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Finding the optimal customer segment for zero-waste supermarkets

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Contents

Executive summary

The use of plastic packaging is causing environmental harm due to the pollutive nature of the production process. The food industry holds a share of 40% of the plastic packaging industry and every year the use of plastic packaging grows with 100 million pieces per year. A reduction in the use of plastic food packaging can be realised by growing the market share of zero-waste supermarkets. Zero-waste stores are grocery stores that sell ecological products that are packaging-free or use limited packaging and fully exclude plastic packaging. At this moment, zero-waste supermarkets are in the far minority when it comes to market share in the market for groceries in the Netherlands. With this research, we strive to find the optimal consumer segment that the zero-waste store should focus its marketing on to increase its market share. Therefore, the research question is:

What consumer segment should zero waste stores focus on to increase their market share in the market for groceries in The Netherlands?

With the use of a survey among supermarket shoppers in The Netherlands, we have segmented the market for groceries into two segments: Sustainable Students & Convenient Workers. Segmentation is done using two-step cluster analysis. The Sustainable Students are consumers who are young and do not have a lot of money to spend. They care about the environment and are willing to travel for packaging-free products. The Convenient Workers have more money to spend on groceries but are less willing to encounter inconvenience.

To better understand the position of zero-waste stores in the market, we have conducted a SWOT analysis. A key understanding is that zero-waste stores fit the opportunity in the supermarket industry of increased demand for sustainable products but bring along more inconvenience and higher prices than regular supermarkets.

Both segments have characteristics that fit with the strengths and weaknesses of the zero-waste store and clash with them. Therefore, the conclusion was drawn that the best consumer segment depends on the distribution strategy of the store. In case it is a physical store, the business can best focus on the Sustainable Students. In case the zero-waste store delivers their products at home, the best segment they can focus on is the Convenient Workers.

Chapter 1: Introduction

If you are not part of the small percentage of consumers that already use zero-waste stores, then you are likely to have plastic wrapped around almost every piece of food in your home. Plastic packaging has been a popular way to keep food fresh for a long time, but currently, in The Netherlands, we are recycling less than 50% of all plastic waste (Kuijpers, 2021). Not only does the production of plastic release CO_2 into the atmosphere, but so does the recycling of plastic. According to the EPA (United States Environmental Protection Agency), every kilogram of polyethene (PET) produced results in one ounce of carbon dioxide released into the atmosphere (Staley, 2009). Recycling is also not a sustainable solution to reduce CO_2 emissions, since the recycling process can be economically unattractive and the process causes recycled plastic to be of less quality than new, unrecycled plastic (Ceurstemont, 2020).

Every year, the average Dutch consumer uses 4 pieces of plastic packaging per day, which amounts to 26 billion pieces of plastic for all Dutch consumers per year (NOS, 2019). This type of packaging is growing each year along with a growing population and leads to an absolute increase of 100 million pieces of packaging each year. The food industry has a significant share of total plastic use, around 40% (Duurzaam-ondernemen.nl, 2019). To stop the growth in the use of plastic food packaging, only a reduction of 5 pieces of packaging per person per year is necessary. This sounds easy, but since almost every item in a grocery store is wrapped in plastic, this can be harder than it sounds.

This is where a zero-waste grocery store can be a solution. In this thesis we define zero-waste stores, also referred to as bulk stores, as grocery stores that sell ecological products that are packaging-free or use limited packaging and fully exclude plastic packaging. This means that the customer is expected to bring their reusable containers or pots, that they fill in-store. Another format of zero-waste stores is online shopping. The customer will order products, which are delivered in a glass jar. The consumer pays a deposit for the jar, which they will get back when they hand in their jars during the next delivery. This way, the plastic packaging is completely left out. These types of stores already exist in The Netherlands but on a small scale. For example, in Rotterdam, there are 4 zero-waste supermarkets versus 126 traditional supermarkets that use packaging (Alle supermarkten in Rotterdam, 2022). Based on these statistics, it seems like zero-waste stores are not yet widely used by consumers.

To summarize, we can say that research regarding an optimal customer segment of zero-waste stores is relevant since the use of plastic is growing each year, plastic harms the environment and the number of zero-waste stores is still negligible in comparison to general supermarkets.

In this research, we will focus on finding the optimal customer segment zero-waste supermarkets can focus on to increase their market share. This leads us to the following research question:

What consumer segment should zero waste stores focus on to increase their market share in the market for groceries in The Netherlands?

This leads us to the following sub-questions:

1. *What segments exist in the market of groceries and how can they be described?*

2. *What are the opportunities and threats in the supermarket industry?*

3. *What are the strength and weaknesses of the zero-waste supermarket?*

To find the optimal consumer segment, we first need to understand which segments there are in the market for groceries. This is the purpose of sub-question 1. Furthermore, we need an in depth understanding of the industry the zero-waste store operates in, to choose the consumer segment that best fits the business model. To achieve this goal, sub-question 2 and 3 are answered. The opportunities and threats in the supermarket industry will indicate how the zero-waste store can fit into this market. Once we know the opportunities and threats of the industry, we can understand what the strengths and weaknesses of the zero-waste store are.

Chapter 2: Theoretical Framework

To conduct this research, we need to establish general concepts that relate to the problem we are developing a solution. Concepts that are relevant include but are not limited to: 'zero waste shopping', 'consumer behaviour and sustainability, 'the plastic packaging industry' and 'business models'. These concepts will be discussed in the following paragraphs.

2.1 Zero waste shopping

In previous research regarding the concept of zero waste, obstacles that prevent consumers from using these stores have already been found. Bulkeley et al. (2020) mention that zero waste is perceived, (and *is)* a more time-consuming way of doing groceries. It is inconvenient to bring your own jars, to find a zero-waste store and it is harder to find what you want in the store. Beitzen-Heineke et al. (2017) recognized more negative sides of zero-waste shopping: Since not every type of food is suitable to sell without plastic, the range of products will be limited in zero-waste stores. Secondly, the store format requires significant changes along the food supply chain. Beitzen-Heineke et al. (2017) suggest that to create a wider adoption of zero packaging, consumer behaviour needs to be influenced, suppliers need to be convinced to change their packaging practices and food logistics need to be less dependent on food packaging.

Apart from these negative sides, zero-waste shopping does have many benefits. In a literature review, Pietzsch et al. (2017) propose four main benefits of zero waste. These benefits are centred around the community, benefits for industries and stakeholders, environmental benefits, and economic benefits. Beitzen-Heineke et al. (2017) mentioned more benefits. These include, but are not limited to, zero-waste stores offering transparency and empowering customers; zero-waste stores reduce food waste in suppliers, logistics and consumers, the stores support local farmers and they provide social benefits, like a healthier diet.

2.2 Consumer behaviour

If we were to model consumer behaviour, we can use the model of Engel et al. (1968). The model consists of 5 stages: inputs, information processing, a decision process, the decision variables and external factors. It describes how at first, a need is recognized. Then, information is gathered about a solution for the problem, after which, all alternatives of the product are evaluated. After having chosen the product to buy, the product is evaluated, post-purchase. External variables like individual motives and social influence will influence the consumer's decision. The model is graphically shown in figure 1.

Figure 1

Graphical representation of Engel's model of the consumer decision-making process.

Source: (Professional Academy, 2021)

2.2.1 Consumer behaviour and sustainability

Green companies generally struggle with the 'intention-action gap' (White, Hardisty, & Habib, 2019). This means that many consumers – especially millennials – are willing to buy brands that are focused on purpose and sustainability, but never follow through with buying the product. In the work of White et al. (2019) five main actions have been discovered that companies should consider when they want to work on closing the 'intention-action gap'. These five points are: using social influence, helping consumers shape good habits; the fact that one implementation of sustainable behaviour might lead to a domino effect and lastly, using hope and pride to drive sustainable consumption.

Thøgersen (2021) found another issue in consumer behaviour regarding sustainability: consumers find it hard to estimate the carbon footprint that is associated with a product, and they have a hard time identifying the most impactful behavioural changes. Thøgersen suggests that better education is necessary to increase carbon numeracy, but it would be even better to start carbon labelling products.

2.2.2 Consumer behaviour and zero-waste

When we go deeper into different attitudes towards zero-waste stores specifically, we find that there are differences between generations. In the work of Topić (2019), attitudes were researched for generations X, Y and Z. The findings of the generations were as follows:

Generation X, the generation born between 1975 and 1985, find that supermarkets do too little to reduce plastic packaging. The generation tries to recycle, but they acknowledge knowing too little about the topic. They do agree that climate change and pollution are one of the most important issues nowadays. Lastly, generation X does not do a lot to reduce plastic waste. They feel like it is the job of companies to reduce waste, rather than consumers.

Generation Y, the generation born between 1985 and 2000, acknowledges sustainability issues as the most important issue of this moment as well. However, they mention that they feel powerless, and are not sure what they can do to help the planet. Furthermore, generation Y takes several measures to reduce its footprint, but when it comes to packaging, they do not tend to take any measures.

Generation Z, the generation born between 2000 and 2010, has the same attitude towards the most important issues of these days as generation Y. Generation Z feels the same feelings of powerlessness as generation Y does. This generation report trying to do more about reducing their plastic waste than generation Y and Z. Lastly, they as well think that it is more the responsibility of big companies to reduce plastic waste than it is the consumer's job.

2.3 The plastic packaging industry

The plastic packaging industry is worth 361.7 billion USD and is expected to grow 4.2% per year from 2021 to 2028 (Grand View Research, 2021-a). The industry faces many opportunities. Grand View Research names a few: the rise of e-commerce is leading to a higher demand for easy-to-use packaging. Another opportunity is the use of plastic in emerging countries. With economic growth, emerging countries are developing a more mature food industry, which can afford to use plastic packaging as their main packaging material.

The industry also faces several threats. Rise of biodegradable plastics and other alternative packaging materials, which are more environmentally friendly, are becoming a popular alternative to regular plastics (Grand View Research, 2021-b). This industry is growing faster than the regular plastic

packaging industry, namely by 9,7% per year. This growth is mainly driven by governments trying to reduce the use of single-use plastic and customers are willing to pay more for biodegradable plastics versus regular plastics.

Chapter 3: Methodology

3.1 Sub-question 1

What segments exist in the market of groceries and how can they be described?

Sub-question 1 strives to segment the grocery market and create different consumer groups, based on the theory of segmentation. To understand the differences between consumer groups, we need to analyse their buying behaviour. Behaviour can be analysed using quantitative methods. Therefore, this question will also be answered quantitatively.

To find an attractive customer segment, we need to gather data on the preferences for grocery shopping of the overall population that does their own groceries. Sub-question 1 will be answered through a survey that we will conduct among a sample of 200 supermarket consumers in The Netherlands. The reliability of the research would be higher if we had more responses, but due to time restrictions, 200 responses is chosen. Before the survey is sent out, we will test the questions on a small sample of 3 consumers.

Due to limited resources, we have chosen to conduct the survey online. Conducting the survey online increases the efficiency of the data-gathering process. In case more time and resources would have been available, it would be an attractive alternative to deduct the survey in a supermarket among shoppers. This would increase the reliability of the data.

Our sample will be approached through social media platforms, like Instagram, WhatsApp, and LinkedIn. These platforms are chosen due to efficiency reasons. By using the snowball effect, we can obtain many responses in a short amount of time. It is recognized that social media is selective and that spreading a survey through that platform will most likely lead to skewed results.

To segment our sample, we need information on several aspects of shopping for groceries. Therefore, in the survey, we will ask a question about current grocery shopping habits, what consumers find most important about grocery stores, attitudes towards sustainability and socio-demographic characteristics. Then, we will segment these groups to find the characteristics of each segment.

3.1.1 Data analysis

The relevant population of our research is everyone who does their own groceries in The Netherlands. To check the criteria for doing their own groceries, in the survey we will ask the participant whether they see themselves as someone who frequently does groceries. If 'no' is answered, the response will be removed from the dataset. The full survey can be found in Appendix A.

To demystify the consumer heterogeneity in our dataset, we need to segment the customers into groups with similar, attitudes and shopping behaviour. Creating segments allows us the describe different types of customers. Segmentation will be done in SPSS using the following clustering method: 'Two-Step cluster analysis'. Overall, 'K-Means cluster analysis' is a more popular method in economic research, but this method does not apply to categorical variables, which we will use in our segmentation analysis. This is because the k-means cluster analysis uses the distance between data points to evaluate the clusters. Categorical variables are discrete and therefore they do not have a natural origin (Kumar, 2021). Two-Step cluster analysis is a hybrid segmentation approach that determines the optimal number of clusters automatically, based on Schwarz's Bayesian Information Criterion (BIC) (Benassi et al, 2020).

We will segment the market based on the theory of segmentation. As stated before, that means that we can segment the market based on geographic, psychographic, demographic, or behavioural variables. We are interested in consumer behaviour. Since psychographic questions look at why consumers behave the way they do, these are the questions that will form the basis of our segmentation. Psychographic characteristics describe the way consumers look at certain ideas and concepts. It goes beyond the behavioural characteristics of consumers since psychographics are what goes on in the brain of the consumer before they behave the way they do.

First, all variables that investigate the psychographic characteristics of the consumer are included. This is because psychographic variables are the best at predicting future consumption behaviour since they answer the question 'Why do consumers behave the way they do?'. Questions 1a, 1b and 1c form the psychographic variables (Goyat, 2011).

In the work of Black & Cherrier (2010), they mention motives for anti-consumption. Anti-consumption is defined as: "resistance to, distaste of, or even resentment or rejection of consumption." (Zavestoski, 2002). Zero-waste stores are about the reduction of packaging and motives of anti-consumption can therefore be related to zero-waste shopping. The research argued that people are willing to consume less for environmental reasons if they are not limited to self-

interested notions such as independence, beauty, quality, or value for money. Therefore, we have added questions 2 and 3 to the segmentation variables.

As stated in the literature review, generations differ in their views opposing zero-waste stores. As certain generations are more likely to support and buy at zero-waste stores, question 4 is included in the segmentation variables. We added question 5 to the variables since zero-waste stores generally sell organic products, and they tend to be more expensive than regular products.

1. *To what extent do you agree with the following statements:*

   a. *I believe that climate change is the biggest issue the world has to deal with right now*

   b. *I believe that individuals can make a difference fighting climate change*

   c. *I would boycott a brand if they acted unethically*

2. *How much time are you willing to travel extra to a supermarket that sells packaging-free, organic products, versus a regular grocery store?*

3. *To what extent do you agree with the following statement? - I am willing to bring my own reusable containers when going grocery shopping, to reduce plastic waste.*

4. *What is your age?*

5. *What is your gross annual household income?*

The other variables that resulted from the survey will be used to help describe the different segments. These variables contain, among others, the geographical and demographic characteristics of the segments.

3.2 Sub-question 2

What are the opportunities and threats in the supermarket industry?

This sub-question and the following are closely linked. Together, they will form a SWOT analysis of the zero-waste store. This sub-question examines the opportunities and threats of the supermarket industry. This question is asked since it will allow us to make an educated guess on whether the future of the supermarket industry fits the concept of the zero-waste store. This sub-question is divided into two smaller questions:

a. What are the opportunities in the supermarket industry?

b. What are the threats in the supermarket industry?

Each of the two questions, as well as the next sub-questions, will be answered with the help of the 'Marketing Plan Worksheet' described in the work of Ferrel et al. (2021). This worksheet is a framework for conducting a strong SWOT analysis. The analysis is divided into 3 sections: 'internal analysis', 'customer analysis' and 'external analysis', each describing different forces influencing the strategy of a zero-waste store. After analysing the forces, we can create a list of the SWOT-attributes.

This question is answered conducting online desk research. This method is chosen since a lot of relevant data and articles can be found on the web.

3.3 sub-question 3

What are the strength and weaknesses of the zero-waste supermarket?

This sub-question will help us understand what exactly the strengths and weaknesses are of the business model of a zero-waste store. The question is divided into two smaller questions:

a. What are the strengths of a zero-waste supermarket?

b. What are the weaknesses of a zero-waste supermarket?

Like the previous sub-question, we will continue the use of the Marketing Plan Worksheet when answering the questions. After this analysis, the SWOT-properties of the zero-waste store and the industry will be listed and an optimal strategy for zero-waste stores will be described. Strengths and weaknesses are listed in comparison to competitors. We have selected regular, physical supermarkets in The Netherlands as direct competitors, since they make up the largest part of the market for groceries. Indirect competitors are flash delivery business and other businesses who home-deliver products. These companies are chosen since they offer groceries as well, but via a different distribution model as zero-waste stores do.

This question will be answered using online desk research as well. The reason this method is chosen is the same reason as with the previous sub-question. A great amount of data can be found online.

Chapter 4: Results

4.1 Sub-question 1

What segments exist in the market of groceries and how can they be described?

From our segmentation, we obtained two different segments in the market for groceries. They can be described as *Convenient Workers* and *Sustainable Students.* The average answers of the two groups to the questions in the survey can be found in Appendix B. In the following paragraphs, the key differences between the groups will be explained.

The segment Sustainable Students consists of more women than the Convenient Workers. The Sustainable Students are on average younger than 25 and are most often a student. This contrasts with the Convenient Workers who are around 30 years old and have a full- or part-time job. This means the Convenient Workers earn more but spend a smaller portion of their income on groceries than the Sustainable Students. Following this logic, they are likely to spend the same absolute amount of money on groceries, but for the Convenient Workers an absolute price increase would be less impactful than for the Sustainable Students.

Something that might be explained by the higher income of the Convenient Workers, is that they more often buy organic food and try and buy food without plastic packaging than the Sustainable Students. The Convenient Workers more often order groceries online at the supermarket than the Sustainable Students, who tend to go to the physical grocery store more often. When the Sustainable Students pick a grocery store they will go to, they most often look at the shortest distance to a store and the store that has the lowest prices. The Convenient Workers care about the distance as well but more often do they care about the assortment than they do about the supermarket that has the lowest prices. Lastly, the Sustainable Students seem to care more about the environment. They are less often omnivores than the Convenient Workers and when they are, they eliminate their meat intake for environmental reasons. The Convenient Workers more often believe that an individual can make a change in the battle against climate change, but the Sustainable Students find climate change more often the biggest issue in the world, at this moment.

4.2 Sub-question 2:

What are the opportunities and threats in the supermarket industry?

To analyse the opportunities and threats in the supermarket industry, and in the next paragraph the strengths and weaknesses of the zero-waste supermarket, we will present our findings according to the 'Marketing Plan Worksheet' described in the work of Ferrel et al. (2021).
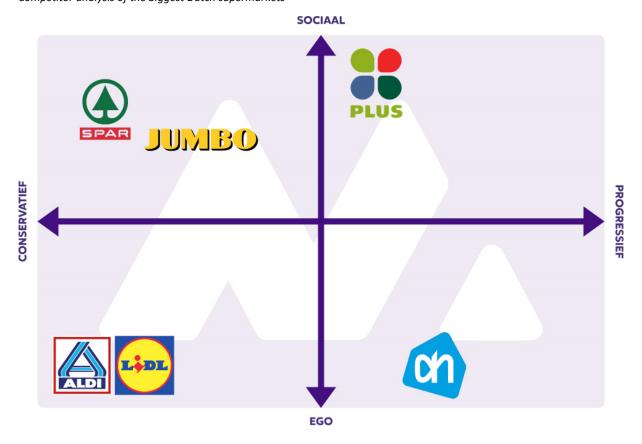
4.2.1 The external environment

We start with conducting research regarding the internal-, external- and customer environment of a zero-waste store. As a result of the research, we can then list the strengths, weaknesses, opportunities, and threats of the business. The internal environment and the customer environment examine the relevant aspects of the business that have to do with the strengths and weaknesses of a zero-waste store. The external environment focuses on the opportunities and threats in the supermarket industry. Therefore, we will start with the external environment for this subquestion. In sub-question 3, the other two environments are elaborated on.

The major competitors of the zero-waste stores are regular supermarkets. In The Netherlands, the stores with the biggest market share are Albert Heijn, Jumbo and Lidl (Schelfaut, 2020). Together, they make up 66.6% of the total market. Albert Heijn has been the supermarket with the largest market share from 2007 until 2017, but starting 2018, Albert Heijn has been losing market share to Jumbo. Jumbo is seen as a supermarket that will continue growing its market share in the future (Merkelijkheid, 2019).

Most supermarkets position themselves in a way that they attract a specific customer segment within the industry. Merkelijkheid (2019) created a competitor analysis of the Dutch supermarket industry in figure 2.

Figure 2

Competitor analysis of the biggest Dutch supermarkets

Note. The left side shows 'conservative', and the right side is 'progressive'. The top side shows 'social', bottom shows 'ego'.

Source: (Merkelijkheid, 2019)

This matrix shows how conservative/progressive a supermarket appears. It also shows if the supermarket positions itself as a store that is, in their eyes, the best store or if it focuses on offering the best customer service.

Recently, a new development has been happening in the market for groceries that can form a threat to regular supermarkets or could serve as an opportunity in case the supermarket would jump in on the development. At-home grocery delivery has become a service that customers are starting to value more and more. This development has been accelerated by Covid-19 measures, which increased the need for obtaining groceries without having to leave the house. In 2020, the national revenue obtained from at-home grocery delivery grew by 63% to €3.110 million. Almost 75% of this revenue came from supermarkets directly (FoodService Instituut, 2021). The concept of at-home grocery delivery has also translated into a zero-waste concept. The business model of the firm 'Pieter Pot' uses the idea of home delivery in combination with reusable glass jars to bring the zero-waste store to the customer's home, thus reducing the inconvenience that might come with it.

Within the development of at-home grocery delivery, another development has taken place over the last few years. The total revenue of flash delivery in 2021 was €184.4 million, whilst 2021 was the first year in which flash delivery entered the market in most cities in The Netherlands (Foodservice Instituut , 2022). Flash delivery lowers the threshold for consumers to buy groceries and as has become clear from the recent growth in the market, this is a growing need among consumers. Flash delivery has formed a serious threat to established supermarkets. In 2021, flash delivery only had a market share of 0.4% in the groceries industry, but during the same year, already 16% of all citizens in The Netherlands made use of the service at least once (Consultancy.nl, 2022; Loon, 2022). The reasons mentioned by consumers for using flash delivery are: convenience (mentioned by 50% of the customers), the fact that you do not have to leave the house (45%) and how quickly the service is (42%). Up until now, there has only been one established supermarket that has jumped onto this trend (Snelle Supers, 2023). Therefore, if this market keeps growing, it could form a serious threat to established supermarkets.

An opportunity for supermarkets is the increased demand for organic and eco-friendly products. From 2015 – 2019, the revenue of organic products has risen by 5% - 8% yearly (Wageningen University & Research, 2022). According to Voeding & Visie (2021), there a five main reasons for this growth. To summarize, farmers who cultivate organic crops can get financial support from the European Union, the price of organic food is lowering on average, more consumers are becoming vegetarian, and more consumers want to know what the heritage is of their food and the range of organic products is increasing.

In The Netherlands, the share of organic products is lower than 5%, which is lower than in various neighbouring countries of The Netherlands. In Germany, the share of organic products is 6,8%, in France 6% and in Austria and Sweden even 23,4% and 19,2%, respectively. Research by Bionext (2021), explains why this is the case. Expert Paul Moers explains that the Dutch as a society is focused on getting the lowest price for their products. Furthermore, he mentions that supermarkets stimulate this by advertising with lower prices in their marketing mix. To stimulate the growth of organic products more, Moers thinks that supermarkets should focus on their advertising more on their contribution to the planet. Thus, shifting the focus from pricing to sustainability in the marketing mix could be an opportunity for supermarkets to jump on the trend of a growing demand for organic products.

The findings above lead to the following opportunities and threats for the supermarket industry.

Opportunities:

1. Home-delivered groceries are a way for supermarkets to serve the consumer's need for convenience.

2. Supermarkets can focus more on selling organic products, to serve the upcoming demand for more sustainable groceries.

Threats:

1. Flash delivery is an upcoming competitor that has been able to greatly jump on consumers' need for convenience.

2. The industry is pressured to lower pricing whilst at the same time serving customers which organic and locally sourced products.

4.3 Sub-question 3

What are the strength and weaknesses of the zero-waste supermarket?

4.3.1 The internal environment

The marketing goals of a zero-waste store are to bring across the message that their products are better for the environment than products from the regular supermarket. They achieve this goal by profiling themselves as an environmentally friendly business that is doing good for the world. Through several advertising methods, such as social media advertisements they bring this message across to the customer.

The goals above correspond with the mission of a zero-waste store. It must be acknowledged that each zero-waste might be different in its goals and mission, but the organisation 'Zero Waste Nederland' summarizes the general goal of zero-waste as follows: 'Zero Waste Nederland stands for a world in which waste does not exist' (Zero Waste Nederland, 2022).

The marketing goal stated above is not only in line with the mission of Zero Waste Nederland but also with recent trends in the external and customer environment. In 2020, on average, 46% of Dutch citizens worry about the pollution of the environment (CBS, 2020). This could mean that customers are motivated to buy products that support the protection of the environment.

At this moment, there are significantly fewer zero-waste supermarkets in The Netherlands than there are regular supermarkets. To mention the comparison stated before, in Rotterdam there are 4 zero-waste stores versus 126 regular supermarkets. This means that there is a lot of market share to gain for zero-waste stores. There are many reasons that zero-waste stores are less popular than regular supermarkets. Most of these reasons lie in the distribution strategy of the firm and the pricing of the products. Since most products are not packaged at all, customers are expected to bring their own containers or jar. This can cause inconvenience and nudge customers towards regular, more accessible supermarkets. Pricing is also a barrier; most products sold by a zero-waste store are organic products, which tend to be more expensive. Even though the price gap between non-organic and organic products is decreasing, organic products are still on average 1,75 times as expensive as non-organic products (Consumentenbond, 2019). All this combined means that a customer will only shop at a zero-waste store when their motivation to buy ecologically friendly products is greater than the combined pain that comes from bringing their own packaging and paying a higher price for the products.

4.3.2 The customer environment

As mentioned in the paragraph above, the zero-waste stores' current customers are customers who are motivated to shop for packaging-free, ecological products. There may be several motivational factors driving this buying behaviour. The reasons found by Sun et al. (2021) are the feeling of moral obligations, green self-identity, environmental concern, and societal pressure. A possibility of increasing the market size of zero-waste stores could arise when they create a sense of community and identity connected to the brand and business concept.

According to CBS (2021), the following demographic groups in The Netherlands see climate change as a big issue: the highly educated, youngsters, women and people living in cities. This could imply that customers who fall into this category but are not yet shopping at zero-waste stores, can be seen as potential customers.

Zero-waste shopping is becoming exponentially more popular. A great part of the increase is caused by social media. Greenpeace (2020) mentioned that the number of times '#zerowaste' was used on Instagram doubled 6 times from December 2017 until March 2019.

To reduce the distribution pain of packaging-free products, the zero-waste store could think about selling its products online instead of in-store. At-home delivery could be exploited, which would reduce the inconvenience for customers. As mentioned before, in The Netherlands, one zero-waste store is already exploiting this concept: Pieter Pot. This store uses a deposit on all the pots

they deliver the products in. Once the customer has given their empty pots back to Pieter Pot during their new delivery, the deposit will be refunded.

Another possible downside for customers shopping here would be the limited number of products available. Zero-waste stores offer a significantly lower variety of products, especially processed foods that are hard to find in zero-waste stores. This suits the idea of selling healthy, ecological products, but it must be acknowledged that it causes potential customers to stay shopping at regular supermarkets.

A weakness of zero-waste supermarkets is their price elasticity. Due to inflation, in December 2022, the price of groceries increased by 14% on average (Clercq, 2023). Since zero-waste stores are already more expensive on average than regular supermarkets, a further price increase could drive consumers away from zero-waste supermarkets and cause them to shop at regular supermarkets instead. This is especially important since regular supermarkets are also increasing their organic and packaging-free assortment. For example, Albert Heijn has created a packaging-free assortment in a few of its XL stores. This includes around 70 different products, of which 55% are organic (Albert Heijn, 2022).

In terms of distribution, the zero-waste store might run into several issues. As mentioned before, Beitzen-Heineke et al. (2017) showed that removing packaging from products required distributors to develop new handling of products, thus inducing additional costs. Furthermore, consumers must get used to the shorter shelf life of products when they are not packaged, along with no use-by-dates. Lastly, the store will require more labour from staff in-store, since consumers might need more help buying the products.

The findings above lead to the following strengths and weaknesses of the zero-waste supermarket

Strengths:

1. The assortment of zero-waste stores fits into the increasing demand for organic products and the consumer's need to consume more sustainably.

2. The concept of a zero-waste store can easily be translated into an at-home groceries delivery service, which is a growing need among consumers. Besides the general convenience of having groceries delivered at home, the additional benefit is that this business model takes away the inconvenience of bringing containers to the store when going grocery shopping.

Weaknesses:

1. In general, the zero-waste store has a small assortment than regular supermarkets, due to the restrictions that come with only selling products without packaging.

2. Since the zero-waste store sells organic products, the average price of grocery shopping at a zero-waste store is higher than at a regular supermarket.

3. For a zero-waste store, it might be harder to find a distributor that has packaging-free products available.

4. Since zero-waste stores mostly are only available in urban areas, consumers who do have a need to shop packaging free but live in a rural area might not be able to get to a store.

5. The inconvenience of shopping at a zero-waste store is high. The store depends on customers who are willing to bring their own containers to the store.

Chapter 5: Conclusion & Discussion

5.1 Conclusion

As a conclusion to this research, we will answer the research question by choosing the right customer segment that fits within the strengths and weaknesses of the zero-waste store and the opportunities and threats of the supermarket industry. The research question is:

What consumer segment should zero waste stores focus on to increase their market share in the market for groceries in The Netherlands?

We have found two consumer segments: the Sustainable Students and the Convenient Workers. Both groups have characteristics that fit within the concept of a zero-waste store, and both have characteristics that clash with the store.

The Sustainable Students are, compared to the Convenient Workers, more willing to bring their own containers and they live in urban areas. This makes the weaknesses of the zero-waste store less relevant for this consumer segment. Furthermore, they are more often vegetarian than the Convenient Workers. A downside is that the Sustainable Students often have less money to spend on groceries than the Convenient Workers. This makes them more susceptible to moving to regular supermarkets in times of price increases.

The Convenient Workers earn more on average, meaning that when they are loyal to the products of a zero-waste store, they are less likely to be driven away by price increases. Next to that, they fit within the strengths of a zero-waste store since they already more often buy organic food and products without plastic packaging. This store does clash more with the inconvenience that comes from shopping with zero waste. They are less often willing to bring their own containers and jars to the supermarket. Next to that, they also order more often their groceries online and live in rural areas than the Sustainable Students.

The findings above bring us to the following conclusion. The segment the zero-waste store can best focus on depends on its distribution strategy. If the zero-waste store is a physical store, it can best focus on the segment Sustainable Students. This suits the fact that the Sustainable Students live in urban areas and do not mind travelling a bit further to the supermarket. Also, they care less about the inconvenience that shopping zero-waste brings along since they are more willing to bring their own containers. In the case the zero-waste supermarket home-delivers its products, it can best focus on the other segment: the Convenient Workers. This segment buys organic products more often and has more money to spend on groceries than the Sustainable Students. This segment is

more suitable for home delivery since they are less willing to bring their own containers than the other segment. Furthermore, home delivery makes zero-waste shopping more accessible for this segment since they more often live in rural areas. When a zero-waste store opens, this can be considered. Depending on where the customers live that the store wants to serve, they can alter their distribution strategy. If it opens in an urban area, with many you residents, a physical store can be attractive. If they open in a more rural or sub-urban area, with more families than younger people, choosing a delivery distribution strategy might be more fitting.

5.2 Discussion

It is important to note that this research faced several limitations. First, the sample size was limited due to limitations in time and resources. We got 231 respondents to our survey, but several of these respondents had to be removed from the data since their response was either unfinished or they did not comply with the requirement of living in The Netherlands or most often doing their own groceries. Based on an estimated population of 8.000.000 people, a confidence interval of 95% and a margin of error of 5%, a sample size of 385 would be required. Therefore, the sample size is a significant limitation of this research.

Furthermore, there are limitations to the Two-Step clustering method. First of all, it assumes that data is linear, which is not always the case. Next to that, it is sensitive to the presence of outliers or noise in the data. Therefore, it is advisable to conduct this research again, on a larger scale, possibly using different clustering methods when better suited for that type of data.

Overall, our study provides new insights into the market strategy of zero-waste supermarkets. Since environmental issues are growing, zero-waste stores can help fight pollution coming from food consumption. Improving the marketing strategy of zero-waste stores can help increase their market share and therefore reduce food packaging. To deeper understand how zero-waste stores can increase their market share, research can be conducted regarding the rest of their business model. For example, improving their distribution strategy, consumer relationships, cost structures and marketing channels can further lead to improved performance of the business model.

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Appendix

Appendix A. Survey

Thesis Survey - Segmentation Grocery Shoppers

Thank you in advance for taking the time to fill in this survey. Completing the survey will take less than 5 minutes.

The answers of this survey will only be used for the thesis I am working on regarding the future of 'zero-waste stores'. Your answers will remain anonymous. For questions you can reach out to 524206mp@student.eur.nl

1) Are you currently living in The Netherlands?
[ ] Yes (1)
[ ] No (2)

2) What gender do you identify as?
[ ] Male (1)
[ ] Female (2)
[ ] Non-binary / third gender (3)
[ ] Prefer not to say (4)

3) What is your gross household annual income in euro's?
[ ] Less than 20.000 (1)
[ ] 20.000 – 34.999 (2)
[ ] 35.000 – 49.999 (3)
[ ] 50.000 – 74.999 (4)
[ ] 75.000 – 99.999 (5)
[ ] 100.000 – 149.999 (6)
[ ] 150.000 – 199.999 (7)
[ ] More than 200.000 (8)
4) Which of the following best describes your household situation?
[ ] I live by myself (1)
[ ] I live together with other students/young professionals (2)
[ ] I live together with my partner (3)
[ ] I live together with my partner and children (4)
[ ] I live by myself with children (5)
[ ] Other (6)

5) What is your highest obtained education level, or equivalent?
[ ] Less than a high school diploma (1)

[ ] High school diploma (2)
[ ] MBO (3)
[ ] HBO (4)
[ ] Bachelor's degree (5)
[ ] Master's degree (6)
[ ] Post-master's degree (7)

6) What is your age?
[ ] Younger than 25 (1)
[ ] 25 – 35 (2)
[ ] 36 – 45 (3)
[ ] 46 – 55 (4)
[ ] Older than 55 (5)

7) Which of the following best describes your employment status?
[ ] Employed, working 1 – 36 hours/week (1)
[ ] Employed, working 36+ hours/week (2)
[ ] Not employed, looking for work (3)
[ ] Not employed, not looking for work (4)
[ ] I'm a student with a part-time job (5)
[ ] I'm a student without a part-time job (6)
[ ] Retired (7)
[ ] Disabled, not able to work (8)

8) What description best describes the area you primarily reside in?
[ ] Rural (1)
[ ] Suburban (2)
[ ] Urban (3)

9) What is your nationality?
[ ] Dutch (1)
[ ] Turkish (2)
[ ] Moroccan (3)
[ ] Suriname (4)
[ ] Antillean (5)
[ ] Other (6)

10) What percentage of your gross income do you spend on groceries?
[ ] Less than 10% (1)
[ ] Around 10% (2)
[ ] More than 10% (3)

11) What percentage of food that you buy is non-processed, whole foods?
[ ] Less than 30% (1)
[ ] Around 30% (2)
[ ] More than 30% (3)

12) What percentage of food that you buy is organic (biologisch)?
[ ] Less than 5% (1)
[ ] Around 5% (2)
[ ] More than 5% (3)

13) In your household, who most often decides at what store groceries are bought?
[ ] Myself (1)
[ ] My partner (2)
[ ] Another member of my household (3)
[ ] Other (4)

14) How likely are you to take the following 3 actions to reduce your carbon footprint?
Please rate from 1 - 7, with 1 being extremely unlikely and 7 being extremely likely.

	Extremely unlikely						Extremely likely
	1	2	3	4	5	6	7
I try to buy food that does not have plastic packaging (a)							
I try to reduce my meat intake (b)							
I bring reusable bags to the store instead of buying a new plastic bag (c)							

15) How likely are you to use the following channels to obtain your groceries?

	Extremely unlikely						Extremely likely
	1	2	3	4	5	6	7
A physical grocery store (a)							
Ordering online at the grocery store (b)							
flashdelivery / flitsbezorging (e.g. Gorillas) (c)							
Ordering online at a third party (e.g. Picnic) (d)							

16) Zero-waste stores are grocery stores that try to minimize product packaging in general and do not use plastic as packaging at all. Have you ever heard of zero-waste supermarkets?
[ ] Yes, I frequently shop at a zero-waste store (1)
[ ] Yes, I have shopped at a zero-waste store once or twice (2)

[ ] Yes, but I have never shopped at a zero-waste store (3)
[ ] No, I have never heard of zero-waste stores (4)

17) What do you find most important when you shop at a physical grocery store?
[ ] The distance from my house to the store (1)
[ ] Low prices (2)
[ ] High-quality products (3)
[ ] Organic products (4)
[ ] Assortment of products (5)

18) How much time are you willing to travel extra to a supermarket that sells packaging-free, organic products, versus a regular grocery store?
[ ] Less than 5 minutes (1)
[ ] 5 – 14 minutes (2)
[ ] 15 – 30 minutes (3)
[ ] 30 minutes or more (4)

19) To what extent do you agree with the following statement?

	Extremely unlikely						Extremely likely
	1	2	3	4	5	6	7
I am willing to bring my own reusable containers when going grocery shopping, to reduce plastic waste.							

20) Are you a member/donor of an activist group working on fighting climate change?
[ ] Yes (1)
[ ] No (2)

21) Which of the following best describes your diet?
[ ] Omnivore (both plant- and meat-based food) (1)
[ ] Vegetarian (no meat-based food) (2)
[ ] Vegan (only plant-based food (3)
[ ] Pescetarian (no meat-based food, excluding seafood) (4)
Display this Q22 in case Q21 is answered with option 2, 3 or 4

22) What is the reason that you have excluded meat from your diet?
[ ] Personal health reasons (1)
[ ] Environmental reasons (2)
[ ] To reduce animal harm (3)
[ ] Economic reasons (4)
[ ] Other (5)

Q23 To what extent do you agree with the following statements:

	Disagree			Somewhat agree			Agree
	1	2	3	4	5	6	7
I believe that climate change is the biggest issue the world has to deal with right now (a)							
I believe that individuals can make a difference fighting climate change (b)							
I would boycott a brand if they acted unethically (c)							

Table 1

Descriptive statistics of the 2 customer groups as a result of segmentation. Group 1 represents the Convenient Workers, group 2 the Sustainable Students.

Question number	Variable Description	$Mean_1$	$Median_1$	$Mean_2$	$Median_2$
2	Gender	1.55		1.67	
3	Household income		2		1
4	Household situation		3		2
5	Education		3		1
6	Age		2		1
7	Employment status		2		4
8	Residential area		3		3
9	Nationality		1		1
10	% Of income on groceries		3		3
11	% Whole foods		1/3		1
12	% Organic food		1		1
14 a	Plastic packaging	4.55		4.23	
14 b	Reduced meat intake	4.57		4.99	
14 c	Reuses bags	6.14		6.09	
15 a	Physical grocery store	6.69		6.81	
15 b	Online grocery store	2.57		2.27	
15 c	Flash delivery	2.18		2.26	
15 d	Third party delivery	2.57		1.77	
16	Heard of zero-waste		2		2
17	Importance grocery store		1		1
18	Travel extra		1/2		2
19	Containers	4.48		5.3	
20	Activist group	1.07	2	1.1	2
21	Diet		1		1
22	Reasons diet		2		2
23 a	Climate change	4.68		5.17	
23 b	Individuals - climate change	4.82		4.67	
23 c	Boycott brand	4.59		4.54	