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The Effect of Environmental Beliefs and the Level of Education on
the Willingness to Pay of the Dutch Generation Z for Sustainable
Soda.

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The views stated in this thesis are those of the author and not necessarily those of the supervisor, second assessor, Erasmus School of Economics or Erasmus University Rotterdam.

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Executive summary

Sustainability is becoming of high importance in society. Both global organisations and consumers think that environmental sustainability is important. Especially Generation Z worries about the climate, which can be seen by their actions. For instance, 62% prefer buying sustainable brands and 73% have a higher willingness to pay (WTP) for sustainable products. One product that influences the climate negatively is sodas. An alternative for sodas is sustainable sodas. The question arises if people are willing to pay for sustainable sodas, and what influences this. Therefore, the central research question of this thesis is:

“Do environmental beliefs and the level of education significantly affect the willingness to pay of the Dutch Generation Z for sustainable sodas?”

To be able to answer this question, four theoretical and three empirical sub-questions were formulated:

1. What is the willingness to pay?
2. What is the definition of environmental beliefs?
3. What is the definition of sustainable sodas?
4. What are the characteristics of Generation Z?

The empirical sub-questions are:

1. What are the main factors that contribute to the willingness to pay for sustainable sodas of the Dutch Generation Z?
2. What are the characteristics of Generation Z in the Netherlands?
3. Which instrument of the marketing mix has the most influence on the willingness to pay of the Dutch Generation Z for sustainable sodas?

The WTP is the maximum that someone is willing to pay for a product or service (Le Gall-Elly, 2009). Environmental beliefs are the sum of attitudes and beliefs that influence an individual's behaviour towards the environment (Gray et al., 1985). The marketing mix are the elements price, product, place, and promotion that a manager can use to satisfy the target market (McCarthy, 1964).

Carley and Yahng (2018) and Mihailescu et al. (2021) found a negative effect of age on the WTP for sustainable products. Furthermore, Galati et al. (2019) and Carley and Yahng (2018) found a significant negative effect of the level of education on WTP. De Araújo et al. (2022) and Nguyen (2021) found a significant positive effect of environmental beliefs on WTP. Lastly, De Araújo et al. (2022) also found a

positive significant effect of sustainable consumption on WTP. These findings led to the formation of 5 hypotheses, which are shown in Table 1.1.

In this thesis, an online survey, a quantitative research method, was distributed on social media. The survey was filled in by 201 respondents. The population of this thesis is the Dutch Generation Z who have lived in the Netherlands their entire lives, and who were born between 1997 and 2004. The respondents' demographics, environmental beliefs, consumption, and knowledge of sustainable soda and WTP are asked. In SPSS the data is analysed using linear and logistic regression and the Pearson's correlation test.

65.67% of the respondents say that they are willing to pay more for sustainable soda. Furthermore, there is an insignificant negative correlation between age and WTP. Neither a positive nor negative significant effect of having a higher level of education on WTP is found. Next, a positive significant effect of having positive environmental beliefs on sustainable consumption is found. Lastly, having positive environmental beliefs increases the level of WTP. In Table 1.1. it is shown which hypotheses are accepted and rejected.

Table 1.1 Acceptance and rejection of hypothesis

Hypothesis	Accepted/Rejected
H1 <i>More than 60 percent of the Dutch Generation Z is willing to pay more for sustainable sodas.</i>	Accepted
H2 <i>When the age increases the willingness to pay of the Dutch Generation Z for sustainable sodas decreases significantly.</i>	Rejected
H3 <i>Acquiring a higher educational degree significantly decreases the WTP of the Dutch Generation Z for sustainable sodas.</i>	Rejected
H4 <i>Having positive environmental beliefs significantly increases the sustainable consumption behaviour of the Dutch Generation Z.</i>	Accepted
H5 <i>Having positive environmental beliefs significantly increases the WTP of the Dutch Generation Z for sustainable sodas.</i>	Accepted

There are several recommendations for future research. First of all, the WTP for sustainable sodas of other generations should be explored. Furthermore, the sample size should increase, as it limits the validity of the research. Moreover, an experiment could be conducted to solve the gap between the stated WTP and real purchasing behaviour. For sustainable soda producers, it is recommended to focus on the marketing mix element product. Besides this, they should focus on Generation Z, as more than 60% were willing to pay for sustainable soda.

Chapter 1: Introduction

1.1. Introduction of the subject of the study

In 2022, global greenhouse gas emissions (GHGE) rose to 36.8 gigatons/a, which was a 0.9% increase (IEA, 2023). Compared to 2021, in which the GHGE increased by 6%, this was a good sign, also keeping in mind that the GHGE were expected to have risen more in 2022 (IEA, 2023). Nevertheless, the number of greenhouse gases still ought to decrease (United Nations, 2023a). By 2030, the greenhouse emissions need to have decreased by 45% to ensure a maximum global warming increase of 1.5 degrees by the year 2100. Currently, this goal is not likely to be met, and because of this transformative action should be undertaken (United Nations, 2023a). These facts show that sustainable practices and sustainability itself are of high importance.

Besides global organizations, consumers themselves think that environmental sustainability is important (Kucher, 2021). They worry about the environmental impact of their behaviour, and they have tried to change their behaviour positively. According to the Global Sustainability Study of Simon-Kucher (2021), 85% of consumers' purchases have become 'greener'. The global green technology and sustainability market was valued at 13.76 billion dollars in 2022 and is expected to grow to 61.92 billion dollars (Fortune Business Insights, 2022). This rise in market size is sustained by Suciu et al. (2019), who state that consumers value organic food more than non-organic food, despite its limited availability and higher price (Suciu et al., 2019).

Regarding consumers, there are differences in sustainability attitudes between generations (Nichols & Holt, 2023). The question arises of who the leading generation is in terms of sustainability. According to some articles, the youth is the future of sustainability (Fien et al., 2008). Azami et al. (2018) state that Generation Y has an inclination toward a green lifestyle and sustainable consumption. According to Dabija et al. (2019), Generation Z is even more sustainability-oriented and green than Generation Y. According to Nichols and Holt (2023), Baby Boomers are less interested in sustainable consumption compared to Generation Z and Y, as these Generations for example view sustainability as more important. Compared to Baby Boomers, Generation X is more aware of environmental issues, but their orientation toward environmental protection and preservation is less than Generation Y (Dabija, 2018). The importance of sustainability for Generation Z and Y can be seen by their behaviour. For example, 32% of American Generation Z and 28% of Generation Y have taken action in rallies, volunteering, or donating money (Tyson et al., 2021).

One of the markets that contributes negatively to the health of consumers and the environment is the soft drinks market (Tahmassebi & BaniHani, 2020; Stanford Magazine, 2017). It detracts the former, as the sugar and acidity levels have a negative influence on consumers' dentures (Tahmassebi & BaniHani, 2020). Besides this, soft drink consumption influences the environment through CO₂ emissions, plastic waste, and water use. For example, for 1 litre of soft drink, 2.7 litres of water is needed (Stanford Magazine, 2017). There are types of soda that are more eco-friendly, such as the organic soda Lemonaid. However, the global sales volume of organic sodas is quite small compared to the global market of carbonated soft drinks. In 2022, the former's sales volume was 5.53 billion dollars, compared to 432.60 billion for carbonated soft drinks (The Business Research Company, 2023; Singh, 2023). The question arises what influences this difference in sales volume? Could it be the difference in price or the difference in brand popularity? Therefore, it might be beneficial to look at the willingness to pay for sustainable sodas, and what influences this.

1.2. Relevance of the subject of the study

The relevance of this research is multi-faceted, as it could have managerial, scientific, and social relevance.

1.2.1. Managerial relevance

This thesis could have managerial relevance for companies that produce sustainable soft drinks. First of all, it is relevant as the additional information that could be provided with this thesis could help companies with their pricing strategy. When companies acquire information about the willingness to pay (WTP) of Generation Z, they will be able to adjust their prices accordingly, both positively and negatively. Furthermore, they could be able to segment and target their customers better after having received information about their environmental beliefs. Lastly, they could try and manipulate the factors that influence Generation Z's WTP, which could benefit them in terms of profit.

1.2.2. Social relevance

Furthermore, this research could be socially relevant, as sustainable consumption is beneficial for future generations. Consumption contributes heavily to global warming, for example by their manufacturing, distribution, and consumption waste. Soft drinks also contribute to global warming through their consumption waste, as soft drinks are in the top five of waste items that can be avoided (Jeswani et al., 2021). Therefore, it is important to decrease the environmental impact of consumption, especially of sodas. By investigating sustainable sodas and the factors that influence Generation Z their willingness to pay for it, we might get a clearer view of future generations' perspectives on it. Besides this, organic sodas

are healthier compared to regular sodas, since it contains fewer additives, such as artificial flavouring (Nguyen, 2021) Therefore, consuming sustainable soda is beneficial for consumer's health. Moreover, this research could be an eye-opener for Generation Z in terms of the effect of their soda consumption considering their health and sustainability. It could make them think in more detail about sustainability and how their actions could become more sustainable, and it could increase the popularity of sustainable sodas amongst this generation. This could make them better citizens and it would benefit the world and future generations.

1.2.2. Scientific relevance

Lastly, this thesis could have scientific relevance due to a gap in the existing literature. There is a population gap in the existing literature, as just a part of Generation Z was researched. For instance, in the article of Mihailescu et al. (2021), 36.7% of their sample consisted of Generation Z. However, just the people who were born between 1997 and 2003 were questioned, leading to an underrepresentation of that generation. Furthermore, in the article of Pham et al. (2021), Generation Z was specifically researched. Nevertheless, there was no information regarding the respondents' age, which could lead to Generation Z not being adequately represented. Therefore, this research focuses on Generation Z, and since the respondents are born between 1997 and 2004, more of Generation Z is represented than in the previous literature.

1.3. The Central Research Question

Compared to 2023, the production of soft drinks in the Netherlands is predicted to rise to 1337 million euros in 2027 (ReportLinker Research, 2023). Coca-Cola enterprises is the leader in soft drinks in the Netherlands in 2022 (Euromonitor International, 2022). This is bad for the environment, as one can of Coca-Cola results in 0.17 kg of CO₂, which is the same as driving a car for 0.9 kilometres (CO2Everything, 2023). From 2018 to 2022, Coca-Cola was named the worst corporate plastic polluter by the brand audit of NGO Break Free From Plastic (2023). According to Nilsson et al. (2011), the environmental footprint of the packaging of soft drinks is greater compared to sweets and crisps. Due to the effect of soft drink consumption, people ought to divert to the consumption of sustainable sodas, which will be defined later on. The question arises whether people would be willing to pay for sustainable soda, and if environmental beliefs, or EBs, and the level of education significantly affect this, as was stated by Carley and Yahng (2018). Both of the terms will be explained later on. In light of these findings, the problem to be studied is whether environmental beliefs and the level of education significantly affect the willingness to pay of the Dutch Generation Z for sustainable sodas. Therefore, the central research question of this thesis is:

“Do environmental beliefs and the level of education significantly affect the willingness to pay of the Dutch Generation Z for sustainable sodas?”

1.4. Theoretical sub-questions

To be able to answer the central research question, four theoretical sub-questions were formulated, which will be further clarified during the literature review:

5. What is the willingness to pay?
6. What is the definition of environmental beliefs?
7. What is the definition of sustainable sodas?
8. What are the characteristics of Generation Z?

1.5. Empirical sub-questions

Furthermore, three empirical sub-questions were formulated, which will be answered after the data collection and analysis:

4. What are the main factors that contribute to the willingness to pay for sustainable sodas of the Dutch Generation Z?
5. What are the characteristics of Generation Z in the Netherlands?
6. Which instrument of the marketing mix has the most influence on the willingness to pay of the Dutch Generation Z for sustainable sodas?

1.6. Possible ethical research issues

It is important to be aware of the ethical research issues of this thesis. Firstly, informed consent is needed from the participants. The respondents need to know what happens with their data, and they ought to be ensured that their data is used for the right purpose and that it is not mistreated. Otherwise, their data cannot be used, or they do not take part in the survey. Therefore, the survey should start with a description of what the study is about and what the data will be used for. Furthermore, the respondents should give consent to use their data. Secondly, the anonymity of the data could be an issue. The data of the respondents should be made anonymous. When this is not the case, the data cannot be used.

1.7. Possible research Limitations

There are some possible limitations of this research. First of all, this thesis is written in a relatively short time, which may result in some problems. For example, due to the limited time, the data collection has to be cut off at a certain point. This could impact the sample size negatively, which could endanger the

representativeness of this study and its results. Furthermore, the limited time may have a negative influence on the quality of the data analysis, as there might not be enough time to do more tests than stated.

Another limitation concerns the representativeness of the data. For example, there may be a case of a non-response bias. There is a chance that this type of bias occurs because the survey is spread through social media platforms and due to the fact that people can choose whether they fill in the survey or not. When the respondents choose not to fill in the survey or when their answers are not useable, the representativeness of this survey could be harmed. Another limitation of this research is the formulation of the survey questions. There could be a possibility that a question is not formulated clearly enough. To prevent this, the questions have been checked before the survey is sent out through several face-to-face interviews, to see where respondents could get confused or whether the survey is too long.

1.8. Brief thesis chapter descriptions

This thesis is made up of five chapters. In the first chapter, the subject of this thesis is introduced and some background information on the subject is provided. Furthermore, the main research question is stated, followed by the theoretical and empirical sub-questions. The second chapter of this thesis is the literature study. With the help of this chapter, the theoretical sub-questions can be answered, and the hypotheses are formulated. The third chapter is the methodology, in which the research design and method are discussed, as well as the collection method of the data and the data analysis. The fourth chapter is the results of the research. Here, the outcome of the data analysis is discussed, which is linked back and compared to the existing literature. The fifth and final chapter is the conclusion. In this chapter, the main findings of this research are summarized and the main research question is answered. Moreover, recommendations for future research are discussed as well as the limitations of this research.

Chapter 2: Literature Review and Conceptual Framework

2.1. Willingness to pay

2.1.1. What is the willingness to pay?

The price of a product plays a role in its consumption of it, as well as in the case of green consumption (Yue et al., 2020). The price plays a role in the green purchasing decisions of customers, as price sensitivity moderates the relation between environmental concern and green consumption negatively. According to Kearney (2020), sustainable products are on average 75 to 85% more expensive than regular products. Consumers with high environmental concerns and high price sensitivity have a lower green purchase intention than those with high environmental concerns and low price sensitivity (Yue et al., 2020). Therefore, companies must know how much a customer would be willing to pay for their service or product (Schmidt & Bijmolt, 2020).

How can the willingness to pay for a product be defined? The willingness to pay can be defined as the maximum price that a consumer would pay for a certain product or service (Le Gall-Elly, 2009). As Schmidt and Bijmolt (2020) mentioned, it is relevant for companies to measure the willingness to pay their customers, and this should be done accurately. The measurement is accurate when the hypothetical WTP is close to the real WTP of a customer, which depends on the hypothetical bias. The difference between the two WTPs is that with a real WTP, there could be a chance that the respondent has to pay his stated WTP, which is not the case with the hypothetical WTP.

2.1.2. Measuring the willingness to pay

There are two measurement types, direct and indirect methods. Using a direct measuring method, a consumer is asked directly for their WTP for a product. An example of such a method is an auction (with a real WTP) or open questioning surveys. An example of an indirect measuring method is conjoint analysis, where products with different attributes (of which price is one attribute) are compared, evaluated, and chosen by the respondents (Schmidt & Bijmolt, 2020). They found that indirect methods lead to an overestimated real WTP compared to direct methods.

2.2. Environmental beliefs

2.2.1. What are environmental beliefs?

A belief can be defined as “the enduring organization of perceptions and cognitions about some aspect of the individual’s world” (Krech & Crutchfield, 1948). There are different types of beliefs, behavioural,

immaterial, and control beliefs. Behavioural beliefs concern the potential effects of behaviour (Ajzen & Fishbein, 2000). A type of behavioural belief is an environmental belief. An environmental belief can be defined as the sum of attitudes and beliefs that influence an individual's behaviour towards the environment (Gray et al., 1985). In this thesis, when a person cares about the environment, their environmental beliefs are high or positive, otherwise they are low or negative respectively.

2.2.2. Measuring environmental beliefs

A common way to measure an individual's environmental beliefs is the New Environmental Paradigm (NEP), which was introduced by Dunlap and Van Liere (1978). This version had some shortcomings, such as it not being internally consistent. Therefore, there came a revised version, which is currently used. This revised NEP uses a survey comprising 15 statements that indicate an individual's level of (dis)agreement. For example, the New Environmental Paradigm scale can be used to investigate relationships between environmental beliefs and pro-environmental behaviours (Anderson, 2012).

2.3. Sustainable soda

The term sustainability (or sustainable development) can be defined as meeting the needs of current generations without restricting the future generations' ability to meet their needs (United Nations, 2023b). As stated by Purvis et al. (2018), sustainability is made up of three pillars; the environmental, social, and economic pillar. The production of sodas affects both the environmental pillar of sustainability, as it affects the health of consumers and the environment through the emission of greenhouse gasses (Eykelboom et al., 2022). Therefore, it is important that the production of soda becomes more sustainable. Sustainable production can be defined as "the creation of goods and services using processes and systems that are non-polluting; conserving of energy and natural resources; economically viable; safe and healthful for employees, communities and consumers; and socially and creatively rewarding for all working people" (LCSP,1998). As Demartini et al. (2018) mention, there are several ways in which the supply chain of soft drinks can become more sustainable. It discusses two important aspects, packaging and water management. The best packaging decisions are the usage of recycled material, lightening the weight of packaging, or upcycling. For water management, the best practices are to reduce water use, use rainwater recovery, and recycle wastewater.

Several soft drink producers are known for their sustainable practices. For example, Lemonaid and ChariTea offer soft drinks that are organic, and which support fair trade. Furthermore, with every drink that gets sold, they donate 5 cents to their foundation, which invests in social projects in for example

Africa or Latin America (Lemonaid, 2023). Another example is Fritz-Kola, who produces soft drinks in glass bottles. They do this to decrease their environmental footprint, which they also do by having their suppliers close by, resulting in fewer emissions. They also take care of the community, which can be seen by campaigns such as #letmebesafe, where they put homeless people into hotels during the COVID-19 pandemic (Fritz-Kola, 2023). In this thesis, sustainable soda is defined as sodas that address one or more aspects of sustainable production, like Lemonaid and Fritz-Kola.

2.4. Generation Z

Generation Z is currently the youngest of all generations. This generation has several different names, such as iGeneration, Gen Tech, or Tweens (Dolot, 2018; Schwieger & Ladwig, 2018). There has been some discussion on the age range of this generation, as Świerkosz-Holysz (2016) for example states that they were born in 1990 or later, whilst Schwieger and Ladwig (2018) state that they were born between 1996 and 2012. Generation Z has some distinctive characteristics which set them apart from the other generations.

First of all, this generation has grown up in a period with a lot of changes, for example in technology. They were raised in a time with the internet, and electronics such as smartphones, laptops, and social media. Therefore, they are known for their technological sophistication, but also for their short attention timespan and dependency on technology (Singh & Dangmei, 2016). Furthermore, this generation is concerned with the climate and its offered natural resources, and the issues that come along with it such as water shortages (Singh & Dangmei, 2016). This can be seen by the fact that 62% of Gen Z consumers preferably buy sustainable brands and that 73% of them are willing to pay more for sustainable products (First Insight, 2020). Their environmental concern can also be recognized by their use of social media, such as Instagram. On such social media platforms, they form communities where they discuss environmental issues and the SDGs (Hidayat & Hidayat, 2021).

2.5. The marketing mix

The marketing mix is originally known as the 4Ps of marketing. It is a term that was first used by Borden in 1949. His marketing mix consisted of 12 elements: product planning; pricing; branding; channels of distribution; personal selling; advertising; promotions; packaging; display; servicing; physical handling; fact-finding, and analysis (Borden, 1964). This term was later refined by McCarthy (1964). He combined the 12 elements into four elements, price, product, place, and promotion. His definition of the marketing mix was “Marketing mix is a combination of all of the factors at the command of a marketing manager to

satisfy the target market.” Many other definitions have been given for this term. For example, Kotler et al. (2008) defined the marketing mix as a series of controllable marketing instruments that can be used by a company to create a pleasing response in the target market. There have been some discussions on the potential addition of other Ps, and currently, the Marketing mix consists of 6 Ps, as Mason and Mayer (1990) added people and presentation to it. In this thesis, the definition of Kotler (2008) is followed, keeping in mind that more elements can be mentioned.

As mentioned, the marketing mix consists of four elements, price, product, place, and promotion. The price of a product is the amount of money that customers need to pay for a product or service (Kotler et al., 2008). The product is what is offered in the market by a company for attention, use, acquisition, or consumption and that could satisfy a need or want (Kotler et al., 1999). Promotion is how companies communicate with their potential and current customers (Kotler et al, 2002). The place is how a company makes the products/services available to the targeted customers (Kotler et al., 1999).

Singh (2012) discussed some decisions that can be made under each element of the marketing mix. For instance, one pricing strategy is loss leader pricing, where the company puts its price relatively low compared to its competitors. McCarthy (1964) says that when choosing a price, one should consider the willingness to pay from the customers. Furthermore, examples of a promotion strategy are handing out leaflets or putting advertisements on television. Some decisions that have to be made regarding the product are the packaging, the quality, or the design of the product. Lastly, a choice regarding the place is whether the company will sell its products online, or in which stores the products will be sold (Singh, 2012).

These are all choices that the producers of sustainable sodas have to make. For instance, they should think about how they communicate their sustainability practices with their customers, and how they could distinguish their product from others with their packaging for example. It is important that they make these choices, as according to Katt & Meixner (2020) some of the P’s have a significant effect on the willingness to pay for organic food. For instance, the quality of a product has a significant positive effect on the willingness to pay. Similarly, the type of store, and therefore the marketing element place, also influences the willingness to pay for organic food (Katt & Meixner, 2020).

2.6. The perceived effects

Several factors influence the willingness to pay for sustainable products. In this section, some of these factors are discussed, followed by the hypotheses of this paper.

2.6.1. Age

According to Fien et al. (2008), the youth is the future of sustainability. This corresponds with what has been found about Generation Z for example, that they care about the climate and the natural resources of this earth (Singh & Dangmei, 2016). Age is therefore one of the influential factors of the WTP for sustainable products. Carley and Yahng (2018) found that the age of respondents had a significant negative influence on the willingness to pay for sustainable beer, as younger people had a higher willingness to pay. Similarly, Mihailescu et al. (2021) found that age has a negative effect on the willingness to pay for all eco-certified wines, which was significant for almost all three labels, except for the sustainable labelled wine. In the case of eco-friendly furniture, age has no significant effect on the willingness to pay, according to Shahsavar et al. (2020). Thus, the first two hypotheses are the following:

H1: More than 60 percent of the Dutch Generation Z is willing to pay more for sustainable sodas.

H2: When the age increases the willingness to pay of the Dutch Generation Z for sustainable sodas decreases significantly.

2.6.2. Level of education

The level of education has a positive impact on responsible behaviour, and thus also on sustainable consumption (Chandra & Verma, 2023). Therefore, it can be seen that the level of education has a significant effect on the willingness to pay of consumers. Carley and Yahng (2018), who researched the willingness to pay for sustainable beer, found that one of the influential factors was the level of education of the respondents. They found that the willingness to pay was higher for people who had a lower academic degree. Galati et al. (2019) found that the chance of an increase in willingness to pay for natural wine is higher with a low level of education. Therefore, the following hypothesis can be formulated:

H3: Acquiring a higher educational degree significantly decreases the WTP of the Dutch Generation Z for sustainable sodas.

2.6.3. Environmental beliefs

As mentioned before, environmental beliefs influence an individual's behaviour towards the environment. This can also be seen in their willingness to pay, as environmental beliefs have a significant effect on it. An article that argues for this is the article of Nguyen (2021), which researches the effect of environmental beliefs and destination image on the willingness to pay for green hotels. Nguyen (2021) finds that environmental beliefs have a significant positive effect on the willingness to pay for green

hotels. This corresponds with the article of De Araújo et al. (2022) who state that environmental beliefs do have a positive effect on the willingness to pay for sustainability in tourist destinations, which is not significant however. Furthermore, Carley and Yahng (2018) state that environmental beliefs have a significant effect on the WTP for sustainable beer, but that it is not the most influential factor and that the effect can both be negative and positive, depending on the belief. De Araújo et al. (2022) state that environmental beliefs do have a significant positive effect on ecotour attitudes and sustainable consumption behaviour. Regarding the latter, they found that already having sustainable consumption behaviour has a positive effect on an individual's willingness to pay. In light of these findings, the last two hypotheses are formulated:

H4: Having positive environmental beliefs significantly increases the sustainable consumption behaviour of the Dutch Generation Z.

H5: Having positive environmental beliefs significantly increases the WTP of the Dutch Generation Z for sustainable sodas.

2.7. Conceptual Framework

In Figure 2.1 the relationships between all the above-mentioned variables are illustrated. As can be seen in Figure 2.1, three factors influence the willingness to pay, age, level of education, and environmental beliefs. The latter factor also influences sustainable consumption.

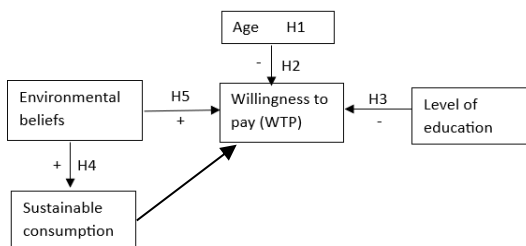


Figure 2.1 The Conceptual Framework

Chapter 3: Research Methodology

3.1. Research Method and Design

The chosen research method for this thesis is quantitative research. There are several reasons why this research method was chosen. First of all, the goal of this thesis is to be able to answer the question of whether environmental beliefs and the level of education have a significant effect on the willingness to pay of the Dutch Generation Z for sustainable sodas. To do this, several hypotheses are formulated. As Basias & Pollalis (2018) state, with the help of quantitative data the hypotheses, and thus the relationships between variables, can be proven. Furthermore, there are some advantages of quantitative data. For instance, quantitative data makes it easier to compare numerical data, which is another reason why this type of research was chosen, as there is a vast amount of numerical data which has to be analysed to see how strong relationships between variables are. Lastly, quantitative research is selected, as qualitative research is rather related to “what” “how” or “where” questions, which is not the type of question of this research, as it is more about seeing relationships between variables (Basias & Pollalis, 2018).

3.2. Data collection

An online survey is used to conduct this research. The reason why I chose this research design is that a survey is flexible, meaning that one can fill it in anywhere. As a result, there are no issues regarding the planning of interviews with the limited availability of respondents. Furthermore, as the sample needs to be representative of the entire Dutch Generation Z, this research design suits it the best, as it is easier to reach people from all the different provinces in the Netherlands than with an interview for example.

The survey is spread through several platforms of social media, especially those that are popular amongst this generation, such as WhatsApp, Facebook, Instagram, and LinkedIn. The sampling method of this research is a non-probability sampling method, convenience, and snowball sampling. It is convenience sampling, as the chance of people filling in the survey depends on whether they are available or not. Furthermore, it can be seen as snowball sampling, as the survey gets forwarded to other people the respondents know, sometimes even on request. To ensure representativeness, the minimum sample size is 200 respondents. The data is collected between June 27 and July 24.

The population of this research is the Dutch Generation Z who have lived in the Netherlands their entire life. As mentioned, the part of the Dutch Generation Z who were born between 1997 and 2004 are researched. This means that the population of this research is between 18 and 27 years old. According to

Centraal Bureau voor de Statistiek (2022), this population consists of 2,013,000 people, and it is made up of 990,000 females and 1,023,000 males.

3.3. Structure survey

The survey is made in Qualtrics. The survey is in Dutch to acquire as many responses from people from all over the Netherlands. It consists of several stages, and it starts with a short explanation of the research. Next, the respondents' environmental beliefs are asked using the 15 statements of the NEP scale, with 1 being 'Fully disagree' and 7 being 'Fully agree', based on a 7-point Likert scale. Then, the respondents are asked about their consumption and knowledge of sustainable sodas. The former is asked to get the variable sustainable consumption. Furthermore, they are asked to rank factors that influence their willingness to pay for sustainable soda from high to low influence. With this information, the question could be answered which of the 4 Ps has the most influence on the willingness to pay for sustainable sodas. Moreover, the respondents are asked if they are willing to pay for sustainable soda using relevant prices, thus using Gabor Granger to test the willingness to pay. After this, the respondents are asked to assign 6 different CO₂ emissions to 6 products, with which their environmental awareness is tested. Then the question is raised whether the respondent is willing to pay more for a soft drink when the amount of CO₂ would decrease. Lastly, there are questions about the demographics of the respondents. The respondents' monthly income, age, level of education, the province they live in, and gender are asked. These questions, rankers, and statements are used to see whether there is a relationship between the respondents' demographics, their environmental beliefs, and their willingness to pay for sustainable sodas. Furthermore, some of these variables, such as income and gender. With the help of this knowledge, I might be able to prove the formulated hypotheses.

3.4. Data Analysis

After collecting the data, the data is analysed using statistical analysis in SPSS. Several statistical procedures are undertaken to test the hypotheses. First of all, descriptive statistics are acquired to describe the sample of this research and to see whether the sample is representative. Secondly, the assumptions for linear and logistic regression are checked. Thirdly, to test the first hypothesis, a graph is made in which the percentage of people who are willing to pay more for sustainable sodas is shown. Then, the second and third hypothesis are tested with linear regression. The independent variable of the former is the variable age and of the latter the variable level of education. The dependent variable of both linear regressions is the willingness to pay.

To be able to test the fourth and fifth hypothesis, first, the 15 statements have to be combined into one variable. Before this is done, there has to be looked at the direction of the statements, and if necessary, they are adjusted. After this has been done, a linear regression between the dependent variable willingness to pay, and the independent variable environmental beliefs is conducted to test the fifth hypothesis. For the fourth hypothesis, a logistic regression is conducted, with environmental beliefs as the independent variable and sustainable consumption as the dependent variable. To check whether the effect of the above-mentioned variables is significant, a p-value of 0.05 is maintained.

Lastly, a combined bar chart is made of the 7 factors that influence the willingness to pay for sustainable soda. On the y-axis, there is the percentage of how much a variable was ranked on positions 1 to 7, and on the x-axis are the 7 aspects.

Chapter 4: Research outcomes

4.1. Descriptive statistics

The survey was filled out by 201 respondents in total. 51.7% of the respondents are female, 46.8% are male and 1.5% identify as other. Regarding the demographic factor level of education, 42.3% of the respondents completed their secondary education, 24.4% have a Bachelors' degree, and 16.4% have a Higher Vocational Education degree. Furthermore, 59.7% of the respondents are between 18 to 21 years old, 34.8% are between 22 and 24, and 5.5% are between 25 and 27 years old. Moreover, 36.8% of the respondents live in Zuid-Holland, followed by 35.3% who live in Noord-Brabant. Lastly, the respondents were asked to state their monthly income. Nearly half of the respondents (49.8%) earn 0 to 800 euros per month, 24.4% earn between 800 and 1700 euros and 14.4% earn 1700 to 2500 euros per month. The average respondent lives in Noord-Brabant or Zuid-Holland, is between 20 and 22 years old, has obtained a secondary school or a Bachelor's degree, and earns between 0 and 800 euros per month. This profile can be explained by the fact that the survey was mostly filled in by the author's personal network, who have similar characteristics. In Tables 7.1 to 7.5, which can be found in Appendix B, the precise distribution of all these demographic factors can be seen.

In Table 4.1. the descriptive statistics of all the variables are shown. The descriptive statistics of the variable Level of Education and Sustainable Consumption are not shown here, as these are categorical variables. The mean and standard deviation of this type of variable are not to be interpreted, as it does not say anything about the variable due to the possibility of unequal spacing between the options. For these variables, the frequency and percentages are shown in Table 7.2 and 7.6 in Appendix 2.

Table 4.1 Descriptive Statistics

Factor	Observations	Minimum	Maximum	Mean	Standard Deviation
Age	201	18	27	21.41	1.742
Willingness to Pay	201	0.25	1.75	1.26	0.337
Environmental Beliefs	201	3.33	6.53	4.93	0.597

As can be seen in Table 4.1, the minimum age is 18 and the maximum age is 27. The mean is 21.41, which can be explained by the fact that 34.3% of the respondents were 21 whilst filling in the survey. The average that consumers are willing to pay for sustainable soda is €1.26. Moreover, the minimum of the variable

environmental beliefs is 3.33, and the maximum is 6.54. Its average is 4.93, which means that the average respondent has high environmental beliefs and that they thus care about the environment.

4.2. Assumptions

As was stated in the previous chapter, hypotheses 2,3, and 5 should be tested using linear regression. To be able to do this, all of the assumptions of linear regression, linearity, normality, and homoskedasticity, have to be met. However, with this data set, either part of the assumptions or none of the assumptions are met. In light of this, the hypotheses have to be tested using another type of statistical analysis. Two statistical tests that are conducted are ordinal logistic regression and Pearson's correlation tests.

Ordinal logistic regressions have, similar to linear regression, some assumptions that have to be met. The assumptions are that the dependent variable is ordered, that the observations are independent of each other, that there is no multicollinearity, and the assumption of proportional odds. As can be seen in the data, the first two assumptions hold for the data. The third hypothesis also holds, as there is just one independent variable in each logistic regression. However, after checking the fourth assumption, proportional odds with the help of the test of parallel lines, it became clear that for this data, the fourth assumption did not hold for all the logistic regressions. As can be seen in Tables 7.12, 7.15, 7.17, and 7.19, is the significance level of the test of parallel lines higher than 0.05 for the logistic regression between EBs and WTP and WTP and Level of Education. For the logistic regression between Age and WTP and EBs and Sustainable Consumption, the significance level is lower than 0.05. For these two logistic regressions, the assumption of proportional odds is violated, because of which logistic regression is not suitable to test these hypotheses. Hypotheses 2 and 4 are therefore tested using Pearson's correlation test.

4.3. Hypothesis testing

4.3.1. Hypothesis 1

With the help of Figure 4.1, the first hypothesis is answered. The first hypothesis is: “More than 60% of the Dutch Generation Z is willing to pay more for sustainable sodas.” As can be seen in Figure 4.1, 65.67% of the respondents state that are willing to pay for a sustainable Coca-Cola, whilst 34.33% are not. Therefore, the first hypothesis can be accepted, as more than 60% of the respondents say that they are willing to pay more for sustainable soda. In Appendix B, in Table 7.7, the amount of money that consumers are willing to pay more for a sustainable Coca-Cola is shown. 25% of the people who state that they are willing to pay extra for sustainable Coca-Cola are willing to pay 30 cents extra.

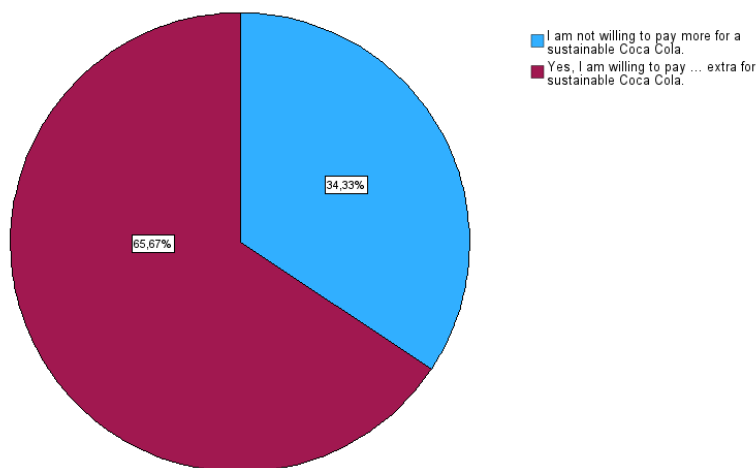


Figure 4.1 Percentages of consumers' willingness to pay for sustainable Coca-Cola

4.3.2. Hypothesis 2

To be able to test the second hypothesis “When the age increases the willingness to pay of the Dutch Generation Z for sustainable sodas decreases significantly.”, a Pearson’s correlation test was conducted. As can be seen in Table 7.8 in Appendix B, the correlation between Age and WTP has a value of -0.027. This result indicates that there is a small correlation between age and willingness to pay. When the age increases, the willingness to pay is likely to decrease. However, because the p-value of the correlation is 0.703, the correlation is not significant. In light of this, the second hypothesis cannot be accepted and is therefore rejected.

4.3.3. Hypothesis 3

Hypothesis 3 states that acquiring a higher educational degree or level significantly reduces the WTP of the Dutch Generation Z for sustainable sodas. This hypothesis was tested using ordinal logistic regression and a Pearson’s correlation test. The results from these tests can be seen in Appendix 2 in Tables 7.10,

7.16, 7.17, and 7.18. The pseudo R^2 of the model is 0.018, which means that 1.8% of the variation in the WTP can be accounted for by the model. Furthermore, as can be seen in Table 7.16, some of the Levels of Education have a positive estimate, like Pre-Master, with a value of 0.074, whilst Master's degree and Secondary school have a negative estimate of -0.495 and -0.302 respectively. The estimate of Master's degree and Secondary school can be explained as follows. The log odds of falling into a higher category of WTP is 0.495/0.302 points lower for a student with a Master's degree/Secondary school degree compared to a student with a Bachelor's degree. As both a higher and lower Level of Education have lower log odds of falling into a higher category of WTP, neither a positive nor a negative effect can be found. Furthermore, none of the Level of Education variables are significant. This partly corresponds with the results of Pearson's correlation test, which found a positive correlation of 0.065, which was not significant due to the p-value of the test being 0.359. In light of these findings, the third hypothesis can be rejected.

4.3.4. Hypothesis 4

To check whether having higher/ more positive environmental beliefs significantly increase the sustainable consumption behaviour of the Dutch Generation Z, a Pearson's correlation test was conducted. As can be seen in Table 7.11, the correlation between environmental beliefs and sustainable soda consumption is 0.230. This is a relatively weak correlation. When a person's environmental beliefs are higher, when they care or worry more about the environment, their sustainable soda consumption is also likely to increase. The p-value of Pearson's correlation test is 0.001, which is smaller than 0.05, because of which the correlation is significant. Therefore, the fourth hypothesis can be accepted.

4.3.5. Hypothesis 5

In Hypothesis 5 it is predicted that having positive environmental beliefs significantly increases the WTP for sustainable sodas of the Dutch Generation Z. With the help of a logistic regression and a Pearson's correlation test this hypothesis was tested. In Table 7.13 the results from the ordinal logistic regression between Environmental Beliefs and the WTP are shown. Some control variables are added to the logistic regression, age, monthly income, province, and gender. The pseudo R^2 of the model is 0.048, which suggests that 4.8% of the variation in the WTP can be explained by the model. The estimate of the Environmental Beliefs variable is 0.581. This number indicates that when there is a one-unit increase in Environmental beliefs, the log odds of falling in a higher level of WTP are predicted to increase with 0.581. Thus, when people have higher environmental beliefs, their WTP will more likely be higher. The p-value of the variable Environmental beliefs is 0.013, and as it is lower than 0.05, it is significant. These results correspond with the findings of Table 7.9, which shows that there is a positive correlation

between the WTP and Environmental beliefs. The correlation has a value of 0.221 and a p-value of 0.002, which is a small but positive correlation. In light of these findings, the fifth hypothesis can be accepted.

4.3.6. Marketing Mix Elements Ranking

One of the empirical questions of this thesis is which instrument of the marketing mix has the most influence on the WTP for sustainable soda of the Dutch Generation Z. To be able to answer this question, a bar chart is created which is shown in Figure 4.2. What is striking about these results, is that the quality of the product is never put in place 5 or 7 in the ranking. Furthermore, it can be seen that advertisements are the least important for the WTP for sustainable soda, as it is placed in place 7 more than 50% of the time. The quality of the product has the most influence on the WTP for sustainable soda for this generation, as it has the highest ranking. The price is slightly less influential, as can be seen in Figure 4.2. In light of these results, it can be concluded that the element product is the most influential on the WTP for sustainable soda.

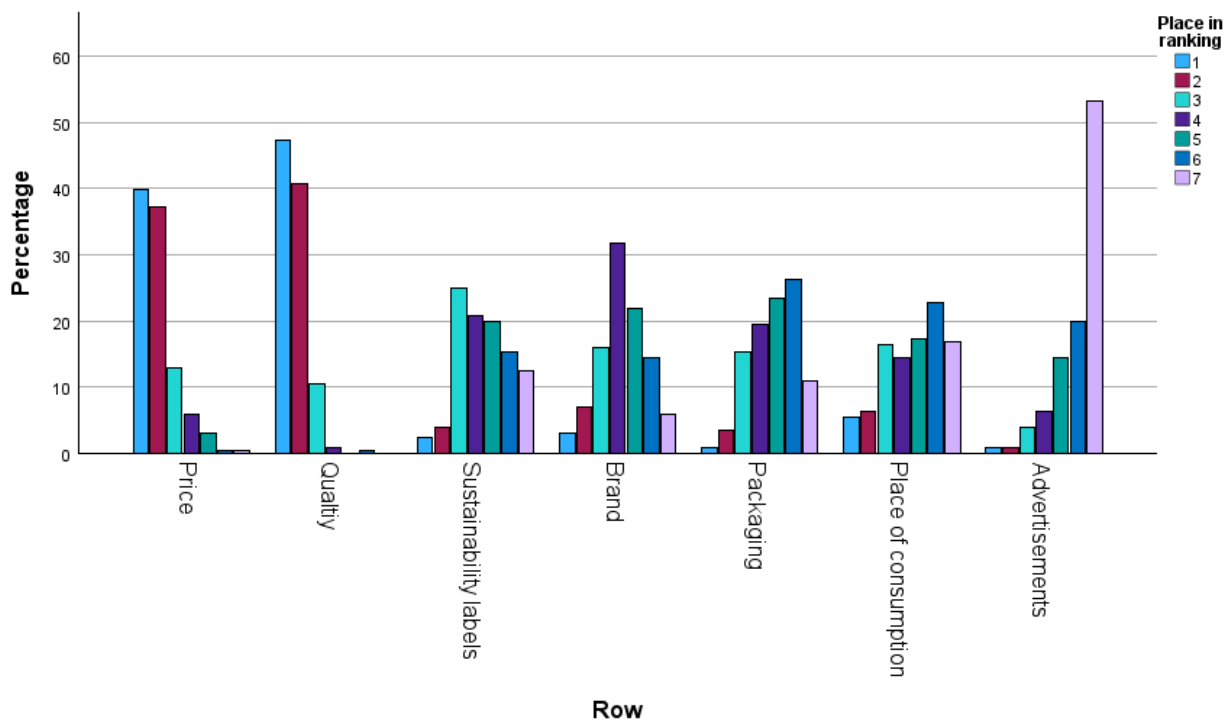


Figure 4.2 Bar chart Marketing Mix elements ranking

Chapter 5: Conclusion & Recommendations

5.1. Main findings

Through their CO₂ emissions, water use, and plastic waste, the soft drinks market contributes negatively to the environment (Stanford Magazine, 2017). An alternative to regular soft drinks is sustainable sodas. A sustainable soda is a soda that addresses one of the aspects of sustainable production. The former can be defined as “the creation of goods and services using processes and systems that are non-polluting; conserving of energy and natural resources; economically viable; safe and healthful for employees, communities and consumers; and socially and creatively rewarding for all working people” (LCSP,1998).

Generation Z is the generation who grew up with technology, and who is known for several things, such as their concern with the climate (Singh & Dangmei, 2016). Generation Z shows their environmental concern by forming communities on social media to discuss environmental issues (Hidayat & Hidayat, 2021), by buying sustainable brands or having a higher WTP for sustainable products, which 62% and 73% respectively do (FirstInsight, 2020). Since Generation Z cares about the environment and acts accordingly, this research focused on whether environmental beliefs and the level of education have a significant effect on the WTP of the Dutch Generation Z for sustainable soda.

Environmental beliefs are the sum of attitudes and beliefs that influence an individual’s behaviour toward the environment (Grey et al. 1985). A high or positive environmental belief means that a person cares about the environment, otherwise they are low or negative. The maximum that someone is willing to pay for a product or service is the willingness to pay, which can be measured both indirectly and directly (Le Gall-Elly, 2009).

The marketing mix is all the factors that a marketing manager can use to satisfy the target market (McCarthy, 1964). Originally it consisted of 4 elements, but currently, this number has grown to 6; Price, Promotion, Place, Product, People, and Presentation.

Adding on to the previous information on Generation Z, Fien et al.(2008) state that the youth is the future of sustainability. Therefore, it was anticipated that more than 60% of the Dutch Generation Z is willing to pay more for sustainable soda. Based on the results, this hypothesis was accepted.

The second hypothesis predicts that the WTP of the Dutch Generation Z decreases significantly when the age increases. This hypothesis is based on the findings of Carley and Yahng (2018), who found a significant negative effect of age on the WTP for sustainable beer, and on the findings of Mihailescu et al. (2021), who found the same effect on the WTP for eco-certified wines. However, this hypothesis was rejected. This does correspond with the findings of Shahsavar et al. (2020), who found an insignificant effect on the WTP for eco-friendly furniture.

Regarding the effect of the level of education on the WTP of the Dutch Generation Z for sustainable soda, it is predicted that having a higher educational degree significantly decreases the WTP. This prediction is a result of the findings of Carley and Yahng (2018), who found a significant negative effect of the level of education on the WTP for sustainable beer. Similarly, Galati et al. (2019) found that having a higher level of education decreases the chance of an increase in the WTP for natural wine. The results of the survey contradict the former findings, and as a result, the third hypothesis is rejected.

According to Nguyen (2021), environmental beliefs have a significant positive effect on the WTP for green hotels. Similarly, Carley and Yahng (2018) found a significant effect on the WTP for sustainable beer of environmental beliefs, the type effect depending on whether the belief is positive or negative. Lastly, De Araújo et al. (2022) stated that environmental beliefs have a positive, but insignificant, effect on the WTP for sustainability practices in tourist destinations. Furthermore, they found that environmental beliefs have a positive effect on sustainable consumption behaviour. As a result of these findings, the fourth and fifth predicted that having positive environmental beliefs significantly increases the WTP and the sustainable consumption behaviour of the Dutch Generation Z respectively. Both hypotheses are accepted with the help of the survey results.

Table 5.1 Acceptance or rejection of hypotheses

Hypothesis	Accepted/Rejected
H1 <i>More than 60 percent of the Dutch Generation Z is willing to pay more for sustainable sodas.</i>	Accepted
H2 <i>When the age increases the willingness to pay of the Dutch Generation Z for sustainable sodas decreases significantly.</i>	Rejected
H3 <i>Acquiring a higher educational degree significantly decreases the WTP of the Dutch Generation Z for sustainable sodas.</i>	Rejected

H4	<i>Having positive environmental beliefs significantly increases the sustainable consumption behaviour of the Dutch Generation Z.</i>	Accepted
H5	<i>Having positive environmental beliefs significantly increases the WTP of the Dutch Generation Z for sustainable sodas.</i>	Accepted

In Table 5.1, it is presented which hypotheses are accepted and rejected in light of the findings. With the help of this information, the main research question “Do environmental beliefs and the level of education significantly affect the willingness to pay of the Dutch Generation Z?” can be answered. Because the level of education has a negative but insignificant effect on the WTP of the Dutch Generation Z and having positive environmental beliefs significantly increases the WTP of the Dutch Generation Z, it leads to the conclusion that solely environmental beliefs have a significant effect on the willingness to pay of the Dutch Generation Z.

5.2. Recommendations

5.2.1. Recommendations for future research

After having conducted this research, some recommendations for future research can be made. First of all, it might be beneficial to look into the willingness to pay for sustainable soda of other Generations, such as Generation Y, as this generation inclines sustainable consumption (Azami et al., 2018). By doing this, a more complete view will be created on the WTP for sustainable soda, which is beneficial for soft drink producers, as they know who they need to focus on regarding their marketing strategies.

Furthermore, it might be useful to increase the sample size in future research. The sample size of this thesis was too small, which will be discussed in more detail in section 5.3 of this thesis. Having a larger sample size could improve the validity and reliability of this research, as some groups are possibly less under or overrepresented.

Moreover, it is recommended to look at the fifteen statements with which the environmental beliefs of the respondents were tested. Some of the respondents gave feedback on the survey and said that they struggled with answering the statements, as some of the vocabulary was difficult for them. The struggle with the statements could have resulted in a non-response bias, as people stopped filling in the survey. Thus, the statements might have to be made easier to understand to reach more respondents and prevent a non-response bias.

A last recommendation is to conduct a different type of research. For this thesis, a quantitative research method was chosen, a survey. However, conducting an experiment where the respondents have to pay their stated WTP, to see if they will also buy the product. Currently, only the stated WTP is known and not the real purchasing behaviour, which is valuable information for sustainable soda producers.

5.2.2. Recommendations for sustainable soda producers

Besides recommendations for future research, there are some recommendations for the producers of sustainable soda, such as Lemonaid.

First of all, companies like Lemonaid should try and target Generation Z more, as they state that they are willing to pay extra for sustainable soda. The respondents of the survey stated that their WTP was €1.26 on average for a bottle of sustainable soda of 250 to 330 ml, so their price should be around that price. They could also try and convince the 34.33% which was not willing to pay for sustainable Coca-Cola of the advantages that it brings. Moreover, sustainable soda producers must not just solely focus on Generation Z, but also on other Generations. It might be beneficial for them to do research themselves on other Generations and countries to see on whom they should focus.

Furthermore, there is a marketing mix element that sustainable soda producers should focus on according to the data. As can be seen from Figure 4.2, the quality of the product is what influences the willingness to pay for sustainable soda the most, followed by the price of the product. What they should focus the least on is advertisements for their products.

5.3. Limitations

There are some limitations to this research. The first limitation was the sample size of the survey. The sample size was too small, which resulted in some problems with the statistical procedures. Furthermore, the Dutch Generation Z was not fully represented in this survey looking at the provinces and income groups. As can be seen in Table 7.4, no respondent lives in the province of Friesland. Besides this, most of the respondents come either from Noord-Brabant or Zuid-Holland, because of which one could suggest that the people from these provinces are overrepresented. In addition, some age groups were underrepresented in the sample. Just 5.5% of the sample is between the ages 25 and 27, whilst 34% of the sample is 21 years old. That the sample is not fully representative of Dutch Generation Z can be explained by the non-probability sampling method that was used for this research. As the survey was distributed through the authors' personal network, not the whole Dutch Generation Z could be reached. A disadvantage of the sampling method was a bias that can occur with this type of data collection, namely

the non-response bias. This bias occurs when the respondent decides not to fill in the survey or stops whilst filling in the survey. This bias resulted in some struggles with meeting the preferred sampling size.

Secondly, this research might have been too focused on a single Generation. Since there has not been any previous research on the WTP for sustainable sodas, it might have been beneficial to look at all the Generations, and not just focus on Generation Z. It might have given a more complete look at people their view on sustainable sodas, which could help sustainable soda producers with their pricing.

Lastly, the WTP of this research is the respondent's stated WTP, not their 'real' WTP. As respondents might be influenced by their norms, values, or social pressure, their stated WTP might not align with their true WTP. One way to solve this could be by experimenting to see their real WTP. Furthermore, the respondents could say that they are willing (and going) to pay for sustainable soda, but in the end, they don't buy it. Therefore, the results of the statistical tests might not always be true in real life, whilst they are on paper. This is something one must keep in mind.

Chapter 6: References

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Chapter 7: Appendix

Appendix A- Survey

Dear respondent,

Welcome to the survey for my Bachelors Thesis for the study Economics and Business Economics at the Erasmus University Rotterdam. My name is Carlijn Michielsen and my thesis concerns the influence of environmental beliefs and the level of education on the willingness to pay of the Dutch Generation Z for sustainable soft drinks.

Sustainable soft drinks are soft drinks that are sustainably produced. This entails “the creation of goods and services using processes and systems that are non-polluting; conserving of energy and natural resources; economically viable; safe and healthful for employees, communities and consumers; and socially and creatively rewarding for all working people” (LCSP,1998).

This survey consists of questions and statements concerning sustainable soft drinks. It will take about 5 minutes to fill in this survey. The data that is acquired through this research will solely be used for this research. Your data will be anonymized, and it will be shared with no one. Moreover, after this research, your data will be deleted.

The questions and statements ought to be filled in truthfully. For the statements, choose which option is most applicable to you.

In case of questions or complaints, you can contact me through the following email address: 564615cm@eur.nl

Thank you for completing this survey!

Kindest regards,

Carlijn Michielsen

The first part of this survey will consist of 15 statements concerning environmental beliefs. For each statement, you must indicate to what extent you agree/disagree with the statement.

Statement	Answer possibilities
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We are approaching the limit of the number of people the Earth can support	Completely agree/ Neutral/ Completely disagree	Agree/ Somewhat Disagree/ Disagree/	Somewhat Agree/ Disagree/ Disagree/
Humans have the right to modify the natural environment to suit their needs.	Completely agree/ Neutral/ Completely disagree	Agree/ Somewhat Disagree/ Disagree/	Somewhat Agree/ Disagree/ Disagree/
When humans interfere with nature it often produces disastrous consequences.	Completely agree/ Neutral/ Completely disagree	Agree/ Somewhat Disagree/ Disagree/	Somewhat Agree/ Disagree/ Disagree/
Human ingenuity will insure that we do not make the Earth unliveable.	Completely agree/ Neutral/ Completely disagree	Agree/ Somewhat Disagree/ Disagree/	Somewhat Agree/ Disagree/ Disagree/
Humans are seriously abusing the environment.	Completely agree/ Neutral/ Completely disagree	Agree/ Somewhat Disagree/ Disagree/	Somewhat Agree/ Disagree/ Disagree/
The Earth has plenty of natural resources if we just learn how to develop them.	Completely agree/ Neutral/ Completely disagree	Agree/ Somewhat Disagree/ Disagree/	Somewhat Agree/ Disagree/ Disagree/
Sometimes people don't pay attention when filling in a survey. Choose Completely disagree.	Completely agree/ Neutral/ Completely disagree	Agree/ Somewhat Disagree/ Disagree/	Somewhat Agree/ Disagree/ Disagree/
Plants and animals have as much rights as humans to exist.	Completely agree/ Neutral/ Completely disagree	Agree/ Somewhat Disagree/ Disagree/	Somewhat Agree/ Disagree/ Disagree/
The balance of nature is strong enough to cope with the impacts of modern industrial nations.	Completely agree/ Neutral/ Completely disagree	Agree/ Somewhat Disagree/ Disagree/	Somewhat Agree/ Disagree/ Disagree/

Despite our special abilities, humans are still subject to the laws of nature.	Completely agree/ Neutral/ Completely disagree	Agree/ Somewhat Disagree/	Somewhat Disagree/ Disagree/	Agree/ Disagree/
The so-called "Ecological crisis" facing humankind has been greatly exaggerated.	Completely agree/ Neutral/ Completely disagree	Agree/ Somewhat Disagree/	Somewhat Disagree/ Disagree/	Agree/ Disagree/
The Earth is like a spaceship with very limited room and resources.	Completely agree/ Neutral/ Completely disagree	Agree/ Somewhat Disagree/	Somewhat Disagree/ Disagree/	Agree/ Disagree/
Humans were meant to rule over the rest of nature.	Completely agree/ Neutral/ Completely disagree	Agree/ Somewhat Disagree/	Somewhat Disagree/ Disagree/	Agree/ Disagree/
The balance of nature is very delicate and easily upset.	Completely agree/ Neutral/ Completely disagree	Agree/ Somewhat Disagree/	Somewhat Disagree/ Disagree/	Agree/ Disagree/
Humans will eventually learn enough about how nature works to be able to control it.	Completely agree/ Neutral/ Completely disagree	Agree/ Somewhat Disagree/	Somewhat Disagree/ Disagree/	Agree/ Disagree/
If things continue on their present course, we will soon experience a major ecological catastrophe	Completely agree/ Neutral/ Completely disagree	Agree/ Somewhat Disagree/	Somewhat Disagree/ Disagree/	Agree/ Disagree/

In the second part of this survey, your soft drink consumption will be asked through questions and statements.

Question	Possible answer
----------	-----------------

How often do you drink a glass of soda per week?	0 times per week/ 1-2 times per week/ 3-4 times per week/ 5 times or more
How much are you willing to pay on average for a bottle of soft drink of 250 ml to 330 ml in the supermarket? (In euros)	0.50/ 0.75/ 1.00/ 1.25/ 1.50/ 1.75/ 2.00
I buy sustainable products in the supermarket.	Seldom/ Sometimes / Often/ Almost always
Are you familiar with sustainable sodas, such as Lemonaid, Charitea, or Charlie's?	Yes, I am familiar with these brands/ I have heard about them/ Never heard of them
I am willing to pay more for sustainable sodas compared to regular sodas.	Completely agree/ Agree/ Somewhat Agree/ Neutral/ Somewhat Disagree/ Disagree/ Completely disagree

In the third part of this survey questions will be asked about your willingness to pay.

Question	Possible answer
Rank the following factors by the degree of influence on your willingness to pay for a sustainable soda (From high to low influence.)	Price product/ Quality products/ Sustainability labels/ Brand of the product/ Packaging of product/ Place of consumption / Advertisements
Are you willing to pay the following amount of money for a sustainable soda (250-330 ml)?	Yes/ No
Options: 0.50/ 0.75/ 1.00/ 1.25/ 1.50/ 1.75/ 2.00	
Looking back at the previous question, how much are you willing to pay maximally for a bottle of sustainable soda?	0.25/0.50/0.75/1.00/1.25/1.50/.175

In the following part of the survey, you will be asked about your environmental awareness and its influence on your willingness to pay.

Question	Possible answer
Link the following CO ₂ emissions (in grams) to the right product. There is one option per product. Options: 5840/2790/800/232/170/130	1 bottle of beer (330 ml)/ 1 glass of wine (150 ml)/ 1 can of Coca-Cola (330 ml)/ 1 glass of milk (250 ml)/ 100 grams of cheese/ 100 grams of lamb

The consumption of one can of Coca-Cola emits 0.17 kg of CO ₂ , which is the same as driving your car for 0.9 km. How much are you willing to pay more for a can of Coca-Cola (€0.70) if it were produced more sustainably?	Own choice/ I am not willing to pay more for a sustainable Coca-Cola.
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In the last part of this survey, your demographic information will be asked, such as gender or income.

Question	Possible answer
What is your gender?	Male/ Female/ Other
How old are you?	18/ 19/ 20/ 21/ 22/ 23/ 24/ 25/ 26/27
In which province do you live?	Noord-Brabant/ Utrecht/ Groningen/ Flevoland/ Gelderland/ Overijssel/ Zeeland/ Limburg/ Zuid- Holland/ Noord- Holland/ Friesland/ Drenthe
What is your monthly income (in euros)?	0-800/ 800-1700/ 1700-2500/ 2500-3300/ 3300- 4200/ 4200-8300/ 8300-16700/ 16700 or higher/ I would rather not say
What is your highest level of education?	Primary school/ Secondary school/ Secondary vocational education/ Higher Vocational Education/Bachelor's Degree/ Pre-Master/ Master's Degree/ PhD

Appendix B- Tables and Figures

Table 7.1 Descriptive statistics of Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Other	3	1,5	1,5	1,5
	Male	94	46,8	46,8	48,3
	Female	104	51,7	51,7	100,0
	Total	201	100,0	100,0	

Table 7.2 Descriptive statistics of Level of Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Higher Vocational Education	33	16,4	16,4	16,4
	Master's degree	5	2,5	2,5	18,9
	Secondary Vocational Education	23	11,4	11,4	30,3
	Pre-Master	6	3,0	3,0	33,3
	Secondary school	85	42,3	42,3	75,6
	Bachelor's degree	49	24,4	24,4	100,0
	Total	201	100,0	100,0	

Table 7.3 Descriptive statistics of Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18	7	3,5	3,5	3,5
	19	15	7,5	7,5	10,9
	20	29	14,4	14,4	25,4
	21	69	34,3	34,3	59,7
	22	43	21,4	21,4	81,1
	23	16	8,0	8,0	89,1
	24	11	5,5	5,5	94,5
	25	4	2,0	2,0	96,5
	26	3	1,5	1,5	98,0
	27	4	2,0	2,0	100,0
	Total	201	100,0	100,0	

Table 7.4 Descriptive statistics of Province

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Drenthe	2	1,0	1,0	1,0
	Flevoland	1	,5	,5	1,5
	Gelderland	23	11,4	11,4	12,9
	Groningen	5	2,5	2,5	15,4
	Limburg	3	1,5	1,5	16,9
	Noord-Brabant	71	35,3	35,3	52,2
	Noord-Holland	7	3,5	3,5	55,7
	Overijssel	6	3,0	3,0	58,7
	Utrecht	6	3,0	3,0	61,7
	Zeeland	3	1,5	1,5	63,2
	Zuid-Holland	74	36,8	36,8	100,0
	Total	201	100,0	100,0	

Table 7.5 Descriptive statistics of Monthly Income

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-800	100	49,8	49,8	49,8
	1700- 2500	29	14,4	14,4	64,2
	2500-3300	16	8,0	8,0	72,1
	3300-4200	2	1,0	1,0	73,1
	4200-8300	1	,5	,5	73,6
	800-1700	49	24,4	24,4	98,0
	I would rather not say	4	2,0	2,0	100,0
	Total	201	100,0	100,0	

Table 7.6 Descriptive statistic of Sustainable Consumption

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Almost always	2	1,0	1,0	1,0
	Almost never	41	20,4	20,4	21,4
	Sometimes	95	47,3	47,3	68,7
	Often	21	10,4	10,4	79,1
	Seldom	42	20,9	20,9	100,0
	Total	201	100,0	100,0	

Regarding the variable Sustainable consumption, it is striking to see that the options sometimes (47.3%), seldom (20.9%), and almost never (20.4%) are chosen most when the respondents are asked if they buy sustainable products at the supermarket. This means that the sample does not consume that sustainably.

Table 7.7 Willingness to pay more for sustainable Coca-Cola

		Frequency	Valid Percent	Cumulative Percent
Valid	\$0.05	6	4,5	4,5
	\$0.10	14	10,6	15,2
	\$0.15	12	9,1	24,2
	\$0.20	19	14,4	38,6
	\$0.21	1	,8	39,4
	\$0.25	6	4,5	43,9
	\$0.30	33	25,0	68,9
	\$0.35	3	2,3	71,2
	\$0.40	1	,8	72,0
	\$0.50	22	16,7	88,6
	\$0.80	3	2,3	90,9
	\$0.85	1	,8	91,7
	\$0.90	1	,8	92,4
	\$1.00	5	3,8	96,2
	\$1.10	1	,8	97,0
	\$1.30	1	,8	97,7
	\$1.50	1	,8	98,5
	\$2.00	2	1,5	100,0
	Total		132	100,0

Table 7.8 Correlation between Age and WTP

		Age	WTP
Age	Pearson Correlation	1	-,027
	Sig. (2-tailed)		,703
	N	201	201
WTP	Pearson Correlation	-,027	1
	Sig. (2-tailed)	,703	
	N	201	201

Table 7.9 Correlation between Environmental beliefs and WTP

		Environmental beliefs	WTP
Environmental beliefs	Pearson Correlation	1	,221**
	Sig. (2-tailed)		,002
	N	201	201
WTP	Pearson Correlation	,221**	1
	Sig. (2-tailed)	,002	
	N	201	201

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

Table 7.10 Correlation between Level of Education and WTP

		Level of Education	WTP
Level of Education	Pearson Correlation	1	,065
	Sig. (2-tailed)		,359
	N	201	201
WTP	Pearson Correlation	,065	1
	Sig. (2-tailed)	,359	
	N	201	201

Table 7.11 Correlation between Environmental beliefs and Sustainable Consumption

		Environmental beliefs	Sustainable consumption
Environmental beliefs	Pearson Correlation	1	,230**
	Sig. (2-tailed)		,001
	N	201	201
Sustainable consumption	Pearson Correlation	,230**	1
	Sig. (2-tailed)	,001	
	N	201	201

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

Table 7.12 Results Test of Parallel lines Ordinal logistic regression WTP and Environmental Beliefs

Test of Parallel Lines^a

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis	618,723			
General	558,229 ^b	60,494 ^c	100	,999

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

- a. Link function: Logit.
- b. The log-likelihood value cannot be further increased after maximum number of step-halving.
- c. The Chi-Square statistic is computed based on the log-likelihood value of the last iteration of the general model. Validity of the test is uncertain.

Table 7.13 Parameter estimates of Ordinal logistic regression WTP and Environmental Beliefs

		Parameter Estimates					95% Confidence Interval	
		Estimate	Std. Error	Wald	df	Sig.	Lower Bound	Upper Bound
Threshold	WTP =0.25	-,299	2,739	,012	1	,913	-5,668	5,070
	WTP =0.50	1,332	2,587	,265	1	,607	-3,739	6,403
	WTP =0.75	3,125	2,564	1,486	1	,223	-1,900	8,151
	WTP =1.00	4,764	2,575	3,421	1	,064	-,284	9,812
	WTP =1.25	5,831	2,585	5,087	1	,024	,764	10,899
	WTP =1.50	6,992	2,596	7,252	1	,007	1,903	12,080
Location	Environmental beliefs	,581	,235	6,115	1	,013	,120	1,041
	Age	,024	,084	,081	1	,776	-,141	,189
	Drenthe	-2,349	1,314	3,195	1	,074	-4,925	,227
	Flevoland	-,334	1,897	,031	1	,860	-4,052	3,384
	Gelderland	-,169	,445	,144	1	,705	-1,040	,703
	Groningen	,603	,838	,518	1	,472	-1,039	2,245
	Limburg	,046	1,110	,002	1	,967	-2,129	2,222
	Noord-Brabant	,258	,329	,615	1	,433	-,387	,903
	Noord-Holland	-,227	,716	,101	1	,751	-1,630	1,175
	Overijssel	-,364	,774	,221	1	,638	-1,880	1,153
	Utrecht	-,058	,837	,005	1	,945	-1,698	1,583
	Zeeland	,145	1,070	,018	1	,892	-1,952	2,242
	Zuid-Holland	0 ^a	.	.	0	.	.	.
	Other	1,037	1,324	,614	1	,433	-1,557	3,631
	Male	-,077	,282	,074	1	,786	-,629	,475
	Female	0 ^a	.	.	0	.	.	.
	0-800	1,877	1,002	3,509	1	,061	-,087	3,842
	1700- 2500	1,570	1,021	2,365	1	,124	-,431	3,571
	2500-3300	2,000	1,068	3,507	1	,061	-,093	4,094
	3300-4200	22,836	,000	.	1	.	22,836	22,836
4200-8300	-,671	2,089	,103	1	,748	-4,765	3,423	
800-1700	2,342	1,022	5,249	1	,022	,339	4,346	
I'd rather not say	0 ^a	.	.	0	.	.	.	

Link function: Logit.

a. This parameter is set to zero because it is redundant.

Note: In this ordinal logistic regression, the dependent variable is WTP, and the independent variable is Environmental Beliefs. The control variables are monthly income, gender, age, and province. Province, gender, and monthly income are dummy variables and their reference categories are Zuid-Holland, Female and I'd rather not say respectively. The significance level is 0.05.

Table 7.14 Results Pseudo R-square Ordinal logistic regression WTP and Environmental Beliefs

Pseudo R-Square	
Cox and Snell	,146
Nagelkerke	,151
McFadden	,048

Link function: Logit.

Table 7.15 Results Test of Parallel lines Ordinal logistic regression WTP and Age

Test of Parallel Lines ^a				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis	144,814			
General	129,180	15,634	5	,008

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

a. Link function: Logit.

Table 7.16 Parameter estimates of Ordinal logistic regression WTP and Level of Education

Parameter Estimates								
		Estimate	Std. Error	Wald	df	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Threshold	WTP = 0.25	-5,660	1,057	28,677	1	<,001	-7,732	-3,589
	WTP = 0.50	-4,026	,557	52,142	1	<,001	-5,118	-2,933
	WTP = 0.75	-2,318	,383	36,629	1	<,001	-3,068	-1,567
	WTP = 1.00	-,778	,340	5,239	1	,022	-1,444	-,112
	WTP = 1.25	,231	,336	,475	1	,491	-,426	,889
	WTP = 1.50	1,331	,353	14,237	1	<,001	,640	2,023
Location	Drenthe	-2,037	1,304	2,439	1	,118	-4,593	,520
	Flevoland	,348	1,797	,038	1	,846	-3,175	3,871
	Gelderland	-,073	,441	,027	1	,868	-,938	,792
	Groningen	,573	,835	,470	1	,493	-1,064	2,210
	Limburg	-,434	1,060	,167	1	,683	-2,512	1,645
	Noord-Brabant	,250	,328	,580	1	,446	-,393	,892
	Noord-Holland	-,164	,712	,053	1	,818	-1,559	1,231
	Overijssel	-,202	,800	,064	1	,801	-1,770	1,366
	Utrecht	,098	,803	,015	1	,903	-1,477	1,672
	Zeeland	,478	1,058	,204	1	,652	-1,597	2,552
	Zuid-Holland	0 ^a	.	.	0	.	.	.
	Higher Vocational Education	,024	,444	,003	1	,957	-,846	,893
	Master's degree	-,495	,860	,331	1	,565	-2,181	1,191
	Secondary Vocational Education	-,490	,496	,975	1	,323	-1,462	,483
	Pre-Master	,074	,776	,009	1	,924	-1,447	1,594
	Secondary School	-,302	,337	,800	1	,371	-,963	,360
	Bachelor's degree	0 ^a	.	.	0	.	.	.
Other	1,871	1,213	2,380	1	,123	-,506	4,249	
Male	-,320	,264	1,464	1	,226	-,837	,198	
Female	0 ^a	.	.	0	.	.	.	

Link function: Logit.

a. This parameter is set to zero because it is redundant.

Note: In this ordinal logistic regression, the dependent variable is WTP, and the independent variable is the level of education. The control variables are province and gender, which are both dummy variables. Their reference categories are Zuid-Holland and Female respectively. The significance level is 0.05.

Table 7.17 Results Test of Parallel lines Ordinal logistic regression WTP and Level of Education

Test of Parallel Lines^a				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis	319,996			
General	267,243 ^b	52,753 ^c	85	,998

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

- a. Link function: Logit.
- b. The log-likelihood value cannot be further increased after maximum number of step-halving.
- c. The Chi-Square statistic is computed based on the log-likelihood value of the last iteration of the general model. Validity of the test is uncertain.

Table 7.18 Results Pseudo R-square Ordinal logistic regression WTP and Level of Education

Pseudo R-Square

Cox and Snell	,059
Nagelkerke	,061
McFadden	,018

Link function: Logit.

Table 7.19 Results Test of Parallel lines Ordinal logistic regression Environmental Beliefs and Sustainable Consumption

Test of Parallel Lines^a				
Model	-2 Log Likelihood	Chi-Square	df	Sig.
Null Hypothesis	271,421			
General	243,175 ^b	28,246 ^c	3	<,001

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

- a. Link function: Logit.
- b. Maximum number of iterations were exceeded, and the log-likelihood value and/or the parameter estimates cannot converge.
- c. The Chi-Square statistic is computed based on the log-likelihood value of the last iteration of the general model. Validity of the test is uncertain.

