

EXPLORING THE IMPACT OF SOCIAL MEDIA ON MILLENNIAL CONSUMER BEHAVIOR TOWARDS PLANT-BASED FOOD: A FOCUS GROUP STUDY

Word count: 20.501

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A dissertation submitted to Ghent University in partial fulfillment of the requirements for the degree of Master of Science in Bioscience Engineering Technology: Food Industry

Academic year: 2022 - 2023



BIO-INGENIEURSWETENSCHAPPEN

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It wouldn't be a thank-you speech if it didn't resonate as the only part in this serious thesis that truly sounds like my own voice. Hence, a slightly less serious, yet heartfelt thank you to everyone who has supported me during this period.

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Have fun with reading!

Sigrid De Bleecker

Abstract

Gezien het toenemende belang van sociale media en de groeiende milieubewustheid wint plantaardig voedsel aan populariteit onder de jongere generatie. Echter is er nog geen onderzoek verricht naar de overkoepelende impact van sociale media op dit fenomeen. Deze studie onderzoekt de invloed van sociale media op het consumentengedrag van millennials (20-40 jaar) ten opzichte van plantaardig voedsel. Het onderzoek beoogt drie hoofdvragen te beantwoorden: (1) Hoe ontwikkelt het vertrouwen van millennials in plantaardig voedsel zich wanneer zij gerelateerde inhoud op sociale media tegenkomen? (2) Welke soorten inhoud zijn het meest effectief in het bevorderen van plantaardig voedsel op sociale media, gebaseerd op de emoties die millennials ervaren? (3) Op welke manier wordt sociale media gebruikt als hulpmiddel om plantaardig voedsel te promoten, en hoe kan dit worden geoptimaliseerd? Een studie met focus groepen werd uitgevoerd met 50 deelnemers in 11 sessies, waarbij gebruik werd gemaakt van een open discussieleidraad om relevante diepgaande gegevens te verzamelen. De resultaten tonen aan dat millennials weinig vertrouwen hebben in de informatie die zij op sociale media zien over plantaardig voedsel, vooral als deze afkomstig is van merkgerelateerde inhoud. Zij neigen meer te vertrouwen op door gebruikers gegenereerde inhoud. Positieve inhoud van niet-gesponsorde individuen en activistische berichten hebben een diepgaande impact op het bevorderen van plantaardig voedsel. Bovendien kan sociale media worden ingezet om bewustwording te creëren en plantaardige diëten beter te promoten door zich te richten op eenvoudige, korte video's met niet-gesponsorde individuen en het koppelen van persoonlijke voordelen.

Kernwoorden: sociale media, plantaardig, millennials, focus groep

Abstract

Given the growing importance of social media and the increase in environmental concerns, plant-based food is gaining popularity among the younger generation. However, no study has examined the overarching impact of social media on this phenomenon. This study investigates the influence of social media on the consumer behavior of millennials (20-40 years) toward plant-based food. This research aims to answer three main questions: (1) How does millennials' trust in plant-based food evolve when they encounter related content on social media? (2) Which types of content are most effective in promoting plant-based food on social media based on the emotions experienced by millennials? (3) In what way is social media used as a tool to promote plant-based food, and how can this be optimized? A focus group study was conducted with 50 participants in 11 sessions using an open-ended discussion guide to gather relevant indepth data. The results show that millennials have little trust in the information they see on social media about plant-based food, especially if it comes from brand-generated content. They tend to trust user-generated content more. Positive content from non-sponsored individuals and activistic posts have a profound impact on promoting plant-based food. Furthermore, social media can be utilized to spread awareness and promote plant-based diets better by focusing on basic, short videos featuring non-sponsored individuals and linking personal benefits.

Keywords: social media, plant-based, millennials, focus group

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List of Abbreviations

AI	Artificial Intelligence
BGC	Brand Generated Content
hPDI	Healthful Plant-based Diet Index
PBF	Plant-Based Food
PDI	Plant-based Diet Index
SM	Social Media
uPDI	Unhealthful Plant-based Diet Index
UGC	User Generated Content

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1 Introduction

In recent years, there has been a notable increase in the use of social media platforms as a means of communication and information sharing. Social media platforms have become a major source of information and inspiration for consumers looking to adopt new eating habits or to search for information about food (Chronis, Lu, & Miller, 2015; McBride, 2011). This rise in the popularity of social media coincides with the growing awareness and concern about sustainability and environmental issues (Lu, Bock, & Joseph, 2013). Alongside the widespread dissemination of the numerous health benefits associated with a plant-based diet, the adoption of this dietary approach has gained increasing popularity in recent times (Grant, 2017). Millennials are particularly at the forefront of this change in dietary lifestyles, as they grew up in a time when environmental concerns were central, leading to a significant portion of them adopting plant-based diets (Lu et al., 2013).

Millennials consider social media to be a primary source of food-related information (Chronis et al., 2015; McBride, 2011), placing a significant level of trust in the content they encounter. However, the level of trust varies depending on the source of the information. Content generated by individuals is regarded as more reliable compared to content originating from brands (Salma Irelli & Chaerudin, 2020). As millennials encounter this content, they are inclined to adopt different dietary habits or explore new food choices, as exemplified by the phenomenon of remote acculturation (G. Ferguson, Tran, Mendez, & Vijver, 2016). One of these emerging dietary habits is the adoption of a plant-based diet, which has gained popularity among millennials, primarily driven by the increasing concerns for the environment (Knaapila, Michel, Jouppila, Sontag-Strohm, & Piironen, 2022). Additionally, there are numerous health benefits associated with this dietary choice, including a reduced risk of diabetes and obesity, as well as improved longevity (Grant, 2017).

While previous research has extensively explored millennials' food choices (Dilistan Shipman, 2020), the promotion of food through social media (Celimli & Adanacioglu, 2021), and the advantages linked to adopting a plant-based diet (Grant, 2017), there remains a research gap concerning the impact of social media on millennials' behavior towards plant-based foods. To address this gap, this study undertakes a thorough literature review to establish a foundation for the research topic. Subsequently, a qualitative research approach, specifically a focus group study, is employed to gain deeper insights into the intricate relationship between social media and millennials' behavior towards plant-based food. To enhance comprehension of this research method, a review of literature on focus group studies, and their characteristics is also included.

This focus group study aims to address three key research questions. Firstly, this study aims to investigate the level of trust that millennials have in plant-based food and whether this trust changes when they are exposed to social media posts about plant-based food. The study seeks to determine whether they believe the information they see on social media or become more critical of it. Secondly, the study will explore the most effective types of social media content for promoting plant-based diets based on the emotions that millennials experience when viewing different types of content. Lastly, the study will examine the extent to which social media plays a role in promoting plant-based food and how this promotion can be further optimized.

Data collection consisted of conducting focus group discussions on the topic until no new results emerge. A total of 11 focus groups were conducted, with 50 respondents in total. During the focus group discussions, a discussion guide was used, which contained open-ended

questions designed to elicit responses that will answer the research questions. The discussion began with questions about the participants' consumption of plant-based foods and how they perceive social media as an influencing factor in their food choices. These results will be compared with the literature in the discussion section. In the subsequent part, questions were asked whose results will provide an answer to the research questions and will also be discussed in the discussion section. The master's thesis ends with some implications, limitations and recommendations for future research and, a conclusion.

2 Literature review

2.1 Social media

2.1.1 Definition

The Internet, seen as a network of computers around the world, is like a street along which emails, messages, documents, etc. are sent to each other. It is seen as a kind of infrastructure, and on top of this structure, the Internet contains services, such as the World Wide Web ("World Wide Web vs. Internet | University of Alabama at Birmingham," n.d.). Just as the original purpose of the Internet was to share documents between scientists in academic or political institutions (Mcenary & Mcenery1, 1995), it has evolved into so much more. So, it is that in 2004 the concept of Web 2.0 emerged (O'Reilly, 2009). Web 2.0 is a concept that stands for the connection between people through the World Wide Web. Just as Web 2.0 is seen as online applications that connects people, social media stands for the social aspects of those applications. It refers to communication between users, forming communities, disseminating information, forming connections, and participating in applications in general (Constantinides & Fountain, 2008). Nowadays, social media is inevitable in daily life considering that in 2022, 4.7 billion people worldwide use some kind of social media platform (Statista Research Department, 2022). The Internet, and thereby social media is one of the main sources used to find information, and more specifically, information about food (Jacob, Mathiasen, & Powell, 2010). Adolescents and millennials use social media as their main means of communication (McBride, 2011) and get trustworthy and quick information about food from it (Chronis et al., 2015).

2.1.2 Remote acculturation

Since everyone has access to social media, social media platforms can connect people from all over the world. People from any culture can share their habits, attitudes, languages, etc. through social media (Meshi, Tamir, & Heekeren, 2015). As a result, social media gives an entirely new meaning to acculturation, namely remote acculturation.

Firstly, acculturation is a phenomenon that occurs when an individual enters an unfamiliar culture, and some adoption of the predominant culture occurs. It involves adoption of the language, customs, values, attitudes, etc. The greater that acquisition, the greater the degree of acculturation (Dawson, Crano, & Burgoon, 1996). Therefore, acculturation requires physical integration into a foreign culture.

Remote acculturation, however, is a new form of acculturation where there is interaction with adoption of customs between two historically and geographically separate cultures through social media, or other emerging mechanisms of globalization (Lambert, Chivers, & Farringdon, 2019). Any contact that is indirect, intermittent or both and provokes acculturation falls within the definition of remote acculturation (G. Ferguson et al., 2016). Thus, no physical integration in a foreign culture is needed for remote acculturation.

This concept can be further narrowed, to remote acculturation of food and eating habits. Social media users will adopt dishes, eating habits, attitudes toward certain food choices and many more through influences from other social media users, from whom they are geographically separated. Millennials are creating new eating habits or changing their current ones, through the influence of social media (G. M. Ferguson, Muzaffar, Iturbide, Chu, & Meeks Gardner, 2018; G. Ferguson et al., 2016; Lambert et al., 2019).

2.1.3 Advertising on social media

In recent years, social media has become increasingly popular among companies as it increases the rate of interaction with existing and potential consumers. The use of social media platforms by companies to interact with consumers is called social media marketing (Yao, Shanoyan, Peterson, Boyer, & Baker, 2018). Social media usage gives companies the opportunity to execute, track and interpret marketing activities faster (Celimli & Adanacioglu, 2021). Also, customers get more personalized offers, which makes them trust the company more (Alberghini, Cricelli, & Grimaldi, 2014). As much as possible, companies want to customize their products according to the wishes of the final consumer. They often engage in co-creation, where there is a collaboration with the customer, which allows new products to be developed and tested. This is all made easier by social media (Constantinides, 2014). Three major goals can be achieved through the use of social media for marketing: building awareness, increasing sales, and building loyalty (Baer, 2009).

Of course, the benefits offered by social media vary from company to company. These benefits depend on the industry and region in which the company is located (Vlachvei & Notta, 2015). For agricultural markets and food industry, social media has been shown to offer benefits in terms of communication, interaction with customers and better commercial practices (Bernal Jurado, Fernández Uclés, Mozas Moral, & Medina Viruel, 2019a).

Social media is becoming more and more important within companies and can itself lead to competitive advantages (De Veylder & Cauberghe, 2013). Of course, advertising on social media platforms can be done in a variety of ways. To use social media as a marketing tool, an article by Constantinides (2014) suggests 2 approaches: a passive and an active approach. Firstly, the passive approach is based on gathering information about customer needs and market information (Anderson et al., 2007). This approach is also known as Listening-In. Individuals can post anything online about their purchases or services. They can provide information, give negative or positive reviews, share experiences, and interact with peers. When all this is posted on the World Wide Web, it is a very useful source of information for businesses. Companies can collect this information in a variety of ways, ranging from Google Alerts to sophisticated collection agents. This allows them to identify problems, and continuously adjust their products to meet customer needs. It can save them a lot of money and prevent reputational damage. The most appropriate applications for this approach are forums, blogs, and content communities (Constantinides, 2014). Secondly, the active approach is using social media as a tool of communication, as well as for direct sales, customer acquisition and customer retention (Bughin, 2007; Source: 2007 McKinsey Survey on Internet Technologies How Businesses Are Using Web 2.0: A McKinsey Global Survey, n.d.). According to Constantinides' (2014) article, this active approach can be divided into 4 subcategories. This classification is shown in Table 1.

TABLE 1: THE ACTIVE APPROACH OF SOCIAL MEDIA AS A MARKETING TOOL(CONSTANTINIDES, 2014)

1. Social Media applications as	Marketers will introduce company blogs, website
public relations and direct	forums and company-sponsored user communities
marketing tools.	to respond to customer needs (T. Singh, Veron-
-	Jackson, & Cullinane, 2008). In addition, they will
	start using content communities, such as YouTube,
	as advertising channels. These ads are viewed

	millions of times and do not cost the company much money (Constantinides, 2014).
Social media personalities as product or brand ambassadors.	On the one hand, industry experts are involved to reach the critical mass of consumers. On the other hand, individual influencers are used, they are going to share their opinions about a product and in some sense recommend the product (Constantinides, 2014).
Social media as a tool to personalize the customer experience.	Customers are given the opportunity to customize the company's website or social media platform to their own preferences, sometimes even products can be personalized. (Constantinides, 2014).
Leveraging the intelligence and creativity of customers.	Customers provide their reviews on interactive e- commerce sites; they can also interact with other customers on these (Constantinides, 2014). These reviews are considered more reliable than traditional marketing (Chen & Xie, 2008; Dellarocas, 2003; Lee, Park, & Han, 2008).

2.1.4 User generated content (UGC) & Brand generated content (BGC)

Social media is just a concept and wouldn't amount to much without content. That content: posted photos, comments on a blog, likes on a YouTube video, text messages on Facebook and just about anything coming from the social media user, is called the user generated content (UGC). User generated content is also known as the fuel for social media (Obar & Wildman, 2015). Not only do individuals create this UGC, but also companies have the ability to use social media, and create content, this is then called brand generated content (BGC). BGC is entirely created and controlled by the company itself (Aspasia & Ourania, 2015).

However, individuals are more likely to trust UGC of consumers, rather than the BGC of companies. Since they believe that BGC by companies will always put their products or services in a nice picture. UGC by consumers will give a more honest opinion about the products or services, containing also negative features and giving a more confidential image to the customers. Companies are also noticing that users are becoming more focused on UGC and turning away from BGC, so they came up with a way to integrate UGC into their marketing strategy, specifically Consumer Generated Advertising. In this, companies are going to actively repost their customers' posts on their own page (Salma Irelli & Chaerudin, 2020).

Previous studies have shown the usefulness of user-generated content to firms (Godes & Mayzlin, 2009). Traditionally, companies go about finding out their customers' needs through interviews and focus groups, however, UGC is an excellent alternative way to find out those needs. Obviously, it is more difficult to collect this UGC, also a lot of content is irrelevant or repetitive, therefore several methods have been developed to filter UGC data and provide companies with the information they need in a specific situation (Timoshenko & Hauser, 2019).

2.1.5 Food on social media

Social media is a marketing tool for all kind of companies (Parsons & Lepkowska-White, 2018). A study by Celimli & Adanacioglu (2021) examined the social media usage of 100 different Turkish food companies from different food sectors, where Facebook was the most popular platform among the companies. Another study, by Gascon, Rodriguez, Bernal, & Gonzalez (2017), examined the social media use of Fast-Food Companies. These would mainly use Facebook, Instagram, Twitter, and YouTube. Here, each platform is used with different purposes. For example, Instagram and YouTube provide catchy images and videos, while Facebook and Twitter provide more quality content. To confirm, according to other studies, Facebook is the leader of social media platforms in the food sector (Vlachvei & Notta, 2015). From this, it could be concluded that the social media platform Facebook is the most popular among food companies, followed by Instagram and Twitter, all three of them gaining popularity due to their visual density and quality content. The social media platform Facebook is the most timesaving and cost-saving for marketing purposes, it also causes increasing product sales and on top of that, the use of Facebook among food companies leads to higher brand-awareness. Overall, food companies use social media for brand awareness; offering products to specific target audiences; presenting campaigns at specific times; increasing competitiveness; enhancing company status; gaining customer trust; reducing marketing costs and increasing sales (Celimli & Adanacioglu, 2021).

The paragraphs above describe how food companies use social media, but the question now is how individuals use social media when it comes to food. After analyzing several posts on Instagram, a large portion turned out to be food-related (Hu, Manikonda, & Kambhampati, 2014). In a study by Holmberg, E. Chaplin, Hillman, & Berg (2016) 1001 adolescent Instagram accounts were examined for food content. Different categories were determined regarding how the food was presented on the Instagram posts. The largest proportion of posts included individuals posing with food for the photo (26.2%), followed by posts of meals at restaurants (25.1%) and posts of meals at special events (22.2%), such as birthdays. Further posts were found of food being actively consumed (15.1%) and posts of homemade food (8.9%). They found that food was posted both with an emphasis on aesthetic features and with an emphasis on food as part of a lifestyle or situation. As well, it was found that in 37.2% of the posts a brand name of the product was visible, as if it could be an advertisement.

For millennials (20-40 years), social media has a big impact on their diet and lifestyle. They pass by many body ideals on the social media platforms, especially on Instagram, and want to look as fit and healthy. Thus, they are also influenced by the food-related posts of these accounts, as they also want to look that way (Lambert et al., 2019).

2.2 Plant-based Food

2.2.1 Background

The term 'plant-based' cannot be explained by one fixed definition. On the one hand, it can be seen as excluding all animal-based products; on the other hand, it can be seen as reducing animal-based products (Aschemann-Witzel, Gantriis, Fraga, & Perez-Cueto, 2020). The first approach is confirmed by Ostfeld's (2017) definition of a plant-based diet which goes as follows: "A plant-based diet consists of all minimally processed fruits, vegetables, whole grains, legumes, nuts and seeds, herbs, and spices and excludes all animal products, including red meat, poultry, fish, eggs, and dairy products." However, there are more and more definitions that are not going to exclude all animal products but allow a small percentage of animal products in the diet (Storz, 2021). For example, an article from Tuso, Ismail, Ha, & Bartolotto (2013)

describes that a plant-based diet seeks to increase consumption of nutrient-dense plant foods as much as possible, and decrease consumption of processed foods, oils, and animal products as much as possible. It is a low-fat diet that contains mostly lots of vegetables, fruits, beans, peas, lentils, seeds, and nuts. There are other sources themselves that also allow fish, poultry, and yogurt in a plant-based diet (Akinyemiju et al., 2016; Shikany et al., 2015). The Alpro Foundation, linked to the plant-based products company of similar name, describes a plant-based diet as one in which 70% of the products consumed are plant-based, and 30% may come from animals ("The Plant-Based Plan: 10 Scientific Reasons for Plant-Based Eating | Alpro Foundation," n.d.). Plant-based food thus has a very broad definition, to elaborate further in this study the second approach is assumed, as it is most often mentioned in past studies, where plant-based food is seen as a diet based mainly on plant-based foods, but not a complete exclusion of animal products.

When considering a plant-based diet, it can be subdivided into different types of diets that exclude various food categories. This ranges from a very strict diet where no animal products are consumed, to a much simpler diet where individuals can choose when to exclude certain categories. To make a clear distinction, these are named again, along with their occurrence in Europe (%). The most common vegetarian diet in Europe is the flexitarian diet (22,9%), or semi-vegetarianism ("Vegan Nutrition Study," 2020). The reason, as the name itself says, is that it is a very flexible diet. Those who call themselves flexitarian will mainly exclude meat and fish from their diet, but when they want to, they will consume these products from time to time (Derbyshire, 2017). Pescatarians (2,9%, ("Vegan Nutrition Study," 2020)) follow a diet that includes fish and other seafood as a main source of protein. They may also include dairy and eggs, but this is an individual choice (Wozniak et al., 2020). There are also lacto-ovo vegetarians (3.1%, ("Vegan Nutrition Study," 2020)), often simply called vegetarians. These will still consume animal products, such as milk and eggs, but no meat or fish. When these do not consume eggs, but do consume milk and milk products, they are called lacto-vegetarians. Conversely, when excluding milk(products) but consuming eggs, they are called ovovegetarians (Wozniak et al., 2020). The strictest diet is veganism (1.9%, ("Vegan Nutrition Study," 2020)), which excludes meat, fish and all products derived from animals (Wozniak et al., 2020). Figure 1 shows how the various diets discussed relate to each other.

Flexitarianism	B	Å	÷	B	200
Pescatarianism	×	×	÷	?	?
Lacto-ovo-vegetarianism	×	×	×	B	200
Lacto-vegetarianism	×	×	×	×	Poor Poor
Ovo-vegetarianism	×	×	×	B	×
Veganism	×	×	×	×	×

FIGURE 1: TYPES OF VEGETARIAN DIETS (THE BITING TRUTH, N.D.)

Plant-based products are growing in popularity as the world's population grows and continuous innovation and advancement occur. If you wanted to follow a plant-based diet, say 50 years

ago, you had to limit yourself to fruits and vegetables. However, there are numerous meat substitutes and thus plant-based products on the market today, making the plant-based diet very diverse. Today, many successful meat and dairy substitutes are available. Soybeans, legumes, nuts, and mushrooms are common ingredients in these products (European Comission, 2019). According to Gómez-Luciano et al. (2019), consumers tend to prefer protein-based products as meat replacements. In this study, consumers were asked to rank three alternative meat replacements, including cultured meat, insects, and plant-based proteins. Plant-based food is thus becoming more popular, but there are some obstacles to its expansion. Plant-based foods are frequently perceived as less tasty and less convenient than meat (Graça, Godinho, & Truninger, 2019). Furthermore, habits and beliefs play a significant role in the continued preference for meat over plant-based alternatives (Aschemann-Witzel et al., 2020). The main reason why plant-based diets are still not chosen is the lack of knowledge on how to prepare plant-based dishes (Varela et al., 2022). Plant-based alternative producers and promoters must overcome these obstacles by emphasizing the positive health and sustainability benefits (Perez-Cueto, 2020).

During a study on cardiovascular health, a plant-based diet index (PDI) was created to express the consumption of plant-based foods more precisely. There are two groups into which this index might be separated. Healthy plant foods including fruit, vegetables, whole grains, nuts, etc. are referred to as having a high healthful PDI (hPDI), whereas low-quality plant and animal diets have low scores. Consuming less-healthy plant-based foods, such as fruit juices, refined grains, fries, sweet, and plant oil results in an unhealthful PDI (uHPDI), while eating nutritious plant foods and animal foods results in negative scores for uHPDI (Satija et al., 2017a).

2.2.2 Benefits of plant-based food

It has been proven that following a plant-based diet can lead to very many health and environmental benefits (Grant, 2017). The following paragraphs will briefly discuss these benefits, based on previous studies and literature. Health benefits will be discussed first, followed by sustainability and environmental benefits.

A first health benefit is the lower risk of getting diabetes. Proven by the American Public Health Association, people who follow a primarily plant-based diet are at lower risk for diabetes than those who do not (Snowdon & Phillips, 2011). This statement is supported by several other studies; According to a 2008 study by Vang et al. non-vegetarians had a higher risk of developing diabetes than vegetarians. According to another study involving over 60,000 men and women, people who follow a vegan diet are less likely to get diabetes than non-vegetarians (Tonstad, Butler, Yan, care, & 2009, 2009). By enhancing insulin sensitivity and reducing insulin resistance, a low-fat, plant-based diet with little to no meat may help prevent and treat diabetes (Barnard et al., 2006).

Additionally, following a plant-based diet reduces the risk of obesity (Magkos et al., 2020). Vegetarian diets may be more nutrient-dense and better for weight management than diets that include meat. Also, vegetarians are more physically fit than meat eaters. Moreover, it is discovered that vegetarians consumed less total fat and more magnesium, potassium, iron, thiamin, riboflavin, folate, and vitamins. Vegetarian diets, according to scientists, are nutrient-dense and can be advised for weight management without sacrificing diet quality (Farmer, Larson, Fulgoni, Rainville, & Liepa, 2011). A 2009 study by Wang & Beydoun confirmed this. Through linear regression analysis, they showed an increasing relationship between obesity and meat consumption. Sabaté & Wien (2010) think that a plant-based diet might potentially be an

effective strategy for preventing obesity. Low energy density and high levels of complex carbs, fiber, and water in plant-based diets can improve satiety and resting energy expenditure.

Finally, following a plant-based diet would lower both systolic blood pressure and diastolic blood pressure (Gibbs, Gaskin, Ji, Miller, & Cappuccio, 2021). Residents of countries in which plant-based foods are predominantly consumed have significantly lower blood pressure than individuals, who are omnivores, from industrialized areas (Casley-smith, 1959; Page, Damon, & Moellering, 1974). Yet there are also marked differences between individuals within industrialized areas, based on their diet. Several studies in the US and Australia show lower blood pressure levels among individuals following a strict vegetarian diet versus omnivorous individuals (Armstrong, Van Merwyk, & Coates, 1977; Rouse, Armstrong, Beilin, & Vandongen, 1983; Sacks, Rosner, & Kass, 1974). Not only does blood pressure improve, but following a plant-based diet improves overall cardiovascular health. Following this diet creates a lower risk of coronary heart disease (Satija et al., 2017b) and mortality (Committee, 1985). The decreased consumption of red meat is mostly to blame for this lower risk of mortality (P. N. Singh, Sabaté, & Fraser, 2003). Generally, a lower meat intake is linked to longer life (Sinha, Cross, Graubard, Leitzmann, & Schatzkin, 2009).

Of course, this does not apply to every kind of plant-based food. The existence of unhealthy plant-based foods such as French fries, nuts, palm oil, etc. must be considered. Therefore, it is clear that a high hPDI will provide all the benefits discussed above, due to the beneficial effects of these foods on glycemic load, weight, insulin regulation, lipid profile, blood pressure, vascular health, inflammation and gut microbiome interactions. A high uPDI, on the other hand, will negatively affect all these parameters (Satija et al., 2017a).

The literature on the effects of a plant-based diet on mental health lacks consensus. While some studies suggest that following a plant-based diet can have a positive impact on mental health (Bonnie L. Beezhold, Johnston, & Daigle, 2010; Bonnie Lynn Beezhold, Johnston, & Daigle, 2009), leading to improved well-being and contentment (Fehér, Gazdecki, Véha, Szakály, & Szakály, 2020a), other studies indicate the opposite, linking plant-based diets with poorer mental health and depression. Moreover, there is uncertainty as to whether the mental effects of plant-based diets are due to the specific nutrients in the diet or to the social and cultural aspects associated with following such a diet (Medawar, Huhn, Villringer, & Veronica Witte, 2019a). Therefore, the influence of plant-based diets on mental health remains a topic of ongoing research and inquiry.

In terms of sustainability and environmental benefits, the following can be said. When a plantbased diet is compared to a meat-based diet, clear differences in sustainability are found. Plantbased diets are more sustainable compared to diets rich in animal products because they use far fewer natural resources and have less of an environmental impact (Sabaté & Soret, 2014). For example, they require less energy, land, and water to still provide the same number of calories as in a meat-based diet (Pimentel & Pimentel, 2003a).

2.2.3 Plant-based food on social media

Despite the growing popularity of plant-based diets, vegans and vegetarians are still perceived negatively by many people. They are often viewed as hypersensitive and lacking in physical and mental strength. Additionally, they are believed to be disruptive when it comes to social gatherings where food is involved (Potts & Parry, 2010).

However, social media can potentially help to reduce this negative stigma. In the case of plantbased foods, not only the physical product will play a role when adverted or seen on social media. They can also evoke sensations and convey experiences (Schmitt, 1999). For many consumers, plant-based food is seen as environmentally friendly and healthy, making it part of their "green consumption" shopping basket (Lea, Crawford, & Worsley, 2006; Pimentel & Pimentel, 2003b). Social media allows for these experiences and additional information to be better conveyed towards consumers, differentiating them in the competitive marketplace (Bernal Jurado, Fernández Uclés, Mozas Moral, & Medina Viruel, 2019b). Also, immediate feedback on the products in terms of sustainability, use and health is made possible by social media as opposed to other marketing tools (Khale & Valette-Florence, 2012).

It is still not quite apparent, nevertheless, how social media affects customers' perceptions of plant-based food. The findings of this study provide a clearer picture of how social media presents vegans and vegetarians as well as how plant-based food is seen on social media. As well as insights into how, according to potential consumers, social media can provide an even more positive perception of plant-based food.

2.3 Target group: Millenials

As this study focuses on a target group that has grown up with the Internet and actively uses social media, while also making independent decisions about their food choices and purchases, millennials are the primary target audience. The millennial generation is one of the generational cohorts from the generational cohort theory. Manheim first proposed the generational cohort theory in 1952 (Pilcher, 1994). According to this theory, people fall into several age groups depending on the historical, cultural, political, and economic events they encounter during their formative years, which are typically between the ages of 17 and 23. As a result, individuals who belong to the same group exhibit comparable attitudes, tastes, and actions as adolescents and adults. Therefore, individuals within the same group frequently have similar traits and outlooks on life (Schewe & Noble, 2010).

Table 2 lists the different generations starting with people born in the year 1943, also another designation used especially in America, and the corresponding birth years (Raišienė, Rapuano, & Varkulevičiūtė, 2021).

Generational cohort	American name	Birth year
Baby Boomers	Boomers	1943-1963
Generation X	MTV generation	1964-1976
Micro-generation X-Y	Xennials	1977-1982
Generation Y	Millenials	1983-2003
Generation Z	Post-Millenials	2003-present

TABLE 2: GENERATIONAL COHORTS

Since millennials will be used as the target group in this study, a little more information about this cohort follows. A focus on their food choices and social media use is provided. A defining event during the formative years of millennials is the "information revolution". They are growing up with the inception of the Internet, and as a result will provide great growth the

following years. They are also more idealistic and socially minded than their previous generation, Generation X (Ting, Lim, de Run, Koh, & Sahdan, 2018).

2.3.1 Growing up with Social Media and the Internet

The millennial generation is the first to have grown up in an interdependent society, thanks to the rise of social media and the globalization of the internet. (Bucic, Harris, & Arli, 2012). This is mostly because social media and the Internet were developed as millennials were growing up. For instance, it has been discovered that more than 70% of US millennials have one or more social media accounts (Nielsen, 2015). Generation X only encountered the Internet and social media during their adult years, which is why they use it more responsibly. Before buying anything through social media, they will gather as much information as possible, looking for products of the highest quality, impulsive purchases are not for them. Millennials, on the other hand, use social media as a tool in everything they do in their daily lives, for them it is something that is indispensable in life. They will quickly like or share content when they have only read the title, without finding out the underlying information (Dabija, Bejan, & Tipi, 2018). Therefore, marketers' favorite target group is millennials because of the large amount of time they spend online (Dabija, Postelnicu, & Dinu, 2018; Pamfilie, Bobe, Cristescu, & Toma, 2016). They will most often be influenced by advertisements on YouTube, or other pop-up advertisements embedded on the social media channels they use (Young, 2015). There is a lack of interest in goods promoted in classic ads (Dabija, Bejan, et al., 2018). Another explanation for this is that word-of-mouth marketing, which is made possible by marketers' use of social media, has a significant impact on millennials (Direction & 2015, n.d.). The target market perceives this as more personal, and they are therefore more likely to make a purchase when influencers, often with limited reach, promote their items. Millennials will also be greatly influenced by the products, services, or even attitudes and thoughts toward topics they read on posts from their friends or other individuals on social media (Dabija, Bejan, et al., 2018).

2.3.2 Millennials' Food Choices

In addition to growing up at a time when the Internet was growing and social media was becoming indispensable, millennials also grew up at a time when there was more and more focus on the environment and sustainability (Lu et al., 2013). The media has contributed to millennials' extensive understanding of these subjects and issues. Researchers have observed that millennials are the generation most willing to spend more money on sustainable items or goods, such as food products, produced by businesses that value sustainability and the environment (Klimkiewicz & Oltra, 2017).

Aside from sustainability and the environment, millennials' food choices are influenced by a variety of other factors. For example, they do not go out to eat simply to satisfy their hunger; rather, eating is associated with expressing one's personality and socializing with friends and family. This generation is daring and always on the lookout for new dishes and flavors to try for themselves. As a result, they are more willing than previous generations to invest time and money in food. This is also ensured by the growing trend of eating healthily. Of course, because millennials are still young and do not yet earn as much as older generations, price and convenience may also influence their food choices (Dilistan Shipman, 2020).

To take all these factors into account when making their food choices, millennials need information. In this, social media plays a big role, as it is their biggest source of information (Dabija, Bejan, et al., 2018). Google, Facebook, Pinterest, and YouTube are the platforms they use most often to find recipes and other information about food. Furthermore, they are also heavily influenced by comments and reviews from friends, family, and others on social media,

which will influence their food choices. Millennials frequently try trendy recipes they see on social media, and some even go so far as to create their own variations and upload videos of them. Most new food trends are initiated by millennials (Dilistan Shipman, 2020).

2.3.3 Plant-Based Diet among Millennials

When it comes down to following a plant-based diet, millennials stand out, relative to other generations, especially by following a flexitarian diet. According to a study by Knaapila et al. (2022), nearly half of millennials eat a plant-based meat alternative at least once a week. The reason these millennials choose plant-based options is primarily for environmental concerns, followed by animal welfare. The main reason why meat alternatives are not consumed by the other half of millennials is because they do not like the taste of them.

2.4 Focus Group Study

2.4.1 Definition and Background

Since a focus group study will be used in this research, the following paragraphs will describe its theoretical aspects. Some history, a definition, and the advantages and possible disadvantages will be discussed. A brief explanation of why this particular qualitative research method is chosen also follows.

Focus groups, according to Kitzinger (1994), are organized talks in which participants explore a certain collection of issues or subjects. An informal discussion on this subject, which is chosen by the researcher, will be led by the participants. The debate is conducted with the assistance of a moderator, who guides the discussion in accordance with the cognitive goals described in light of the characteristics of the participants, and an observer, who watches nonverbal cues, gathers nonverbal data from the exchange, and combines verbal data that comes up in the discussion (Acocella, 2012). Focus groups have been around since 1920, where they were first described as a market research method (Bogardus, 1926). Focus groups have been used in qualitative marketing research for more than 50 years, and it is currently estimated that over a quarter of a million focus groups are held each year in the United States alone (Stewart & Shamdasani, 2014).

Focus groups are defined as a qualitative research method that uses group interaction to collect data and insights, which cannot be collected without this group interaction (Morgan, 1996). In other words, by bringing people together and directing the topic of conversation toward the participants' collective attitudes and views, the dynamic transmission of ideas will result in untapped reactions and valuable data. Focus groups typically function best for subjects that involve other people's convictions and opinions, and group interaction may access the subconscious and motivational aspects of the human mind. Focus groups are a great way to uncover the motivations underlying participant viewpoints (Morgan, 1996). Furthermore, focus groups no longer simply consist of small research projects that require two or three groups to physically gather in a small room. Focus groups are increasingly held online, through telepresence, virtual worlds, and social media. Focus groups are also routinely run on a huge scale and all over the world (Stewart & Shamdasani, 2014).

In the beginning, focus groups were mainly used by market researchers to find ways to improve and advertise their products to customers. Now focus group results are being used by government agencies and all kinds of institutions and organizations to inform judgments about their goods and services. Focus groups were quickly used by international public health organizations, notably in social marketing initiatives. Organizations in the educational and environmental sectors have also used this method to listen to their staff members as well as their existing and potential users (Krueger, Casey, Donner, Kirsch, & Maack, 2001).

2.4.2 Characteristics of a Focus Group Study

To conduct a focus group, Krueger et al. (2001) stated to gather about 18-32 respondents in total, but given the flexibility of qualitative research, it might be a different number in other studies. In order to obtain reliable results, one must repeat a focus group three to four times, making each group six to eight respondents (Krueger et al., 2001). Information is gathered using the debate as a foundation. Each participant is free to comment, ask questions of other participants, or reply to comments made by others, including the moderator, in an open dialogue. Participants are encouraged to interact with one another in order to spark in-depth discussion of various subjects. A focus group study is considered successful when no new insights or thoughts emerge during the last session; a stabilization of the results has then been achieved (Folch-Lyon & Trost, 1981).

According to a paper by Krueger et al. (2001), there are four key characteristics to a focus group to be considered a good and reliable focus group. The thorough selection of participants is the first characteristic. It is necessary to choose people who possess the essential skills, competencies, and expertise to gather comprehensive results. The selection of participants should allow for everyone to speak without causing controversy. Everyone should feel free to voice their own thoughts and emotions regarding the subject (Krueger et al., 2001). In order to avoid inhibition or situations where some participants feel ashamed to speak in front of people with whom they feel distant in terms of life experience, representations of the world, etc., it is crucial that the focus group not include participants with too distant cultural levels, social status, and hierarchical positions (Greenbaum, 2011). Nonetheless, it's critical to prevent overly homogeneous groupings in order to promote the gathering of many viewpoints (Krueger, 2014).

The ability to create a welcoming environment for the participants is the second crucial quality. It is recommended to hold the focus group in a comfortable or neutral environment, such as a living room, classroom, library, or cafe. The debate will now begin as the participants take their seats so they can see one another. The focus group should be held in the participant's native language to enhance their capacity for expression. To put participants at ease even more, the moderator explains in advance why he is recording the conversation and what will be done with all the information obtained (Krueger et al., 2001).

Selecting a competent moderator is the third characteristic. Moderators must ensure that the participants feel comfortable and feel that they are in a safe environment where they can voice their opinions. In groups with many dominant characters, the moderator must be able to control them well. Good preparation will of course also count in creating a competent moderator (Krueger et al., 2001). He will draw attention to the similarities among the participants and guide their proper discussion of the subject. Also, the moderator will assist them in determining the viewpoint from which they are expected to approach the subject of that particular group discussion (Acocella, 2012).

Finally, systematic analysis and reporting is the fourth characteristic for obtaining a competent focus group study. In order to perform the focus group with a logical progression, the analyst must design the study's questions and topics well. When another analyst comes to the same conclusions after reviewing the same data and information, that conclusion is considered credible (Krueger et al., 2001).

2.4.3 Advantages and Disadvantages of a Focus Group Study

Focus groups feature not one, but two different sorts of interactions in comparison to traditional interviews. The interaction between the participant and the moderator, as in traditional interviews, comes first. Second, there is the interaction among the participants themselves, which is more important because it will help the study achieve its objective. Indeed, this interaction is seen as the source of information for the study (Puchta & Potter, 2004). This will lead to several advantages, compared to other qualitative research techniques.

By focusing on the interaction between participants, the underlying nature of their stories can be retrieved. Because of the contact and social connectedness, participants will talk more about their own experiences, which will reveal their actual emotions and beliefs (Stewart & Shamdasani, 2014). Also, because the focus group material was generated as a result of a series of actions made by the moderator and participants, the context of the discussion may have an impact on it (Acocella, 2012). Focus groups also provide answers and opinions on a variety of topics from a large number of respondents in a shorter period of time and with greater flexibility than other research methods. They are an excellent primary source of information. The purpose of a focus group when serving as a primary source is to gather various opinions and thoughts on a topic, with groups separated by socio-demographic factors. Focus groups are also used as an additional source of information in multi-method studies (Litosseliti, 2003).

In addition to these benefits, focus groups have few limitations. One significant disadvantage is that finding participants is much more difficult. This is because participants must have a direct connection to the research topic; otherwise, the focus group will not produce useful results (Litosseliti, 2003). Also, there should not be extroverted and introverted characters in the same session because introverts will be unable to express themselves clearly. Furthermore, the focus group can give participants an oppressive feeling, making them afraid to express all their opinions, especially on sensitive topics. Because focus groups only have 6 to 10 participants, it is possible that the participants do not accurately represent the target group. Finally, focus groups are more expensive than other qualitative methods such as questionnaires (Somekh, 2022).

2.4.4 Rationale for selecting a Focus Group Study

According to Powell & Single (1996), a focus group is typically used when there is a need for new relevant information on a topic that lacks existing knowledge, as well as to explore complex dynamics such as emotions, trust, and personal opinions. This is made possible through dynamic and interactive discussions among participants.

Through open discussions, participants can share their personal experiences, perceptions, and concerns, providing valuable insights into their trust or mistrust in plant-based food and social media content related to plant-based food. In this way, the first research question is addressed, seeking an answer to the participants' level of trust.

Furthermore, focus groups allow for the exploration of participants' emotions when exposed to different types of content containing plant-based food. By presenting various examples and facilitating group discussions, different emotions can be identified. Additionally, participants can assist each other in better expressing or eliciting their emotions.

Lastly, the discussions among participants provide an opportunity for them to share their own experiences and interactions with social media platforms. This allows for distinguishing between effective and less effective ways to optimize social media as a tool for creating

awareness. By addressing these three research questions, a focus group study is regarded as a useful strategy for obtaining in-depth qualitative data on this topic (Deliens, Clarys, De Bourdeaudhuij, & Deforche, 2014).

3 Material and method

To address the research questions, focus group discussions were conducted. Fifty millennials, aged between 20 and 40 years, participated in these focus groups. The participants engaged in a 1-hour discussion on the topic of social media and plant-based food. These focus group sessions took place during the last two weeks of March 2023 and the first week of April 2023.

3.1 Participants

3.1.1 Recruitment

A total of 50 participants were recruited for the focus group study. To be eligible, participants had to meet three criteria: (1) they had to belong to the millennial generation, defined as being between the ages of 20 and 40 in 2023, as described in part 2.3; (2) they were required to have previous experience consuming plant-based food, regardless of whether they currently include it in their diet.; and (3) they had to use social media, regardless of the platform. These criteria were clearly stated on the recruitment poster, and each participant was asked to confirm their eligibility at the start of each session to ensure that they met all requirements.

To recruit participants for this study, a poster was created (see Appendix A for the poster of the first week) that listed the focus group sessions' dates and times, eligibility requirements, a brief overview of the study, incentives for participation, and contact information. This poster was made by using the online graphic design platform Canva. The focus groups were scheduled over three weeks, and to ensure even distribution of participants across sessions, a new poster was created for each week. These posters were printed and distributed seven days in advance on three university campuses - Campus Coupure, Campus Schoonmeersen, and Campus Aula. In addition, the poster was shared on social media platforms like Instagram and Facebook and posted in relevant student and vegan communities. Finally, word-of-mouth advertising was used to encourage participation in the study. The recruitment methods were selected to specifically target the millennial demographic, which constitutes the majority of individuals on college campuses. Moreover, the recruitment poster was distributed through Facebook groups that exclusively comprised millennial members. Additionally, since the researchers themselves were millennials, the word-of-mouth recruitment efforts were also limited to this demographic. Participants had to contact the researcher via email or Whatsapp when they wanted to participate.

3.1.2 Socio-demographics

The focus group study consisted of 50 participants between the ages of 20 and 40, all of whom reported using social media and having consumed plant-based foods at some point in their lives. As part of the data collection process, socio-demographic information was also collected from the participants, including their age, gender, occupation, highest degree obtained, nationality, dietary lifestyle, and frequency of social media use. The table in Appendix B shows the distribution of gender, age group, highest degree obtained, dietary lifestyle, and frequency of social media use per session. As well as the distribution in total, in numbers (n) and percentage (%). All data, from each individual participant, are presented in 11 different tables (per session) in Appendix C.

Of the 50 participants in the focus group study, 28% were male and 72% were female. The majority of participants fell in the age range of 20 to 25 (66%) (M = 25 years). Additionally, 90% of participants had already completed higher education. In terms of dietary lifestyle, half of the participants identified as omnivorous at the time of the interview, while 28% considered

themselves flexitarian, 10% pescatarian, 10% vegetarian, and 2% were vegan. Regarding social media usage, 94% of participants reported using social media daily.

3.1.3 Incentives

In order to express gratitude and appreciation for their participation, every participant received a \in 15 gift voucher, which could be used both in-store and online at Fnac or Vanden Borre. By highlighting this incentive on the recruitment poster, individuals were more motivated to take part in the study. These stores were opted based on their popularity and broad range of products, which could be of interest to the potential participants. The vouchers were distributed at the end of each discussion, once participants had submitted an attendance list to verify their identity. A manual was included with the vouchers, and participants were free to use them however they wished.

3.2 Procedure and data collection

The participants reached out to the researcher to express their interest in participating in the study, their e-mail address was asked or saved. A few days before the session took place, each participant received a separate email reminder, which also contained the specific location where the session would take place. The focus group sessions continued until no further new results were produced and the data reached saturation.

Each session took place at Campus Coupure in Ghent (Coupure Links 653, 9000 Ghent), in a meeting room in block A. The meeting room was equipped with an oval table that held 8 chairs, a TV screen, and a whiteboard. Since there was 1 moderator and 1 supervisor at each session, the maximum capacity was 6 participants. Water and cookies or Easter eggs were provided for the participants. The meeting room, the TV screen and the white board are shown in Figure 2. An information sheet (Appendix D) and a consent form (Appendix E) were distributed to each participant. Before the start of each session, each participant was asked to review them carefully and ask questions if necessary. The consent form asked their permission to audio-record the discussion, when they had indicated this, the consent forms were collected back by the moderator.

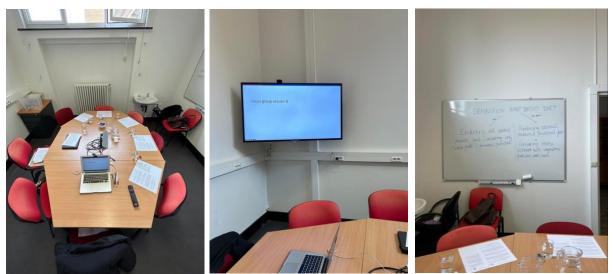


FIGURE 2: LEFT TO RIGHT; MEETING ROOM, TV SCREEN, WHITE BOARD

Each focus group session was divided into 2 parts, each with a separate audio recording. These recordings were made using the Dictaphone application on an iPhone. In the first recording,

participants were welcomed, and asked the two screening questions. Then each participant had to introduce themselves based on several points on the presentation, these were their name, gender, age, occupation, highest degree obtained, nationality, dietary lifestyle, and their frequency of social media use. When everyone finished introducing themselves, the first recording was stopped. Then the second recording was started. Before asking the first question, the moderator gave a brief explanation of plant-based food, which was also written on the whiteboard and went as follows: *Plant-based food is defined very broadly. For some, this means excluding all animal products and consuming only "whole foods," which are food products that have been processed as little as possible. These products are usually free of hydrogenated fats and artificial colors, flavors, and preservatives. However, following a plant-based foods, and consuming more nutrient-rich vegetables, fruits, nuts, legumes, lentils, and seeds (Ostfeld, 2017; Tuso et al., 2013). Figure 3 shows how this definition was represented schematically on the board.*

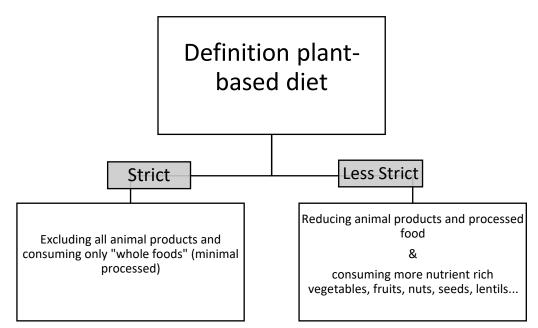


FIGURE 3: DEFINITION PLANT-BASED DIET

After giving this explanation, the moderator started asking the first question, using a discussion guide (Appendix F), and so, the discussion started. The discussion guide included open-ended questions and prompts to encourage participants to share their experiences and opinions related to the study's research questions. The guide was divided into three sections: a general section that included questions about each individual aspect, a section combining questions about plantbased food and social media, and a section of backup questions that served as a contingency to allow for additional questioning. During the discussion, one of the questions included, showing four social media posts on the TV screen, the first one was a TikTok video of a non-sponsored individual, the second one was an Instagram video of Alpro, the third one was an Instagram post of Alpro and the last one was an Instagram video of Kim Kardashian. All four posts can be found in Appendix G. Seven of the eleven discussions were conducted in English, the same language as the discussion guide. In the other four groups, only Dutch speakers were present, so the discussion continued in Dutch, this made the participants feel more comfortable and allowed them to express themselves better. Afterward, these transcriptions were translated back to English by the Dutch native speaker. After asking the last question, and thanking the participants for their participation, the second recording was stopped. An attendance list was

distributed, and participants were asked to provide proof of identity, thus they had to prove their presence. After this, the voucher was distributed to each participant as an incentive. Figure 4 shows the timeline of how each focus group session was conducted.

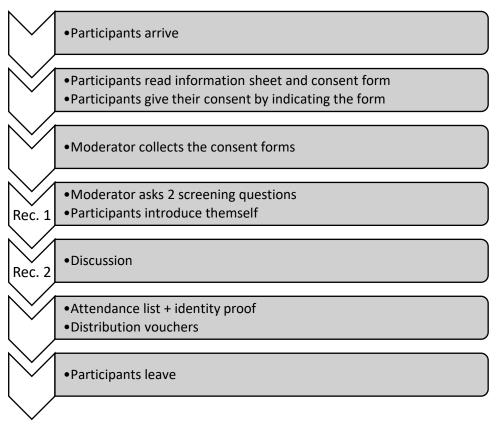


FIGURE 4: TIMELINE OF A FOCUS GROUP SESSION

After each session, the audio recordings were stored on a password-protected computer. These were then transcribed using the transcription tool in Microsoft Word. To make this transcription more accurate and precise, each recording was checked again manually. After each recording was transcribed, the audio recordings were deleted.

3.2.1 Timeline data collection

Together with participant recruitment and conducting the focus group sessions, data collection took a total of four weeks. Participants were recruited by week, so posters were distributed one week in advance each time. Figure 5 shows a timeline of the entire data collection.

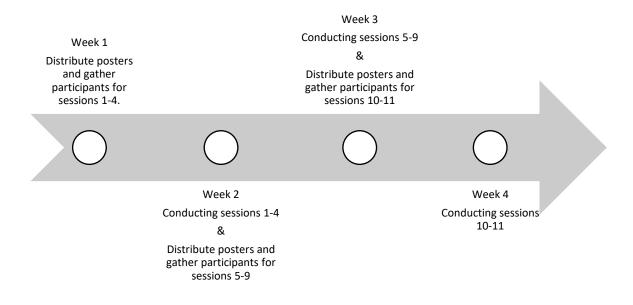


FIGURE 5: TIMELINE DATA COLLECTION

3.3 Data Analysis

When the focus groups were complete, the audio recordings from on the iPhone, were transferred to the password-protected laptop. The first recordings of each session (the introductions) were manually transcribed by the researcher. Then all socio-demographic data were placed in an excel file, and the proper names were replaced with a code name, these code names range from P01 (Participant 1) to P50 (Participant 50). The second recordings (the discussions) were also transcribed by the researcher, but, as additional help, the transcription tool of Microsoft Word was used. This tool causes an audio file you uploaded to be transcribed automatically. However, when speakers speak unclearly or when voices are indistinguishable, errors occur in the automatic transcription. Because of this, each session was listened to and checked again by the researcher until the transcriptions were completely correct.

All of the transcriptions were stored in NVivo, a software tool designed to help qualitative researchers organize, analyze, and extract insights from unstructured or qualitative data ("NVivo - Lumivero," n.d.). The data analysis was performed using NVivo release 1.7.1 (1534). Initially, all transcripts were head-ringed to facilitate subsequent auto-coding. Inductive coding was used, meaning that we started purely from our data when analyzing in NVivo. After autocoding, some manual codes were also added. Parental codes were created as the main themes of the discussion, and child codes as the sub-themes for each main theme. Finally, a structured code tree was created, which can be seen in Figure 8. The abbreviations PBF and SM represent Plant-Based Food and Social Media, respectively.

Q.01 Consuming PBF

Q.01a Personal benefits

Q.01b Difficulties

Q.02 Social media & food

Q.02a Social media platforms for food

Q.02b Food content on SM

Q.02b1 Passive content

Q.02b2 Active content

Q.02b3 Shared content

Q.02c Influence

Q.02c1 Influencers

Q.02c2 Food products

Q.03 Trust in PBF

Q.03a Trust in PBF on SM

Q.04 Social media as a convincing factor for PBF diet

Q.05 Sentiments on posts about PBF

Q.06 Examples of social media posts about PBF

Q.07 Social media as a tool to create awareness of PBF

Q.08 PBF without SM

Q.09 Types of posts that are most influencing

Q.10 Stereotypical plant-based diet follower

FIGURE 6: MAIN THEMES OF THE CODE TREE

Also, each participant was identified as a case, with the socio-demographics as attributes. Thus, a case classification was made. Queries were used to retrieve patterns and relationships.

3.4 Ethical consideration

Ethical approval was obtained prior to commencing data collection, with the process initiated one and a half months in advance. The discussion guide was submitted along with the request to secure ethical approval, which was granted by the ethical committee of the Faculty of Political and Social Sciences at Ghent University, Belgium (reference number 2023-07). The research ethics application was approved three weeks after submission.

During the sessions, all participants were provided with a written informed consent prior to the start of the discussion. They were allowed to review this thoroughly and ask questions if they wished. After giving their consent, all these forms were collected back by the moderator. We ensured participant confidentiality by using pseudonyms to refer to participants in the transcripts and removing any identifying information. We also informed participants that they could withdraw from the study at any time.

3.5 The use of Artificial Intelligence (AI) as a tool

Since the researcher was not a native English speaker, professional English reporting was occasionally challenging. For this reason, an AI tool, namely ChatGPT, was used to rewrite or rephrase some parts of this master's thesis, as well as to translate some sentences into English. In no way was the tool used for interpreting results or generating new texts.

4 Results

The results of the analyses are presented in a similar logic to that of our code tree in NVivo. Though, some categories were clustered together. It should be mentioned that all groups contained roughly equal proportions of omnivores, flexitarians or vegetarians, so responses did not differ much between sessions.

4.1 Focus groups characteristics

A total of 11 focus group sessions were conducted over three weeks. Each group contained four to six participants with a total of 50 participants and, lasted between 52 and 75 minutes. The characteristics of each session individually can be found in Table 3.

Focus group	Date	Duration Discussion (min)	#Participants	Gender distribution
Session 1	20/03/2023	57	5	M: 1 F: 4
Session 2	20/03/2023	59	5	M: 1 F: 4
Session 3	21/03/2023	64	4	M: 2 F: 2
Session 4	22/03/2023	54	4	M: 0 F: 4
Session 5	28/03/2023	52	4	M: 1 F: 3
Session 6	28/03/2023	57	5	M: 1 F: 4
Session 7	29/03/2023	75	4	M: 1 F: 3
Session 8	29/03/2023	52	4	M: 2 F: 2
Session 9	30/03/2023	58	6	M: 2 F: 4
Session 10	03/04/2023	74	4	M: 1 F: 3
Session 11	04/04/2023	55	5	M: 2 F: 3

TABLE 3: CHARACTERISTICS OF EACH FOCUS GROUP (M: MALE, F: FEMALE)

4.2 Consuming Plant-Based Food

When asked about the participants' reason for consuming plant-based food, several motivations emerged. The majority, 44% of the participants, mentioned the environmental aspect as their main reason for consuming more plant-based food. For 22% of the participants, animal welfare came up more as the main reason. Approximately 16% of the participants mentioned both issues. The remaining participants mentioned other reasons, including religion, novelty, variety, taste, and social circle. For many of the participants, a combination of several issues, was their driver for consuming plant-based food. Some examples of participants' expressions can be observed below.

'For me it is mainly because I believe in a varied diet in which all types of food can have a place and can contribute to health. Also, the often less severe impact on the environment and climate of plant-based nutrition. That is why partly animal products are replaced by vegetable things because of environmental impact, but also because of health effects such as less saturated fats and cholesterol and things like that. So that's pretty much the motivation for me.' – P44 (23, M)

'Yes, the same thing with me, out of environmental conviction and also animal suffering' -P50(22, M)

'Now that these new products are arriving in the market it's like **something new**, it's a totally different new experience, and at the same time they also have all these **climate and environmental benefits**, so it's more like a win-win in my perspective, that's why I was interested to start trying plant-based food.' -P09(21, F)

Benefits

Participants identified several benefits associated with consuming plant-based foods. For most of them, the standout benefit was improved health. They reported better digestion, lower cholesterol levels, improved cardiovascular health, and an overall healthier lifestyle.

'I think I get more healthy, especially in my digest system. So, when I daily eat plantbased food. I can regularly go to the toilet every morning.' -P20(24, F)

'For cholesterol, it is also better.' – P16 (24, F)

'Yeah, I feel healthy, definitely. People say I look younger, I feel fit.' – P22 (38, M)

In addition to an improvement in physical health, some participants also mentioned an improvement in their mental health; consuming plant-based foods made them feel like they were making a positive contribution to the world.

'And yes, for me it's because, I feel more, maybe it's in my head, that I feel more healthier for my mental health.' -P30(23, F)

'That we are better people.' -P33 (27, M)

'For me I think when I eat more plant-based I also feel mentally better, I know that I'm doing something good for the environment so yeah.' -P37(31, F)

Additionally, four participants mentioned another perceived benefit of following a plant-based diet, namely that it appears to be more cost-effective to them.

'Sometimes it is cheaper. That is already an advantage.' – P50 (22, M)

Difficulties

However, some participants mentioned that they also sometimes struggle when consuming plant-based foods. For them, it is easier to still choose meat sometimes because they are sure of the nutrients they are taking in, also they get a more saturated feeling from it.

'I'm pretty athletic and stuff so I do need my calories on my day so to speak. And then when you start eating plant-based, it's **easier to eat a piece of meat to get my protein and be a little higher in satiety** and stuff. Because otherwise I would keep eating all day long' - P43 (24, F)

'But nutritionally, there are certain aspects that are really difficult if you go completely vegan.' -P44 (23, M)

'Well, now that you mention it, I mean, it came to my mind that when I have or when I choose to eat food, vegetable things. I'm not really sure if what I have in my plate gives me everything that my body needs at that moment, you know like. Is this what I need to eat from macro nutrients? I don't know, and I just based my portion on the size and I make a salad this huge. But I'm not sure if it's as balanced as a piece of chicken rice and so on.' – P11 (29, M)

'Also, most of the time **I** don't feel full. If I don't have, like cheese or eggs with it. Sometimes I make like big plates of like a bowl of quinoa, a lot of sweet potatoes and everything. But I'm still like, there's something missing somehow.' -P13 (20, F)

Some participants were aware that plant-based food can also be eaten in a very unhealthy way. Variety stood out to them as the key to health, and not necessarily following a plant-based diet exclusively.

'You have to do that right, of course. You can eat very unhealthy plant-based food and you sometimes have to take supplements.' -P45 (22, F)

Furthermore, some participants also felt that plant-based alternatives are often more expensive and harder to find while traveling or searching for restaurants in other countries, or small cities.

'But I sometimes find it all expensive in the store. Yes, I think that's a pity that it's so expensive. Then I'm going to choose meat in the end' -P46(24, F)

'I think it's also more expensive sometimes and then also when you travel and you're going to a restaurant, they don't always have a plant-based alternative. So yeah, that sucks sometimes.' -P32 (22, F)

4.3 Social Media and Food

Platforms

During this part of the discussion, participants were asked about their use of social media for food-related topics. Specifically, they were asked which platforms they use most frequently for food-related content. The half of the participants mentioned Instagram as their top choice, noting that the platform's visual aspect, including short videos like reels, was particularly attractive.

'Maybe because you directly have the pictures with it. When I watch the reels on **Instagram**, I see all the pictures so. Like when I see the recipes, I see how it's made and the results. That's appealing.' – P30 (23, F)

Additionally, a lot of the participants (22%) mentioned YouTube as their preferred platform, citing the platform's detailed videos on preparing dishes, especially plant-based dishes. Pinterest and TikTok were named by 16% of the participants as their go-to platforms, while Facebook was deemed outdated by some. Participants who are engaged in a scientific education tended to prefer using Google over social media for finding food related content, although they sometimes ended up on social media platforms through Google searches first. When searching for nutrient information, most participants still opted for Google as their primary source, but Pinterest and YouTube were also considered useful resources. So, a clear connection is seen between the content and the platforms on which participants see food-related content. For example, one participant describes it as follows:

'I think **it depends on the platform** that you use, because on like Facebook or something, I get more like ads. But then on YouTube I would get more recipes and like people promoting healthy living and plant-based food.' -P21(25, F)

Passive food content

Participants often come across food-related content while passively scrolling on their social media platforms. This content can be categorized into a few different types. Most participants frequently see recipes on their social media feeds, with Instagram featuring photos with accompanying text and YouTube offering more detailed videos. 20% of the participants noted that these recipes are often, or exclusively, plant-based.

'For me it's vegetarian cooking video's that I come across without even looking for them.' -P09(21, F)

'Yes, I fully agree, just plant-based recipes.' – P43 (24, F)

Many participants also frequently encounter information about food and nutrition while passively scrolling through their social media feeds. This includes advice on transitioning to a plant-based diet, tips for healthier eating, and hacks for making cooking easier.

'Also tips for like instead of using full fat milk you use oat milk or soy, or different variations. So information on how you can switch to plant-based.' -P04(24, F)

'I also used to follow an account. I didn't really follow it, but I was going to her account often because I found it fascinating. Which was about also more **nutritional value of plants**. She was like an expert in stomach, like intestinal problems or claimed expert, because she didn't really study anything related to this. But then she was a lot about yeah **how plant-based food could also improve your intestinal processes**.' – P12 (29, F)

'Personally, I see a lot of **hacks**, to improve your skills.' – P01 (24, F)

Furthermore, participants mentioned that they occasionally come across advertisements, restaurant pages, photos of meals, or posts from professional chefs while scrolling through their social media feeds. However, these types of posts are far less common compared to other categories.

Active food content

Interestingly, when participants actively search for food content on social media, it's primarily to explore restaurants and get an idea of what their dishes look like. One participant even uses a specific app for this purpose.

'I use one app. I don't remember the name, but it's like for searching, like you can filter...., yeah, filter like the restaurants in plant.... I don't know if now they will have plant-based, but like vegan, vegetarian or like more, I don't know, friendly with environment or things like that. So, and you can also see like how much is the budget that they ask for and the like the people score it. So yeah, I use that app. ' – P29 (24, F)

Regarding restaurant searches, Instagram and Google Maps were the most mentioned platforms. In addition, participants still primarily search for recipes, particularly quick, easy, and affordable ones. A few participants also use social media to find nutritional information, sometimes about plant-based food.

'To be honest I also search information about the nutritional point of view, because I'm really interested in these things.' -P06(27, F)

However, a larger proportion of participants indicated that they would never do this.

Participants' food content

When asked whether they share their own food content on social media, more than half of the participants answered affirmatively. This typically entails sharing photos of meals they've had either at restaurants or at home. It's worth noting, however, that these posts were mostly shared via stories or in private and not always permanently or publicly. Some participants also intentionally share their plant-based food content.

'Yes, I had like, when I was 15, I had a blog post and I made recipes on it, I also wrote articles about vegetarian lifestyle, and I shared it on Facebook.' -P09(21, F)

'Yeah, not so long ago I posted my groceries, which they looked really green, you know, like it was like a bunch of fruits and vegetables. Yeah, yeah. And I just took a photo and would be like, Yeah, vegan, pet friendly.' – P11 (29, M)

'Not that often. Once in a while, so just, so other people can... So, I can surprise other people that what I'm eating is actually fully plant-based and it looks tasty and I often get really, really nice comments that it looks tasty and so on.' -P22 (38, M)

Influence of social media

As the previous section demonstrates, participants get to see a lot of food content. The question now is whether they are also influenced by this content. Most participants admit to having been influenced by social media at one time or another; only 6% say they have never been influenced in terms of food-related content on social media. Participants say they are mostly inspired to cook meals by social media. They get this inspiration from two types of content: recipes and food product advertisements, with inspirational recipes being mentioned most often.

'I think I mostly use social media for **inspiration** for recipes, the more plant-based recipes you find, the more will appear on your social media, I feel like, so now I have a lot of plant-based recipes. inspiration was the difficult part for me, so I really use it

therefore. Also for things that go well together to make something on my own, so yeah I use it mostly for inspiration. ' - P10(24, F)

'Yeah, I think I might have bought some promotions because of social media, for example, from Delhaize. If they, for example if they have a **promotion** I saw on a reel or a story, like a 1 + 1 or yeah. Or something like that.' – P31 (37, M)

Several participants reported that they have experimented with new food products or modified their dietary habits as a result of social media. A few of them even mentioned that they have started consuming more plant-based foods after being exposed to such content on social media.

'Like a lot of things I didn't know like existed. For example, like it's super dumb, but for example, kale, I never ate it at home. And I saw that on Instagram and a lot of people were eating kale and that there where like a lot of nutrients in it. And then I tried it and I really liked it.' -P13 (20, F)

'I think vegan lifestyle is very trendy, so I definitely pick up some things from social media. It's cool to eat vegan nowadays, although it's still hard.' -P01(24, F)

'Well, social media has made me eat more protein. I had actually seen a very interesting informative video about that. That was really an informative video on how to do all you things, it's saying how much energy everything contains, or for example how many fats to burn. And then it turned out that that's why you had to eat more protein, and then I did. So I was really influenced.' -P26(23, F)

Although participants acknowledge that social media has a strong influence on their food choices, they do also mention that other factors, such as price, taste, and recommendations from friends, still have a significant impact. Therefore, social media does not completely dictate what they end up eating. For example, they are never going to buy all the ingredients needed for a particular recipe on social media. The important ingredients are looked at and purchased if necessary.

'It depends, when it's a really important ingredient that I cannot replace, then I would buy it. But if it's just some herb or some non-important ingredient, I just let it out, or I'll take something I already have at home. So, it depends.' -P37(31, F)

Participants often mention that their food choices are subconsciously influenced by social media. They tend to choose a particular item because they saw it previously on social media, rather than actively seeking out a specific product.

'I don't know anymore, it's not that I really buy it because I saw it in an advertisement or something, well it is actually, but like **unconscious**. I'm like in the store and then I see those products and I recognize them and then I buy them.' -P39(38, M)

'Yes, the longer you think about it, the more you have actually been subconsciously influenced.' -P17(29, F)

Furthermore, 56% of participants mentioned that they follow food influencers, or pages related to food. Some are plant-based.

'Look, to be honest, I got influenced, especially in social media. I saw this, let's say people that are like high performance athletes and so on. They are vegan and they say "If I can do it, you can do it" and these kind of things.' -P11(29, M)

'Also, because I'm a yoga teacher, most of the yoga girlies I follow are vegan as well, so it definitely influences me.' -P01(24, F)

4.4 Trust in Plant-based Food

General

When asked about their trust in plant-based diets and its associated benefits, only 28% of participants responded positively. The majority of these participants stated that they do not actively think about it and choose plant-based foods based on taste and price, rather than health benefits. They do recognize the environmental and animal welfare benefits of plant-based diets.

'Yes, purely for the environment, but in terms of health, **I** don't really care about that. I really just eat everything... also the cheapest most of the time.' -P50(22, M)

'I don't think I thought about it that far as u guys, I just enjoy, I like to have some proteins in it, that most of the times comes from processed foods, but I haven't really thought about it that much. If it tastes good I'm happy for now.' -P10(24, F)

However, 72% of participants expressed doubts about their trust in a plant-based diet. For 40%, a plant-based diet is not always as healthy as it may seem. These participants mention that processed food plays a big role in this, highly processed products, such as many meat substitutes, are not healthy for them.

'Yes, it depends on how **processed** they are. Sometimes I do wonder what's in them, I have a connotation with vegetarian and plant-based food that it's more healthy, and if I'm going to eat plant-based I also want to eat healthy, and that's not always the case. I like to control my consumption more by making everything myself.' – P08 (26, F)

'Some micro nutrients for example, because they only have some nutritional values like the protein content on the package. But then how can we look into the real content to know that it's sufficient for our health or not.' -P14 (28, M)

In addition, some participants do note that a plant-based diet doesn't always have to be strictly healthy. Just like with a meat-based diet, indulging in guilty pleasures is allowed. So, as a plant-based diet follower, one can still enjoy the occasional treat.

'I see the processed ones more as a guilty pleasure.' -P05(25, F)

Furthermore, some participants express their skepticism towards the environmental benefits of a plant-based diet. They argue that plant-based food often comes from distant locations, which can result in high transportation emissions and environmental impacts. In addition, plant-based food production also requires a lot of water use. Thus, these participants stress the importance of considering the origin and production process of your food.

'I also think that sometimes it might not be better for the environment, for example, when we drink soy milk and it has to come form like South America or something, it still has an impact on the environment.' -P32 (22, F)

Participants emphasize the importance of knowledge when it comes to transitioning to a plantbased diet. They stress that being conscious about your food choices, whether it involves meat consumption or vegetarianism, is crucial.

'You have to eat **consciously**; you always have to. Always think a little bit. With some things, you know they're unhealthy, and you eat them anyway, but you realize that you're not boundless.' -P44 (23, M)

'I think it depends on the choice you make, like when you're eating meat you have to choose the right meat and ensure it comes from good and ethical source, but on the other hand, when you eat plant-based you need to do the same. And not just buy whatever processed plant-based product you find, because that's as bad as eating meat.' -P36(23, F)

Notable, the participants who mention that knowledge and awareness is important are mostly those with a background in food science or eat entirely plant-based foods themselves.

On social media

Nowadays, a lot of information about plant-based diets is also spread on social media. Only 8% of the participants claim not to question this information, they don't really care and start believing everything they see. These are all participants with no scientific background.

So, all the other participants are rather skeptical of the information they encounter. When the posts are about the environmental and animal welfare benefits, they pretty much start to believe them, but they are aware that these are often exaggerated or taken out of context.

'I believe like the short information about plant-based food, they are not going to lie about the benefits I think, they can just widen them out. So, I think that they only tell the good parts and leave out the bad parts.' -P40(22, F)

However, when they come across information about the health and nutritional aspects of plantbased diets, they start to believe it less.

'For me, if I look at information on social media, it will be recipes. Other things I would not trust.' -P29(24, F)

'For me it's also more for inspiration, for making something and trying something. But I'm actually **very suspicious** of real nutritional advice when it comes from social media. I see a lot of things that are really wrong, incorrect information.' -P44 (23, M)

Though, it does depend heavily on who posted the information. The majority of participants mentioned that they do not believe the information posted by self-claimed dietitians. This is because these have no scientific background, unlike scientists, who do. Consequently, these post mostly on platforms such as LinkedIn and Twitter. The self-claimed dietitians are seen more on Instagram and TikTok.

'If it's someone recognized as a nutrition expert, then I believe what they say. But if I see recipes from self-claimed dietitians claiming it to be very nutritious and stuff, then I think they try too hard, it's not trustworthy anymore.' -P37(31, F)

'I don't really trust those self-made dietitians who all appear on Instagram, I honestly don't trust that.' -P44 (23, M)

'The different in trust lays within if it's a brand or a researcher who posted it. If I know find information that I would really trust, it would come from a platform like LinkedIn.' -P05(25, F)

As participant P05 mentioned, information posted by brands is often seen as less reliable. Participants feel that brands only promote plant-based foods to make more money, they do not really stand behind the environmental and animal welfare benefits according to them. They claim that these brands only follow trends, which is now veganism.

'That's just because they feel that's becoming a hype among the youth, all those plantbased things.' -P42(23, F)

'Yes I also think on Instagram, that's hip now, all those plant-based stuff, and they just get a lot more attention and money for promoting it.' -P46(24, F)

They also mention that the recipes shown on social media often look much tastier than they actually are, also these are insidious because in the videos it seems that they are prepared very quickly, which in reality they are not.

A large portion of the participants did mention that this lack of trust is mainly due to their scientific knowledge. They think that people without a scientific background would have greater trust in this information.

'We have enough prior knowledge to understand that. But for other people, that is indeed difficult.' -P44(23, M)

'We are also very critically trained; we are going to interpret things very critically just because we have been taught to question it.' -P43 (24, F)

'Because of my background, I know a lot about foot and nutrition, and they're often so wrong on social media. ' -P37(31, F)

4.5 Social media as a Convincing Factor for Plant-based Food

When asked if social media played a role in their decision to switch to a plant-based diet, 20% of participants indicated that it did. Notably, 25% of those who responded in the affirmative stated that their switch was prompted by the viewing of videos depicting slaughterhouses produced by animal activist organizations.

'For me I think my shift towards plant-based food also came from social media, because of the awareness that was spread through social media about the environmental aspects. These made me shift towards it.' -P05 (25, F)

'Well, for me, **going vegetarian was because of social media** mostly because, you know, I was young and I was scrolling on Facebook. And then you see all these videos of how animals are really treated. And then you know, you see all the blood and how they're slaughtered, so it disgusts you. And then that's when I decided to become vegetarian. So I think it had a very big impact on me. ' - P32 (22, F)

The other participants mentioned that their switch came more from their own ideology; for the environment and animal welfare, or through friends or family eating more plant-based. Although for 36% of participants, social media caused them to broaden their plant-based diet. Things they saw on social media were sometimes the trigger for switching.

'It didn't make me shift, but it made me **increase my plant-based consumption**. I still eat non plant-based food, but I think the amount of vegan/plant-based food I use now is increased due to social media.' -P04 (24, F)

'I wouldn't say it was like the start for eating plant-based, but definitely **has an impact**. Because I don't know. It's like getting more and more popular and to see, like influencers making healthy food and then you're like, OK, I want to be like them. So, I'm also going to eat like that. So yeah, it has a big impact I think. ' - P21 (25, F)

4.6 Plant-based Food on Social Media

During the discussion, the participants themselves often distinguished between different types of social media posts dealing with plant-based food. These can be divided into 4 categories, which can be seen in Table 4.

1. Advertisements	2. Activistic	3. Non-	4. Friends/
	posts	sponsored	Peers
		influencers	
Posts that are clearly	Posts posted by	People one does not	People one knows
sponsored by brands or	activist	know who talk about	who talk about
influencers, with the	organizations,	plant-based food	plant-based food.
goal of purchasing	vouching for animal	without being paid	
products.	welfare. Such as	to do so.	
	Gaia or Peta.		

 TABLE 4: CATEGORIES OF PLANT-BASED FOOD POSTS

4.6.1 Sentiments

Participants were surveyed about the feelings they felt when seeing plant-based posts on social media. One participant described it as follows:

'I feel like the emotions are very much **one out of two ways**. it's either very happily, very like sunshine and summer breeze. And, then on the other side it can be so passive aggressive, like mean almost.' -P08 (26, F)

She mentions that the feelings are either very positive or very negative, and not somewhere in between. This is something that resonated with many participants' responses. Only 12% did not really have positive or negative feelings when seeing posts about plant-based food, they felt rather neutral.

When presented with posts on their social media platforms about plant-based food, 56% of the participants report feeling positively impacted. They find the posts inspiring, aesthetically pleasing, and attractive. These types of posts encourage participants to consume more plant-

based foods without requiring a complete shift to a vegan diet, often by providing easy-tofollow recipes or highlighting small steps that can make an impact. Participants also express a sense of curiosity about plant-based foods.

'I feel I feel like it's more **positive** every time I see it. It it's very bright in colors most of the time also and it always **inspires** me to cook more.' -P13 (20, F)

'Rather **inspiring** or something? Yes, it's like "look how easy it is to be plant-based" and "you can do it too", yes. ' - P47 (25, F)

'Yes just that it **looks good**, that it looks like this, they make it nice or tasty, so that they make it easy or something. It is always fairly short that it is so **accessible**. And then a few in a series, you can easily follow that page, if there are a few that pass that look really good.' – P49 (23, F)

However, 44% also appear to experience negative feelings when seeing posts about plant-based food. They find these posts pushy, activist, and sometimes even passive aggressive. They do clarify that this is more likely to be the case with informative posts or posts attempting to convince people to become vegan rather than posts with recipes. They get angry because the information is not always accurate, or get the feeling that people are trying to force something on them.

'I think you come across a lot of very **activism** information as well, that is not always correct. That's also why I don't follow any vegan influencers because I do not always agree with the very activistic mindset that often is behind it, like **everyone should be vegan**, and this is the one thing that will save the world. I think it's often **very pushy**.' – P05 (25, F)

'But then if it's more like informational, like nutritional information. Like all these nutritional experts, sometimes it also makes me feel like a bit **mad** or like what is it actually based on?' – P12 (29, F)

'Recently I followed an account on Instagram and it's about plant-based food, but the comment section is always so **aggressive**, like people really harsh on the meat eaters and like sometimes I feel like they are too much. Like it gives me **negative feelings** about plant-based food, of course I understand all the environmental benefits, but then if you really **force people** to change in the way that you want people to change then it's not going to work?' – P14 (28, M)

According to some participants, the constant stream of negative posts can even have a depressing effect on them. They feel powerless to effect change in the face of the poor conditions in the meat industry and the resulting environmental problems. As individuals, they believe that they are only a drop in the ocean and this leads to great pressure and anxiety, causing them to feel bad.

'It was a bit **too much** or something, I was constantly getting those images of dead animals. That really wasn't cool anymore or anything. That suffocated me. I had really some climate **depressions** because **I** can't do anything about it, just be healthy, vegan. And in the long run, that makes you feel bad.' – P45 (22, F) 'Sometimes there are a lot of sad people. Or like people who are more concerned about the impacts on animal welfare and something like that, I mean I have the feeling that they are carrying a big backpack, you know, like on themselves. And I know there is a problem, but they are making me change from the **depression side**, not from the happiness side.' – P11 (29, M)

4.6.2 Examples of Social Media Posts about Plant-based Food

Four social media posts related to plant-based food were also featured each time during the discussions. Participants were allowed to give their free opinions on each of the posts. The first post was a TikTok video by a food influencer, where various plant-based dishes were shown. This post was viewed positively by all participants, especially since it was not an advertisement. They experienced this post as inviting, inspiring, and it aroused curiosity.

'I like the first one the best I think, because you can see like many options of plant-based food and it shows that plant-based food doesn't have to be boring, that it's not just like I don't know lettuce and carrots. So, I really liked that video.' -P21(25, F)

'Yeah, I think the first one is very **appealing**, it's also, I mean, I don't know. She doesn't really want to sell us something. She just wants to show us how nice and good plant-based food can look like and give us **inspiration**; it gives me a very positive vibe.' – P41 (28, F)

The second post was a promotional video from Alpro. Here opinions were divided. Some of the participants found the video interesting because it explains how you can contribute to a better planet just by making a small change in your daily life, by substituting one product. It seems easy and appealing.

'I think that indeed Alpro is a smaller step.' –P49 (23, F)

'The second video was more like "look you can just do one thing" and not too much work, so I would probably rather do that than make the recipes of the first videos.' -P36(23, F)

Others found the video unappealing because it is just another advertisement. They feel it is all about money and not the benefits of plant-based food.

Participants had a negative perception of the third post, which was shared by Alpro and contained a long text about the benefits of plant-based food. While some participants found the text too lengthy and stated that they would never read it, others felt that it was too much of an advertisement and only presented one side of the story. Additionally, participants felt that the post was too scientific for a social media platform.

'With the third one, it was really clearly only one side of the story, it was giving all the advantages; like less water, less CO2, less impact and stuff and then I'm like yeah but what are the disadvantages, because it can't be all good.' -PO2 (21, F)

'The 3rd post with the long answer, I think if I would come across that on Instagram, I wouldn't read it. Because it's very long.' -P32(22, F)

The latter, a video in which Kim Kardashian promotes plant-based chicken nuggets, was unanimously considered negative. Participants felt the post was too sponsored; it is clearly an advertisement. There is also no focus on plant-based, but mainly on the aspect of preparing them quickly and easily. Some also said it looks expensive, since a rich person is presenting the product.

'It's *clearly advertising*, she probably gets so much money for it, but she doesn't mean it sincerely. Also, because whether it was vegan chicken nuggets or not, it was mainly about efficiency and the air fryer.' -P16 (24, F)

However, some do mention that they are a bit biased due to their scientific background. They do think the larger public could be influenced by advertisement posts. It is also mentioned by some that they would be unknowingly influenced anyway. When faced with choices in the store they could end up choosing a product they previously saw on social media.

4.6.3 A Tool to create Awareness

As the discussion came to an end, the participants were asked whether they believe social media could be an effective way to raise awareness about plant-based food. While all participants agreed, they also outlined certain conditions. They stated that social media can be useful in promoting initial changes towards a more plant-based diet, by featuring basic information such as plant-based recipes, demonstrating how to easily replace one product with a plant-based version, promoting challenges, and sharing small adjustments that don't require a complete shift to a plant-based diet.

'Yes it's like the little things you can do. Like give you some inspiration, that can lead to more plant-based in little steps. You don't have to immediately switch your whole diet for it.' -P36 (23, F)

'Yeah, I have like a sister, she's 16, when school tells her something she would be like 'nope I don't listen to you'. But if one of her favorite influencers would be like 'omg this month we are going to do a challenge', then she would rather do it.' -P02(21, F)

'Actually, on social media I see way more vegan recipes than vegetarian. They should try to make it a little bit more in the middle because they make it with all the plant-based stuff and I think maybe that can be something not very clear for people, right?' – P30 (23, F)

According to the participants, the content related to plant-based food on social media should be informative, nuanced, simple, and not pushy. They emphasized the importance of avoiding dangerous content, especially for young people who tend to be easily influenced by what they see online. They also noted that linking personal benefits and a more familiar, traditional approach where they respond to the emotions of the target group can have a greater influence on people.

'And, I also think that has a lot more influence if they link something to it, like you're going to lose a lot of weight or you're going to...' -P46(24, F)

'And I think also promoting while seeing like families or stuff would be more convincing, like seeing a huge plate of food with a family around it, then you see that everyone eats from that and not only like single persons.' -P13 (20, F)

Additionally, participants expressed that they are primarily influenced by posts shared by friends or non-sponsored influencers who have expertise in the subject matter, rather than paid advertisements. They preferred content that requires minimal effort on their part, such as short and straightforward videos, like reels or TikTok. This type of content has a greater impact on their decisions.

'YouTube or Facebook videos were like too long to actually influence you, but now with Instagram reels and TikTok, it's shorter and quicker, but the video content I think is important.' -P05 (25, F)

'I just want to add, like if I would be influenced by people on social media it would be more because of people with backgrounds. Like an education and food related. ' -P34(27, F)

Celebrities

During the study, the participants were asked if they followed certain celebrities on social media, without mentioning that they were vegan. Later, the participants were informed that these celebrities were in fact vegan. Surprisingly, most of the participants were unaware of this fact, and mentioned that they did not follow these individuals specifically because of their veganism.

'I wouldn't necessarily follow them for that reason.' -P16(24, F)

However, some participants did note that these celebrities have significant influence and could potentially raise awareness for plant-based food. Despite this, many participants felt that they couldn't fully embrace a vegan lifestyle or post too much about it on social media because it wasn't a core part of their identity or values.

'I think they have a big influence, they have a lot of followers anyway, and people who want to be them and follow them in everything. '-P17(29, F)

'I do think if there is to be a change it can happen through them.' -P16(24, F)

'I think that they can say it like once, but I don't think that when you go to their profile that you only see food, and like vegetarian stuff. They don't need to push people to be vegetarian. But they can share what they eat **to like inspire people more**, because they do have a big audience.' – P36(23, F)

'I think it would be easier if you have some professionals about plant-based food to give more information about it and stuff. And those famous people don't have to do that, they just can share it like once, or like indeed **just share their meals** or something. But don't give information about it.' – P40 (22, F)

Activistic propaganda

As presented in section 4.6.1, participants mentioned that they often come across passiveaggressive or activist posts about plant-based nutrition on social media. However, they believe that these types of posts have a minimal impact on the average person's eating habits. On the one hand, they create a sense of helplessness, making people feel like their actions won't make any significant difference. 'Because they have something of "my contribution is not going to matter anyway".' – P42 (23, F)

On the other hand, these posts can be shocking and may cause some to switch to a plant-based diet temporarily, but they tend to revert to their old habits shortly after. As a result, the impact of such posts is short-term at best.

'But I see that on social media and then I think "oh no so bad, I have to eat less meat", but in the end it **doesn't convert me to becoming vegetarian**. It's just 2 days that I eat less meat, but after that, it is forgotten. '-P18(24, F)

'If you see a video about a slaughterhouse, you might **feel bad** about yourself, but not say like "oh now I'm never eating meat again". Maybe like **for a short period**, but you will forget about it. '-P38 (21, M)

During the discussions, participants frequently suggested that a combination of passiveaggressive and positive-inspirational posts can effectively raise awareness. The aggressive posts may have a shock value that prompts people to think more, while the positive posts can encourage them to maintain their new habits. One participant neatly summarized this approach as follows:

'I think like for the impact, if they show you like really negative videos, you will remember them for a few days, and maybe you will stop eating meat for a few days or a few weeks, but then it will stop. But for the positive videos, those will more change the mind of a person and that's more like a real habit that would change. So I think it should be a **combination of the two**. Like it could start with a negative video, but to make it work and to maintain it to stay vegetarian or plant-based, I think the positive videos are more necessary. Like with more information and inspiration.' – P36 (23, F)

Additional factors

Participants noted that while social media can be effective in promoting plant-based diets, there are other equally important factors that need to be considered. This is particularly relevant for those who are not seeing food-related content through social media due to their algorithm. For instance, educational institutions should provide more attention and education on plant-based diets. Additionally, one's social circle can greatly influence their dietary choices, so promoting plant-based eating within personal networks can be impactful. Lastly, participants acknowledged that promotions in supermarkets can also influence their purchasing decisions. When vegetarian products are on sale, they are more likely to choose them over meat options.

'I think that maybe need to come from schools and other institutions as well, and not only from social media.' -P05(25, F)

'I think it's really through your friends. If you have like a variety of friends and you don't, yeah belong to just one similar group. Then that friend who's like a vegetarian, vegan will be able to share their posts or stories. And then you will be aware, yeah.' – P31(37, M)

'I chase the promos so if the vegetarian stuff is in promo, then I eat the vegetarian alternatives that week.' -P47(25, F)

4.6.4 Plant-based Food without Social Media

One of the backup questions, which ended up being asked in almost every focus group anyway, was whether the attention and awareness for plant-based food would be the same if social media did not exist. All participants responded negatively, stating that without social media, the popularity of plant-based food would not be as widespread, and a smaller percentage of the population would adopt a vegan lifestyle. Participants noted that social media has expanded our world, including the variety of foods available, and people are now aware of plant-based food products from all over the globe. Additionally, social media has made it easier to consume plant-based food and provides a sense of community among peers who also follow a plant-based diet.

'I think it would still be there, but not as prominent as it is now.' -P02(21, F)

'I just think, social media has made our world so much bigger to say. Now you see recipes from all over the world and influencers from all over the world also with other cuisines and stuff and...' – P47 (25, F)

Without social media, participants claim that people would have less knowledge of all the options out there regarding plant-based foods, as well as all the benefits of consuming a plant-based diet. There would also be less positivity towards plant-based food. According to them, this is also mainly because it is a trend on social media these days to be vegan.

'There would also be no demand, the supply would be much smaller, it wouldn't be attractive. It would be much less figured out which variants they can still make.' -P49 (23, F)

'I think people wouldn't care as much about eating plant-based. Because I feel like eating plant-based and healthier in general is like some kind of trend that is going on right now on social media.' -P21(25, F)

The participants did suspect that there would be a shift to more plant-based diets among humanity, but it would just be smaller and much slower in coming. Social media magnifies and amplifies this shift, according to them.

4.7 Stereotypical Plant-based Diet Follower

In order to facilitate a coherent and focused discussion, most groups were prompted to share their perception of a stereotypical individual who follows a plant-based diet. Two distinct stereotypes emerged from their responses. Participants generally view a plant-based diet follower as an alternative individual, often using the term "hipster" to describe them. Gender is not a factor in this perception. This person is typically highly motivated by their convictions regarding the welfare of animals and the planet and is quite vocal about it. However, it was evident from the responses that this stereotype is somewhat outdated, stemming from the hippie movement.

'A hipster with so many baggy clothes, so that they bought in the thrift store, the secondhand store. Yes, that's really stereotypical, but it is.' -P44(23, M)

'Yes, it is the people who really do that out of conviction, and for the planet and the animal suffering.' -P27(24, F)

Participants also mentioned the emergence of a new stereotype due to social media. This stereotype mostly consists of women and young people. People describe them as skinny, affluent individuals with plenty of free time. They start following a plant-based diet because it is trendy rather than due to environmental and animal welfare concerns. They do so simply because they can afford to and to participate in this new trend to go vegan.

'I think for me, when I see the women, she is white, skinny, has a lot of time. That's a very stereotypical vegan person for me.' -P01(24, F)

'But I think you also have some who do that out of privilege, they still have the means to do it and follow that new trend like that.' -P27(24, F)

Both stereotypes share a common trait of living a conscious lifestyle. The first stereotype is conscious about their food choices for the sake of the environment and animals, while the second stereotype is more conscious about their health and image.

'So, I think if you have to say how do you consider or describe someone who is plantbased, someone who just immediately thinks a little more about what it is, people who are aware of what they put in their mouths.' - P42 (23, F)

Interestingly, participants mentioned that they now see fewer and fewer stereotypes than before. It is often the case that their parents or grandparents hold certain stereotypes. Moreover, it should be mentioned that these stereotypes are mostly prevalent in Western cultures. In other cultures, religion often plays a bigger role in the decision to consume a plant-based diet, according to the participants.

5 Discussion

5.1 Findings

After conducting an in-depth literature review, it is evident that there are still several aspects regarding social media and plant-based food that have not been explored. To gain a better understanding of millennials' trust in social media content about plant-based food, the emotions they experience when exposed to such content, and the role of social media in promoting plant-based food, a qualitative research approach was employed. This involved conducting a study using focus groups to examine how social media influences millennials' consumer behavior towards plant-based food. A total of 11 sessions were conducted with 50 participants, each lasting 52-75 minutes. The discussions encompassed reasons for consuming plant-based food, social media usage related to food content, and the overall impact of social media on millennials' behavior. The findings were compared to existing literature, and the research questions were addressed.

All participants in this study had consumed plant-based food at some point, as it was a requirement for participation. However, they had different reasons for doing so. Most participants cited environmental reasons as their motivation. This finding is consistent with the literature, which shows that millennials are the first generation to prioritize sustainability and the environment in their lives. For instance, Klimkiewicz & Oltra's (2017) study demonstrated that millennials are willing to spend more money on sustainable products. As in the study of Knaapila, Michel, Jouppila, Sontag-Strohm, & Piironen (2022) are environmental reasons, along with animal welfare, the main reason for consuming plant-based foods. The other reasons also included taste, variety, religion, novelty, and acquaintances who eat plant-based food.

The participants also discussed several personal benefits associated with consuming plant-based food. Notably, they reported experiencing health benefits, which aligns with existing literature about the benefits of consuming a plant-based diet (Grant, 2017). Specifically, they reported improvements in digestion, reduced cholesterol levels, and enhanced cardiovascular health, leading to an overall improvement in their well-being. Additionally, the participants perceived benefits for their mental health, feeling a sense of satisfaction for contributing to the environment. However, the literature remains inconclusive regarding the causal relationship between a plant-based diet and mental health, as some studies have reported contradictory findings (Fehér, Gazdecki, Véha, Szakály, & Szakály, 2020b; Medawar, Huhn, Villringer, & Veronica Witte, 2019b). Some participants also mention that they found it cheaper. Notably, these individuals were all students without a stable income, making their observation understandable.

Despite the benefits of consuming plant-based food, participants in the study also reported facing some challenges and difficulties when trying to adopt a plant-based diet, which occasionally leads them to prefer meat. They mention that they are often not full enough, nor are they sure if they are getting all the nutrients they need when they only eat plant-based food. It should be noted that a subset of participants expressed concerns about the potential health risks of a plant-based diet. These participants had an advanced understanding of nutrition and emphasized the importance of a diverse, minimally processed diet to achieve optimal health. They cautioned that consuming a limited range of plant-based foods or relying on heavily processed alternatives could compromise the health benefits of a plant-based diet. Also, plantbased food is often seen as more expensive.

When comparing these difficulties with the benefits, conflicting answers emerge. For instance, there are uncertainties regarding the health benefits. These findings align with the findings of Satija et al. (2017a), which shows that a high hPDI offers health advantages, while a high uPDI leads to an unhealthy lifestyle. Many of the participants still lack knowledge about

this. The participants had differing opinions on the cost of plant-based food as well, with some finding it cheaper and others finding it more expensive. This discrepancy could be attributed to variations in the type of plant-based food that each individual purchases, as well as their dining habits. Those who frequently dine out may find plant-based options to be more expensive, while those who predominantly cook at home may find it to be a more economical choice. Additionally, many participants observed that meat substitutes tend to be more costly, whereas purchasing whole plant-based foods is typically more affordable.

When participants see food-related content on social media, it is mainly on Instagram, followed by YouTube, due to their visual nature. This contrasts with previous literature, which found Facebook to be the dominant platform (Celimli & Adanacioglu, 2021; Vlachvei & Notta, 2015). However, since the current study focuses on millennials, it is possible that Facebook may be considered outdated by this age group compared to a broader audience. This notion finds support in a study conducted by Pew Research Center (2021), which demonstrated that Instagram has surpassed Facebook as the most popular social media platform among the 18-29 age group, the predominant age range in our research.

Participants mostly see recipes on social media and around 20% of them come across only plant-based dishes without searching for them. They also passively view tips on switching to a plant-based diet and advertisements. When they actively use social media for food content, it is to look up restaurants or recipes. Some participants share information about plant-based food themselves.

Social media has a significant impact on millennials' eating habits through remote acculturation, just as previous research by Ferguson et al. (2016) had already shown. A majority (94%) reported being influenced by recipes or advertisements to unconsciously buy food products from time to time. In fact, some have even developed new eating habits, such as consuming more plant-based food. About 56% of participants follow food-related influencers or pages on social media. However, price, taste, and recommendations from friends and family remain important factors in their food choices, which aligns with previous literature about millennials' food choices (Dilistan Shipman, 2020).

To answer the first research question about how millennials' trust in plant-based food evolves when they see it on social media, they were asked about their trust in plant-based food in general, and their trust in social media posts about plant-based food. The findings show that 72% of the participants expressed doubts about the health benefits of plant-based food in general, they do not trust that processed plant-based alternatives are that much healthier than meat products. In addition, 92% of participants lack confidence in social media posts related to plant-based food, citing exaggerated environmental and animal welfare claims and very questionable nutritional information. Participants question social media posts from brands and self-proclaimed dieticians harshly, while they are more likely to believe posts from recognized scientists or knowledgeable individuals. Thus, as in Salma Irelli & Chaerudin's (2020) study, it is clear that millennials have more trust in UGC than in BGC. It should be noted that these results may not be generalized to the entire target group, as this 92% of participants have a higher education and scientific background.

Upon examining four social media posts related to plant-based foods, several observations can be made. It is evident that millennials do not find posts by celebrity influencers that are sponsored by companies appealing. These posts are perceived skeptically and are not considered effective, aligning with the existing literature where BGC is generally viewed negatively and unappealing by consumers (Goh, Heng, & Lin, 2013; Salma Irelli & Chaerudin, 2020). Additionally, posts with long and scientific text are also deemed ineffective. Alternative strategies for promoting plant-based foods, such as non-sponsored inspirational videos or videos highlighting the environmental impact of small lifestyle adjustments, are more successful. However, millennials still maintain skepticism towards posts directly shared by companies.

Participants' responses were divided when asked about their emotions when seeing social media posts about plant-based foods. Some experienced very positive emotions when seeing recipes or other non-sponsored content, finding the posts inspiring and encouraging them to eat more plant-based food. However, highly activist posts were met with negative feelings, including anger and depression. Some participants mentioned that these posts may have a temporary effect, but they ultimately forget about them. A combination of both types of posts is recommended, with activist posts serving as a shock effect to initiate the switch to plant-based and positive posts helping to maintain this dietary lifestyle.

To answer the **second research question**, the study found that content from nonsponsored influencers and friends is the most effective in promoting plant-based food. It should be simple and short, preferably in the form of a video, to minimize the user's effort. Thus, it can be said that Instagram Reels and TikTok's are highly popular. This type of content encourages small steps and helps to maintain a plant-based lifestyle. However, activist posts can also have a place in promoting plant-based diets by providing a shock effect to initiate the switch.

According to the participants, social media has had a clear impact on millennials' adoption of plant-based foods. As the literature has already indicated, 50% of millennials consume plantbased food on a weekly basis (Knaapila et al., 2022). This study reveals that 20% of them made this switch due to social media, and 36% said that social media has broadened and increased their consumption of plant-based foods. As previously explored in the literature, social media significantly shapes millennials' consumption patterns (Dilistan Shipman, 2020). It serves as their primary source of information for finding recipes and gathering nutritional information (Dabija, Bejan, et al., 2018). Moreover, they are strongly influenced in their food choices by comments and reviews on social media (Dilistan Shipman, 2020). Additionally, there is an increasing dissemination of environmental awareness through social media, which indirectly impacts their dietary decisions (Lu et al., 2013). These findings are further reinforced by the participants in this study. Participants believe that without social media, their perceptions of plant-based foods would not be the same. Social media has made it easier and more accessible for consumers to learn about the benefits and options available for plant-based diets. It has also helped spread positivity about plant-based diets. Although the shift towards plant-based diets would eventually happen, social media reinforces and amplifies this dietary lifestyle, making it more popular and widespread. So, in this way, social media has certainly already played a role as a tool to raise awareness of plant-based food.

To optimize social media as a tool for promoting plant-based diets, participants provided several suggestions. They argue that social media can only bring about changes in people's eating habits by disseminating basic and easy-to-understand information that is nuanced, simple, and not pushy. They mentioned examples like short TikTok's or Instagram reels containing basic plant-based recipes or containing tips for changing to a plant-based diet in small steps. As well, the content should come from a non-sponsored person with clear knowledge of the subject, such as a degree in nutrition. Dietitians giving simple and basic information or tips for following a nutritious plant-based diet are very effective. Finally, linking personal benefits or traditional aspects to following a plant-based diet can have a motivating effect, such as mentioning you'll feel more energized by eating a certain plant-based recipe etc.

Celebrities can also play a role in promoting plant-based diets on social media, but participants suggest they do so in moderation, as it may not be part of their identity. Nonetheless, it is okay for them to occasionally share their experiences to inspire others.

While social media can be an effective tool for promoting plant-based foods, it should not be relied upon as the sole means of raising awareness. Participants acknowledged that nutrition education in schools, social circle influences, and supermarket promotions also play significant roles in promoting plant-based diets.

5.2 Implications

First and foremost, this study reveals that millennials have little to no trust in social media content about plant-based food. This is particularly true when the content is generated by brands or sponsored influencers. As a consequence, millennials often develop aversions to the promoted products or begin to question even accurate information. If brands still wish to promote their plant-based products, it is advisable to utilize short, inspiring videos that demonstrate how one product can be replaced by a plant-based alternative in a specific recipe. It is evident that this content must remain inspirational and positive, without including scientific information. However, linking personal benefits to the consumer is recommended.

To further promote plant-based diets among millennials, it will be necessary for other millennials or influencers who already follow a plant-based diet to take a step forward, as they are seen as the most credible and inspiring. Millennials mentioned that their peers have a significant influence on them. Celebrities can also occasionally mention their adherence to a plant-based diet, but they should avoid excessive pushiness, as it may come across as something millennials are being forced into.

Furthermore, the government can play a role in promoting plant-based food through social media by adjusting their policies. They can occasionally incorporate positive and inspiring videos into millennials' social media platforms. It is recommended to involve individuals with clear knowledge and a scientific background on this topic in these videos. Since a lack of nutritional knowledge is a primary reason why millennials may not fully adopt a plant-based diet, improved nutrition education in schools is necessary.

5.3 Limitations and further research

During the literature review of this topic, a section on social media as a marketing tool was also mentioned in section 2.1.3. However, this aspect was not further addressed in the study, as it was deemed irrelevant to the research questions after analyzing the research results. Additional research could be conducted to explore the potential of social media as a marketing tool for plant-based food, including which approach is the most effective: passive or active, and which category of active approach. A quantitative study with a questionnaire could be conducted to assess which approach is appealing. In this study, distinctions could also be made based on age and gender. An example of this can be seen in a study conducted by Francisco et al. (2021).

In addition, more focus groups could be conducted on the same topic, as the target group of 50 participants in this study may not be representative of the broader millennial population. Given that this study recruited primarily highly educated individuals, with a higher proportion of women than men, and with 66% of participants under the age of 25, further research may aim to recruit a more diverse target group regarding age, gender, and educational level. Moreover, given the differences in attitudes and behaviors between millennials and Generation Z, it may be worthwhile to conduct a separate study focusing specifically on the latter group to gain a deeper understanding of their perceptions of plant-based food and their use of social media.

Potential interactions and diverse perspectives may have been overlooked due to self-reporting bias and the small meeting room, which only allowed for a maximum of six participants and often had fewer due to cancellations or low registration. Also, there may be possible time biases because there is a three-week time difference between the first and last focus group. For example, negative or positive news about plant-based diets may have appeared in that time period, which may influence the participant's answers. Future studies could explore alternative methods for data collection, such as online surveys or larger focus group settings to achieve new interactions and perspectives.

Furthermore, the study revealed some disagreement among participants regarding the potential impact of a plant-based diet on millennials' mental well-being. Therefore, further research is needed to explore the relationship between plant-based food consumption and mental health, as well as the role of social media in shaping these attitudes and behaviors.

Lastly, during the discussion, an interesting topic was brought up that was not directly related to the research question. This topic concerned the description of a stereotypical plant-based diet follower, as provided by the participants. While it was not addressed in the research question, it is still a valuable point of consideration as it sheds light on the perceptions and preconceived notions surrounding plant-based diets. Further exploration of this topic could provide insight into potential barriers or facilitators to adopting a plant-based diet and inform future research in this area.

6 Conclusion

In conclusion, this study aimed to examine the impact of social media on millennials' consumer behavior towards plant-based food. Through a comprehensive literature review and a focus group study, we gained valuable insights into this subject.

The findings from the first part of the study revealed that millennials are primarily motivated by environmental reasons and animal welfare when consuming plant-based foods, aligning with previous research. Furthermore, participants reported experiencing various health benefits, including improved mental health, which remains an area with limited clarity in existing literature. Common challenges related to adopting a plant-based diet faced by millennials include feeling unfulfilled and lacking knowledge about the nutritional content of plant-based foods, consistent with previous studies.

In addressing the research questions, it was evident that millennials have limited trust in information about plant-based food, particularly on social media. Non-sponsored content from individuals was found to be more trusted compared to brand-sponsored content, as supported by prior literature.

The second part of the study examined the participants' responses to different types of social media posts related to plant-based food. It was inferred that a combination of activist posts and short (maximum 30 seconds), inspiring videos proved to be the most effective in promoting plant-based food to millennials. These content formats facilitate initial behavioral change and promote the sustainability of a plant-based diet.

Overall, social media already plays a significant role in promoting plant-based food among millennials, with 36% of participants reporting increased consumption due to its influence. Social media platforms contribute to a more positive perception of plant-based food and facilitate its global dissemination. To optimize social media as a tool for promoting plant-based food, we propose three approaches: (1) emphasizing basic, easy-to-understand information through short videos, (2) utilizing non-sponsored channels for content dissemination, and (3) highlighting personal benefits associated with consuming plant-based food. These strategies can enhance the effectiveness of social media in driving attention towards plant-based options.

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Appendix A: Poster first week



PARTICIPANTS WANTED

age 20-40



20/3, 10 am or 2 pm 21/3, 2 pm 22/3, 10 am



Campus Coupure

Are you a frequent social media user?

Did you ever consume plantbased food?

> For a study on the social media influence on plant-based food consumption, we are looking for participants to discuss this topic in a focus group (115h). Vegetarianism/ veganism is not required; you must have consumed plant-based food at some point before.

€15 gift voucher for each participant

Interested? Contact me: sigrid.debleecker@gent.be or +32492673127 (whatsapp)

Appendix B: Socio-demographics participants

 TABLE 5: SOCIO-DEMOGRAPHICS PARTICIPANTS

						Session	n (n)						
	1	2	3	4	5	6	7	8	9	10	11	Total (n)	Tota (%)
Total participants	5	5	4	4	4	5	4	4	6	4	5	50	100
Gender													
Male	1	1	2	0	1	1	1	2	2	1	2	14	28
Female	4	4	2	4	3	4	3	2	4	3	3	36	72
Age													
20-25	5	2	1	2	3	5	3	1	3	4	4	33	66
26-30	0	3	3	2	0	0	0	3	1	0	1	13	26
31-35	0	0	0	0	0	0	0	0	1	0	0	1	2
36-40	0	0	0	0	1	0	1	0	1	0	0	3	6
Highest degree													
Highschool	1	0	1	0	0	1	0	1	0	1	0	5	10
Bachelor	2	2	0	2	1	1	3	0	3	1	3	18	36
Master	2	3	3	2	2	3	1	3	2	2	2	25	50
PhD	0	0	0	0	1	0	0	0	1	0	0	2	4
Dietary lifestyle													
Omnivore	4	2	2	2	3	4	1	0	4	1	2	25	50
Flexitarian	0	2	1	2	0	0	3	2	2	1	1	14	28
Pescatarian	0	0	1	0	0	0	0	0	0	2	2	5	10
Vegetarian	1	1	0	0	0	1	0	2	0	0	0	5	10
Vegan	0	0	0	0	1	0	0	0	0	0	0	1	2
Frequency of social media u	se												
Daily	4	5	3	4	4	5	4	4	5	4	5	47	94
Not-daily	1	0	1	0	0	0	0	0	1	0	0	3	6

Appendix C: Socio-demographics participants per session

1. 66001011	1 20/03/2023	10 um			
TABLE 6: SOCI	O-DEMOGRAPH	HICS SESSION 1			
Participant	P01	P02	P03	P04	P05
Gender	F	F	М	F	F
Age	24	21	25	24	25
Occupation	Yoga	Student	Bio-engineer	Student	PhD Student
	Teacher				
Highest	Bachelor	Highschool	Master	Bachelor	Master
education					
Nationality	Belgium	Belgium	Belgium	Slovenia	Belgium
Dietary	Omnivore	Vegetarian	Omnivore	Omnivore	Omnivore
Lifestyle		-			
Frequency	Daily	Daily	Not daily	Daily	Daily
of social	-	-	-	-	-
media use					

1. Session 1 - 20/03/2023 – 10 am

2. Session 2 – 20/03/2023 – 2 pm TABLE 7: SOCIO-DEMOGRAPHICS SESSION 2

Participant	P06	P07	P08	P09	P10
Gender	F	М	F	F	F
Age	27	26	26	21	24
Occupation	PhD Student	PhD Student	PhD Student	Student	Student
Highest	Master	Master	Master	Bachelor	Bachelor
education					
Nationality	Italy	The	Belgium	Belgium	Belgium
		Philippines			
Dietary	Omnivore	Omnivore	Flexitarian	Vegetarian	Flexitarian
Lifestyle					
Frequency	Daily	Daily	Daily	Daily	Daily
of social					
media use					

3.	Session	3 –	21/03/2	2023 -	2 pm
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	1
TABLE 8: SOCIO-DEMOGRAPHICS	SESSION 3

Participant	P11	P12	P13	P14
Gender	М	F	F	М
Age	27	26	26	21
Occupation	PhD Student	PhD Student	Student	PhD Student
Highest education	Master	Master	Highschool	Master
Nationality	Mexico	Belgium	Belgium	Vietnam
Dietary Lifestyle	Omnivore	Pescatarian	Flexitarian	Omnivore
Frequency of social media use	Daily	Daily	Not daily	Daily

4. Session $4 - \frac{22}{03} - \frac{10}{2023} - 10$ am

TABLE 9: S	SOCIO-DEMOGRAPHICS SESSION 4

Participant	P15	P16	P17	P18
Gender	F	F	F	F
Age	26	24	29	24
Occupation	Administrive assistant	Student	Social worker	Student
Highest education	Master	Master	Bachelor	Bachelor
Nationality	Belgium	Belgium	Belgium	Belgium
Dietary Lifestyle	Flexitarian	Omnivore	Flexitarian	Omnivore
Frequency of social media use	Daily	Daily	Daily	Daily

5. Session 5 – 28/03/2023 – 2 pm

TABLE 10: SOCIO-DEMOGRAPHICS SESSION 5

Participant	P19	P20	P21	P22
Gender	F	F	F	Μ
Age	22	24	25	38
Occupation	Student	PhD Student	Student	Software developer
Highest education	Bachelor	Master	Master	PhD
Nationality	Belgium	Indonesia	Belgium	Belgium
Dietary Lifestyle	Omnivore	Omnivore	Omnivore, halal	Vegan
Frequency of social media use	Daily	Daily	Daily	Daily

6. Session 6 – 28/03/2023 – 6 pm

 TABLE 11: SOCIO-DEMOGRAPHICS SESSION 6

Participant	P23	P24	P25	P26	P27
Gender	F	F	М	F	F
Age	24	24	24	23	24
Occupation	R&D and	Visual	Accountmanager	Supply	Architect
	Innovation employee	designer		chain trainee	
Highest	Master	Bachelor	Highschool	Master	Master
education					
Nationality	Belgium	Belgium	Belgium	Belgium	Belgium
Dietary	Omnivore	Vegetarian	Omnivore	Omnivore	Omnivore
Lifestyle		-			
Frequency	Daily	Daily	Daily	Daily	Daily
of social					
media use					

7. Session $7 - \frac{29}{03} - \frac{10}{2023} - 10$ am

Participant	P28	P29	P30	P31
Gender	F	F	F	М
Age	24	24	23	37
Occupation	Student	Student	Student	PhD Researcher
Highest	Bachelor	Bachelor	Bachelor	Master
education				
Nationality	America	Spain	Belgium	The Philippines
Dietary	Flexitarian	Flexitarian	Flexitarian	Omnivore
Lifestyle				
Frequency of	Daily	Daily	Daily	Daily
social media				
use				

TABLE 12: SOCIO-DEMOGRAPHICS SESSION 7

8. Session 8 – 29/03/2023 – 2 pm TABLE 13: SOCIO-DEMOGRAPHICS SESSION 8

Participant	P32	P33	P34	P35	
Gender	F	М	F	М	
Age	22	27	27	27	
Occupation	Student	PhD Student	PhD Student	PhD Student/	
			Consulta		
Highest	Highschool	Master	Master	Master	
education					
Nationality	Belgium	The Netherlands	Belgium	Russia	
Dietary	Vegetarian	Flexitarian	Vegetarian	Flexitarian	
Lifestyle					
Frequency of	Daily	Daily	Daily	Daily	
social media					
use					

9. Session 9 – 30/03/2023 – 10 am

 TABLE 14: SOCIO-DEMOGRAPHICS SESSION 9

Participant	P36	P37	P38	P39	P40	P41
Gender	F	F	М	М	F	F
Age	23	31	21	38	22	28
Occupation	Student/	PhD	Student	Post-doctor	Student	PhD
	Dietitian	Student		researcher		Student
Highest	Bachelor	Master	Bachelor	PhD	Bachelor	Master
education						
Nationality	Belgium	Belgium	Belgium	Colombia	China	Ethiopia
Dietary	Omnivore	Omnivore	Flexitarian	Omnivore	Omnivore	Flexitarian
Lifestyle						
Frequency	Daily	Daily	Daily	Daily	Daily	Not-daily
of social						
media use						

10. Session 10 – 03/04/2023 – 2 pm
TABLE 15: SOCIO-DEMOGRAPHICS SESSION 10

Participant	P42	P43	P44 P45	
Gender	F	F	М	F
Age	23	24	23	22
Occupation	Student	PhD Student	PhD Student	Student
Highest	Bachelor	Master	Master	Highschool
education				-
Nationality	Belgium	Belgium	Belgium	Belgium
Dietary	Pescatarian &	Flexitarian	Omnivore	Pescatarian
Lifestyle	Lactose-free			
Frequency of	Daily	Daily	Daily	Daily
social media				
use				

11. Session 11 - 04/04/2023 - 10 am

 TABLE 16: SOCIO-DEMOGRAPHICS SESSION 11

Participant	P46	P47	P48	P49	P50
Gender	F	F	М	F	М
Age	24	25	26	23	22
Occupation	Student	PhD Student	Lab Manager	Student	Student
Highest	Bachelor	Master	Master	Bachelor	Bachelor
education					
Nationality	Belgium	Belgium	Belgium	Belgium	Belgium
Dietary	Omnivore	Flexitarian	Omnivore	Pescatarian	Pescatarian
Lifestyle					
Frequency	Daily	Daily	Daily	Daily	Daily
of social					
media use					

Appendix D: Information sheet

Focus group study - Social media, plant-based food, and millennials



INFORMATION SHEET FOR PARTICIPANTS

We would like to invite you to participate in this master thesis research. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information.

Background and objective of the study

Nowadays, the utilization of social media is ubiquitous, and it continues to integrate into the daily life, particularly among teenagers and adults aged 20 - 45 years old, where mostly are considered as millennial generation. Consumers are also using social media to find information regarding food, including news, reviews, recipe, food safety, and others. Meanwhile, the trend of plant-based food is rising. However, the influence of social media towards consumers behavior regarding plant-based food is still unclear. Therefore, the objective of this topic is to investigate the effect of social media on consumers behavior towards plant-based food.

Importance and contribution of the study

Due to the newness of both issues, social media and plant-based food, many questions and connections remain unanswered; do millennials actively seek information about plant-based food on social media? is social media a good tool to increase the awareness of plant-based food? etc. In this study, we aim to have these questions and connections answered and clarified by millennials themselves. We want to find out how this target group is influenced by social media, regarding plant-based food.

What will happen during the focus group?

Each focus group will consist of 6-8 participants (age 20-40) who will be asked to discuss about the different topics. The focus group session will be AUDIO-RECORDED; however, all personal information will be removed in the data processing to protect the identity of all participants. Should you have any objection towards the recording, please let the researchers know about your concerns. You can find the contact information of the researchers at the bottom of this page. Master's student, Sigrid De Bleecker, will lead the discussion in each focus group and guide you through the different topics we want to explore. There are no right or wrong answers in such a discussion - we are simply interested in your opinions. You can expect the study to take about an hour to an hour and a half (including registration and group discussion).

What will happen to the results?

The recordings will be transcribed and analyzed for patterns and connections by the master's student. The results will appear in the thesis report, and they will not contain any personal information. If you are interested in the results, you can contact Sigrid after the study is finished.

Contact information

For further information and to ask any questions that you might have, contact one of the researchers.

- Sigrid De Bleecker, Email: sigrid.debleecker@ugent.be Phone: +32492673127
- Listia Rini, Email: listia.rini@ugent.be

Appendix E: Consent form

Focus group study – Social media, plant-based food, and millennials



Informed consent

I declare hereby that I, as a participant in a research project in the Department of Agricultural Economics under direction of prof. Hans De Steur at Ghent University:

- have been informed about the research objectives, the questions and the tasks that
 I will encounter during the research and that I was given the opportunity to receive
 further information if desired;
- 2. will participate out of free will in the research project;
- 3. agree to have the focus group audio-recorded;
- 4. agree to maintain the confidentiality of information shared in this focus group;
- give informed consent to the researchers to process, store for at least 10 years and report my data in a anonymized form, which is in accordance with the European General Data Protection Regulation (GDPR) law and will be protected the Principal Investigator of the project (Prof. Hans De Steur, Email: Hans.DeSteur@UGent.be);
- 6. am aware of the option to stop my participation in this research at any moment in time without having to provide a reason;
- 7. know that participating or stopping my participation in the research has no negative consequences of any kind for me;
- 8. am aware of the option to ask the researcher(s) for a summary of the results after the study is finished and the results have been known;
- 9. agree that my data may be used for further analysis by other researchers of the research division of Prof. Hans De Steur after complete anonymization;
- 10. am aware that UGent is the responsible entity with regards to the personal information collected during the study. I am also aware that the data protection officer can give me more information about the protection of my personal information. Contact: privacy@ugent.be

○ Yes, I consent○ No, I do not consent

Appendix F: Discussion guide

(start recording 1)

PART 1. Screener questio s for participants:

Do you use any social media platform: YES/NO Have you ever tried plant-based food: YES/NO

PART 2. Ice breaker

Socio-demographic/introduction round

- o Name
- Gender: m/v/x
- o Age
- Occupation
- Highest education
- o Nationality
- o Dietary lifestyle
- o Frequency of social media use (Daily/Non-daily)

(stop recording 1)

(start recording 2)

INTRODUCTION + DEFINITION

Explaining what plant-based food is:

Plant-based food is defined very broadly. For some, this means excluding all animal products and consuming only "whole foods," which are food products that have been processed as little as possible. These products are usually free of hydrogenated fats and artificial colors, flavors and preservatives.

However, following a plant-based diet does not have to be so strict, for many it simply involves reducing animal products and processed foods, and consuming more nutrient-rich vegetables, fruits, nuts, legumes, lentils and seeds.

PART 3. General

- o PBF
 - Why do you buy/consume PBF? Why not? What are the advantages/disadvantages for you?
 - Do you trust PBF? (The information about it? The advantages?)
- Social media & (PBF) food
 - How has social media already had an influence on what you eat? Do you want to eat more of certain products? Which other eating habits did you create?
 - Do you follow any food influencers/bloggers? Or pages related to food? Which ones?
 - What kind of information do you come across about food on social media?
 And about PBF?
 - \circ $\;$ What information do you actively seek for about food on social media?

- And about PBF?
- Which social media platforms would you use to find information about food?
 And about PBF?
- Which food product have you bought because of social media?
 - Where these products plant based?

PART 5. Social media & plant-based food

- Has social media been the convincing factor for trying/consuming (more) plant-based food?
 - What other role can social media play regarding plant-based food?
- o Do you actively share info about PBF on social media? To whom? What kind of info?
- What do people talk about PBF on social media, what sentiments do people express with these posts and what sentiments do you get when seeing posts about pbf? Are these rather positive or negative?
- Do you follow specific influencers, actresses, celebrities, or companies that promote PBF and how are they influencing you?
 - (Examples: Lizzo, Pamela Anderson, Ellie Goulding, Demi Moore, Ariana Grande, Billie Eilish, Kim Kardashian, Christian Burgess, The Vegan Butcher, Alpro, Beyond meat...)
- Showing them the following posts:
 - PPT
 - What do you think about these posts?
 - Do you want to try this now
 - Do you find these posts convincing?
- Do you trust the information about PBF online?
 - What is needed to make the online content more trustworthy? What gaps do you see when seeing online content about pbf?
- How do you think social media can be a tool to increase the awareness of PBF? What are the advantages and disadvantages of Social media as a tool for this?

PARTr6. Backup questio s

- How and for how long do you know about PBF? Was it through social media?
- What do you think, what kind of people follow a plant-based diet? What kind of people do not?
 - Did you make this assumption because of things you saw on social media?
- Imagine if social media did not exist. How would people view plant-based food then?
 Would there be differences from now?
- Is there a certain connection between social media and food for you? Explain.
- Did you create certain attitudes/thoughts about food because of social media? Which ones?
 - How where these posts so convincing that you changed thoughts?
- If you are scrolling on social media platforms, through what are u influenced the most to buy food? (ads, influencers, friends' posts, TikTok's, brands' posts, other)
 And PBF?
- How do you prefer to receive posts/information about PBF on social media?

Appendix G: Social media posts shown during the discussion

1. First Post



































FIGURE 7: TIKTOK VIDEO $(1^{st}$ post shown during discussion)

2. Second Post

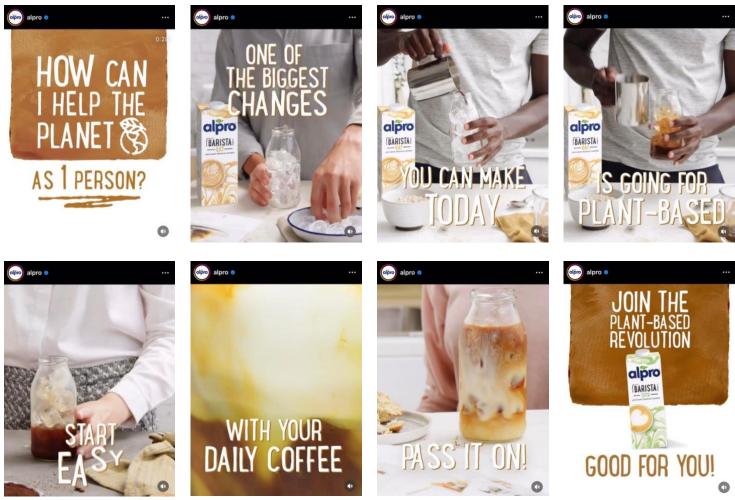


FIGURE 8: INSTAGRAM REEL (2ND POST SHOWN DURING DISCUSSION)

3. Third Post



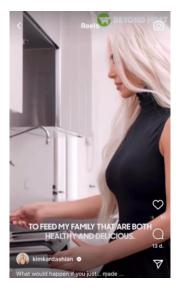
FIGURE 9: INSTAGRAM HIGHLIGHT (3RD POST SHOWN DURING DISCUSSION)

4. Fourth Post





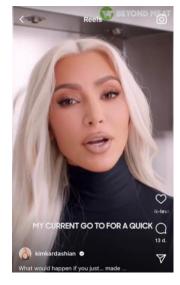
Reels

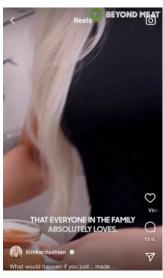


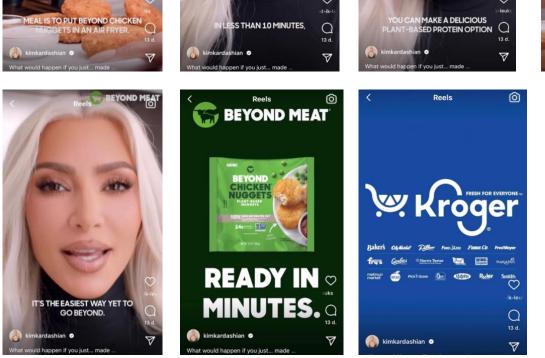
Reels

6

 \heartsuit







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FIGURE 10: INSTAGRAM REEL (4TH POST SHOWN DURING DISCUSSION)