

Where's the beef ?

A quantitative study of the impact of advertising claims on consumer beliefs, attitudes and behavioral intentions in the context of plant-based meat

Abstract

With a growing population to feed and increased focus on reducing unsustainable (for both the planet and the body) food practices, meat consumption and reduction has become a hot topic. Although an increasing number of people are choosing to ditch dairy and say no to meat, most people in the Western world do consume meat, and enjoy doing it. Advertising has long been known to effectively impact consumers' food choices but when it comes to advertising plant-based meat alternatives, marketers and food producers are still finding their best practices. While heavy users of plant-based meat alternatives, vegetarian and vegans, don't need much persuading, same cannot be said about people who have not cut meat from their diets, i.e., flexitarians and meat eaters. Prior research has identified various barriers and drivers for consumption of plant-based meats and the reduction of meat, namely environmental, ethical and health reasons, but it is rather unknown if these potential benefits should be focused on when advertising plant-based meat alternatives to the masses. Therefore, the following thesis aims to evaluate if and how different advertising claims affect meat eaters and flexitarians. Additionally, the thesis also aims to evaluate which behavioral constructs predict purchase intentions for plant-based meat alternatives among these individuals. The study shows that an advertising claim plays an important role but that the type of claim does not matter as much as one would think. Furthermore, flexitarians and meat eaters are impacted differently by advertising claims in the context of plant-based meats. In addition, the study shows that consumer attitudes, subjective norm and moral norms predict purchase intentions. Finally, the study presents managerial implications and avenues for future research in the thriving field of plant-based meat alternatives.

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Definitions

Advertising appeal: Refers to rhetorical ways of persuasion, often underlying the implicit psychology of advertisements (Oxford Reference, 2023).

Advertising claim: A statement made in advertising about the characteristics or benefits of a product or service, designed to persuade an individual to make a purchase (The Universal Marketing Dictionary, 2023).

Flexitarian: An individual consciously reducing meat intake but eating meat now and then (De Backer and Hudders, 2015).

Food neophobia: Refers to a tendency to avoid novel, unfamiliar foods (Hoek et al., 2011).

Food values: Refer to attributes and consequences related to food consumption that can be used to explain choices between a wide range of food products (Lusk & Briggeman, 2009).

Meat eater: An individual who eats (red) meat, fish and chicken (De Backer and Hudders, 2015).

Meat attachment: Defined as a positive bond towards meat (Graça et al., 2015).

Moral norm: An individual's perception of the morally right or wrong behaviour (Ajzen, 1991).

Plant-based meat alternatives (PBMA): In this study, plant-based meat alternatives refer to products that resemble the taste and texture of regular meat but are vegan, often made using soy, peas, wheat or a combination of them (Northcutt, 2022). PBMA is the abbreviation of plant-based meat alternatives.

Subjective norms: Perceived social pressures to perform or not to perform a behavior (Ajzen, 1991).

Vegan: An individual who consumes no food that comes from animals, such as meat, eggs, or dairy products (Merriam-Webster, 2023).

Vegetarian: An individual who does not eat meat: whose diet consists of vegetables, fruits, grains, nuts, and sometimes eggs or dairy products (Merriam-Webster, 2023).

1 Introduction

The following chapters introduce the topic of plant-based meat alternatives (PBMA), the practical importance of the topic for marketers and the problem area related to it. Furthermore, the research questions are outlined, together with expected knowledge contribution and an overview of the disposition of the remaining thesis.

1.1 Background

Long gone are the days where following a vegan or vegetarian diet was seen as a radical, hippie-like and extremist choice. Over the last few decades, reducing the consumption of meat and dairy has become mainstream, which has disrupted the food and beverage market for good. The innovation pace within the food sphere is tangible and our taste buds are sure to be in for an exciting time ahead. These types of innovations are needed, though. Feeding a planet of approximately 8 billion people comes at a high cost with regard to land and water usage, emissions and pollution. More than one third of all greenhouse gas emissions come from the production of food, with meat production accounting for 60% of the total (Ipsos, 2022). Indeed, since the world population is estimated to reach over 9 billion by 2050, drastic changes in how the planet is fed need to be made (UN Food and Agriculture Organization, 2009). Environmental reasons are however not the only motivation for people to change their eating habits, there are personal motives too. A growing body of research has linked meat and dairy heavy diets with negative health outcomes, such as weight issues and cardiovascular diseases (Zhang et al., 2021).

Indeed, health and environmental reasons are often listed as the number one motives for choosing PBMA instead of regular meat, with 54% of people claiming health and nutritional reasons and 38% indicating sustainability motives as the main driver for including PBMA in their diet (Ipsos, 2022). Alongside health and environmental concerns, broader welfare concerns are also seen as a key driver for reducing meat and dairy from daily diets, with 22% stating animal welfare concerns as a reason for opting for PBMA (Ipsos, 2022). Using plants as the main source of protein is nothing new per se, with tofu and falafel, for example, having been around for thousands of years. However, a big shift has happened during recent years and the global market for plant-based food has seen a huge surge, was valued at over 44 billion USD in 2022 and is estimated to reach a staggering 162 billion USD in 2030 (Statista, 2023). With the market growing at a fast pace and several companies entering the scene with innovative products and brands, there is sure to be something for even the pickiest of consumers.

However, despite a large variety of plant-based products, and the benefits of consuming them being rather well-known, changing dietary habits is seen as challenging and unnecessary according to the vast

majority (Shepherd, 2002). The study by Ipsos (2022) sheds light on this unwillingness to change dietary habits, stating that some 42% of people actively consuming meat were unlikely to cut back on animal products, while some 17% stated that this type of shift would be extremely unlikely. Indeed, when it comes to eating habits, people are creatures of habit and eating habits are ingrained in both social, cultural and personal norms (National Library of Medicine, 2021). A top executive at one of the world's largest PBMA companies, Impossible Foods, nails down the essentials of making PBMA a long-term food choice by stating that *"You'll buy the product once based on novelty, you'll come back if the taste was good and if there are benefits such as nutrition and sustainability, and you'll buy it in the long run if the value is right"* (Ipsos, 2022, p. 18). While this seems straightforward and intuitive, many argue that the shift towards a diet with reduced meat is moving at a slower pace than what would be needed in terms of planetary resources (UN Food and Agriculture Organization, 2009).

1.2 Problem area

The field of consumers' attitudes towards and preferences regarding PBMA in general is somewhat researched (de Oliveira Padilha et al., 2022; Knaapila et al., 2022; Van Loo et al., 2020). However, based on research, there is a great degree of uncertainty connected to how information about PBMA should be communicated ideally and how different audiences perceive the messaging connected to it (Edgar et al., 2009). Many argue that there is an important job-to-be-done for marketers to influence consumer behavior towards more sustainable lifestyles, including greener eating habits (Bogueva et al., 2017). PBMA being a rather novel food, there is a scant amount of research on how to encourage consumers to choose these products. Furthermore, many of the PBMA brands on the market wish to target a wider consumer market, for example meat eaters and flexitarians, as opposed to only targeting the more traditional target segment for plant-based products, i.e., vegetarians and vegans (Taylor, 2019). Indeed, most people in the Western world consume meat, so marketing products that closely resemble meat to a wide audience, rather than actively targeting the ones who abstain from consuming meat, makes intuitive sense (Eatwell, 2022). Targeting a wide consumer base comes with its challenges and marketers are testing the waters in the hope of finding the most optimal way to appeal to somewhat skeptical consumers.

Even though the drivers and barriers of reducing meat consumption and opting for a more plant-based diet are widely known, there is rather large consumer heterogeneity regarding the topic. Moreover, the vast body of research focusing on these barriers and drivers often overlook the potential differences among the large consumer group of people who consume meat and rather focus on understanding the motivations to go fully vegan or vegetarian (Janssen et al., 2016). What would actually motivate the large masses to opt for PBMA? Do the collective reasons, such as environmental or animal welfare concerns entice the great majority the strongest as some researchers claim (Fonseca & Sanchez-Sabate,

2022)? Or does it all come down to personal reasons such as focus on one's own health, as is claimed by a large group of researchers (Hopwood et al., 2020)? What about the obvious, but quite often in the context of PBMA rather neglected aspects of, hedonic enjoyment and taste? Indeed, there are plenty of possibilities regarding benefits for marketers and food producers to emphasize, to achieve effective communication but there seems to be no consensus regarding which aspects to highlight to create effective communication. Furthermore, it is obviously not only effective marketing activities that are needed to get consumers to choose PBMA. In fact, a thorough understanding of the consumer decision making process connected to PBMA, among people who actively consume conventional meat, is also necessary to increase the share of people choosing plant-based foods.

Increasing the share of individuals who consume meat to choose PBMA is also unsurprisingly a focus for one of Sweden's largest and most popular plant-based food brands, Anamma (Keldsen, 2022). Anamma's Brand Manager Malin Rosenqvist agrees that while vegetarians and vegans have long been the primary target for Anamma, flexitarians are an important and growing target group that has been rather neglected over the years since most focus has been put on heavy users, i.e., vegetarians and vegans. Rosenqvist states that attracting more flexitarians is an important focus area for Anamma. Furthermore, due to most Swedes identifying as meat eaters (Axfood, 2022), Rosenqvist agrees that this segment is undoubtedly attractive but quite unexplored in the category of PBMA (M. Rosenqvist, personal communication, February 24, 2023).

1.3 Purpose

The aim of this master's thesis is to examine whether and how various advertising claims aiming to promote PBMA affect the beliefs, attitudes, and behavioral intentions of consumers who eat meat, i.e., are not vegetarian. This study specifically tries to identify and assess the advertising claims commonly used in promoting PBMA, namely claims focusing on the health, environmental, and animal welfare benefits of PBMA as well as the obvious, but sometimes disregarded, potential benefit of taste. Moreover, the purpose is to investigate the role of dietary preference in shaping consumer responses to advertising claims for PBMA. By doing this, we aim to provide insights and recommendations for marketers of PBMA on how to effectively communicate the benefits of their products to consumers.

Additionally, this master's thesis aims to identify factors predicting purchase intentions for PBMA. Thereby, this study aims to provide a more thorough understanding of consumer behavior connected to PBMA as well as to pinpoint prospective areas for intervention and marketing tactics that can boost the uptake of these goods. The results of this study could ultimately help the public's health and environmental sustainability by encouraging the adoption of healthier and more environmentally

friendly eating habits. This thesis aims to cover the following research questions, which are broken down into two primary research questions and one secondary research question:

The primary research questions are:

1. *What is the impact of different advertising claims, namely health, environmental, taste and animal welfare on consumers' beliefs, attitudes and behavioral intentions towards plant-based meat alternatives?*
2. *What are the factors influencing consumer decision-making when it comes to purchasing plant-based meat alternatives?*

The secondary research question to be investigated is:

3. *What is the effect of dietary preference (meat eaters and flexitarians) on the impact of different advertising claims on advertisements for plant-based meat alternatives?*

1.4 Delimitations

In order to define the scope of this study, the following delimitations have been made. Firstly, this study is delimited due to the chosen manipulations. In the experiment, only the claims were manipulated, while everything else was kept constant to be able to assess the effects of the claims in isolation. Additionally, a conscious delimitation to use one claim as an independent variable and test whether the existence of the claim influences the dependent variables was made. The study therefore refrained from looking into other manipulations that concern the claim, such as use of language or length of the claim, or the effect of having multiple claims in one advertisement. In addition, the study is delimited to the choice of a neutral medium of the advertisement and thus does not assess any potential influence of the media format.

A second delimitation concerns the choice of the dependent variables in the model. The dependent variables were chosen according to which variables are widely accepted as being influenced by advertisements (see section 2.3). While there are other constructs that could have been affected by advertisements, such as brand attitudes, the purpose was to investigate effects on consumer behavior, where behavioral intentions were deemed as an appropriate predictor and beliefs and attitudes were seen as important potential mediators in the context of PBMA.

Finally, the study is deliberately limited to meat eaters and flexitarians, as argued for in section 1.2, and thus excludes the dietary group of vegetarians. Finally, while revenues of plant-based meat alternatives are increasing globally (Statista, 2022), this study is delimited to the Swedish, Finnish and German market. The three markets were deemed particularly interesting to look at due to the large variety of plant-based brands and products in these markets and the considerable share of people trying to reduce their meat intake (BMEL, 2023; Natural Resources Institute Finland, 2022; Svenskt kött, 2018).

1.5 Expected knowledge contribution

Although not entirely uncharted area, the discussion of PBMA has so far mostly concentrated on the factors that influence consumers' decisions to adopt a vegan or vegetarian diet, yet the domain of advertising PBMA has received less attention. More precisely, it has not considered how various advertising promises will be received by future customers, specifically those who still eat meat. In order to better understand those who eat meat and contribute to the change towards more sustainable eating patterns, this thesis focuses on flexitarians and meat eaters. The expected contribution includes evaluating the effectiveness of advertising claims emphasizing different benefits of PBMA, namely those connected to the environment, animal welfare and health, while also evaluating the obvious, but often neglected aspect of taste.

Second, by applying Ajzen's (1991) Theory of Planned Behavior and evaluating the possibility of expanding it with the concepts of moral norms and food neophobia, this study seeks to uncover explanatory variables that influence the consumer decision-making process when purchasing PBMA. Overall, the expected contributions of this research include a better understanding of the factors that shape consumer behavior in the context of PBMA, as well as practical insights for marketers and policymakers looking to promote sustainable and ethical food choices.

1.6 Disposition

This thesis consists of six sections, all aiming to serve a purpose in achieving the research objectives. First up, the *introduction* provided an overview of the research topic, and the cultural and economic relevance of it. Furthermore, research questions that the thesis aims to answer were outlined. The introduction is followed by a *theory and hypotheses generation* section, where previous research on the topic is presented, together with the identified research gap. Thereafter, the section covers the theoretical frameworks that lay the grounds for the conceptual model of the thesis. Next, the *methodology* section outlines the research design, sampling methods, data collection procedures, and data analysis techniques used in the study. It also discusses the quality of the study from different perspectives. The fourth section *analysis and results* presents and analyzes the findings of the study in relation to the hypotheses

presented in the *theory and hypotheses generation* section. Chapter five, *discussion*, discusses the implications of the findings in relation to the research questions and the theoretical framework. A sixth and final section includes summarizing *conclusions* of all the above as well as theoretical contributions and managerial implications. Finally, limitations and criticism alongside suggestions for future research are presented.

2 Theory and Hypothesis Generation

The following sections present the theoretical foundation of the thesis. First, an overview of the current literature and research is outlined in the theoretical background, followed by a description of the observed research gap. Then, the theoretical framework, including traditional marketing theory as well as theory connected to consumer behavior is presented. Hypotheses are generated throughout the theoretical Framework section.

2.1 Theoretical background

2.1.1 Barriers and drivers for plant-based meat consumption

The background above sheds light on superfluous meat consumption having negative consequences on the environment, animal welfare and health and how the market of PBMA is growing at a fast pace. Yet, there is a certain reluctance among people, specifically in Western societies, to reduce their meat consumption and embrace a more plant-based diet (Lea et al., 2006). Furthermore, previous research has found that the preference towards choosing PBMA over conventional meats remains low (Van Loo et al., 2020). Research aiming to unveil the barriers and drivers for meat reduction and the adoption of a more plant-based diet is rather extensive (Graça et al., 2015; Hielkema & Lund, 2021). Indeed, main barriers for choosing PBMA include lower sensory attractiveness, practicalities, habits and skepticism about the necessity of reducing meat intake (Hielkema & Lund, 2021; Spendrup & Hovmalm, 2022). The phenomena of food neophobia, defined by Hoek et al. (2011) as a tendency to avoid novel, unfamiliar foods, is also identified as a barrier for purchasing PBMA in some studies (Bryant et al., 2019; Hwang et al., 2020). Furthermore, the phenomenon of meat attachment is also widely considered to be a barrier for choosing PBMA and is described as “*a positive bond towards meat*” (Graça et al., 2015, p. 114).

Luckily, research has also identified drivers for choosing PBMA, including ethical and moral considerations as well as health reasons (Circus & Robison, 2019; Contini et al., 2020). Interestingly, sensory attractiveness has also been identified as a driver for PBMA consumption, while low sensory attractiveness is also seen as a barrier, as mentioned above, which illustrates the heterogeneity of consumer perceptions regarding PBMA (Circus & Robison, 2019; Elzerman et al., 2013). Indeed, it is the differences between consumers that make the emerging field of research on PBMA consumption and preferences ever so interesting, which is why the following chapter will outline previous research regarding the dietary groups that plant-based meat producers often consider important to win over, namely meat eaters and flexitarians.

2.1.2 Different dietary groups

There is a plethora of different dietary groups which is why it is of high relevance to look at the differences among these dietary groups in the context of meat consumption, which is more researched compared to differences between dietary groups regarding the consumption of PBMA. Previous research has also found a negative correlation between meat consumption and plant-based meat consumption (Siegrist & Hartmann, 2019).

Research has found that going fully vegan or vegetarian may not be realistic or necessary for the large majority of consumers, but rather that reduction can play an important part in transitioning to a more environmentally sustainable and healthy diet (Dagevos, 2021; Eckl et al., 2021). In many developed countries, a significant portion of the population consists of omnivores, also known as meat-eaters, and flexitarians, often referred to as meat-reducers, making these consumer segments and their characteristics important to consider when uncovering the route to substantial and long-term meat reduction (Eckl et al., 2021). Furthermore, the consumer groups of meat eaters and flexitarians are to be seen as promising future consumers of PBMA since studies have found that these dietary groups look for alternative proteins that resemble conventional meat, making PBMA a relevant and natural step in their meat reduction (Eatwell, 2022). Therefore, these consumer groups are an integral part of interest for both producers of meat alternatives and marketers (Michel et al., 2021; Spendrup & Hovmalm, 2022). Although both dietary groups still consume meat, research has hinted towards differences in their motives to do so, making these consumer groups potentially more heterogeneous than one might think (Dagevos, 2021). Moreover, researchers suggest that having a thorough understanding of factors influencing consumer decision making regarding PBMA is important to intervene and promote more sustainable and healthy food habits (Kemper et al., 2023).

Kemper et al. (2023) found differences between the groups regarding meat attachment, noting that meat eaters hold greater attachment to red meat than flexitarians. Furthermore, the study concluded that motivations for meat reduction differed, meat eaters continuing to consume meat due to its taste and flexitarians due to its nutritional value. When looking at further motivations for flexitarians to reduce meat consumption, there seems to be rather larger inconclusiveness, some studies indicating that health-related reasons are a primary reason for reducing meat consumption, but that ethical and environmental reasons are not (Forestell et al., 2012). Other research points to ethical and environmental considerations as main motivators for meat reduction among flexitarians (De Backer & Hudders, 2015; Verain & Dagevos, 2022). Zooming in on meat eaters, some studies have found that this group of people is also motivated by ethical and environmental considerations, although not to as large an extent as flexitarians (Apostolidis & McLeay, 2016). Moreover, another suggested difference between meat eaters and flexitarians is that flexitarians are, to a larger extent than meat eaters, aware of the connection between food choices, namely meat consumption and production, and climate change (Kemper et al., 2023).

While some studies have indeed found significant differences between meat eaters and flexitarians, some studies show that, when it comes to ethical considerations such as animal welfare, the groups are more homogeneous than one might think. Indeed, Kemper et al. (2023) found that animal welfare concerns are an equally important reason for meat reduction regardless of dietary preference.

Finally, an important notion to keep in mind when looking at the different dietary groups of meat eaters and flexitarians, is that usually categorizes these groups according to self-identified dietary preference and that in the case of dietary groups, there may be a variety of different diets and eating patterns, with varying degrees of overlap and distinction between them. In other words, dietary preference cannot be seen as a binary variable as for example gender. Due to this and the fact that differences between meat eaters and flexitarians remain vague and rather inconclusive, these groups' potential differences will be explored as a secondary research question. More specifically, the secondary research question aims to explore whether these dietary groups differ in how they are impacted by advertising claims regarding PBMA. Please note that hypotheses are not generated for this additional research question due to the aforementioned ambiguities in both categorization, and research findings mostly being connected to meat reduction, as opposed to the consumption of PBMA.

2.1.3 Claims, framing and advertising appeals for plant-based meat alternatives

In the hopes of increasing consumers' willingness to purchase PBMA, some researchers have studied how to optimize messaging and framing of meat alternatives; nonetheless, the body of research on marketing activities relating to PBMA remains scant. In a recent study, however, the effect of language style in the context of conveying the environmental impact of consuming meat and promoting PBMA found that the use of figurative language, as opposed to literal, resulted in more favorable consumer responses (Ye & Mattila, 2022). Papies et al. (2020) found that including descriptions that evoke feelings of enjoying food on ready-made plant-based meal labels increased purchase intentions. These findings indicate that food in general is considered a highly emotive product (Canetti et al., 2002). Furthermore, Ye & Mattila (2021) have investigated the role of different communication strategies in making plant-based menu items at restaurants more desirable, concluding that emphasizing a social appeal (e.g., "environmental and animal welfare friendly") increased the likelihood of consumers opting for plant-based menu items. However, Ye & Mattila (2021) encouraged future research to separate the components of "social" appeal in order to separately look at environmental and animal welfare benefits. Some efforts have been made to investigate how different consumer groups perceive PBMA advertisement. Indeed, a recent study conducted among Americans found that individuals, depending on political ideology, perceived message framings in PBMA advertisements differently, suggesting that an environmental framing does not resonate well with conservative consumers (Yule & Cummings,

2023). Some researchers have also tested the use of different product names when referring to PBMA and how they affected consumer preferences towards the product. Findings from these studies conclude that using the product name “vegan meat” or “plant-based meat” as opposed to “artificial meat” or “meat-alternative” resulted in more positive consumer responses (Sucapane et al., 2021; Ye et al., 2022).

2.2 Theoretical Research Gap

Firstly, the existing research has largely focused on meat consumption and how it relates to attitudes and consumption of plant-based meat alternatives as well as on drivers and barriers related to consumption of plant-based meat alternatives. While it is important to understand barriers and drivers for food preferences, few efforts have been made to uncover efficient ways for food producers and marketers to optimize advertising of novel foods, such as plant-based meat alternatives. Moreover, according to social marketing research, effective communication can be utilized in order to alter human behavior for the benefit of the environment (Pidgeon & Fischhoff, 2011), which is why the case of advertising of plant-based meat is interesting, yet rather unexplored.

Moreover, the current body of research which has investigated ways of marketing PBMA often undermines or neglects the group of consumers that are not the primary target group for PBMA, i.e., who are not vegetarian or vegan, or looks at the population as a whole, resulting in marketing activities that might be too niched on one hand, or too general on the other. This thesis aims to find clarity regarding which benefits of PBMA to enhance, in order to win over the consumer groups that consume regular meat. Moreover, in contrast to previous research, this research, more specifically the secondary research question, aims to discover if there are differences in how plant-based meat marketers should appeal to the dietary groups that consume meat, since it is this large group of people whose meat reduction and increased interest in PBMA can have a significant impact on achieving more sustainable eating habits (Spendrup & Hovmalm, 2022).

Secondly, the Theory of Planned Behavior, also referred to as the TPB (Ajzen, 1991) has been widely used to investigate individuals' attitudes, beliefs, and intentions towards various health behaviors, such as smoking, exercise, and healthy eating (Montague et al., 2001; Sogari et al., 2023; Wakefield et al., 2010), and even meat reduction (Çoker & van der Linden, 2022). However, there has been limited research on the application of the TPB in the context of plant-based meat alternatives and the adoption of plant-based meat alternatives is still relatively low, and there is a need to better understand the factors that influence individuals' acceptance and intentions to consume these products. Furthermore, the Theory of Planned Behavior neglects some important factors that might be applicable in gaining a more nuanced understanding of consumer behavior in relation to plant-based meat alternatives, namely the notions of *moral norms* and *food neophobia*. To the knowledge of the authors, these concepts have not

together or separately been used to extend the Theory of Planned Behavior in the context of plant-based meat alternatives, opening an interesting avenue of research.

2.3 Theoretical framework and hypothesis generation

2.3.1 Appeals and claims used in the context of food advertising

Various advertising appeals are used by marketers to “*create an atmosphere where the target audience desires are evoked towards the product*”, which in turn aims to increase communication effectiveness (Akbari, 2015, p. 479). Advertising appeals come in many different variations but are commonly divided into two broad categories, namely emotional appeals and rational appeals (Li, Li, & Zhao, 2009). According to Leonidou and Leonidou (2009), as explained by Akbari (2015), emotional appeals seek to evoke a consumer’s social, psychological, or symbolic needs whereas rational appeals aim to appeal to rational thinking, often highlighting a product’s practical and functional aspects. In practice, appeals can be communicated in different formats, the most common ones being verbal and visual appeals. A form of a verbal advertising appeal could therefore be, for example, an advertising claim.

Indeed, statements made in advertisements with the aim of enhancing the positive and emphasizing the attractiveness of the product depicted in the advertisement are generally called claims (Wells et al., 2006). Claims are widely seen as a powerful tool for marketers, as proven by Mitchell and Olsson (1981), who state that attitudes are significantly influenced by product attribute beliefs which in turn can be affected by advertising claims. Claims are widely used in marketing and advertising to affect the consumers’ attitudes about a product or brand and the context of food advertising is no exception (Kim et al., 2009). In the context of food advertising, claims are in some instances divided in two different categories, namely nutrition and health claims and product information (Kim et al., 2009). A health claim, as defined by the European Commission (2023) is “*any statement about a relationship between food and health*”, for example “fiber regulates blood sugar”. A nutrition claim is any claim that “*states, suggests or implies that a food has particular beneficial nutritional properties*” (European Commission, 2023). However, previous research has shown that consumers do not generally distinguish between health and nutrition claims which is why this study regards both health and nutrition claims, as defined above, as health claims (Williams, 2005). Product information claims on the other hand, inform for example about the product’s quality, taste or convenience (Kim et al., 2009). Indeed, we assume the positive effect of an advertising claim to hold true in the context of plant-based meat alternatives and hypothesize the following:

H1: A PBMA advertisement containing a claim has a more positive effect on the dependent variables (a-e) compared to a PBMA advertisement without a claim.

- a. Beliefs
- b. Attitude towards the ad ($Attitude_{ad}$)
- c. Attitude towards the behavior ($Attitude$)
- d. Other behavioral intentions
- e. Purchase intentions

2.3.2 Information processing and persuasion

The psychological mechanisms behind persuasion processes can be explained by information processing models. The Cognitive Structure Model, as described in Cartwright's (1949) work on mass persuasion, explains that a series of interrelated and complex processes must be activated within the individual to impact behavior. These processes involve establishing a particular cognitive structure, motivational structure, and behavioral structure. An individual's behavior is thus essentially influenced by the individual's beliefs, opinions, and "facts," as well as by their goals, needs, and values (Cartwright, 1949). As stated by Lutz and Swasy (1977), Cartwright's (1949) propositions about the cognitive persuasion process are in line with the expectancy-value model, which will be presented next.

The expectancy-value model of attitudes is a widely used theory to explain the relationship between beliefs and attitude formation towards an object (Ajzen, 2001; Fishbein & Ajzen, 1975). According to this model, a person's attitude towards an object is determined by the sum of salient beliefs associated with the object, such as characteristics, attributes, values and goals, multiplied with the evaluation of those beliefs (Cohen et al., 1972; Fishbein & Ajzen, 1975). The model assumes that evaluative meanings emerge unconsciously when forming beliefs about the object (Ajzen & Fishbein, 2000), and only beliefs that are easily accessible in memory affect attitudes (Ajzen, 2001). As stated in Lutz and Swasy (1977), the expectancy-value perspective implies that an individual's behavior can be influenced by messages addressing the individual's goals or means to achieve those goals. Furthermore, Kim et al. (2009) claim a greater likelihood of attitude change or persuasion if the perceived characteristics of an object are highly valued. Kokkinaki and Lunt (1999) additionally found that high personal relevance, or involvement, increased information processing as well as strength and accessibility of attitudes significantly (Kokkinaki & Lunt, 1999; Ajzen, 2001).

Thus, in the context of advertising, this implies that in order to change beliefs and attitudes, advertisements need to portray characteristics that are of relevance to the receiver, which is why the following sections will first present the concept of *food values*, establishing a foundation for consumer choice making in the context of food, followed by important factors affecting choice-making in the context of meat and PBMA.

2.3.3 Food Values

Rather than explaining mechanisms behind consumers' choice-making regarding food by preferences, which according to Lusk and Briggerman (2009) cannot be seen as stable constructs, the duo set out to identify a set of *food values* that would better explain consumer choices in the food domain. Moreover, instead of indicating food attributes per se, food values would indicate “*abstract attributes, consequences and end states of food consumption that are potentially applicable in explaining choices between a wide range of food products*” (Lusk & Briggerman, 2009, p. 186). Based on their research, Lusk and Briggerman (2009) found that the values of safety, nutrition, taste, and price were rated as the most important ones for consumers on average but that there is significant heterogeneity in the importance placed on the (in total 11 identified) food values among consumers in general. While the most prominent food values among consumers consuming PBMA specifically have not been established, we now turn to research highlighting key beliefs, motivations and attitudes regarding meat consumption and reduction as well as plant-based meat consumption, in order to carve out potential food values in the context of PBMA. Even though price has also been highlighted as an important factor in theory, the authors of this thesis decided to omit it since the purpose of the thesis was to test different claims, and price was not seen as a comparable claim.

2.3.3.1 Taste

When researching consumer attitudes and beliefs affecting consumption of plant-based meat alternatives, a study conducted among Swedish consumers concluded, not surprisingly, that taste was one of the most important factors affecting attitudes and beliefs regarding meat substitution products (Spendrup & Hovmalm, 2022). Similar findings have been made by others: Bryant and Sanctorem (2021) found that taste and texture were the primary reasons for individuals expressing dissatisfaction with meat substitutes and Michel et al. (2021) found that meat is mainly associated with positive attributes like “delicious” while meat alternatives were associated with attributes like “disgust”, pointing towards the importance of taste. Moreover, looking at reasons for meat consumption, several studies show that the primary reason individuals continue to consume meat is due to their enjoyment of its taste (Kemper, 2020; Kemper & White, 2021; Kemper et al., 2023; Mullee et al., 2017). Lea and Worsley (2003) found that enjoyment of the taste of meat was the most important barrier to meat reduction, similarly to van den Berg et al. (2022) who found taste as the strongest barrier in a study among young Dutch adults. It is also suggested that taste is the most important factor to emphasize when looking to increase positive attitudes towards PBMA among individuals who consume meat, since emphasis on taste could be perceived as more relevant and less controversial (Spendrup & Hovmalm, 2022). To conclude, it is rather clear that taste is an important factor in the context of plant-based meat alternatives, which together with the theory presented regarding claims and attitude formation above, leads us to propose the following hypothesis:

H2a: A PBMA advertisement containing a positive taste claim has a more positive effect on the dependent variables (a-e) compared to a PBMA advertisement without a claim.

- a. Beliefs
- b. Attitude towards the ad ($Attitude_{ad}$)
- c. Attitude towards the behavior (Attitude)
- d. Other behavioral intentions
- e. Purchase intentions

2.3.3.2 Health

Another important belief to address in the context of plant-based meat alternatives, as suggested by Spendrup and Hovmalm (2022), is health. When it comes to beliefs regarding health, there are more salient differences between the two dietary groups (meat eaters and flexitarians) compared to for example taste. Indeed, research has found that health is the second most important reason for meat eaters to continue eating meat. What is more, compared to meat reducers, meat eaters had considerably lower levels of belief in the health benefits of plant proteins. More specifically, meat eaters were less inclined to agree that a diet based on PBMA is healthier than one that includes meat, and less likely to believe that reducing red meat consumption can prevent diseases (Kemper et al., 2023).

Turning to meat reducers on the other hand, one of the most prominent reasons for meat reducers to cut down on meat consumption has been found to be health reasons and the belief that there are health benefits with meat reduction (De Backer & Hudders, 2015; Lentz et al., 2018; Verain & Dagevos, 2022). Lentz et al. (2018) claim that meat reducers are more motivated by health concerns than other consumers. On the contrary, however, studies have also identified that despite being a motivator for meat reduction, health is also a factor inhibiting meat elimination, for instance due to meat being a source of iron and protein (De Backer & Hudders, 2015; de Boer et al., 2017; Kemper, 2020; Kemper et al., 2023; Pohjolainen et al., 2015). To conclude, despite differences between the dietary groups, health is seen as an important factor in the context of food choices, leading us to propose the following hypothesis:

H2b: A PBMA advertisement containing a health claim has a more positive effect on the dependent variables (a-e) compared to a PBMA advertisement without a claim.

- a. Beliefs
- b. Attitude towards the ad ($Attitude_{ad}$)
- c. Attitude towards the behavior (Attitude)

- d. Other behavioral intentions
- e. Purchase intentions

2.3.3.3 Environmental benefits

Many researchers have found environmental and sustainability concerns to be among the top reasons for consumers to reduce their meat consumption (Hielkema & Lund, 2021; van den Berg et al., 2022). Furthermore, studies have found that among the top reasons for consumers to consume plant-based meat alternatives are concerns about climate and sustainability (Cheah et al., 2020; Spendrup & Hovmalm, 2022). Yet, differences among the dietary groups have been detected. Compared to most meat eaters, flexitarians are, to a greater extent, aware of climate change and the connection between food choices and climate change (Mullee et al., 2017). However, as pointed out by Lusk and Briggerman (2009), effect of food production on the environment is an important food value among consumers and food in general, which leads us to propose the following hypothesis:

H2c: A PBMA advertisement containing an environmental claim has a more positive effect on the dependent variables (a-e) compared to a PBMA advertisement without a claim.

- a. Beliefs
- b. Attitude towards the ad ($Attitude_{ad}$)
- c. Attitude towards the behavior ($Attitude$)
- d. Other behavioral intentions
- e. Purchase intentions

2.3.3.4 Animal welfare benefits

Kemper et al. (2023) found that animal welfare concerns are an equally important reason for meat reduction regardless of dietary preference. Furthermore, the study also found that consumers had similar beliefs of the importance of animal welfare when it comes to food choices. Furthermore, this notion is supported by several other studies that found that both meat eaters' and flexitarians' willingness to change their diet towards a more vegan diet may be more strongly motivated by animal suffering than by for example environmental or health concerns (Fonseca & Sanchez-Sabate, 2022; Janssen et al., 2016). This leads us to propose the following hypothesis:

H2d: A PBMA advertisement containing an animal welfare claim has a more positive effect on the dependent variables (a-e) compared to a PBMA advertisement without a claim.

- a. Beliefs
- b. Attitude towards the ad ($Attitude_{ad}$)
- c. Attitude towards the behavior ($Attitude$)
- d. Other behavioral intentions
- e. Purchase intentions

Marketers resort to claims, often with the end-goal of increasing consumer purchase intentions. But the route from being exposed to an advertisement or a claim to seeing a possible effect on purchase intentions needs to be examined more thoroughly, in order to fully understand the underlying mechanisms of claims and their effectiveness. In order to do so, the following chapters will explain the route from advertising exposure to potential behavioral intentions and the mediating factors along that route.

2.3.4 Attitudes and beliefs

The concept of attitudes is an important one to bear in mind, since attitudes are widely accepted as an effective predictor of consumer behavior (Ajzen, 2001; Katz, 1960; Udell, 1965). Katz (1960, p. 168) defines attitudes as *“the predisposition of the individual to evaluate some symbol or object or aspect of his world in a favorable or unfavorable manner”* and a more recent definition of Ajzen (2001, p. 28) denotes *“attitude represents a summary evaluation of a psychological object”*. Fishbein and Ajzen (1975, p. 222) presented a widely acknowledged causal basis of attitudes, namely that *“a person's attitude is a function of his salient beliefs at a given point in time”*. Beliefs, in turn, are *“the subjective associations between any two discriminable concepts. Salient beliefs are those activated from memory and ‘considered’ by the person in a given situation”* (Mitchell & Olson, 1981, p. 318). Salient beliefs thus play a crucial role in attitude formation. Besides beliefs, research has proposed another variable to play a significant role in the formation of attitudes and behavioral intentions, namely attitude toward the advertisement (MacKenzie et al., 1986; Mitchell & Olson, 1981). According to Mitchell and Olson (1981, p. 327), attitude toward the advertisement *“reflects subjects’ evaluations of the overall advertising stimulus”*.

2.3.5 Behavioral intentions

Behavioral intentions are often seen as a crucial predictor of an actual purchase. According to Ajzen (1991, p. 181), intentions are *“indications of how hard people are willing to try (...) in order to perform the behavior”* and if these intentions are strong, they likely lead the individual to perform the certain

behavior (Ajzen, 1991). Hence, behavioral intentions are gladly used by many researchers to assess consumers' purchasing behavior.

Behavioral intentions can be measured in different ways. Research often resorts to purchase intentions, seen as the closest predictor of an actual purchase and, according to Spears and Singh (2004, p. 56), defined as *“an individual's conscious plan to make an effort to purchase a brand”*. Other behavioral intentions used in research on consumer behavior include repurchase behavior (Hellier et al., 2003; Lee et al., 2010; Rambocas et al., 2018); willingness to pay a price premium (WPP) (Anselmsson et al., 2014; de-Magistris & Gracia, 2016; Hultman et al., 2015; Zhang et al., 2018); or intentions to recommend the product or service (Bendall-Lyon & Powers, 2004; Ladhari et al., 2017; Rambocas et al., 2018). In the context of novel foods, the willingness to try the product is further used by some researchers (Mancini et al., 2019; Menozzi et al., 2017; Moon et al., 2011). Intentions are distinct from attitudes, since intentions, as defined by Eagly and Chaiken (1993, p. 168), as cited by Spears and Singh (2004) are *“the person's motivation in the sense of his or her conscious plan to exert effort to carry out a behavior”*, whereas attitudes can be seen as a summary of evaluations.

As Mitchell and Olson (1981) explain the reasoning of Fishbein (1963), beliefs serve as a mediator between advertising stimuli and attitude formation. These attitudes, in turn, affect intentions. As a result, to alter consumer behavior, advertisers must modify consumer beliefs. According to Fishbein, as described in Mitchell and Olson (1981, p. 319), the route from exposure to advertisement to behavioral intentions can then be summarized as: *“a marketing stimulus such as an advertisement affects consumers' beliefs first. Then the influenced salient beliefs mediate the marketing variable's effect on attitude, and attitude in turn mediates subsequent effects on behavioral intention.”* Mitchell and Olson's (1981) findings, however, imply that the mediating role of attitude toward the ad should not be neglected either. This led to their suggestion of a slightly adapted causal flow from the exposure to an advertisement to behavioral intentions: an advertisement stimulus affects attitude toward the ad and salient beliefs about product attributes simultaneously, which in turn affect attitude toward the brand and attitude toward the behavior, which then finally shape behavioral intentions.

In the further course of this study, attitude toward the advertisement will be denoted as *attitude_{ad}*, while attitude toward the behavior will be referred to as *attitude*. Based on the presented theoretical findings, the relationships between beliefs, *attitude_{ad}*, attitude and behavioral intentions can then be hypothesized as follows:

H3a: Beliefs mediate the effect of advertising claims on behavioral intentions of plant-based meat alternatives.

H3b: Attitude_{ad} mediates the effect of advertising claims on behavioral intentions of plant-based meat alternatives.

H3c: Attitude mediates the effect of advertising claims on behavioral intentions of plant-based meat alternatives.

2.3.6 The theory of planned behavior

The Theory of Planned Behavior (TPB) which is an extension of the Theory of Reasoned Action (Fishbein & Ajzen, 1975), is one of the most cited and studied models for the prediction of human behavior. The very essence of the theory is that behavioral decisions are the result of a rational process in which behavior is influenced by three notions: attitudes, subjective norms and behavioral control (Sommer, 2011).

As already introduced in section 2.3.4, attitudes can be defined as *"the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question"* (Ajzen, 1991, p. 188). Alongside attitudes, a second component predicting intention is a social factor called subjective norm. Ajzen (1991, p. 188) defines subjective norm as *"the perceived social pressure to perform or not to perform the behavior"*. This social pressure commonly comes from people or groups in one's social environment, who are important or influential such as family, significant others or friends and to what extent they approve of one's behavior (D'Souza et al., 2022). The notion of social pressure has proven to be present in the context of food consumption, as a recent study found that it was one of the most prominent factors driving people's consumption of organic food (Ruiz de Maya et al., 2011). Finally, the third and final component in the TPB is perceived behavioral control, which Ajzen (1991, p. 188) defines as *"the perceived ease or difficulty of performing the behavior"*. The factor of perceived behavioral control is important to observe in the context of novel foods, such as PBMA, since the convenience and availability of the product may restrict an intended purchase (D'Souza et al., 2022).

By applying the TPB, this study aims to find out whether attitudes, subjective norm or perceived behavioral control are predictors of purchase intentions towards PBMA. Therefore, the following hypotheses are proposed:

H4a: Attitude has a positive impact on purchase intentions towards a plant-based meat alternative.

H4b: Subjective norms have a positive impact on purchase intentions towards a plant-based meat alternative.

H4c: Perceived behavioral control has a positive impact on purchase intentions towards a plant-based meat alternative.

2.3.7 Extending the theory of planned behavior

While the TPB it is one of the most cited theories to predict behavioral intentions (Alavion et al., 2017), it is also widely criticized. Some of the critiques towards the TPB include simplifying the process of consumer decision-making and putting too much focus on rational reasoning and leaving out unconscious influences on behavior (Sniehotta et al., 2014). In order to possibly increase the explanatory value of the model, it is suggested by an array of scholars that the TPB can be extended with additional independent variables (Conner & Armitage, 1998). In the context of plant-based meat alternatives, we suggest extending the TPB with the concepts *food neophobia* and *moral norms*.

2.3.7.1 Food neophobia

The concept of food neophobia refers to an aversion or reluctance to try novel or unfamiliar foods (Pliner & Hobden, 1992), usually prompted by avoiding the possible harm of eating something unfamiliar (Siegrist et al., 2013). Researchers have suggested that in order to introduce novel foods, such as PBMA, it is important to aim for a positive initial exposure of new foods as well as communicating their pleasant sensory attributes (Faria & Kang, 2022). Furthermore, food neophobia has been recorded as a barrier for the adoption of PBMA (Bryant et al., 2019; Hwang et al., 2020). Considering that the sensory aspect is an important factor in decision-making regarding food, it might be suggested that it is especially important for highly food neophobic consumers that PBMA resemble regular meat when it comes to sensory qualities. This, together with the fact that one of the most salient barriers for the unwillingness to reduce meat consumption is the enjoyment of and familiarity with the taste of meat, suggests that food neophobia can play an important role as an explanatory variable for purchasing plant-based meats (Kemper, 2020; Kemper et al., 2023), which leads us to suggest the following hypothesis:

H5: Food neophobia has a negative impact on purchase intentions towards a plant-based meat substitute.

2.3.7.2 Moral norms

The TPB has been repeatedly criticized for basing attitudes on cognitive or rational beliefs, while insufficiently considering normative or moral influences on behavior (Arvola et al., 2008; Conner & Armitage, 1998). Ajzen (1991) defines moral norms as “*personal feelings of moral obligation or responsibility to perform, or refuse to perform, a certain behavior*”. In a meta-analysis, Conner and Armitage (1998) found that moral norms significantly predicted intentions in most studies reviewed. However, research suggests that the impact of moral norms on behavior depends on the type of behavior

(Conner & Armitage, 1998; Godin et al., 2005). According to Connor and Armitage (1998, p. 1441), moral norms particularly influence “*behaviors with a moral or ethical dimension*”. Accordingly, the notion of moral norms has been used to explain various behaviors relating to sustainable behavior such as using public transportation (Heath & Gifford, 2002) and recycling (Guagnano et al., 1995), but to the knowledge of the authors, has not been applied to the context of plant-based meat consumption yet. Considering previous findings of the influence of moral norms on sustainable behaviors, it can be expected that moral norms can have an impact on plant-based meat consumption. Besides food neophobia, moral norms are therefore suggested to extend the TPB with:

H6: Moral norms regarding consumption of plant-based meat alternatives have a positive impact on purchase intentions towards a plant-based meat substitute.

2.4 Hypothesized model

The model presented below visualizes the hypothesized relationships and illustrates the tests that will be performed in the data analysis:

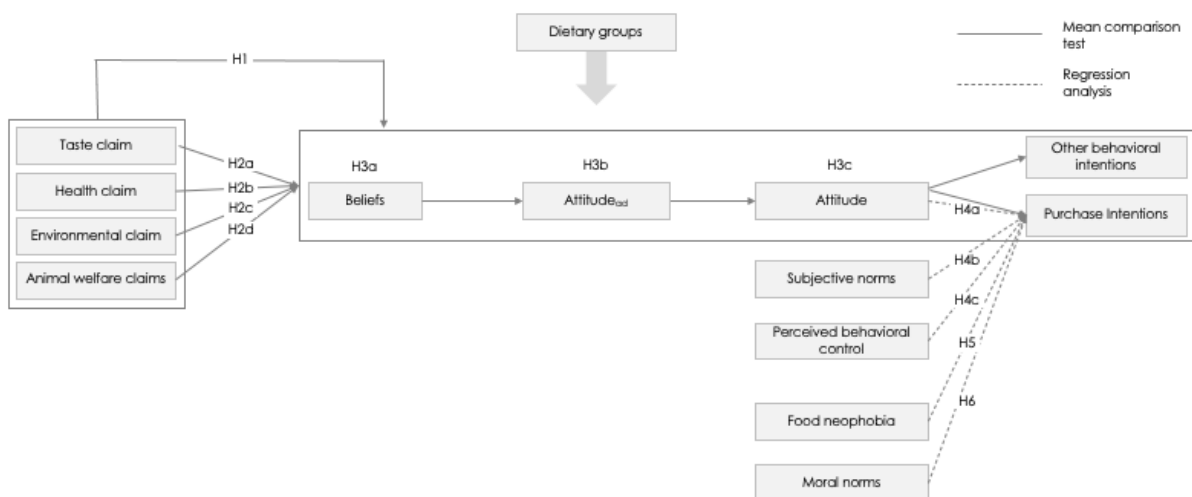


Figure 1: Proposed conceptual model

2.5 List of hypotheses

Summary of Hypotheses	
RQ1: What is the impact of different advertising claims on consumers' beliefs, attitudes and behavioral intentions towards plant-based meat alternatives?	H1: A PBMA advertisement containing a claim has a more positive effect on the dependent variables (a-e)¹ compared to a PBMA advertisement without a claim. H2a: A PBMA advertisement containing a positive taste claim has a more positive effect on the dependent variables (a-e)¹ compared to a PBMA advertisement without a claim. H2b: A PBMA advertisement containing a health claim has a more positive effect on the dependent variables (a-e)¹ compared to a PBMA advertisement without a claim. H2c: A PBMA advertisement containing an environmental claim has a more positive effect on the dependent variables (a-e)¹ compared to a PBMA advertisement without a claim. H2d: A PBMA advertisement containing an animal welfare claim has a more positive effect on the dependent variables (a-e)¹ compared to a PBMA advertisement without a claim. H3a: Beliefs mediate the effect of advertising claims on behavioral intentions of plant-based meat alternatives. H3b: Attitude_{ad} mediates the effect of advertising claims on behavioral intentions of plant-based meat alternatives. H3c: Attitude mediates the effect of advertising claims on behavioral intentions of plant-based meat alternatives.
RQ2: What are the factors influencing consumer decision-making when it comes to purchasing plant-based meat alternatives?	H4a: Attitude has a positive impact on purchase intentions towards a plant-based meat alternative. H4b: Subjective norm has a positive impact on purchase intentions towards a plant-based meat alternative. H4c: Perceived behavioral control has a positive impact on purchase intentions towards a plant-based meat alternative. H5: Food neophobia has a negative impact on purchase intentions towards a plant-based meat substitute. H6: Moral norms regarding consumption of plant-based meat alternatives have a positive impact on purchase intentions towards a plant-based meat substitute.

Table 1: Summary of Hypotheses

3 Methodology

The following chapter describes the methodological reasoning behind the study. The selection of research approach and design will be presented alongside pre-tests conducted in preparation for the main study. Thereafter, the main study will be described and critically reviewed with regards to data quality.

3.1 Scientific research approach

This thesis employs a deductive research approach, meaning that hypotheses were developed from existing theory and previous theoretical findings, and subsequently tested in an empirical study (Bell et al., 2019). The aim of this thesis is to contribute to the current body of knowledge on consumer behavior concerning sustainable food consumption. Since the purpose of the main study was to test the causal relationship between different advertising claims and consumption of plant-based meat alternatives, a deductive approach was considered appropriate, in line with Bell et al. (2019). The main study was conducted by means of an experiment in which five different pre-designed treatments were presented to respondents and data was collected by means of a questionnaire. While the chosen approach was considered a good methodological fit for the purpose and scope of this thesis, it has limitations. Hypotheses were mainly based on former theory and research, which poses the risk of having incorrect or incomplete assumptions. Thus, results deviating from the hypotheses were explored with an abductive approach, with the aim to find an explanation to them against the backdrop of the existing body of research, which will be presented in the discussion section (Alvesson & Sköldbberg, 1994).

3.2 Theory collection

The thesis work commenced with field investigation of the relevant product category and continued with a comprehensive review of existing research within the fields of marketing and advertising as well as consumer perceptions towards PBMA. Since PBMA are still relatively unexplored, the review expanded to the related field of meat consumption. The theory is based on a wide range of published and peer-reviewed articles to ensure quality. Various academic search databases that are accessible under the Stockholm School of Economics library subscription were primarily utilized to gather theoretical articles online. During this process, potential research questions and hypotheses were continuously formulated and adjusted with the reviewed theories and research.

3.3 Research Design

The main study of this thesis was quantitative with an experimental between-subjects design. Thus, participants were randomly allocated to one of four treatment groups and one control group and shown only one of the five different treatment variants, which is a common approach in marketing research (Söderlund, 2018). For each of the treatments, only the claim was manipulated, thereby serving as an independent variable (Bell et al., 2019). The stimulus (claim) was presented within an advertisement. One group was exposed to an advertisement without a claim and thereby served as control group for the other groups, separately and cumulatively. The participants' responses to the stimuli were measured by a survey that was identical for all groups. A more detailed description of the stimulus and survey design will follow in the sections below.

The chosen research design proved to have several advantages for the purpose of this study. Firstly, the experimental, between-subjects design made it possible to expose and allocate a large sample randomly to different stimuli. This enabled the comparison of the reactions to different stimuli while controlling for alternative explanations, which allowed us to conclude causal relationships (see section 3.7.2; Bell et al., 2019). Secondly, thanks to the experimental and quantitative design, results can be generalized to the general population (see section 3.7.2; Bell et al., 2019).

3.4 Preparations for the Main Study

3.4.1 Pre-study 1: Insights from the Swedish plant-based meat market

In order to get an as current view of the topic as possible and make sure the advertising stimuli was realistic, an interview with the leading Swedish plant-based meat brand, Anamma, was conducted prior to the study. Anamma's Brand manager Malin Rosenqvist was interviewed on February 24th, 2023, to discuss the landscape and target groups of PBMA in Sweden. The full question battery for the interview can be found in Appendix 1.

Indeed, in line with what research has shown, Rosenqvist agrees that major drivers for buying plant-based for all target groups are connected to ethics, environmental friendliness and personal health motives and that advertising and on-pack claims mainly focus on these topics. According to Rosenqvist, there are notable differences in how to market products to the dietary group completely restraining from meat versus the group that eats meat, calling for different marketing strategies to attract different types of consumers. For example, the claim "vegan" is thought to be discouraging or too polarizing among people who consume meat, while it is important for those who do not consume meat, hence it was decided that the tested claims will only focus on ethics (animal welfare), environmental friendliness and

health as well as taste. Indeed, another differing factor between the heavy users i.e., vegans and vegetarians, and flexitarians is how the taste of the product is emphasized, Rosenqvist explains:

“The majority of vegans often say they are disgusted by the taste or thought of meat, whereas a large share of the flexitarians we interviewed say they prefer plant-based products that taste familiar, like regular meat”-M.Rosenqvist

This is one reason why Anamma has historically restrained from using taste claims emphasizing meat-like taste on their products, but since the focus of this study is flexitarians and meat eaters, it was deemed appropriate to also create an advertisement with a taste focus, alongside the other three food values (M. Rosenqvist, personal communication, February 24, 2023).

3.4.2 Pre-study 2: Selection of claims

A pre-study (n = 20) was conducted with the purpose of choosing the four stimuli (claims) used in the main study. The pre-study was conducted via Qualtrics and completed on the 21st of March with 20 respondents. All respondents were exposed to eight different claims, two for each food value as explained in section 2.3.3. The claims were adapted from common claims on actual plant-based meat products from different brands on the Swedish, Finnish and German market to ensure that they are generally perceived as realistic. Furthermore, Anamma’s brand manager, Malin Rosenqvist, was also consulted to make sure the suggested claims were suitable and realistic for the category of PBMA. We chose rather short and concise claims to minimize the risk of having covariates affecting the dependent variables, in line with the purpose and scope of this study. The claims were presented in a randomized order to each respondent to prevent any potential bias resulting from the order in which the respondents were exposed to the stimuli (Söderlund, 2018).

After exposure to the claim, the respondents were asked the same set of questions. First, *emotionality* and *trustworthiness* were tested through one item, respectively, with a seven-point bipolar scale ranging from “*not trustworthy*” to “*trustworthy*” and “*non-emotional*” to “*emotional*”, and the question read “*What is your perception of the claim?*”. Although also included as control questions in the main study, the two items were still considered important for the pre-study to gain an understanding of how the different claims performed in terms of these characteristics. Secondly, correct *association* with the desired food value was tested through one item with a multiple-choice question reading “*What is the claim trying to emphasize?*” with the four possible answers covering one of the four food values each. Thirdly, the likelihood of the claim being an actual claim in an advertisement for a plant-based meat product was investigated with a seven-point bipolar scale ranging from “*very unlikely*” to “*very likely*” to make sure that the chosen claims evoked realistic outcomes and validity of the study could be ensured.

When selecting the four claims to be included in the main study, the results regarding *perception as realistic* were considered first. Apart from “*Enriched with iron, B2 & B1*”, all claims received a mean value of over 5.60 and were therefore deemed applicable to be used in the main study. If the two claims covering one food value received a similar mean value for this question, the next step involved determining their proper comprehension, that is, whether they were appropriately linked with the respective food value. This resulted in the choice of the claims “*Tasty & meaty*” (taste), “*Low CO₂ footprint*” (environment), “*No animals harmed*” (animal welfare) and “*High in protein & fiber*” (health). The first three claims all yielded higher means in both being perceived as realistic and associated with the correct food value, while the chosen health claim yielded a slightly lower result regarding the association with the correct food value than the other health claim, “*Enriched with iron, B2 & B1*”. However, since “*High in protein & fiber*” yielded a much higher mean regarding *perception as realistic*, this claim was deemed as more appropriate for the main study. The taste claim “*Tasty & meaty*” received a lower mean score in *trustworthiness* than the other taste claim “*Delicious & juicy*”. However, since “*Delicious & juicy*” was only associated with the correct food value for 80% of the respondents, we chose “*Tasty & meaty*” to avoid the risk of misunderstanding of the claim. Moreover, *trustworthiness* will be included as control variable in the main study and can therefore be controlled for in any tests.

Concerning the variable *trustworthiness*, the claims received mean values ranging from 4.20 to 5.85. Interestingly, the *trustworthiness* of the different claims seemed to depend on which food value they were reflecting; the taste claims both received the lowest mean values concerning *trustworthiness* ($M_{\text{taste}} = 4.45$), followed by the two environmental claims ($M_{\text{environment}} = 4.90$), the health claims ($M_{\text{health}} = 5.15$), and lastly the animal welfare claims ($M_{\text{animals}} = 5.63$), in that order. Even larger differences can be seen among the claim pairs when it comes to the variable *emotionality*. The health claims were perceived as least emotional ($M_{\text{health}} = 2.33$), followed by the environmental claims ($M_{\text{environment}} = 4.05$), the taste claims ($M_{\text{taste}} = 5.30$) and lastly the animal welfare claims ($M_{\text{animals}} = 6.08$), which were perceived as most emotional. These findings reinforced the importance to include *trustworthiness* and *emotionality* as covariates in the main study. However, it should be noted that the participants of this pre-study were able to compare the claims with each other, since every participant was exposed to all of them, which will not be the case in the main study. The results for the pre-study are presented in the table below.

Dependent variable	Food choice		N	Mean	Std. Deviation	Variance
	motive	Stimuli				
<i>Perception as realistic</i> (1 = strongly disagree; 7 =	Taste	Delicious & juicy	20	5.60	1.74	3.04
		Tasty & meaty	20	5.70	1.90	3.61
	Environment	Low CO ₂ footprint	20	5.95	1.02	1.05
		85% less climate impact	20	5.95	1.36	1.85

strongly agree)	Health	Enriched with iron, B2 & B12	20	4.95	1.75	3.05
		High in protein & fiber	20	6.10	0.94	0.89
	Animal Welfare	No animal harmed	20	5.75	1.55	2.39
		Cruelty free	20	5.70	1.42	2.01
<i>Trustworthiness</i> (1= not trustworthy; 7 = trustworthy)	Taste	Delicious & juicy	20	4.70	1.19	1.41
		Tasty & meaty	20	4.20	0.98	0.96
	Environment	Low CO2 footprint	20	4.85	1.39	1.93
		85% less climate impact	20	4.95	1.32	1.75
	Health	Enriched with iron, B2 & B12	20	4.95	1.50	2.25
		High in protein & fiber	20	5.35	1.42	2.03
	Animal Welfare	No animal harmed	20	5.85	1.06	1.13
		Cruelty free	20	5.40	1.24	1.54
<i>Emotionality</i> (1= non-emotional; 7 = emotional)	Taste	Delicious & juicy	20	5.50	1.12	1.25
		Tasty & meaty	20	5.10	1.22	1.49
	Environment	Low CO2 footprint	20	3.75	1.87	3.49
		85% less climate impact	20	4.35	1.98	3.93
	Health	Enriched with iron, B2 & B12	20	2.05	1.07	1.15
		High in protein & fiber	20	2.60	1.43	2.04
	Animal Welfare	No animal harmed	20	6.05	1.07	1.15
		Cruelty free	20	6.10	0.99	0.99
				% correct association (multiple choice was possible)		
<i>Association</i> (with correct food choice motive)	Taste	Delicious & juicy	20	80.00%		
		Tasty & meaty	20	100.00%		
	Environment	Low CO2 footprint	20	100.00%		
		85% less climate impact	20	85.71%		
	Health	Enriched with iron, B2 & B12	20	100.00%		
		High in protein & fiber	20	95.00%		
	Animal Welfare	No animal harmed	20	100.00%		
		Cruelty free	20	90.48%		

Table 2: Results of pre-study 2: Claims

3.4.3 Manipulation check

A third pre-study was conducted, serving as a manipulation check to ensure that the stimuli and questionnaire worked without problems. The manipulation check was distributed to participants not included in the later main study (Söderlund, 2018) and was completed on March 28th with a total of 25 participants with at least five respondents per stimulus. Since the main study will be run in Northern Europe and Germany, the manipulation check was also distributed in these countries. After the manipulation check, some adjustments were made to the stimuli and questionnaire. More specifically, the made-up brand “GoodFood” was added since according to participants, the presence of a brand would make the advertisement more realistic. Also, a progress bar was added to the survey, due to respondents expressing feedback regarding the absence of it.

3.5 Main Study

The main study was conducted using a between-subject experimental research design, in which each participant was randomly assigned to one of the five stimuli ads. As in the pre-study, data was collected by means of an online questionnaire designed in Qualtrics, which the respondents completed after being exposed to the stimuli ad.

3.5.1 Stimuli design

As mentioned above, the claims were integrated in an advertisement of a plant-based meat product to allow for a more realistic presentation of the advertisement and elicit realistic reactions. The claims were chosen by means of pre-study 2 (see section 3.4.2).

A burger was chosen as the plant-based meat product shown in the advertisement. Burgers are amongst the most popular products both in the meat and the PBMA product category (Curtain & Grafenauer, 2019; Kyriakopoulou et al., 2021; Statista, 2020). The choice of a burger for the stimuli designs thus reduced any effects on the dependent variables caused by unfamiliarity or reluctance against the product itself. The general liking of burgers was controlled for in the main study. Moreover, the advertisement was kept simple to decrease the likelihood that other factors would influence the dependent variables and to ensure the claim was noticed appropriately. Furthermore, the advertisement included a generic and made-up brand *GoodFood* to represent the category of plant-based food. The decision to not include a real brand was taken in order to avoid any brand associations to affect the results of this study, as this was considered outside the scope for this thesis. The final advertisements were designed in collaboration with a graphic designer to ensure a realistic design. The five final advertisements that were used in the main study are presented in Appendix 2.

3.5.2 Survey design

Data was collected by means of a questionnaire with closed questions, which was deemed a good fit with theory and hypotheses. Surveys are a common approach to test and measure psychological reactions, such as attitudes and preferences, in experiments (Söderlund, 2018). Surveys are time- and resource-efficient and allow for easy processing of answers since answers are coded automatically. Closed questions further improve comparability of answers, which is crucial for exploring cause-effect relationships, and facilitate completion of the questionnaire (Bell et al., 2019).

However, surveys exhibit some disadvantages. The questions or possible answers might be misunderstood or interpreted differently by the respondents (Bell et al., 2019). The respondents might

choose answers without fully reflecting about them in order to finish quickly (Söderlund, 2018). Also, surveys impede delving deeper into or clarifying chosen answers (Eliasson, 2013).

Except for the stimulus, all participants completed the same questionnaire to increase comparability. As mentioned above, participants were allocated to the different groups randomly, with one group serving as control group for the others. For each respondent, the survey started with an introduction to the study and assurance of anonymity and conformance with GDPR. Thereafter, the respondents were introduced to the scenario and provided with some definitions, for instance of plant-based meat products, to avoid any misinterpretation of questions or terms (Malhotra, 2019). The respondents were then exposed to the stimuli and prompted to look at the advertisement carefully, as they were not able to go back to the advertisement during the questionnaire. The questions which followed were presented in the same order for all participants. All questions were phrased in a simple language and were manipulation-checked with participants from different countries to ensure correct understanding and eliminate any potential issues (Söderlund, 2018; Malhotra, 2019; see Section 3.4.3). All questions except for the demographic and food preference measures were closed questions utilizing seven-point Likert or bipolar scales to effectively test the hypotheses (Bell et al., 2019). The full survey can be seen in Appendix 3.

3.5.3 Questionnaire measures

The questionnaire measures were taken from prior relevant studies in the field of consumer behavior. For most constructs, indexes were created, which were further tested for Cronbach's Alpha to assess internal reliability. Most items were measured with a seven-point Likert ranging from "*Strongly disagree*" to "*Strongly agree*" or a bipolar scale, which are scales often employed when measuring attitudes or motivations (Bell et al., 2019) since they allow for measurement of ordinal variables on an interval scale, enabling the calculation of means and standard deviations. Moreover, the odd number of options allows for neutral responses (Malhotra, 2019). The sources and results from the Cronbach's Alpha tests are explained in the following section, with the full questionnaire being presented in Appendix 3.

3.5.3.1 Beliefs

In order to measure the beliefs consumers have about plant-based meat products in general, respondents were asked to rate their agreement with five statements on a seven-point Likert scale. For example, respondents were asked to agree or disagree with "*Buying plant-based meat products instead of conventional/real meat would mean food free from chemicals such as artificial preservatives*". The statements were adapted from Arvola et al. (2008) who used similar statements to test consumers'

beliefs of organic foods. The items regarding *beliefs* toward PBMA were combined into an index showing high internal reliability with Cronbach's Alpha of .816.

3.5.3.2 Attitudes

As outlined in the theory section, research has proposed to measure attitude toward the ad and attitude toward the behavior separately. Accordingly, *attitude_{ad}* was tested by asking “*What is your opinion on the ad?*” and measured on a seven-point bipolar scale with three items reading “*It was bad*”/“*It was good*”, “*I disliked it*”/“*I liked it*” and “*Negative opinion*”/“*Positive opinion*”. The measures were adapted from Mitchell and Olson (1981). The measures for the respondent’s attitude toward the behavior (denoted as *attitude*) were adapted from Madden et al. (1992), with the question reading “*After seeing the ad, what is your opinion on buying a plant-based burger patty?*”, measured by means of five items. The items were “*Bad*”/“*Good*”, “*Unpleasant*”/“*Pleasant*”, “*Against*”/“*For*”, “*Harmful*”/“*Beneficial*” and “*Unenjoyable*”/“*Enjoyable*”. The items for each attitude construct were combined into an index each, showing high internal reliability indicated by a Cronbach’s Alpha of .922 for *attitude_{ad}* and .943 for *attitude*.

3.5.3.3 Subjective norm

Subjective norm was tested by means of four questions with one item each, measured on a seven-point Likert scale. The statements were adapted from Vermeir and Verbeke (2008) and Madden et al. (1992) and read, for instance, “*Most people who are important to me think I should buy a plant-based burger patty next time I prepare a burger*”. An index was created regarding *subjective norm* showing high internal reliability with a Cronbach’s Alpha of .914.

3.5.3.4 Perceived Behavioral Control

Perceived behavioral control was tested through three questions, adapted from Madden et al. (1992) and Ajzen (2006). The statements read, for example, “*I am confident that, if I wanted to, I could easily buy a plant-based burger patty within the next few weeks*”, and were each measured on a seven-point Likert scale. The items regarding *perceived behavioral control* were combined into an index which showed high internal reliability indicated by a Cronbach’s Alpha of .763.

3.5.3.5 Food neophobia

Food neophobia is the first of the two constructs utilized to extend the TPB model by Ajzen (1991). The measures for food neophobia were taken from the Food Neophobia Scale (FNS) (Pliner & Hobden,

1992) and were based on a four-item question battery with a seven-point Likert scale. For instance, the respondents were asked to agree or disagree with “*I don’t trust new foods*”. An index was created with the measures used for food neophobia and displayed high internal reliability shown by a Cronbach’s Alpha of .752.

3.5.3.6 Moral norms

Moral norms is the second of the two constructs with which we extended the original TPB model by Ajzen (1991). Moral norms were tested with four statements, each rated on a seven-point Likert scale. The statements were adapted from Kaiser and Scheuthle (2003) and Arvola et al. (2008) and read, for instance, “*Buying plant-based burger patties instead of patties made of conventional/real meat is responsible towards other people/animals/the environment*”. While some studies testing moral norms rather measure moral obligations, in line with our statements (1) and (2), Arvola et al. (2008) prefer to measure “*positive moral attitude*”, which describes positive self-evaluations resulting from the expected adherence to one's own moral principles. Based on exploratory interviews, Arvola et al. (2008) concluded that measuring positive moral attitudes would be more appropriate in the context of organic food choice. We therefore included statements (3) and (4). An index was created for *moral norms*, showing high internal reliability shown by a Cronbach’s Alpha of .924.

3.5.3.7 Behavioral intentions

Behavioral intentions were tested both concerning purchase intention and other intentions that might indicate positive interest in the product, as exposure to one advertisement might not immediately influence a consumer’s purchase intention. *Purchase intention* was measured by means of a three-item question battery adapted from Ajzen and Sheikh (2013) and Magnusson et al. (2001) with the statements reading, for instance, “*I intend to buy a plant-based burger patty in the upcoming weeks*”. *Other behavioral intentions* were assessed through a three-item battery with the first statement being adapted from Menozzi et al. (2017). The statements read, for example, “*I would be willing to try a plant-based burger patty if it was offered to me for free*”. All six behavioral intention questions were tested using a seven-point Likert scale. Two indices were created: one for *other behavioral intentions* and one for *purchase intentions*, both showing high internal reliability with Cronbach’s Alphas of .732 and .904, respectively.

3.5.3.8 Control and Attention Questions

A few control questions concerning the advertisements and personal characteristics were included in the questionnaire to enable potential further investigation of the variables and controlling for personal

or ad-related factors that might lead to biases. In addition, three attention checks were included to facilitate removal of respondents who were not properly reading the questions or showed signs of fatigue (Bell et al., 2019).

3.5.4 Data collection

Data was collected via online surveys created in Qualtrics. Participants for the pre-studies as well as for the main study were recruited via Facebook and via Prolific, an online platform connecting researchers with participants, used by numerous leading organizations (Palan & Schitter, 2018). Using Prolific enabled us access to a broader sample, particularly in terms of age and income (Palan & Schitter, 2018).

The survey was distributed to individuals living in Finland, Sweden and Germany and data was collected between March 30th and April 13th, 2023. We chose to collect data in several countries to be able to get a larger and broader sample, which is crucial to allow for generalizability of the results (Bell et al., 2019). Moreover, as the two authors of this thesis have roots in Finland, Sweden and Germany, extending the study to those countries allowed recruitment from personal networks, which can be regarded as a convenience/non-probability sample (Bell et al., 2019). The three countries were assumed to have a similar culture and follow similar trends when it comes to meat consumption. A question concerning the country of residence was further included in the survey to be able to control for potential differences. The pre-tests and the main study were therefore held in English for all countries to increase comparability. This was deemed appropriate as most adults in all three countries are fluent in English, while none of the countries has English as the official language. To make sure the stimuli and questionnaire were fully understood in each country, the manipulation check was distributed to participants in each of the countries.

The participants were randomly assigned to different conditions (Pallant, 2013; Söderlund, 2018), with nearly equal numbers of respondents for each of the treatment conditions, each person only completing one survey. Among the 491 individuals who opened the questionnaire, 423 completed it. Three respondents did not accept the GDPR conditions, and two respondents answered falsely to the third attention check question and were therefore removed from the dataset. Additionally, nine respondents were eliminated because their country of residence was neither Sweden, Finland or Germany. Finally, 40 respondents were eliminated because they identified as vegetarians or vegans, groups we chose to exclude from the study as explained in section 1.3. Moreover, the dataset was screened for extreme outliers regarding completion time in combination with the regarded data, but no significant outliers were found. The data collection ultimately resulted in 369 valid respondents.

The table below summarizes the demographic characteristics of the survey respondents, grouped by the ad condition the respondent was exposed to. The results show an even distribution between male and female, with a slight overrepresentation of men. We deliberately targeted flexitarians by posting in Facebook groups containing a major share of flexitarians in order to ensure approximately equal sizes of the dietary groups. The distribution between the three nationalities is also rather even, with a slight overweight of German respondents. We conclude that the demographic variables were balanced and are not expected to have impacted the findings. Additionally, we generally conducted all the tests including covariates such as age, income, gender, country of residence and nationality. However, we observed no significant deviations from the results obtained when these covariates were not included, meaning the results obtained when running tests using covariates produced the same results as when running the tests without using the covariates. Thus, we will not elaborate on them in our analysis.

Ad condition/claim	Environment	Animal welfare	Taste	Health	No claim	Total
N	76	84	65	75	69	369
Gender (%)						
Female	45	46	45	47	42	45.0
Male	55	54	54	52	58	54.5
Other	0	0	2	1	0	0.5
Nationality (%)						
German	47	39	49	41	26	40.7
Swedish	28	43	26	36	30	33.1
Finnish	25	18	25	23	44	26.2
Dietary preference (%)						
Meat eater	46	55	48	44	54	49.3
Flexitarian	54	45	52	56	46	50.7
Age (years)						
Min	20	18	20	18	19	18
Max	75	65	61	71	72	75
Mean	35	33	34	33	35	34
Median						30
Meat consumption frequency (# times per week)						
Mean	4	4	4	3	4	4
PBMA consumption frequency (# times per week)						
Mean	4	5	5	4	5	5
Household income (€) per month (%)						
Less than 1000	17	11	9	13	7	12
1000-2000	15	20	25	23	15	19
2001-3000	13	17	9	17	18	15
3001-4000	12	8	14	11	10	11
4001-5000	9	10	14	4	7	9
5001-6000	13	10	3	1	15	8
6001-7000	1	5	5	9	7	5
7001-8000	3	2	5	3	6	4
More than 8000	7	10	8	12	10	9
Prefer not to say	11	8	9	7	6	8

Table 3: Demographics of the respondents

3.6 Structure and analysis of data

The collected data was directly exported from Qualtrics to IBM SPSS Statistics Version 29 to avoid any human error in the transfer. After elimination of invalid or incomplete responses as described in section 3.5.4, the data was checked for errors (Pallant, 2013). In the *food neophobia* scale used in the survey, one of the items was negatively worded, and was thus reversed when preparing the data for analysis (Pallant, 2013). Multi-item scales were tested for internal reliability using Cronbach's Alpha, and those with a level of .7 or higher were deemed acceptable (Bell et al., 2019; Pallant, 2013). These were combined into index variables.

To test the hypotheses, we split our hypothesized model in two parts: the advertisements affecting beliefs, attitudes and behavioral intentions on the one hand, and the Theory of Planned Behavior on the other hand. The first part will be analyzed in section 4.1.1 and will involve mean comparisons conducted with independent-samples t-tests, one-way ANOVAs and one-way MANOVAs. The second part of the model will involve multiple linear regressions and will be analyzed in section 4.1.2. The add-on program Hayes's PROCESS tool for SPSS v4.2 was further installed for mediation and moderation analyses. We acknowledge that a better way to test our hypothesized model would have been the use of *Structural Equation Modeling (SEM)*. Due to the complexity of this statistical analysis technique and the limited scope of this thesis, we decided in agreement with our supervisor that the split of the model is adequate for our purposes. In order to minimize the likelihood of Type I errors, we utilize an alpha level of .05, implying a confidence level of 95%.

For the mean comparison tests, the data was first checked for uni- and multivariate normality of the dependent variables by using the Kolmogorov-Smirnov statistic and Mahalanobis Distance. Although some variables violated the assumption of normality of distribution, the tests were still regarded as applicable to our data since MANOVAs and ANOVAs are relatively robust to violations of normality (Pallant, 2013). Secondly, the data was checked for outliers, but no significant outliers were found. Thirdly, linearity between each pair of dependent variables was confirmed and no multicollinearity was found. Fourthly, homogeneity of variance-covariance-matrices was confirmed with Box's M test of Equality of Covariance Matrices (Pallant, 2013).

For the linear regressions, some additional tests were conducted. Multicollinearity between independent variables was tested by means of the VIF and Tolerance value but found absent. Normality of the distribution of the residuals was assessed with the P-P plot and scatter plot and confirmed. Finally, homoscedasticity was confirmed with the Breusch-Pagan test. After testing the assumptions, we concluded that we can perform all tests as desired.

3.7 Critical review of data quality

Quantitative studies involve the risk of a lack of quality of the collected data (Bell et al., 2019). Thus, the data quality has been critically reviewed by looking at reliability, validity and replicability. The three factors are discussed below.

3.7.1 Reliability

Reliability of a study is concerned with the question whether the data collection and analytical methods produce consistent results if the study were to be replicated (Bell et al., 2019). Two dimensions of reliability are deemed relevant for this study: stability and internal reliability.

Stability implies that if a test or measure is repeated with the same sample and contextual conditions twice, the findings should be similar with little variation over time (Bell et al., 2019). To ensure stability of our measures, we conducted a pre-study testing the claims and a manipulation check to test the manipulation and the questionnaire.

All questionnaire measures were adapted from previous academic papers, which were checked for credibility by inspecting the number of citations and quality of the journal in which it was published. All multi-item scales were tested for internal reliability by using Cronbach's alpha before being combined to an index, to ensure they are measuring the same intended variable (Bell et al., 2019). All scales scored a Cronbach's alpha exceeding 0.7, statistically justifying the creation of index variables and showing high internal reliability (Söderlund, 2019).

3.7.2 Validity

Validity is often seen as the most crucial criterion of research and can be divided in four components: internal validity, measurement validity, external validity and ecological validity, all of which will be discussed below (Bell et al, 2019).

Internal validity concerns the question whether we can infer with confidence that manipulation of the stimuli causes variation in the dependent variables, and not something else (Bell et al., 2019). The internal validity in this study is deemed satisfactory due to the experimental design of the study. Respondents were allocated randomly to one of the stimuli designs, ensuring that sample sizes were more or less equal. The advertisement was deliberately designed in a way that it resembled real advertisements, while ensuring that no associations to an existing product or brand could be drawn. The claim in the advertisements was the only parameter that differed between the treatment groups while

everything else was kept equal, which enabled us to attribute differences in the dependent variables to the independent variable (Söderlund, 2018). Nevertheless, it should be noted that despite trying to construct the claims in the advertisements as similar as possible, for instance in terms of length of the claim, we cannot with certainty state that there might not have been other factors influencing reactions. Control and demographics questions were included in the questionnaire to be able to test for other factors potentially influencing the effect on the dependent variables. Lastly, the claims were pre-tested, and the main study was pilot tested to eliminate issues in understanding of the survey and its questions. Summarized, the internal validity of this study is considered satisfactory.

To ensure measurement validity, measurement scales were constructed according to previous research and the tested relationships were based on previous research. The claims and questionnaire were pre-tested to ensure correct understanding. According to Bell et al. (2019), measurement validity is further related to reliability: by ensuring stability and internal reliability of our measures, we ensured that our measures could be considered valid (Bell et al., 2019).

External validity addresses whether the study findings can be generalized to the larger population, beyond the specific research context (Bell et al., 2019). Due to the scope and timeframe of this master thesis, we had to make a necessary trade-off between time and cost of data collection and the number of respondents. On average, 73.8 responses were collected per treatment group with a range from 65 to 84 respondents per stimuli. Although random allocation was supposed to ensure equal numbers in all groups, the fact that we needed to exclude many responses, mainly due to incompleteness of the survey, impeded equal numbers in all groups. Moreover, by using Prolific besides distributing the survey in the authors' social circles, generalizability could be increased since Prolific allowed us to recruit respondents from a broader population (Palan & Schitter, 2018). The sample groups were relatively evenly distributed between genders, dietary preferences, income and ages. However, the sample is rather skewed towards younger respondents, with a median age of 30, likely a consequence of the survey being spread among peers of the authors of this thesis. The findings should therefore rather be generalized to younger people. Moreover, data was only collected in Sweden, Finland and Germany, implying that our findings can only be generalized for these three markets and other markets similar to them. In summary, the external validity is deemed acceptable given the scope of the study.

Finally, ecological validity assesses whether the findings are applicable to everyday life (Bell et al., 2019). Due to the scope of the thesis, some active decisions needed to be made on how to make the experiment feasible. This involved measuring constructs such as attitudes and behavioral intentions with self-reported data instead of assessing people's actual behavior in real life. The stimuli were designed as realistically as possible by taking the interview with Anamma into consideration and using claims seen in the actual market. However, typical components of an advertisement such as a price or (known) brand needed to be excluded to avoid other factors to influence the dependent variables besides

the claims. This likely influenced how realistic the advertisement was perceived by the respondents. Moreover, answering a questionnaire can induce a feeling of unnaturalness to the respondent (Bell et al., 2019). In summary, there is room for improvement regarding ecological validity, but the scope of this thesis leads to some necessary sacrifices in ecological validity, which is why overall ecological validity is considered acceptable.

3.7.3 Replicability

Replicability of the study was ensured by using widely used multi-scale measures that have already been successfully replicated by other researchers. Moreover, theory, method and analysis are described in detail, ensuring replicability of the experiment. Additionally, the full questionnaire is included in Appendix 3. The study is thus deemed to ensure replicability.

4 Analysis and results

In the following section the data from the quantitative survey will be analyzed and hypotheses presented in section 2.3 will be tested. This section will also present findings connected to the secondary research question. The proposed conceptual model is again presented below, making it easier for the reader to follow along.

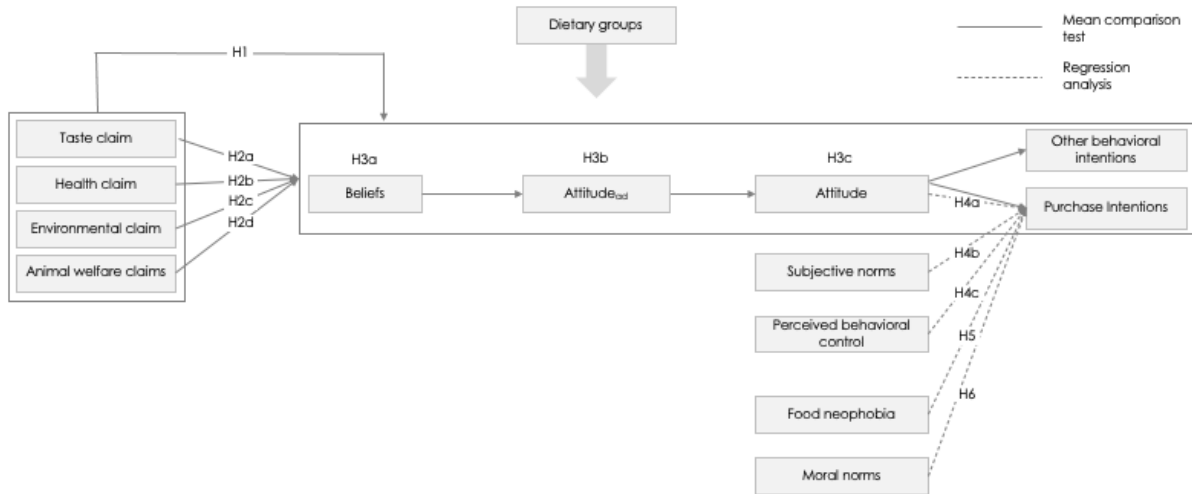


Figure 2: Conceptual model reminder

4.1 Hypothesis testing

In this section, each of the hypotheses as outlined in section 2.3 will be tested. The presentation of the findings will follow the same order as the hypotheses were presented in chapter 2.3, starting with the effect of the claims, followed by results connected to the TPB.

4.1.1 Claims

4.1.1.1 Exposure to a claim

Hypothesis H1 suggested that a claim embedded in a PBMA advertisement will have a positive effect on the dependent variables *beliefs*, *attitude_{ad}*, *attitude*, *other behavioral intentions* and *purchase intentions* as compared to an advertisement without a claim. For this purpose, we created a dummy variable of *ad condition*, with 0 = “Not exposed” and 1 = “Exposed to a claim”, which we called *exposure to claim*. Thus, the four groups exposed to a claim were merged into one here. We ran a one-way between-subjects MANOVA with the independent variable *exposure to claim* and the dependent variables *beliefs*, *attitude_{ad}*, *attitude*, *other behavioral intentions* and *purchase intentions*.

The multivariate test presented statistically significant differences between the group exposed to a claim and the group not exposed to a claim on the combined dependent variables ($p < .001$). When looking at the dependent variables separately, we used a Bonferroni adjusted alpha level of .01 since multiple statistical tests were performed simultaneously (Field, 2018; Harris, 1975; Pallant, 2013). The variables *attitude* ($p < .001$) and *other behavioral intentions* ($p = .005$) showed statistically significant differences between the two groups, while *purchase intentions* ($p = .032$) showed a tendency to be significant, although not significant on the Bonferroni adjusted alpha level. For the significant variables, the group exposed to a claim presented higher means. Since the difference between the group exposed to a claim and the group not exposed to a claim is significant for some of the dependent variables, H1 is partially supported. Table 4 presents the full results.

Dependent variable	Exposure to claim	N	Mean	Std. Error	F	p	Partial Eta Squared
Beliefs	Not exposed	69	4.000	.144	1.540	.215	.004
	Exposed to a claim	300	4.199	.069			
Attitude _{ad}	Not exposed	69	5.024	.158	.021	.886	.000
	Exposed to a claim	300	4.999	.076			
Attitude	Not exposed	69	4.380	.174	13.623	.0002***	.036
	Exposed to a claim	300	5.092	.083			
Other behavioral intentions	Not exposed	69	4.280	.171	8.143	.005**	.022
	Exposed to a claim	300	4.821	.082			
Purchase intentions	Not exposed	69	3.034	.213	4.630	.032	.012
	Exposed to a claim	300	3.542	.102			

* = $p \leq .01$, ** = $p \leq .002$, *** = $p \leq .0002$ (Bonferroni adjusted)

Table 4: Statistical analysis for H1

H1: A PBMA advertisement containing a claim has a more positive effect on the dependent variables (a-e) compared to a PBMA advertisement without a claim.

- a. Beliefs **not supported**
- b. Attitude towards the ad (Attitude_{ad}) **not supported**
- c. Attitude towards the behavior (Attitude) **supported**
- d. Other behavioral intentions **supported**
- e. Purchase intentions **not supported**

H1 PARTIALLY SUPPORTED

4.1.1.2 Effects of the different claims

Hypotheses H2a – H2d suggested positive effects of each of the different claims on the dependent variables *beliefs*, *attitude_{ad}*, *attitude*, *other behavioral intentions* and *purchase intentions* when compared to the no claim condition. This was tested by means of independent-samples t-tests.

Concerning the taste claim (H2a), a statistically significant difference between the claim condition and the no-claim condition was only found regarding the variable *attitude* ($M_{\text{taste}} = 4.91$, $M_{\text{no claim}} = 4.38$; $p = .031$), with a higher mean showcased in the exposed group. Although not statistically significant ($p > .05$), the exposed group presented higher means regarding all other dependent variables, except for the variable *attitude_{ad}*, which showed a higher mean for the unexposed group. Hypothesis H2a can therefore be partially supported. The full results can be seen in Table 5.

Dependent variable	Ad condition	N	Mean	Std. Deviation	t	Two-Sided p	Cohen's d
Beliefs	Taste	65	4.034	1.218			
	No claim	69	4.000	1.165	.164	.870	.028
Attitude _{ad}	Taste	65	4.687	1.273			
	No claim	69	5.024	1.155	-1.606	.111	-.278
Attitude	Taste	65	4.914	1.457			
	No claim	69	4.380	1.384	2.176	.031*	.376
Other behavioral intentions	Taste	65	4.718	1.418			
	No claim	69	4.280	1.317	1.853	.066	.320
Purchase intentions	Taste	65	3.431	1.813			
	No claim	69	3.034	1.618	1.339	.183	.231

* = $p \leq .05$, ** = $p \leq .01$, *** = $p \leq .001$

Table 5: Statistical analysis for H2a

The independent-samples t-tests regarding the health claim (H2b) showed significant differences for the variables *beliefs* ($M_{\text{health}} = 4.41$, $M_{\text{no claim}} = 4.00$; $p = .030$), *attitude* ($M_{\text{health}} = 5.15$, $M_{\text{no claim}} = 4.38$; $p = .001$), *other behavioral intentions* ($M_{\text{health}} = 4.97$, $M_{\text{no claim}} = 4.28$; $p = .002$) and *purchase intentions* ($M_{\text{health}} = 3.88$, $M_{\text{no claim}} = 3.03$; $p = .004$), with higher means presented in the group exposed to the health claim. There was no significant difference in *attitude_{ad}* ($p > .05$), even though the mean was also higher in the exposed group. Hypothesis H2b is thus partially supported. The detailed results are presented in the table below.

Dependent variable	Ad condition	N	Mean	Std. Deviation	t	Two-Sided p	Cohen's d
Beliefs	Health	75	4.411	1.084			
	No claim	69	4.000	1.165	2.191	.030*	.365
Attitude _{ad}	Health	75	5.116	1.318			
	No claim	69	5.024	1.155	.441	.660	.074
Attitude	Health	75	5.149	1.377			
	No claim	69	4.380	1.384	3.343	.001***	.558
Other behavioral intentions	Health	75	4.973	1.361			
	No claim	69	4.280	1.317	3.101	.002**	.517
Purchase intentions	Health	75	3.880	1.844			
	No claim	69	3.034	1.618	2.916	.004**	.486

* = $p \leq .05$, ** = $p \leq .01$, *** = $p \leq .001$

Table 6: Statistical analysis for H2b

The independent-samples t-test comparing the environmental claim group with the no claim group (H2c) showed statistically significant differences in terms of the dependent variables *attitude* ($M_{\text{environment}} = 5.15$, $M_{\text{no claim}} = 4.38$; $p = .001$) and *other behavioral intentions* ($M_{\text{environment}} = 4.80$, $M_{\text{no claim}} = 4.28$; $p = .025$), with higher means presented in the group exposed to the claim. The group exposed to the environmental claim also showed higher means regarding all other dependent variables; however, these differences were not statistically significant ($p > .05$). Hypothesis H2c is therefore partially supported. See Table 7 for the full results.

Dependent variable	Ad condition	N	Mean	Std. Deviation	t	Two-Sided p	Cohen's d
Beliefs	Environment	76	4.208	1.261	1.028	.306	.171
	No claim	69	4.000	1.165			
Attitude _{ad}	Environment	76	5.053	1.326	.137	.891	.023
	No claim	69	5.024	1.155			
Attitude	Environment	76	5.153	1.408	3.328	.001***	.553
	No claim	69	4.380	1.384			
Other behavioral intentions	Environment	76	4.798	1.429	2.263	.025*	.376
	No claim	69	4.280	1.317			
Purchase intentions	Environment	76	3.346	1.740	1.117	.264	.186
	No claim	69	3.034	1.618			

* = $p \leq .05$, ** = $p \leq .01$, *** = $p \leq .001$

Table 7: Statistical analysis for H2c

Finally, the independent-samples t-tests regarding the animal welfare claim (H2d) showed statistically significant differences concerning the variables *attitude* ($M_{\text{animal welfare}} = 5.12$; $M_{\text{no claim}} = 4.38$; $p = .003$) and *other behavioral intentions* ($M_{\text{animal welfare}} = 4.79$; $M_{\text{no claim}} = 4.28$; $p = .034$), with higher means displayed in the group exposed to the claim. The t-tests assessing the other dependent variables did not display statistically significant results ($p > .05$), even though they also display higher means in the group exposed to the claim than in the unexposed group. Hypothesis H2d is thus partially supported. The results are displayed in the table below.

Dependent variable	Ad condition	N	Mean	Std. Deviation	t	Two-Sided p	Cohen's d
Beliefs	Animal Welfare	84	4.129	1.245	.654	.514	.106
	No claim	69	4.000	1.165			
Attitude _{ad}	Animal Welfare	84	5.087	1.438	.295	.768	.048
	No claim	69	5.024	1.155			
Attitude	Animal Welfare	84	5.124	1.587	3.056	.003**	.497
	No claim	69	4.380	1.384			
Other behavioral intentions	Animal Welfare	84	4.786	1.554	2.143	.034*	.348
	No claim	69	4.280	1.317			
Purchase intentions	Animal Welfare	84	3.504	1.803	1.680	.095	.273
	No claim	69	3.034	1.618			

* = $p \leq .05$, ** = $p \leq .01$, *** = $p \leq .001$

Table 8: Statistical analysis for H2d

H2a/b/c/d: A PBMA advertisement containing a(n) taste / health / environmental / animal welfare claim has a more positive effect on the dependent variables (a-e) compared to a PBMA advertisement without a claim.

- a. Beliefs
- b. Attitude towards the ad ($Attitude_{ad}$)
- c. Attitude towards the behavior ($Attitude$)
- d. Other behavioral intentions
- e. Purchase intentions

	Taste	Health	Environment	Animal welfare
a. Beliefs	Not supported	Supported	Not supported	Not supported
b. $Attitude_{ad}$	Not supported	Not supported	Not supported	Not supported
c. Attitude	Supported	Supported	Supported	Supported
d. Other behavioral intentions	Not supported	Supported	Supported	Supported
e. Purchase intentions	Not supported	Supported	Not supported	Not supported
	H2a PARTIALLY SUPPORTED	H2b PARTIALLY SUPPORTED	H2c PARTIALLY SUPPORTED	H2d PARTIALLY SUPPORTED

Table 9: Summary of statistical tests for hypotheses H2

4.1.1.3 Differences between claims

In addition to testing for statistically significant differences between each exposed group and the non-exposed group, we investigated differences comparing the different exposed groups with each other, in order to be able to answer the first research question in a more nuanced manner. Therefore, we ran a one-way between-subjects MANOVA with the same dependent variables as in the t-tests and the independent variable *ad condition*. Using Wilks' Lambda, the results implied a statistically significant difference between the different levels of *ad condition* on the combined dependent variables ($p = .006$). When looking at the dependent variables separately, the only statistically significant difference was displayed for *attitude* ($p = .006$) (see Table 10). Post hoc tests using the Tukey HSD test (Field, 2018; Pallant, 2013), comparing each of the *ad condition* groups with each other for the dependent variable *attitude* revealed statistically significant differences only between the no claim group and each of the claim groups, but not between the groups that were exposed to a claim. Thus, the results presented in section 4.1.1.2 indicate that there are differences between the four different groups that were exposed to a claim, but this MANOVA shows that they are not significant.

Dependent variable	F	p	Partial Eta Squared
Beliefs	1.354	.249	.015
Attitude _{ad}	1.198	.311	.013
Attitude	3.708	.006**	.039
Other behavioral intentions	2.344	.054	.025
Purchase intentions	2.153	.074	.023

* = $p \leq .01$, ** = $p \leq .002$, *** = $p \leq .0002$ (Bonferroni adjusted)

Table 10: One-way MANOVA: differences between claims

4.1.1.4 Ad perception

To explore potential reasons for different effects of different claims on the dependent variables, we ran three one-way ANOVAs for the ad perception variables, namely *trustworthiness*, *emotion* and *informativeness*. The results are presented in the table below and show a significant difference between the claims regarding *emotion* ($p = .011$) and *informativeness* ($p < .001$). Regarding *emotion*, post-hoc tests using the Tukey HSD test showed that only the mean scores for the animal welfare claim and the no claim condition differed significantly ($p = .004$). Concerning *informativeness*, the environmental claim ($p = .015$) as well as the health claim ($p < .001$) differed significantly from the no claim condition.

Dependent variable	Ad condition	N	Mean	Std. Deviation	F	p	Eta Squared
Trustworthiness	Environment	76	5.263	1.389	2.235	.065	.024
	Animal Welfare	84	5.250	1.389			
	Taste	65	4.969	1.413			
	Health	75	5.547	1.425			
	No claim	69	5.000	1.082			
	Total	369	5.217	1.272			
Emotion	Environment	76	3.605	1.609	3.304	.011*	.035
	Animal Welfare	84	4.036	1.711			
	Taste	65	3.492	1.288			
	Health	75	3.507	1.474			
	No claim	69	3.174	1.306			
	Total	369	3.583	1.520			
Informativeness	Environment	76	4.500	1.609	5.020	<.001***	.052
	Animal Welfare	84	4.321	1.711			
	Taste	65	4.123	1.288			
	Health	75	4.773	1.474			
	No claim	69	3.696	1.306			
	Total	369	4.298	1.520			

* = $p \leq .05$, ** = $p \leq .01$, *** = $p \leq .001$

Table 11: One-way ANOVAs: ad perception

4.1.1.5 Mediators

H3a, H3b and H3c propose *beliefs*, *attitude_{ad}* and *attitude* to function as mediators in the effect of *exposure to claim* on *other behavioral intentions* and *purchase intentions*. For the purpose of testing

these proposed mediation effects, Hayes's bootstrapping macro PROCESS for SPSS was used. Model 4 was used and the tests were run at a 95% confidence interval. We conducted bootstrapping with $n = 5,000$ bootstrap samples to avoid non-normality of the sampling distribution of the indirect effect (Preacher & Hayes, 2008). The results were interpreted according to Zhao et al. (2010).

The table below presents the indirect effects for the tested mediation relationships. The only variable found to be significantly mediating the effect of *exposure to claim* on both *other behavioral intentions* and *purchase intentions* is *attitude*, since the two respective confidence intervals (BootLLCI to BootULCI) did not include zero. Moreover, since the direct effects of *exposure to claim* on *other behavioral intentions* and *purchase intentions* was insignificant in both cases ($p_{\text{other behavioral intentions}} = .564$; $p_{\text{purchase intentions}} = .901$), we can conclude that we have *indirect-only mediation* (Zhao et al., 2010). This implies that *attitude* fully mediates the effect of a claim on *other behavioral intentions* and *purchase intentions*.

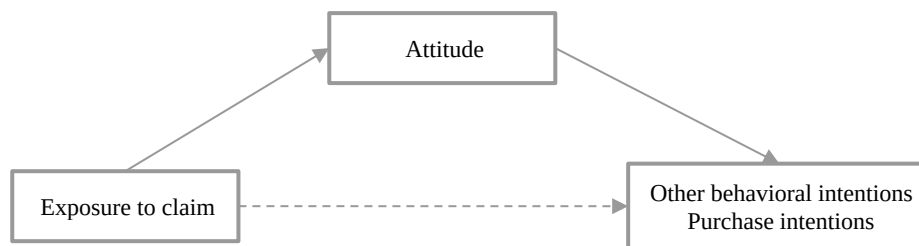


Figure 3: Attitude towards the behavior as mediator

Dependent variable	Mediator	Direct effect				Indirect effect			
		Effect	se	t	p	Effect	BootSE	BootLLCI	BootULCI
Other behavioral intentions	Beliefs	.419	.162	2.577	.010	.123	.098	-.068	.324
Other behavioral intentions	Attitude _{ad}	.553	.170	3.262	.001	-.012	.079	-.168	.141
Other behavioral intentions	Attitude	.085	.147	.578	.564	.456	.122	.223	.707
Purchase intentions	Beliefs	.346	.197	1.753	.081	.162	.130	-.090	.419
Purchase intentions	Attitude _{ad}	.523	.214	2.438	.015	-.014	.092	-.192	.173
Purchase intentions	Attitude	-.024	.191	-.124	.901	.532	.146	.259	.825

Table 12: Statistical analysis for H3

H3a: *Beliefs* mediate the effect of advertising claims on behavioral intentions of plant-based meat alternatives. **Not supported**

H3b: *Attitude_{ad}* mediates the effect of advertising claims on behavioral intentions of plant-based meat alternatives. **Not supported**

H3c: *Attitude* mediates the effect of advertising claims on behavioral intentions of plant-based meat alternatives. **Supported**

H3 PARTIALLY SUPPORTED

4.1.2 The Theory of Planned Behavior

4.1.2.1 Attitude, subjective norms and perceived behavioral control

Hypotheses H4 are connected to the Theory of Planned Behavior and seek to determine whether *attitude* (H4a), *subjective norm* (H4b) and *perceived behavioral control* (H4c) can be used to explain *purchase intentions*. More specifically, a multiple linear regression was utilized to determine whether the independent variables *attitude*, *subjective norm* and *perceived behavioral control* significantly influence the dependent variable *purchase intentions*. The results indicate that *attitude* and *subjective norm* both have a significant effect on *purchase intentions* ($p < .001$). However, the regression analysis shows that *behavioral control* is not significant in explaining *purchase intentions* ($p = .977$). The results thus indicate that H4a and H4b are supported, whereas H4c is not. Considering the significant independent variables, *subjective norm* ($b = .525$) is found to have a larger positive effect than *attitude* ($b = .467$). Lastly, the adjusted R^2 value for the regression model is $R^2_{\text{Adjusted}} = .55$, meaning that 55% of the variance in the dependent variable can be explained by the independent variables. The results from the regression analysis are summarized in the table below.

	B	Std. Error	t	Sig.
(Constant)	-.651	.415	-.568	.118
Attitude	.467	.049	9.519	<.001***
Subjective norm	.525	.044	12.050	<.001***
Perceived behavioral control	-.002	.065	-.029	.977
N	369			
Adjusted R Square	.553			
F (3, 365)	152.948			

* = $p \leq .05$, ** = $p \leq .01$, *** = $p \leq .001$

Table 13: Statistical analysis for H4

H4a: Attitude has a positive impact on purchase intentions towards a plant-based meat alternative. **Supported**

H4b: Subjective norm has a positive impact on purchase intentions towards a plant-based meat alternative. **Supported**

H4c: Perceived behavioral control has a positive impact on purchase intentions towards a plant-based meat alternative. **Not supported**

H4 PARTIALLY SUPPORTED

4.1.2.2 Extending the theory of planned behavior: food neophobia and moral norms

Hypothesis H5 and H6 aim to establish whether *food neophobia* (H5) and *moral norms* (H6) can further explain purchase intentions towards plant-based meat alternatives alongside the other three components of the TPB. The regression analysis with the three independent variables *attitude*, *subjective norms* and *perceived behavioral control* will from now on in the text be referred to as $TPB_{Original}$ and the regression with all the five independent variables will be referred to as $TPB_{Extended}$.

The findings show that the $TPB_{Extended}$ regression predicts a larger share of the purchase intentions connected to plant-based meat alternatives, since the adjusted R^2 increased by two percentage points to $R^2_{Adjusted} = .57$, compared to $R^2_{Adjusted} = .55$ in the $TPB_{Original}$. Looking at each independent variable separately, it can be noted that *attitude* and *subjective norm* remain significant ($p < .001$) and *perceived behavioral control* remains insignificant ($p = .896$). Zooming in on the additional independent variables, the data shows that *moral norms* are significant ($p < .001$) in predicting *purchase intentions*, whereas *food neophobia* is not ($p = .870$). Although not significant, contrary to what was hypothesized the relationship between *food neophobia* and *purchase intentions* is positive. Among the significant independent variables, *subjective norm* is still the most positive predictor variable of *purchase intentions* ($b = .410$), followed by *attitude* ($b = .369$) and *moral norms* ($b = .244$). To conclude, H5 is not supported and H6 is supported.

	B	Std. Error	t	Sig.
(Constant)	-.896	.464	-1.932	.054
Attitude	.369	.054	6.865	<.001***
Subjective norm	.410	.050	8.161	<.001***
Perceived behavioral control	-.008	.064	-.130	.896
Moral norms	.244	.058	4.241	<.001***
Food neophobia	.008	.046	.164	.870
N	369			
Adjusted R Square	.572			
F (5, 363)	99.562			

* = $p \leq .05$, ** = $p \leq .01$, *** = $p \leq .001$

Table 14: Statistical analysis for H5 and H6

H5: Food neophobia has a negative impact on purchase intentions towards a plant-based meat substitute.

H5 NOT SUPPORTED

H6: Moral norms regarding consumption of plant-based meat alternatives have a positive impact on purchase intentions towards a plant-based meat substitute.

H6 SUPPORTED

4.2 Secondary research question: Claims and dietary preference

To be able to answer the secondary research question whether *dietary preference* has an effect on the impact of advertising claims, Hayes's PROCESS tool for SPSS was used with 5,000 bootstrap samples. Model 1 and a 95% confidence interval were used. The tests were run both for a recoded version of *ad condition* and the dummy variable *exposure to claim*. *Ad condition* was recoded to assign the value 1 to “no claim”, since this allowed computation of interaction effects for the four groups that were exposed to a claim and comparison to the no claim condition. The moderation variable was *dietary preference*, and the dependent variables were *attitude* and *other behavioral intentions*, since they had been found to be significantly affected by the claims (see sections 4.1.1.1 and 4.1.1.3).

When using the dummy variable *exposure to claim* and thus comparing the whole group exposed to a claim to the group not exposed to a claim, a significant moderation effect of *dietary preference* was found on the dependent variable *attitude* (see Table 15). Zooming in on the conditional effects at different levels of *dietary preference*, the results revealed that *dietary preference* played a moderating role in the effect of *exposure to ad* on *attitude* only for flexitarians (see Table 16). Looking at the different claim

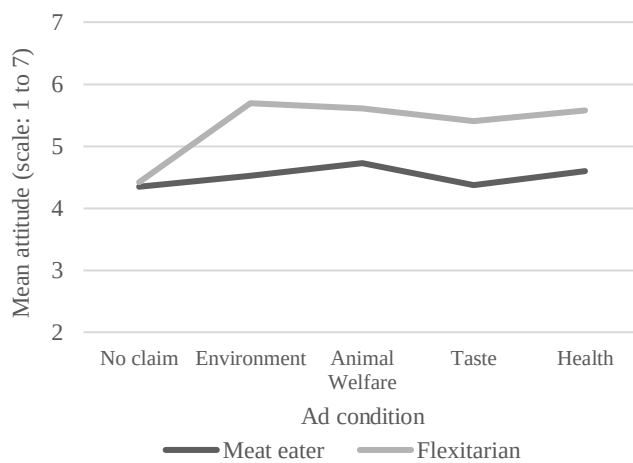


Figure 4: Effect of ad condition on attitude, influenced by dietary preference

conditions separately by using the independent variable *ad condition*, the moderation analysis further revealed that the interaction effects for the environmental claim and for the taste claim were significantly moderated by *dietary preference*. A tendency could also be found for the animal welfare and the health claim at a 10% significance level (see Table 17). The moderation analyses for the dependent variable *other behavioral intentions* did not yield significant results, implying that *dietary preference* did not moderate the effect of the claims on intentions.

Dependent variable	Interaction coefficient	SE	t	p	LLCI	ULCI
Attitude	.933	.368	2.534	.012*	.209	1.657
Other behavioral intentions	.371	.340	1.093	.275	-.297	1.039

* = $p \leq .05$, ** = $p \leq .01$, *** = $p \leq .001$

Table 15: Results from moderation analyses, interaction coefficients for all tested dependent variables (X = exposure to claim)

Dietary preference	Effect	SE	t	p	LLCI	ULCI
Meat eater	.227	.253	.894	.372	-.272	.725
Flexitarian	1.159	.267	4.340	.000***	.634	1.685

* = $p \leq .05$, ** = $p \leq .01$, *** = $p \leq .001$

Table 16: Results from moderation analysis, conditional effects at values of the moderator (X = exposure to claim, Y = attitude)

Group	Interaction coefficient	SE	t	p	LLCI	ULCI
X1 (Environmental claim)	1.100	.461	2.384	.018*	.193	2.007
X2 (Animal welfare claim)	.806	.451	1.788	.075	-.081	1.693
X3 (Taste claim)	.959	.479	2.001	.046*	.017	1.901
X4 (Health claim)	.908	.464	1.958	.051	-.004	1.820

* = $p \leq .05$, ** = $p \leq .01$, *** = $p \leq .001$

Table 17: Results from moderation analysis for different levels of X (X = ad condition, Y = attitude)

4.3 Summary of findings

The following table summarizes the findings from the statistical tests.

Summary of Results from Hypotheses testing		
RQ1: Impact of advertising claims	H1: A PBMA advertisement containing a claim has a more positive effect on the dependent variables (a-e) ¹ compared to a PBMA advertisement without a claim.	PARTIALLY SUPPORTED
	H2a: A PBMA advertisement containing a positive taste claim has a more positive effect on the dependent variables (a-e) ¹ compared to a PBMA advertisement without a claim.	PARTIALLY SUPPORTED
	H2b: A PBMA advertisement containing a health claim has a more positive effect on the dependent variables (a-e) ¹ compared to a PBMA advertisement without a claim.	PARTIALLY SUPPORTED
	H2c: A PBMA advertisement containing an environmental claim has a more positive effect on the dependent variables (a-e) ¹ compared to a PBMA advertisement without a claim.	PARTIALLY SUPPORTED
	H2d: A PBMA advertisement containing an animal welfare claim has a more positive effect on the dependent variables (a-e) ¹ compared to a PBMA advertisement without a claim.	PARTIALLY SUPPORTED
	H3a: Beliefs mediate the effect of advertising claims on behavioral intentions of plant-based meat alternatives.	NOT SUPPORTED
	H3b: Attitude _{ad} mediates the effect of advertising claims on behavioral intentions of plant-based meat alternatives.	NOT SUPPORTED
	H3c: Attitude mediates the effect of advertising claims on behavioral intentions of plant-based meat alternatives.	SUPPORTED
RQ2: Factors influencing consumer decision-making regarding PBMA	H4a: Attitude has a positive impact on purchase intentions towards a plant-based meat alternative.	SUPPORTED
	H4b: Subjective norm has a positive impact on purchase intentions towards a plant-based meat alternative.	SUPPORTED
	H4c: Perceived behavioral control has a positive impact on purchase intentions towards a plant-based meat alternative.	NOT SUPPORTED
	H5: Food neophobia has a negative impact on purchase intentions towards a plant-based meat substitute.	NOT SUPPORTED
	H6: Moral norms regarding consumption of plant-based meat alternatives have a positive impact on purchase intentions towards a plant-based meat substitute.	SUPPORTED

Table 18: Summary of findings from hypothesis testing

5 Discussion

Chapter five will discuss the results from the hypothesis testing in the light of the research questions. The chapter concludes with a discussion regarding the secondary research question.

5.1 Discussion of the results from hypothesis testing

5.1.1 Effect of advertising claims

This section will start by discussing the first research question:

1. *What is the impact of different advertising claims, namely health, environmental, taste and animal welfare on consumers' beliefs, attitudes and behavioral intentions towards plant-based meat alternatives?*

The findings from hypothesis H1 presented significantly higher means for the group exposed to a claim compared to the group not exposed to a claim for the variables *attitude* and *other behavioral intentions*, and a tendency could be found for *purchase intentions*, albeit not significant. The existence of a claim did not lead to statistically significant mean differences regarding *beliefs* or *attitude_{ad}*. Follow-up mediation analyses, tested according to hypotheses H3, have shown that *attitude* fully mediates both the effect of the claims on *other behavioral intentions* and *purchase intentions*.

The effect of advertising claims on *attitude* and *intentions* as well as the mediating role of *attitude* are in line with traditional marketing literature (Kim et al., 2009; MacKenzie et al., 1986; Mitchell & Olson, 1981). Moreover, we can see the strongest magnitude of effect in terms of difference in means regarding the variable *attitude*, followed by *other behavioral intentions* and lastly *purchase intentions*. This means, that even if positive attitudes towards the behavior had been formed after seeing the claim, they did not necessarily translate to intentions. In marketing theory, this is commonly called the *attitude-behavior gap* (Vermeir & Verbeke, 2006) and implies that behavioral intentions are affected by other factors besides *attitude*, which is why the TPB will be discussed later. The attitude-behavior gap has been acknowledged in other contexts of environmental consumerism as a barrier for greener consumption and might be one explanation as to why our results show a lower impact of advertising claims on actual intentions (Gupta & Ogden, 2006). Furthermore, product- and brand-related factors such as price, convenience or brand familiarity might be factors influencing behavioral intentions (Carrigan & Attalla, 2001). Indeed, the absence of a real, known brand, which is often found to be a mediator in marketing theory, might explain the lower effects on purchase intentions in this study (MacKenzie et al., 1986). The presence of an established brand on a PBMA packaging was seen to increase purchase intentions in a study conducted in the U.S., indicating that the inclusion of a known

German, Swedish or Finnish brand could have led to higher purchase intentions in our case (Van Loo et al., 2020).

The differences in means between the two groups were not significant regarding *beliefs* and *attitude_{ad}*, which is inconsistent with a large part of advertising literature (MacKenzie et al., 1986; Mitchell & Olson, 1981). Beliefs about product attributes are often found to be a major mediator of the effect of advertising content on attitudes, which also contradicts our findings. One possible explanation for the absence of an effect of the advertisement on beliefs is that people who do not identify as vegan or vegetarians have been noted to hold strong beliefs, and even negative stigma towards plant-based diets and products, making it difficult to alter these beliefs (Markowski & Roxburgh, 2019). Furthermore, the notion of meat attachment might also be a hinder to altering flexitarians', and especially meat eaters' beliefs about PBMA (Nezlek & Forestell, 2022).

Many studies in advertising literature further find significant effects of *ad content* on *attitude_{ad}* and found *attitude_{ad}* to partially mediate attitude formation, together with *beliefs* (Holbrook, 1978; MacKenzie et al., 1986; Mitchell & Olson, 1981). Our results, in contrast, do not imply any significant impact of *ad content* on *attitude_{ad}*; in fact, the means between the groups exposed to a claim and the groups not exposed to any claim are almost equal. A potential explanation could be that advertisements used in other studies (e.g., Mitchell and Olson, 1981) had more elements that varied between the different conditions such as the (non)existence of a picture or a claim. In contrast, our advertisements only differed in the claims and therefore might not have affected the respondents' attitude toward the advertisement as much as in other studies.

5.1.1.1 Differences between claims

The findings from hypotheses H2a to H2d, in combination with those from H1, indicate that exposure to a claim as compared to no claim significantly affects *attitude* and *other behavioral intentions*, but interestingly, the effects of the different claims do not differ significantly. Our study therefore indicates that having a claim on the product is better than not having a claim, but it does not matter what kind of claim is chosen for the plant-based meat product.

Even though we did not find significant differences between the four claims, there are tendencies that point to the health claim “*High in protein and fiber*” performing the best, whereas the taste claim “*Tasty & meaty*” seems to have performed on the lowest level. Indeed, the health claim was the only claim that had a significant positive effect on *beliefs*, when comparing to the no claim condition. Furthermore, according to our survey, the health claim was perceived the most informative and trustworthy out of the four claims. Indeed, the perceived informativeness, or factualness of message content has been found to have a positive effect on beliefs in prior research, which could explain the rather good performance

of the health claim (Holbrook, 1978). However, it is important to note that while some studies have concluded that informative or factual advertisements are more effective (Aaker & Norris, 1982), other studies have found the opposite, concluding that emotional messaging trumps (Goldberg & Gorn, 1987) which is why the success of the health claim cannot be explained by the informativeness alone. Reasons as to why individuals continue to eat meat often includes concerns regarding the nutritional profile of PBMA, for example inadequate levels of proteins and other nutrients (Tso & Forde, 2021). Therefore, a claim stating “*High in protein and fiber*” might indeed resonate well with flexitarians and meat eaters. This notion is also supported by Spendrup & Hovmalm (2022). Furthermore, on the basis of the expectancy-value theory and in the context of food advertising, it is often suggested that advertising claims that align with consumers’ anticipated product attributes are perceived as most persuasive (Feng & Park, 2018). According to this notion, it could be suggested that PBMA might be seen more as a functional product in the eyes of flexitarians and meat eaters, meaning it is better marketed using nutritional claims as opposed to taste claims, which are better suited when marketing hedonic foods. This congruency between anticipated product attributes and advertising claim, when it comes to hedonic versus functional foods is widely researched and confirmed (Cheong & Kim, 2011; Choi et al., 2013).

The weaker success of both the environmental and animal welfare claims in our study contrasts with what was found in previous research on PBMA menu items, which found that a social claim (a combination of an animal welfare and environmental claim) had a significantly higher influence on consumer preference than taste and health claims (Ye & Mattila, 2021). Indeed, it is possible that individuals who consume meat do not wish to be reminded of the negative effects meat consumption has on the environment and animal welfare, since they might feel judged or moralized, as suggested by Anamma’s Brand Manager (M.Rosenqvist, personal communication February 24, 2023) and prior research on ethical food claims (Schuldt & Hannahan, 2013).

5.1.2 The Theory of Planned Behavior

We will continue by discussing the second research question:

2. *What are the factors influencing consumer decision-making when it comes to purchasing plant-based meat alternatives?*

The hypotheses H4a to H4c sought to examine whether the widely acknowledged Theory of Planned Behavior could be applicable in explaining purchase intentions of plant-based meat alternatives. Results show that *attitude* and *subjective norm* have a positive influence on *purchase intentions*, supporting hypotheses H4a and H4b. Out of the two, *subjective norm* had the most considerable effect on *purchase intentions*, meaning that social expectations have a larger effect on getting individuals to purchase plant-

based meat alternatives than individuals' actual *attitudes*. The considerable effect of *subjective norms* can be seen as contradicting some previous research that points towards attitudes being the most positive predictor of individuals' intentions in the context of food consumption (Ajzen, 2015). However, subjective norm has been found as an even stronger predictor of behavioral intentions in other contexts examining sustainable behavior (Cialdini et al., 1990). What is more, *perceived behavioral control* (PBC) explaining purchase intentions, as suggested by H4c, could not be supported. Thus, being in control of one's own behavior did not positively predict individuals' purchase intentions connected to plant-based meat alternatives. Not finding *perceived behavioral control* as a significant predictor of *purchase intentions* offers a contrasting view to not only the famous TPB but also to other food-related studies, for example eating genetically modified food (Kim, 2014) and eating healthy food (Åström & Rise, 2001), that found PBC to be a predictor of *purchase intentions*. PBC not being significant could be explained by the fact that in general, respondents felt they had autonomy to buy plant-based meat alternatives if they wished to do so, which in turn could be an outcome of the widespread availability and accessibility, in terms of price and convenience, in Germany, Sweden and Finland. This offers a contrasting perspective to views suggesting that eating plant-based food would be regarded as an expensive, privileged way of life (Greenebaum, 2018).

5.1.2.1 Extending the Theory of Planned Behavior

The original TPB was extended with two components, to see if *food neophobia* (H5) or *moral norms* (H6) could further explain *purchase intentions* connected to plant-based meat alternatives. The extension proved to be successful, in the sense that the extended version of TPB predicted a larger share of the variation in *purchase intentions* compared to the original TPB. However, the results showed that H5 was not supported, meaning that conclusions regarding individuals' reluctance to try novel foods lowering purchase intentions for plant-based meats could not be drawn. This is rather contradicting to what has been concluded in previous studies that have found food neophobia as a barrier for purchasing plant-based meat (Bryant, C. et al., 2019; Hwang et al., 2020). These contradicting results could entail that plant-based meat is not as widely regarded as a new type of food anymore in Sweden, Germany and Finland due to the rapid development and the established nature of the category (Statista, 2023). Furthermore, it can be argued that a plant-based burger patty, as depicted in the survey, closely resembles conventional and familiar food and is therefore not considered as especially novel or exotic.

The concept of *moral norms* was found to have a positive effect on purchase intentions for PBMA, resulting in H6 being supported, alongside H4a and H4b. Moral norms add a welcomed layer of ethics to the TPB, which has often been criticized as relying on rational or cognitive components to explain behavior (Conner & Armitage, 1998). Moral norms having a positive effect on purchase intentions for plant-based meats are aligned with previous studies concluding that concerns regarding personal morals

and ethics, for example relating to animal welfare and the environment, are important drivers for reduced meat consumption (Kwasny et al., 2022).

5.2 Discussion regarding the secondary research question

This section will discuss the secondary research question:

3. *What is the effect of dietary preference (meat eaters and flexitarians) on the impact of different advertising claims in advertisements for plant-based meat alternatives?*

The moderation analyses conducted in section 4.2 showed that *dietary preference* moderated the effect of the different claims on *attitude*. The conditional effects further revealed that the moderation effect is in fact only significant for flexitarians, but not for meat eaters. This implies that the claims only had a significant positive effect on *attitude* as compared to the no claim condition for the dietary group of flexitarians. Moreover, when zooming in on the different claims, the moderation effects were significant for the environmental and the taste claim, although the other two claims also showed significant results at a 10% significance level. The moderation analyses regarding *other behavioral intentions* did not yield significant results, indicating that meat eaters and flexitarians did not significantly differ in how they reacted to the different claims when it comes to their behavioral intentions.

The results indicate that attitudes of flexitarians are more easily altered by PBMA advertising, compared to attitudes of meat eaters. The more positive effect of an exposure to a claim on *attitude* for flexitarians can possibly be explained with the higher involvement and more positive attitudes towards PBMA among flexitarians compared to that of meat eaters (Spendrup & Hovmalm, 2022). Indeed, as explained in section 2.3.2, attitude change is more likely to occur when the advertising message addresses something of importance to the individual (Holbrook, 1978; Kim et al., 2009; Kokkinaki & Lunt, 1999; Mitchell & Olson, 1981). Consumers generally do not process all information available to them, but process primarily information regarded as most important (Holbrook, 1978; Vermeir and Verbeke, 2006). According to Kokkinaki and Lunt (1999), higher personal relevance of the advertising message thus increases information processing and in turn positively impacts strength and accessibility of attitudes. Hence, as the claims address an issue of importance to flexitarians, this dietary group is more receptive towards the claims, explaining why attitude change occurred significantly more strongly than for meat eaters.

6 Conclusion

This section summarizes the main conclusions that can be drawn from the presentation and discussion of the results in the previous chapters. It further presents the theoretical and practical contributions of the study, as well as a discussion of limitations and potential avenues for future research.

6.1 A claim has a positive effect on attitude and behavioral intentions, but the type of claim does not make a difference

To summarize the findings related to the first research question “*What is the impact of different advertising claims, namely health, environmental, taste and animal welfare on consumers' beliefs, attitudes and behavioral intentions towards plant-based meat alternatives?*”, we conclude the following:

The study found that exposure to an advertising claim in an advertisement for a PBMA versus being exposed to an advertisement without a claim has a significant impact on consumer attitudes and other behavioral intentions. However, only a tendency could be found for a significant impact of the claim on purchase intentions. This entails that even though the claim has a positive effect on attitudes, it did not result in a positive impact on purchase intentions. We suggest the attitude-behavior gap is prevailing even in the context of PBMA. We also suggested that other product- and brand-related factors, and the lack of them in our study, might have weakened the impact on purchase intentions. In contrast to established marketing theories, however, the study found no significant differences in beliefs, when comparing the group exposed to a claim and the group not exposed to a claim, indicating that changing consumer beliefs relating to PBMA among individuals who consume meat, i.e., meat eaters and flexitarians, is a complex process and negative stigmas around PBMA might make it more challenging.

Interestingly, our study found that while being exposed to a claim had positive effects, significant differences between the four types of claims could not be established. However, the findings indicate that there are tendencies for the health claim to perform the strongest out of the four, whereas the taste claim indicated the least positive effects. We suggest one reason for this to be the congruency between a functional, informative advertising claim and the functional character of plant-based meat, which is often perceived persuasive by consumers (Feng & Park, 2018). Finally, we suggested that the relatively weaker performance of the animal welfare and environmental claim stem from individuals not wanting to be reminded of the negative consequences of their food choices, as suggested by previous literature (Schuldt & Hannahan, 2013).

6.2 Attitudes, subjective and moral norms predict purchase intentions of plant-based meat alternatives

Since exposure to advertisement alone is not sufficient to explain behavioral intentions, we proposed the second research question “*What are the factors influencing consumer decision-making when it comes to purchasing plant-based meat alternatives?*” and summarize the findings as follows:

The widely acknowledged TPB was somewhat successful in explaining purchase intentions towards PBMA, since the study found that attitude and subjective norm are significant predictors of purchase intentions. Surprisingly, subjective norm proved to be the strongest predictor of purchase intentions, indicating what has already been examined in other contexts of sustainable behavior, namely that social expectations and the opinions of an individual’s social circle have significant effects on opting for PBMA (Cialdini et al., 1990). Perceived behavioral control, on the other hand, does not seem to be of relevance in the context of PBMA. In order to more intricately answer the research question, we successfully extended the TPB with the concept of moral norms, proving that individuals’ concerns for the environment and animal welfare should result in higher purchase intentions. In contrast to that notion, the advertising claims related to the ethical and moral dimensions of PBMA did not lead to significantly more favorable effects than the other two claims and showed a tendency to perform worse than the health claim.

6.3 The attitudes of flexitarians are more easily affected

Finally, to answer the secondary research question “*What is the effect of dietary preference (meat eaters and flexitarians) on the impact of different advertising claims on advertisements for plant-based meat alternatives?*”, we conclude:

Our study found that dietary preference moderated the effect of different claims on attitude, but only for flexitarians, suggesting that flexitarians could be more easily persuaded than meat eaters by including claims in advertisements of PBMA. This moderation effect was not, however, observed for other behavioral intentions. We suggested that flexitarians being more easily swayed by PBMA advertisements could be explained by their higher involvement in and liking of PBMA, and their therefore higher tendency to process the information provided by the claim. These findings support the idea that attitude formation when exposed to an advertisement is influenced by personal relevance and shows that this is particularly relevant when it comes to the advertising of PBMA.

6.4 Theoretical contributions

The theoretical contributions of our thesis are two-fold: contributions in the domain of marketing and advertising and second, in the domain of consumer decision making. We begin by presenting the contributions in the domain of marketing and advertising.

By studying ways of advertising plant-based meat alternatives, we add to the scant, yet growing research area on meat substitutes. Prior research on plant-based meat alternatives has mainly focused on consumption drivers and barriers as well as individual beliefs and attitudes towards PBMA (Slade, 2018; Spendrup & Hovmalm, 2022). Focus has also been on product- and brand-related factors, while the domain of marketing these products has remained rather unexplored (Hoek et al., 2011; Van Loo et al., 2020). A few efforts in the advertising and marketing field of PBMA have undoubtedly been made, yet these have mainly focused on message framing and the effectiveness of on-pack labels, leaving advertising claims fairly unexplored (Demartini et al., 2022; Ye & Mattila, 2021). What is more, these studies have mainly been conducted in the U.S and Italy, leaving Finland, Germany and Sweden as understudied regions in the domain on marketing plant-based meat alternatives. Furthermore, by focusing on meat eaters and flexitarians, we provide an interesting viewpoint to the topic of marketing plant-based food, which has been suggested by prior research studying meat consumption and reduction (Kemper et al., 2023). Additionally, we extend prior research on claims used in food advertising, which has not, to the knowledge of the authors, studied plant-based meats (Choi et al., 2013; Kim et al., 2009; Schuldt & Hannahan, 2013). We also answer to Ye and Mattila's (2021) call to separate what they call the "social" appeal, namely looking at environmental and animal welfare claims separately. Finally, since we did not find that advertisement succeeded in changing consumer beliefs, as suggested by Mitchell and Olsson (1981), our study proposes that traditional views in marketing theory should be applied with caution when considering advertising of novel, and rather polarizing foods.

Equally important, our study showed that the established TPB is adequate in predicting purchase intentions in the domain of PBMA. More specifically, our study found that attitudes and subjective norms are significant predictors of purchase intentions for PBMA. By concluding that subjective norm was the strongest predictor of purchase intentions, we contradict prior findings that have deemed attitudes as the strongest predictor (Ajzen, 2015). Our findings also concluded that perceived behavioral control could not be found as a significant predictor of purchase intentions for PBMA, challenging the classical construct of TPB and contesting the impact of PBC when examining consumer goods that are easily accessible and reasonably priced. Finally, by successfully extending the original construct of TPB with the concept of moral norms, we add a new layer to the TPB, which in its original form has been criticized for relying too much on the rationality of consumers (Sniehotta et al., 2014). Furthermore, by looking at flexitarians and meat eaters in the light of the TPB, we add to the research on consumer

decision making in the context of plant-based meat alternatives, which has historically focused more on vegans and vegetarians (Christopher et al., 2018; Kerschke-Risch, 2015).

6.5 Managerial implications

Having focused on flexitarians and meat eaters, our study provides practical ideas to marketers of plant-based meat alternatives who wish to expand beyond their heavy-users, i.e., vegetarians and vegans. More specifically, our findings suggest that there is more work to be done in optimizing advertising towards this rather unexplored segment, albeit our findings do indicate that including an advertising claim on PBMA leads to a positive impact on consumer attitudes, beliefs and some of the lower order behavioral intentions. However, in order to impact purchase intentions, more is needed. Comparing the different types of claims, our findings suggest that no significant differences between them can be established; however, some tendencies were found, which could provide avenues for marketers to explore. Indeed, our findings suggested that the health claim *“High in protein and fiber”*, would be received well among flexitarians and meat eaters, whereas the taste claim *“Tasty and meaty”* did not lead to stellar results. Moreover, our findings for the secondary research question also suggest that flexitarians seem to be more positively impacted by PBMA advertisement, suggesting marketing efforts could give more bang for the buck when targeting this group.

Our findings from having applied the TPB suggest that PBMA purchase intentions are predicted by not only consumer attitudes, but also subjective and moral norms. This implies that policy makers and PBMA producers and marketers should highlight the social acceptability of opting for PBMA. However, based on the results from our study, policy makers and PBMA marketers should approach the area of moral norms with caution when targeting meat eaters and flexitarians, since the claims with an ethical layer (animal welfare and environment) did not perform the best out of the four claims tested.

6.6 Limitations and criticism of the study

To begin with, our advertising stimuli pose some limitations to our study. Indeed, the advertisement in the experiment was not culturally adapted to the three different audiences and could therefore have been perceived as generic. Also, the chosen plant-based product, the burger, could be seen as not fully representing the category of PBMA. Furthermore, the only stimuli altered in our study was the claim or the inclusion versus absence of it, meaning that our study does not examine the effect of visual stimuli.

Second, the data sample was collected from three different countries, which could be seen as a limitation. Indeed, since we utilize a convenience sample, our questionnaire was in English and presumably not in the respondents' mother tongue, which could lead to misunderstandings and cultural

interpretations (Wenz et al., 2021). Moreover, since the study included three countries, the generalizability of the findings is rather limited to these countries on the one hand, while on the other hand, may not prove as accurate results as wanted for each of the three countries individually. Moreover, one potential limitation in our study relating to the secondary research question is the ambiguity of different dietary groups. Indeed, dietary preference cannot be seen as a binary variable and since survey respondents indicate their self-perceived dietary preference, generalizability and replicability of results could be conflicted.

Thirdly, applying the established, yet criticized TPB in our study calls for critical reflections. Certainly, the TPB has been criticized for explaining consumer behavior through a rational lens and not incorporating the role of emotions (Conner et al., 2013; Sniehotta et al., 2014). Moreover, since survey data was collected through self-administered surveys as suggested by Ajzen (2006), rather than observing actual behavior or analyzing real sales data, biased or less reliable results may have been recorded. De Leeuw et al. (2015) found that this can be the case especially when examining socially desirable behaviors.

Finally, the scope of the study provides some limitations. Our study did not utilize a holistic view on marketing, since it only focused on one of the four pillars of the marketing mix, namely promotion. Certainly, factors such as product, price and place as well as other factors suggested to be included in the mix when considering marketing within the sustainability domain, could also have been considered in order to provide a more holistic view on the topic (Pomeroy, 2017).

6.7 Suggestions for future research

Since our study found tendencies for the success of the more informational claims and the opposite for the more hedonic claim, future research could examine the match between perceived product attributes and advertising appeals in order to establish or reiterate the concept of congruency in the PBMA domain. In addition, given that our advertisements did not manage to alter consumer beliefs, future research should examine if different advertising techniques could be able to do so.

Second, since the study was conducted among Finnish, German and Swedish consumers, future research could replicate the study by expanding it to cover more diverse parts of Europe. Furthermore, researchers should also investigate adapting the advertising stimuli to the studied cultural context, in order to possibly gain more statistically significant result. Furthermore, more nuanced cultural comparisons among the populations could also provide interesting avenues of future research.

Thirdly, since the aim of our study was not to examine food values (Lusk & Briggerman, 2009) in the context of plant-based food, we suggest future research to focus on fleshing out food values in the context of plant-based meats. Furthermore, our study focused on only four types of claims and their individual effect on the consumer. Future research should take on a more holistic perspective and examine the effect of other claims and the joint effect of various claims.

Fourthly, since our study found that the TPB and the extended version of it only explained 57% of the variation in purchase intentions future research could focus on uncovering other constructs that predict a larger share of the purchase intentions for PBMA. Finally, as noted in our study, purchase intentions for PBMA remain low among flexitarians and meat eaters, therefore future research should focus on uncovering reasons for how to increase the adoption of these products among these dietary groups.

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Appendices

Appendix 1: Pre-study 1: Questions for interview with Anamma

1. Tell us about your role and Anamma.
2. What are Anamma's primary target groups?
3. How would you describe these target groups?
4. Any new target groups you wish to reach but have not yet?
 - a. What is the biggest difference between these groups (your primary target group and the ones you are currently not targeting)
 - b. Why have you not targeted them yet, biggest challenges?
5. How do you work with advertising?
6. How do you work with advertising claims?
 - a. Claims preferred by the different target groups.
 - b. Evaluation of claims suggested for main study – thoughts, comments?
7. Do you see any general trends in the category for plant-based food?
8. Biggest challenge/opportunity for Anamma in the upcoming years?

Appendix 2: Stimuli ads

Environmental claim



Animal welfare claim



Health claim



Taste claim



No claim condition



Appendix 3: Questionnaire main study

Block 1: Introduction

If you are participating in this survey via Prolific please add your unique ID below.
Otherwise just click the blue arrow to start the survey.

----- Page Break -----

Hello and welcome to our survey!

We are conducting this survey as part of our Master's Thesis at the Stockholm School of Economics. Thank you for supporting us in our thesis by giving us a few minutes of your time today!

The survey will take about 7 minutes to complete. If you no longer wish to participate, simply close the tab. For the most user-friendly experience, we highly recommend taking the survey on a **computer**. The thesis is not in collaboration with a corporation.

Please only continue with the survey if you **currently live in Northern Europe or Germany**.

If you have any questions or comments, contact us at 42059@student.hhs.se (Sophie) or 23923@student.hhs.se (Ida).

Thank you for participating!
Ida & Sophie

----- Page Break -----

GDPR information

As an integral part of the educational program at the Stockholm School of Economics, enrolled students complete an individual thesis. This work is sometimes based upon surveys connected to the subject. Participation is naturally entirely voluntary. You can at any time withdraw your consent by closing the window and your data will thereafter be permanently erased.

Anything you state in the survey will be held strictly confidential and will only be made available to supervisors, tutors and the course management team. The thesis written by the students will not contain any information that may identify you as a participant. All data will be stored and processed safely by the SSE and will be permanently deleted when the project is completed.

You are welcome to visit <https://www.hhs.se/en/about-us/data-protection/> in order to learn more about your rights related to personal data.

I have read the information above and consent to take part in this study.

I do not consent to take part in this study.

----- Page Break -----

Block 2: Advertisement

You will now be shown an ad for a plant-based meat product. Imagine the product will be **launched in 2023 and sold in supermarkets in Northern Europe and Germany**. Imagine you see this ad in a context where you normally see ads (e.g. on a billboard or social media).

For the purpose of this study, we define **plant-based meat** as products that **imitate meat** but are **plant-based**, made with e.g., soy, beans, peas, mushrooms or oats.

Whenever we refer to **conventional/real meat** in this survey, we mean **red and white meat**, e.g. beef, pork, chicken, but **not fish**.

In the following pages we will ask you a couple of questions regarding this ad. Therefore, please take your time to **study the ad carefully** before you move on to the questionnaire. You will only **see the ad once** and won't be able to go back to it.

Please try to answer the questions as truthfully as possible and trust your instincts.

----- Page Break -----



Have you studied the scenario and ad carefully? You will not be able to go back.

Yes

No

----- Page Break -----

Block 3: Dependent variables

What is your opinion on the ad?

	1	2	3	4	5	6	7	
It was bad	☐	☐	☐	☐	☐	☐	☐	It was good
I disliked it	☐	☐	☐	☐	☐	☐	☐	I liked it
Negative opinion	☐	☐	☐	☐	☐	☐	☐	Positive opinion

After seeing the ad, what is your opinion on buying a plant-based burger patty?

	1	2	3	4	5	6	7	
bad	☐	☐	☐	☐	☐	☐	☐	good
unpleasant	☐	☐	☐	☐	☐	☐	☐	pleasant
against	☐	☐	☐	☐	☐	☐	☐	for
harmful	☐	☐	☐	☐	☐	☐	☐	beneficial
unenjoyable	☐	☐	☐	☐	☐	☐	☐	enjoyable

Please indicate how much you agree with the following statements

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
Most people who are important to me think I should buy a plant-based burger patty next time I prepare a burger.	☐	☐	☐	☐	☐	☐	☐
Most people who are like me think I should buy a plant-based burger patty next time I prepare a burger.	☐	☐	☐	☐	☐	☐	☐
People whose opinion I value would prefer that I buy a plant-based burger patty next time I prepare a burger.	☐	☐	☐	☐	☐	☐	☐

Please indicate how much you agree with the following statements

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
I am confident that, if I wanted to, I could easily buy a plant-based burger patty within the next few weeks	☐	☐	☐	☐	☐	☐	☐
Buying a plant-based burger patty in the next few weeks is completely up to me	☐	☐	☐	☐	☐	☐	☐
The decision to buy a plant-based burger patty in the next few weeks is under my complete control	☐	☐	☐	☐	☐	☐	☐

Here is an attention task for you as it is important that you keep reading all questions carefully. Which of the following is *not* an animal?

Monkey

Cow

Banana

Dog

Please indicate how much you agree with the following statements

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
I intend to buy a plant-based burger patty in the upcoming weeks	☐	☐	☐	☐	☐	☐	☐
The next time I buy a burger patty, I will choose the plant-based meat alternative	☐	☐	☐	☐	☐	☐	☐
I will make an effort to buy a plant-based burger patty in the next few weeks	☐	☐	☐	☐	☐	☐	☐
I would be willing to try a plant-based burger patty if it was offered to me for free	☐	☐	☐	☐	☐	☐	☐
I am willing to pay extra for a plant-based burger patty	☐	☐	☐	☐	☐	☐	☐
I would be interested in finding out more about the product	☐	☐	☐	☐	☐	☐	☐

What is your perception of the ad?

	1	2	3	4	5	6	7	
Not trustworthy	☐	☐	☐	☐	☐	☐	☐	Trustworthy
Non-emotional	☐	☐	☐	☐	☐	☐	☐	Emotional
Non-informative	☐	☐	☐	☐	☐	☐	☐	Informative

----- Page Break -----

Please indicate how much you agree with the following statements:

"Buying plant-based burger patties instead of patties made of conventional/real meat..."

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
...is responsible towards other people/animals/the environment.	☐	☐	☐	☐	☐	☐	☐
...is my moral obligation to other people/animals/the environment.	☐	☐	☐	☐	☐	☐	☐
...would feel like I am contributing to something better.	☐	☐	☐	☐	☐	☐	☐
...would make me feel like a better person.	☐	☐	☐	☐	☐	☐	☐

Please indicate how much you agree with the following statements

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
I don't trust new foods.	☐	☐	☐	☐	☐	☐	☐
If I don't know what is in a food, I won't try it.	☐	☐	☐	☐	☐	☐	☐
I am very particular about the foods I will eat.	☐	☐	☐	☐	☐	☐	☐
I will eat almost everything.	☐	☐	☐	☐	☐	☐	☐

Please indicate how much you agree with the following statements:

"Buying plant-based meat products instead of red meat would mean..."

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
...food free from chemicals such as artificial preservatives.	☐	☐	☐	☐	☐	☐	☐
...healthier food.	☐	☐	☐	☐	☐	☐	☐
...better tasting food.	☐	☐	☐	☐	☐	☐	☐
...food that has been produced in a way that is better for the environment.	☐	☐	☐	☐	☐	☐	☐
...food that has been produced in a way that is better from an animal welfare perspective.	☐	☐	☐	☐	☐	☐	☐

Here is an attention task for you as it is important that you keep reading all questions carefully. Please choose the number eight.

1

7

8

12

23

----- Page Break -----

Block 4: Control questions & demographics

How much do you like burgers in general (regardless if prepared with real/regular meat or plant-based meat)?

	1	2	3	4	5	6	7	
I dislike them a lot	☐	☐	☐	☐	☐	☐	☐	I like them a lot

How frequently do you usually consume **plant-based** meat?

	More than once a week	Once a week	2-3 times a month	Once a month	A few times a year	Once a year	Never
Please choose the category closest to the number of times you consume plant-based meat.	☐	☐	☐	☐	☐	☐	☐

On how many days per week do you consume **meat** (incl. chicken)? Please state in whole numbers, e.g. 4. (If you're a vegetarian, fill in 0)

Please choose the definition that best describes your dietary preference

Meat eater (My diet consists of meat among other things and I am not actively trying to reduce my meat consumption)

Flexitarian (I occasionally eat meat but I'm actively trying to reduce my meat consumption)

Vegetarian/vegan (I never eat meat)

Where do you currently live?

What is your nationality?

How old are you? Please state in numbers, e.g. 28

What do you identify as?

Female

Male

Other

What is your gross household income per month? Please convert to **Euros**. 10 SEK are approximately 1€, so if your income is 10,000 SEK per month, choose 1,000€. If you're not entirely sure, simply choose an estimate.

(Remember, the survey is entirely anonymous, the data will be permanently deleted when the project is completed and the data exclusively serve the purpose of this master thesis.)

What is your gross household income per month? Please convert to **Euros**. 10 SEK are approximately 1€, so if your income is 10,000 SEK per month, choose 1,000€. If you're not entirely sure, simply choose an estimate.

(Remember, the survey is entirely anonymous, the data will be permanently deleted when the project is completed and the data exclusively serve the purpose of this master thesis.)

Less than 1,000€ per month

1,000€ - 2,000€ per month

2,001€ - 3,000€ per month

3,001€ - 4,000€ per month

4,001€ - 5,000€ per month

5,001€ - 6,000€ per month

6,001€ - 7,000€ per month

7,001€ - 8,000€ per month

More than 8,000€ per month

Prefer not to say

Please choose the product shown in the advertisement at the very beginning of the survey

Vegetarian pizza

Plant-based burger

Vegan pasta

----- Page Break -----

THANK YOU so much for taking part in our survey!

Here is the completion code for Prolific: C5O32R9M. If you are a Prolific respondent, please copy the ID and submit to the portal before continuing.

Please finish the survey by **clicking on the arrow**.

Sophie & Ida