



Bachelor Marketing Thesis

**Iconic packaging in marketing: how does Pringles’  
packaging impact the consumer decision-making  
process**

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## Executive Summary

Every product in our daily lives is packed, either bottled, wrapped in plastic or in paper. The main function of packaging is to transport the product in an intact state from one place to another. Other functions of packaging include functional as well as promotional purposes (Kaupinnen-Räisänen, 2014). Besides protecting, packaging can also be used as a marketing tool to differentiate your brand from other brands. Some brands managed to come up with their own iconic packaging, recognizable for their outstanding design, colors or shape. The brand Pringles accomplished to differentiate themselves with their cylindrical shape, saddle-shaped chips and vibrant colors, making it easy recognizable for all. The most influential factor in consumer decision-making color will be left out so what happens if a decision must be made without an immediate attraction to color, but with a focus on iconic design? Thus, the central research question is proposed as follows:

*“How does the distinctive/recognizable design of Pringles’ packaging impact the consumer decision-making process and buying behavior of the Dutch Generation Z?”*

To respond to this research question, the upcoming theoretical and empirical sub-questions will be discussed first:

Theoretical sub-questions:

1. What does packaging entail?
2. What does distinctive design entail?
3. What does the FMCG good potato chips entail?
4. What does the consumer decision-making process and buying behavior entail?
5. What does the Dutch Generation Z entail?

Empirical sub-questions:

1. How frequently does the Dutch Generation Z consume potato chips?
2. What factors does the Dutch Generation Z consider when buying potato chips?
3. How does distinctive design impact the consumer decision-making process and buying behavior of the Dutch Generation Z?
4. Based on what packaging functions does the Dutch Generation Z prefer Pringles over competing potato chips brands?
5. How does Pringles influence the consumer buying process of the Dutch Generation Z?

The Literature Study concluded that packaging can be divided in four functions: protection, containment, communication and convenience. Distinctive design is the first connection between

consumer and product and serves as a silent salesman in the decision-making process that will help sell the product. Besides, previous research showed that packaging enables comparison of different types of packaging each with its own characteristics. This matches especially low involvement FMCG goods like potato chips with low purchase transaction, low risk, and high frequency in purchasing. Lastly, Generation Z is a group of people aged 12-25, having similar snack consumption due to the experience of the same political, economic and social events. These assumptions lead to the following hypotheses:

H1: Packaging isolates a product from external influences and is used to protect, contain, communicate, and add convenience.

H2: Design is the first connection between consumer and product in which recognizability of the design enables differentiation, product attractiveness and influences decision-making positively.

H3: Potato chips are thinly fried potato slices that fall under the category FMCG goods bought by consumers on a regular basis.

H4: The consumer decision-making process entails five stages a consumer must undergo before a purchase decision can be taken, while being significantly influenced by packaging.

H5: Generation Z is a group of people aged 12 to 25, differing in food consumption preferences but similar in snack consumption and forming their opinions based on the same political, economic or social events they experienced during their life.

The empirical research was conducted through data gathered with an online survey. Afterwards, the gathered data was analyzed with SPSS. The analysis resulted in accepting all hypotheses except Hypothesis 2 since it was concluded that distinctive design had no significant effect on consumer decision-making. However, Pringles' communication function and the interaction between Pringles' protection and containment function did have a significant influence on the rating of distinctive behavior regarding buying behavior of respondents. Lastly, it could be concluded that packaging in general is not a determining factor in the decision-making process but offering different types of packaging allows evaluation of alternatives, which impacts consumer decision-making. A remark to mention is that these conclusions are based on the sample of Dutch Generation Z regarding potato chips consumption.

Recommendations for the potato chips in general will be to focus on pricing since this research showed that the overall preference of the Dutch Generation Z was mostly attributed to price. Regarding Pringles, their paperboard packaging is an asset compared to competitors. Creating an environmentally friendly substitute for the last piece of plastic, its lid, will this increase Pringles' sales? Or will this trigger Pringles' competitors to improve their packaging as well? Lastly, there could be opportunity for future researchers to gain insights on different age groups, nationalities and product markets focusing mainly on the generation with a higher disposable income and a potential higher willingness-to-pay for a product.

# Chapter 1. Introduction

## 1.1 Pringles' packaging

Every product in our daily lives is packed, either bottled, wrapped in plastic or in paper. The main function of packaging is to transport the product in an intact state from one place to another. Other functions of packaging include functional as well as promotional purposes (Kaupinnen-Räsänen, 2014). Functional means are for example containment and perishability of the product whereas promotional functions involve identification of the brand or using packaging as a communication tool to advertise your product (Simms & Trott, 2010) to targeted potential consumers.

One of the most important aspects of packaging is attributed to color. As Singh (2006) points out, the majority of people's evaluation towards products and people is derived from color. But what parts from packaging are left if you leave out color? Among others, the first impression of a product depends on design and recognizability. Many decision choices are made at the point of purchase (Underwood & Klein, 2002) so outstanding shapes or attributes can be in favor.

Besides protecting, packaging can also be used as a marketing tool to differentiate your brand from other brands. Some brands managed to come up with their own iconic packaging, recognizable for their outstanding design, colors or shape. You can think of Tiffany & Co with their iconic blue and white packaging, Kikkoman's unique and convenient soy sauce bottle (Hesterberg, 2017), Toblerone's mountain shaped chocolate or the chocolates of After Eight, each thin piece packed separately. The recognizability of the brand makes their product visually appealing for new consumers and creates a sense of familiarity with existing consumers.

Another brand who managed to differentiate themselves in their packaging is Pringles, the first to produce saddle-shaped chips. The company was founded in 1956 by Proctor & Gamble, who appointed organic chemist Frederic Bauer to invent a chip that would not break easily and stay fresh for a long time (York, 2023). Namely, they responded to complaints of customers of other chips breaking quickly and the high air to chip ratio in the bags (Rout, 2023). In 2018, frequent chips consumers performed a study on the air to chip ratio among 14 chips brands (Keiser, 2018), finding Pringles at the second-to-last place with 28% air. One of the key reasons to eventually start the brand is still working after sixty years. Not only is Pringles recognized for its chips, but its geometrical shape curving in two directions is also used for medical purposes. Namely, a patent in dental surgery has been filed by Ten Bruggenkate (2003) allowing the placement of implants in the saddle shaped jaw.

Potato chips find their origin in the United States in 1853 in a hotel kitchen in New York (Kirkman, 2007), but started for a small market. Eventually, production grew, and it found their way to the

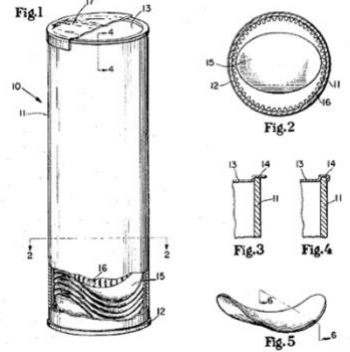
Netherlands in 1958. Nowadays, Pringles is one of the biggest potato chips brands in the Netherlands, though the label of potato chips is to dispute. Pedreschi et al. (2017) define potato chips as thin potato slices that are fried into a light, airy and crispy substance. However, Pringles produces a potato product made off ‘dehydrated processed potato’, but is also containing corn, rice and wheat (Mueller, 2021). Therefore, the Food and Drug Administration labeled Pringles in 1977 as ‘potato chins made from dried potatoes’ (Times, 1975), not to confuse with potato chips. To avoid unclarities, the product of Pringles will be mentioned potato chips in the continuation of this thesis.

**Figure 1**  
*The History of Pringles’ Logo*



As mentioned before, Pringles was originally created by Frederik J. Bauer in 1956 who was assigned by Proctor and Gamble to design a type of potato chips different from its competitors, who were producing chips that broke easily and could not stay fresh. According to Category Manager E-commerce at Kelloggs Bas Geertman, Pringles managed to put themselves among the top 4 chips brands in the Netherlands: Lays, Doritos and Crocky (personal communication, May 15, 2023). Pringles sticks to the design of their colorful cylinder, including images of the elements of different chips flavors and Pringles’ mascot Mr. P, who has been rebranded in 2021 in honor of Pringles’ 30<sup>th</sup> anniversary and is now looking like a 54-year-old and ‘as handsome as ever’ (Kellogg’s UK and Ireland Press Office, 2021).

**Figure 2:**  
*Pringle Patent (Madrigal, 2011)*



Pringles recognizable design has given the brand a comparative advantage due to Bauer who filed a patent together with Harold Kenneth Hawley on behalf of Proctor and Gamble in 1966 (Swlattorneys, 2022). Starting from the top down, Pringles’ design consists of a plastic transparent lid to close the

cylinder and keep the chips fresh. Secondly, the biggest part of the packaging entails the paperboard cylinder, which is more durable and environmentally friendly than the plastic used at the competitors' packaging (Design Rush, n.d.). Lastly, the bottom part of Pringles' cylinder is made of stainless steel. The paperboard cylinder ensures better protection than potato chips inside plastic bags. The main reason why Pringles is chosen as the potato chips option in an airplane is the insurance of good quality throughout the flight (Geertman, B., personal communication May 15, 2023).

Though each component of Pringles' packaging has its own function, there are some critics concerned about the recyclability of the packaging. As the chief executive of the Recycling Association Simon Ellin mentioned in 2017, using multiple different materials makes recycling complicated. Ellin even labeled this problem the 'Pringles factor' and aims that future design refrain from this factor. Since 2017, Pringles came with several improvements. For example, Pringles created a recyclable paper can in 2020 (Poole, 2020) and recently announced the adjustment of the bottom part from steel to paper, allowing the recyclability of the packaging to be 90% in 2025 (Rösken, 2023). In conclusion, Pringles keeps up with the latest trends while remaining attractive for consumers as well as reducing their environmental footprint.

Pringles' cylindrical shape and vibrant colors are iconic for the brand, making it easy recognizable. Additionally, Pringles is often associated with the feeling of familiarity due to the friendly and colorful design. Pringles managed to file a patent for its design in 1966 and is therefore the only brand with this iconic shape (Swlattorneys, 2022). The cylindrical shape allows the chips to stay intact when being transported or when put onto shelves (Design Rush, n.d.). In this thesis, consumers' regard towards Pringles' packaging will be conducted, keeping in mind several functions of packaging.

## **1.2 Relevance**

As mentioned before, packaging plays a huge role in our daily consumption. We are influenced, either conscious or unconsciously by multiple factors. Color has been found the most influential (Singh, 2006), but what to say about unique designs? Especially in the case of Pringles, the cylindrical shape captures the consumers' attention in the overfull market of chips. Moreover, Pringles manages to keep this attention and create a long-lasting relationship with the consumer while building brand loyalty. The scientific relevance of this paper lies in omitting color in the consumer decision-making process and focusing on the design and shape of iconic products. Additionally, the functionality of packaging will be investigated as well. Several studies have been conducted on the impact of color in marketing, but what happens if a decision has to be made without an immediate attraction to color. Several manufacturers of daily necessities with fierce competition from other similar brands will benefit by acknowledging which aspects would make their product stand out.



### **1.3 Central Research Question and Sub-Questions**

This paper will look for the influence of the distinctive design of Pringles' packaging on the consumer decision-making process and buying behavior, examining a group of respondents in their late teens and begin twenties. Therefore, the central research question will be as follows:

*“How does the distinctive/recognizable design of Pringles' packaging impact the consumer decision-making process and buying behavior of the Dutch Generation Z?”*

To respond to this research question, the upcoming theoretical and empirical sub-questions will be discussed first:

Theoretical sub-questions:

1. What does packaging entail?
2. What does distinctive design entail?
3. What does the FMCG good potato chips entail?
4. What does the consumer decision-making process and buying behavior entail?
5. What does the Dutch Generation Z entail?

Empirical sub-questions:

1. How frequently does the Dutch Generation Z consume potato chips?
2. What factors does the Dutch Generation Z consider when buying potato chips?
3. How does distinctive design impact the consumer decision-making process and buying behavior of the Dutch Generation Z?
4. Based on what packaging functions does the Dutch Generation Z prefer Pringles over competing potato chips brands?
5. How does Pringles influence the consumer buying process of the Dutch Generation Z?

### **1.4 Possible Ethical Research Issues**

When conducting quantitative research, one can run into some ethical issues. To start off with the collection of the data, participation should take place under informed consent, participation have to know their rights and should be guaranteed of anonymity. Besides that, knowing that the main topic of this thesis is to be the packaging of the brand Pringles, may cause evaluation apprehension, also known as the guinea pig effect. This means that the respondents know they are being observed. Therefore, they may give socially acceptable answers to answer what is expected from them, in this case maybe in favor of Pringles.

## **1.5 Possible Research Limitations**

Though this research aims to find realistic answers to the sub-questions stated above, there are some limitations to point out. Firstly, the sample size used in this paper may not be representative for the entire population of young adults in the Netherlands. To illustrate, according to the Centraal Bureau van de Statistiek (2023), the Netherlands had 2,775,951 inhabitants aged 12-25 on January 1<sup>st</sup>, 2023. Obviously, these numbers are not to compare with the 138 respondents of the research sample. Secondly, the data could be dominated by the self-reported bias because the collected data might not reflect the respondents' actual behavior or preferences. Furthermore, there is a degree of time sensitivity since this research is performed in the span of two to three months. Lastly, there is lack of control over external factors because the research may not be able to check for other external factors influencing the result. Therefore, it cannot be stated with certainty that we can speak of causality.

## **1.6 Thesis Chapter Descriptions**

This thesis is divided into five chapters: starting with Chapter 1 Introduction, followed by Chapter 2 Literature Study, Chapter 3 Research Methodology, Chapter 4 Research Outcome and finally Chapter 5 Conclusion & Recommendations.

In Chapter 2, Literature Study, a total of 40 recent and relevant papers have been inspected extensively to gather knowledge on distinctive design, packaging and consumer behavior. Given this information, each theoretical sub-question will be discussed thoroughly and be transformed into hypotheses, forming a conceptual research model on the subject of iconic packaging. In Chapter 3, Research Methodology, the used research process is discussed. First the different types of research are explained. Besides that, the choice for the selected data collection method, details on the research sample and the selected data analysis method will be clarified.

In Chapter 4, Research Outcome, the collected survey data and analysis outcomes are presented, converting the raw data into understandable sentences. The hypotheses as stated in Chapter 2 will be looked back into, to see if the hypotheses will be confirmed or denied. In Chapter 5, Conclusion & Recommendations, the key findings of both literature study and empirical research are presented and compared, looking for similarities and differences. Hereafter, these conclusions will be applied to the case of Pringles, forming an answer to the central research question and hypotheses will be accepted or refuted. Furthermore, recommendations to the brand Pringles, the market of potato chips and future researchers will be presented. Lastly, there is place for some reflection for the researcher herself.

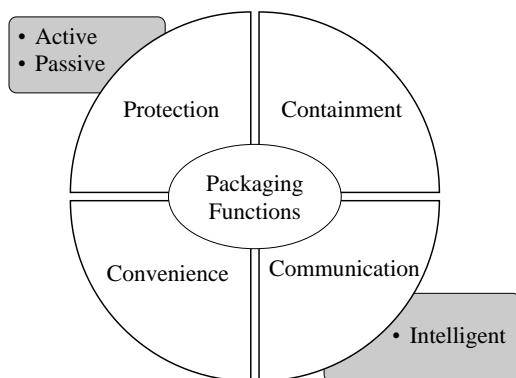
## Chapter 2. Literature Study

### 2.1 What does packaging entail?

The marketing mix contains four Ps: Product, Place, Price and Promotion (Kellerman et al., 1995). This mix forms a conceptual framework that distinguishes the decision-making of managers in order to align their supply to the customers' needs (Goi, 2009). Frey (1961) even suggested to split the marketing variables into an offering and a methods and tools part. The first part covers product, brand, price, packaging and services whereas the methods and tools' part cover distribution channels, personal selling, advertising, sales promotion and publicity. Yet, packaging will be considered as the part of product, but packaging can function as a promotion tool as well. Packaging is used to isolate a product from its external environment (Müller & Schmid, 2019) in order to provide a safe transport. Additionally, it is the first element consumers see before finally deciding to make the purchase (Agariya et al., 2012). Underwood (2003) distinguishes packaging as a 'product-related attribute', valuable when brand identity is being formed and communicated to potential consumers. High quality packaging has many benefits: it slows quality decay, protects the product during transport and therefore facilitates easy distribution, provides the product all year long and lastly, reduces premature wastage (Mahalik, 2009). Basically, the usage of packaging can be divided into four basic functions: Protection, Containment, Communication and Convenience, PCCC in short (Aggarwal & Langowski, 2020; Paine, 1990). All functions will be extensively discussed in this paragraph.

**Figure 3**

*Model of Packaging Functions*



*Note:* This model was produced by Yam et al., (2005)

Firstly, protection is one of the main functions of packaging since proper packaging extends durability of the product (Aggarwal & Langowski, 2020). Packaging protects the product in hazardous situations. In fact, protection can be considered as preserving quality, though full conservation cannot be guaranteed. More and more, the role of packaging is shifting from being a 'protector' towards being 'information provider' and 'persuader' (Anonymous, 2000). Traditionally, packaging formed a passive

role as an inactive barrier solely functioning as protection against oxygen and humidity (Yam et al., 2005). However, new packaging materials have been developed to fulfil as active packaging. Vermeiren et al. (1999) defined active packaging as ‘actively changing the condition of the packaging to prolong shelf-life or improve safety or sensory prospects while maintaining the quality of the food’. Absorbing or emitting gases will eventually favor the internal package environment (Yam et al., 2005).

Secondly, packaging must be able to contain the product from the point of being packed until the utilization of the last contents of the product (Paine, 1990). Packaging functions in this context as a shell for different shapes and sizes. Furthermore, it will adapt to the circumstances per variety of shape. Thirdly, packaging serves as a marketing tool that communicates the image an organization wants to propagate. However, Yam et al. (2005) considered communication not only as a marketing tool, but communicative packaging can also be used for functional purposes since labels can contain warning labels or a list of ingredients. Packaging serves in this case an intelligent purpose by tracking the product and its surroundings (Yam et al., 2005).

Lastly, convenience is another important function of packaging. Lindh et al. (2016) reviewed several articles on packaging functions over the last 30 years, arguing that most of the authors mention ‘convenience’, otherwise called ‘to facilitate handling’ or ‘creating utility or service’. The researchers give the term convenience to a certain product if the used packaging meets up with the standards that are desired (Lindh et al., 2016).

To summarize, packaging is one of the first elements a consumer notices when the product meets the eye. Additionally, packaging can be used for several purposes. Figure 3 shows the as discussed packaging functions, highlighting the active use of protection and the intelligent function of communication. Therefore, the first hypothesis is formed:

*H1: Packaging isolates a product from external influences and is used to protect, contain, communicate, and add convenience.*

## **2.2 What does distinctive/recognizable design entail?**

Packaging is often referred to as a ‘silent salesman’ that will help sell the product after capturing the attention of the consumer (Löfgren et al., 2008). In order to get to the actual purchase, several factors of the product will play a role in the purchase decision of a consumer: the price, the shape, the color and the overall appearance of the product. Last mentioned factor represents the first connection between consumer and product. Irrespective of the type of product, judgements will be formed based on this sensorial experience (Bloch et al., 2003). Therefore, distinctive design creates differentiation and

product attractiveness in highly competitive markets. Focusing on design enables brands to adjust to varying market demands (Battezzatti & Magnani, 2000).

Additionally, Dobson and Yadav (2012) view the recognizable factor of packaging as an asset for FMCG goods that attracts attention while it delivers information. In doing so, brand loyalty will be built resulting in repeating purchases. Underwood and Ozanne (1997) agree to this point and highlight the even aggressive manner of positioning packaging. They distinguish the importance of design in a way to stand out with the exposure of positive aesthetic, experiential, functional and symbolic benefit to the consumer. Shortly summarized, packaging is a decisive factor in the purchase decision process. Furthermore, recognizable design draws attention, keeps attention in the short run as well in the long run. Relatedly, the following hypothesis has been created:

*H2: Design is the first connection between consumer and product in which recognizability of the design enables differentiation, product attractiveness and influences decision-making positively.*

### **2.3 What does the FMCG good potato chips entail?**

Food is one of the basic needs as discussed in Maslow's Hierarchy of Needs. Maslow argued that after satisfaction of these basic needs, the individual can climb up to meet higher level needs (McLeod, 2007). The food option potato chips fall within the Fast-moving consumer goods (FMCGs). According to Verma et al. (2023), FMCGs are defined as products with low purchase transaction, low risk, low involvement but high frequency in purchasing. Somashekar and Kaboor (2016) add that FMCG products are bought on a regular basis in small amounts. These products comprise durable and non-durable goods, as well as highly demanded goods, perishable goods and processed goods like potato chips. Dobson and Yadav (2012) argue that the competitive markets of FMCG goods are both immediate and dynamic in nature. Translating this to the potato chips market, immediate means that existing potato chips brands will compete with each other (Dobson & Yadav, 2012). Furthermore, the dynamic point of the competition of potato chips is considered a fluent process of new brands entering the market and already existing ones innovating and developing (Dobson & Yadav, 2012).

Potato chips, also known as chips, are a widely popular snack among consumers. The chips are invented in the United States in 1853 (Kirkman, 2007). Pedreschi et al. (2017) define potato chips as thin potato slices that are fried into a light, airy and crispy substance. During the production process, the moisture of the original potato decreases from 80 into 2 percent. In exchange, the new crispy product contains from 35% up to 44% oil (Garayo, & Moreira, 2002). Potato chips are consumed for their crunch and variety of tastes. Potato chips are often packaged in sealed bags made from plastic and aluminum to ensure preservability of the crispy texture. In addition, potato chips can also be preserved in paperboard

packaging, used by Pringles for example, which may be a more sustainable option as well as better protection for the product.

The key finding regarding the sub-question above is that potato chips is a FMCG good bought on a regular basis in small amounts. Typically, FMCG goods involve low risk and low involvement purchases. The thin fried potato slices claimed their spot among the snacks and keeps innovating in tastes, textures and packaging. Thus, the following hypothesis is written as follows:

*H3: Potato chips are thinly fried potato slices that fall under the category FMCG goods bought by consumers on a regular basis.*

## **2.4 What does the consumer decision-making process and buying behavior entail?**

Before products come to the point of consumption, an entire process of deliberating, weighing and comparing alternatives has been preceded. Munthiu (2009) described the five stages a buyer goes through when making a purchase decision: problem recognition, information search, evaluation of alternatives, purchase and post-purchase behavior. Belch and Belch (2004) even expanded this Five Stage model by connecting each stage to a relevant cognitive process: motivation, perception, attitude formation, integration and learning. Briefly stated, consumption can be precepted as an important factor in social life (Zak & Hasprova, 2020). The authors conclude this in their article from the fact that consumers have a lot of different products to choose from to serve the needs in markets. Moreover, consumer decision-making depends on what problems must be solved and what drives the individual into making that choice (Szmigin & Piacentini, 2022). The authors distinguish involvement as ‘the perceived relevance of a purchase to the consumer’. This purchase can be a service, idea, product or website (Sharma & Klein, 2020). Once this object of is chosen, a personal relationship might develop with the object, leading to mentally preparing for buying that particular product (Klein & Sharma, 2022).

There are different types of involvement to appoint. Firstly, low-involvement goods such as everyday goods. These goods are referred to as system 1 goods which are chosen intuitively, fast, on an automatic base, effortless, implicit and emotional. High-involvement goods on the other hand are referred to as system 2 which are selected at a slower pace with a conscious, explicit and logical mindset (Milkman et al., 2008). Fast-moving consumer goods like potato chips are typical system 1 goods because they are selected on autopilot and often involve repeating consumer decisions.

Additionally, packaging influences the consumer decision-making process on different aspects, in the problem recognition stage as well as the evaluation of alternatives stage. Firstly, packaging can attract consumers based on its colors or distinctive design. In this case, it serves as an external stimulus

triggering the thinking of potentially buying the product (Munthiu, 2009). After that, the consumer will gather information on different products and different types of packaging and their purposes. In the evaluation of alternatives, a consumer will make their choice based on all the possible options of packaging, taking into account the degree of importance regarding for example price, quality and specific features (Dudovskiy, 2013). In the next steps, the consumer will either be pleased with the product, be disappointed or something in between and post-purchase behavior will follow: a rebuy or maybe an alternative (Garai-Fodor, 2021).

Thus, the most important part to take away from this is that a purchase decision is formed after several stages have been preceded, influenced by multiple internal factors like motivation, perception, attitude, learning and involvement. Additionally, the external stimulus packaging forms an inevitable role into triggering the consumer towards a purchase decision. Therefore, the next hypothesis is prepared:

*H4: The consumer decision-making process entails five stages a consumer must undergo before a purchase decision can be taken, while being significantly influenced by packaging.*

## **2.5 What does the Dutch Generation Z entail?**

Generation Z, Gen Tech, the iGeneration, ‘always clicking’ or post-Millennials. These are all ways to define the age generation born in the years 1997 until 2012 (Dimock, 2019). The generational cutoff between people belonging to Millennials and people belonging to Generation Z depends on primary factors influencing on political, economic and social levels (Dimock, 2019). Remembrance of large, critical events play a role in this. If that is not the case, the individual will be passed on to the next generation. Therefore, a demarcated age group can be mentioned a generation when individuals are subject to the same conditions, are affected by the same technology and are experiencing the same events (Dolot, 2018). Smith and Clurman (1997) agreed to this extent and expanded upon these events accompanying an individual through all his life while subconsciously affecting behavior and choices. Generation Z can be well summarized by the concept C Generation, standing for ‘connected’ to the internet, ‘communicating’, ‘changing’ or community-oriented (Dolot, 2018). Generation Z has an online as well as an offline presence. The online presence is derived from this generation being born after the creation of the World Wide Web (Chicca & Shellenbarger, 2018) enabling this generation to have immediate access to gaining information and communicating this towards others.

Regarding food consumption, Garai-Fodor (2021) concluded in her study that Generation Z food consumption preference could be divided in a ‘health and environment’, ‘all-average’, ‘no preference’ and a ‘time and price sensitive’ group where each name depicts highly valued factors of these groups. Garai-Fodor also found that the value orientation of food consumption preference differed significantly.

Furthermore, snacking appeals to Generation Z, both for hunger and for energy purposes which suits the phase of life of this generation (Paipongna, 2022). Besides, Generation Z is not often involved with sustainable options beyond supporting local and seasonal consumption (Kamenidou et al., 2019), though they care about the reduction of single use plastics and believe that large companies should make a change as well (Kymäläinen et al., 2021). Based on this reasoning, the last hypothesis can be concluded:

*H5: Generation Z is a group of people aged 12 to 25, differing in food consumption preferences but similar in snack consumption and forming their opinions based on the same political, economic or social events they experienced during their life.*

## **2.6 Key Findings Literature Study**

The summary of Literature Study's key findings is presented as follows: Firstly, packaging is used to isolate a product from external influences and keeps the product safe during transport. Besides that, packaging ensures food quality and reduces early disposal of products. In addition, well designed packaging facilitates easy use either at home or on the go, at all-time directing important information to the consumer. To summarize it shortly, packaging is used for protection, containment, convenience and communication. Secondly, distinctive design serves as the decisive factor in the buying process. It captures attention of the consumer and retains it. From that point, it makes the product attractive and brand loyalty will be developed. Thirdly, the just mentioned brand loyalty is the desire of every FMCG good producer. These goods involve low risk, low involvement but high frequency buying. The thin potato slices are a FMCG good bought regularly in small amounts. The snack is beloved for its crunch and wide variance in tastes, packaging and branding.

Fourthly, the consumer decision-making process is the internal journey of a consumer from recognition of the need for a product to the feeling after the product has been purchased. It entails a five-step model (problem recognition, information search, evaluation of alternatives, purchase and post-purchase behavior) and is influenced by cognitive processes. Consumer decisions can be made with low or high involvement, differing in effort, pace and emotional state. The level of involvement decides thoroughness of the search for information or evaluation of alternatives. Ultimately, a producer desires repeated purchases, in other words positive post-purchase behavior. Lastly, the Dutch Generation Z aged 12-25 is the main target group of this research, sharing the same values, beliefs and thoughts because of experiencing the same events in their life



## 2.7 Hypotheses and Conceptual Research Model

The Conceptual Research Model represents the components and processes involved in the Literature Review above. To give an overview, the hypotheses are listed as follows:

H1: Packaging isolates a product from external influences and is used to protect, contain, communicate, and add convenience.

H2: Design is the first connection between consumer and product in which recognizability of the design enables differentiation, product attractiveness and influences decision-making positively.

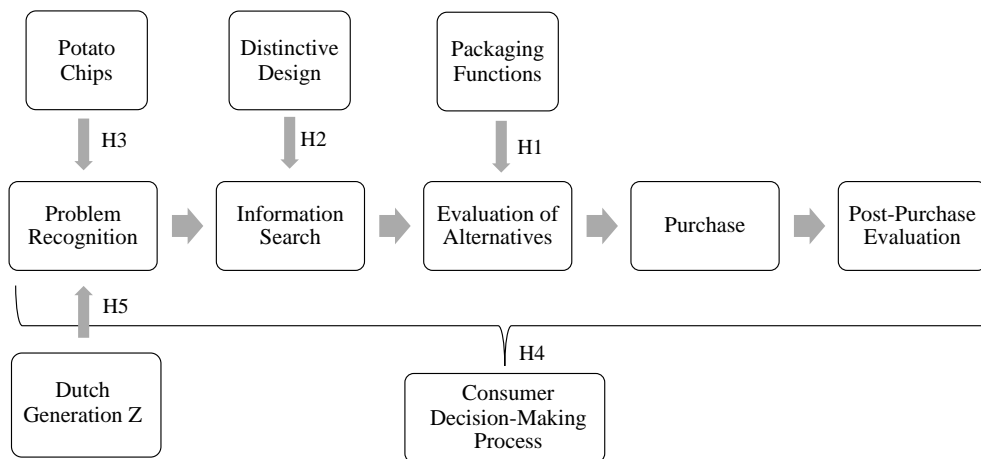
H3: Potato chips are thinly fried potato slices that fall under the category FMCG goods bought by consumers on a regular basis.

H4: The consumer decision-making process entails five stages a consumer must undergo before a purchase decision can be taken, while being significantly influenced by packaging.

H5: Generation Z is a group of people aged 12 to 25, differing in food consumption preferences but similar in snack consumption and forming their opinions based on the same political, economic or social events they experienced during their life.

**Figure 4**

*Conceptual Research Model*



## **Chapter 3. Research Methodology**

### **3.1 Research Types**

There are several ways to collect data in academic research, either by doing quantitative or qualitative research. Starting off with qualitative research, which usually takes place in the form of depth-interviews, observation or focus groups. The main goal of qualitative research methods is to understand the ideology, experiences, actions, and opinions of people (Pathak et al., 2013). Gibson et al. (2004) add another characteristic of allowing participants to speak for themselves, resulting in being heard for their sorrows as well as interested in their thoughts and beliefs. Thus, qualitative research indicates which things ‘might’ matter. On the other hand, quantitative research gathers numerical data with mathematical methods (Sukamolson, 2007). Some of the most common used methods of quantitative research are surveys, experiments or correlational research. The main reason to choose quantitative over qualitative research is the ability to make generalizations based on the examined sample (Holton & Burnett, 2005). Thereby, the results can be extended to broader groups, increasing validity. In this thesis, the consuming decision-making process of Pringles’ consumers is investigated. Eventually, quantitative research indicates to what extent packaging matters in this field. However, important factors playing a role in potato chips preference were conducted with qualitative research, by asking a couple of questions to some family and friends.

### **3.2 Data Collection**

The data for this thesis was gathered in the form of an online survey made by Qualtrics. A within-subject design in which every participant experienced the same conditions was used to answer the central research question and test the hypotheses. Therefore, reliability was insured because a small representative sample was used. Furthermore, the empirical sub-questions supporting the central research questions were formed into survey questions, rather asked directly or questioned obscured by looking for certain preferences or ratings. The survey enhanced easy and quick distribution via several social media platforms like WhatsApp, LinkedIn and Instagram. Spreading the survey via these social media platforms was useful since the main target group of this research is the Dutch Generation Z. After all, the distribution and data collection process started June 12<sup>th</sup> and took place in June 2023.

### **3.3 Research Sample**

The sample used in this research contains individuals belonging to the Dutch Generation Z, in the age groups 12-25. Additionally, the focus in this research is on the Dutch Generation Z, in other words with the Dutch nationality. This group was selected with the belief that firstly the results could be generalized to this generation, because this generation may be sensible for potential future adjustments in packaging. Secondly, focusing on the Dutch nationality was found more logical because people with the same

nationality are more likely to share the same values, beliefs and opinions which gives more credibility to this research. Therefore, people with other nationalities were excluded from the sample in order to assure reliability of the sample. Besides that, the survey gathered data from other age groups as well. Though other age groups besides 12-25 will be excluded from the main sample, it would be interested to compare the younger generation with the older generation aged 50+ in future research. Lastly, incomplete survey responses were excluded from the sample. Everyone who replied 'Potato' to the control question was considered as (almost) complete and was therefore used to either accept or reject the hypotheses. One important notification to make is that 138 responses reached the control question, after which 128 managed to complete the whole survey. However, 138 responses were used to test Hypothesis 1, 3 and 4 because these additional answers improve reliability of the sample. To test Hypothesis 2 and 4, it has been decided to divert to 128 answers of fully completed surveys.

The survey was distributed among LinkedIn, Instagram and WhatsApp as well as in private settings and messages. At all times, the requirements to fit in the sample were presented to the potential respondent to ensure whether the individual's nationality and age would fit the criteria. Furthermore, snowball sampling was applied to gather enough respondents. Namely, respondents were asked to recruit other respondents by sending the survey forward to people with the same characteristics in terms of nationality and age. Distribution started June 12, 2023 after which the first responses were received immediately. Data collection ended June 28, 2023. All over June, 191 answers were collected of which 53 were excluded from the sample due to the described criteria above as. Thus, a total of 138 responses were analyzed. This raw data can be found in Appendix C.

### **3.4 Data Analysis Method**

The survey consisted of some demographic questions to ensure if the respondent's age and nationality would fit the target group of this survey, followed by questions on potato chips consumption, the influence of distinctive design on consumer behavior and the ranking of potato chips brands. Secondly, respondents were asked to rate potato chips brands Pringles and Lays based on the usefulness of four packaging functions PCCC which were discussed just before. Lastly, respondents were asked to rate 9 fictitious potato brands profiles generated by SPSS, differing in brand, occasion, packaging and design. SPSS ensured an orthogonal design to separate the effect of each attribute asked.

After all the raw data was gathered, it was analyzed with SPSS, popular for its simplicity and easy-to-follow command language. Several data analysis methods were used to analyze the data. Firstly, the string values of a 5-point Likert scale were converted into numeric values to enable the correct use of each ordinal value: "Disagree" = 1, "Somewhat disagree" = 2, "Neutral" = 3, "Somewhat agree" = 4 and "Agree" = 5. To test the first hypothesis, a multiple ANOVA (Analysis of Variance) was used to test the effect of multiple independent variables on one dependent variable. The independent variables

that were used were the packaging functions protection, containment, communication and convenience, affecting the dependent variable rating of distinctive design on buying behavior. First this test was run for the packaging functions of Pringles, and it was repeated for the packaging functions of Lays. Furthermore, a conjoint analysis was done using the respondents' ratings of the nine potato chips profiles, which was possible due to the orthogonal design generated by SPSS before the survey was spread. Finally, for the last hypothesis, an independent samples t-test was used to compare the means of two independent age groups regarding potato chips consumption in order to determine whether there was statistical evidence that the population means were significantly different.

### **3.5 Researcher Bias**

A bias is described as type of systematic error that could affect scientific research and therefore could be disrupting the process of measurement (Krishna et al., 2010). Thus, allowing a bias will have an effect on the validity of the research. Possible biases that may occur are selection bias, which could result in the sample not being representative for the population of interest (Krishna et al., 2010). Secondly, the sample could be subjected to voluntary response bias. It might occur that specific people felt more inclined to respond to this survey, for example potato chips enthusiasts.

## Chapter 4. Research Outcome

Chapter 4 of this thesis presents all data gathered with the survey alongside the results of the analysis carried out with the software SPSS. Firstly, the raw survey data and used variables are specified for better understanding in the upcoming parts in this chapter. Secondly, each hypothesis will be sequentially tested using the as described analysis techniques in Chapter 3.4 Data Analysis Method. Lastly, the chapter finishes with summarizing the key findings.

### 4.1 Raw Survey Data

A total of 191 responded to the survey. This number used to be even higher but answers during the collection process were deleted due to insufficient progress (>82%). The border for a progress of 82% was chosen to be able to answer Hypothesis 1, 3 and 4, but for testing Hypothesis 2 and 4, a totally completed survey was required. After excluding 53 responses due to unsuitable age, nationality or process, the remaining 138 responses were used to analyze in this research. 57.97% (80) of the sample reported being female, 41.30% (57) reported being male and 0.72% (1) preferred not to say their gender. Additionally, respondents were asked to mention their nationality since the aim of this research is to make conclusion on the group of Dutch Generation Z, sharing the same values, beliefs and opinions compared to other generations or nationalities. Respondents were also asked to indicate their potato chips consumption to give insight in the whole generation. Since respondents were also asked their age, 12-18 or 19-25, the correlation between chips consumption and age have been looked into. This could be important for targeting the right age group with future improvements. Furthermore, the respondents were asked whether distinctive design influenced their buying behavior, rating on a scale from 0 (not influenced at all) to 10 (heavily influenced), resulting in an average rating of 5.4. This outcome shows that the impact of distinctive design differs between the respondents and does not have an immediate significant influence on the decisions they make.

### 4.2 Hypothesis 1

The first hypothesis suggested the following: *Packaging isolates a product from external influences and is used to protect, contain, communicate, and add convenience.* In the survey, the respondents were asked to select factors they took into account when buying potato chips, namely Taste, Price, Discounts, Occasion, Quality, Packaging (Sustainable) and Ease of use. In total, the respondents mentioned 411 factors. Figure 5 in Appendix D.1 shows the distribution of each factor. The most frequent factors mentioned were Taste and Price, by respectively 31.63% (130 respondents) and 26.52% (109 respondents) of the total factors. Moreover, Figure 5 shows that 3.4% (14 respondents) of all answer could be assigned to (sustainable) packaging. Therefore, the first part of the hypothesis can be accepted.

Furthermore, to give more information on the second part of the hypothesis, Table 10 (see Appendix D.1) shows an overview of the cumulative sum of all packaging functions. For each packaging value, the cumulative sum was calculated in which a higher cumulative sum means a higher valuation of usefulness. Each column depicts the cumulative sum per brand and the total of the two brands Pringles and Lays. What can be derived from Table 10 is that overall, Lays scored higher on all packaging functions than Pringles. In total, packaging and convenience were found the most useful function, containment and communication the least useful. Furthermore, the convenience function of packaging was considered the most useful of all packaging functions. Besides, Pringles' packaging scored the highest on the convenience function, but communication was also considered useful. Additionally, protection was considered the most important function of Lays' packaging. Communication was considered the least useful function of packaging.

To either test or reject the rest of the hypothesis, it should be tested whether the packaging functions protection, containment, communication and convenience had a significant influence on the preferences of the respondents regarding distinctive design. The average rating of whether distinctive design was influencing buying behavior of the respondents, showed an average score of 5.4. A multi-factor ANOVA (Analysis of Variance) was used to test the effect of multiple independent variables on one dependent variable, including interaction effects. In this research, the multiple packaging functions protection, containment, communication and convenience serve as independent variables, affecting the dependent variable rating of distinctive design on buying behavior. The test was run for Pringles' packaging functions as well as Lays' packaging functions since both brands offer different designs, so the respondents' opinion regarding functionality and buying behavior might differ. A p-value above 0.05 suggests that there is no significant difference between the effects of the different ratings on usefulness ("Disagree", "Somewhat disagree", "Neutral", "Somewhat agree", "Agree") of each packaging function.

**Table 7**

*Tests of Between-Subjects Effects*

Dependent Variable: Q8: To what extent does distinctive design influence your buying behavior?  
Please rate on a scale from 0 (not influenced at all) - 10 (heavily influenced). - Distinctive design influences my buying behavior

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	420.834 <sup>a</sup>	86	4.893	1.224	.218
Intercept	1121.359	1	1121.359	280.600	<.001
Pringles_protection	31.252	4	7.813	1.955	.115
Pringles_containment	2.065	4	.516	.129	.971
Pringles_communication	59.125	4	14.781	3.699	.010

Pringles_convenience	32.762	4	8.191	2.050	.101
Pringles_protection *	27.357	1	27.357	6.846	.012
Pringles_containment					
Pringles_protection *	46.717	5	9.343	2.338	.055
Pringles_communication					
Pringles_protection *	47.119	6	7.853	1.965	.088
Pringles_convenience					
Pringles_containment *	42.063	6	7.011	1.754	.127
Pringles_communication					
Pringles_containment *	29.057	6	4.843	1.212	.316
Pringles_convenience					
Pringles_communication *	11.269	7	1.610	.403	.896
Pringles_convenience					
Pringles_protection *	.318	1	.318	.079	.779
Pringles_containment *					
Pringles_communication					
Pringles_protection *	.029	1	.029	.007	.933
Pringles_containment *					
Pringles_convenience					
Pringles_protection *	3.856	1	3.856	.965	.331
Pringles_communication *					
Pringles_convenience					
Pringles_containment *	.904	1	.904	.226	.636
Pringles_communication *					
Pringles_convenience					
Pringles_protection *	.000	0	.	.	.
Pringles_containment *					
Pringles_communication *					
Pringles_convenience					
Error	203.811	51	3.996		
Total	4625.000	138			
Corrected Total	624.645	137			

a. R Squared = .674 (Adjusted R Squared = .124)

As can be seen from Table 7 (depicted in Appendix D.1), Pringles' communication function has a significant effect on the rating of distinctive design on buying behavior with a p-value of 0.010 which is below 0.05 (5%). Besides that, the interaction of Pringles' protection function and Pringles' containment function shows a significant effect with a p-value of 0.012. Apart from two significant values, the rest of the variables and interaction effects are all not significant with p-values above 0.05 indicating no significant difference between the effect of rating of usefulness of packaging function on the rating to what extents distinctive design influences the respondent's buying behavior. The adjusted R<sup>2</sup> is 0.124 which means that 12.4% of the dependent variable is declared by the independent variables.

As for the case of Lays, Table 9 depicted in Appendix D.1 shows no significant difference for all variables and interceptions except for Lays convenience function, indicating a significance effect with a p-value of 0.044. The adjusted  $R^2$  is 0.108 which means that 10.8% of the dependent variable is declared by the independent variables.

In short, it was observed that for Pringles' communication function and the interaction effect between Pringles' protection and containment functions, there has been a significant effect between the effects of the different rating of usefulness of the rating of distinctive design influencing buying behavior. For all other variables and interaction effects, there has been no significant effect. Furthermore, Lays' convenience function showed a significant effect as well. Lastly, it can be concluded that Pringles' packaging functions declare more of the dependent variable than Lays' packaging functions, depicted by the higher  $R^2$ .

Overall, packaging is one of the elements a consumer keeps in mind when buying a product. The packaging of Pringles and Lays show different forms of surrounding a product, both rated useful on different packaging functions. Pringles' packaging was found the most useful for convenience and Lays' packaging was found the most useful for protection. Furthermore, a multifactor ANOVA model showed that Pringles' communication function and Lays' convenience function had a significant effect on the rating of distinctive design on buying behavior. Furthermore, the rating of distinctive design was declared more by Pringles' packaging functions than Lays' packaging functions. Therefore, it can be concluded that consumers consider packaging as an option for protection, containment, communication or convenience and the hypothesis can be accepted.

### **4.3 Hypothesis 2**

The second hypothesis has been prepared as follows: *Design is the first connection between consumer and product in which recognizability of the design enables differentiation, product attractiveness and influences decision-making positively.* The first part of this hypothesis can be accepted since design is the first thing a potential buyer notice (Bloch et al., 2003). Applying this to this research, respondents are using, wearing or consuming products they have decided to buy after the approval of their first sensory experience with the product. To either accept or reject the second part of the hypothesis, it should be tested whether distinctive design has a significant influence on the decision-making process of the respondents. Therefore, the respondents were asked to rate nine potato chips profiles generated by SPSS, differing in four attributes: Brand, Occasion, Price, Packaging. Table 6 depicted in Appendix D.2 shows the orthogonal design which is used in scientific research to separate the effects of attributes. Yet, it must be said that for the upcoming analysis, a group of 128 respondents was used instead of 138



for the other analysis since 128 respondents filled in the survey completely. However, for a more representative sample, 138 responses were used for hypotheses 1, 3 and 5.

**Table 1**

*Utilities*

Characteristics	Options	Utility Estimate	Std. Error
Brand	Pringles	.192	.
	Lays	.223	.
	Private brand	-.415	.
Occasion	Holiday	.299	.
	Everyday	-.236	.
	Party	-.063	.
Price (in €)	1.90	1.000	.
	2.19	-.394	.
	2.65	-.606	.
Packaging	Iconic cylinder design	-.189	.
	Regular bags	.016	.
	Sustainable packaging	.173	.
(Constant)		6.037	.

Table 1 shows the results of a conjoint analysis which computed utility estimates of the attributes Brand, Occasion, Price, and Packaging, where each coefficient indicates the added value of utility compared to the constant of 6.037. The standard errors could not be computed due to insufficient degrees of freedom. Table 3 (Appendix D.2) shows a significance of <0.001 which is below 0.05, so the model works suitably enough. The utilities are scaled to sum to zero within each attribute, so a negative value does not mean the option is unattractive, yet it means other options are preferred over that option. What can be derived from Table 1 is that both Pringles and Lays are preferred over a private brand, with a slight preference for Lays namely 0.223 over 0.192. Secondly, holiday was the most preferred occasion of the three options. According to Category Manager E-commerce at Kellogs Bas Geertman (personal communication, May 15, 2023), sales of Pringles rise during the summer holidays, which supports the respondents' choice for this option. Thirdly, the price option preferences differed the most, which will be explained as well in the next part. Namely, a price of 1.00 was preferred the most and a price of 2.65 was the least preferred option. Lastly, when it comes to packaging, the iconic cylinder design is the least preferred option. However, utilities differ not much from each other which can also be derived from the importance value of 11.529 in Table 2.

**Table 2***Importance Values*

Brand	20.301
Occasion	17.043
Price	51.128
Packaging	11.529
<hr/>	
Averaged Importance Score	

Table 2 shows the importance values of each attribute, measuring how important the factor was to overall preference. The more spread there is within a certain attribute, the more important it will end up being. The results show that price has the most influence on overall preference of the respondents, 51.1% of the overall preference can be attributed to price. This can be derived from the utility scores as well. A price of 1.90 was preferred the most with a utility of 1.000 whereas a price of 2.65 obtained utility - 0.606. The attribute packaging was considered the least important factor on overall preference of the respondents. Regular bags (0.016) and sustainable packaging (0.173) were preferred over the iconic cylinder design (-0.189) (from Pringles).

Summarizing, Pringles and Lays are preferred over a private brand when rating potato chips profiles. Combined with a higher preference for consumption during the holiday, a price of €1.90 and regular bags or sustainable packaging. However, the option for iconic distinctive design had no significant effect. Therefore, the hypothesis should be rejected since distinctive design does not have a significant effect on decision-making.

#### 4.4 Hypothesis 3

The third hypothesis has been formulated as follows: *Potato chips are thinly fried potato slices that fall under the category FMCG goods bought by consumers on a regular basis.* To determine the regularity, respondents were asked to mention their weekly consumption of potato chips. If the majority of the respondents reported frequent consumption, the hypothesis could be accepted. Figure 6 in Appendix D.3 shows that 37.8% (52) of the sample reported a consumption of less than once a week, followed by 36.7% (51) of the sample consuming potato chips once a week. 20.1% (28) reported consuming potato chips twice a week and 5.1% (7) are consuming potato chips more than twice a week. Concluding this, the majority of the sample, 62.3% (86), reported the consumption of potato chips at least once a week, showing a regular basis as stated in the hypothesis. Based on this reasoning, the hypothesis can be firmly accepted.

#### **4.5 Hypothesis 4**

The fourth hypothesis implied the following: *The consumer decision-making process entails five stages a consumer must undergo before a purchase decision can be taken, while being significantly influenced by packaging.* The five stages that need to be considered are Problem Recognition, Information Search, Evaluation of Alternatives, Purchase, Post-Purchase Evaluation. During the research, the respondents were presented information on distinctive design and on the four functions of packaging. Therefore, the first two stages of the five-stage model could be eliminated, and the main effect of packaging could be tested in the Evaluation of Alternatives and Purchase steps.

The conjoint analysis as discussed in paragraph 4.3 Hypothesis 2 showed that packaging was the least important factor in the rating of potato chips profiles with an importance value of 11.529 (Table 2, Appendix D.2). Moreover, consumers value the price of the product, the brand, and the occasion of consumption over packaging. This implies that packaging is one of the last factors consumers keep in mind when making a consumption decision. Figure 5 in Appendix D.1 shows similar results to the importance values depicted in Table 2. Namely, taste (mentioned by 130 respondents) and price (mentioned by 109 respondents) were considered as the most important factors in the buying process. Furthermore, occasion (mentioned by 36 respondents) was the fourth most important factor and (sustainable) packaging (mentioned by 14 respondents) the second to last.

Table 11 (in Appendix D.5) zooms in on the derived utilities of packaging. What can be derived from Table 11 is that differing in packaging types influences the preferences of consumers. For example, sustainable packaging is the most preferred option with a utility estimate of 0.173, followed by regular bags with a utility estimate of 0.016. Iconic cylinder design on the other hand is the least preferred option with a utility estimate of -0.189.

Overall, it can be concluded that packaging is not the most determining factor in the consumer decision-making process, where consumer prefer taste and price over other factors. However, offering different types of packaging enables evaluation of alternatives, changes preferences and eventually might influence purchases. Therefore, there is a significant influence of packaging on the consumer decision-making process and the hypothesis can be accepted.

#### **4.6 Hypothesis 5**

The fifth hypothesis mentioned the following: *Generation Z is a group of people aged 12 to 25, differing in food consumption preferences but similar in snack consumption and forming their opinions based on the same political, economic or social events they experienced during their life.* This research focusses on Generation Z as its focus group. Therefore, the gathered data has been concentrated on the age group

12 to 25 years. Hence, the respondents of the survey can be accepted as the accurate representation of the target population. The age groups are divided into two parts 12-18 years and 19-25 years to look for differences in food consumption between the younger Generation Z and the older Generation Z.

The two age groups may differ in education (high school student, college student, starter etc.), housing and monthly income. Research by the Australian research company Roy Morgan (2020) found that parents with children under eighteen purchase them every two to four weeks new potato chips, which may explain the high consumption of this group. Therefore, an independent samples t-test has been conducted to look for difference between the age groups regarding potato chips consumption, depicted in Table 5. The null hypothesis will be that the variance in potato chips consumption across the two age groups is equal. The alternative hypothesis will be that the variance in potato chips consumption across the two age groups will be significantly different.

**Table 5**

*Independent Samples T-Test Age Groups and their Potato Chips Consumption*

Q5: How often do you consume potato chips per week?

Levene's Test for Equality of Variances		t-test for Equality of Means							95% Confidence Interval of the Difference	
		Significance		t	df	Mean Difference	Std. Error Difference	Lower	Upper	
F	Sig.	One- Sided p	Two- Sided p							
Equal variances assumed	6.646	.011		1.605	136	.425	.265	-.099	.950	
Equal variances not assumed				1.727	36.209	.425	.246	-.074	.925	

Firstly, the independent samples t-test checks for implementation, using the Levene's Test to see if both variances are equal across the two age groups. If the Leven's test shows significance above 5% (sig. > 0.05), the t-value of Equal variances assumed can be used. However, the given value 0.011 is below 0.05, so the variance in potato chips consumption is significantly different across the two age groups. Thus, equal variances not assumed should be used which depicts a two-sided p-value of 0.093 which is above 0.05, meaning there is no significant difference between the age groups 12-18 and 19-25 and the null hypothesis can be accepted. Therefore, it is not possible to conclude that a difference in age groups

increases potato chips consumption, meaning the two age groups do not significantly differ in food consumption. For this reason, the hypothesis can be accepted.

#### **4.7 Summary of Key Findings Results**

Overall, four of the five hypotheses ended up being accepted. For the first hypothesis, a multifactor ANOVA test was used to test the effect of the packaging functions protection, containment, communication and convenience variables on the dependent variable rating of distinctive design on buying behavior. Pringles' communication function, Lays' convenience function and the interaction between Pringles' protection function and Pringles' containment function showed a significant effect on the rating of distinctive design on buying behavior. This indicated that consumers consider protection, containment, communication and convenience as packaging functions, though it depends on the brand and its own form of packaging. Secondly, to test the second hypothesis, a conjoint analysis was run with an orthogonal design and the ratings of 9 profiles by the respondents. It was concluded that packaging was the least important factor consumers take into account when rating potato chips profiles. Furthermore, the distinctive design option was the least preferred option. The hypothesis which stated that distinctive design influences decision-making was therefore rejected. Thirdly, the potato chips consumption of the sample was examined. A vast majority of 62.3% (86) of the sample reported consumption of potato chips at least once a week. This proved that potato chips fall under a FMCG good which is bought on a regular basis.

Fourthly, to test whether packaging was influencing the consumer decision-making process, the conjoint analysis results were looked at again. Zooming in on packaging, it was concluded that consumers prefer different types of packaging, serving as alternatives and therefore packaging could have an influence on the consumer decision-making process. Finally, for the fifth hypothesis, independent samples t-test has been conducted to look for difference between the age groups regarding potato chips consumption. The test showed that the variance of potato chips consumption was equal across the two age groups, so it can be stated that Generation Z does not significantly differ in food consumption across age groups.

## **Chapter 5. Conclusions & Recommendations**

The following chapter will first discuss the key findings of the Literature Review and Empirical Research. Afterwards, there will be looked for similarities and differences between both types of research. Then the central research question will be answered using the key findings and the hypotheses will be accepted or rejected. Next, there will be recommendations for both Pringles, the potato chips market in general and for future researchers. Lastly, limitations that might have occurred during this research will be discussed and the researcher's own perception will be reflected.

### **5.1 Key findings Literature Review**

Firstly, packaging is the part of a product isolating it from its external environment (Müller & Schmid, 2019). Investing in high quality packaging is essential since it slows down decay, protects the product during transport allowing easy distribution, ensures year-round availability and lastly reduces premature wastage (Mahalik, 2009). These benefits all belong to the packaging functions protection, containment, communication, and convenience, PCCC in short. Besides, packaging must keep innovating to remain attractive for the consumer. As for protection, there has been a shift from a passive role as a practical barrier (Yam et al., 2005) to a more active role of adapting to changing conditions (Vermeiren et al., 1999). Moreover, brands can identify themselves through their packaging and communicate this to potential consumers (Underwood, 2003).

Secondly, the distinctive design of packaging serves as a silent salesman in the decision-making process that will help sell the product (Löfgren et al., 2008). The overall appearance is the first connection between consumer and product, and judgements will follow hereafter (Bloch et al., 2003). Distinctive design differentiates a product from others and makes a product attractive in competitive markets. Ultimately, a producer wants to build brand loyalty resulting in repeated purchases because of distinctive design influencing consumer decision-making. Additionally, this desire aligns with the definition of Fast-moving consumer goods (FMCGs), which are products with low purchase transaction, low risk, low involvement but high frequency in purchasing (Verma et al., 2023). These characteristics fit the definition of the system 1 good potato chips, often bought on autopilot. The packaging of potato chips differs from sealed plastic bags to a cylindrical paperboard design Pringles has, which is more sustainable and better protects the product from breaking.

Furthermore, every product goes through the consumer decision-making process, consisting of five stages: problem recognition, information search, evaluation of alternatives, purchase and post-purchase behavior. The level of involvement, which is the perceived relevance of a purchase to the consumer (Szmigin & Piacentini, 2022), determines how much a consumer cares about a product. Packaging influences the decision-making process on different aspects. First it captures the attention of the

consumer with for example distinctive design. In the next step, packaging enables comparison of different types of packaging each with its own characteristics (Dudovskiy, 2013). Based on the desired characteristics, a purchase will be made after which the product will be either rebought or there will be looked at an alternative (Garai-Fodor, 2021). Lastly, Generation Z is the group of people aged 12 to 25. They may differ in reasons for buying a product (Garai-Fodor, 2021) and are more affected by sustainable options (Kamenidou et al., 2019), but are similar in snack consumption (Paipongna, 2022) for hunger and energy purposes.

## **5.2 Key Findings Empirical Research**

The Literature Review resulted in the formation of five hypotheses that were tested with 138 responses to a survey. The respondents were selected based on their Dutch nationality, their age ranged 12-25 years and completion of the survey (where fulfilment of 82% was required to answer hypothesis 1, 3 and 5). Finally, this resulted in a representative sample of the Dutch Generation Z. Firstly, the majority of the sample, 62.3% (86 respondents), reported the consumption of potato chips at least once a week, showing a regular basis while 37.8% (52 respondents) of the sample reported consumption of less than once a week. Within the age range 12-25 that Generation Z entails, an independent samples t-test found that there was no significant difference between the age groups 12-18 and 19-25 regarding potato chips consumption.

Furthermore, it was found that Taste and Price are decisive factors in the buying process of potato chips, mentioned by respectively 31.63% (130 respondents) and 26.52% (109 respondents). Other important factors included Discounts and Occasion but only 3,4% (14 respondents) mentioned (sustainable) packaging as an important factor. Moreover, a conjoint analysis run on an orthogonal design of nine profiles differing in Brand, Occasion, Price and Packaging showed similar results. First of all, the results showed that 51.1% of the overall preference of the respondents could be attributed to Price, followed by an importance score of 20.3% for Brand and 17.0% for Occasion. In the last place comes packaging with 11.5% of the overall preference attributed to this factor. Additionally, the distinctive design option: iconic cylinder design (-0.189) was the least preferred option among the packaging options. This could also be explained by the average rating of whether distinctive design was influencing buying behavior of the respondents, showing an average score of 5.4. Sustainable packaging was the most preferred option (0.173), followed by regular bags (0.016).

Lastly, responses regarding usefulness of packaging functions, it turned out that Lays' packaging was found to be more useful on all functions than Pringles' packaging. Individually, Pringles' packaging was found most useful on its convenience and communication function whereas Lays' packaging was found the most useful for its protection function. Continuing, a multi-factor ANOVA tested the effect

of the packaging functions protection, containment, communication and convenience as independent variables on the dependent variable, the rating of distinctive design on buying behavior. It was found that Pringles' communication function and Lays' convenience function had a significant effect on the rating of distinctive design on buying behavior. Besides, the interaction between Pringles' protection and containment function showed significant results as well. Furthermore, the rating of distinctive design was declared more by Pringles' packaging functions (12.4%) than Lays' packaging functions (10.8%), depicted by a higher  $R^2$ .

### **5.3 Comparing Literature Review and Empirical Research**

Four of the five hypotheses ended up being accepted, which implies that the Literature Study and Empirical Research include suitable information though not all assumptions overlap with the results. Firstly, previous literature concluded that packaging serves as protection, containment, communication or convenience for the product (Mahalik, 2009). The empirical research concluded that indeed protection and convenience were found the most useful packaging functions. Though it was expected that the paperboard packaging of Pringles would be found more useful for protecting the product, Lays' plastic bags were found more useful for protecting. Secondly, previous literature stated that distinctive design would help sell the product and would communicate brand identity to consumers. Bloch et al. (2003) stated that distinctive design would influence judgements of the product. Nevertheless, a conjoint analysis showed that the distinctive design option: iconic cylinder design was the least preferred option among the packaging options. The average rating of whether distinctive design was influencing buying behavior of the respondents showed similar results with an average score of 5.4.

Moreover, Underwood (2003) distinguished packaging as brand identification which could be communicated towards consumers. This assumption could be supported by a multi-factor ANOVA test, which resulted in Pringles' communication function, Lays' convenience function and combining between Pringles' protection and containment function significantly affecting the rating of distinctive design on buying behavior. However, the declared variance is low which indicates that only a fraction of the differences between people is attributed to the packaging functions. Other factors like taste, price and discounts make more impact on decision-making.

Furthermore, literature showed that the overall appearance of a product will help sell the product (Löfgren et al., 2008). Therefore, it was expected that differencing in packaging options would cause a shift in preferences. Even though a conjoint analysis revealed that packaging was the least important factor on overall preference, differencing in packaging options showed a shift in preferences. Translating this to the consumer decision-making process, it could be concluded that packaging in general is not a determining factor in the decision-making process but offering different types of packaging allows



evaluation of alternatives, which impacts consumer decision-making. This means that in case packaging influencing consumer decision-making, the literature and empirical research draw the same conclusions.

Lastly, previous research proposed that FMCG goods are products with low purchase transaction, low risk, low involvement but high frequency in purchasing (Verma et al., 2023). Potato chips is a product that falls under this description, which can be supported by the empirical research which found that the majority of the sample, 62.3% (86 respondents), reported the consumption of potato chips at least once a week. The sample group consisted of solely Dutchmen belonging to Generation Z aged 12-25, expected to be similar in snack consumption (Paipongna, 2022) for hunger and energy purposes. This was supported by empirical research which found no significant difference between the age groups 12-18 and 19-25 regarding potato chips consumption. A remark to mention is that these conclusions are based on the sample of Dutch Generation Z regarding potato chips consumption.

#### **5.4 Central Research Question**

The central research question of this research stated the following:

*“How does the distinctive/recognizable design of Pringles’ packaging impact the consumer decision-making process and buying behavior of the Dutch Generation Z?”*

Based on the outcome of the comparison between the key findings of the Literature Study and the Empirical Research an answer could be formulated. Firstly, the functions of potato chips packaging were specified and the element of distinctive or recognizable design was to be found in comparing the brand Pringles and Lays, since Pringles is known for its iconic cylinder paperboard design. The impact of the distinctive design of Pringles’ packaging on the consumer decision-making process was measured in two ways. Firstly, it has been checked whether Pringles’ packaging functions had a significant effect on the rating whether distinctive design influences the buying behavior of consumers. Indeed, the consumers’ perception of usefulness for Pringles’ communication function and the combination of Pringles’ protection and containment function showed significant effects on the rating of distinctive design regarding buying behavior.

Secondly, a conjoint analysis derived importance scores of the characteristics Brand, Occasion, Price and Packaging on the overall preference of the respondents. This resulted in the conclusion that packaging in general is not a determining factor in the decision-making process but offering different types of packaging allows evaluation of alternatives, which impacts consumer decision-making. However, the distinctive design option was the least preferred option among the packaging options.

Summarizing, packaging functions may have a separate effect on the rating of distinctive behavior of respondents but combining the functions all together and forming a product with distinctive design, it can be concluded that the distinctive/recognizable design of Pringles does not have a positive effect in the consumer decision-making process of Dutch Generation Z.

## **5.5 Acceptation and Rejection of the Hypotheses**

Now the central research question has been answered, the following hypotheses could be accepted with the research that has been conducted: H1: Packaging isolates a product from external influences and is used to protect, contain, communicate, and add convenience. H3: Potato chips are thinly fried potato slices that fall under the category FMCG goods bought by consumers on a regular basis. H4: The consumer decision-making process entails five stages a consumer must undergo before a purchase decision can be taken, while being significantly influenced by packaging. H5: Generation Z is a group of people aged 12 to 25, differing in food consumption preferences but similar in snack consumption and forming their opinions based on the same political, economic or social events they experienced during their life.

One hypothesis was rejected because the results of this research conflicted with the assumptions of the hypothesis: H2: Design is the first connection between consumer and product in which recognizability of the design enables differentiation, product attractiveness and influences decision-making positively.

## **5.6 Recommendations to Pringles and the potato chips market**

This research contains valuable insights regarding packaging, especially in the potato chips market. Firstly, the importance of pricing should be reinforced since this research showed that the overall preference of the Dutch Generation Z was mostly attributed to price. This could be explained since this generation of adolescents, students, or starters does not have as much to spend compared to older generations. A recommendation for Pringles in particular is to focus on discounts, especially around the holidays because Pringles is often considered a holiday snack. Secondly, different packaging options, especially sustainable options should be developed to meet the demands of consumers, who are increasingly willing to pay for sustainable options. Especially for Pringles, their paperboard packaging is an asset compared to competitors. Creating an environmental substitute for the last piece of plastic, its lid, will set the tone for Pringles' competitors to improve their packaging.

## **5.7 Recommendations to Future Researchers**

Several studies have already been done on the effect of color in packaging. This research will hopefully contribute to the studies on distinctive design. This research was mainly concentrated on one age group and nationality. Therefore, there could be opportunity for future researchers to gain insights on different

age groups, nationalities and product markets. Especially investigating different age groups would be interesting, since the disposable income and willingness-to-pay will play a more important role for older people. Lastly, an experiment in real life on a large scale through for example questioning supermarkets visitors would potentially lead to more honest and interesting answers.

## **5.8 Research Limitations**

To answer the central research question and the five empirical sub-questions, a survey was distributed resulting in a total of 191 answers of which 138 could be used to fit in the sample. As illustrated in chapter 1.5, the Netherlands counted for more than 2.5 million inhabitants aged 12-25 on January 1<sup>st</sup>, 2023 (Centraal Bureau voor de Statistiek, 2023). Obviously, these numbers are not to compare with the 138 respondents of the research sample. Besides, the survey reported an almost 40:60 male to female ratio whereas the CBS (n.d.) reports a nearly equal 1:1 ratio. This overrepresentation of females might influence the data. Furthermore, the collected data might not reflect the respondents' actual behavior or preferences since the survey was filled in anonymously and with no further intentions. A real-life setting will enhance more reliable answers. Lastly, due to the short time span of this research, more qualitative research would have been useful to support the qualitative data.

## **5.9 Reflection**

The process of writing this thesis has been a rollercoaster for me. From starting with the subject packaging, the question arose what product to dive into. After concluding that wine and whiskey were more influenced by the taste of the product rather than the packaging, potato chips came into my mind. Especially the distinctiveness of Pringles' packaging seemed interesting, admirable for its long history and its shape used even in the dental industry. This research taught me to filter the most important parts of an article, to compare and look for similarities but also for differences. This research taught me to write academic but understandable writing and how to perform adequate research through a survey by asking the right questions. Afterwards, it has been a difficult process of keeping up with the work and to invest time in completely understanding what to do with the final data gathered. This research made me realize how hard it is to write an academic paper, so I want to express my respect for all researchers. To conclude, this Thesis triggered my desire to start a Marketing Master next year.

# Appendix

## Appendix A: References

- Agariya, A. K., Johari, A., Sharma, H. K., Chandraul, U. N. S., & Singh, D. (2012). The Role of Packaging in Brand Communication. *International Journal of Scientific & Engineering Research*. <https://www.ijser.org/researchpaper/The-Role-of-Packaging-in-Brand-Communication.pdf>
- Aggarwal, A., & Langowski, H. (2020). Packaging Functions and Their Role in Technical Development of Food Packaging Systems: Functional Equivalence in Yoghurt Packaging. *Procedia CIRP*, 90, 405–410. <https://doi.org/10.1016/j.procir.2020.01.063>
- Anonymous. (2000). Product packaging: Empty Promises? *Consumer Policy Review*, 10(6), 206-211.
- Battezzati, L., & Magnani, R. (2000). Supply chains for FMCG and industrial products in Italy. *International Journal of Physical Distribution & Logistics Management*, 30(5), 413–424. <https://doi.org/10.1108/09600030010336180>
- Belch, G. E., & Belch, M. A. (2004). *Advertising and Promotion: An Integrated Marketing Communications Perspective*.
- Bloch, P., Brunel, F. F., & Arnold, T. W. (2003). Individual Differences in the Centrality of Visual Product Aesthetics: Concept and Measurement. *Journal of Consumer Research*, 29(4), 551–565. <https://doi.org/10.1086/346250>
- Catpaw. (2022, September 13). The Pringles can, 1 patent & a new design. *Bitter Grounds Magazine*. <https://bittergrounds.com/pringles-cans-a-patent-newish-design/>
- Centraal Bureau voor de Statistiek. (n.d.). Jongeren. *Centraal Bureau voor de Statistiek*. <https://www.cbs.nl/nl-nl/visualisaties/dashboard-bevolking/leeftijd/jongeren#:~:text=Hoeveel%20jongeren%20zijn%20er%20in,inwoners%20jonger%20dan%2025%20jaar>
- Centraal Bureau voor de Statistiek. (n.d.). Mannen en vrouwen. *Centraal Bureau voor de Statistiek*. <https://www.cbs.nl/nl-nl/visualisaties/dashboard-bevolking/verdeling/>
- Chicca, J., & Shellenbarger, T. (2018). Generation Z: Approaches and teaching–learning practices for nursing professional development practitioners. *Journal for nurses in professional development*, 34(5), 250-256.
- Design Rush (n.d.). Pringles Packaging Overtook the Market by Storm with Iconic Design and Distinct Product Identity. *Design Rush*. <https://www.designrush.com/best-designs/packaging/pringles-packaging-design>
- Dimock, M. (2019). Defining generations: Where Millennials end and Generation Z begins. *Pew Research Center*, 17(1), 1-7.
- Dobson, P., & Yadav, A. (2012). Packaging in a market economy: The economic and commercial role of packaging communication.

- Dolot, A. (2018). The characteristics of Generation Z. *E-Mentor*, 74, 44–50.  
<https://doi.org/10.15219/em74.1351>
- Dudovskiy, J. (2013). Consumer decision making process: a detailed analysis. *Research Methodology*.
- Frey, A. W. (1961). Advertising (3rd ed.). New York: The Ronald Press.
- Garai-Fodor, M. (2021). Food Consumption Patterns, in a Values-based Approach, for Generation Z. *Acta Polytechnica Hungarica*, 18(11), 117–134. <https://doi.org/10.12700/aph.18.11.2021.11.7>
- Gayle, D. (2020, September 23). Product designers “must reduce Pringles factor” to boost recycling. *The Guardian*. <https://www.theguardian.com/environment/2017/may/18/product-designers-must-reduce-pringles-factor-to-boost-recycling>
- Goi, C. L. (2009). A Review of Marketing Mix: 4Ps or More? *International Journal of Marketing Studies*, 1(1). <https://doi.org/10.5539/ijms.v1n1p2>
- Hesterberg, K. (2017, February 8). The Little-Known Stories Behind 8 Iconic Packaging Designs. *blog.hubspot.com*. <https://blog.hubspot.com/marketing/iconic-packaging-designs-stories>
- Holton, E. F., & Burnett, M. F. (2005). The basics of quantitative research. *Research in organizations: Foundations and methods of inquiry*, 29-44.
- Kamenidou, I. C., Mamalis, S. A., Pavlidis, S., & Bara, E. Z. G. (2019). Segmenting the generation Z cohort university students based on sustainable food consumption behavior: A preliminary study. *Sustainability*, 11(3), 837.
- Kauppinen-Räsänen, H. (2014). Strategic Use of Colour in Brand Packaging. *Packaging Technology and Science*, 27(8), 663–676. <https://doi.org/10.1002/pts.2061>
- Keiser, K. (2018, July 4). How much air is in your bag of chips? *Bakery & Snacks*.  
<https://www.bakeryandsnacks.com/Article/2018/06/20/How-much-air-is-in-your-bag-of-chips>
- Kellerman, B. J., Gordon, P. J., & Hekmat, F. (1995). Product and pricing courses are underrepresented in undergraduate marketing curricula. *Journal of Product & Brand Management*, 4(1), 18-25.
- Kellogg’s UK and Ireland Press Office. [@KelloggsPressUK]. (2021, September 21). *Mr. P, our #Pringles mascot has had his first makeover in 20 years to coincide with the 30<sup>th</sup> anniversary of our UK Launch. He will now sport a modern look, and at 54 years old, he is still looking as handsome as ever! For the full #pressrelease email us at pressoffice@kellogg.com* [Tweet].  
<https://twitter.com/KelloggsPressUK/status/1440289461506502663>
- Krishna, R., Maithreyi, R., & Surapaneni, K. M. (2010). Research bias: a review for medical students. *J Clin Diagn Res*, 4(2), 2320-2324.
- Kirkman, M. A. (2007). Global Markets for Processed Potato Products. *Elsevier eBooks* (pp. 27–44).  
<https://doi.org/10.1016/b978-044451018-1/50044-0>
- Klein, A., & Sharma, V. M. (2022). Consumer decision-making styles, involvement, and the intention to participate in online group buying. *Journal of Retailing and Consumer Services*, 64, 102808. <https://doi.org/10.1016/j.jretconser.2021.102808>

- Kymäläinen, T., Seisto, A., & Malila, R. (2021). Generation Z food waste, diet and consumption habits: A Finnish social design study with future consumers. *Sustainability*, *13*(4), 2124.
- Lindh, H., Williams, H. M., Olsson, A., & Wikström, F. (2016). Elucidating the Indirect Contributions of Packaging to Sustainable Development: A Terminology of Packaging Functions and Features. *Packaging Technology and Science*, *29*(4–5), 225–246.  
<https://doi.org/10.1002/pts.2197>
- Löfgren, M., Witell, L., & Gustafsson, A. (2008). Customer satisfaction in the first and second moments of truth. *Journal of Product & Brand Management*, *17*(7), 463–474.  
<https://doi.org/10.1108/10610420810916362>
- Madrigal, A. C. (2018, 22 juni). The Pringle as Technology. *The Atlantic*.  
<https://www.theatlantic.com/technology/archive/2011/04/the-pringle-as-technology/236903/>
- Mahalik, N. P. (2009). Processing and packaging automation systems: a review. *Sensing and Instrumentation for Food Quality and Safety*, *3*(1), 12–25. <https://doi.org/10.1007/s11694-009-9076-2>
- McLeod, S. (2007). Maslow's hierarchy of needs. *Simply psychology*, *1*(1-18).
- Milkman, K. L., Chugh, D., Bazerman, M. H., & School, H. B. (2008). *How Can Decision Making be Improved?*
- Mueller, K. (2021, September 20). This Is Why Pringles Aren't Really Potato Chips. *Reader's Digest*.  
<https://www.rd.com/article/are-pringles-potato-chips/#:~:text=Savory%20crispy%20and%20addictive%20Pringles,all%E2%80%94they're%20crisps>
- Müller, P., & Schmid, M. (2019). Intelligent Packaging in the Food Sector: A Brief Overview. *Foods*, *8*(1), 16. <https://doi.org/10.3390/foods8010016>
- Munthiu, M. C. (2009). The buying decision process and types of buying decision behaviour. *Sibiu Alma Mater University Journals. Series A. Economic Sciences*, *2*(4), 27-33.
- Paine, F. T. (1990). *The Packaging User's Handbook*. Springer Science & Business Media.  
<https://doi.org/10.1007/978-1-4613-1483-7>
- Paipongna, M. (2022, July 27). 2022 Food and Health Survey Spotlight: Generation Z. *Food Insight*.  
<https://foodinsight.org/spotlight-generation-z/>
- Pathak, V., Jena, B., & Kalra, S. (2013). Qualitative research. *Perspectives in clinical research*, *4*(3).
- Pedreschi, F., Mery, D., Marique, T., & De Chile, S. (2007). Quality Evaluation and Control of Potato Chips and French Fries. *Elsevier eBooks* (pp. 545–566). <https://doi.org/10.1016/b978-012373642-0.50025-9>
- Poole, J. (2020, September 24). Pringles reveals paper tube Tesco trials as “recycler’s nightmare” reaches tipping point. *Packaginginsights.com*.  
<https://www.packaginginsights.com/news/pringles-reveals-paper-tube-tesco-trials-as-recyclers-nightmare-reaches-tipping-point.html>

- Potato chips and corn chips the snack foods of choice for parents during lockdown - Roy Morgan Research.* (2020, May 18). <https://www.roymorgan.com/findings/potato-chips-and-corn-chips-the-snack-foods-of-choice-for-parents-during-lockdown>
- Rösken, T. (2023, May 3). Pringles-bus verliest metalen bodem en kan straks bij oud papier. *NU.nl*. <https://www.nu.nl/economie/6262065/pringles-bus-verliest-metalen-bodem-en-kan-straks-bij-oud-papier.html>
- Rout, S. (2023, March 15). Why Pringles are Shaped Like THAT - Cantor's Paradise. *Medium*. <https://www.cantorsparadise.com/why-pringles-are-shaped-like-that-c494407bbeb>
- Sharma, V. M., & Klein, A. (2020). Consumer perceived value, involvement, trust, susceptibility to interpersonal influence, and intention to participate in online group buying. *Journal of Retailing and Consumer Services*, 52, 101946. <https://doi.org/10.1016/j.jretconser.2019.101946>
- Simms, C., & Trott, P. (2010). Packaging development: A conceptual framework for identifying new product opportunities. *Marketing Theory*, 10(4), 397–415. <https://doi.org/10.1177/1470593110382826>
- Singh, S. (2006). Impact of color on marketing. *Management Decision*, 44(6), 783–789. <https://doi.org/10.1108/00251740610673332>
- Smith, W., & Clurman, A. (1997). Rocking the ages: the Yankelovich report on generational marketing. *Choice Reviews Online*, 35(03), 35–1629. <https://doi.org/10.5860/choice.35-1629>
- Sukamolson, S. (2007). Fundamentals of quantitative research. *Language Institute Chulalongkorn University*, 1(3), 1-20.
- Swlattorneys. (2022). Pringle Proof: More Things Are Patentable Than Meets The Eye. *SW&L Attorneys*. <https://www.swlattorneys.com/patentability-requirements/#:~:text=The%20Pringles%20Patent,Patent%20being%20granted%20in%201970>
- Szmigin, I., & Piacentini, M. (2022). *Consumer Behaviour*.
- Ten Bruggenkate, C.M. (2003). *Intra-osseous implant* (European Patent No. EP1638477B1. European Patent Office. <https://patentimages.storage.googleapis.com/3e/88/0a/6749fb5303aaf8/EP1638477B1.pdf>
- Underwood, R. A., & Klein, N. M. (2002). Packaging as Brand Communication: Effects of Product Pictures on Consumer Responses to the Package and Brand. *The Journal of Marketing Theory and Practice*, 10(4), 58–68. <https://doi.org/10.1080/10696679.2002.11501926>
- Underwood, R. A. (2003). The Communicative Power of Product Packaging: Creating Brand Identity via Lived and Mediated Experience. *The Journal of Marketing Theory and Practice*, 11(1), 62–76. <https://doi.org/10.1080/10696679.2003.11501933>

- Verma, S. S., Rojhe, K. C., Horská, E., Sharma, S., & Šedík, P. (2023). Consumer Decision-Making Rules for FMCG Products—Study of Rural in North India. *Economies*, *11*(1), 26.  
<https://doi.org/10.3390/economies11010026>
- Vermeiren, L., Devlieghere, F., Van Beest, M., De Kruijf, N., & Debevere, J. (1999). Developments in the active packaging of foods. *Trends in Food Science and Technology*, *10*(3), 77–86.  
[https://doi.org/10.1016/s0924-2244\(99\)00032-1](https://doi.org/10.1016/s0924-2244(99)00032-1)
- Yam, K. L., Takhistov, P., & Miltz, J. (2005). Intelligent Packaging: Concepts and Applications. *Journal of Food Science*, *70*(1), R1–R10. <https://doi.org/10.1111/j.1365-2621.2005.tb09052.x>
- York, B. (2023). Pringles (History, Flavors, Pictures & Commercials). *Snack History*.  
<https://www.snackhistory.com/pringles/>
- Zak, S., & Hasprova, M. (2020). The role of influencers in the consumer decision-making process. *SHS web of conferences*, *74*, 03014. <https://doi.org/10.1051/shsconf/20207403014>



## Appendix B: Survey questions

### Start of Block: Consent form

Q1 Thank you for participating in this survey. My name is Valérie Schretlen and I am a third year Economics student at Erasmus University. This online survey is being distributed in support of my Marketing Bachelor Thesis. The aim of this research is to observe whether the iconic packaging of Pringles influences the consumer decision-making process of Generation Z in the Netherlands.

You will be asked to answer some questions on your potato chips consumption, where your brand of choice is based on and lastly, you are asked to rate products based on their packaging functions. This survey is estimated to take approximately 5-10 minutes to complete. Please do fill it in completely and truthfully. Your participation is completely voluntary, and your obtained data will only be used solely for this research. Afterwards, your answers will be deleted.

If you have any questions about this research, feel free to contact me on 543937vs@eur.nl. By clicking 'yes', you are giving consent to participate in this research.

P.S.: This survey contains credits to get free survey responses at SurveySwap.io and SurveyCircle

Q1: I agree to give consent to participate in this survey.

Yes (1)

No (2)

---

Q2: What is your age group?

12-18 (1)

19-25 (2)

26-35 (3)

36-50 (4)

50+ (5)

---

Q3: What gender do you identify yourself with?

- Male (1)
  - Female (2)
  - Non-binary / third gender (3)
  - Prefer not to say (4)
- 

Q4: What is your nationality?

- Dutch (1)
  - Other, namely (2) \_\_\_\_\_
- 

Q5: How often do you consume potato chips per week?

- Less than once a week (1)
  - Once a week (2)
  - Twice a week (3)
  - More than twice a week (4)
- 

Q6: Please rank these potato chips brands in order of use.

- \_\_\_\_\_ Lays (1)
  - \_\_\_\_\_ Pringles (2)
  - \_\_\_\_\_ Private brand ('huismerk') (3)
  - \_\_\_\_\_ Crocky (4)
  - \_\_\_\_\_ Doritos (5)
  - \_\_\_\_\_ Others (6)
-

Q7: What factors do you take into account when buying potato chips? (Multiple answers allowed)

- Taste (1)
- Price (2)
- Discounts (3)
- Quality (4)
- Packaging (Sustainable) (5)
- Occasion (6)
- Ease of use (7)
- Other, namely: (8) \_\_\_\_\_

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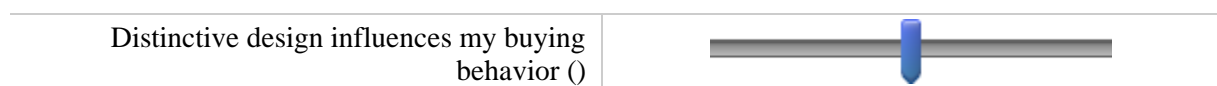
Packaging is considered as one of the key elements that play a role in the consumer decision-making process. Packaging isolates a product from external influences to provide a safe transport, either from manufacturing to the store, or from the store to your house.

Packaging is often referred to as a 'silent salesman' that will help sell the product after capturing the attention of the consumer. No matter the type of product, judgements will be formed based on this sensorial experience. Pringles does this by providing ease of use with their cylindrical container, which protects the product from breaking, which is the case for potato chips in regular plastic bags. Other distinctive designs you can think of are Toblerone's chocolate bars, Kikkoman's soy sauce or the typical blue and white design of Tiffany & Co.

---

Q8: To what extent does distinctive design influence your buying behavior? Please rate on a scale from 0 (not influenced at all) - 10 (heavily influenced).

0 1 2 3 4 5 6 7 8 9 10



---

The main functions of packaging are Protection, Containment, Communication and Convenience. In the following questions, you will be asked to rate the packaging of Pringles vs. Lays on the subject Protection, Containment, Communication and Convenience.

Protecting the product is important because it extends the durability of the product. Additionally, it

will preserve quality in an active manner by changing the conditions of the packaging (by for example absorbing or emitting gasses to favor the internal packaging environment).

---

Q9: Please rate the following statement: Pringles' packaging is useful for its protection function.

- Disagree (1)
  - Somewhat disagree (2)
  - Neutral (3)
  - Somewhat agree (4)
  - Agree (5)
- 

Q10: Please rate the following statement: Lays' packaging is useful for its protection function.

- Disagree (1)
  - Somewhat disagree (2)
  - Neutral (3)
  - Somewhat agree (4)
  - Agree (5)
- 

Containment is the second packaging function. Packaging must contain the product from the point of being packed to the utilization of the last contents of the product. It will form a shell for different shapes and sizes.

---

Q11: Please rate the following statement: Pringles' packaging is useful for its containment function.

- Disagree (1)
- Somewhat disagree (2)
- Neutral (3)
- Somewhat agree (4)
- Agree (5)

---

Q12: Please rate the following statement: Lays' packaging is useful for its containment function.

- Disagree (1)
  - Somewhat disagree (2)
  - Neutral (3)
  - Somewhat agree (4)
  - Agree (5)
- 

Thirdly, the communication function. Packaging serves as a marketing tool that communicates the image a brand wants to propagate. Besides, it is also functional since packaging contain warning labels or use instructions.

---

Q13: Please rate the following statement: Pringles' packaging is useful for its communication function.

- Disagree (1)
  - Somewhat disagree (2)
  - Neutral (3)
  - Somewhat agree (4)
  - Agree (5)
- 

Q14: Please rate the following statement: Lays' packaging is useful for its communication function.

- Disagree (1)
  - Somewhat disagree (2)
  - Neutral (3)
  - Somewhat agree (4)
  - Agree (5)
-

Lastly, packaging fulfills a convenience function. Packaging facilitates handling or creates utility/service if it meets up with the standards that are desired. Consumers enjoy having the ability to bring their favourite products with them wherever they go, convenient packaging enables that.

---

Q15: Please rate the following statement: Pringles' packaging is useful for its convenience function.

- Disagree (1)
  - Somewhat disagree (2)
  - Neutral (3)
  - Somewhat agree (4)
  - Agree (5)
- 

Q16: Please rate the following statement: Lays' packaging is useful for its convenience function.

- Disagree (1)
  - Somewhat disagree (2)
  - Neutral (3)
  - Somewhat agree (4)
  - Agree (5)
- 

Q17: Before we move on, please select 'potato'

- Trampoline (1)
  - Potato (2)
- 

In this last part, you will be asked to rate some (fictitious) potato chips profiles, differing in brand (Pringles, Lays, Private brand ('huismerk'), occasion (Holiday, Everyday, Party), packaging (Iconic cylinder design, regular plastic bags, Sustainable packaging) and price (€1,90; €2,19; €2,65). Please pay attention to the changing characteristics of each profile.

---

Q18: Please rate these (fictitious) potato chips profiles with the following characteristics (brand, occasion, packaging, price):

1 2 3 4 5 6 7 8 9 10

Private brand ('huismerk'), everyday, iconic cylinder design, €2,65 ()	
Private brand, party, regular bags, €1,90 ()	
Lays, holiday, regular bags, €2,65 ()	

Q19: Please rate these (fictitious) potato chips profiles with the following characteristics (brand, occasion, packaging, price):

1 2 3 4 5 6 7 8 9 10

Lays, party, iconic cylinder design, €2,19 ()	
Lays, everyday, sustainable packaging, €1,90 ()	
Pringles, party, sustainable packaging, €2,65 ()	

Q20: Please rate these (fictitious) potato chips profiles with the following characteristics (brand, occasion, packaging, price):

1 2 3 4 5 6 7 8 9 10

Pringles, holiday, iconic cylinder design, €1,90 ()	
Private brand, holiday, sustainable packaging, €2,19 ()	
Pringles, everyday, regular bags, €2,19 ()	

Q21 One last question, do you have anything else to comment on potato chips in general, on Pringles or on your buying behavior regarding those products?

\_\_\_\_\_

I want to thank you for your participation in this survey!

**End of Block: Default Question Block**







	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	
1	Start Date	Progres	Thank y	Q2: What is y	Q3: What	Q4: Who	Q5: How often	Q6: P	Q6: P	Q6: P	Q6: P	Q6: P	Q6: P	Q7: What factors do you	Q8: 1-5	Q8: Please ra	Q10: Please r	Q11: Please r	Q12: Please r	Q13: Please r	Q14: Please r	Q15: Please r	Q16: Please r	Q17: Before w	Q18: Q18: f	Q18: Q18: f	Q19: Q19: P	Q20: P	Q20: Q20: P	Q20: Q20: P	Q20: Q20: P	Q20: Q20: P	Q20: Q20: P	
91	18-06-2023 13:01	100	Yes	19-25	Male	Dutch	week	1	4	2	5	3	6	Taste,Price	1	Agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Potato	4	7	3	4	5	2	5	2	1
92	18-06-2023 15:33	100	Yes	19-25	Female	Dutch	Once a week	2	1	4	5	3	6	Taste,Price,Discounts,Qual	6	Agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Potato	3	6	4	5	7	3	7	5	4
93	18-06-2023 12:16	100	Yes	19-25	Female	Dutch	Once a week	2	5	1	6	3	4	Taste,Price,Discounts,Occ	3	Agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Potato	2	7	7	5	8	6	7	7	4
94	18-06-2023 17:04	100	Yes	19-25	Male	Dutch	More than once a week	1	2	5	3	4	6	Taste,Price	8	Agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Potato	6	6	7	7	7	7	9	8	7
95	18-06-2023 17:48	100	Yes	19-25	Male	Dutch	Once a week	3	4	6	5	2	1	lity,Occasion	5	Agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Potato	1	2	1	2	8	2	7	2	3
96	18-06-2023 22:33	100	Yes	19-25	Male	Dutch	Once a week	1	4	2	5	3	6	Price,Quality,Occasion	3	Agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Potato	5	8	5	4	7	4	6	6	6
97	18-06-2023 22:32	100	Yes	19-25	Male	Dutch	Once a week	1	3	2	5	4	6	Taste,Price,Ease of use	4	Agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Potato	2	8	5	3	8	4	7	3	3
98	19-06-2023 09:38	100	Yes	19-25	Female	Dutch	Less than once a week	3	4	2	6	5	1	Taste,Price,Quality	5	Agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Potato	4	5	4	5	5	6	6	7	7
99	18-06-2023 13:03	100	Yes	19-25	Male	Dutch	Once a week	2	3	1	5	4	6	Taste,Price,Occasion	6	Agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Potato	8	7	6	7	6	7	7	7	6
100	19-06-2023 15:36	100	Yes	19-25	Male	Dutch	Once a week	1	2	3	5	4	6	Taste,Quality,Occasion	8	Agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Potato	5	8	9	7	9	6	8	4	8
101	19-06-2023 22:14	100	Yes	19-25	Male	Dutch	Twice a week	3	2	4	5	1	6	(Sustainable) Taste,Price,Packaging	8	Agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Potato	8	4	6	9	8	9	10	7	6
102	20-06-2023 10:15	100	Yes	19-25	Male	Dutch	Once a week less than once a week	1	3	4	5	2	6	Taste,Price,Quality	4	Agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Potato	3	9	3	2	2	7	8	2	4
103	20-06-2023 10:34	100	Yes	19-25	Male	Dutch	Once a week less than once a week	1	2	4	5	3	6	Taste,Quality	0	Agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Potato	5	3	8	7	7	6	7	3	7
104	20-06-2023 13:58	100	Yes	19-25	Female	Dutch	Once a week	2	4	3	5	1	6	Taste,Price,Discounts	6	Agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Potato	6	7	6	6	7	6	7	6	7
105	20-06-2023 13:58	100	Yes	19-25	Female	Dutch	Twice a week less than once a week	1	5	3	4	2	6	Taste,Price	6	Agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Potato	4	8	6	3	10	6	6	5	5
106	21-06-2023 10:22	100	Yes	19-25	Male	Dutch	Less than once a week	3	2	5	4	1	6	Taste,Price,Quality	5	Agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Potato	5	7	8	7	4	6	8	6	5
107	21-06-2023 10:30	100	Yes	19-25	Male	Dutch	Once a week	3	2	5	4	1	6	Taste,Price,Discounts,Qual	6	Agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Potato	5	6	7	8	6	7	8	4	4
108	21-06-2023 11:35	100	Yes	19-25	Male	Dutch	Less than once a week	1	2	5	3	4	6	Taste	6	Agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Potato	4	4	7	7	6	7	7	6	6
109	21-06-2023 11:37	100	Yes	19-25	Male	Dutch	Less than once a week	1	5	2	3	4	6	Taste,Price	7	Agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Potato	7	5	5	5	7	6	7	6	6
110	21-06-2023 11:35	100	Yes	19-25	Male	Dutch	Once a week less than once a week	2	1	5	4	3	6	Taste,Quality	0	Agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Potato	4	3	6	3	5	4	7	5	6
111	21-06-2023 11:47	100	Yes	19-25	Male	Dutch	Once a week less than once a week	1	4	5	3	2	6	Taste,Discounts	5	Agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Potato	7	6	9	8	5	2	10	5	3
112	21-06-2023 13:27	100	Yes	19-25	Male	Dutch	Once a week less than once a week	3	1	5	4	2	6	Taste,Price,Quality	6	Agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Potato	5	6	7	7	8	8	9	6	6
113	21-06-2023 20:53	100	Yes	19-25	Female	Dutch	Once a week less than once a week	1	4	3	5	2	6	(Sustainable) Taste,Price,Packaging	4	Agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Potato	2	9	3	1	8	4	8	5	3
114	22-06-2023 09:07	100	Yes	19-25	Male	Dutch	Twice a week	1	3	5	4	2	6	Taste	5	Agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Potato	2	2	5	7	8	6	7	4	6
115	22-06-2023 11:18	100	Yes	19-25	Male	Dutch	Once a week	1	2	4	6	3	5	Taste,Price	7	Agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Potato	4	7	7	6	7	7	7	7	7
116	22-06-2023 12:41	100	Yes	19-25	Male	Dutch	Once a week	1	2	4	5	3	6	Price	7	Agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Potato	6	8	4	6	8	3	10	5	5
117	23-06-2023 13:08	100	Yes	19-25	Male	Dutch	Once a week	1	2	3	5	4	6	Taste,Quality	0	Agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Potato	5	5	5	5	5	5	5	5	5
118	23-06-2023 22:57	100	Yes	19-25	Female	Dutch	More than once a week	1	2	3	5	4	6	lity	3	Agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Potato	7	7	5	8	7	7	9	5	4
119	25-06-2023 13:50	100	Yes	19-25	Male	Dutch	Less than once a week	4	1	5	3	2	6	Taste,Price,Discounts	9	Agree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Disagree	Potato	7	4	4	7	6	6	8	8	6

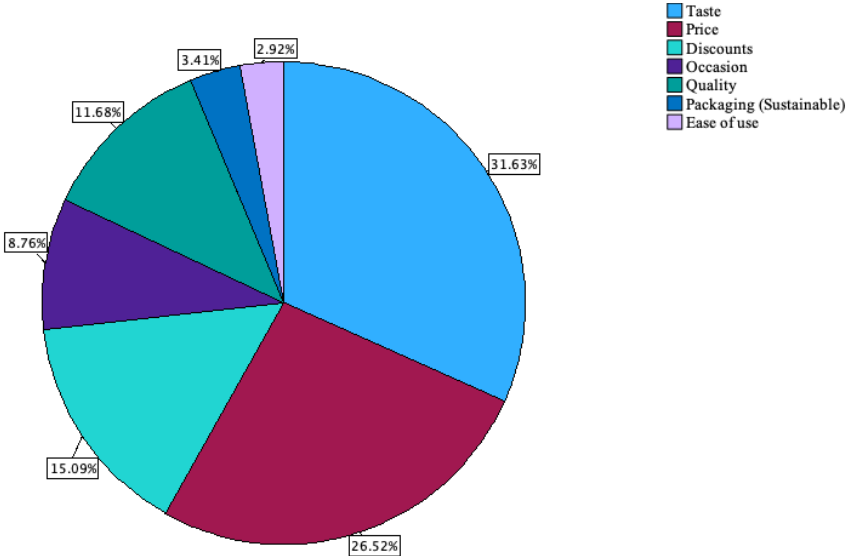


**Appendix D: Figures and Tables**

**Appendix D.1: Hypothesis 1**

**Figure 5**

*Factors influencing buying behavior potato chips*



*Note:* This figure represents the 411 factors mentioned by 138 respondents influencing their buying behavior regarding potato chips.

**Table 10**

*Packaging Function \* All Packaging Functions*

			Brand		
			Pringles	Lays	Total
All Packaging Functions	Protection	Cumulative Sum	329	485	814
		% within all functions	22.3%	27.4%	25.1%
	Containment	Cumulative Sum	353	449	802
		% within all functions	23.9%	25.4%	24.7%
	Communication	Cumulative Sum	394	405	799
		% within all functions	26.7%	22.9%	24.6%
	Convenience	Cumulative Sum	399	430	829
		% within all functions	27.1%	24.3%	25.6%
Total		Cumulative Sum	1,475	1,769	3,244
			100.0%	100.0%	100.0%

% within all  
functions

Note: The higher the cumulative sum, the more importance people give to a factor (1 = Disagree on a statement, 5 = Agree to the statement). Therefore, the total sum represents differences in importance.

**Table 6**  
*Between-Subjects Factors*

		Value Label	N
Q9: Pringles_protection.	1	Disagree	73
	2	Somewhat disagree	3
	3	Neutral	8
	4	Somewhat agree	44
	5	Agree	10
Q11: Pringles_containment.	1	Disagree	59
	2	Somewhat disagree	7
	3	Neutral	17
	4	Somewhat agree	46
	5	Agree	9
Q13: Pringles_communication.	1	Disagree	39
	2	Somewhat disagree	6
	3	Neutral	39
	4	Somewhat agree	44
	5	Agree	10
Q15: Pringles_convenience.	1	Disagree	44
	2	Somewhat disagree	13
	3	Neutral	24
	4	Somewhat agree	28
	5	Agree	29

**Table 7**  
*Tests of Between-Subjects Effects*

Dependent Variable: Q8: To what extent does distinctive design influence your buying behavior?  
Please rate on a scale from 0 (not influenced at all) - 10 (heavily influenced). - Distinctive design influences my buying behavior

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	420.834 <sup>a</sup>	86	4.893	1.224	.218
Intercept	1121.359	1	1121.359	280.600	<.001
Pringles_protection	31.252	4	7.813	1.955	.115
Pringles_containment	2.065	4	.516	.129	.971
Pringles_communication	59.125	4	14.781	3.699	.010

Pringles_convenience	32.762	4	8.191	2.050	.101
Pringles_protection *	27.357	1	27.357	6.846	.012
Pringles_containment					
Pringles_protection *	46.717	5	9.343	2.338	.055
Pringles_communication					
Pringles_protection *	47.119	6	7.853	1.965	.088
Pringles_convenience					
Pringles_containment *	42.063	6	7.011	1.754	.127
Pringles_communication					
Pringles_containment *	29.057	6	4.843	1.212	.316
Pringles_convenience					
Pringles_communication *	11.269	7	1.610	.403	.896
Pringles_convenience					
Pringles_protection *	.318	1	.318	.079	.779
Pringles_containment *					
Pringles_communication					
Pringles_protection *	.029	1	.029	.007	.933
Pringles_containment *					
Pringles_convenience					
Pringles_protection *	3.856	1	3.856	.965	.331
Pringles_communication *					
Pringles_convenience					
Pringles_containment *	.904	1	.904	.226	.636
Pringles_communication *					
Pringles_convenience					
Pringles_protection *	.000	0	.	.	.
Pringles_containment *					
Pringles_communication *					
Pringles_convenience					
Error	203.811	51	3.996		
Total	4625.000	138			
Corrected Total	624.645	137			

a. R Squared = .674 (Adjusted R Squared = .124)

**Table 8**

*Between-Subjects Factors*

		Value Label	N
Q10: Lays_protection.	1	Disagree	6
	2	Somewhat disagree	37
	3	Neutral	25
	4	Somewhat agree	20
	5	Agree	50

Q12: Lays_containment.	1	Disagree	25
	2	Somewhat disagree	11
	3	Neutral	34
	4	Somewhat agree	40
	5	Agree	28
Q14: Lays_communication.	1	Disagree	35
	2	Somewhat disagree	8
	3	Neutral	38
	4	Somewhat agree	45
	5	Agree	12
Q16: Lays_convenience.	1	Disagree	28
	2	Somewhat disagree	10
	3	Neutral	34
	4	Somewhat agree	50
	5	Agree	16

**Table 9**

*Tests of Between-Subjects Effects*

Dependent Variable: Q8: To what extent does distinctive design influence your buying behavior?

Please rate on a scale from 0 (not influenced at all) - 10 (heavily influenced). - Distinctive design influences my buying behavior

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	494.478 <sup>a</sup>	105	4.709	1.158	.325
Intercept	1790.640	1	1790.640	440.209	<.001
Lays_protection	36.611	4	9.153	2.250	.086
Lays_containment	21.886	4	5.471	1.345	.275
Lays_communication	41.314	4	10.329	2.539	.059
Lays_convenience	44.918	4	11.230	2.761	.044
Lays_protection *	22.881	8	2.860	.703	.686
Lays_containment					
Lays_protection *	16.355	5	3.271	.804	.555
Lays_communication					
Lays_protection *	9.696	6	1.616	.397	.875
Lays_convenience					
Lays_containment *	36.937	8	4.617	1.135	.367
Lays_communication					
Lays_containment *	20.339	9	2.260	.556	.822
Lays_convenience					
Lays_communication *	23.619	6	3.937	.968	.463
Lays_convenience					

Lays_protection *	7.000	1	7.000	1.721	.199
Lays_containment *					
Lays_communication					
Lays_protection *	2.042	1	2.042	.502	.484
Lays_containment *					
Lays_convenience					
Lays_protection *	.000	0	.	.	.
Lays_communication *					
Lays_convenience					
Lays_containment *	.000	0	.	.	.
Lays_communication *					
Lays_convenience					
Lays_protection *	.000	0	.	.	.
Lays_containment *					
Lays_communication *					
Lays_convenience					
Error	130.167	32	4.068		
Total	4625.000	138			
Corrected Total	624.645	137			

a. R Squared = .792 (Adjusted R Squared = .108)

## Appendix D.2: Hypothesis 2

**Table 6**

*Profiles*

Card ID	Potato chips			
	Potato chips brands	Potato chips consuming situations	Price per product	Type of packaging
1	Private brand	Everyday	2.65	Iconic cylinder design
2	Private brand	Party	1.90	Regular bags
3	Lays	Holiday	2.65	Regular bags
4	Lays	Party	2.19	Iconic cylinder design
5	Lays	Everyday	1.90	Sustainable packaging
6	Pringles	Party	2.65	Sustainable packaging
7	Pringles	Holiday	1.90	Iconic cylinder design
8	Private brand	Holiday	2.19	Sustainable packaging
9	Pringles	Everyday	2.19	Regular bags



**Table 1***Utilities*

Characteristics	Options	Utility Estimate	Std. Error
Brand	Pringles	.192	.
	Lays	.223	.
	Private brand	-.415	.
Occasion	Holiday	.299	.
	Everyday	-.236	.
	Party	-.063	.
Price (in €)	1.90	1.000	.
	2.19	-.394	.
	2.65	-.606	.
Packaging	Iconic cylinder design	-.189	.
	Regular bags	.016	.
	Sustainable packaging	.173	.
(Constant)		6.037	.

**Table 2***Importance Values*

Brand	20.301
Occasion	17.043
Price	51.128
Packaging	11.529
Averaged Importance Score	

**Table 3***Correlations<sup>a</sup>*

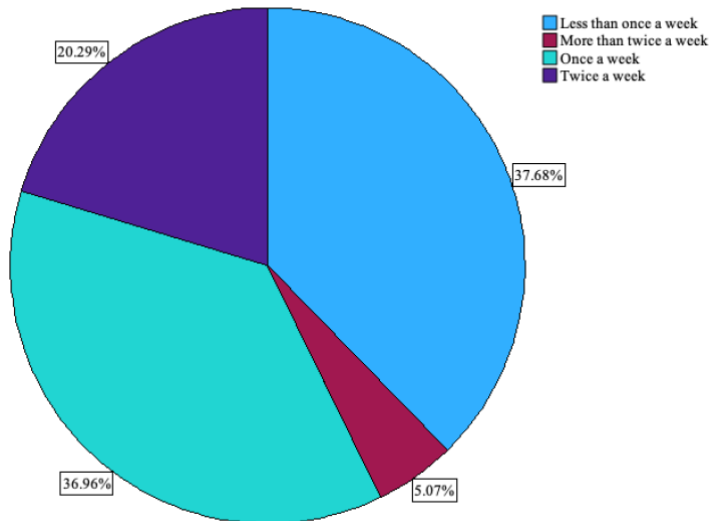
	Value	Sig.
Pearson's R	1.000	.
Kendall's tau	1.000	<.001

a. Correlations between observed and estimated preferences

### Appendix D.3: Hypothesis 3

**Figure 6**

*Potato chips consumption*



### Appendix D.4: Hypothesis 4

**Table 11**

*Utilities of Packaging*

Characteristics	Options	Utility Estimate	Std. Error
Packaging	Iconic cylinder design	-.189	.
	Regular bags	.016	.
	Sustainable packaging	.173	.
(Constant)		6.037	.

### Appendix D.5: Hypothesis 5

**Table 4**

*Group Statistics*

	Q2: What is your age group?		Mean	Std. Deviation	Std. Error Mean
	N	Mean			
Q5: How often do you consume potato chips per week?	12-18	24	2.75	1.073	.219
	19-25	114	2.32	1.201	.112

**Table 5***Independent Samples T-Test Age groups and their potato chips consumption*

Q5: How often do you consume potato chips per week?

	Levene's Test		t-test for Equality of Means							
	for Equality of									
	Variances									
			Significance						95% Confidence	
	F	Sig.	t	df	One- Sided p	Two- Sided p	Mean Difference	Std. Error Difference	Lower	Upper
Equal variances assumed	6.646	.011	1.605	136	.055	.111	.425	.265	-.099	.950
Equal variances not assumed			1.727	36.209	.046	.093	.425	.246	-.074	.925

## Appendix E: Statistical tests

### Appendix E.1: Hypothesis 1

#### Univariate ANOVA testing the effect of Pringles' packaging functions on the rating of distinctive behavior influencing buying behavior

```
UNIANOVA Q8TowhatextentdoesdistinctivedesigninfluenceyourbuyingbehaviorPI BY
Pringles_protection
  Pringles_containment Pringles_communication Pringles_convenience
/METHOD=SSTYPE(3)
/INTERCEPT=INCLUDE
/CRITERIA=ALPHA(0.05)
/DESIGN=Pringles_protection Pringles_containment Pringles_communication
Pringles_convenience
  Pringles_protection*Pringles_containment Pringles_protection*Pringles_communication
  Pringles_protection*Pringles_convenience Pringles_containment*Pringles_communication
  Pringles_containment*Pringles_convenience
Pringles_communication*Pringles_convenience
  Pringles_protection*Pringles_containment*Pringles_communication
  Pringles_protection*Pringles_containment*Pringles_convenience
  Pringles_protection*Pringles_communication*Pringles_convenience
  Pringles_containment*Pringles_communication*Pringles_convenience
Pringles_protection*Pringles_containment*Pringles_communication*Pringles_convenience.
```

#### Univariate ANOVA testing the effect of Lays' packaging functions on the rating of distinctive behavior influencing buying behavior

```
UNIANOVA Q8TowhatextentdoesdistinctivedesigninfluenceyourbuyingbehaviorPI BY
Lays_protection
  Lays_containment Lays_communication Lays_convenience
/METHOD=SSTYPE(3)
/INTERCEPT=INCLUDE
/CRITERIA=ALPHA(0.05)
/DESIGN=Lays_protection Lays_containment Lays_communication Lays_convenience
  Lays_protection*Lays_containment Lays_protection*Lays_communication
  Lays_protection*Lays_convenience Lays_containment*Lays_communication
  Lays_containment*Lays_convenience Lays_communication*Lays_convenience
  Lays_protection*Lays_containment*Lays_communication
  Lays_protection*Lays_containment*Lays_convenience
  Lays_protection*Lays_communication*Lays_convenience
  Lays_containment*Lays_communication*Lays_convenience
  Lays_protection*Lays_containment*Lays_communication*Lays_convenience.
```

### Appendix E.2: Hypothesis 2

#### Conjoint analysis potato chips profiles

```
CONJOINT PLAN='/Users/schretlen/Desktop/spss/hypothesis  
2/orthogonal_design/orthopotato.sav' /DATA='/Users/schretlen/Desktop/spss/hypothesis  
2/profiles.sav' /SCORE=N1 TO N9
```