

## **Hey, I am an environmentally friendly product!**

A qualitative thematic analysis of the communication of environmentally friendly through explicit and implicit cues by plant-based milk brands in the Netherlands.

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### **ABSTRACT**

Recently, the popularity of plant-based milk has dramatically increased as more people look for non-dairy or sustainable alternatives. The industry has changed as more brands seek to offer products that are environmentally friendly. As a result of the increased importance of environmentally friendly practices, green marketing has greatly increased worldwide. There is, however, a divide between the green marketing strategies utilized by brands and the actual disclosure of the product's benefits to the environment. The goal of this study is to provide more information on the packaging strategies employed by plant-based milk brands to clearly demonstrate their brand values. Therefore, this paper will dive deeper into how plant-based milk brands utilize explicit and implicit cues on packaging to communicate environmental friendliness. The study will examine 100 packages and focus on the design elements and approaches to communication used by these brands to communicate ideals. To guarantee that this study covers all the consumer touchpoints where plant-based milk brands are encountered by consumers, 100 plant-based milk packages were gathered from organic and major supermarkets in The Netherlands. Moreover, this study employs a multimodal discourse analysis and thematic qualitative analysis. By using multimodal discourse analysis, it provides an in-depth understanding of the themes in relation to their sociocultural, political, and historical context. It was found that plant-based milk brands are communicative about the health benefits of the products and make comparisons based on conventional dairy milk. Moreover, plant-based milk brands heavily rely on environmental labels and divert from using visual cues and will use visual cues from time to time as a supporting element to other cues. An emerging trend for plant-based milk brands is to adopt QR codes on their packaging to show a transparent supply chain as consumers can follow along the manufacturing and selecting sources journey. In the context of EU and Dutch laws, it came to light that plant-based milk brands are ambiguous about partnering with NGOs. As a result, legislators should pay attention and pass rules requiring brands to be more transparent in their communications, particularly when it comes to giving a specific percentage of their profits to charity.

**KEYWORDS:** *Branding, communication, packaging, environmentally friendly, green marketing*

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## **Abbreviation list**

EF (Environmentally Friendly)

PBMB (Plant-based Milk Brand)

CUT (Cue Utilization Theory)

DSA Code (Dutch Sustainability Advertising Code)

TA (Thematic Analysis)

MCDA (Multimodal Critical Discourse Analysis)

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## 1. Introduction

Plant-based milk has become popular in recent years as more people seek non-dairy milk alternatives. As a result, a range of plant-based milk brands (PBMB) has boomed to keep up with the demand. Among the many known PBMB, Oatly has transformed from creating and selling a niche product targeted at customers following lifestyles that are frequently medically motivated to a business eager to market its products to a wider audience of consumers by portraying those products as vegan, environmentally friendly, and healthy alternatives to dairy products (Fuentes & Fuentes, 2017). A broad scope of environmental-related concerns is addressed by Oatly, including climate change, food wastage, genetically modified food, and sustainable farming practices (Fuentes & Fuentes, 2017, p.538). Oatly's dedication to acting as "a good company" that develops and sells environmentally friendly (EF) products includes these concerns and themes (Fuentes & Fuentes, 2017). Such a change in the market indicates that many companies are making efforts to function responsibly and provide EF products (Deloitte, 2022). Globally, green marketing has grown significantly as big companies strive to portray a green image by raising consumer knowledge and demonstrating that as a company, they are trying to solve environmental challenges (Cherian & Jacob, 2012; Leonidou et al., 2011). Although there isn't one standard definition for "green marketing" yet (Correia et al., 2023; Nekomahmud & Farkas, 2020), environmental awareness is a common theme of the definition (Nekomahmud & Farkas, 2020). According to this study, "green marketing" refers to a broad variety of measures that are put together with the intention of bringing consumers' attention to both the characteristics of EF products and the company's EF efforts (Correia et al., 2023).

The effectiveness of green marketing depends on effective communication, which keeps customers informed about the company's EF products, companies' articles such as resource-efficient, organic, or free from chemicals (Polonsky, 1994), and establishes its reputation for its environmental values (Mogaji et al., 2022). According to Correia et al. (2023), companies use various approaches such as advertising, sustainability reports, visual identity, and company publicity to communicate their green marketing objectives. However, according to Smith and Brower (2012), there is a gap between the green marketing tactics that businesses use and the ways of communicating as customers are frequently uninformed of green products' environmental benefits and characteristics (Mogaji et al., 2022). Huang et al. (2013) make a similar claim arguing that companies should communicate EF products, specifically the unique product's attributes and environmental benefits, through product branding, taking a position in the green market. As a result, companies are looking for other approaches seeing the product's package as a communication channel (Smith & Brower, 2012; Prothero et al., 1997). As Mogaji et al. (2020) study indicated, products' symbols and signs have been a helpful way to communicate environmental messages.



However, packaging as a medium is frequently disregarded, as packaging is believed to essentially repeat existing marketing messaging (Lemon, 2015). Despite this, there are various market trends that point to the increasing importance of product packaging as a means of brand communication (Underwood et al., 2001, p. 403). The packaging of an item plays a key role in delivering messages and hidden cues that ultimately encourage the buyer to notice the product (Agariya et al., 2012). As a result, the traditional function of packaging as a ‘protector’, is now seen as an ‘information provider’ and ‘persuader’ (Agariya et al., 2012, p.2). So, effective packaging design and marketing can greatly impact a product's brand value (Underwood, 2002). Additionally, a recent study by Nguyen (2020) found that most consumers have little knowledge of what defines EF packaging and find it challenging to separate it from non-EF choices. The research also shows that customers want EF food packaging to be aesthetically pleasing while yet upholding their environmental standards for packaging components and manufacturing practices (Nguyen, 2020).

Therefore, this study aims to explore how plant-based milk brands utilize packaging as a medium to communicate environmentally friendly through implicit and explicit cues. The following research question and sub-questions are formulated:

**RQ1:** How do plant-based milk brands communicate environmentally friendly through implicit and explicit cues?

*SQ1:* How can plant-based milk brands use discursive tools to communicate their environmentally friendly messages?

*SQ2:* How can plant-based milk designers use their packaging to align with the Dutch norms on communicating environmentally friendly?

### 1.1.Societal Relevance

According to a Deloitte study (2022), only one in three customers will truly believe a product is EF if it is labeled as EF sourced or produced. There is apparent room for policymakers and companies to learn more about this issue and raise awareness. Hence, this study is particularly significant to consumer behavior and marketing strategies. It makes it easier for customers to recognize and choose plant-based milk brands (PBMB) promoting EF products. Consumers can distinguish between brands that are sincerely motivated towards being EF as opposed to brands that might make inaccurate or misleading environmental claims by recognizing the packaging cues utilized by different brands (Dörnyei et al., 2022). Additionally, it allows customers to make conscious choices that are consistent with their environmental opinions by educating them about available environmental alternatives. As a result,

customers are given the power to choose EF products and encourage the development of EF products (Lemon & Verhoef, 2016).

Brands should consider the fact that consumers in general place greater importance on ethical and environmental issues. The design and development of EF products must therefore be given top priority by brands (Magnier & Crié, 2015). Hence, the food and beverage industries may be influenced by this study to adopt more EF packaging techniques. Other firms may follow along, particularly when specific design cues or aspects prove successful in communicating EF. The results of this study can also assist regulators and legislators in developing guidelines and requirements for EF packaging. Guidelines that limit misleading claims while promoting transparency about EF operations can be developed with the aid of an understanding of the influence of explicit and implicit cues on customer behavior (Granato et al., 2022). This could result in a stronger legal system that supports EF packaging practices.

### 1.2. Academic relevance

As there is not much existing research on the use of product design to communicate EF values, this study will add to the limited amount of literature on communicating EF that already exists (Crilly et al., 2004). The understanding of how brands may support the environment is improved by the study's findings. Moreover, it can contribute to developing new concepts and theories in the field of green marketing. Additionally, by using multimodal critical discourse as a method of data analysis, this study aims to close the previously mentioned research gap by examining how packaging cues change in salience, level of meaning, and value, or acquire an opposite meaning when brands are communicating their EF values (Wagner, 2015, p. 216). Lastly, the study will add to the progress of quantitative methods of measurement but also in qualitative research such as focus groups, interviews, and experimental research.

### 1.3. Chapter outline

The following provides an outline of this thesis, considering the context of the study and the research questions. Chapter 2 presents the theoretical framework, which introduces key ideas and theories for this research. Chapter 3 presents the methodological framework which explains the qualitative approach used in this study to examine the patterns and discursive approach to communicating environmentally friendly. The results are presented and addressed in Chapter 4 with reference to the research questions and theories discussed. Lastly, Chapter 5 discusses the limitations of the study, both theoretical and social implications, and suggestions for future research.

## 2. Theoretical framework

To understand how brands communicate their EF image, it's important to examine relevant concepts linked to EF practices and communication means using implicit and explicit cues. This chapter will introduce key theoretical concepts like green marketing, assessing green attributes, cue utilization theory, and critical discourse. It will also outline the field of study, aiming to expand the understanding of the brand communication of EF.

### 2.1. The Plant-Based Milk Industry

Plant-based milk brands (PBMB) have grown recently (Schiano et al., 2020). In 2016, The Netherlands consumed EUR 291 million worth of plant-based products, a 50% growth in two years (Fossanalytics, 2022). The reduction in milk consumption led to a significant decline in conventional dairy products' market value since 2013 (van Gelder, 2023). Milk consumption in the Netherlands dropped from 810 million liters in 2013 to around 704 million liters in 2019 (van Gelder, 2023). The association of milk production with environmental degradation has contributed to reduced dairy consumption (Clay et al., 2020). Recent research indicates that manufacturing dairy products requires more water and land, and releases more greenhouse gases than alternative dairy (Clay et al., 2020). Moreover, reducing animal product consumption benefits people's health, further driving PBMB consumption. There's a discrepancy in the EF definition between PBMB and consumers. Marketing prioritizes responsible resourcing and environmental preservation, while consumers value the social and economic benefits of EF products. Effective PBMB marketing requires understanding how consumers perceive EF compared to factors like authenticity, health, ethics, and trustworthiness (Schiano et al., 2020, p.11229). Marketers can leverage this by associating EF with traits like "healthy," "natural," "reliable," and "ethical" to persuade customers of PBMB's benefits (Schiano et al., 2020, p. 11229). Thus, closing the gap between customer demands and the company's EF practices requires acknowledging different viewpoints.

PBMB has gained recognition through marketing strategies that address environmental and human well-being concerns (Clay et al., 2020 Schiano et al., 2020). These strategies utilize packaging, storefront displays, and online channels to inform consumers about how PBMB products respond to environmental

and health concerns while providing a familiar experience (Schiano et al., 2020). PBMB takes extra measures to make its packaging resemble conventional dairy milk, even mimicking the cool flavor using a few ingredients (Clay et al., 2020). To exemplify, some PBMB argues that they can mimic the cool flavor of refrigerated cow milk with just a few ingredients (Clay et al., 2020). Furthermore, Clay et al. (2020) observe the term “plant-powered” (p.951), frequently used in PBM marketing, drawing on the widespread idea that protein is healthy and overcomes all downsides of dairy milk. On the packaging, PBMB emphasizes nutritional claims, specifically highlighting the inclusion of calcium and protein while others address issues with milk cholesterol and heart disease (Clay et al., 2020). PBMB understands that its product might not have the same nutritional value as dairy milk and hence PBMB products are marketed to the more general concept of health (Clay et al., 2020). For instance, With the use of buzzwords like "good health" as well as slogans such as “the original nutrition powerhouse” (Silk), PBMB engages a broader viewpoint on health (Clay et al., 2020).

## 2.2.Green Marketing

### 2.2.1. Branding

As people become more informed about environmental problems, they are starting to recognize the importance of protecting the planet's natural resources (Correia et al., 2023). Consequently, there is currently a higher need for green marketing among academics and the general population (Correia et al., 2023). In response, companies are progressively working on EF products to meet this requirement. Sdrolia and Zarotiadis (2018) state that EF products can be identified by their minimal or absent negative environmental impact and compliance with ethical and moral requirements. Contrarily, sustainable products provide economic and social benefits in addition to environmental protection (Sdrolia & Zarotiadis, 2018). These products aim to have a lower environmental impact than conventional alternatives (Khandelwal et al., 2019).

Green marketing communication implies an effort on the part of the company to reach out to the target audience through strong pro-environmental messaging, increasing the chances of EF's perception of the brand (Correia et al., 2023; Tan et al., 2022). Branding is a key goal in green marketing strategies (Kumar, 2016, p.141). A brand image comprises a “core image” and an “extended image” (Srivastava et al., 2022, p. 24). The extended image includes the “logo”, “background”, and other extrinsic attributes that give the brand personality (Srivastava et al., 2022, p. 24). A brand, according to Aaker (1996), is the name given to a product or a distinguishing characteristic like a logo, tag, or packaging. However, Wijaya (2013) argues that a brand encompasses more than just external attributes. This supports the definition of the core image proposed by Srivastava and colleagues (2022), which establishes a connection between the

brand and the consumer. The core image gives meaning to consumers by embodying a company's identity and values (Buil et al., 2016; Mahmood & Bashier, 2020; Wijaya, 2013). This ensures that the brand's image incorporates all consumer perspectives, including a brand's "physical attributes", "functional benefits consumer understanding", "emotions, affiliations", and "symbolic meanings" (Wijaya, 2013, p. 61). Thus, a brand can assert itself as an EF brand by distinguishing itself from opponents and strongly conveying its environmental characteristics (Hartmann et al., 2005).

### *2.2.2. Communication through packaging*

In the framework of green marketing, the interaction between branding and communication is important. Effective communication is essential for the success of green marketing initiatives as it enables businesses to persuade consumers about their EF approaches and position their brand as EF (Gupta & Kumar, 2013). Green communication also influences consumers' purchasing preferences, motivating them to choose EF products and change their shopping habits (Mogaji et al., 2022). Packaging plays a vital role in communicating a brand's identity and image (Agariya et al., 2012; Srivastava et al., 2022). Consumer interaction with a product primarily occurs through its packaging, significantly shaping their perception of the brand. Packaging effectively conveys a brand's EF practices and identity (Steenis et al., 2017), making it a critical factor in consumers' evaluation of a product's EF (Mogaji et al. 2022; Mukonza et al., 2021).

## **3. Classification of Greenness**

The legitimacy theory posits that organizations try to justify their actions in society by spreading particularly EF messages, (Crossley et al., 2021). The manufacturer's guarantee on the product and its claims is known as a brand promise. The brand promise is conveyed through the brand identity in packaging design (Srivastava et al., 2022). Upholding the communicated brand promises is crucial to sustaining a product's success. This provides a solid foundation for investigating the many EF promises made by businesses. In return, society provides the organization with legal standing to own and categorize itself to be an EF product (Crossley et al., 2021). However, brands that violate the terms of the social contract such as using misleading claims or labels, may face various punishments and compensatory measures, such as decreased purchases (Crossley et al., 2021). This theory can be applied to understand optimal package design enabling companies to uphold their social contract with consumers.

### *3.1. Regulatory Aspect*

In the context of the European Commission (European Commission, 2023) and Dutch Sustainability Advertising Code (DSA) (van Gerwen & Strout, 2023) (Appendix A) has introduced a proposal that

provides guidelines for brands to make clear and reliable claims about being EF. Brands are obligated to provide specifics about the evaluation that supports their claims, particularly specifications of the product, facts regarding any negative impacts on the environment, manufacturing information, and additional documentation (European Commission, 2023). Brands should consider providing weblinks, QR codes, or other means of authentication so that consumers can fact-check the information supporting the claims to increase transparency (European Commission, 2023). To ensure authenticity and ownership, it is essential that brands regularly check and update their statements. Brands must comply with the DSA Code, which delineates environmental commitments and emphasizes the importance of defining terms like "green," "eco," and "fair." (Van Gerwen & Strout, 2023). To maintain authenticity, brands should substantiate their environmental friendliness claims with credible data and tangible actions. DSA Code also emphasizes the necessity for brands to consider every stage of production before making environmental claims, as well as openly discussing any deficits along the supply chain (van Gerwen & Strout, 2023).

### *3.2. Degree of Green*

To shape a clearer idea of what environmental claims are comprised of the (Leonidou et al., 2014) framework is introduced in this section. Leonidou and colleagues' framework (2014) serves the purpose of assessing the environmental claims made by brands in their green marketing efforts. It is made up of four linked components: the focal point, evaluation areas, leverage aspects, and the driving force (Leonidou et al., 2014, p. 671). By highlighting these four components', brands demonstrate their efforts to increase the validity, transparency, and legitimacy of their environmental claims around their product (Viet, 2022). The next section explains these four elements in more detail.

#### *3.2.1. Focal point*

The focal point of environmental claims refers to the product's environmental attributes and aspects of the brand's environmental behavior (Leonidou et al., 2014) which can vary to include the adoption of EF processing, and recycling practices by a company, partnering with environmental groups that are well-liked by the general public (Carlson et al., 1993; Leonidou et al., 2014). Furthermore, Carlson et al. (1993) argued that in order to ascertain the brand's environmental behavior, consumers would need to examine the 'product-oriented', 'process-oriented', 'image-oriented', and 'claims based on environmental facts' of the brand (p.7).

Firstly, product-oriented and process-oriented claims are very closely intertwined as both claims are defined as product traits. Product-oriented refers to the characteristics of a product, such as its biodegradability (Carlson et al., 1993), whereas process orientation examines a specific attribute of a product, in particular the manufacturing processes and disposal technique (Carlson et al., 1993).

Demonstrating a clear link between a product or process and the environment has previously proven beneficial for brands as it portrays its environmental claims to be credible (Coulson et al., 2013). Secondly, image-oriented claims emphasize the brand's overall image and social obligation (Carlson et al., 1993). According to Baum (2012), making an image-oriented claim, such as donating the brand's profits to an environmental nonprofit organization - even if the claim is unrelated to the product or the manufacturing, can create positive relationships with the wider community and demonstrate a more genuine effort (Baum, 2012). Lastly, claims based on environmental facts place an emphasis on factual reports made by organizations built on proof and cannot be modified by third parties (Carlson et al., 1993).

### 3.2.2. Evaluation Areas

The evaluation area emphasizes the “level of accuracy or vagueness”, “strength or weakness”, and “the substance or associative” of claims to be assessed as acceptable or ambiguous (Lindblom, 1994, as cited in Leonidou et al., 2014, p.675). Hartmann and Ibanez (2009) pointed out that substantive claims are based on real, observable actions which demonstrate the brand’s efforts to be EF and reduce consumers’ skepticism (Carlson et al., 1996). These actions include following guidelines (Orazi and Chan, 2018), receiving third-party certifications (Coulson et al., 2013), and transparently documenting their environmental impact (Orazi and Chan, 2018). All demonstrating the brand's effort to be EF. Correspondingly, Carlson et al. (1996) specified that substantive claims are tangible which can reduce consumers' skepticism. Contrarily, associative claims focus on creating a positive perception of the brand without tangible action (Carlson et al., 1996). Therefore, it is advised to avoid making such claims because they mislead consumers and fail to reflect actual environmental actions. (Szabo & Webster , 2020)

### 3.2.3. Leverage Aspects

The leverage aspect refers to the message execution style (Leonidou et al., 2014) appeals like rational, emotional, or moral (Banerjee et al., 1995; Zheng et al., 2022) Brands employ these appeals independently or in combination to show their environmental concern and support their actions. (Lindblom, 1994). Firstly, emotional appeals encompass “fear”, “guilt”, “humor”, “self-esteem” and “warmth” (Banerjee et al., 1995, p.23; Venhoeven et al., 2020) used to express support for the environment. Moreover, rational appeals, also known as informational appeals, emphasize facts and reasoning (Casais & Pereira, 2021). Lastly, moral appeals invoke the feeling of what is ‘right’ in relation to environmental issues such as the preservation of the earth, the wellness of the future generation, and the protection of one’s own health (Kärnä et al., 2001, p.63).

### 3.2.4. Driving Forces

Driving forces are defined by the overriding values that are present in messages to “maintain human health”, “conserve biodiversity”, “protect the lives of animals”, and “preserve the environment” (Kärna et al., 2001, p.63). Wagner and Hansen's (2002) study indicated that environmental brands place emphasis on planet preservation, rather than health protection and personal health. Due to the close ties to reality and its effects on customers' lives, these driving forces directly affect consumers (Leonidou et al., 2014). However, it's crucial to understand that legitimate and trustworthy driving forces are required (Leonidou et al., 2014).

## 4. Cue Utilization Theory

Identifying sustainable packaging can be difficult for two reasons. First of all, it can be challenging as it is often difficult to distinguish ‘green’ from ‘non-green’. Secondly, sustainable purchase decisions are incredibly complex and can result in “information overload” (Herbes et al., 2020 p. 260) or also known as “green overload confusion” (Granato et al., 2022, p. 12). Consumers frequently look for simple ways to determine whether a product or packaging is EF or sustainable to minimize complexity (Herbes et al., 2020). Cue utilization theory (CUT) is a theory that has been proposed as a concept for reducing such complexity (Olson, 1978). CUT views products as a collection of cues that communicate certain product characteristics (Herbes et al., 2020). CUT has been extensively researched in the field of behaviour (Olsen; 1978; Kahneman and Tversky, 1973). CUT has also been discovered to shape beliefs about a product's environmental or social impact and the trustworthiness of sustainability-related claims (Herbes et al., 2020). These cues play an important role in signaling environmental orientation (Pancer et al., 2015). Therefore, CUT will be used in this paper to understand the different cues sent to consumers to influence the perception of EF.

There are many schemes for classifying cues of a package in the scientific literature (Agariya et al., 2012; Underwood & Klein, 2002). Underwood et al. (2001) pointed out, the package design concept is inherently multidimensional, incorporating multiple elements such as text, shape, graphic design, logo, size, colors, illustrations, material, construction, texture, etc (p.3). However, Ischen et al. (2022) claim that customers largely rely on what are known as “implicit” packaging cues and “explicit” packaging cues (p.31). Similarly, in a recent study by Herbes et al. (2020), people tend to take both implicit and explicit packing cues into account when assessing a product's EF. According to this study's definition of implicit cues, are cues connected with the material of the packaging which does not make explicit claims (Granato et al., 2022). Contrarily, explicit cues include both verbal and visual components that directly



communicate a product's characteristics (Granato et al., 2022). By differentiating what implicit and explicit cues are, this research examines the influence of implicit and explicit cues on how packaging communicates environmental friendliness.

#### *4.1. Visual Cues*

To communicate and portray a brand as EF, visual design cues are a key factor. Visual cues have been shown to be very effective, especially when compared to verbal cues (Lazard & Atkinson, 2014). Visual cues primarily focus on the “appearance” of the product rather than the “content” of the cue (Vermeir & Roose. 2020, p.2) which attracts attention to the product but it also offering mental stimuli which can serve as meaning provider that helps the consumer understand environmental-related matters Granato et al. (2022). The following section will examine the various elements of visual cues and see how they might be used to indicate EF.

##### 4.1.1. Color

Colors can be a powerful tool to communicate complex information (DeLong & Martinson, 2013) such as conveying a product's motif or brand identity (Purnhagen et al., 2016; Vermeir and Roose, 2020). They hold a referential meaning which is built up when individuals encounter pairings of colors with particularly meaningful messages, concepts, objects, and experiences (Labrecque et al., 2013). Hence, selecting suitable colors can help brands seem more likable and help brands communicate EF to a critical society (Vermei & Roose, 2020). Moreover, Garaus and Halkias (2019) emphasized that brands should stick to “category norms” or “market standards” in branding (p.1094). Uncommon packaging colors can stimulate mistrust and further complicate product identification (Spence, 2016). Therefore, brands must consider both the impactful use of colors and the requirement to conform to predefined norms. As follows, Vermei and Roose (2020) argued that using arousing colors like red and orange can enhance the brand image to be more appealing and likable, reducing skepticism. Notably, Magnier and Crié (2015) study that green, brown, and white are colors associated with nature, a healthy lifestyle, and environmentally manufactured products (p.358). These color associations are very much in line with the ideals and norms of EF.

##### 4.1.2. Graphical Representation

Magnier and Crié (2015) defined visual cues as graphics or icons that may be viewed on the product, referring to graphical cues. According to Magnier and Crié (2015) taxonomy of graphical cues, images of “trees”, “leaves”, and “fields” as well as “icons for environmental protection” are graphic cues that communicate EF (p.358). This finding is in accordance with the findings of Hartmann and Apaolaza-

Ibáez (2010), which discovered that “biosphere nature”, such as “forests”, had a positive emotional influence on customers in contrast to showing urban and desert surroundings (p.120). While trademarks like the FSC and recyclable logos are also helpful visual cues, understanding logos necessitates clear verbal communication to prevent ambiguity (Magnier & Crié, 2015). Therefore, choosing the right imagery alongside the trademarks is crucial (Seo & Scammon, 2017). Alternatively, Lazard and Atkinson (2014) considered infographics as a form of graphical visualization since it is a popular medium for communicating information. When it comes to communicating green messages, Tu et al.’s (2018) study demonstrated that infographics emerged as a better visual approach in comparison to text-only information on green messages. Similarly, Lazard and Atkinson’s (2014) study demonstrated that messages about recycling were better communicated through infographics. In consideration of this, Tu et al.’s (2018) study provided a summary of the most essential guidelines for effectively communicating graphical cues. Firstly, graphics and text must be communicated in a clear and cohesive manner to make them understandable immediately (Tu et al., 2018). Additionally, adding colors to graphics increases the chances of being more understandable (Tu et al., 2018). Lastly, in accordance with the “psychology of visual perception” (p.16) when providing infographics, it is essential to look at the composition as humans like to look at a text in a specific direction (Tu et al., 2018).

Moreover, Meijers et al. (2018) argued that visual cues can be considered as visual metaphors as visual cues are less inclined to trigger “negative evaluation persuasion knowledge” (p.1000), in comparison to verbal information. This resulted in a favorable opinion of the persuasive approach and less distrust toward the campaign. Furthermore, the use of visual impact metaphors removes any “temporal” and “spatial” gap between a human and the environment (Meijers et al., 2018, p.1000). It enables people to be directly involved and experience the brand.

## 4.2. Informational Cue

Although visuals play a part in green marketing, Banerjee et al.’s (1995) research demonstrated that textual assertions are just as important. Cues that deal with textual information provided on the packaging are commonly referred to as informational cues (Magnier & Crié, 2015). Magnier and Crié (2015) classified these cues as “environmental labeling”, “license agreements”, and “environmental claims” (p.358). The following section explores these informational cues in detail.

### 4.2.1. *Environmental Labeling*

An environmental label is also known as “green labels”, “eco-labels”, and “organic labels” (Siraj et al., 2022, p.2821) can be defined as any symbols appearing on product packaging that seeks to inform a consumer that a product is in some significant way less harmful to the environment (Tang et al., 2004).

The use of environmental labeling has become more important in delivering key information to consumers (Donato & D’Aniello, 2021) as environmental labels work like a certification mark that assures consumers of the truthfulness of these claims (Atkinson & Rosenthal, 2014). Environmental labels come in all sorts of forms, with some containing more detailed information claims than others (Atkinson & Rosenthal, 2014). For example, the carbon reduction label indicates that the carbon footprint of a product has been certified and made a commitment to reduce that footprint (Atkinson & Rosenthal, 2014). Alternatively, some environmental labels provide much more universal and suspicious claims like products are “organic” and “bio” (Atkinson & Rosenthal, 2014). In addition to the presence of eco-labels on products and adding specific labels that would portray a positive brands image to consumers (Donato & D’Aniello, 2021; Schiano et al., 2020; Siraj et al., 2022) Positioning and size of these eco-labels matter as well (Proi et al., 2023). According to the study's findings, eco-labels need to be bigger to be more visible and useful (Proi et al., 2023). This implies that increasing the measurement of eco-labels could improve customer interest in the product. However, Ertz et al. (2017) discovered consumers are more likely to trust certification if it was approved by independent organizations, instead of verifying that information themselves. Since environmental labeling provides only limited information about the actual improvements, it should be accompanied by other cues, to be more impactful (Ertz et al., 2017).

#### *4.2.2. Licensing Agreement*

Referring to Magnier & Crié’s (2015) study, licensing agreement refers to the environmental regulations of products proposed by producing organizations, authorities, and other players. This includes approving, certifying, or recommending by an organization that aims at protecting the environment (p. 358). From the viewpoint of consumers, licensing agreement differs from an environmental label as licensing agreement is more reliable and trustworthy as the information is not verified by the brand (Coulson et al., 2013; Granato et al., 2022). Polonsky et al. (1998) argued that to avoid misleading consumers, the use of official agreements should include, the nature of the scheme, such as the standards to be met to use it on the package. Indicating how much the organization contributes to the cause and lastly a contact number for more information (Polonsky et al., 1998).

#### *4.2.3. Environmental Claims*

According to Magnier and Crié's (2015) study, participants refer to environmental claims as pedagogical information aiming to educate consumers about environmental mater (p.358). This could be in the form of an ecological quiz, information about waste sorting, or using ethical, scientific, or environmental vocabulary. However, in a recent study by Liem et al. (2022), respondents were requested to write down their perspectives on sustainability and packaging, with answers frequently incorporating

terms like "not harmful to the environment," and "less pollution." (p.104658) which can be considered as using environmental vocabulary. Such broad assertions can be interpreted as greenwashing, therefore statements about sustainability should be specific and associated (Granato et al., 2022). Numbers are frequently seen as true and scientific, implying that careful consideration and research went into their findings. However, according to Xie and Kronrad's (2013) study, only 19.41% of consumers are more inclined to trust and positively perceive a brand when specific statistics are provided (p.104). On the other hand, according to Gleim et al. (2013), verbal information without numerical values is more effective (p.54). Despite this, according to Xie and Kronrad (2013), rounded figures or estimations are preferred by consumers if brands still want to use numerical information. This shows that while numerical figures may enhance consumers' perceptions of environmental statements as credible, people might not always react favorably to numerical information. Brands should therefore carefully consider using numerical figures together with verbal cues in their *environmental labeling, license agreements, and statement or broad environmental claims* (Magnier & Cri , 2015, p.358).

### 4.3.Structural Cue

Despite the fact that structural cues do not directly address consumers (Granato et al., 2022), they are nevertheless crucial clues in connecting with them since implicit cues have a higher symbolic value. Additionally, consumers are more likely to process implicit cues than explicit ones, which, according to van Ooijen et al. (2017), makes them a more effective tool when communicating through packaging. As a result, the following section will further examine and discuss the use of structural cues.

#### 4.3.1. Material

Packaging structural ecological cues can be defined as cues that relate to the structure of packaging (Magnier and Cri , 2015, p.357). Packaging material has been identified as an easy cue for consumers to determine EF products (Herbes et al., 2020). Nguyen's (2020) research too indicated the most prominent dimension of EF packaging from a consumer perspective relates to packaging material. Similarly, Lindh et al. (2016) discovered that to be considered EF packaging, it begins with the material itself. Their study examined the quality of the packaging and used material cues to determine whether the product was EF (Lindh et al., 2016). According to D rnyei et al. (2022), material cues fall under "reused packaging", "recycled materials", and "renewable materials" and less packaging" (p.4). Oloyede and Lignou (2021) highlighted the relevance of developing aesthetically appealing packaging and recyclable or disposable. According to their research, buying packaging that looks good but is not recyclable is pointless (Oloyede &Lignou, 2021). As a result, recyclable or biodegradable packaging increases the likelihood that consumers will buy a product. Additionally, participants from Nguyen et al. (2020) results indicated that

the materials should also be nontoxic to humans, easily decomposed at disposal, and best if biodegradable. Adding on, reusability was another criterion participants perceived as important to EF packaging (Nguyen et al., 2020). Lindh et al. (2016) identified two ways in which materials can be reused in EF packaging. Firstly, brands should emphasize that the following materials would be used to manufacture the same product but a second one, and secondly, the importance of being able to be reused at the consumer's home Lindh et al. (2016). These two strategies may increase the practical value of EF packaging while contributing to the environment (Nguyen et al., 2020; Lindh et al., 2016).

Regarding packaging materials, Nguyen et al.'s (2020) results indicated that consumers believe that paper is the most EF material as it is believed to be easily decomposed. Similarly, Steenis et al. (2017), supports this view as their study indicated that customers believe packaging made from paper is more EF than packaging made of plastic. Contrarily, plastic packaging might be viewed as being more EF because of its less raw material demand (Nguyen et al., 2020). Additionally, factors like “practicality”, “hygienic standards”, and “ease of use” encourages consumers to prefer plastic packaging (p.6).

## **5. Critical Discourse as a Theory**

Discourse plays an important role in this study, both methodologically and theoretically. Rather than examining concepts, Jørgensen and Phillips (2002) argued that it offers an outlook on how society functions and the building blocks to understand the interaction evident in society. This viewpoint is applicable to the research's topic as language is becoming increasingly important in the context of EF practices (Bednarek & Caple, 2012). Comparably, Carnevale et al. (2017) recommend researchers examine how language may result in the development or implementation of specific important identities for brands. Therefore, it is important to examine the different linguistic and nonlinguistic approaches brands used while assessing the ways brands communicate EF on packages. The following section will provide a framework to understand the deeper meaning behind packaging designs.

### **5.1. Critical Linguistic**

Critical linguistics is crucial to branding since language characterizes brands and communicates their purpose to customers (Carnevale et al., 2017). Using language, brands can influence how consumers think, recall and respond to a brand (Carnevale et al., 2017). A useful tool for analyzing the complex relationships between language and branding is critical linguistics. Critical linguistics aims to show the ideologies that are buried behind texts by carefully examining their language patterns (Machin & Mayr, 2012). This approach plays a role in highlighting how specific views and values are shaped and communicated through language (Kivle & Espedal, 2022). Critical linguistics strongly emphasizes text analysis because it enables researchers to show how language shapes and maintains ideological systems

(Farrelly, 2020). To comprehend these hidden meanings, researchers can examine the words used in a text, especially in a particular area or topic is known as a *lexical field* (Machin & Mayr, 2012). A lexical field can be compared to a map. A lexical field displays significant words associated with a certain topic, much like a map does for significant locations and characteristics (Machin & Mayr, 2012). For example, when discussing EF communication, Shelton (2015) emphasizes that terms like "green," "EF," "recyclable," and "low carbon footprint" have distinct meanings when talking about EF communication. When discussing matters related to the environment, the chosen and employed words revealed what is believed to be crucial among marketers. At the same time, lexical choices can be used to assert a level of authority and co-membership with the audience (Fairclough, 1995). A common way is to use specific, official-sounding terms that help to convey authority (Machin & Mayr, 2012). To illustrate lexical choice to assert authority is using particular words approved by recognized third parties Polonsky et al. (1998). One such group is the Advertising Standards Authority which has repeatedly stated that a brand may only make an absolute green claim—such as saying a product is “carbon neutral”—if they can back it up with strong, independent, verified, and generally accepted evidence (Advertising Standards Authority, n.d.). By mandating this, the carbon impact of the marketed product is guaranteed to be properly offset. Similarly, Fuertes-Olivia et al. (2001) asserted that linguistic function is described as *hedging* that can reinforce the truth value of the proposition as it makes a statement less forceful or assertive. Hedging can be accomplished by simply adding the words "maybe," "almost," or "somewhat." It can help express an opinion that may be controversial in a respectful, authoritative way (Fuertes-Olivera et al., 2001).

However, it is possible for brands to *over-lexicalize* which gives a sense of “over-persuasion” and is normally evidence that something is problematic or of ideological contention” (Machin & Mayr, 2012, p.37). When a brand is portrayed as EF, overlexicalization signifies the overuse and repetition of specific environmental terminology. This method can be interpreted as an effort to influence customers too strongly and build a strong link between the brand and ecological ideals. Linguistic functions such as *emphatics* also known as intensifiers are words such as “of course”, “extremely” and “too” which is the act of wording being too forceful (Fuertes-Oliva, 2001). However, excessive use of emphatics might be viewed as a form of overlexicalization in which the subject matter is overstated and not accurately represented, giving off the sense of lying (Fuertes-Oliva, 2001). Contradicting, suppression, or lexical absence can also be found in the text, where words that should be present are missing (Machin & Mayr, 2012). This approach frequently takes place when brands decide to mainly emphasize the good features of their products while avoiding any discussion of potential negative effects. Although this strategy might be intended to promote a positive image, customers must have a thorough and transparent awareness of a product's impact on the environment Orazi and Chan, 2018). Any claims made by companies on EF practices must be supported by credible facts under the DSA Code (van Gerwen & Strout, 2023). Brands

are now required to demonstrate specific strategies and workable plans for implementing these pledges rather than simply stating that they are committed to sustainability (van Gerwen & Strout, 2023). For instance, if a brand markets that it hopes to achieve carbon neutrality by 2030, the marketing must specify attainable plans for doing so. This guarantees that customers will not be deceived by false claims and may make wise judgments.

## 5.2.The Semiotics of Branding

In marketing, the study of semiotics is applied to understand topics like brand image, interpreting media messages, retail branding, and packaging design (Wagner, 2015). Additionally, brands can efficiently trigger specific emotions in consumers by using symbols (Berger, 2019). However, badly constructed or overlooked symbols may have a negative effect on how consumers perceive the brand (Carnevale et al., 2017). Marketers need to carefully study the elements of symbolism and semiotics to make sure their communication approach is acceptable. Semiotics and CUT are complementary theories that view products and brands as bundles of cues that convey particular attributes to consumers (Herbes et al., 2020). To raise understanding and communicate with social significance, semiotics uses symbols and signs (Berger, 2019). Semiotics can be utilized to determine if the explicit and implicit cues used by PBMB properly communicate the intended effect to customers or whether they have unintended consequences in the context of this study. By providing a thorough framework, semiotics has a significant impact on branding strategy (Berger, 2019; Carnevale et al., 2017). Semiotics defines brands as complex systems of signs, leading to a greater understanding of how brands work (Conejo & Wooliscroft, 2014). Thus, allowing a better understanding of whether PBMB's cues achieve the intended effect on consumers. The following section will employ the theoretical concept proposed by Machin and Mayr (2012) which considers *denoting* and *connotating, objects, settings, and salience* as tools to communicate meaning through visual means.

### 5.2.1. *Denoting and Connotating*

Machin and Mayr (2012) introduced a crucial semiotic framework known as *denote* and *connote*. Denotation is the simple explanation of what an image is intended to represent. However, it is important to go beyond just describing and taking into account both the speculated meanings of the image and what is actually revealed (Xie et al., 2021). Connotation, conversely, is concerned with how an image conveys meaning and messages or concepts to audiences (Xie et al., 2021). It involves identifying the societal norms and symbolic meanings that the image contains. Connotation is largely communicated through the objects and environments shown in the image (Xie et al., 2021). This approach is a lot like CUT because

an EF product can be interpreted as a semiotic symbol that communicates to customers of its significance. A product's short explanation explaining that it is EF could function as its denotation. However, as Granato et al. (2022) observe, it is challenging to distinguish between "EF" and "non-EF" products and thus, requires to go beyond denotation. The idea of connotation is relevant in this situation. As it relates to EF packaging, the connotation applies to any additional symbolic meanings attached to it, such as the focal point, evaluation areas, leverage attributes, and driving force (Leonidou et al., 2014,p.671). The packaging contains a number of indications, both implicit and explicit, that convey these meanings (Ischen et al., 20220, p.31)

### 5.2.2. *Object and Setting*

When examining a group of objects, it's crucial to take their individual meanings into account (Machin & Mayr, 2012). First of all, *icons* are described by Danesi (2017) as a visual representation with a specific meaning that represents a concept through analogy or symbolism. Moreover, information is communicated more quickly through icons and is also easier to remember (Shen et al., 2018). Additionally, icons can graphically and easily reflect a larger structure of power through an “object”, giving them a symbolic value or connotation (Danesi, 2017). Secondly, in visual semiotic analysis, the term *setting* defines the context or environment that is visual (Machin & Mayr, 2012). It incorporates the “foreground”, “surrounding area”, and “arrangement “ within a photograph or other visual composition. (Van Leeuwen & Jewitt, 2004). In the context of CUT, Rettie and Brewer (2000) indicated that similarly, the positioning of explicit cues on packaging can significantly affect how consumers remember and define the product. Based on their research, verbal cues are remembered better when placed on the right of the packaging, whereas visual cues are remembered better when placed on the left side of the packaging (Rettie & Brewer, 2000).

### 5.2.3. *Saliency*

According to Machin & Mayr (2012), saliency is the term used to explain how certain features of an image are deliberately used to stand out, capturing the audience's attention and underlining key ideas. The composition's ways of acquiring saliency include the following: *significant cultural symbols, size, colors, tone, focus, foreground, and overlapping* (Machin & Mayr, 2012, p. 54-56). Objects with significant symbolic meaning are frequently used to symbolize important cultural meanings. Correspondingly, significant cultural symbols often carry historical and traditional significance that reflects the identity of a community or country (Tekigul et al., 2022). As a result, in this paper, important cultural symbols can be viewed as legal frameworks that support and uphold these EF claims. Furthermore, consideration of an attribute's size can help assess its importance (Machin & Mayr, 2012). Moreover, Machin and Mayr



(2012) argued that larger characteristics typically draw more attention and are thought to be more important than smaller ones. Additionally, colors are quite important for meaningful communication. Less significant attributes may have dull or less brilliant colors, while significant things frequently have deeper and brighter hues. Tone, which describes the strength or brightness of a characteristic, is a different factor to take into account. An attribute's perceived relevance may be increased and the viewer's attention may be captured by a stronger tone. Lastly, the degree of concentration used also has an impact on perceived importance. High-focus traits draw attention, whereas low-focus traits draw less attention (Machin & Mayr, 2012).

## 6. Methodology

This chapter will go through the study's methodology. Elaborating on the chosen method, sampling, size of data sets, operationalization, method of analysis, and research validity and reliability. It should be noted that since this is a qualitative study, the results are not generalizable to a larger sample size.

### 6.1. Research design

This study uses a qualitative research approach with a thematic analysis (TA) and multimodal critical discourse analysis (MCDA) to examine how plant-based milk brands utilize explicit and implicit cues on packaging to communicate EF.

The majority of prior research on the marketing of PBMB has been product-focused, with little exploration of the marketing messaging trends throughout the industry as a whole. (Ledin & Machin, 2020). Hence, this study fills an important gap in the literature and the understanding of how these brands communicate their EF attributes through explicit and implicit cues on their packaging by carrying out an in-depth examination of a variety of PBMB. By studying and uncovering new patterns and themes in the approaches to marketing PBMB, the researcher explores the uncovered ground in this study, leading to new discoveries and extending the knowledge of this growing field (Given, 2008).

### 6.2. Choice of Method

The study uses qualitative research as the method of choice to provide a greater understanding of the reasons why specific marketing tactics ( Milliken, 2001) are successful in communicating the environmental message of PBMB. Additionally, qualitative research makes it possible to identify and recognize newly emerging patterns, providing insightful information earlier on (Crick, 2020; Milliken, 2001). Furthermore, little attention has been paid to qualitative research in the marketing field (Milken, 2001) as marketing studies frequently rely on quantitative methods rather than going deeper into messages and meanings (Amaya et al., 2021). By using qualitative as a choice method, this study explores specific ideas and interpretive information that would not be feasible in quantitative data and so fills a research gap (Amaya et al., 2021; Given, 2008).

TA and MCDA are specifically used in this study effort to examine and sort the data. Such a combination of research techniques will enable a more thorough understanding of how brands convey their environmental values through packaging.

### 6.2.1. *Thematic Analysis*

TA has been chosen as the choice method because it allows the researcher to identify meaningful patterns (Braun & Clarke, 2006; Van et al., 2019), in the context of EF. Additionally, in the realm of communication and media studies, it is a simple method to identify themes or patterns of meaning in qualitative data (Braun & Clarke, 2006; Van et al., 2019). When handling a big data set, TA additionally summarizes key elements in a clear and organized finding (Nowell et al, 2017; Van et al., 2019). Additionally, it allows for a better understanding of how explicit and implicit cues convey EF, which will help marketers develop effective marketing campaigns. TA emphasizes the “social”, “cultural”, and “contextual” interpretations to which it influences individual experiences and discovers the development that is constructed (Kiger & Varpio, 2020, p. 847). In the context of brand communication through cues Kiger and Varpio (2020) argued that TA allows a deeper look into themes that may not be obvious in the data. Cues are implicit means of communicating (van Ooijen et al., 2017), and therefore with the use of TA, the researcher can identify these.

### 6.2.2. *Multimodal Critical Discourse Analysis*

In the context of green marketing, Hansen and Machin (2008) pointed out that connotations are extensively used and that there is almost no denotative communication (Dyer, 2008). Furthermore, Dyer (2008) explained that markets pay attention to what connotation words possess. Similarly, Beasley and Danesi (2002) stated that just like language, images are chosen carefully based on how they can be interpreted. Packaging similarly includes explicit and implicit techniques that can be ideological and influence the imbued into events or people (Çoşkun, 2015). Therefore, MCDA was adopted as the second method of analysis to reach this research’s objective (Machin & Mayr, 2012).

MCDA approaches define discourse as examining the ways in which different communication genres work together and independently create semiotic meaning (Kress, 2010; Liu, 2013). This definition emphasizes how the environment, society, and events shape concepts and their importance (Foucault, 1972). Language cannot be analyzed separately from meaning but rather within the context of the society must be considered. To establish the underlying system or grammar of communication (Ledin & Machin, 2018), Kress and Van Leeuwen (2006) argued that researchers should examine language and visuals through Halliday's (1978) Systemic Functional linguistics which has expanded to understand the meaning-making in MCDA (cited in Yao & Zhuo, 2018).

Halliday's (1978) framework proposes that to understand the role of semiotics in communication, researchers should recognize that semiotics carry out three main metafunctions. These serve as a lens to examine how semiotics is employed to communicate ideas with individuals (Yang & Zhang, 2014). The first is the ideational metafunction, which explores the ways in which language presents and interprets

actual events (Yang & Zhang, 2014). Secondly, interpersonal metafunction emphasizes the utilization of language in interpersonal communication to share attitudes, emotions, and beliefs (Yang & Zhang, 2014). Lastly, the textual metafunction focuses on a text's structure and layout, and how language creates a clear and smooth flow of information (Yang & Zhang, 2014).

By using MCDA as a method of choice, the researcher can analyze how PBMB utilizes the three main metafunctions to make meaning. MCDA also allows the researcher to evaluate the legitimacy of the EF brand claims, and the PBMB communication strategies contextualized within cultural standards (Yang & Zhang, 2014). This highlights the importance and influence of discourses on EF claim communication and hence addresses the theoretical limitations of TA (Braun & Clark, 2006; Lawless & Chen, 2018).

### 6.3.Sampling

Purposive sampling is employed for several reasons. Firstly, purposive sampling allows the researcher to pick samples that fit the study's goals (Patton, 2002). It deepens understanding of the subject matter by selecting samples with relevant data and traits most relevant to the field (Palinkas et al., 2015). Lastly, this method provides an organized and effective use of resources since the researcher can select samples that have a higher chance of accomplishing the research objective (Creswell & Creswell, 2017).

To examine the packaging of different PBMBs, this study relies on media material as its primary source of data. Research suggests media content is a suitable data source for researching verbal and nonverbal communication since it provides the analysis of messages spread across a variety of mediums (Krippendorff, 2013). It allows the comparison of various packaging cues from different brands. To enable a more extensive examination of the implicit and explicit cues in the packaging, photos taken by the researcher are used. This provides a thorough understanding of the variations in the packaging of different PBMBs.

### 6.4.Size of Data

According to Elo et al. (2014), there is no ideal sample size for qualitative studies, but there are some considerations when determining sample size, including the subject matter, the purpose of the study, and the range of a theory or conclusion (Flick, 2018). Furthermore, external restrictions including time and resource availability and demands from outside organizations like examination boards should also be considered (Flick, 2014). As a result, an outside organization, the Faculty of History, Communication, and Arts has decided that a sample size of  $N=\pm 100$  visual pictures is acceptable.

In qualitative research, software programs can help select, store, and organize themes (Alhojailan, 2012); and improves the “validity” and “reliability” of themes emerging during data analysis (Welsh, 2002, cited in Alhojailan, 2012, p. 39). This study employs NVivo, which not only brings the

aforementioned advantages for TA but also effectively detects patterns and relationships, together facilitating rigorous, informative conclusions from the data (Dhakal, 2022).

### 6.5.Data Collection

A number of factors helped determine the data that will be used in this study. Firstly, the choice of the Netherlands as the study’s location was based on the number of PBMB available, providing a suitable sample size (Foss Analytics, 2022). The study focused on online/ physical supermarkets with big sales and a sizable client base, like Crisp, Albert Heijn, Picnic, Jumbo, Lidl, and Aldi. The survey also considered the organic supermarket companies Ecoplaza and Marqt (amsterdamtips, 2022). It should be noted that the generalizability of the study's findings may be limited to other cultures or countries with different marketing practices.

Another criterion used in the case selection was the focus on Western European brands, such as Oatly, Aplro, and Wunda (Bhattacharjee, 2012). Approximately 100 images of Western European plant-based milk brands were collected, ranging from €1 to €3. This price range was chosen after considering variables including availability, demographic representation, and Dutch market research.

The study selected oat, almond, soya, and coconut milk substitutes, which are the fastest-growing milk alternatives in the Netherlands (ABN.AMBRO, 2022). Oat milk brands are more common than other alternative products due to their popularity. A minimum of 15 brands of each alternative is guaranteed in this study. Notably, brands that offered the same plant-based alternative were accepted if they used different explicit and implicit cues. Similarly, barista alternative milk is taken into account, as it incorporates EF claims. To ensure consistency and reliability, each product was shot during the data collection processes from various points of view (Kothari, 2004).

### 6.6.Operationalization

The following table provides an overview of various significant research concepts found in Appendix B to serve as the framework for examining EF communication and PBMB's implicit and explicit cues.

Measurement	Scholars	Sub-themes	Definition

<b>Informational cues</b>	(Atkinson & Rosenthal, 2014; Donato & D’Aniello; 2021; Ertz et al., 2017; Magnier & Crié, 2015; Siraj et al., 2022; Tang et al., 2004)	Environmental labeling, license agreements, and statement or broad environmental claims	Cues dealing with information on packaging are referred to as informational cues (Magnier & Crié, 2015). Classification of informational cues consists of environmental labeling, license agreements, and statement or broad environmental claims (Magnier & Crié, 2015, p.358).
<b>Graphical cues</b>	(Hartmann & Apaolaza-Ibáñez, 2010; Labrecque et al., 2013; Lazard & Atkinson, 2014; Magnier and Crié 2015; Meijers et al., 2018; Seo & Scammon, 2017; Tu et al., 2018; Vermeir & Roose, 2020)	Colors, graphical cues, visual impact metaphors	Visual cues emphasize the ‘appearance’ or ‘form’ of the product rather than the content of the cue (Vermeir & Roose. 2020, p.2)
<b>Structural cue</b>	(Dörnyei et al., 2022; Herbes et al., 2020; Lindh et al., 2016; Magnier & Crié, 2015; Nguyen, 2022; Steenis et al.,2017)	Reused packaging, recycled materials, renewable materials bio-based and less packaging	Packaging structural ecological cues are defined as cues relating to the structure of packaging.
<b>Classification of greenness</b>	(Carlson et al., 1993; Coulson et al., 2013; Hartmann & Ibáñez, 2009; Leonidou et al., 2014; Lindblom, 1994; Orazi and Chan,2018; Sarkat, 2012; Wagner & Hansen, 2002)	Evaluation area, Focal point, Driving forces, Leverage aspects, product orientation, process orientation, image orientation, and environmental facts, claim specificity, claim emphasis, claim substantiveness, and claim validity, rational, emotional, or moral execution styles, planet,	The evaluation of a brand's greenness focuses on the extent of adopting recycling and processing policies for PBMBs. It includes an examination verifying the reliability of claims, considering factors like accuracy, specificity, and transparency. Leverage refers to the intentional use of moral, emotional, or rational appeal to strengthen and highlight these claims. Driving forces include the basic environmental ideals that PBMB seeks to communicate.

		animals, plants, and human beings.	
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This study combines deductive and inductive approaches. The paper examines the framework developed by Leonidou et al. (2014), which is then used to see if the theory is applicable to the study’s research topic (Azungah, 2018; Hyde, 2000). With the deductive approach, initial themes are drawn from existing literature on the topic of research (Azungah, 2018). In this case, Leonidou et al. (2014) conceptual model includes four different environmental components which can be considered as the initial codes. Furthermore, Leonidou et al. (2014)'s concepts heavily draw from other studies on environmental claims, making it possible to operationalize each trait in detail (Banerjee et al., 1995; Carlson et al., 1993; Wagner & En, 2002). Despite the fact that Leonidou et al.'s (2014) framework provides a thorough analysis of the important components of green marketing, it falls short in its in-depth examination of how PBMB communicates its EF claims. Thus, this study uses inductive research to create a more in-depth classification of EF communication grounded on PBMB. The inductive methodology supports the study of possible new themes and sub-themes, revealing new discoveries that are not covered by the current framework (Thomas, 2006).

## 6.7.Method of Analysis

### 6.7.1. Thematic Analysis

To formulate an answer to the research question ‘*How is EF portrayed in plant-based milk brands in the Netherlands through verbal and non-verbal cues?*’ a thematic analysis is appropriate in which 100 images of different PBMBs are analyzed. Following data collection, Braun and Clarke's (2006) five analysis steps will be applied through a systematic approach. Once the data has been obtained, it is best to read through and immerse oneself before coding. This entails actively interpreting the material, such as seeking meanings or patterns (Braun & Clarke, 2006; Van et al., 2019). Secondly, initial codes based on judgment were created, also known as open coding (Boeije, 2009). These codes represent a part of the data that is relevant to the research topic (Braun & Clarke, 2006). This was accomplished by analyzing the data set and finding relevant aspects of the research. The third stage is also known as axial coding (Boeiji, 2009), which involves grouping codes of synonyms and the same types as specific open coding

has the exact synonyms with similar meanings (Wæraas, 2022). Searching for code repetition and similarity is crucial when developing a theme. This differentiates the dominant and less significant features (Boeije, 2009). The axial coding themes are broader and more complex than the themes discovered in the open coding. In the fourth stage, themes were changed or removed, and new themes were formed if existing ones did not adequately portray information (Braun & Clarke, 2006). It is essential to refer back to the conceptual model when removing, changing, or adding new themes to make the model more suitable for the research topic. In the fifth step, the attributes of each theme will be highlighted to illustrate the focus of each theme since it is preferred to have a single focus that is relevant to the research question (Braun & Clarke, 2006). A second round of coding is conducted as it allows the researcher to combine all of the concepts around a few key characteristics (Braun & Clarke, 2006). The collective dimensions may highlight shared theoretical underpinnings or clarify specific shared value features (Wæraas, 2022). The exact terminology on the packaging will be cited in the findings to demonstrate how each greenness dimension is communicated through verbal and visual cues.

#### 6.7.2. *Multimodal Critical Discourse Analysis*

Packaging is a discourse form that communicates information to consumers through a mode of communication (Chen & Eriksson, 2019). In essence, any interaction that communicates information can be viewed as a language that uses symbols, codes, linguistic trends, and norms to produce meanings that are culturally and time-relevant (Van Dijk, 2008). To investigate how language is portrayed in milk packaging, this analysis uses an MCDA methodology. The research looks at both explicit and implicit representations in the packing. *Denoted* portrayals are simple, literal descriptions without any implied implications (Machin & Mayr, 2012). Examples include using words like "sustainable" or using images of wildlife and plants to denote EF (Hartmann & Apaolaza-Ibáñez, 2010). Contrarily, *connoted* portrayals use more elaborate and symbolic connotations that are conveyed through the use of color, linguistics, and structure (Machin & Mayr, 2012). When doing MCDA, it is essential to analyze thematic concepts discovered from the earlier thematic analysis since it enables a more in-depth review of the results.

To identify specific expressions and terminology utilized to convey key concepts, each theme is assessed. This procedure fits with the idea of *lexical fields*, in which individual words are connected to specific subjects or genres (Fairclough, 1995). The second step is to determine whether there is *overlexicalization*, which is the overuse of particular phrases (Machin & Mayr, 2014). This analysis focuses on whether a brand's credibility and respect among customers are strengthened by the recurrent usage of particular words or phrases. According to Fuertes-Olivia (2001), *hedging*, or using words like "maybe," "almost," or "somewhat," might show precaution and reliability. Looking into the amount of hedging used in PBMB reveals the communicative approach of brands and the extent to which credibility



is attached to the claims found on the packaging. This research facilitates identifying cases of *lexical absence*, in which brands overemphasize favorable attributes while avoiding talk of potential drawbacks (Machin & Mayr, 2012). Additionally, visual semiotics contribute significantly to the emergence and maintenance of social ideals. This entails looking closely at the *objects*, *setting*, and *salience* (Machin & Mayr, 2012) of each packaging design. Firstly, objects can serve as icons, simplifying or replacing complicated processes with visual illustrations (Danesi, 2017). Moreover, setting examination focuses on the placement of visual semiotic elements within the overall package design (Machin & Mayr, 2012). Lastly, salience analysis involves looking at the interaction of visual components, such as “focus”, “foreground”, “size”, “colors”, and “cultural symbols” (Machin & Mayr, 2012, p. 54-56). By methodically utilizing critical linguistics and semiotic analysis, this integrated approach provides a thorough assessment of the implicit and explicit approaches used in PBMB. Furthermore, it offers insight into the discourses, beliefs, and practices concealed within the packaging, ultimately leading to an expanded understanding of the brand-communication techniques implemented.

#### 6.8. Validity and Reliability

TA is an adaptive research approach with certain limitations in terms of reliability and validity. Nowel et al. (2017) highlighted potential negative aspects including inflexibility and lack of consistency when developing themes based on study findings. To address this, Elo et al. (2014) and Nowel et al. (2017) provided a framework building on Lincoln and Guba's (1985) which was incorporated into the present research's 5-stage TA approach (cited in Nowel et al., 2017, p.3)

The first phase involves familiarizing the data and exploring a code framework with clear definitions and examples (Braun & Clarke, 2006). It makes it easier to understand how ideas develop, improving the accuracy of the analysis (Nowell et al., 2017) (Appendix C). Maintaining a reflective notebook in the second phase also acts as auditable proof, keeping track of new observations and creating a solid grasp of the data and its relations, strengthening validity (Nowell et al., 2017). The analytical phase is concerned with establishing the reliability and credibility of the themes that have been found. Diagramming combined with detailed notes is used to examine how various codes work together and to illustrate the relationships between themes (Nowell et al., 2017). In the fourth stage, the researcher shows how each topic is linked to the raw data, highlighting the accuracy and reliability of the results. Identifying the storyline each theme communicates, with an empirical basis, is the focus of the fifth phase to help establish credibility (Nowell et al., 2017). Additionally, choosing clear and descriptive topic titles improves readers' grasp of each subject's focus by increasing clarity and transparency for them (Appendix D). Lastly, highlighting how the findings are in line with and add to the contemporary knowledge/research on the topic.

In examining the reliability and validity of MCDA Lê and Le (2013) argued that MCDA lacks systematic rigor and tends to focus on a few specific elements while ignoring others. To address this, Lê and Le (2013) suggest using triangulation by combining several qualitative methodologies. TA is employed to accomplish triangulation in this study. Additionally, in line with Alyousef's (2020) recommendation, the researcher calculated the percentage frequency of each overall pattern to increase the validity of the qualitative investigation. The qualitative interpretations are supported by the quantitative approach's ability to offer more tangible data, hence enhancing the study's overall validity.

## 7. Results

This section examines the emerging themes related to PBMB's communication of EF (Appendix E). Moreover, findings from TA and MCDA will be combined, providing an in-depth understanding of the topic in relation to its socio-cultural, political, and historical context. By providing context, it highlights the importance of the themes that have been found in this study. This discussion is structured according to 5 identified themes through TA: (1) *Product attributes of being environmentally friendly*, (2) *Process orientation of environmentally friendly*, (3) *Product sourcing orientation of environmentally friendly*, (4) *I am a good company*, and (5) *Pro-environmental behavior*.

### 7.1. Product Attributes of Being Environmentally Friendly

From findings, it has been discovered that explicit and implicit cues of PBMB often relate back to conventional milk products. Previous studies found that PBMB has become more well-known due to marketing strategies that draw attention to the environment, and the well-being of humans and give consumers a familiar experience as a dairy alternative (Clay et al., 2020; Schiano et al., 2020). Consequently, Clay et al. (2020) and Schiano et al. (2020) have argued that EF PBMB should acknowledge the gap between consumers and the market definition of what it means to be an EF product. This was confirmed by the data of milk packages that have made explicit and implicit cues related to health and conventional milk. The theme '*Product attributes of being environmentally friendly*' is constructed of 2 sub-themes. Firstly, the sub-theme of '*health benefit product tags*' is defined as keywords that are brief descriptors of the product surrounding the health benefits they carry. Lastly, the sub-theme of '*propagandism*' is defined as taking a green positioning by challenging norms present in conventional milk packaging.

#### 7.1.1. Health benefit tags

<b>Health tags</b>	<b>frequency</b>
No added sugar	23%
Gluten free	11%
Lactose-free	7%
Unsweetened	8%
Low in unsaturated fat	8%

no GMO/ No GMP	3%
Calcium	7%
No syrups, harmful additives, dilutions, or other oat derivatives	2%
No preservation	2%
No Artificial flavors	7%
vitamin B2, B1, D4	5%

Figure 1. Health Benefits Tags Frequency

Within this discourse, figure 1 displays the most common verbal statements conveyed on the packaging. The top three health benefit product tags were ‘no added sugar ‘(23%) and gluten-free (11%) while the least common health benefit for plant-based milk is no preservation (2%) and no harmful additives (2%). This is consistent with statements by Martínez-Padilla et al. (2023) who have found that plant-based milk is often marketed as being healthier in comparison to conventional dairy milk. In terms of health benefits, Martínez-Padilla et al. (2023) found that “*lactose intolerance*”, “*milk sensitivities*”, “*being cholesterol-free*”, and a “*sense of health*” is what influence customers to choose plant-based milk (p.2). Rather than explicitly mentioning health, these brands convey the discourse of health through impact linkage with the ingredient and nutritional aspect of the plant-based dairy milk product.



Figure 2. Wunda



Figure 3. Campina

Figures 2 and 3 are among many of the brands that clearly portray these mentions of ingredients and nutritional aspects while alluding to being good for one's health. First, we have Wunda using red as a *color* and a different font in comparison to the rest of the text to highlight the health attributes of the product. Wunda's product is unsweetened and rich in important macros (protein, etc.) and various vitamins. Plus, it's low in fat, sugar-free, and gluten-free. The visualized muscular arm denotes that drinking plant milk allows consumers to be muscular and feel strong. Consequently, having 'plus' denotes that Wunda has all the ingredients that individuals would need in relation to strength and healthy bones, whilst allowing consumers to drink plant-based milk without worry. In the *foreground*, there is a retro-stripped background which often is seen in superhero comic strips. Using visuals, Wunda connotes their product must be good and fights off bad attributes such as removing the downsides of dairy milk (Clay et al., 2020). Secondly, Campina's text "A delicious variety for a good start to the Day" draws on implementing a broader viewpoint on health (Clay et al., 2020). Campina's viewpoint on health connotes that it involves more than just consuming food that is nutrient-dense, it can also imply enjoying life. The visual use of adding a line to emphasize "a good start to the day" increases the *focus* of the message and emphasizes what Campina defines as health.



Figure 4. Jumbo



Figure 5. Oatly

Furthermore, effective discursive strategies can be exemplified in Figures 4 and 5 as both brands utilize the *setting* of the packaging to inform the product's health benefit tags. Jumbo and Oatly took a different approach for compiling all the important health benefits into one packaging where the consumer can immediately spot the health benefits of the products. What differentiates both brands is the visually appealing packaging that communicates complex information and draws customers in with graphical and textual cues. Jumbo uses bright colors and stylized writing, while Oatly uses creative titles to attract readers. Both companies creatively educate customers about the product's health advantages. Furthermore, Jumbo's text "We have listed everything you want to know about our..." connotate the *cultural significance* health benefits holds for consumers, as Clay et al. (2020) stated that there is a rise in demand for PBMB due to the increasing consumer interest in health.

The discourse on the health benefits associated with PBMB is consistent with how consumers see EF products. PBMBs have recognized the need to additionally take into account social and economic elements in order to be viewed as EF in the eyes of consumers, realizing that environmental thinking alone may not be sufficient. Given that customers place a high value on social and financial factors,

brands must clearly link a relationship between health-related attributes and their overall brand image. Brands may successfully satisfy consumer expectations and improve their standing as EF products in the market by addressing these criteria.

### 7.1.2. Propagandism

In 2017, the European Court of Justice established legislation whereby PBMB are prohibited to use terms like "milk" to market their products (Lawrence, 2021). This legalization has shaped the way brands present their products (Yang & Zhang, 2014). Thus, within this discourse, it is discovered that PBMB is comparing plant-based attributes to conventional dairy attributes and draws similarities between them.



Figure 6. Alpro



To illustrate, Alpro packaging seen in Figure 6 purposefully created its packaging design to closely mimic conventional milk products. This is consistent with Clay et al.'s (2020) observation that PBMB's packaging looks like traditional dairy milk. Alpro's packaging has *cultural significance* since the glass milk acts as a metaphor for the iconic milkman. The visual component stirs up feelings of reminiscence about milk delivery in childhood. The packaging, symbolic of the glass milk bottles, promises their almond milk is just as fresh. Hence, the overall visual likeness to milk products can be seen as an *object* as it physically resembles the originalities of milk packaging. Visual similarity draws on customers' pre-existing memories of milk to build a rhetorical connection and familiarity, leveraging consumers' existing associations with milk.



Figure 7. Rebel Kitchen



Figure 8. Dryk



Figure 9. ROA

Additionally, companies like Rebel Kitchen, Dryk, and ROA illustrate an innovative strategy by putting the word "milk" on the labels of their products. Figures 7,8,9 try to improve it by adding icons, such as a star, tree, or a different letter in place of the "I" in "milk". This way PBMB avoids the labeling restrictions and provides a comparison between their products and conventional dairy products.

In comparison to ROA, Rebel Kitchen uses a larger font *size* in its discursive tools, which increases visibility and draws focus. Rebel Kitchen also uses a distinctive *color* to draw attention to the letter "y" in the product name, replacing the "I" in "milk." This color contrast heightens the design's significance and draws consumers' attention. The packaging design has a simple and clean layout with just two colors, which draws attention to the prominent cues. This design strategy is consistent with



Machin and Mayr's (2012) idea of using color and tone to produce messages that are more effective and significant.



Figure 10. Alpro (shhhh this is not milk)



Figure 11. Oatly (no milk, no soy, no... uh whatever.)



Figure 12. Vly (no milk today)

Lastly, Figures 10,11,12 adopt an ironic approach to convey their shared message. All 3 brands employ the word "no" repetitively creating a contradictory effect and emphasizing the contrast between plant-based milk and conventional dairy milk. Additionally, Oatly's phrase links to an ongoing debate in the plant-based market regarding soy as an alternate EF option. According to a recent article from The Guardian, soy, frequently seen as EF has serious environmental consequences because of deforestation (2020). This is illustrated in Figure 11, specifying that the product does not contain soy. However, Oatly's primary objective is to encourage consumers to choose plant-based milk and to highlight that the overall consumption of dairy is more harmful to the environment than any dairy alternative.

## 7.2.Process Orientation of Plant-Based Milk Brand

In this study, a common aspect of communicating EF is through explicitly informing manufacturing processes and disposal techniques (Carlson et al., 1993). Of the 33 European PBMB, the majority communicated the manufacturing of their products to consumers through their packaging. This section is constructed by 3 sub-themes, providing a clear link between the manufacturing processes and the environment (Leonidou et al., 2014) and ensuring that the brand meets the market standard for

performance, cost, safety, and health (Nguyen et al., 2020). Firstly, the '*green packaging material claim*' is defined as a description made by brands highlighting the *reused packaging, recycled materials, and renewable materials* of the product (Dörnyei et al., 2022). Secondly, the use of '*sustainable material licensing initiatives*' can be defined as brands using credible sustainable materials by working together with third-party verifications. Lastly, the sub-theme of '*green energy output*' can be defined as manufacturing usage of moderate emissions in their processing that does not hurt the environment. While this sub-theme is not as visibly strong compared to other sub-themes, brands must be mindful of the sources of energy they use. This sub-theme elaborates on Carlson et al.'s (1993) definition of process-oriented claims. It signifies that green energy must be prioritized within other processes, such as production and waste disposal.

#### 7.2.1. *Green packaging material claim*

Within this discourse, it is understood that brands need to communicate recyclability, reusability, and reduction to adhere to the sustainable packaging coalition (Nguyen et al., 2020). However, findings show that PBMB barely makes use of verbal claims to communicate SPC's criteria. This can be seen in the lexical field being recyclable materials (7%), with a low focus on reusability/reused materials (0%) and a slight focus on renewable resources (6%). In comparison to past research, these results demonstrate significantly lower percentages, opposing the importance of products being reused, recyclable, and renewable to avoid being perceived as insignificant (Oloyede & Lignou, 2021; Nguyen et al., 2020). Furthermore, a significant environmental term that has been used among PBMB is 'plant-based material' (10%) as exemplified in Figure 3. Despite what the word denotes, research has shown that plant-based materials are not necessarily recyclable or biodegradable (PBPC, 2023). This contradicts Nguyen et al. (2020) study as it was argued that EF products should be easily decomposed and biodegradable. Additionally, using broad terms like plant-based material to discuss the product's reusable, renewable, or recyclable can be interpreted as ambiguous therefore statements about EF should be specific and associated (Granato et al., 2022).



Figure 13. Isola bio



Figure 14. Alpro

An emerging marketing trend from the data revealed that PBMB makes use of infographics and numerical claims in combination with environmental licensing to increase *salience*. Scholars (Gleim et al., 2013; Xie & Kronrad, 2013) argue that brands should take precautions when using percentages to maintain social relationships and establish associative claims (Orazi & Chan, 2018). If precautions are not taken, it could result in breaking the social relationship among consumers' trust (Crossley et al., 2021) and not be considered an associative claim (Carlson et al., 1996). A correct approach can be exemplified by Isola Bio's associative claim on its green packaging (Figure 13).

Isola Bio strategically places verbal claims within a white contrast box that stands out against the blue background, effectively grabbing the viewer's attention as suggested by Machin & Mayr (2012). Isola Bio took precautions by highlighting FSC-certified. Furthermore, incorporating keywords like "renewable sources," "FSC-certified," and "responsibly managed" creates a correlation and strengthens its message, demonstrating its commitment to EF. Furthermore, the message is strengthened by the identical color scheme since words like "renewable resources," "reduced plastic," "responsible managed," and "sugar cane" is in the same color. A cohesive message of EF manufacturing is communicated by the visual similarity, explicitly highlighting the relationship between these components.

Alternatively, an example of a weak claim is made by Alpro seen in Figure 14. It is stated that Alpro is working on using 100% renewable materials in its packaging and currently uses 89% renewable materials. Alpro takes leverage by highlighting that their packaging is 100% recyclable as an argument

for their shortfall in renewable material. Alpro reassures customers by using phrases like “already now” and “we strive for”. However, PBMB must comply with the DSA Code, which suggests linking sustainability claims to concrete plans of action. The absence of described approaches may cause consumers to question Alpro's authenticity.

It is useful for PBMB to use contrasting *colors* in their product marketing after looking at the discursive tools used to support the manufacturing of EF materials. This is particularly apparent in Figures 13 and 14. Alpro and Isola Bio use intense blue colors to bring focus to specific features on a white background. Making other written features less apparent and drawing attention to highlighting the significance of those elements. Additionally, earlier studies by Machin & Mayr (2012) argued that less bright colors would denote less significance. Isola Bio's design, however, contradicts this theory. Instead, Isola Bio's discursive tools concentrate on the brightness's *tone* to draw attention and emphasize the importance of the prominent cues.



Figure 15. Melkan

PBMB also utilized visual cues such as infographics to communicate its EF efforts of recyclability, reusability, and renewable. A PBMB that does it well is Melkan seen in Figure 15. The *setting* of “fold the box up as small as possible” is prominently visible on the left side of the packaging design, which carries *cultural significance* in the context of the Dutch municipality's objective to achieve a circular system by 2050. The packaging design strives to increase the possibility of Dutch customers engaging in recycling activities by offering specific advice. This is consistent with Harvard Business

Review (2014), which emphasizes the emotional impact of infographics. The claim made by Lazard and Atkinson (2014) that infographics remove irrelevant information is evident when brands use infographics to clearly and effectively explain how to recycle.

7.2.1.1. Sustainable licensing initiative

Material licensing	Visual Logo
<i>FSC</i>	
<i>Tetra Pak</i>	
<i>Carbon Trust</i>	
<i>IT BIO-006</i>	
<i>Groene Punt</i>	
<i>Sin</i>	

<i>Agricultural Biologique</i>	
<i>Carbon footprint</i>	

Figure 16. Sustainable material licensing initiatives

The use of *sustainable material licensing initiatives* (figure 16) (Appendix falls under the *lexical field* of licenses of PBMB such as *FSC* (66%), *Tetra Pak* (80%), *carbon trust* (3%), *IT-BIO 006* (45%), *Groene Punt* (1%), *SIN* (2%) and *Agriculture Biologique* (8%) verifying that the products meet the market standard and thus their manufacturing can be categorized as EF. There is thus a strong explicit connection made between PBMB and third-party verification as it implies confidence in the manufacturing procedures of brands. This also aligns with the studies conducted by Crossley et al. (2021) as the usage of third-party verification upholds the social contract that its packaging is in truth renewable and maintains a social tie with the wider community. Overall, every license that is visible on products can be portrayed as a *significant cultural symbol* as it conforms to the DSA Code which emphasizes how brands create a reliable sense of interpersonal communication with the consumers.





Figure 17. Albert Heijn

The emphasis on EF licensing necessitates an additional viewpoint. PBMB notices that consumers are becoming increasingly aware of the dishonest tactics connected to EF. Relevant research and EU rules surrounding third-party verification processes support this increased understanding. However, a close look at the *setting* and *size* of licensing used by these brands uncovers several flaws leading up to associative claims. Albert Heijn's product packaging (Figure 17) serves as an illustration of this problem. The abundance of text and the FSC certification is on the same side of the packaging, restricting its noticeability. Machin & Mayr (2012) suggest that attributes placed behind the *foreground* denote a lack of emphasis on their significance. Thus, the information overload lessens the importance given to the FSC certification. Additionally, research has shown that consumers frequently ignore text considered to be an information overload. Therefore, customers might overlook the FSC labeling or the recycling mark, causing them to mistakenly believe that Albert Heijn's plant-based milk brand is not EF.

Alternatively, Oatly (figure 5) used discursive techniques to emphasize the significance of licensing. Oatly draws attention from compositional elements using *graphical fonts* communicating to consumers that the side of the packaging is the “boring but very important side”. Additionally, the statement is a form of juxtaposition as the contrast emphasizes that buyers may overlook this. Therefore, having graphical fonts has been shown in the literature to be effective to draw consumers’ attention as a *high-focus* characteristic that attracts attention to the licensing.

The discourse surrounding milk packaging flaps plays an important role in creating meaning, particularly for the licensing of Tetra Pak. Data shows 80% of the packages feature TetraPak licensing, indicating recyclability. When consumers flatten the products, the flaps act as a medium to draw *focus* to the composition, functioning as a focal point for promoting recycling. This placement supports Machin and Mayr's (2012) claim that emphasizing certain symbols improves awareness. Additionally, the visual semiotic link with the Tetra Pak symbol sends a consistent message that highlights the value of recycling and the brand's dedication to EF.



Figure 18. Oatly's Tetra Pak explanation



Figure 19. Dryk's Tetra Pak explanation

Alternatively, Oatly (figure 18) and Dryk (figure 19) have included a thorough explanation of Tetra Pak. The terms "good package," "protect its context naturally," and "easy to recycle," are in line with the protective function of packaging (Agariya et al., 2012). Brands that use sustainable packaging must emphasize reducing, recycling, and reusing. Incorporating such components ensures that a package fits consumer demands for EF packaging whilst protecting the environment. Oatly and Dryk develop a differentiating communication strategy by stressing the natural protection and recyclable nature of its packaging. Tetra Pak's logo may not prove sufficient on its own to separate it from other non-EF brands or it could be easy to ignore without any further context.

#### 7.2.1.2. Green energy Output

When examining the discourse of PBMB within the process orientation, communication regarding the specific form of renewable energy utilized is often vague. A PBMB compares its current packaging to previous versions to denote they are improving the way they utilize energy during production. Alpro packaging in Figure 14 exemplifies this practice. The text, "CO2 reduction by 18%" implies that Alpro's carbon dioxide emissions have decreased. The use of color draws customers' focus to the upgraded model and builds trust in the brand's innovative approaches to minimizing carbon dioxide emissions. According to research, brands need to manufacture their products in line with the life cycle assessment for them to be represented as EF (Bjørnbet & Vildåsen, 2021). The legality of referencing past products or



manufacturing practices is encouraged under DSA Code. Furthermore, brands must provide measurements to support claims. However, Alpro has used words with positive connotations, such as “reduction” and “friendly” to imply that its manufacture is less damaging. It neglects the absence of comparison insight, leaving their claims ambiguous.



Figure 20. Vermodo



Figure 21. Vermodo Carbon Neutral licensing

Instead of making environmental claims, brands should put more emphasis on noticeable elements that will help people understand their messages. These tools include licensing and labeling. Illustrated in Figures 21 and 22 by Vermodo, in collaboration with Tracking Climate Change. This partnership reveals Vermodo's claims regarding carbon neutrality have been approved. By including the text "to compensate for this product's CO2 emission" in Figure 21 Vermodo shows transparency surrounding their carbon emissions, whilst demonstrating certified climate protection projects. In line with Baum's (2012) findings on the value of community involvement in creating a positive brand image and Carlson et al.'s (1993) discussion of EF, Vermodo's action highlights a positive relationship with the larger community.

### 7.3.Product Sourcing Orientation of Environmentally friendly

Besides manufacturing and waste disposal playing a role in determining whether a product is EF, findings showed sourced sustainability is important, or where and how PBMB get their products. This is

supported by research emphasizing farming practices and EF processing methods (Sharma, 2023). Hence, the *‘Product sourcing orientation of environmentally friendly’* is defined as the way brands communicate the processing, selecting, and managing of the ingredients of their products as EF. This theme is constructed of three sub-themes. Firstly, the *‘characteristics of ingredients’* are defined as the origin of where brands get their products. Following, *‘characteristics of farming’* is defined as the ways brands grow and operate their ingredients. In the context of plant-based milk brands, they operate their ingredients through either ‘small scale’, ‘sustainably cultivated’, or ‘with the support of nature’. Lastly, *‘transparent sourcing’* can be defined as third-party verification that enables brands to make verified and credible claims surrounding their transparency.

### 7.3.1. Characteristics of Ingredients



Figure 22. Alpro (Southeast Asian Coconuts)



Figure 23. Roa (European Whole Oats)

Findings reveal that purchasing overseas resources like Nordic oats (4%), Asian coconut (4%), Mediterranean almonds (6%), and Italian almonds (1%) is a sign of EF practice in this discourse. Alpro links warm weather to coconut-based products in Figure 22. Brands utilize rational appeal in their environmental claims, which connote that coconuts from Southeast Asia are more likely to result in

high-quality products (Wagner & Hansen, 2002). High-quality products are emphasized by the European Environment Agency (n.d.) as an essential element of EF products.

However, most PBMBs are primarily headquartered in Europe, and the shipping of components over great distances has a tremendous environmental impact. Hence, such claims can be seen as substantive. Additionally, the *over-lexical* of sourcing ingredients from "international" regions might create an interpersonal metafunction heightening the idea of superior quality. However, big text *sizes* and contrasting *colors* used to accentuate buzzwords on packaging may give the impression that emphasis is being forced and could negatively impact the brand's image. On the other hand, ROA (figure 23) offers an excellent illustration of the idea that sourcing, traceability, and careful selection are signs of brands being EF. First, ROA intentionally communicates its roots to establish a link between the product and its reputation for premium whole oats. By attributing its origins to The Netherlands, ROA draws on the tradition of oat cultivation in Europe. In addition, the use of QR codes to back their claims makes them credible and traceable, leading to the classification of their claims as associative.

### 7.3.2. Characteristics of farming



Figure 24. The Bridge La Famiglia Organic (sustainable cultivation)



Figure 25. Alpro (sustainable cultivation)

Within this discourse, it has been noted in the findings that PBMB produces ingredients through “family- farming”, “sustainably cultivated”, and “with the support of nature”. Firstly, The Bridge La Famiglia Organic (Figure 24) assert that their product is sourced from a family-owned farm. This offers a greater level of emotional appeal (Banerjee et al., 1995) due to attachment to the community, local landscapes, and ecosystems. This aligns with Holloway et al., 2021 as family farming is passed down by generation. Thus, the significance of family farming goes beyond just producing but includes generations-long bonds and cultural connections (Holloway et al., 2021).

Alpro (Figure 25) exemplifies sustainable cultivation by reducing resources, preserving the condition of the soil, and improving the management of water use (planetjourney,n.d.). It emphasizes that farming

in the Mediterranean Sea allows their almonds to be "mostly" rain-fed, addressing water use concerns. Almond milk is known to have the highest water footprint (Sharma, 2023). However, the adjective "mostly" presents ambiguity and may lead to different interpretations among consumers regarding the dependence on rainfall. Despite the vagueness, Alpro's packaging demonstrates trustworthiness and transparency. The setting of a discreet remark underneath the box (figure 25) states:

*"Our almonds mostly get rainwater - at least 2/3 of the water just falls from the sky,"*

By using rational appeal, Alpro markets its EF farming technique by providing numerical evidence of its alternative solutions, specifically the specification of how Alpro improves the management of water use. Customers that prioritize supporting EF brands will find this to be an appealing claim.



Figure 26. Rude Health (With the support of Nature)



Figure 27. Rude Health (With the support of Nature)

Brands used "nature" to indicate EF in farming. It fosters the idea that brands are a part of the environment since it reflects an attitude to work with the changing seasons and a sense of synchronization with nature. Figures 26 and 27 illustrate how Rude Health uses this concept in this discourse. Figure 26 is an illustration of how hyperbole is used to communicate the coconut used in their products is grown in the most natural environment by exaggerating the amount of sunlight it receives. Figure 27 also makes use of the linguistic device "fall off the tree ripe," which dramatizes the amount of ripeness, signifying that the brand favors selecting almonds at their best ripeness and environment-wise. Moreover, Figure 27 shows a

graphic representation of growing, happy ecological systems as the text state "the bees are buzzing about it" demonstrating that the brand's products are EF and draw bugs.

### 7.3.3. *Transparent sourcing*

Turunen & Halme (2021) note that brands often opt for either third-party verified EF labels or free-form sustainability communication, also diminishing potential information overload (Herbes et al., 2020) as it allows consumers to make clear decisions on whether a product is EF or non-EF.

Label	Logo
Rainforest Free Soya	
Fairtrade Licensing	
Soil Association	

Figure 28. Sourcing licensing

Among the many third-party verification that has been used as seen in Figure 28 are Rainforest Free Soya (7%), Fairtrade Licensing (2%) and Soil Association (5%). Among the three licensing, Rainforest Free Soya is specified to be Alpro’s own verification of sourcing their soya responsibility. In the context of legality, this complies with the DSA Code, which allows firms to create their own iconography to depict their claims or footprint. Their claim that their products are not rainforest-derived soya can connote as an associative claim as they do comply with regulations. However, there might be a challenge to inform consumers that the product is EF as consumers trust certification from independent organizations more (Coulson et al., 2013).





Figure 29. Provamel



Figure 30. Isolabio



Figure 31. Campina

There is an opportunity for PBMB to transparently communicate their sourcing processing with the usage of QR codes, as done by 7% of discussed companies. Figures 29, 30, and 31 provide a scan & trace where consumers can follow the whole journey. It allows consumers to discover how, where, and when the drinks were made. This adheres to a proposal from the European Commission for the substantiation of green claims that concern the environmental footprint of products, services, and companies through Weblink, QR codes, or other identification methods.

#### 7.4.I am a good company

From past literature, it has been communicated that brands should create a positive relationship with the wider community and demonstrate a more genuine effort (Braun, 2012) linking this to Carlson et al. (1993) image-oriented claims. However, there was no specification on how it can demonstrate a genuine effort from the data a new classification/theme was found on how PBMB can communicate its social obligation. The theme *'I am a good company'* is defined as a brand's initiatives to do good for the world which are not directly related to their EF image. The following subthemes *'give back to society'* and *'promising slogan'* can be used to understand how generosity and a positive relationship are

communicated among PBMB. Firstly, the *'give back to society'* sub-theme is defined as initiatives by brands to contribute to the good of the public. Lastly, a brand can portray they are a good company by using *'promising slogans'*, which are defined as quick and vague catchphrases that make brands seem motivated to make a change.

#### 7.4.1. Give back to society



Figure 32. Harvest Moon

Harvest Moon packaging layout denotes a strong *focus* on charitable giving (Baum, 2012) evident by the significant *setting* of information about charities on one side of the product (figure 32). The strategically composed text in the middle draws immediate attention and enhances the message's *high-focus characteristics*. The lack of *object* elements around the text emphasizes the brand's image-oriented strategy and highlights the importance of having a positive brand image within the wider community. Harvest Moon explicitly states that it donates 1% of its total sales to charity while reinvesting the rest to build a sustainable business. It gives off credibility and trustworthiness by referencing an NGO, perceiving the brand as having goals outside of economic purposes. However, the use of semiotic salience tools, reveals a disconnect between the denotation of "Harvest Moon", which intends to signify giving back to society, and the actual meaning through visual images. Machin and Mayr (2012) argue that the

value of salient instruments in brand communication goes more than just being visually obvious when examining their use. While these instruments can draw in consumers and produce an appealing composition, their ultimate value depends on revealing the social conventions and symbolic meaning (Xie et al., 2021). It is evident through the overuse of "we" raise doubt about Harvest Moon's intention to support organizations that are close to its heart. Moreover, emphatic phrases like "our," "more," "care," and "deeply" function to amplify the message by influencing the consumer's emotional appeal. However, Machin and Mayr (2012) argued that such linguistic decisions are part of an effort to sway perceptions and create image-focused branding. Thus, using such terms can misrepresent the real extent of significance or sincerity.



Figure 33. Rebel Kitchen



Figure 34. Rebel Kitchen Certification

In contrast, Rebel Kitchen employs adopts a simple and straightforward approach to charitable giving (figure 33). The packaging features a white background *color*, with contrasting colored text used to emphasize the message and create a *high-focus* attribute. The *salience* of the *foreground* and *overlapping* elements is heightened as there is no visual interference. The key difference between the brands lies in the inclusion of specific statements on different sides of the packaging as shown in Figures 34 and 35. Figure 34 exemplifies Rebel Kitchen's intention to "question the norm," which is substantiated in Figure 35 highlighting their certification as a B-Corp brand. By emphasizing its B-Corp status, Rebel Kitchen justifies its authenticity by donating 1% of its revenue. Furthermore, the packaging also features the Soil Association Organic, a membership charity advocating for healthy, human, and sustainable food, farming, and land use (Soilassociation, n.d), and 1% for the planet known to support farming that uses restorative practices (1% for The Planet, n.d.). Through these collaborations, Rebel Kitchen proves that its actions



are sincere and significant while having a tangible influence on the wider community. Notably, the text on Rebel Kitchen packaging is transparent and clear, with no *lexical absences* or missing words. All the necessary information is present and supported by factual data and relevant metrics rather than based on words.

Overall, it is required by the DSA Code that any statements about sustainability be supported by solid evidence. Without specific plans to back it up, as Crossley et al. (2021) suggested, misleading claims or labels, result in punishments and compensatory measures, thereby undermining the brand's image of being EF. Additionally, the absence of recognizable labels, symbols, or referrals to recognized organizations on the package raises doubts about the legitimacy of any charitable donations. Harvest Moon standing in contributing to society is further lowered by the absence of B-Corporate confirmation, which usually testifies to brands being social responsibility. These indications suggest that the company's promises are unlikely to be true, undermining its standing as an EF brand.

#### 7.4.2. *Promising Slogans*

Based on research, Magnier and Crié's (2015) definition of informational cues does not identify slogans, but it has been demonstrated that slogans incorporate science, ethics, and environmental terms too. However, slogans have a different function than explicit environmental claims. Environmental claims aim to inform and educate consumers (Magnier & Crié, 2015), while slogans try to give off a more holistic connotation linked to the brand's image (Pike, 2004). As a result, slogans can be categorized under an additional cue of informational cues to communicate PBMB's EF objectives.

Within this sub-theme, linguistic tools such as *personification*, *metaphors*, and *imagery* were adopted. In general, the specified linguistic falls under the use of emotional appeal (Banerjee et al., 1995; Zheng et al., 2022) to execute messages. To illustrate, Harvest Moon's promising slogan (figure 32), "We're a little company, out to leave a lasting legacy," makes use of both *juxtaposing language* and *imagery*. Firstly, Harvest Moon communicates an impression of sincerity and familiarity by talking about itself as a "little company," which could be charming to customers. Secondly, the statement creates visual imagery of the brand being modest and humble. In this way, it is possible that it can provoke a higher chance of emotional response as Lazard and Atkinson (2014) noted that visual is more effective when compared to verbal communication. Furthermore, the claim that Harvest Moon is "out to leave a lasting legacy" communicates a feeling of ambition and vision and portrays the brand to have a significant influence. By utilizing literary characteristics, the brand can engage on an interpersonal level by *personifying* with the public and expressing its genuine desire to have a positive, durable impact.

However, the assessment of a slogan's EF is important since it could cover up the genuine actions of a brand because it may not be driven by actual, noticeable actions (Hartmann & Ibanez, 2009). As a

result, consumers can have a false impression of the brand which leads to brands being ambiguous due to the low level of truth in claims brands make (Lindblom, 1994). Therefore, when comparing the three types of appeal that brands use to communicate their EF messages, outlined by Banerjee et al. (1995) and Zheng et al. (2022). It can be noted that the emotional appeal should be utilized with precaution. Although it does express a sense of support it does also take advantage of the visual imagery that an emotional literature device brings out. which is seen to be a stronger persuasive approach in comparison to verbal. As a result, the slogan might be interpreted as manipulative, which may prevent people from asking critical questions about Harvest Moon's actual environmental policies.

### **7.5.Pro-environmental behavior**

Findings highlighted a new theme called '**pro-environmental behavior**', which illustrates the relationship between EF products and motivating consumers to carry out EF behaviors. While people are aware of how important living an EF lifestyle is, they may be hesitant to do so (Meijers et al., 2018). To encourage consumers to participate by choice, PBMB has used packaging. This theme aligns with Wagner and Hansen's (2002) claim since PBMB places more emphasis on planet preservation. However, the current research findings differ from Wagner and Hansen's claim because PBMB leverages human health and biodiversity conservation as persuasive arguments to encourage pro-environmental behavior. They are viewed as justifications for encouraging pro-environmental behavior rather than as two distinct driving forces. The following sub-theme: '*sense of self*', '*idealizing the environment*', and '*futuristic vision thinking*' are all driving forces to encourage pro-environmental behavior to preserve the environment. The '*sense of self*' is defined as using a combination of an emotional and moral appeal targeting the consumer's identity as a call for action to enable environmental change. The possibility of merging such appeals requires to be addressed since it did not receive much attention in prior research (Leonidou et al., 2014; Banerjee et al., 1995; Zheng et al., 2022). The subtheme of '*idealizing the environment*' is defined as a call to action by idealizing the characteristics of the environment. Lastly, '*Futuristic vision thinking*' is defined as triggering consumers' morality and making them choose to be better for the future. This subtheme adheres to Wagner & Hansen's (2002) leverage aspect of the moral appeal.

#### *7.5.1. Sense of Self*



Figure 35. Rude Health



Figure 36. Natrue



Figure 37. Alpro



Figure 38. Oatly

Within this discourse, the incorporation of values like self-improvement, self-interest, well-being, and social status is a popular driving force of PBMB to form a connection between consumer behavior and self-perception. Communicating with consumers through the act oneself has a high *salient* due to *the cultural significance* it holds. Wang et al. (2021) research showed that Dutch people are more strongly from within because it is something that distinguishes them from others.

As illustrated by Oatly (figure 39), it challenges individuals' social standing by appealing to consumers' desire for social acceptance and admiration. This is exemplified as 'coolness' in this quote connotes being popular and admired. Furthermore, in this case, the *intensifier* "much" is utilized in this situation to point out the seriousness in which practicing pro-environmental behavior might improve an individual's 'coolness'. It signifies that implementing pro-environmental behavior has a major or significant influence on a person's social standing appeal. Following, Rude Health's (Figure 36) phrase of "glass half-fullers" represent individuals who have a positive and optimistic outlook on life as being "half-fullers" implies a mindset focused on personal growth and finding the positive aspect of situations. This incorporates the value of self-improvement. Similarly, the phrase on Natrue's packaging claims that their product is "A drink for those thirsty for change". Natrue (Figure 37) uses figurative speech to correlate the behavior of consuming a plant-based drink with seeing a change in the world. It attracts those who want to make changes to their lifestyle and portrays PBM as a sign of growing toward a more EF way of living.

Promising slogan placement has an important role in encouraging pro-environmental behavior. Figures 36, 37, 38, and 39 provide evidence of its effectiveness. Consumers must read a lot of words in Alpro's slogan before realizing they are the target market. whereas the slogans are easier to see in Figures 36, 37, and 39 because they are larger than the surrounding text. Oatly takes it further by displaying its slogan in a visually graphical manner. These strategies increase the visibility of their environmental claims, thereby creating a positive appeal to adopt pro-environmental behavior.

### 7.5.2. Idealizing The Environment

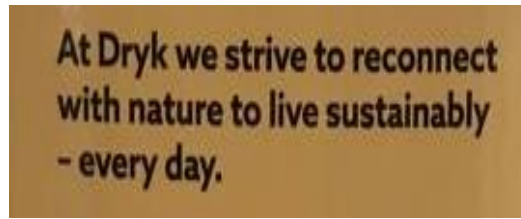


Figure 39. Coco

Figure 40. Dryk

Figure 41. Lima

Within this discourse, Meijers et al. (2018) concept of visual metaphor are visible as the discourse closes the gap between the brand and its customers (Meijers et al., 2018) by establishing a relationship between nature and the consumer. This was highlighted by Coco (figure 40) viewing its product as a gift from Mother Nature, creating a sense of harmony and naturalness. Mother Nature's capitalization suggests a shared relationship with the audience, suggesting that everyone has a role in protecting the environment for the next generation. It promotes customers to consider themselves as key players in keeping a positive connection with nature. Moreover, the brand taps into the intrinsic need of all people to preserve and maintain nature by portraying an image of a protective mother figure

Furthermore, Dryk and Lima use the rhetorical strategy of romanticizing and idealizing a life spent in harmony with the natural world. By using terms like "reconnect with nature" and "living in harmony with nature," Dryk and Lima create a persuasive idea of an ideal society where people and the environment live together in complete peace. By presenting nature as a source of unity, the brand appeals to people's desire for a sense of community (Baum, 2012).

However, a romantic representation of nature can be an *overlexicalization* as it is a subject matter that is not accurately represented (Machin & Mayr, 2012). To illustrate, Coco ignores general environmental effects such as the production of coconut milk causing deforestation or carbon emissions (Sharma, 2023). The refusal to take into account important environmental issues like deforestation and carbon emissions

serves as an example of how romanticizing nature may be misleading and fails to address the complexity and issues of EF practices.

### 7.5.3. *Futuristic vision Environment*



Figure 42. Natrue



Figure 43. Oatly

A similar approach is identified in this sub-theme. However, the emphasis of visual metaphor takes place by referring to the earth as people's homes rather than a planet which induces a positive effect (Meijers et al., 2018). As a result, taking environmental action seems less challenging, which addresses the customers' hesitation that research has identified (Meijers et al., 2018). Natrue's claim that "with small gestures, we contribute to big change" is illustrated in Figure 42, which suggests that small gestures can have significant implications. Customers might view the environment as their home since the word "we" foster a sense of connection. A white flag, as shown in Figure 42, is also included to help support the message and symbolizes how small efforts can result in big changes. The symbolic value of the white flag in the context of PBMB represents the future and growth of plant-based alternatives. This success is based on customers putting EF measures into action.

Oatly text, depicted in Figure 43, indirectly corresponds to a moral appeal. By using terms such as "starts ringing" and "living in the future", it employs a futuristic scenario and engages consumers' imagination. Moreover, rather than symbolizing the package as a "protector" (Agariya et al., 2012), it symbolizes the future of the world. This implies that consumers have an active role in deciding whether

they will pick up the phone to join the act of behaving EF. It highlights that individuals have a responsibility to act when faced with environmental challenges. It forces consumers to reflect on their choices and the impact they have on the environment. Additionally, the repetition of the phrase “good thing” reinforces the positive emotional appeal and strengthens the message impact by emphasizing the positive outcomes of choosing Oatly and embracing pro-environmental behavior.

## 8. Conclusion

The plant-based milk industry is growing as more people are switching from conventional milk to plant-based as they care for the environment. At the same time, as people care more about the environment, consumers are being more aware and acknowledging that not all brands communicate their EF in a trustworthy way. As a result, over the past year, plant-based milk has had to reconsider the effectiveness of its message of EF due to consumers being skeptical. Hence, the present study aimed to show how brands can communicate their EF messages through packaging as an innovative way to convey to consumers as it is often neglected by marketers.

This research was divided into two sub-questions: “How can plant-based milk brands use discursive tools to communicate their environmentally friendly messages?” and “How can plant-based milk designers use their packaging to align with the Dutch norms on communicating environmentally friendly?”

This combination was made to account for a comprehensive understanding of how PBMB portrays itself. Additionally, it helped in breaking up the main research question into two sub-questions. A qualitative TA was performed to translate the explicit and implicit cues that were communicated on the packaging into codes and overarching themes. Furthermore, an MCDA was followed that was applied as a method of analysis to examine whether the messages that brands portray are in fact genuine or whether there were additional details that were not communicated. With the guidance of this methodology, the central research question can be addressed: How is environmental friendliness portrayed in plant-based milk brand packaging in the Netherlands through implicit and explicit cues?

### 8.1. Theoretical implication

The research results provide insight into PBMB communicates its environmental claims within the context of Leonidou et al. (2014) classification of green using visual cues, verbal cues, and structural cues. The research demonstrates that not all of Leonidou et al. (2014) classification of green accurately reflect the way PBMB communicate EF features. As a result, new classifications have been proposed, including *product sourcing orientation and pro-environmental behavior, to better understand their communication strategies*.

The concept of product-oriented is defined by Carlson et al. (1993) as the environmental characterization of a product which usually includes using scientific, ethical, or environmental terminology (Magnier & Crié, 2015). However, a new production characterization was identified when comparing plant-based milk to conventional dairy and its health advantages. These include adding health terminology such as ‘no added sugar’, ‘gluten free’, and ‘calcium’. Therefore, health terminology can be used to describe PBMB in addition to ethical, scientific, or environmental vocabulary (Magnier & Crié, 2015). Moreover, it was

found that structural cues were most evident in process orientation, specifically in the context of the manufacturing process. Percentages (Xie & Kronrad, 2013), environmental licensing (Magnier and Crie, 2015), and labeling (Siraj et al., 2022) have been identified to be significant indicators for communicating EF messages since these elements were included in PBMB communication of green material and energy, strengthening consumer trust in the brand's process orientation. A gap was found in Carlson et al. (1993) definition of process orientation as the inclusion of green energy is an important indicator of PBMB being EF. However, communication regarding the sort of green energy used in manufacturing processes needs to be more transparent as well as specific.

Sourcing-oriented and process orientation are very closely intertwined as both claims are defined by products (Carlson et al., 1993). Nevertheless, sourcing orientation examines the method of farming and selecting the ingredient.

The research found that within the PBMB examined, image-oriented (Carlson et al., 1993) claims were less common, especially those involving charity donations (Baum, 2012). Only a small portion of the brands mentioned charity contributions in any way, and one brand's claim was found ineffective given the ambiguous details regarding its donations to charities. Instead, PBMB frequently presents itself as a "good company" that fulfill the concept of image-oriented claims defined by Carlson et al. (1993), highlighting a priority in communicating its brand image.

The study also looked at how PBMB communication was delivered, and it discovered that moral and emotional appeals were among the main methods used to amplify the effectiveness of its EF message. Whereas informational cues can be considered as a variation of rational appeal because they place the same importance on empirical and scientific measurements (Casais & Pereira, 2021), such as environmental labeling (Siraj et al., 2022), licensing (Magnier and Crie, 2015), and percentages (Xie & Kronrad, 2013).

The idea of pro-environmental behavior has been introduced as a new classification in PBMB communication, emphasizing the relationship between EF products and motivating customers to take part in pro-environmental behavior. Self-perception, environmental idealization, and consumer moral triggers can be considered the guiding principles for this classification (Kärna et al., 2001).

The study also examined how visual cues can strengthen the EF image of a brand on a theoretical level. Whilst visual cues are an important aspect in communicating EF, their stand-alone value is lower in comparison to verbal cues, which may act independently to portray PBMB as EF. Instead, visual cues must be paired with other elements to be considered credible. Particularly, PBMB can support its environmental and numerical claims by using infographics or graphical imagery. The study also discovered a growth in the application of visual metaphors in EF communication, which was identified as a visual cue by Meijers et al. (2018). Despite having the ability to close the gap between people and the



environment (Meijers et al., 2018) the use of visual metaphors in green marketing has not been widely researched. However, a noticeable trend found in the result was the application of visual metaphors to motivate consumers to behave pro-environmental and with less reluctance.

Subsequently, plant-based milk brands can make use of discursive tools (Machin & Mayr, 2012) such as *color* and *size* to emphasize the brand's claims as it is shown from the data that many brands would use contrasting colors to associate environmental terms with the brands. However, it is important to note that when selecting a color, PBMB uses colors that associate with nature which aligns with Magnier and Crié (2015) as green, brown, and white are colors associated with nature, a healthy lifestyle, and environmentally manufactured products (p.358) Additionally, the *size* of the text would be enlarged and placed in the *foreground*. It was noted that environmental labels regarding EF packaging would be *overlapped* with graphics and an overload of information. An overflow of communication channels makes it difficult for consumers to comprehend explicit cues that can enhance the brand's communication of EF (Herbes et al., 2020). However, it is important to note that brands should not take advantage of this as using discursive tools can portray the brand as misleading and cover up its non-EF efforts. Hence, it is advised that brands only use discursive tools if their claim is backed up using factual statements or third-party sources that can verify their claims.

## 8.2.The societal and practical implication

Referring to the following sub-question: How can plant-based milk designers use their packaging to align with the Dutch norms on communicating environmentally friendly?"

The results of this research contribute to how emerging PBMB can introduce their product in the Netherlands. From the results, some brands are abiding by European Law and the DSA Code. At least 10% of the brands have used the concept of 'traceability' through QR codes which allow consumers to read more about the brand's mission statement, and the green supply chain of brands, or get to know the farmers that cultivate the ingredients. Additionally, it is known that The Netherlands is known for its recycling and separation of waste disposal. This is reflected in the many environmental and iconographical tools of communication, emphasizing the importance of correctly disposing of the products. Legislators should pay attention to brands trying to enhance their brand image by giving a certain percentage of their revenue to non-governmental organizations. On this matter, it is noticeable that brands are using 'charities' and 'donations' quite loosely without any evidence. Therefore, the European Law or the DSA should introduce new legislation providing documentation and proof of evidence that the percentage suggested by brands truly goes to non-governmental organizations. Unexpectedly, brands have become aware of how important third-party verification is to establish legitimacy. Apart from Alpro,

which uses "rainforest-free soya", the norm of explicitly showing third-party verification symbols makes this evident. Additionally, brands have realized the importance of thoroughly outlining the product specifications, environmental impacts, and production procedures that back up their environmental claims.

### 8.3.Limitation

There are several limitations to this study. To begin with, as this research adopted a qualitative methodology, its findings are partly subjective and biased because the analysis was conducted using the researcher's point of perspective of what is coded to be explicit and implicit cues or the ways brands communicate EF. Therefore, precautions were made and the method that was used to collect and analyze the data was provided in as much depth and transparency as feasible to make the study as reliable as possible.

Moreover, limits on data collection were discovered. Over the past year, new PBMBs have emerged due to the increasing popularity of plant-based milk. With developing standards and viewpoints on the industry, the way brands market themselves through packaging changes respectively. This could explain potential differences between approaches to communicating EF on the packaging and is difficult to fully consider in this research. Specifically, it is likely the field has developed much deeper in the last couple of years, as to how associative and credible claims are. As a result, the conclusions of this research might be less novel than they could have been. This can be resolved in other studies by considering the timeline of product releases.

Lastly, the researchers realized that brands could communicate their message on the top of brands' packaging. It wasn't until all 100 photos of different PBMB had been gathered that this revelation became clear. It is likely that certain explicit or implicit messages were conveyed through the packaging that was overlooked, therefore this discovery can be seen as having limitations in hindsight. As a result, companies may have successfully communicated a component of their products' EF that consumers were unaware of.

### 8.4.Future studies

The existing literature on communicating EF brand values on the packaging is quite limited. Therefore, to broaden the body of literature presently in existence, it would be beneficial to conduct more studies on PBMB and use packaging as a medium of communication. The present study specified looking at oats, almonds, coconut, and soya as milk alternatives but there are other milk alternatives that researchers can further look into. Additionally, researchers can examine whether the salience of explicit

cues plays a role in consumers classifying a brand's message as trustworthy by using innovative methods like experiments, eye tracking, or interviews to further examine the salience of explicit cues from the perspective of consumers.

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## 9. Appendix

### 9.1. Appendix A

The European Commission wants to strengthen the legitimacy of green claims and encourage consumer trust in environmentally friendly products by providing clear rules. Hence it is advised that brands should the following adjustment in their environmental claims to communicate effectively their environmentally friendly efforts:

1. Describe the evaluation that supports the environmental claim. This includes product specifications, environmental effects, the manufacturing process, additional information from studies or statistical data, and an explanation of how the environment is maintained.



2. Make this data available by a weblink, a QR code, or other identification methods.
3. At most every five years, check the legitimacy of their environmental claims and the evidence supporting them.
4. When activities emerge that could influence the preciseness of environmental claims, such as alterations to the technological technique used to support the claim, the claim should be updated right away.

Similarly, on 1<sup>st</sup> February, The Netherlands introduced the Dutch Sustainability Advertising Code (Code) which replaces the Environmental Advertising code (MRC) which was introduced 1<sup>st</sup> January 1991 and was last updated on 1<sup>st</sup> October 2000 (van Gerwen & Wessing, 2023). According to the Code, an environmental claim is any assertion that a product or activity has a positive, neutral value, or negative influence on the environment. Van Gerwen & Wessing (2023) gave an example of an environmental claim that is often seen on products: 'This packaging is 100% biodegradable'

1. They should inform consumers about their environmentally friendly activities in a simple and open way. Companies must clarify how they translate and use these sustainability claims, as well as clarify terminology like "green," "eco," and "fair."
2. Any sustainability promises made by businesses must be backed up by reliable data. Expressing a commitment to sustainability must be supported with actionable strategies to carry out that commitment. For instance, if an advertisement says it hopes to be climate-neutral by 2030, it must have concrete strategies for getting there; otherwise, consumers can be misled, and the Code will be broken.
3. Any phase in the production process, including the preparation of raw materials, distribution, shipping, storing, consumption, or waste disposal, could be tied to environmental claims. Therefore, brands should be able to demonstrate their claims about being environmentally friendly across the whole supply chain, or they should be upfront with customers if they are unable to do so.
4. Given that they are granted by respectable organizations, accredited quality symbols, labels, and logos can be implemented to support the execution of environmentally friendly claims. It is acceptable to make claims about waste processing, waste collection, and the reusing (recycling) of goods or parts of goods, provided that the approach being marketed is accessible. It is acceptable to make claims about waste processing, waste collection, and the reusing (recycling) of goods or parts of goods, provided that the approach being marketed is accessible and being used by the advertiser. If recycling fails to be achieved, the marketer must make this immediately clear in the claim and offer more details on the level of reused materials.
5. Brands are free to design their own icons to illustrate their footprint or claims if brands conform to two requirements: their source must be obvious, and there cannot be minimal room for interpretation.

## 9.2. Appendix B

Measurement	Scholars	Sub-themes	Definition

<b>A. Informational cues</b>	(Atkinson & Rosenthal, 2014; Donato & D’Aniello; 2021; Ertz et al., 2017; Magnier & Crié, 2015; Siraj et al., 2022; Tang et al., 2004)	environmental labeling, license agreements, and statement or broad environmental claims	Cues that deal with the information provided on the packaging are commonly referred to as informational cues (Magnier & Crié, 2015). Classification of informational cues, that consisted of environmental labeling, license agreements, and statement or broad environmental claims (Magnier & Crié, 2015, p.358).
<i>Environmental labeling</i>	(Magnier and Crié, 2015; Donato & D’Aniello, 2021; Tang et al., 2004; Siraj et al., 2022)	green labels, 'EF labels,' 'eco-labels,' 'environment-friendly labels,' and 'organic labels	Environmental labeling is the term used to describe labels on products that have not been confirmed by independent sources. They frequently concentrate on elements like production, procedure, or manufacturing techniques, which are essential elements in determining how environmentally friendly a brand is
<i>License agreement</i>	Magnier and Crié, 2015; Polonsky et al.,1998)		The term "licensing agreement" refers to factual claims that the product or certain of its components can be regarded as environmentally friendly, as confirmed by third parties.
<i>Environmental claims</i>	(Magnier and Crié, 2015; Xie & Kronrad ,2013; Gleim et al.,2013; Liem et al., 2022, Granato et al., 2022)	Numerical claims	Environmental claims are described as simple words or phrases that describe a brand's intrinsic environmental values
<b>B. Visual cues</b>	(Vermeir & Roose, 2020; Labrecque et al., 2013; Magnier and Crié (2015; Hartmann & Apaolaza-Ibáez , 2010; Seo & Scammon, 2017; Tu et al., 2018; Meijers et al., 2018; Lazard & Atkinson, 2015)	Colors, graphical cues, visual impact metaphors	Visual cues emphasize the ‘appearance’ or ‘form’ of the product rather than the content of the cue (Vermeir & Roose. 2020, p.2)
<i>Colors</i>	(Vermeir and Roose, 2020; Purnhagen et al., 2016; Labrecque et al., 2013; Magnier & Crié, 2015)	Brand appeal, mistrust, brand image enhancement	The role of color is to quickly communicate a product's message or brand identity. People develop a symbolic understanding of certain color combinations when they encounter important messages, concepts, or events.

<i>Graphical cues</i>	(Hartmann & Apaolaza-Ibáñez (2010; Magnier & Crié, 2015)	Biosphere, environmental protection, biosphere nature, infographics	graphical cues are defined as cues that are connected to the images or icons on packaging and suggest environmental friendliness.
<i>Visual impact metaphors</i>	(Meijers et al., 2018)	Idyllic and Romanized vision, spatial and temporal gap	Meijers et al. (2018) define a visual impact metaphor as an object that comprises a visual implicit comparison to another object so to visualize the impact of one's behaviors by using a feedback feature.
<b>C. Structural cues</b>			
<i>Material</i>	(Magnier & Crié, 2015; Herbes et al., 2020; Nguyen, 2022; Lindh et al., 2016; Dörnyei et al., 2022; Steenis et al., 2017)	Sourced, manufactured, transported and recycled reused packaging, recycled materials, renewable materials bio-based and less packaging (Dörnyei et al. (2022	Packaging structural ecological cues can be defined as cues that relate to the structure of packaging package structural cues deal with the material used to manufacture the package. The type of packaging makes it simple for customers to identify environmentally friendly (EF) products. It has components like recycled materials, repurposed packaging, and natural resources.
<b>D. Classification of greenness</b>			
<i>Focal point</i>	(Carlson et al., 1993; Brown, 2019).	product orientation, process orientation, image orientation, and environmental facts	The focal point of environmental claims is on a product's eco-friendliness, which can refer to a variety of things, including the adoption of ecologically friendly processing or recycling practices by a company
<i>Evaluation area</i>	Carlson et al., 1993; Lindblom, 1994; Hartmann & Ibáñez, 2009; Leonidas et al., 2019; Zhou & Wen, 2013; Orazi and Chan, 2018	claim specificity, claim emphasis, claim substantiveness, and claim validity	When evaluating environmental claims made by brands, the evaluation area incorporates a thorough analysis to determine the validity and reliability of such statements. It includes a number of elements, such as the veracity, specificity, and transparency of the claims.

<i>Leverage aspects</i>	Carlson et al. (1993;Sarkat, 2012; Orazi and Chan,2018)	rational, emotional, or moral execution styles	In the context of environmental claims, leverage refers to the intentional use of various appeals, such as those that are rational, emotional, or moral, to increase the strength and significance of these claims.
<i>Driving forces</i>	Carlson et al.,1993;Wagner & Hansen, 2002)	planet, animals, plants, and human beings	The concept of driving forces in green marketing refers to the basic environmental values that brands aim to portray through their advertising claims

9.3. Appendix C

<b>Verbal communication of environmentally friendly</b>		
<b>Code</b>	<b>Sub-theme</b>	<b>Theme</b>
Longevity	<i>Characteristics of structural cue</i>	<b>Life Cycle Assessment (LCA)</b>
Durability		
Green distribution		
User-friendly design		
Recycleability		
Bioegradibility		
energy efficiency	<i>Operational measures</i>	
Carbon footprint		
Waste reduction		
Recycle	<i>Processing licensing agreement</i>	
Tetrapak		
Groene Punt		
1% for the planet	<i>Charity/ non governmental labels</i>	<b>Brand Image and Social Obligation</b>
Certified B		
B-corporate		
Cause alignment	<i>Impactful advocacy</i>	
awareness campaign		
Community engagement		

Collaborative partnership			
High quality		<b>Product Attributes</b>	
Craftmanship			
family business			
regional identification			
Cultural identification			
Superiority			<i>product origin</i>
No preservatives			<i>Health claims</i>
Rich in unsaturated fat			
No artificial flavors			
Non GMO			
Gluten free			
IT BIO 006	<i>production method licensing</i>		<b>Link between A Product and Environment Process</b>
SIN			
GB-ORG-05			
Agriculture Bioloque			
Certisys BE BIO			
Innovative solution	<i>Follow Along Journey</i>		
responsible supplier selection			
Supply chain mapping			
Responsible forestry			
RFID Tracing	third-party certification (sourcing)		
Fairtrade			
Soil Association			
OF & G organic			
100% plant-based	<i>environmental claims</i>	<b>Associative and Substantive claims</b>	
Organic			
Biodiversity focus			
Renewable			

Vegan approved		
Citing authoritative research		
reinforce urgency		
Climate change report		
Numerical values	<i>Scientific consensus</i>	
Harmonious existence		
loves nature		
Green living		
Connection to the environment	<i>nature-feelings</i>	
Personal benefit		
Personal well-being		
Unity and collaboration		
Trailblazer	<i>A sense of Vision</i>	
empathy		
joy		
fear		
Nurturing		
Hope	<i>emotional</i>	<b>Encourage Pro- Environmental Behaviour</b>

<b>Visual communication of environmentally friendly</b>		
<b>Codes</b>	<b>Sub-theme</b>	<b>Themes</b>
Bold Typography	<i>Amplifying environmental key words</i>	<b>Textual and size fonts</b>
Distinctive fonts		
size variation		
color contrast		
Typographic hierachy		
Typography effects		
Speech bubbles	<i>Visual framing</i>	
Contrasted backdrop		
Framing technique		

Lively characteristics	<i>Symbolic elements</i>	<b>Graphical design</b>
Whimsical icons		
Naturistic icons		
Animal icons		
Comical characters		
Playful imagery		
satirical		
Expressive elements		
Puns		
Almond color	<i>Plant-based alternative characteristics</i>	
Oats Color		
Coconut color		
Soy color		
Earth tones		
Blue hues		
Green tones		
Neutral tones		
Bright accents		
Color combination	<i>Environmentally friendly accents</i>	
Sustainable farming journey	<i>Infographics</i>	
Shareable content		
Numerical visualization		
Memorable visually structural		
Production attributes icons		
Manufacturing attributes icons		
Sourcing attributes icons		

9.4. Appendix D

Construct	Definition	Example
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<b>A. Product Attributes of being environmentally friendly</b>	characteristics that are utilized in building environmentally friendly products.	
<i>Propagandism</i>	characteristics that are utilized in taking a green positioning by challenging norms present in conventional milk packaging.	Visual graphics such as milk bottles, milk droplets, historical figures, M*LK
<i>health benefit product tags</i>	keywords that are brief descriptors of the product surrounding the health benefits they carry.	lactose and gluten-free
<b>B. Process orientation of environmentally friendly</b>	brands improving and taking a green stand on the manufacturing and distribution process leading up to the end product.	
<i>green packaging material claim</i>	a description made by brands highlighting the reused packaging, recycled materials, renewable materials (bio-based and less packaging)	made from 88% renewable, new packaging, cap is 23% less
<i>sustainable material licensing initiatives</i>	brands using credible sustainable materials by working together with third-party verifications	of FSC (66%), Tetra Pak (80%), carbon trust (3%),
<i>green energy output</i>	manufacturing usage of moderate emissions in their processing that does not hurt the environment.	solar and water energy
<b>C. Product Sourcing orientation of environmentally friendly</b>	the way brands communicate the processing selecting and managing of the ingredients of their products as environmentally friendly.	
<i>characteristics of ingredients</i>	the origin of where brands get their products	Central Europe, Southeast Asia, the Mediterranean
<i>the characteristics of the farming</i>	the ways brands grow and operate their ingredients	small scale', 'sustainably cultivated', and 'with the support of nature'
<i>transparent sourcing</i>	third-party verification that enables brands to make verified and credible claims surrounding their transparency in the production process	Rainforest Free Soya, Fairtrade Licensing, Soil Association,
<b>D. I am a good company</b>	brand's initiatives to do good for the world which are not directly related to their environmentally friendly image	
<i>Giving back to Society</i>	brands giving a percentage of the brand's profit to an environmental non-profit organization to improve their brand image	revenue to 1% for the planet



<i>promising slogans</i>	quick and vague catchphrases that make brands seem motivated to make a change	We are green, and we will keep it up
<b>E. Pro-environmental behaviour</b>	the enactment of encouraging consumers to behave environmentally friendly	
<i>sense of self</i>	using an emotional appeal to the consumer's identity as a call for action to enable environmental change.	half-fullers
<i>Idealizing the environment</i>	a call to action by highlighting the importance of the environment	scenic design and exotic biodiversity design of packaging
<i>Futuristic vision thinking</i>	triggering consumers' morality and making them choose to be better for the future	graphical illustrations such as a white flag and a planet

9.5. Appendix E

<b>Coding</b>	<b>Sub Ttheme</b>	<b>Theme</b>
<i>Open coding</i>	<i>Selective coding</i>	<i>Axial coding</i>
FSC	Sustainable Material Licensing Initiative	Process orientation of environmentally friendly
Tetrapak		
Carbon trust		
IT-BIO 006		
Groene Punt		
SIN		
GB-ORG-05		
3RS	Green Packaging Material Claims	
User-friendly design		
Numerical claims		
Challenging traditional material		
Climate Footprint reduction	Green energy Output	
Numerical claim of green energy		
Renewable energy		
Green distribution method	Characteristics of ingredients	Product sourcing Orientation of environmentally friendly
Central Europe		
South Asia		

Meditereanean		
Northeast Asia		
Nordic Region		
Community based farming	Characteristics of farming method	
Small-scale		
Sustainably cultivated		
With the support of nature		
Living soils programma		
Scan & Trace		
Expertise knowledge		
Website link		
Rainforest free soya label		
Specification and details on measurement		
Fairtrade Licensing	Transparent sourcing	
Revenue division	Give back to Society	<b>I am a good company</b>
1% for the planet non governmental		
Certified B corporation		
Never compromise	Promising slogans	
We are green and we will keep it up		
We will question the norm		
Half fullers	Sense of self	<b>Pro-environmental behaviour</b>
Thirsty for change		
Your choice, your life		
Living in harmony	Idealizing the environment	
Reconnect with Nature		
Preserving the planet		
Romanticising the environment		
Plant-based revolution		
Legacy making		
Ball on consumer court		
Life changing		Futuristic vision thinking

No artificial ingredient	Health benefit to environmentally friendly product	Product Attributes of being environmentally friendly
Muscle iconography		
Vatmin purposes		
Nutriscore		
Dietary reasoning		
Challenging the norms		
Traditional milk positioning		
Brand names		
Legislation context	Propagandism	

9.6. Appendix F

Claims, certification and labels on plant-based milk brands packaging							
Front	Frequency	Right-Side	Frequency	Left-Side	Frequency	Back	Frequency
IT BIO 006	15	Tetrapak	50	FSC	15	Carbon footprint	1
SIN	2	FSC	26	B-corporate	10	FSC	25
Fairtrade	1	Certified B	5	Tetrapak	15	OF & G organic	10
Soil Association	1	IT BIO-006	10	IT BIO-006	5	IT BIO 006	15
Spiral food	1	Fairtrade	1	Carbon footprint	1	Tetrapak	5
Carbon footprint	1	Recycle	20	Soil association organic	1	KLBD	10
Vegan approved	20	Vegan	4	1% for the planet	1	B-corporate	1
Gluten free	8	100% plant-based	5	Recycle	15	Soil association organic	1
Non GMO	1	Groene Punt	1	Vegan	1	Certisys BE BIO	8
No artificial flavors	3					Agriculture Bioloque	8
BIO	10					Bio	5
Rich in unsaturated fat	2					Vegan	11
Organic	7					No color	5

100% plant-based	60					No preservatives	
GB-ORG-05	5						
Rainforest free							
Charity/ non governmental							
Bio/ organic third-party certification							
third-party certification (sourcing)							
Social and environmental performance							
Packaging and material certification							
Sustainable claims							
Life Cycle Assesment							
Health Claims							
Food Categorical							