beck, 1992).

Key traits:

Members of Generation X are often described as pragmatic, self-reliant, and sceptical of traditional institutions and authority figures. They tend to value more personal independence, adaptability, and practical problem-solving skills, which were

shaped by their experiences during periods of political instability and economic volatility. As a generation, they are frequently described as having a balanced approach to risk and change, preferring realistic solutions over idealistic visions. (Twenge, J.M., 2010).

Environmental Values:

Generation X generally supports environmental protection but more often frames it within a broader context of economic and personal priorities. Their environmental concern tends to be moderated by practical considerations, such as financial cost, personal convenience, and the perceived effectiveness of environmental initiatives. Studies indicate that sustainable behaviour among Generation X is more likely to occur when environmental choices align with economic benefits or lifestyle efficiency (Berkup, 2014). Although environmental awareness is present, it is still often expressed through pragmatic, calculated decision-making rather than purely altruistic or idealistic motivations.

1.6.2. Generation Z

Birth years: 1995-2012

Context:

As one of the youngest and most researched generations to date, Generation Z has grown up on an era marked by rapid technological advancement, economic uncertainty, and increasing global awareness of social and environmental issues (Twenge, 2017; Parker & Igielnik, 2022). Their initial years have been shaped by the widespread availability of digital media, the visibility of global climate movements such as Friday for Future, and increasing public discourse surrounding climate change, biodiversity loss, and sustainability (Corner et al., 2015). They have also experienced the social and economic impacts of major events like the COVID-19 pandemic and growing political tensions, contributing to a generation that is more aware of long-term global risks than its predecessors. (Schiller et al., 2020).

Key Traits:

Gen Z is frequently described as socially conscious, digitally connected, and value driven. Compared to earlier generations, they are more likely to question traditional institutions, advocate for inclusivity, and demand transparency and accountability, particularly from governments and corporations. They are also very often seen as collaborative, open-minded, and highly adaptable, with strong digital literacy enabling them to engage with complex global issues from a young age (Lucas, Leith, & Davison, 2015).

Environmental Values:

Environmental protection can be said to be a core concern for Generation Z. Researchers shows that member of this generation are more likely than older cohorts to view climate change as an immediate and personal threat, and to express a high level of support for sustainability policies and environmentally justice (Deloitte, 2022) Their pro-environmental attitudes are often linked to a broader sense of social responsibility and intergenerational justice. Many are willing to make a change to their lifestyles, such as reducing consumption, eating less meat, or supporting ethical brands, based on environmental values. In addition, Gen Z shows strong engagement in environmental volunteering and activism, viewing these efforts as meaningful ways to contribute to global change (Barron, Gruber, & Huffman, 2022). Unlike Generation X, whose environmental actions are often moderated by cost-benefit thinking, Gen Z tends to act on environmental issues out of principle, even in the absence of direct personal benefit.

1.6.3. Generational Differences in Environmental Valuation

Recent surveys suggest that younger generations, particularly Generation Z demonstrate slightly stronger environmental values and are more willing to take action in support of sustainability than older generations, such as Generation X. This generational gap in environmental valuation mirrors broader societal changes, as sustainability increasingly becomes a defining concern and value among younger generations (Deloitte, 2022).

Several factors to explain this trend:

Education: Generation Z has grown up with environmental and climate education integrated in school curriculum and youth programs, which has increased awareness from an early age

Access to information: The modern use of digital media and social platforms enables Generation Z to stay informed about environmental issues, participate in climate movements, and engage with sustainability-focused content.

Risk perception: Generation Z is increasingly aware of the environmental consequences of climate change and tends to view it as a direct and personal threat. This heightened risk perception contributes to their willingness to take action in support of sustainability. Recent studies show that this concern is not only ideological but also reflected in consumption behaviour. For example, research by Gomes, Lopes and Nogueira (2023) found that Generation Z consumers are willing to pay more for environmentally friendly products, especially when these products align with their values and perceived quality expectations. Similarly, the Deloitte Global Survey (2022) reports that nearly two-thirds of Gen Z respondents prefer to purchase and use sustainable products, even when they come at a higher cost. These findings clearly show that Generation Z's environmental attitudes are increasingly influencing their economic decisions and consumer preferences.

2. Research Aim and Methodology

The aim of this bachelor thesis is to estimate the perceived monetary value of selected non-market environmental goods, specifically clean air, biodiversity, clean drinking water, by comparing the willingness to pay for the protection of these goods. The thesis focuses on a comparative analysis of Generation X and Generation Z, aiming to identify differences in environmental concern, awareness, and consumer behaviour through a stated preference technique known as the Contingent Valuation Method. This study also seeks to determine how trust, motivation, and personal value influence participants' willingness to support environmental initiatives financially.

To guide the analysis, the following hypothesis were established:

H0: There will not be a significant difference between Generation Z and Generation X in terms of willingness to pay for environmental protection.

H1: Respondents from Generation Z will report a higher willingness to pay for environmental protection than those from Generation X.

H2: Generation Z will show higher self-reported environmental awareness and more frequent eco-friendly behaviour compared to Generation X.
H3: Generation Z is more likely to value more drinking water, therefore more willing to financially support the protection of clean drinking water sources than Generation X

H4: Generation Z is more likely than Generation X to require transparency guarantees before trusting or supporting environmental programs.

H5: Trust in Government positively influence willingness to pay for environmental initiatives.

This research is based on a quantitative method, using a structured questionnaire as the main tool for data collection. The Contingent Valuation Method was selected as the core technique, as it allows for the estimation of monetary values associated with non-market environment goods. Respondent were presented with a different set of questions about their background, awareness about environmental issues and a

hypothetical purchasing scenario where they could voluntarily contribute to certified environmental projects through a small additional fee during purchases. This format enables the measurement of willingness to pay in a realistic, consumer-oriented context.

The study employed several analytical approaches. Descriptive statistics were used to summarise frequencies and percentages across key variables. Non-parametric statistical methods were primarily used for hypothesis testing, given the categorical and ordinal nature of the data. Specifically, Chi-square tests of independent and Fisher's exact tests were used to assess statistical significance in generational differences. Additionally, a qualitative thematic analysis was applied to open-ended responses, particularly to explore reasons for refusing to contribute financially to environmental protection.

The whole survey was created using Google forms and was distributed online through personal networks, social media, and academic circles. Participants were encouraged to share the survey further with their parents, family or other connections in order to collect enough samples. The survey was conducted in April 2025 and was completely anonymous and voluntary.

The target population for our research consisted of individuals born between 1965 and 1980, representing Generation X and individuals born in years 1995 to 2012, representing Generation Z. Participant were required to state their year of birth, allowing for accurate generational classification. A non-probability convenience sampling method was used. The final sample aimed to include a balanced number of participants from both generations, with a minimum of 100 participants per group targeted to allow for meaningful comparison. Responses from individuals who did not belong to either Generation X or Generation Z were excluded from analysis, as their numbers were too low to form a separate generational category.

The structure of the questionnaire was divided into five main sections. In the introduction respondent were informed about the purpose of the survey, the estimated time required, and the confidentiality of their responses. The researcher's name and study context were also provided.

In the following section, respondents were asked several questions about their background information, such as their year of birth, gender, level of completed education and their approximate monthly income.

The next section, titled “Environmental Behaviour and Awareness”, this part aimed to evaluate the respondent’ general attitudes and behaviour related to the environment. It explored how frequently individuals engage in environmentally friendly actions, such as recycling, reducing waste, or using public transport. Additionally, participants were asked to assess their own level of awareness regarding environmental problems and to indicate how important environmental protection is to them personally. The section also examined which environmental issues, such as climate change, air pollution, loss of biodiversity, water pollution, waste and recycling, respondents find most concerning. Finally, participants were asked to identify which environmental goods (e.g., clean air, safe drinking water, biodiversity) they value the most, providing insight into their environmental priorities.

In Section 3, respondents were introduced to a hypothetical scenario where store offer a voluntary “Green Product Contribution”, an additional amount customers can choose to pay to support environmental protection focused on improving air quality, preserving biodiversity, and ensuring clean water access. Participants were then asked whether they would be willing to contribute to such a scheme, and if so what percentage of the product price they would be willing to add, with options ranging from 0% to 5%. The questionnaire also included a targeted question assessing respondents’ willingness to contribute specifically toward clean water initiatives. For those who indicated an unwillingness to contribute, follow-up questions explored their reason for refusal, such as lack of trust, financial constraints, or scepticism about effectiveness.

The final section aimed to explore the underlying factors that influence respondents’ willingness to pay for environmental protection. Respondents were asked to identify their primary motivation for contributing, with options including personal health benefits, a sense of moral duty, concern for future generations, or perceived economic advantages. The section also examined the role of institutional trust by assessing respondents‘ confidence in government-led environmental programs. To

understand how transparency might affect behaviour, participants were asked whether they would be more willing to contribute if there were clear guarantees about how the funds would be used. Finally, the questionnaire explored whether non-monetary incentives, such as receiving a symbolic “Green Supporter Certificate,” would increase respondents’ willingness to pay.

The questionnaire concluded with a short thank you message, expressing appreciation for the participants’ time and effort.

The data collection procedure involved administering an online survey that was active for a period of approximately one week in April 2025. Participants were recruited through direct messaging, social platforms, and academic outreach, with emphasis on reaching members of both generational groups. The online format ensured an easy access and a broader reach. No personally identifiable data were collected.

3. Results and Discussion

In this chapter, we present and interpret the results obtained from the survey conducted as part of this bachelor thesis. The objective of this part is to provide a thorough analysis of the collected data and to test the hypotheses outlined in the introductory section. We aim to uncover key patterns, relationships, and generational differences in the perception of environmental goods and willingness to pay (WTP) for their protection. Each visual representation, chart and graphs, will be described in detail, highlighting what they show, what can be inferred, and how the responses of Generation X and Generation Z differ. Based on these findings, we will draw conclusions that provide clear answers to the research questions and serve as the key foundation for the discussion and recommendations in the next chapter.

3.1. Demographic Overview

A total of 237 respondents participated in the survey, with participants classified into two generational categories, which is Generation X (born between 1965 and 1980) and Generation Z (born between 1995 and 2012). As part of the first question(Q1), respondents were asked to indicate their year of birth, which was then used to assign them to the appropriate generational category. Of the total sample, 103 participants belonged to Generation X and 134 were classified as Generation Z. This balance enabled a meaningful generational comparison regarding environmental values and willingness to pay (WTP) for the preservation of environmental goods.

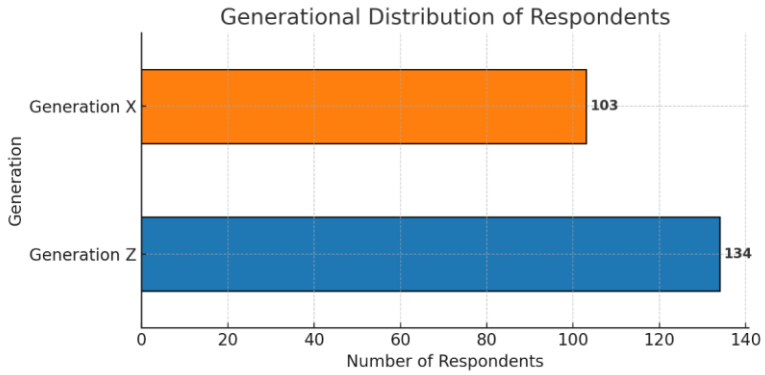

Figure 1. Generational Distribution of Respondents (Q1)

Picture one illustrate the numbers of respondents from each generation. As the horizontal chart bar shows, Generation Z slightly outnumbered Generation X, with 134 participants compared to 103. This representation is significant as it reflects a strong engagement from young generation, potentially indicating higher interest in environmental issues among Gen Z individuals. The near balance in responses allows for a robust comparison of attitudes and behaviours across the two generations

In terms of gender, the sample included participants who identified as male, female, or preferred not to disclose their gender. As illustrated in Figure 2, female respondents made up to 53.2% of the sample (approximately 126 out of 237), while male respondents accounted for 46% (around 109 participants). Additionally, 0.8% of respondents (2 individuals) selected “Prefer not to say” . This gender distribution contributes to a diverse respondent base and helps ensure a broader range of perspectives in the analysis

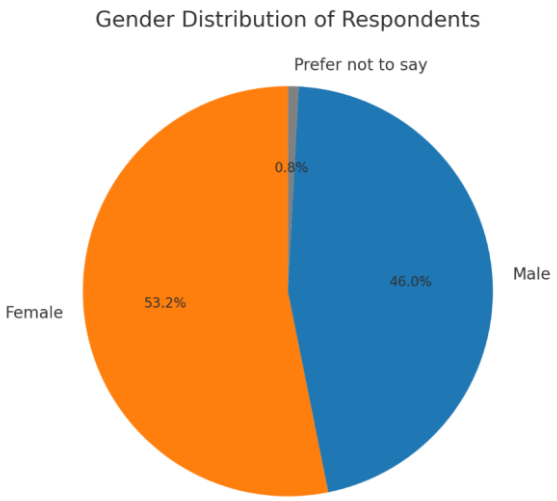

Figure 2. Gender Distribution of Respondents (Q2)

The survey also collected information on respondents' educational background and income levels (Q3). Figure 3 presents the highest level of completed education among survey respondents. The majority of participants reported having attained either a high school diploma (86 respondents) or a bachelor's degree (85 respondents), indicating that the most had at least a secondary-level education. Additionally, 45 individuals held a master's degree, while 20 respondents had only completed primary school. One participant reported having a PhD. This diverse educational background provides a valuable basis for analysing how education may influence environmental awareness and willingness to pay for environmental protection, particularly when comparing responses across Generation X and

Generation Z.

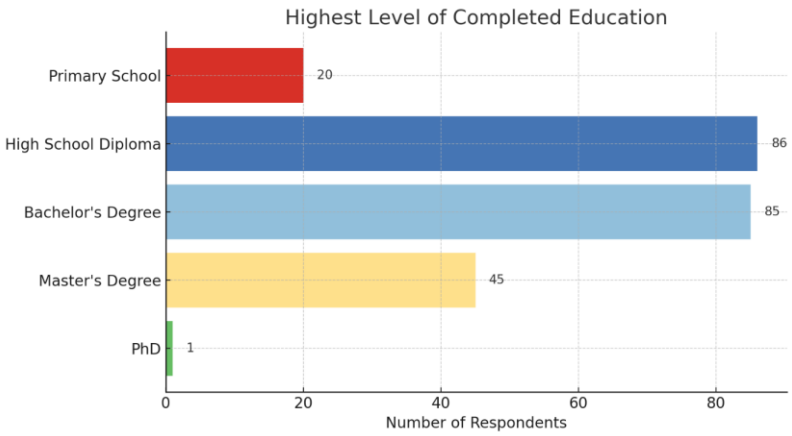

Figure 3. Highest Level of Completed Education (Q3)

In the Figure 4 below, you can see the monthly income distribution of survey participants (Q4). The most represented income category was “Less than 500 €,” with 70 respondents, followed by “Prefer not to say,” chosen by 49 participants. Other notable groups included 37 respondents earning 2000 € and above, 33 earning between 500 € and 999 €, 25 reporting income between 100 € and 1499 €, and lastly 23 participants in the 1500 € to 1999 € range. This wide distribution of income levels add depth to the sample and allows for the exploration of how financial standing may relate to environmental attitudes and willingness to pay (WTP) for environmental protection. It is worth noting that the high number of respondents in the “Less than 500 €” group could be due to a larger share of participants being students or young adults without full-time employment. Lower income may serve as a limiting factor for financial contribution, while higher income groups may have greater capacity or flexibility to support green initiatives. Including income as a contextual variable is therefore valuable in understanding generational differences not only in values, but also in economic capacity to act on those values.

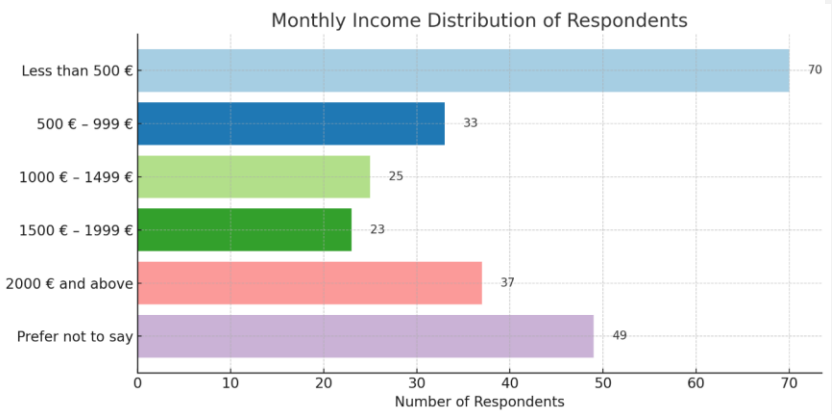

Figure 4. Monthly Income Distribution of Respondents (Q4)

3.2. Environmental Behaviour and Awareness

In this follow-up section, we explored and compared the environmental behaviour and awareness of respondents from Generation X and Generation Z. Drawing on survey questions Q5 to Q9, the analysis focused on how frequently individuals engage in eco-friendly actions, how they assess their own awareness of environmental issues, and how important to they perceive environmental protection to be. It also examines which environmental issue they find most concerning and which environmental good they value the most.

While comparing the responses across generational lines, in Figure 5 (Q5), we found that the frequency of eco-friendly behaviour (such as recycling, using public transport, or reducing plastic use) among respondents from both generations, this chart reveals that Generation Z tends to engage in environmentally friendly activities more frequently than Generation X. A notable 64 Gen Z respondents reported engaging in such behaviours "often," compared to only 33 Gen X respondents. Similarly, 21 Gen Z participants stated that they "always" engage in eco-friendly actions, while only 5 from Generation X reported the same. In contrast, Gen X had a higher number of respondents selecting either "rarely (28) or "sometimes" (37), suggesting a more moderate level of engagement.

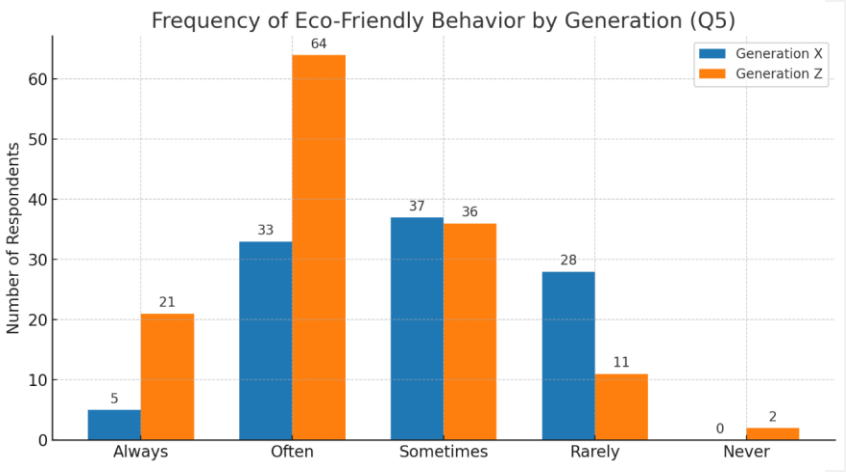

Figure 5. Frequency of Eco-friendly behaviour by Generation (Q5)

In addition to behavioural patterns, the survey also explored how respondents perceive their own environmental awareness (Q6). As illustrated in Figure 6, Generation Z once again demonstrated higher self-assessed awareness than Generation X.

Specifically, 46,3% of Gen Z respondents (62 out of 134) rated their awareness as "High," compared to 30.1% of Gen Z respondents (31 out of 103). Additionally, 38.8% of Gen Z rated their awareness as "Moderate", compared to 34% of Gen X. On the lower end of scale, 18.4% of Gen X participants described their awareness as "Low", while only 6.7% of Gen Z did so.

These results so far indicate that Generation Z not only engage more frequently in eco-friendly behaviour, but also perceive themselves as more environmentally aware, which may help explain their stronger engagement across the survey responses. This may also indicate differences in how environmental information is received and internalized by each generation.

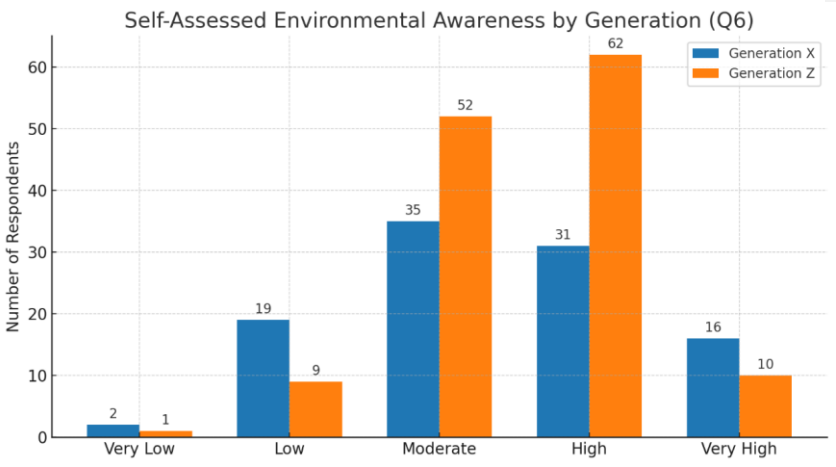

Figure 6. Self-assessed Environmental Awareness by Generation (Q6)

In Figure 7, it compares how respondents from both Generation X and Generation Z assess the importance of environmental protection (Q7). We can see that both groups demonstrated strong support, with the majority rating environmental protection as either "important" or "very important".

Among Generation Z, 60 respondents considered it "important" and 25 selected "very important," showing that nearly 2-thirds view issue with high seriousness. Similarly, Generation X showed strong concern, with 53 respondents rating it "important" and 19 as "very important". Responses in the lower categories were relatively few, only 13 Gen Z and 12 Gen X participants related it as "slightly important," and just one Gen Z respondent selected "non important".

Overall, the data suggests that both generations recognize environmental protection as a significant issue and based on these two findings we can accept our hypothesis

H2: Generation Z will show higher self-reported environmental awareness and more frequent eco-friendly behaviour compared to Generation X.

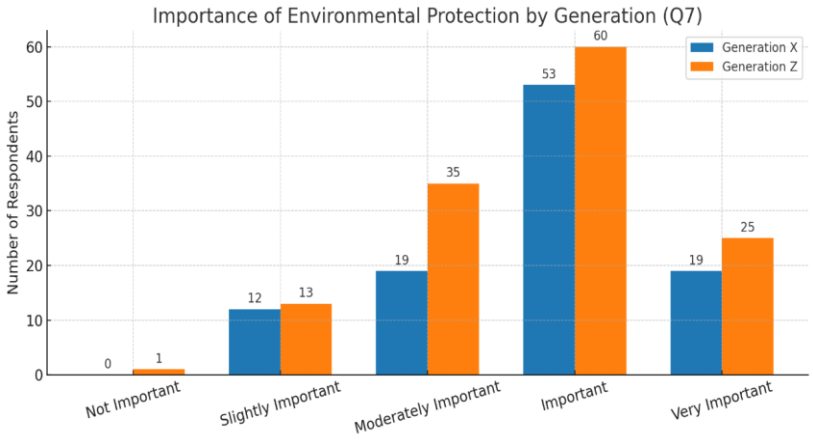

Figure 7. Importance of Environmental Protection by Generation (Q7)

While both generations demonstrated a strong general commitment to environmental protection, the next question (Q8) aimed to identify which specific environmental problem they find most concerning. This helps us move from broad attitudes to concrete environmental priorities.

Respondents were allowed to select multiple answers, the chart Figure 8 displays the total number of mentions across categories for each generation. The results show that Generation Z expressed higher concern across nearly all categories. Climate change was the most frequently selected issue among Gen, mentioned 126 times, followed by waste and recycling (118). In contrast, Generation X respondents most commonly selected air pollution (95), followed by climate change (57).

These results suggest that while both generations recognize major environmental challenges, Generation Z demonstrates a broader and more intense concern, especially regarding systematic and emerging issues such as climate change, waste and recycling, and water pollution. This aligns with the hypothesis that younger generations exhibit greater environmental awareness and are more attuned to a variety of ecological threats.

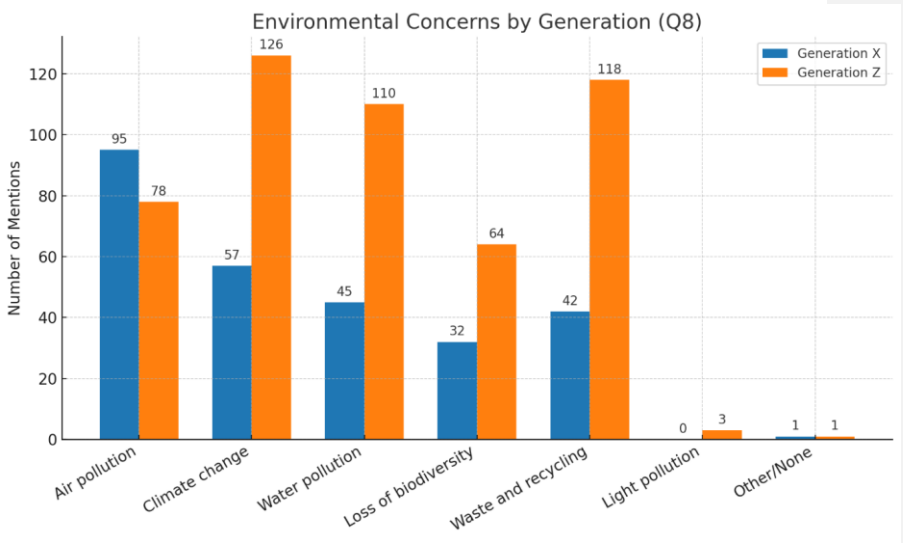

Figure 8. Environmental Concerns by Generation (Q8)

To understand the personal priorities within environmental protection, respondents were asked to identify which environmental good they value the most (Q9). As shown in Figure 9, the results reveal interesting generational contrast in priorities.

Among Generation X, the vast majority (66 out of 103 respondents, or 64.1%) selected clean air as the most valued good, followed by clean water (31.1%) and natural landscapes (2.9%). Biodiversity was selected by only 2 individuals (1.9%).

In contrast, Generation Z showed a more diverse distribution of preferences. While clean water was top choice (49 out of 134, or 24.6%), clean air followed closely with 30.6%, and natural landscapes were chosen by 24.6%. Notably, 10 Gen Z respondents (7.5%) valued biodiversity the most, a much higher proportion than in Gen X.

These results suggested that Generation X places greater emphasis on essential needs like clean air, whereas Generation Z displays a more varied environmental value system, with clean water as the top choice. This broader environmental concern may once again

reflect Gen Z's exposure to global environmental disclosure education and advocacy in digital media spaces.

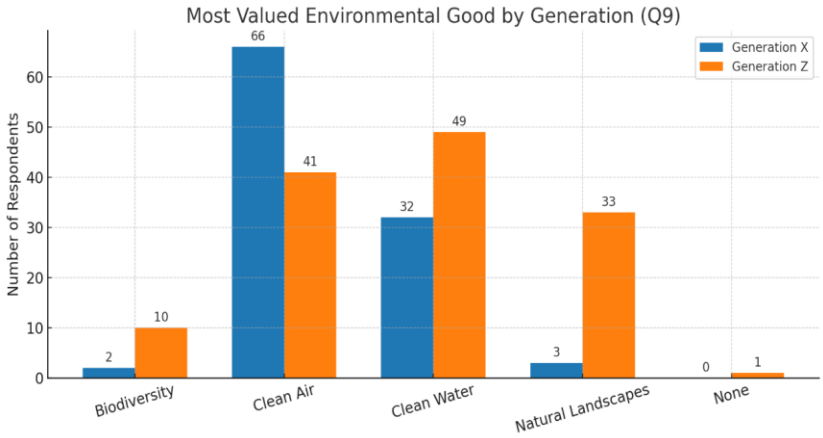

Figure 9. Most Valued Environmental Good by Generation (Q9)

3.3. Willingness to pay (WTP)

This section presents a comparative analysis of Generation X and Generation Z, regarding their willingness to financially contribute to environmental protection projects. It is based on responses to survey questions Q10 through Q13, which evaluates general willingness to pay, specific monetary contributions preferences, willingness to support clean water protection, and reasons for refusal. Here we will also be confirming some of our hypotheses.

Before asking questions, all respondents were presented with the following hypothetical scenario in which shops would offer an optional "Green Product Contribution, a small fee added to purchase to fund these certified environmental protection programs like improving air quality, conserving biodiversity, and protecting clean water. This context helped stimulate realistic decision-making for the following WTP questions.

3.3.1. General Willingness to Contribute voluntarily

To assess general support, participants were asked whether they would be willing to voluntarily add a small fee when shopping, based on scenario described above (Q10).

Figure 10 present a side-by-side comparison of responses from Generation Z and Generation X. A higher proportion of Generation X respondents (69.9%) indicated their willingness to contribute, compared to 57.5% of Generation Z. Meanwhile, Generation Z had a slightly higher share of “Maybe” responses (36.6% vs. 26.2%).

To test whether the observed generational differences in willingness to pay (WTP) are statistically significant, a Fisher’s exact test was conducted. Given the relatively small number of “No” responses, data were simplified into two categories: “Yes” and “Not Yes” (which combines “Maybe” and “No”).

The Fisher’s exact test yielded a p-value of 0.059, which is just above the commonly accepted threshold of 0.05 for statistical significance. This result indicates that while Generation X appears more willing to contribute to than Generation Z, the difference is not statistically significant at the 5% level. However, the result may suggest that a possible generational pattern that could be explored further in larger or more stratified sample.

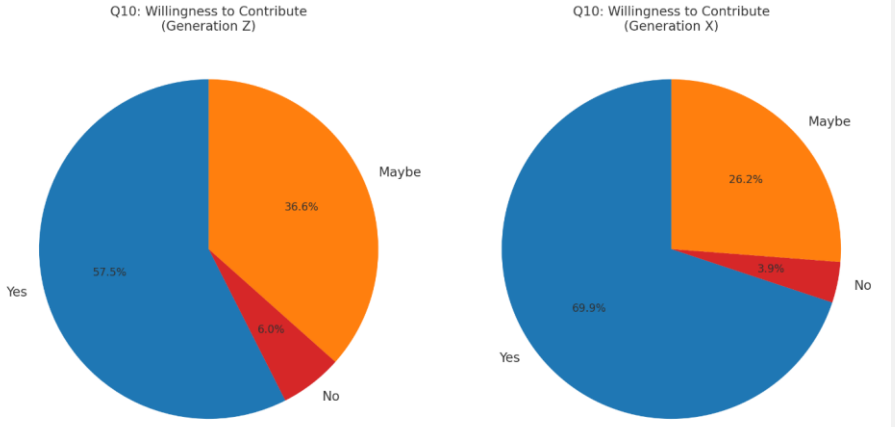

Figure 10. Willingness to Contribute by Generations (Q10)

3.3.2. Willingness to Pay

Participants who expressed willingness to pay then asked to indicate the maximum percentage of their purchase they would be willing to contribute (Q11).

Figure 11 highlights the maximum percentage each generation is willing to add to their purchases for environmental protection. While Generation X had a slightly higher share of responses initially willing to contribute, their financial commitment remained modest, with 45 respondents selecting the lowest option of 0.5%. Generation Z, in contrast, demonstrated greater readiness to pay higher percentages, with 50 choosing 1%, 41 selecting 2%, and notably, Gen Z also had more respondents opting for 5% or even 10%. This is particularly interesting given that many Gen Z participants are students with lower income, suggesting their stronger environmental concern may outweigh financial limitations. Generation X's response, concentrated in the lower brackets, indicate a more cautious or budget-aware mindset, possibly prioritizing financial stability over environmental spending.

To assess whether these generational differences in contribution level were statistically significant, a Chi-square test of independence was conducted. The results showed a highly significant difference between two generations ($\chi^2(5, N = 237) = 29.02$, $p < 0.001$). This confirms that Generation Z was significantly more likely to select higher contribution percentages, while Generation X tended to favour lower options such as 0.5%.

Based on the combined findings from Q10 and Q11, we can confidently reject the null hypothesis (H0), which stated that there would be no significant difference between Generation Z and Generation X in terms of willingness to pay (WTP) for environmental protection. While Generation X showed a slightly higher percentage of respondents selecting "Yes" in Q10, the detailed breakdown in Q11 reveals a more nuanced picture. Generation Z respondents demonstrated a greater willingness to pay higher contribution rates (1%, 2%, 5%, and even 10%) compared to their Generation X counterparts, who were more concentrated in the lower contribution bracket (0.5%). This pattern suggests that although initial willingness to participate was present in both groups, Generation Z expressed stronger financial commitment to environmental protection. Therefore, we accept the alternative hypothesis (H1): respondents from Generation Z show a higher willingness to pay for environmental protection than those from Generation X.

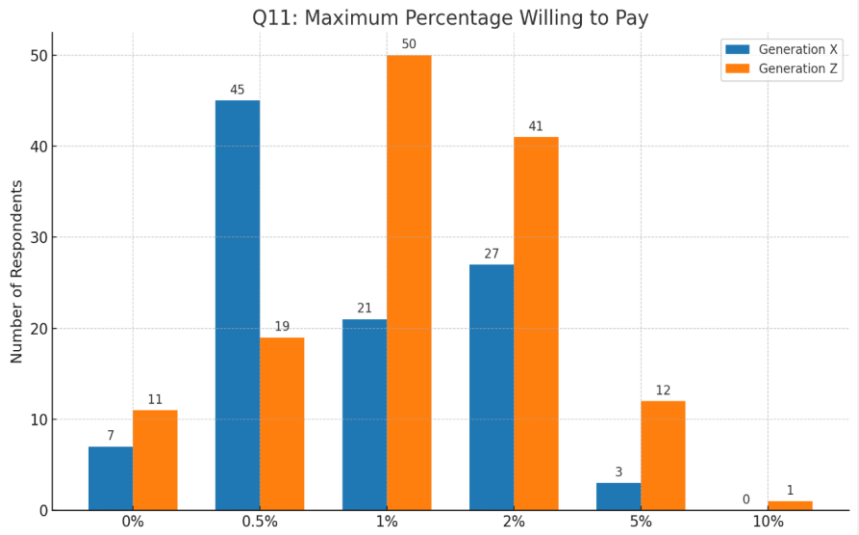

Figure 11. Maximum Percentage Willing to Pay (Q11)

3.3.3. Willingness to Pay for Clean Water

In the follow-up question focused specifically on clean drinking water, participants were asked whether they would be willing to financially contribute to its protection (Q12). As seen in Figure 12, the responses were similar among the two generations. Among Generation Z, 58.2% answered "Yes," 36.6% "Maybe," and only 5.2% "No". Generation X showed a slightly less certainty, with 54.4% responding "Yes," 40.8% selected "Maybe," and 4.9% said "No". These findings shows that while overall support remains high across both generations, Gen Z continues to display slightly greater willingness, particularly on environmental issues perceived as urgent and tangible, such as access to lean water.

To test whether this generational difference is statistically significant, a Fisher's Exact Test was concluded due to small sample size in some categories. The result yielded a p-value of 0.598, suggesting no statistically significant difference between Generation Z and Generation X in their willingness to support clean water protection. Thus, although Gen Z appears marginally more willing in absolute terms, the observed difference could be due to chance.

The results from both Q9 and Q12 jointly support hypothesis 3 (H3), which propose that Generation Z is more likely to value clean drinking water and, therefore, show a greater willingness to financially support its protection. In Q9, 36.6% of Gen Z respondents identified clean water as the most important environmental good, compared to only 31.1% of Gen X participants. This preference is further reflected in Q12, where 58.2% of Gen Z expressed willingness to contribute financially toward protecting clean water sources, slightly more than the 54.4% of Gen X. Although the difference in both is not dramatic, the combined evidence from both question suggests that clean water hold slightly higher priority for Gen Z, confirming H3.

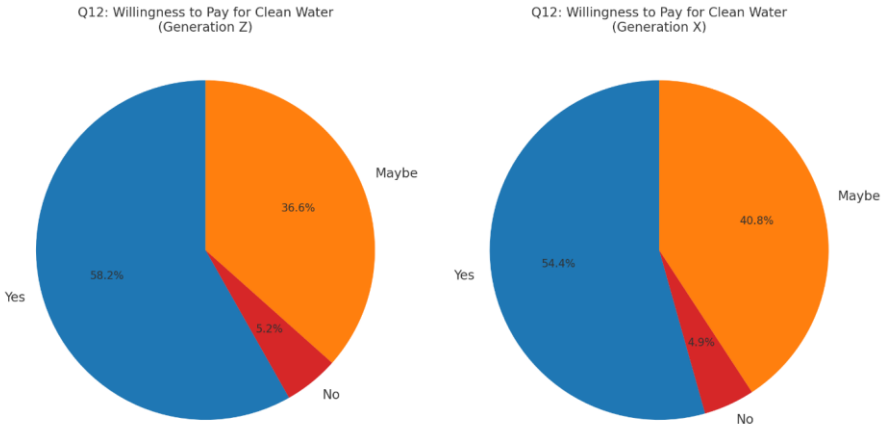

Figure 12. Willingness to pay for Clean Water by Generation (12)

3.3.4. Reasons for Refusing to Contribute

In Question 13, respondents who indicated they were not willing to contribute financially, were asked to explain their reasoning (Q13). A qualitative review of the answers revealed several recurring themes. The most common justification was related to financial constraints, with multiple participants citing low income, student status, or general lack of spare money. Another frequently mentioned theme was distrust, both towards companies and government institutions, where respondents questioned how the funds would be used or

expressed skepticism about the transparency of such initiatives. A third group emphasized that environmental protection should be the responsibility of governments or large corporations, not individual consumers. Several participants also voiced ideological concerns, arguing that structural or collective action is more appropriate than individual financial contributions. These findings highlight that while environmental concern exists, financial capacity and trust in institutions are major barriers to voluntary support.

The findings from Q10 to Q13 confirm that Generation Z demonstrated a higher willingness to pay for environmental protection than Generation X. Despite lower income levels, Gen Z participants showed a greater tendency to support higher contribution rates, especially for clean water protection. Their motivations appeared to be driven more by personal responsibility and environmental values. Generation X, while also supportive, leaned more toward minimal contributions, with many expressing concerns over trust, financial capacity, or the belief that responsibility lies with government or corporations. These qualitative insights offer a deeper understanding of the generational divide in environmental financing.

3.4. Motivation and Trust

This section explores the underlying motivations and trust dynamics that influence willingness to pay across generations. By analysing responses to Q 14 through Q17, we compare how Generation Z and Generation X differ in their reasons for contributing, their trust in institutional programs, the effect of transparency, and the impact of symbolic recognition. These insight help illuminate not just *if* individuals are willing to pay, but also *why*.

3.4.1. Primary Motivation to Pay for Environmental Protection

In this question, participants were asked to identify the main reason that would serve as a motivation for them to financially contribute to environmental protection (Q14). They could choose one of four predefined options: *economic benefits, health benefits, moral responsibility, or preserving nature for future generations*.

Figure 14 illustrates how motivation differ between Generation Z and Generation X. Generation Z is more frequently motivated by *preserving nature for future generations*, with 42 respondents selecting this option, compared to only 20 from Generation X. Gen Z also show stronger interest in *economic benefits* (25 vs. 6), suggesting that financial considerations and long-term sustainability are more influential for younger generations.

Conversely, Generation X places greater emphasis on *health benefits*, which was the most selected motivation in their group (57 respondents vs. 44 from Gen Z). This suggests that Gen X may prioritize personal and immediate outcomes when considering environmental contributions.

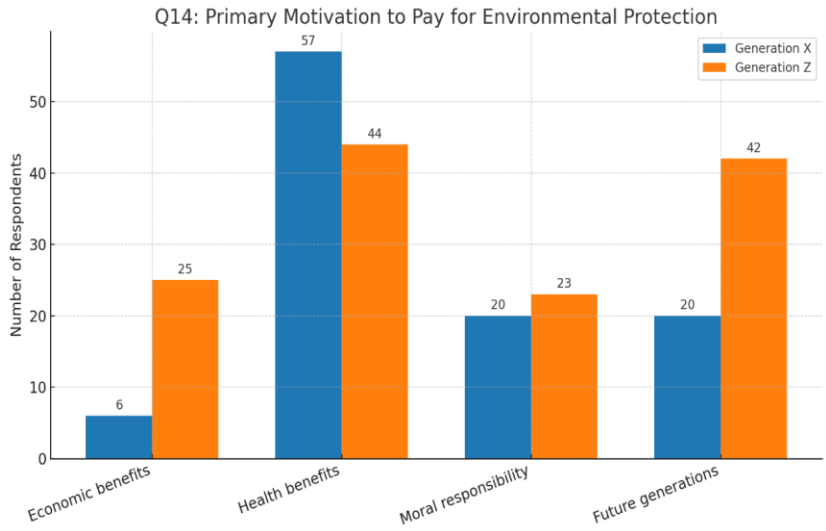

Figure 14. Primary Motivation to Pay for Environmental Protection by Generation (Q14)

3.4.2. Trust in Government Environmental Programs

In this question, participants were asked to rate their level of trust in government-run environmental initiatives on a five-point scale from "very trustworthy" to "very untrustworthy" (Q15). As shown in Figure 15, trust level varies notably between generations.

A larger share of Generation Z respondents expressed skepticismm with 48 stating that government programs are “somewhat untrustworthy” and 22 selecting “very untrustworthy”. In contrast, Generation X appear slightly more neutral, with 49 participants choosing “neutral” and fewer rating the programs as “very untrustworthy” (only 4 respondents). While neither group showed particularly high levels of strong trust, Gen X participants were overall more likely to lean toward trust or neutrality.

These findings suggest that Generation Z tends to have lower institutional trust in environmental governance compared to Generation X. The mistrust could influence their willingness to contribute to financially unless transparency or third-party oversight is clearly guaranteed, something explored in the next section.

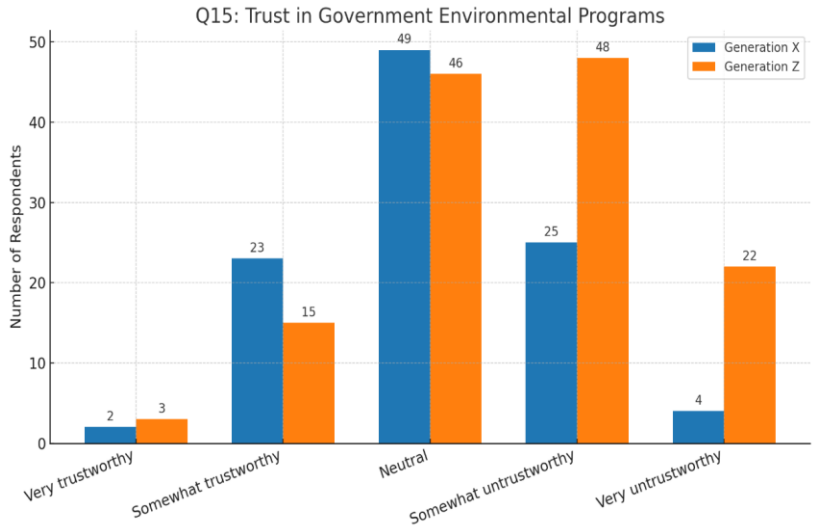

Figure 15. Trust in Government Environmental Programs by Generation (Q15)

3.4.3. Willingness to Pay if transparency is Guaranteed

This is a question, where respondents were asked whether they would be more willing to financially contribute to environmental programs if full transparency about fund allocation and usage was guaranteed (Q16).

As seen in Figure 16, transparency has a notably stronger impact on Generation Z. A remarkable 106 Gen Z respondents answered “Yes” compared to just 49 from Generation X. Meanwhile, 43 Gen X participants responded “Maybe”, suggesting hesitation even with transparency, while only 19 Gen Z selected that option. The refusal was relatively low in both groups (11 Gen X and 9 Gen Z).

These findings clearly indicates that transparency significantly boosts Gen Z’s willingness to pay. It also supports earlier insights (from Q15) that lower institutional trust among Gen Z can be effectively countered by clear guarantees. For policymakers and environmental program designers, this suggests that building transparent and traceable system could be especially effective in mobilizing support from younger generations.

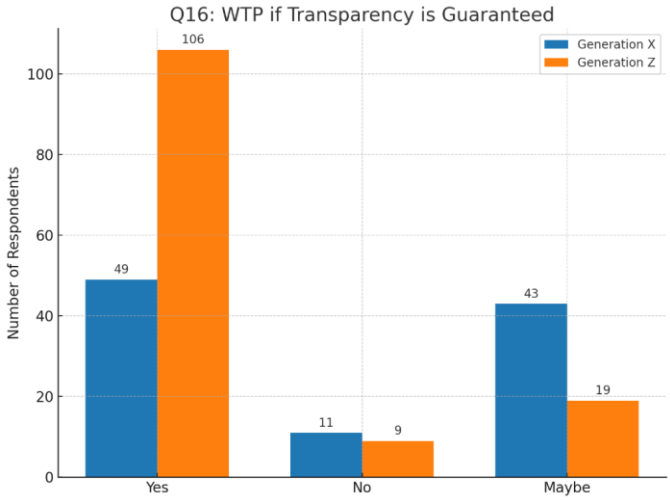

Figure 16. Willingness to Pay if Transparency is Guaranteed by Generation (Q16)

3.4.4. Influence of Symbolic Rewards (certificate)

In this last question (Q17), participants were asked whether receiving a symbolic “Green Supporter Certificate” would influence their willingness to financially contribute to environmental programs. The results show a clear generational difference in how symbolic recognition is valued. Among Generation X, 76 respondents stated that such a certificate

would make them more willing to contribute, while only 46 Generation Z participants said the same. In contrast, 66 Gen Z respondents indicated the certificate would not influence their decision, compared to just 18 from Gen X. This may suggest that Gen Z's willingness to support environmental causes is already high, and external rewards like symbolic recognition are less impactful for this group. For Gen X, on the other hand, such initiatives might serve as useful reinforcement or added motivation.

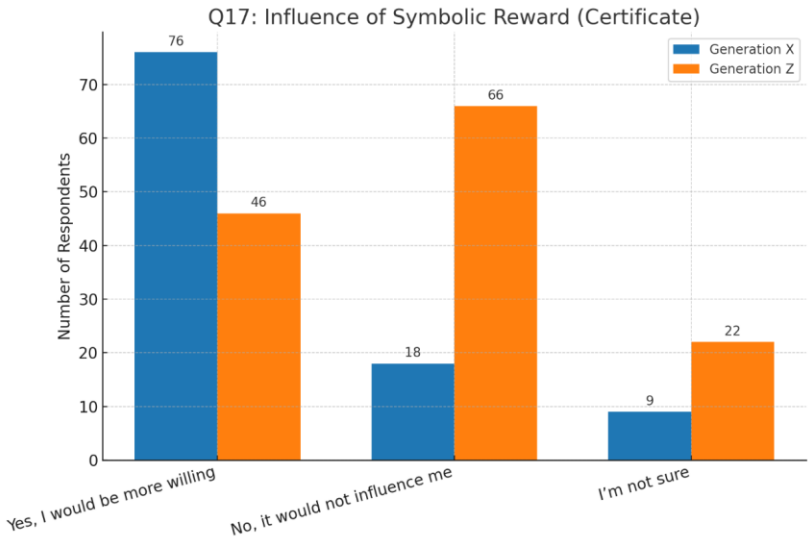

Figure 17. Influence of Symbolic Reward by Generation (Q17)

The results from questions Q14 to Q17 reveals important generational difference in both motivation and trust related to environmental protection. Generation Z was more likely to be motivated by long-term concerns such as preserving nature for future generations and economic benefit, while Generation X prioritized personal health benefits. In term of trust, Gen Z displayed lower confidence in government environmental programs (Q15), but responded more positively to transparency guarantees (Q16), confirming Hypothesis H4 that Gen Z is more likely to require transparency before committing support. Furthermore, the overall trend suggests that improved trust conditions lead to higher willingness to pay,

particularly among Gen Z, offering partial support for Hypothesis H5. Interestingly, symbolic incentives like certificate (Q16) had greater influence on Generation X, while Gen Z appeared less responsive, likely because many were already willing to contribute based on intrinsic motivations.

3.5. Discussion

This study aimed to examine generational differences in the perceived value of non-market environmental goods and the willingness to financially support their protection. Using the Contingent Valuation Method and a cross-sectional survey design, we compared responses from Generation X and generation Z regarding their environmental awareness, behaviour, and willingness to pay (WTP) for initiatives supporting clean air, biodiversity, and clean water.

The findings offer mixed but meaningful support for the hypotheses. Generation Z reported slightly lower "Yes" responses than Generation X in general willingness to contribute (Q10), but to this difference was not statistically significant based on the Fisher's exact test. However, a clearer distinction emerged in the levels of contribution (Q11), where Generation Z was significantly more likely to select higher contribution rates, as confirmed by a Chi-square test. These results support the acceptance of H1, indicating that while both generation shows interest in environmental protection, Generation Z appears more committed financially.

In terms of environmental behaviour and awareness, Generation Z outperformed Generation X in both frequency of eco-friendly practices and self-assessed awareness. These findings align with H2, suggesting that younger individuals may be more actively engaged with sustainability, possibly influenced by education, digital exposure, and social norms prevalent in their formative years.

Clean water was identified as the most valued environmental good by many respondents in both groups. While Generation Z showed slightly greater concern and willingness to pay for its protection (Q9 and Q12), the Fisher's test for Q12 revealed no significant statistical difference between the two generations. Still, the joint result of these questions supports H3 at a descriptive level.

A central part of the thesis also explored trust and motivation fact factors. The data showed that Generation Z has lower trust in government environmental programs but responded more positively to transparency guarantees (Q16), affirming H4. Symbolic rewards such as a “Green Supporter Certificate” had a stronger motivational effect on Generation X, while Generation Z appeared driven more by internal motivations such as intergenerational responsibility and environmental justice.

Finally, qualitative responses to refusal (Q13) highlighted recurring themes such as financial limitations, lack of institutional trust, and beliefs that governments and corporations, not individuals, should bear the primary responsibility for environmental funding. These insights provide important context to the quantitative findings, showing that practical and systemic concerns may still limit environmental action despite expressed concern.

Overall, the results reflect both generational similarities and differences. While environmental concern is high across the board, Generation Z stands out for its stronger willingness to contribute larger amounts, suggesting a generational shift toward more engaged environmental citizenship. These findings have implications for the design of environmental policies, campaigns, and funding models that target generational motivations more precisely.

4. Conclusion

This bachelor thesis explored the perceived monetary value of selected non-market environmental goods, specifically clean air, biodiversity, and clean drinking water, through a comparative analysis of Generation X and Generation Z. Using the Contingent Valuation Method (CVM) and a structured online survey, the study aimed to evaluate generational differences in environmental awareness, values, and willingness to financially support environmental protection initiatives.

The results show that while both generations express strong concern for environmental issues, Generation Z tends to demonstrate higher levels of self-assessed awareness and more frequent engagement in eco-friendly behaviour. Clean water and clean air were the most valued environmental goods across both groups, though Gen Z showed a more diverse distribution of priorities, including a higher valuation of biodiversity and natural landscapes.

In terms of willingness to pay (WTP), Generation X had a slightly higher proportion of respondents initially agreeing to contribute, but Generation Z was significantly more willing to contribute larger amounts—especially at higher percentage levels. This finding, supported by a Chi-square test, allows us to reject the null hypothesis (H0) and accept that generational differences in WTP are indeed present. The Fisher's exact test, however, showed that some differences (e.g., willingness to contribute for clean water) were not statistically significant, suggesting that both generations share similar baseline support for essential environmental goods.

Furthermore, the analysis of motivational factors and institutional trust revealed that Generation Z places more importance on transparency and long-term sustainability, while Generation X is more motivated by health concerns and responsive to symbolic recognition. These insights suggest that tailored communication and engagement strategies should be adopted depending on the target generation.

Taken together, the findings confirm several of the proposed hypotheses and highlight the importance of generational context when evaluating environmental attitudes and behaviours. For policymakers and environmental organizations, this research suggests that engaging Generation Z may require emphasizing transparency, intergenerational equity, and digital

outreach, while engaging Generation X may benefit from highlighting personal health benefits and tangible outcomes.

In conclusion, this thesis demonstrates that generational perspectives play a crucial role in shaping environmental values and financial support for sustainability initiatives. While both Generation X and Generation Z show concern for the environment, their motivations, behaviours, and willingness to contribute differ in meaningful ways. These findings underscore the importance of considering generational context in the development of environmental policies, public campaigns, and voluntary contribution programs. By tailoring strategies to the unique values and trust dynamics of each group, it is possible to foster broader participation and more effective support for environmental protection across society.

5. References

1. Pearce, D. W., & Pretty, J. N. (1993). *Economic values and the natural world*. Earthscan.
2. Hanley, N., Barbier, E. B., & Barbier, E. (2009). *Pricing nature: cost-benefit analysis and environmental policy*. Edward Elgar Publishing.
3. Sukhdev, P., Wittmer, H., Schröter-Schlaack, C., Nesshöver, C., Bishop, J., ten Brink, P., ... & Simmons, B. (2010). The economics of ecosystems and biodiversity: mainstreaming the economics of nature: a synthesis of the approach, conclusions and recommendations of TEEB. *UNEP, Geneva Switzerland*.
4. Freeman Iii, A. M., Herriges, J. A., & Kling, C. L. (2014). *The measurement of environmental and resource values: theory and methods*. Routledge.
5. Inglehart, R. (1995). Public support for environmental protection: Objective problems and subjective values in 43 societies. *PS: Political science & politics*, *28*(1), 57-72.
6. Twenge, J. M. (2017). *iGen: Why today's super-connected kids are growing up less rebellious, more tolerant, less happy--and completely unprepared for adulthood--and what that means for the rest of us*. Simon and Schuster.
7. Mannheim, K. (1952). The sociological problem of generations. *Essays on the Sociology of Knowledge*, *163*, 95.
8. Mitchell, R. C., & Carson, R. T. (2013). *Using surveys to value public goods: the contingent valuation method*. Rff press.
9. Arneson, R. (2021). *Public goods*. In E. N. Zalta (Ed.), *The Stanford Encyclopedia of Philosophy* (Summer 2021 ed.). Stanford University. https://plato.stanford.edu/entries/public-goods/
10. Assessment, M. E. (2001). *Millennium ecosystem assessment* (Vol. 2). Washington, DC, USA: Millennium Ecosystem Assessment.
11. Peterson, L. G. (2003). *A primer on nonmarket valuation* (Vol. 3, pp. 72-82). P. A. Champ, K. J. Boyle, & T. C. Brown (Eds.). Dordrecht, The Netherlands: Kluwer Academic Publishers.
12. Rosen, S. (1974). Hedonic prices and implicit markets: product differentiation in pure competition. *Journal of political economy*, *82*(1), 34-55.
13. Clawson, M., & Knetsch, J. L. (2013). *Economics of outdoor recreation*. Rff Press.
14. Hanley, N., Mourato, S., & Wright, R. E. (2001). Choice modelling approaches: a superior alternative for environmental valuation? *Journal of economic surveys*, *15*(3), 435-462.
15. Pearce, D. W., & Turner, R. K. (1989). *Economics of natural resources and the environment*. Johns Hopkins University Press.
16. Carson, R. T., Flores, N. E., & Meade, N. F. (2001). Contingent valuation: controversies and evidence. *Environmental and resource economics*, *19*, 173-210.
17. Arrow, K., Solow, R., Portney, P. R., Leamer, E. E., Radner, R., & Schuman, H. (1993). Report of the NOAA panel on contingent valuation. *Federal register*, *58*(10), 4601-4614.
18. Gifford, R., & Nilsson, A. (2014). Personal and social factors that influence pro-environmental concern and behaviour: A review. *International journal of psychology*, *49*(3), 141-157.
19. Corner, A., Roberts, O., Chiari, S., Völler, S., Mayrhuber, E. S., Mandl, S., & Monson, K. (2015). How do young people engage with climate change? The role of knowledge,

values, message framing, and trusted communicators. *Wiley Interdisciplinary Reviews: Climate Change*, *6*(5), 523-534.
20. Gomes, S., Lopes, J. M., & Nogueira, S. (2023). Willingness to pay more for green products: A critical challenge for Gen Z. *Journal of Cleaner Production*, *390*, 136092.
21. Beck, U. (1992). *Risk Society: Towards a New Modernity* (Vol. 17). SAGE.
22. Inglehart, R. (2018). The trend toward postmaterialist values continues. In *Citizen politics in post-industrial societies* (pp. 57-66). Routledge.
23. Twenge, J. M. (2007, September). Generation Me: Why Today's Young Americans Are More Confident, Assertive, Entitled—and More Miserable Than Ever Before. In *CPA Practice Management Forum* (Vol. 9, p. 20). CCH, Inc..
24. Parker, K., & Igielnik, R. (2020). On the cusp of adulthood and facing an uncertain future: What we know about Gen Z so far.
25. Schiller, C., Hellmann, T., Schüle, H., Heller, S., & Gasster, E. Just How Resilient are OECD and EU Countries?.
26. Lucas, C., Leith, P., & Davison, A. (2015). How climate change research undermines trust in everyday life: a review. *Wiley Interdisciplinary Reviews: Climate Change*, *6*(1), 79-91.
27. Deloitte. (2022). *The Deloitte Global 2022 Gen Z and Millennial Survey*. Deloitte Insights. https://www2.deloitte.com/content/dam/insights/articles/glob175227_global-millennial-and-gen-z-survey/Gen%20Z%20and%20Millennial%20Survey%202022_Final.pdf
28. Berkup, S. B. (2014). Working with generations X and Y in generation Z period: Management of different generations in business life. *Mediterranean journal of social Sciences*, *5*(19), 218-229.
29. Barrón, N. G., Gruber, S., & Huffman, G. (2022). Student engagement and environmental awareness: Gen Z and ecocomposition. *Environmental Humanities*, *14*(1), 219-232.