



**How do consumers react to sustainability-focused
food advertisements?
A comparative study of emotional vs. informational
appeals in plant-based meat substitutes**

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ABSTRACT

Sustainability is becoming more and more central in the food industry and understanding how consumers respond to sustainability-focused advertisement is therefore very important. This dissertation aims to explore how consumers react to sustainability focused emotional and informational advertisements for plant-based meat substitutes.

The study uses a quantitative method and gathers primary data from an online survey. Variables measured were product liking, purchase intention and willingness to pay and moderating effects of gender, age and environmental awareness were examined.

The results showed that emotional appeal advertisement has a higher product liking, purchase intention and willingness to pay among consumers than informational appeal advertisement. Gender and environmental awareness showed a significant moderating effect for product liking and purchase intention. Women showed a higher product liking and purchase intention for emotional appeals and men for informational appeals. Participants with higher environmental awareness had a higher product liking and purchase intention for the emotional appeal. Participants with a lower environmental awareness had a higher product liking and purchase intention for informational advertisement. Age didn't show any statistically significant moderating effects.

The study provides effective insights for marketers of sustainable food products. It also highlights the importance of tailoring advertisement messaging accordingly to improve the advertisements effectiveness.

Keywords: emotional advertisement, informational advertisement, sustainability marketing, product liking, purchase intention, willingness to pay, plant-based meat substitutes.

Title of dissertation: “How do consumers react to sustainability-focused food advertisements? A comparative study of emotional vs. informational appeals in plant-based meat substitutes”

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SUMÁRIO

A sustentabilidade está a tornar-se cada vez mais central na indústria alimentar. Compreender como os consumidores reagem à publicidade focada na sustentabilidade é, por isso, muito importante. Esta dissertação teve como objetivo comparar a forma como os consumidores reagem a anúncios emocionais e informativos focados na sustentabilidade e avaliar o impacto nas suas preferências por hamburguers de origem vegetal.

O estudo utiliza um método quantitativo e recolhe dados primários através de um inquérito online. As variáveis medidas foram a aceitação do produto, a intenção de compra e a disposição a pagar, tendo sido ainda examinados os efeitos moderadores do género, da idade e da consciência ambiental.

Os resultados mostraram que o uso de um apelo emocional na publicidade focada na sustentabilidade conduz a maior gosto pelo produto, intenção de compra e disposição a pagar entre os consumidores comparado com um apelo informativo. O género e a consciência ambiental mostraram ter um efeito moderador significativo no gosto pelo produto e na intenção de compra. As mulheres e aqueles com maior consciência ambiental mostraram ter mais gosto pelo produto e maior intenção de compra quanto expostas a um apelo emocional, do que os homens e aqueles com menor preocupação ambiental. Já a idade não mostrou quaisquer efeitos moderadores estatisticamente significativos.

O estudo fornece insights úteis sobre comportamento do consumidor para os profissionais de marketing de produtos alimentares sustentáveis e destaca a importância de adaptar as mensagens publicitárias ao público-alvo para melhorar a sua eficácia.

Palavras-chave: publicidade emocional, publicidade informativa, marketing de sustentabilidade, gosto pelo produto, intenção de compra, disposição a pagar, substitutos de carne à base de plantas.

Título da dissertação: "Como é que os consumidores reagem aos anúncios de alimentos centrados na sustentabilidade? Um estudo comparativo dos apelos emocionais vs. informativos em substitutos de carne à base de plantas"

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CHAPTER 1: INTRODUCTION

1.1 Background and Problem Statement

In an era defined by multiple global challenges, the importance of sustainability is increasing across all industries, and particularly in the food sector. As consumers become more aware of environmental and social issues, food companies are under growing pressure to integrate sustainability into their core operations and marketing strategies (Rayner 2023). Therefore, understanding how consumers react to sustainability-focused messages is crucial for food brands, in order to adapt their communication strategies to increase their market shares (Schlich 2023).

Previous studies have shown that there is a rise in the motivation to integrate plant-based substitutes in diets among consumers, mainly due to environmental concerns, ethical reasons and health benefits (Hoek et al., 2017). This research also uncovered that factors such as animal welfare, reduced environmental impact and personal health contribute to the adoption of meat substitutes (Hoek et al., 2017).

Two main types of appeals are used in advertising – emotional appeals and informational appeals. Emotional appeals seek to engage consumers by evoking feelings or emotions rather than providing objective product information. By establishing an emotional bond with the audience, emotional advertisement has the potential to boost behavioural intentions and attitudes (Taute et al., 2011). Informational appeals focus on providing consumers with detailed factual content about a product's features, benefits, or functional attributes. Informational ads seek to establish credibility and confidence by providing objective information that supports customers' ability to make informed decisions. By emphasizing observable advantages or addressing particular issues, informational advertisements frequently stress data, statistics, and factual content to help consumers feel educated and confident in their purchase decisions (Teichert et al., 2018).

Advertising research has shown that emotional appeals can be highly effective in building positive brand attitudes and loyalty, with results being especially visible among consumers who have high environmental awareness (Teichert et al., 2018). Informational appeals usually increase consumer trust and credibility, which makes them effective regarding rational decision-making purchases (Nuweihed & Trendel, 2023).

Although the effects of emotional versus informational appeals in advertising messages have been already extensively researched in marketing, studies evaluating their impact in the context of the consumption of plant-based meat substitutes are still lacking. This gap demonstrates the need to conduct research that examines how these appeals affect consumers' perceptions and inclinations to buy in this quickly growing sector of the food industry.

Moreover, since plant-based alternatives are becoming more and more popular, it is of high importance for companies to identify which communication styles will be the most persuasive ones for the consumers. It will be of value for companies to attract not only consumers who already are motivated to purchase sustainable plant-based products, but also to attract consumers who are more hesitant of purchasing the plant-based products. The understanding of the impact that emotional versus informational advertising has can help brands develop effective campaigns. Those campaigns can also help to accelerate the transition to more sustainable diets which is beneficial for the environment.

1.2 Aims and Scope

The main aim of this thesis was to evaluate the impact of emotional vs. informational sustainability-focused advertising on consumers' product liking, purchase intention and willingness to pay. More specifically, this study focused on advertisement in the plant-based meat substitutes category. Furthermore, this thesis explored the role played by consumer characteristics (e.g., age, gender, environmental awareness) in moderating the effectiveness of emotional versus informational sustainability messages.

The following research questions are proposed:

RQ 1: How do emotional sustainability-focused advertisements impact consumers' product liking, purchase intention and willingness to pay for plant-based meat substitutes compared to informational sustainability-focused advertisements?

RQ 2: How does age, gender and degree of environmental awareness moderate consumer responses to emotional versus informational sustainability appeals in advertisements of plant-based meat substitutes?

1.3 Research Methods

In order to answer the research questions, this thesis used a deductive, explanatory research approach. A quantitative study using an online questionnaire was designed and implemented to collect primary data. The questionnaire was created with the help of Qualtrics and later distributed through different social media platforms. People familiar with plant-based meat substitutes and aged between 18-85 years old made up the target demographic.

The effect of type of advertising appeal (emotional vs. informational) on dependent variables product liking, purchase intention and willingness to pay was tested in an experiment embedded in the online questionnaire. In this experiment, participants were showed a randomly assigned plant-based meat advertisement, either one representing an emotional appeal or one representing an informational appeal. After exposure to one of these advertisements, participants were asked questions to determine the effectiveness of each appeal type and to see how it affected the product liking, purchase intention and the willingness to pay. Additionally, in order to investigate how different consumer groups reacted to each kind of advertisement appeal, the moderating impacts of environmental awareness, gender and age were examined. The collected data was analysed with IBM SPSS software.

1.4 Relevance

Food companies must carefully consider how they communicate their sustainability efforts to consumers, especially considering the rise of plant-based alternatives and eco-friendly practices (Vaz-Velho, 2023). This research contributes to a better understanding of how consumers value sustainability in food advertising and how these perceptions influence their purchasing decisions. By exploring the effectiveness of emotional versus informational appeals in sustainability messaging, this thesis generated insights that can help brands make more impactful and persuasive sustainability-focused marketing strategies. Finally, this research is valuable for marketing professionals, as well as brands and advertisers, to help optimize messaging to better appeal to consumers and in turn raise loyalty and increase market share.

1.5 Dissertation Outline

The second chapter presents a review of existing knowledge and work regarding emotional as well as informational advertisement appeals. The third chapter offers a detailed description of the methodological approach applied in this thesis to uncover what impact emotional and informational appeals have on product liking, purchase intention and willingness to pay and if there were differences between genders, age groups and levels of environmental awareness. Chapter four provides a detailed overview of the results achieved. Chapter five describes the conclusions, limitations and future managerial recommendations as well as suggestions for future research.

CHAPTER 2: LITERATURE REVIEW AND HYPOTHESES

2.1 Plant-based meat substitutes

Plant-based diets are increasing in popularity due to reasons such as health, animal welfare and environmental concerns. This increased popularity can be explained by a societal movement to more ethical and ecological habits of consumption. More and more consumers are questioning the environmental impact as well as the ethical aspects of regular meat production. The plant-based meat substitutes are considered to be a replacement for regular meat (Willett et al., 2019).

Plant-based meat substitutes that have the structure and texture similar to animal meat are most commonly made of soy protein, wheat protein and pea protein but also from mycoprotein and lupin beans (Bryant & Barnett 2020).

The market growth and expansion of plant-based meat substitutes is not only happening because of vegetarian and vegan consumers, but also because of flexitarian consumers. Flexitarians are individuals who want to limit their meat intake but not fully eliminate it (Michel et al., 2021). With the rise of plant-based alternatives and eco-friendly practices, the food industry must adapt its communication strategies to increase their market share (Marti et al., 2023).

However, even though the plant-based diets are rising in popularity, there are also certain barriers that might keep consumers from purchasing plant-based meat substitutes. This is one of the reasons why effective marketing is of great importance. A potential barrier from implementing plant-based meat products into a diet is cultural attachment to meat. A study made by Weinrich (2019) revealed that social norms such as for example family traditions and holiday meals might be factors that contribute to not purchasing plant-based meat substitutes (Weinrich 2019). A study made by Slade (2018) suggests that price sensitivity is another potential factor for choosing regular meat rather than the plant-based alternative, however, prices differ between countries (Slade 2018). Another study showed that some consumers are sceptical about the taste of plant-based meat substitutes. These consumers are also often worried about the plant-based meat substitutes being overly processed. This type of scepticism might be a factor that hinders consumers from trying or regularly buying plant-based meat (Michel et al., 2021).

2.2 Emotional and informational messaging in advertisements

Consumer attitudes are shaped by advertising, including when it comes to sustainability-focused items like plant-based meat alternatives. Informational and emotional appeals are two popular strategies in persuasive advertising. While informational appeals use facts, logic, and product features to influence decisions, emotional appeals use the viewer's feelings, values, or sense of self to generate affective responses (Teichert et al., 2018).

A study performed by Ye & Mattila (2022) showed that consumers who have a higher awareness of association between climate change and meat consumption display more favourable attitudes toward plant-based meat products than the remainder. This study also showed that figurative language (such as metaphors) leads to more positive consumer responses compared to literal language in the promotion of plant-based meat. These findings indicated that the use of emotionally engaging language in sustainability advertisements is likely to be successful in improving consumer perceptions and intentions to buy, especially in the case of plant-based foods (Ye & Mattila, 2022).

A study conducted by Vrtana and Krizanova (2023) focused on determining how emotional and informational advertising influences the purchase behaviour and brand loyalty of consumers. The results showed that emotional advertisements, especially the ones that promote sustainable values, enhanced brand loyalty in comparison to informational

advertisements. The emotional appeal advertisements that focused on environmental protection or social impact made the consumers view the brand as more value-driven. This study further highlighted that emotional appeals result in a stronger consumer-brand connection. Emotional appeals contributed to feelings of connection, pride and an alignment with personal values that resulted in a more favourable brand perception and also an increased willingness to pay. (Vrtana & Krizanova 2023).

In a study made by Royo-Vela (2005), the author investigates how emotional and informational content in television commercials influences the audience. The findings showed that the television commercials that were more emotionally tailored were perceived as more entertaining and more engaging by the study participants. This type of advertisements captured the attention of the participants better which made them more memorable and persuasive. The commercials that put their focus on information and on communication of product features and benefits were evaluated as more credible by the participants (Royo-Vela, 2005).

The author of the study, Royo-Vela (2005) also looked into the relationship between informational and emotional components and discovered that commercials that included the two kinds of content received the greatest ratings overall. According to this research, integrating emotional resonance with information such as product details may lead to more positive customer reviews. By appealing to both emotional and logical decision-making processes, this type of hybrid messaging has the potential to increase the advertisement's total persuasive power (Royo-Vela, 2005).

Additionally, a study made by Chang (2012) demonstrated that compared to informative appeals, emotional appeals can be more successful in improving consumers' perceptions of the brand and raising their willingness to pay for sustainable products. According to his research, consumers' views of a brand's social responsibility and authenticity were significantly enhanced by emotional framing, which in turn raised their willingness to pay. Therefore, emotional framing might be a better way to explain complex sustainability issues in a way that appeals to a wider range of consumers (Chang 2012).

Based on this research, the following hypothesis was formulated:

H1: An emotional message appeal has a stronger effect on product liking, purchase intention and WTP than an informational message appeal.

2.3 The effect of gender on emotional and informational advertisement

Research suggests that responses to emotional and informational advertisement may vary with gender. Namely, it shows that men and women process advertising content differently, which may lead to different reactions to emotional and informational appeals.

A study made by Koc (2004) explored gender differences regarding processing information in advertisements. Results showed that men tend to respond well to content that is clear and data-driven, which is easy to process and that directly communicates a product's features or benefits. On the other hand, this study showed that women tend to be more receptive for informational content that possesses emotional elements (Koc, 2004).

Another study, by Putrevu (2004), investigated gender differences in response to print advertisements. Findings showed that men were more likely to choose advertisements that were basic, factual, and direct, and that emphasized the characteristics and advantages of the product. Furthermore, this research showed that women reacted more favorably to advertisements that combined informational and emotional elements (Putrevu 2004).

Gender differences were also researched by Kempf and Palan (2006). Their study focused on how men and women processed messages of different strength and type when it came to word-of-mouth communication. Results showed that women were more receptive to messages which were detailed and emotionally charged. The results also showed that women concentrated on both the emotional and informational parts of a message. Nevertheless, men were more receptive to messages that were concise, direct and focus on the main point rather than peripheral details. This preference for communication that is straightforward might suggest that factual and informational communication in advertising is likely to be more effective amongst men (Kempf & Palan 2006).

More recently, Garaus and Wolfsteiner (2022) examined how media multitasking influenced the effectiveness of emotional and rational advertising appeals across genders. The results showed that media multitasking in general had a negative effect on brand attitude for both genders, due to the fact that divided attention might in general reduce persuasiveness of all different advertisement types. However, the study indicated that women generally had a more

positive response to emotional appeal advertisements than men. Men did respond more positively to informational appeals. Garaus and Wolfsteiner imply that these differences might be because of the cognitive and emotional processing styles that differ among genders.

Assuming that women tend to react more positively to emotional than informational advertisements compared to men, they are also likely to be more inclined to like, purchase and pay more for the product shown in an emotional appeal advertisement than men do. On the contrary, men are probably more inclined to like, purchase and pay more for a product in an informational appeal advertisement, compared to an emotional appeal one, than women.

In view of this, the following hypothesis was proposed:

H2: Women will show a stronger preference for emotional advertisements than men.

Furthermore, the effect of an emotional (vs an informational) message appeal on product liking, purchase intention and WTP is stronger in the case of women (vs men).

2.4 The effect of age on emotional and informational advertisement

Previous research implies that the responses to emotional and informational advertisement might vary depending on age.

Abbas (2024) writes about the role of younger generations and their sustainable consumption patterns. This research suggests that these generations, who are also known for their higher environmental awareness compared to older consumer groups, are more likely to respond to advertisements that include emotional appeals related to sustainability than those that include informational appeals. The rationale provided for this assumption is that younger consumers form a stronger emotional connection with brands that align with environmental responsibility, ethical impact and social contribution. Furthermore, the study suggests that older consumers may not be as driven by the emotional elements as younger ones and are instead more likely to respond in a more favourable way to fact-based information when purchasing sustainable products (Abbas 2024).

Research conducted by Keshari and Jain (2016) explored how age and gender influenced consumer responses to emotional and rational (informational) advertising appeals. The study measured attitude toward the ad, purchase intention and brand perception. Findings showed

that younger consumers aged 18-35 years preferred emotional advertisements. They responded more positively to advertisement messages that stimulate emotions or relate with personal values and aspirations. Meanwhile, older consumers (the ones aged 35 and above) preferred advertisements that were rational and fact-based. This age group of consumers seemed to put more value on practical information, logical reasoning and attributes of the advertised product. The preference for informational appeal advertisements among this age group might have to do with a longer experience of being exposed to marketing contents as well as a more analytical mindset, which makes informational advertisement more persuasive. Furthermore, the study uncovered that women in general exhibited a higher preference for emotional appeals, while men displayed a higher preference for informational appeals (Keshari and Jain, 2016).

In view of this, the following hypothesis was proposed:

H3: The effect of an emotional (vs an informational) message appeal on product liking, purchase intention and WTP is stronger for younger (vs older) consumers.

2.5 The effect of environmental awareness on emotional and informational advertisement

Advertisements using negative emotional appeals, such as highlighting the potential negative consequences of inaction or environmental damages are especially effective to shape positive attitudes to sustainable products (Balaskas et al., 2023).

This impact is more evident among consumers with high environmental awareness, since they often feel a stronger emotional connection to messages that address environmental issues. It further implies that consumers who are less environmentally aware may respond better to a more straightforward and informational approach in sustainable products advertisement. The study also shows that by relying on emotions such as guilt or fear and by trying to create a sense of urgency to act, the environmental emotional appeal advertisements improve consumers attitudes to the advertisement. Furthermore, it also increases their purchase intention of the ecologically friendly product displayed in the ad. This result is more prominent among people with a higher environmental awareness. It can be explained that people who are more concerned about the environment are more inclined to feel a personal

responsibility for the environment and are therefore more open to become affected by emotional appeal advertisements. On the contrary, people who reported a lower environmental awareness did not have as strong responses to the emotional appeal messages in the advertisements. This can be explained by the fact that the emotional appeal might feel less relevant, as they don't feel the same responsibility about the environment. It can also be perceived as a bit overpowered and thus reducing the intended persuasive impact of the advertisement (Balaskas et al., 2023).

A study performed by Smith and Green (2024) examined whether an emotional appeal in advertisement increased consumers' intention to engage in water conservation behaviours. Results showed that when an emotional appeal advertisement was used, and in particular when it was highlighting the negative consequences that come with water scarcity, this increased consumers' intent to conserve water. Messages that evoked feelings among the participants such as a sense of fear or urgency tended to increase their intention to save water. The study also showed that the effect was stronger in the case of participants with high environmental awareness, implying that emotional appeals in sustainability advertisement resonate better with consumers who are environmentally conscious than those who are not. The participants who have a higher level of environmental awareness are most likely to be more concerned about the environment which might explain that the emotional message appeal resonated with their values and created a willingness to act and contribute to water conservation (Smith & Green 2024).

Meanwhile, participants with lower environmental awareness responded more favourable to informational appeal advertisements, which provided facts. The emotional appeal advertisements had a lower effectiveness on these participants. The informational messages were more convincing for these participants as they presented a specific justification for changing behaviour and did not rely on emotionally charged messaging (Smith & Green 2024).

Having this in mind, the following hypothesis was put forward:

H4: The effect of an emotional (vs an informational) message appeal on product liking, purchase intention and WTP is stronger in the case of consumers with high (vs low) environmental awareness.

2.6 Conclusions and conceptual framework

Given the literature review, the emotional message appeal seems to be overall more appealing to consumers than the informational message appeal. However, certain factors such as gender, age and environmental awareness seem to have an impact on preference for either emotional or informational appeal. Men seem to have a higher preference for the informational appeal than emotional appeal, while women seem to have a higher preference for the emotional appeal than informational appeal. Younger consumers tend to prefer emotional appeals, while older consumers tend to prefer informational ones. It also seems that the higher the environmental awareness, the higher the preference for emotional appeal. Based on these conclusions, a conceptual framework was developed (see Figure 1).

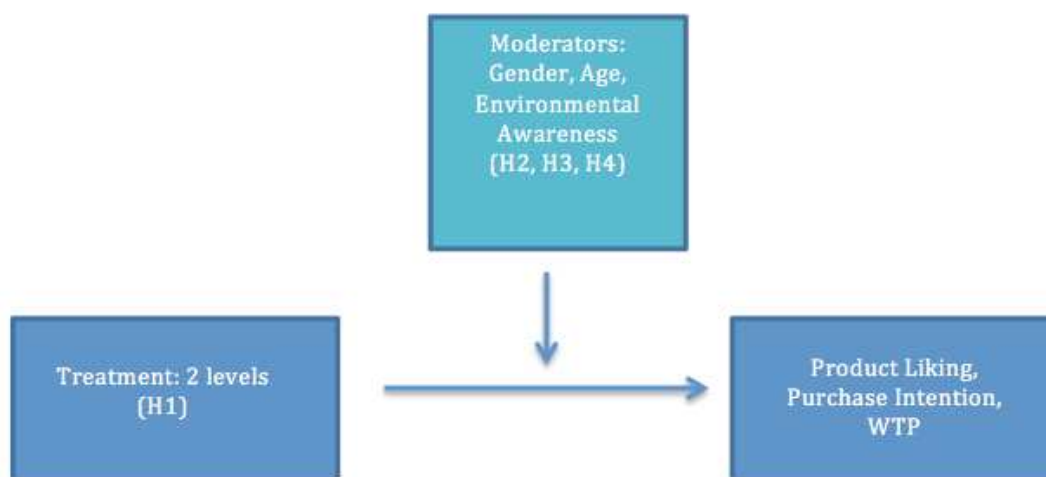


Figure 1 – Conceptual framework for how emotional and informational appeal messages in advertisement affect product liking, purchase intention and willingness to pay. Gender, age and environmental awareness are tested as moderators.

CHAPTER 3: RESEARCH METHODOLOGY

3.1. Research Approach

Since the main goal of this thesis was to determine the effects of distinct types of advertising appeals (emotional vs. informational) on consumer responses to plant-based meat substitutes, an explanatory research approach was undertaken. Furthermore, deductive quantitative research methods were employed to test several research hypotheses, providing a structured approach to understand the relationships between advertising appeal types and consumer responses within the context of sustainability-focused advertising for plant-based meat substitutes. Finally, the Qualtrics survey software was used to gather quantitative primary data, with results being subsequently analysed with IBM SPSS software.

3.2. Study Design

An online questionnaire was designed and implemented to collect primary data. The questionnaire was pilot tested with 10 individuals prior to administration, to improve clarity and comprehension; duration was ca. 5 min. Following a brief introduction, respondents provided informed consent to participate. The main part of the questionnaire was a single-factor experimental treatment with two levels, administered at random to participants: an emotional appeal advertisement (Message 1) and an informational appeal advertisement (Message 2). The advertisements were created with the help of graphic software Canvas. Both ads had the same green background, the same picture of a plant-based meat burger and the same text colour and font. They only differed in the content, as one message contained an emotional appeal and the other an informational one (see Figure 2 and 3).

With choosing our plant-based meat burger, you help end animal suffering and create a more sustainable world. Join us in building a future where the environment and every animal is valued.



Choose compassion. Choose plant-based meat.

Figure 2 – Emotional appeal advertisement.

Switching to plant-based meat saves 105 animals per person each year and cuts water use by 55%.



Choose plant-based meat to improve the environment and animal welfare.

Figure 3 – Informational appeal advertisement.

Following exposure to one of the ads, a manipulation check was administered asking participants to classify the advertisement they saw as either informational, emotional, a mix of both, or neither. Data on the dependent variables product liking, purchase intention and willingness to pay were then collected. Purchase intention was measured on a 11 point Likert-type scale where 1 = No chance, almost no chance and 11 = Certain, practically certain. Product liking was measured on a 9 point Likert-type scale where 1 = Dislike extremely and 9 = Like extremely. Willingness to pay was measured as amount of euros for a 150g burger shown in the advertisement treatment.

Additionally, participants were asked how much they would be willing to pay for a meat burger compared to a plant-based meat burger. The trade-off willingness to pay was measured on a scale with 6 statements from "I would pay less than the price of a beef burger" to "I would be willing to pay up to 20% more than the price of a beef burger".

Furthermore, participants were asked about their general preference for emotional ads (3 items, $\alpha = 0.940$) and informational ads (2 items). Responses were provided on a 7-point likert-type scale where 1=Strongly Disagree and 7 = Strongly Agree. Next, relevant individual differences were measured: environmental awareness, using the New Ecological Paradigm scale (Dunlap et al., 2000) (15 items, $\alpha = 0.921$), age and gender. Finally, participants indicated how familiar they were with the consumption of plant-based meat substitutes and provided information on their dietary preferences and demographics (level of education and income, nationality). The complete questionnaire is given in Appendix 1.

3.3 Population, Sample and Administration

The population in this study was defined as individuals familiar with plant-based meat substitutes and aged between 18-85 years old. The survey was distributed to participants through social media and personal contacts. A convenience sample of $n = 128$ individuals opened the survey, however, only $n = 114$ participants met the eligibility criteria and answered all the survey questions. This means that the final sample size used for data analysis was $n = 114$. The participants that did not meet the eligibility criteria ($n = 2$) were automatically sent to the end of the survey. The data of the participants that did not answer all the questions in the survey and exited it ($n = 12$) was not included in the analysis. The

participants who were excluded were in total 14 and they could have retaken the questionnaire if they entered the link again.

Table 1 contains information about the demographics, socioeconomics and dietary habits of the study sample. A majority of women participated in the survey. Most participants were 21-30 years old. Over half of the participants had a high education level, namely a master's degree. Most of the respondents had a medium level monthly income, ranging between 2.000€ - 5.000€. The most represented countries or origin were Sweden and Poland. Almost half of the sample was omnivorous while the rest stated not to consume meat (vegetarian, vegan), eat only fish (pescetarian) or restrict their meat consumption (flexitarian). Most respondents were heavy or frequent users of plant-based meat substitutes.

Table 1 – Demographics of study sample (n = 114).

Variable	Class	% (n)
Gender	Male	36.8 (42)
	Female	62.3 (71)
	Other	0.9 (1)
Age Mean: 32.1 years Median: 26 Standard deviation: 13.36	18-20 years	2.6 (3)
	21-25 years	42.9 (49)
	26-30 years	27.2 (31)
	31-35 years	3.5 (4)
	36-40 years	0 (0)
	41-45 years	2.6 (3)
	46-50 years	4.2 (6)
	51-55 years	4.2 (6)
	56-60 years	7.0 (8)
	61-65 years	0.9 (1)
66 years and more	2.6 (3)	
Education	Low (High School Graduate)	6.1 (7)
	Medium (Bachelor's Degree)	33.3 (38)
	High (Master's Degree)	55.3 (63)
	Very high (PhD)	5.3 (6)
Income	Low (Up until 1.999€)	29.8 (34)
	Medium (2000€ -5.999€)	45.7 (52)
	High (6000€ or more)	14.9 (17)
	Prefer not to say	9.6 (11)

Nationality	Swedish	35.1 (40)
	Polish	29.8 (34)
	German	19.3 (22)
	Other	15.8 (18)
Diet	Omnivorous	48.2 (55)
	Vegetarian	24.6 (28)
	Vegan	0.9 (1)
	Pescetarian	3.5 (4)
	Flexitarian	22.8 (26)
Consumption of plant-based meat substitutes	Non- or infrequent users	28.9 (33)
	Frequent users	32.5 (37)
	Heavy users	38.6 (44)

Table 2 presents the results of the manipulation checks for the emotional and the information advertisement appeals. Given that participants in each treatment group mostly perceived the stimulus accurately (emotional appeal = $66.1 + 19.6 = 85.7\%$; informational appeal = $70.7 + 20.7 = 91.4\%$), and in order not to reduce sample size further, a decision was made not to eliminate responses based on the results of the manipulation check.

Table 2 – Manipulation checks for the emotional and informational advertisement appeals.

	% (n)	
	Informational appeal (n = 58)	Emotional appeal (n = 56)
Emotional and impactful	6.9 (4)	66.1 (37)
Informative and factual	70.7 (41)	5.4 (3)
A mix of emotional and informative	20.7 (12)	19.6 (11)
Neither emotional nor informative	1.7 (1)	8.9 (5)

3.4 Analysis

The significance of differences between the means of product liking, purchase intention and willingness to pay in the two treatment groups was tested with non-parametric independent samples tests (two-tailed Mann-Whitney U , 5% significance), given that these variables were not normally distributed. The significance of differences between the medians of the WTP for a plant-based burger compared to a standard beef burger in the two treatment groups was

tested with a non-parametric independent samples median test (two-tailed, 5% significance), given that this variable was ordinal.

An independent samples t-test was used to determine whether there was a significant difference in the advertisement preferences depending on gender (5% significance). Furthermore, a general linear model was used to test whether gender was a moderator for product liking, purchase intention and willingness to pay. Likewise, a general linear model was used to estimate if age and environmental awareness were moderators.

CHAPTER 4: RESULTS AND DISCUSSION

4.1 Effects of message appeal on product liking, purchase intention and willingness to pay (WTP)

Table 3 presents the means (SD) of product liking, purchase intention and WTP in the two experimental groups and the significance of differences, testing H1.

Table 3 – Means (SD) of product liking, purchase intention and WTP in the two experimental groups.

	Informational (n = 58)		Emotional (n=56)		U	p-value
	Mean	SD	Mean	SD		
Product liking	6.8	1.3	7.2	1.5	1959.5	.047
Purchase intention	7.4	2.1	8.1	2.8	2022.5	.022
WTP plant-based burger (€/150g)	7.9	2.7	8.9	3.1	2016.5	.025

Purchase intention was measured on a 11-point Likert-type scale where 1 = *No chance, almost no chance* and 11 = *Certain, practically certain*. Product liking was measured on a 9-point Likert-type scale where 1 = *Dislike extremely* and 9 = *Like extremely*.

The results show that the participants who were exposed to the emotional advertisement had a significantly higher product liking, higher purchase intention and higher willingness to pay for the product than participants who were exposed to the informational advertisement. This confirms Hypothesis 1, which states that an emotional appeal leads to higher product liking, purchase intention and WTP than an informational appeal.

Table 4 – Percentage and frequencies of participants willing to pay less, the same or 5-20% more for a plant-based meat burger compared to a regular beef burger, in total and per experimental group.

	%Sample (n = 114)	%Informational(n=58)	%Emotional (n = 56)	<i>U</i>	<i>p</i> -value
<i>WTP less</i>	23.7 (27)	27.6 (16)	19.6 (11)	6.852	.015
<i>WTP same</i>	31.6 (36)	39.7 (23)	23.2 (13)		
<i>WTP +5%</i>	20.2 (23)	27.6 (16)	12.5 (7)		
<i>WTP +10%</i>	20.2 (23)	3.4 (2)	37.5 (21)		
<i>WTP +15%</i>	3.5 (4)	1.7 (1)	5.4 (3)		
<i>WTP +20%</i>	0.9 (1)	0.0 (0)	1.8 (1)		
Median	<i>WTP same</i>	<i>WTP same</i>	<i>WTP +5%</i>		

When asked whether they would pay less, the same or more for a plant-based meat burger than a regular meat burger, participants were divided: 23.7% stated they would pay less, 31.6% would pay the same and 44.8% would pay between 5%-20% more. The median for participants who viewed the emotional advertisement was higher than the median for people who viewed the informational advertisement. The median for the emotional advertisement was 3 (2.91) which means "I would pay up to 5% more" and the median for the informational advertisement was 2 (2.12) which means "I would pay the same". This means that people who saw the emotional appeal advertisement were more willing to pay a higher price for the plant-based meat burger compared to a regular meat burger, unlike those who saw the advertisement with an informational appeal. The non-parametric independent samples test showed significance, which means that the medians are different depending on the advertisement appeal type viewed.

4.2 The moderating effects of gender on message appeal

Table 5 presents the results of t-tests comparing the means of general ad appeal preferences across genders. These findings show that there are statistically significant differences in preferences for ad appeal between women and men. Women have a higher preference for emotional advertisements than men. Meanwhile, men have a stronger preference for informational advertisements than women.

Table 5 - Advertisement preference depending on gender, women n = 71, men n = 42.

	MEN		WOMEN		<i>t</i>	<i>p</i> -value
	Mean	SD	Mean	SD		
Informational advertisement	5.83	1.20	4.87	1.18	4.19	<.001
Emotional advertisement	4.33	1.38	5.87	1.33	-5.86	<.001

Responses were provided on a 7-point Likert-type scale (1 = *Strongly Disagree* and 7 = *Strongly Agree*).

In view of these general differences, a General Linear Model testing the significance of the interaction effect between treatment and gender on product liking, purchase intention and willingness to pay for a plant-based burger was estimated, the results of which are depicted in Table 6. Figures 4,5 and 6 plot the estimated marginal means of the dependent variables per gender and treatment.

Table 6 - Results of the General Linear Model testing the significance of the interaction effect between treatment and gender on product liking, purchase intention and WTP for a plant-based burger.

	Informational (n = 58)				Emotional (n=55)				General linear model		
	MEN		WOMEN		MEN		WOMEN		<i>F</i> -VALUE (<i>p</i> -value)		
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	AD TYPE	GENDER	AD TYPE X GENDER
Product liking	6.52	1.58	7.09	0.95	6.12	1.50	7.74	1.27	0.226 (.635)	18.270 (<.001)	4.186 (.043)
Purchase intention	6.84	2.38	7.85	1.84	5.76	2.36	9.24	2.14	0.137 (.712)	28.070 (<.001)	8.486 (.004)
WTP plant-based burger (€/150g)	7.56	3.37	8.18	2.17	7.06	2.66	9.68	3.01	0.806 (.371)	8.477 (.004)	3.227 (.075)

Purchase intention was measured on a 11-point Likert-type scale where 1 = *No chance, almost no chance* and 11 = *Certain, practically certain*.

Product liking was measured on a 9point Likert-type scale where 1 = *Dislike extremely* and 9 = *Like extremely*.

Table 6 indicates that gender has a statistically significant moderating effect on treatment on product liking and purchase intention. There is no statistically significant effect on the willingness to pay.

Figure 4 indicates that women have a higher product liking than men, when it comes to both the informational and emotional appeal. However, product liking was higher for the emotional appeal than the informational appeal among women, while among men, product liking was higher for the informational appeal than the emotional one.

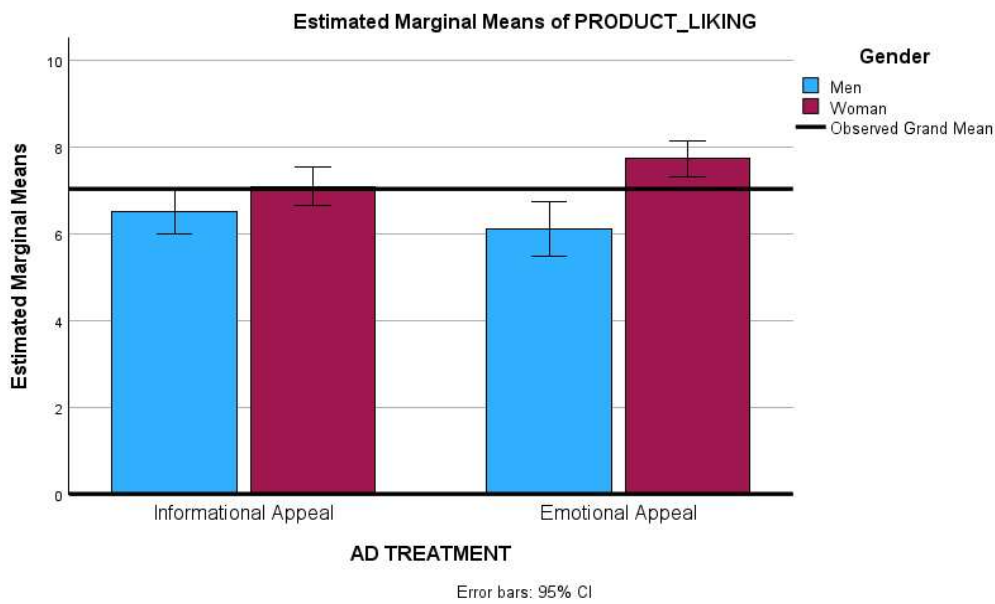


Figure 4 – Estimated Marginal Means of Product Liking divided by gender.

Figure 5 indicates that women have a higher purchase intention than men, both when it comes to the informational and the emotional ad. Nevertheless, purchase intention for women is higher for the emotional appeal advertisement than for the informational appeal advertisement. For men, the purchase intention is higher for the informational appeal advertisement than for the emotional appeal advertisement.

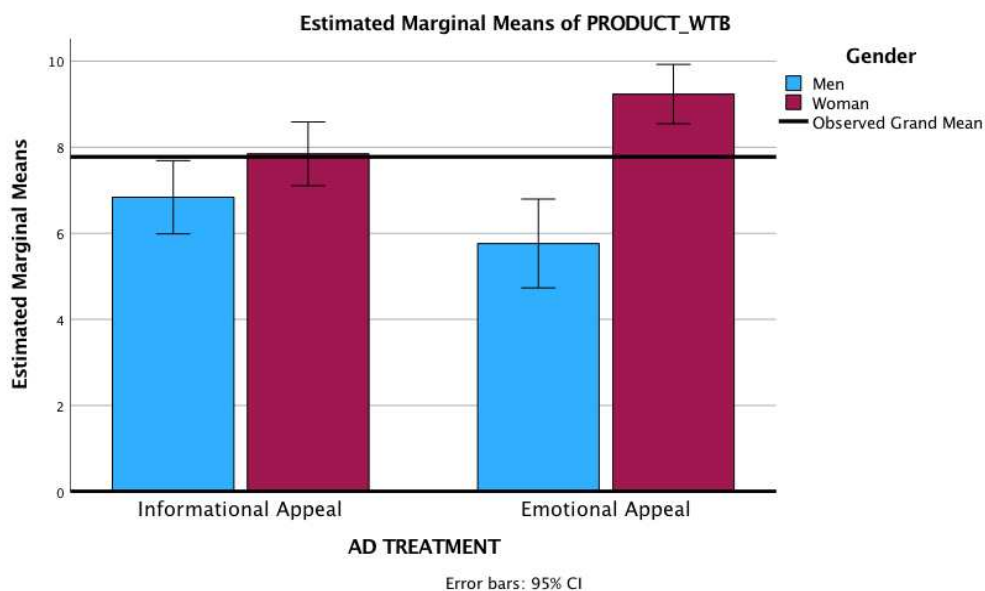


Figure 5 – Estimated Marginal Means of Purchase Intention divided by gender.

Figure 6 shows the estimated marginal means of willingness to pay. However, gender did not have a statistically significant moderating effect on treatment when willingness to pay was the dependent variable. The interaction between gender and advertisement appeal was not significant in the case of participants' willingness to pay. Men, in particular, are willing to pay roughly the same mean amount for the product irrespectively of ad appeal type, while women increase their willingness to pay when shown an emotional ad appeal in place of an informational one.

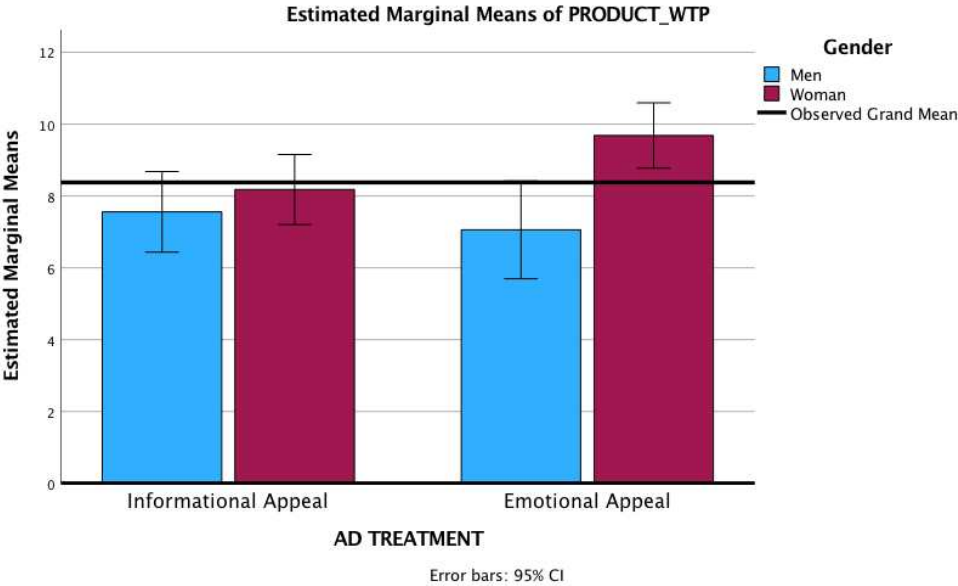


Figure 6 – Estimated Marginal Means of Willingness to Pay divided by gender.

The results partially confirm Hypothesis 2. Women show a stronger preference for emotional advertisements than men. Furthermore, being female (vs male) increases the effect of an emotional (vs an informational) appeal on product liking and purchase intention. However, there is no statistically significant interaction between gender and advertisement type for the willingness to pay.

4.3 The moderating effects of age on message appeal

Table 7 - Results of the General Linear Model testing the significance of the interaction effect between treatment and age on product liking, purchase intention and WTP for a plant-based burger.

	Informational (n=58)				Emotional (n=56)				General linear model		
	19-26 years		27+ years		19-26 years		27+ years		F-VALUE (p-value)		
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	AD TYPE	AGE	AD TYPE X AGE
Product liking	6.88	1.20	6.79	1.41	7.28	1.72	7.10	1.12	1.600 (.200)	0.242(.624)	0.025 (.874)
Purchase intention	7.68	1.93	7.04	2.37	8.28	3.06	7.75	2.12	1.905 (.170)	1.501(.223)	0.013 (.910)
WTP plant-based burger (€/150g)	8.26	2.90	7.42	2.48	9.22	3.24	8.20	2.82	2.393 (.125)	2.762(.099)	0.024 (.877)

Purchase intention was measured on a 11-point Likert-type scale where 1 = *No chance, almost no chance* and 11 = *Certain, practically certain*.

Product liking was measured on a 9point Likert-type scale where 1 = *Dislike extremely* and 9 = *Like extremely*.

The results show that there is no statistically significant difference between younger and older consumers regarding product liking, purchase intention and willingness to pay. The results do not support hypothesis 3, meaning that age does not seem to influence the effectiveness of the treatment on product liking, purchase intention and willingness to pay.

4.4 The moderating effects of environmental awareness on message appeal

The environmental awareness was measured on a NEP-scale and the study sample generally placed high on the scale. To divide the sample in two groups with lower and higher environmental awareness, a median split was done. The median value was 5.17, which means 57 participants had a lower environmental awareness than 5.17, and 57 participants had a higher environmental awareness than 5.17.

Table 8 shows that environmental awareness has a statistically significant moderating effect on treatment on product liking and purchase intention. There was no statistically significant moderating effect on willingness to pay.

Table 8 - Results of the General Linear Model testing the significance of the interaction effect between treatment and environmental awareness on product liking, purchase intention and WTP for a plant-based burger.

	Informational (n = 58)				Emotional (n=56)				General linear model		
	Lower Awareness		Higher Awareness		Lower Awareness		Higher Awareness		F-VALUE (p-value)		
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	AD TYPE	Environmental Awareness	AD TYPE X Environmental Awareness
Product liking	6.76	1.35	6.96	1.21	6.29	1.40	7.91	1.23	0.959 (.329)	13.729 (<.001)	8.293 (.005)
Purchase intention	7.27	2.04	7.60	2.27	6.58	2.43	9.22	2.45	1.148 (.287)	11.667 (<.001)	7.081 (.009)
WTP plant-based burger (€/150g)	7.70	3.21	8.20	2.00	7.92	3.12	9.56	2.95	2.093 (.151)	3.861 (.052)	1.092 (.298)

Purchase intention was measured on a 11-point Likert-type scale where 1 = *No chance, almost no chance* and 11 = *Certain, practically certain*.

Product liking was measured on a 9point Likert-type scale where 1 = *Dislike extremely* and 9 = *Like extremely*.

Figure 7 displays that participants with lower environmental awareness have a lower product liking than participants with a higher environmental awareness, both for the informational and emotional advertisement. However, the difference between the groups in product liking is more prominent in the emotional advertisement type than in the informational advertisement. Furthermore, participants with a lower environmental awareness have a higher product liking for the informational appeal than for the emotional one. On the contrary, participants with a higher environmental awareness who were exposed to the emotional appeal advertisement have a higher product liking than the participants who were exposed to the informational advertisement.

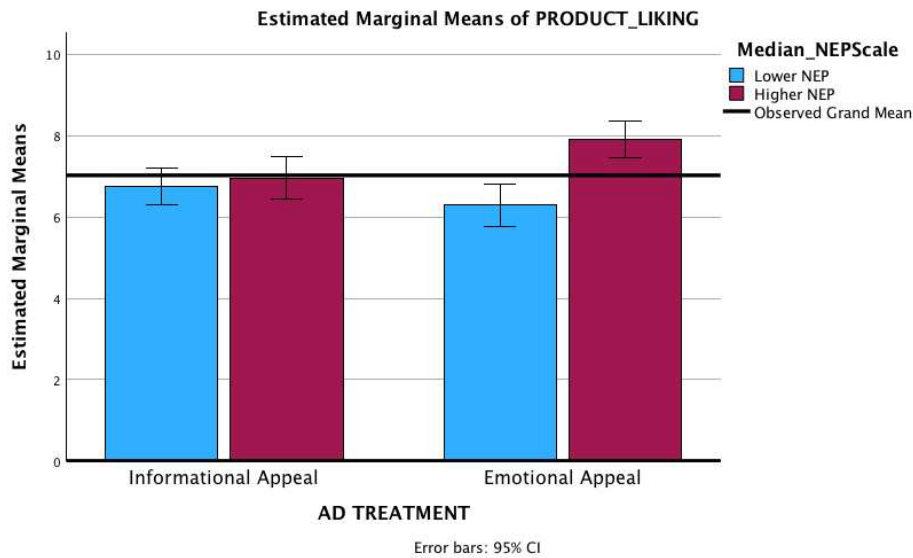


Figure 7 – Estimated Marginal Means of Product Liking divided by lower vs. higher environmental awareness.

Figure 8 shows that participants with a higher environmental awareness have a higher purchase intention for the product after viewing the emotional appeal advertisement. Participants with a lower environmental awareness have a higher purchase intention for the product after viewing the informational appeal advertisement. In general, participants with a higher environmental awareness have a higher purchase intention for the product.

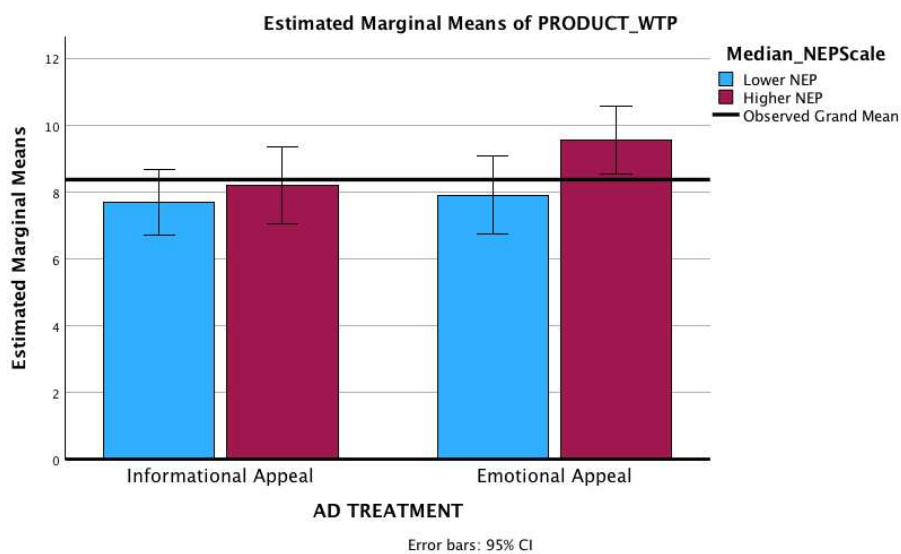


Figure 8 - Estimated Marginal Means of Purchase Intention divided by lower vs. higher environmental awareness.

Figure 9 shows the estimated marginal means of willingness to pay. Nevertheless, environmental awareness did not have a statistically significant moderating effect on treatment regarding the willingness to pay variable. This means that there is no significant difference on the willingness to pay based on lower or higher environmental awareness.

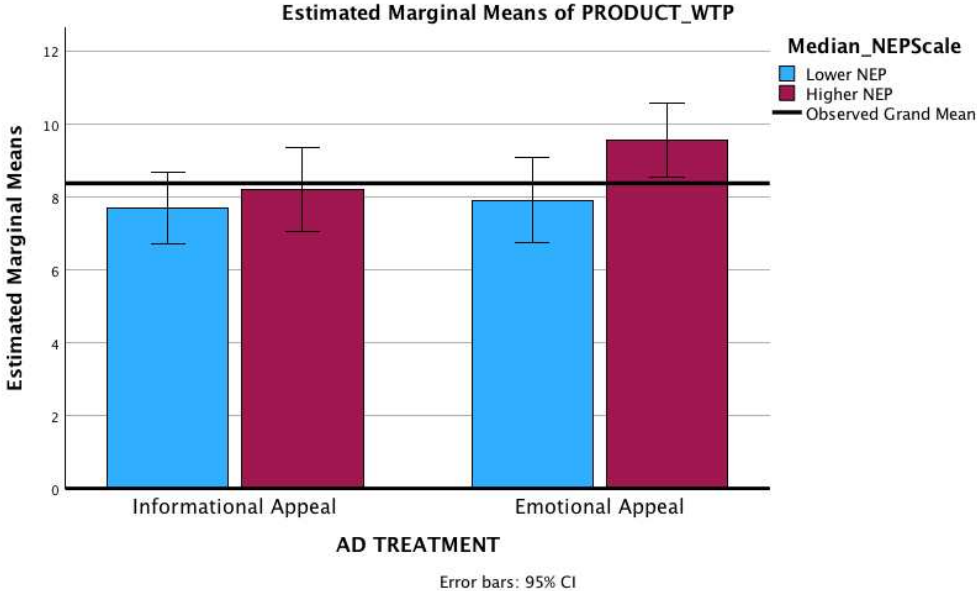


Figure 9 – Estimated Marginal Means of Willingness to Pay.

The results do partially confirm Hypothesis 4. Having higher (vs lower) environmental awareness increases the effect of an emotional appeal on product liking and purchase intention. However, there was no statistically significant interaction between willingness to pay and environmental awareness.

4.5 Discussion

The role of food consumption is becoming more and more prominent regarding personal health and the shape of the planet. The excessive consumption of animal-based foods, particularly red and processed meats, has been identified as a major contributor to climate change and health impacts (Willett et al., 2019). Plant-based meat substitutes are a promising solution, providing the opportunity to mitigate environmental impact while aligning with consumer interest in health and sustainability (Bryant & Barnett, 2020; Marti et al., 2023). To shift consumer behaviour toward plant-based alternatives, the marketing communication strategies need to be tailored accordingly for the targeted audience.

This study suggests that emotional appeal advertisements are more effective in terms of product liking, purchase intention and willingness to pay than informational appeal advertisements. Emotional appeals are particularly beneficial in sustainability marketing, where emotional involvement can support ethical decisions (Chang, 2012; Vrtana & Krizanova, 2023).

The findings showed that gender is a significant moderating factor, and women do respond more positively to emotional appeal advertisement than men. These findings align with existing literature that implies that women tend to react more positively to emotional messages, while men tend to prefer informational content (Putrevu, 2004; Kempf & Palan, 2006; Garaus and Wolfsteiner, 2022). Contrary to the literature findings presented in Chapter 2, age did not have a significant effect on product liking, purchase intention, or willingness to pay. However, the sample in this study consisted mostly of younger participants, which might have limited the ability to see age-related differences in consumer responses.

Another insight of this study is the moderating role of environmental awareness. Participants with a higher environmental awareness had a higher product liking and purchase intention when they were exposed to the emotional appeal advertisement than to the informational appeal one. The findings do align with existing literature that states that emotionally charged sustainability messages resonate deeper with people who are more environmentally conscious (Balaskas et al., 2023; Smith & Green, 2024).

RQ 1: How do emotional sustainability-focused advertisements impact consumers' product liking, purchase intention and willingness to pay for plant-based meat substitutes compared to informational sustainability-focused advertisements?

The results demonstrated that the emotional appeals were more effective than informational ones in enhancing product liking, purchase intention, and willingness to pay. The participants who were exposed to the emotional appeal advertisement expressed a bigger interest in the plant-based meat product and were also more inclined to pay a higher price for it. This suggests that emotionally resonant content can be beneficial in shaping favourable consumer attitudes and behaviour intentions in sustainability-focused advertisements.

RQ 2: How does age, gender and degree of environmental awareness moderate consumer responses to emotional versus informational sustainability appeals in advertisements of plant-based meat substitutes?

The findings showed that gender did significantly moderate the effectiveness of the advertisement appeals. Women had a stronger preference for emotional advertisements and a higher product liking and purchase intention in response to the emotional appeal advertisement in comparison to the informational one. On the contrary, men had a higher preference for informational advertisements and had a higher product liking and purchase intention in response to the informational appeal. However, willingness to pay did not differ significantly between advertisement type and gender. The observed differences between the genders highlight the importance of tailoring advertising strategies according to the target audience.

Younger and older participants had a similar reaction to both emotional and informational appeals and no significant difference was shown in the results. A possible explanation could be that the sample size in the study predominantly consisted of younger participants, which may have reduced the variability in the responses.

Participants with a lower environmental awareness had a higher product liking and purchase intention for the informational appeal advertisement than for the emotional appeal advertisement. Meanwhile, participants with a higher environmental awareness had a higher product liking and purchase intention for the emotional appeal advertisement. There was no statistically significant difference for willingness to pay between the two groups (lower and higher environmental awareness).

CHAPTER 5: CONCLUSION AND LIMITATIONS

5.1. Main Conclusion & Managerial Implications

This study showed that overall, the emotional appeal advertisement has a higher effectiveness on enhancing product liking, purchase intention, and willingness to pay. Gender and environmental awareness also played an important role on the effectiveness of the different advertisement types. Age did not seem to influence the effectiveness of the treatment. The findings provide important insights into consumer behaviour in sustainable food marketing. From a managerial perspective, brands that are marketing plant-based products could use emotional narratives to connect with customers, and especially to connect with women. They could focus on topics such as animal welfare and environmental protection. Since there are differences between genders and advertisement preference, segmented campaigns that are tailored to the preferences of each gender could lead to higher conversion rates. When focusing on the male audience, the advertisements should be more factual and data-driven.

Brands could also focus on emotional appeal advertisement when the aim is to target consumers who are eco-aware. When the aim is to target consumers who are less eco-aware, the advertisements of the brand could be more informationally focused. Tailoring the advertisements communication style based on the consumers environmental awareness level can increase the effectiveness of the marketing campaigns that aim to promote sustainable products.

Another option to increase sales and accelerate the transition to sustainable diets could be to use a mix of emotional and informational advertisements. For example, using emotional storytelling in media advertisements might be more effective to gain awareness amongst customers, while factual information on for example the packaging could be beneficial to support consumers in their decision-making. Positioning plant-based products as both emotionally fulfilling and logically advantageous can enhance the quality of pricing strategies and long-term brand loyalty.

Moreover, emotional advertisement can also contribute to making the brand more memorable amongst consumers. If the brand's emotional appeal advertisement does align with what the brand practices, such as animal protection or ethical sourcing, it can deepen the consumers relationship with the brand. It's also important for the brand to be transparent about their actions and about how they contribute to a better environment and to avoid greenwashing in order to increase credibility.

Marketing truly plays a big role in increasing environmental awareness amongst consumers and helping them make more sustainable choices. By tailoring an effective marketing strategy, companies would not only achieve higher sales but also contribute to a better planet. It's of importance to know which consumer segment to target and to craft the marketing strategy accordingly.

5.2. Limitations and Implications for Future Research

The aim of this thesis was to explore the effectiveness of emotional vs. informational advertisement sustainability advertisement particularly among plant-based meat substitutes. The aim was also to evaluate whether factors such as gender, age and environmental awareness moderate the effect of the advertisement appeal type. Despite the literature review, study execution and analysis, there are limitations that must be acknowledged, and they might also give implications for future research.

One of the limitations of this study is the sample size, that was not representative for the general population. The study mostly consisted of younger consumers and there was a lack of older participants. Secondly, the nationalities consisted of mostly Polish and Swedish representants, and there was a tendency for a higher educational background and low to medium income. The participants also had an overall high environmental awareness. Considering future research, an implication would be to gain a more diverse sample in terms of demographics and characteristics.

Another limitation aspect is that all the data collected was self-reported by the study participants. This means that the measured variables such as product liking, purchase intention and willingness to pay might have been subject to potential biases, for example

social desirability or hypothetical bias. The behaviour of the participants might be different in real life than the one they indicated in a survey. Future research could focus on adding behavioural experiments, such as simulated purchases to better evaluate the variables product liking, purchase intention and willingness to pay.

Moreover, the advertisement in the experiment in the survey was self-made and differed from professional made advertisement. There was also only advertisement in the form of a picture that was tested, and the results might have been different if the advertisement in the stimuli was made as a video or if some sort of music was used. In terms of future research, a video advertisement could be tested.

Another implication for future research is to test for more variables, for example political ideology. Since sustainability focused advertisement and sustainable products are constantly evolving, the differences in effectiveness of emotional and informational research are an impactful and important topic for further research.

A potential idea for future studies could also be to do a study only among people who currently are not consumers of plant-based meat substitutes. The study could test for factors that are keeping them from buying these products as well as test different marketing strategies and see which ones these consumers rate the highest. This could help companies to tailor the marketing in a compelling way to attract new consumers and make them try the products.

APPENDIX

Appendix 1 – Survey

Start of Block: Introduction

Introduction This survey is conducted as part of my master dissertation at Católica Lisbon School of Business and Economics. My research aims to explore the effects of advertisement on consumer preferences for plant-based meat substitutes. The survey is expected to take about 5 minutes to complete. Your responses are anonymous and the data collected will only be used for academic research purposes. If you agree to contribute to this research project, please proceed to answer the questions. Thank you!

End of Block: Introduction

Start of Block: Screening



Age How old are you?

▼ Less than 18 years (17) ... 86 or older (86)

Skip To: End of Survey If Age = 17



PBMSFamiliarity *Plant-based meat substitutes are food products made from plant ingredients, such as soy, pea protein, mycoprotein or other plant-based sources. They are designed to mimic the taste, texture, and appearance of traditional meat, and to replace it in diets.* How familiar are you with plant-based meat substitutes?

- I eat them regularly (6)
- I eat them occasionally (5)
- I have tasted them several times (4)
- I have tasted them once (3)
- I have heard about them but never tasted them (2)
- Never heard about them (1)

Skip To: End of Survey If PBMSFamiliarity = 1

End of Block: Screening

Start of Block: Informational



InfoManCheck Please indicate how you find this advertisement to be:

- Emotional and impactful (1)
 - Informative and factual (2)
 - A mix of emotional and informative (3)
 - Neither emotional nor informative (4)
-



LikeInfo How much do you like the plant-based burger in the ad?

- Like extremely (9)
 - Like very much (8)
 - Like moderately (7)
 - Like slightly (6)
 - Neither like nor dislike (5)
 - Dislike slightly (4)
 - Dislike moderately (3)
 - Dislike very much (2)
 - Dislike extremely (1)
-



WTBInfo How likely would you be to purchase the plant-based burger in the ad?

- Certain, practically certain (11)
- Almost sure (10)
- Very probable (9)
- Probable (8)
- Good possibility (7)
- Fairly good possibility (6)
- Fair possibility (5)
- Some possibility (4)
- Slight possibility (3)
- Very slight possibility (2)
- No chance, almost no chance (1)

WTPInfo How much would you be willing to pay for the plant-based burger (150 gram) in the ad?

0 1 3 4 5 6 8 9 10 11 13 14 15 16 18 19 20 21 23 24 25

€/Burger ()	
-------------	--

End of Block: Informational

Start of Block: Emotional



ManCheckEmot Please indicate how you find this advertisement to be:

- Emotional and impactful. (1)
 - Informative and factual. (2)
 - A mix of emotional and informative. (3)
 - Neither emotional nor informative. (4)
-



LikeEmotion How much do you like the plant-based burger in the ad?

- Like extremely (9)
 - Like very much (8)
 - Like moderately (7)
 - Like slightly (6)
 - Neither like nor dislike (5)
 - Dislike slightly (4)
 - Dislike moderately (3)
 - Dislike very much (2)
 - Dislike extremely (1)
-



WTBEmotion How likely would you be to purchase the plant-based burger in the ad?

- Certain, practically certain (11)
 - Almost sure (10)
 - Very probable (9)
 - Probable (8)
 - Good possibility (7)
 - Fairly good possibility (6)
 - Fair possibility (5)
 - Some possibility (4)
 - Slight possibility (3)
 - Very slight possibility (2)
 - No chance, almost no chance (1)
-

WTPEmotion How much would you be willing to pay for the plant-based burger (150 gram) in the ad?

0 1 3 4 5 6 8 9 10 11 13 14 15 16 18 19 20 21 23 24 25

€/Burger ()	
-------------	--

End of Block: Emotional

Start of Block: Plant-based Consumption



FreqEatPBMS How often do you consume plant-based meat substitutes?

- 6 times per day or more (9)
 - 3-5 times per day (8)
 - 2-3 times per day (7)
 - Once per day (6)
 - 5-6 times per week (5)
 - 3-4 times per week (4)
 - 1-2 times per week (3)
 - 1-3 times per month (2)
 - Less than once per month (1)
 - Never (0)
-

TradeOffMeat How much would you be willing to pay for a plant-based burger sandwich, compared to the price of a traditional beef-meat burger sandwich?

- I would pay less than the price of a beef burger (1)
- I would pay the same as the price of a beef burger (2)
- I would be willing to pay up to 5% more than the price of a beef burger (3)
- I would be willing to pay up to 10% more than the price of a beef burger (4)
- I would be willing to pay up to 15% more than the price of a beef burger (5)
- I would be willing to pay up to 20% or more than the price of a beef burger (6)

End of Block: Plant-based Consumption

Start of Block: Scales



AdPreferene Please indicate how much you agree with each statement below:

	Strongly Agree (7)	Agree (6)	Somewhat Agree (5)	Neutral (4)	Somewhat Disagree (3)	Disagree (2)	Strongly Disagree (1)
I prefer advertisements that use emotional messages, such as those that highlight the impact on future generations or animal welfare. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I prefer advertisements that present factual information, such as the environmental benefits or statistics related to sustainability. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ads that appeal to emotions are more likely to influence my purchasing decisions. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ads that provide factual information are more likely to influence my purchasing decisions. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am more likely to purchase sustainable products when advertisements	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



emphasize the
emotional
impact of my
choices. (5)

NEPScale Please indicate how much you agree with each of the statements:

	Strongly Agree (7)	Agree (6)	Somewhat Agree (5)	Neutral (4)	Somewhat Disagree (3)	Disagree (2)	Strongly Disagree (1)
We are approaching the limit of the number of people the earth can support. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Humans have the right to modify the natural environment to suit their needs. (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When humans interfere with nature, it often produces disastrous consequences. (24)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Human ingenuity will ensure that we do NOT make the earth unlivable. (25)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Humans are severely abusing the environment. (26)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The earth has plenty of natural resources if we just learn how to develop them. (27)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Plants and animals have as much right as humans to exist. (28)

The balance of nature is strong enough to cope with the impacts of modern industrial nations. (29)

Despite our special abilities, humans are still subject to the laws of nature. (30)

The so-called ecological crisis facing humankind has been greatly exaggerated. (31)

The earth is like a spaceship with very limited room and resources. (32)

Humans were meant to rule over the rest of nature. (33)

Humans will eventually learn enough about how nature works to be able to control it. (34)

The balance of nature is very delicate and easily upset. (35)

If things continue on their present course, we will soon experience a major ecological catastrophe. (36)

End of Block: Scales

Start of Block: Demographics



Gender What is your gender?

- Men (1)
 - Woman (2)
 - Non-binary (3)
 - Prefer not to say (99)
-

Nationality What is your nationality?

Edulevel Please indicate the highest level of education you have achieved to date:

- Less than high school (1)
 - High school graduate (2)
 - Bachelor's degree (3)
 - Master's degree (4)
 - Doctorate degree (5)
-



Income Please indicate the total net monthly income of your household: (*net = after deduction of taxes and social security contributions*)

- Less than 1000€ (1)
 - 1.000-1.999€ (2)
 - 2.000-3.999€ (3)
 - 4.000-5.999€ (4)
 - 6.000-7.999€ (5)
 - 8000€ or more (6)
 - Don't know/Prefer not to say (99)
-



Dietary preference Which of the following best describes your current diet?

- Omnivorous (no special dietary restrictions) (1)
- Vegetarian (no consumption of meat, but consumption of other animal products) (2)
- Vegan (no consumption of animal products) (3)
- Pescetarian (consumption of fish, no consumption of meat) (4)
- Flexitarian (predominantly vegetarian diet, occasional consumption of meat) (5)

End of Block: Demographics

Appendix 2 - General Linear Model Results - Gender

Descriptive Statistics

Dependent Variable: PRODUCT_LIKING

AD TREATMENT	Gender	Mean	Std. Deviation	N
Informational Appeal	Men	6.52	1.584	25
	Woman	7.09	.947	33
	Total	6.84	1.281	58
Emotional Appeal	Men	6.12	1.495	17
	Woman	7.74	1.267	38
	Total	7.24	1.527	55
Total	Men	6.36	1.543	42
	Woman	7.44	1.168	71
	Total	7.04	1.414	113

Tests of Between-Subjects Effects

Dependent Variable: PRODUCT_LIKING

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^b
Corrected Model	39.758 ^a	3	13.253	7.846	<.001	.178	23.539	.988
Intercept	4852.912	1	4852.912	2873.255	<.001	.963	2873.255	1.000
TREATMENT	.382	1	.382	.226	.635	.002	.226	.076
Gender	30.857	1	30.857	18.270	<.001	.144	18.270	.989
TREATMENT * Gender	7.070	1	7.070	4.186	.043	.037	4.186	.527
Error	184.100	109	1.689					
Total	5817.000	113						
Corrected Total	223.858	112						

a. R Squared = .178 (Adjusted R Squared = .155)

b. Computed using alpha = .05

Descriptive Statistics

Dependent Variable: PRODUCT_WTB

AD TREATMENT	Gender	Mean	Std. Deviation	N
Informational Appeal	Men	6.84	2.375	25
	Woman	7.85	1.839	33
	Total	7.41	2.128	58
Emotional Appeal	Men	5.76	2.359	17
	Woman	9.24	2.136	38
	Total	8.16	2.720	55
Total	Men	6.40	2.400	42
	Woman	8.59	2.108	71
	Total	7.78	2.452	113

Tests of Between-Subjects Effects

Dependent Variable: PRODUCT_WTB

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^b
Corrected Model	171.939 ^a	3	57.313	12.456	<.001	.255	37.368	1.000
Intercept	5670.900	1	5670.900	1232.486	<.001	.919	1232.486	1.000
TREATMENT	.631	1	.631	.137	.712	.001	.137	.066
Gender	129.154	1	129.154	28.070	<.001	.205	28.070	1.000
TREATMENT * Gender	39.047	1	39.047	8.486	.004	.072	8.486	.823
Error	501.530	109	4.601					
Total	7511.000	113						
Corrected Total	673.469	112						

a. R Squared = .255 (Adjusted R Squared = .235)

b. Computed using alpha = .05

Descriptive Statistics

Dependent Variable: PRODUCT_WTP

AD TREATMENT	Gender	Mean	Std. Deviation	N
Informational Appeal	Men	7.56	3.367	25
	Woman	8.18	2.172	33
	Total	7.91	2.742	58
Emotional Appeal	Men	7.06	2.657	17
	Woman	9.68	3.014	38
	Total	8.87	3.133	55
Total	Men	7.36	3.075	42
	Woman	8.99	2.744	71
	Total	8.38	2.965	113

Tests of Between-Subjects Effects

Dependent Variable: PRODUCT_WTP

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^b
Corrected Model	112.416 ^a	3	37.472	4.683	.004	.114	14.048	.885
Intercept	6788.791	1	6788.791	848.384	<.001	.886	848.384	1.000
TREATMENT	6.449	1	6.449	.806	.371	.007	.806	.144
Gender	67.834	1	67.834	8.477	.004	.072	8.477	.823
TREATMENT * Gender	25.825	1	25.825	3.227	.075	.029	3.227	.429
Error	872.221	109	8.002					
Total	8921.000	113						
Corrected Total	984.637	112						

a. R Squared = .114 (Adjusted R Squared = .090)

b. Computed using alpha = .05

Appendix 3 - General Linear Model Results – Age

Descriptive Statistics

Dependent Variable: PRODUCT_LIKING

AD TREATMENT	Age_CLASS	Mean	Std. Deviation	N
Informational Appeal	19-26 years	6.88	1.200	34
	27+ years	6.79	1.414	24
	Total	6.84	1.281	58
Emotional Appeal	19-26 years	7.28	1.717	36
	27+ years	7.10	1.119	20
	Total	7.21	1.522	56
Total	19-26 years	7.09	1.491	70
	27+ years	6.93	1.283	44
	Total	7.03	1.411	114

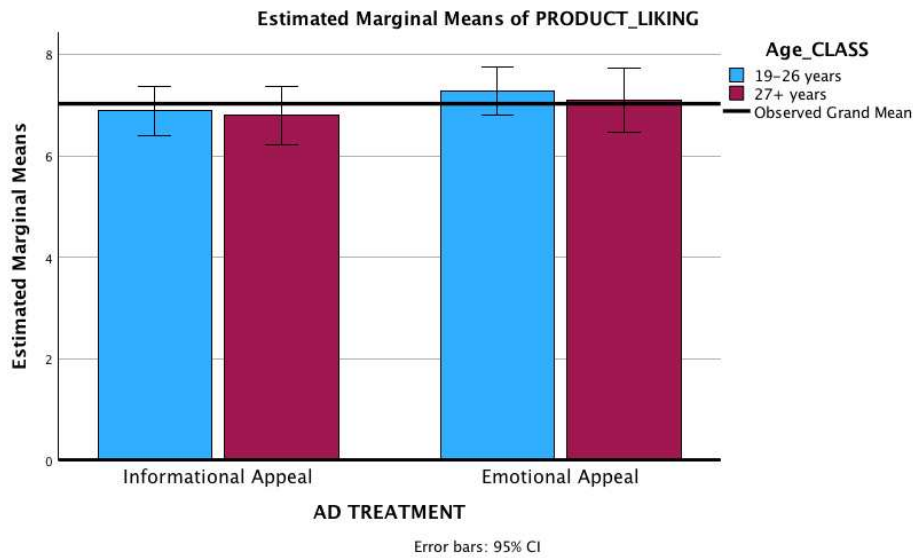
Tests of Between-Subjects Effects

Dependent Variable: PRODUCT_LIKING

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^b
Corrected Model	4.411 ^a	3	1.470	.733	.534	.020	2.200	.202
Intercept	5286.332	1	5286.332	2637.053	<.001	.960	2637.053	1.000
TREATMENT	3.327	1	3.327	1.660	.200	.015	1.660	.248
Age_CLASS	.484	1	.484	.242	.624	.002	.242	.078
TREATMENT * Age_CLASS	.051	1	.051	.025	.874	.000	.025	.053
Error	220.510	110	2.005					
Total	5853.000	114						
Corrected Total	224.921	113						

a. R Squared = .020 (Adjusted R Squared = -.007)

b. Computed using alpha = .05



Descriptive Statistics

Dependent Variable: PRODUCT_WTB

AD TREATMENT	Age_CLASS	Mean	Std. Deviation	N
Informational Appeal	19-26 years	7.68	1.934	34
	27+ years	7.04	2.368	24
	Total	7.41	2.128	58
Emotional Appeal	19-26 years	8.28	3.058	36
	27+ years	7.75	2.124	20
	Total	8.09	2.752	56
Total	19-26 years	7.99	2.574	70
	27+ years	7.36	2.263	44
	Total	7.75	2.467	114

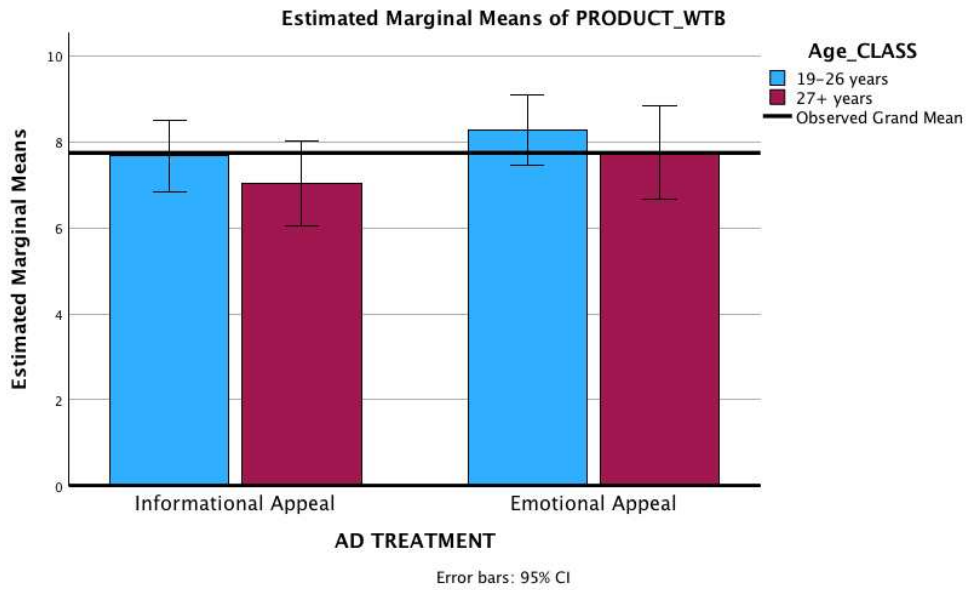
Tests of Between-Subjects Effects

Dependent Variable: PRODUCT_WTB

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^b
Corrected Model	22.251 ^a	3	7.417	1.226	.304	.032	3.679	.321
Intercept	6350.500	1	6350.500	1049.872	<.001	.905	1049.872	1.000
TREATMENT	11.522	1	11.522	1.905	.170	.017	1.905	.277
Age_CLASS	9.080	1	9.080	1.501	.223	.013	1.501	.229
TREATMENT * Age_CLASS	.077	1	.077	.013	.910	.000	.013	.051
Error	665.372	110	6.049					
Total	7527.000	114						
Corrected Total	687.623	113						

a. R Squared = .032 (Adjusted R Squared = .006)

b. Computed using alpha = .05



Descriptive Statistics

Dependent Variable: PRODUCT_WTP

AD TREATMENT	Age_CLASS	Mean	Std. Deviation	N
Informational Appeal	19-26 years	8.26	2.895	34
	27+ years	7.42	2.483	24
	Total	7.91	2.742	58
Emotional Appeal	19-26 years	9.22	3.235	36
	27+ years	8.20	2.821	20
	Total	8.86	3.107	56
Total	19-26 years	8.76	3.090	70
	27+ years	7.77	2.640	44
	Total	8.38	2.952	114

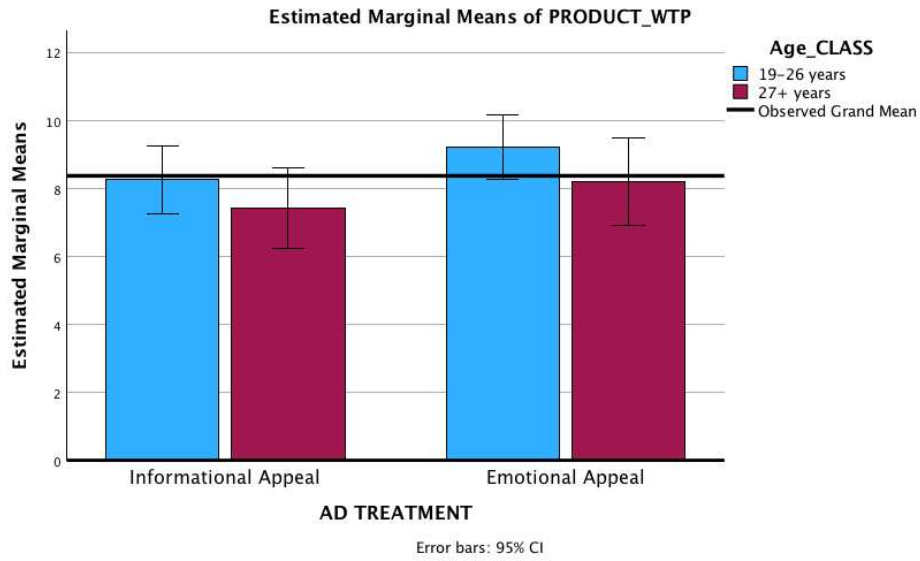
Tests of Between-Subjects Effects

Dependent Variable: PRODUCT_WTP

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^b
Corrected Model	48.907 ^a	3	16.302	1.916	.131	.050	5.748	.484
Intercept	7361.789	1	7361.789	865.285	<.001	.887	865.285	1.000
TREATMENT	20.359	1	20.359	2.393	.125	.021	2.393	.335
Age_CLASS	23.498	1	23.498	2.762	.099	.024	2.762	.377
TREATMENT * Age_CLASS	.204	1	.204	.024	.877	.000	.024	.053
Error	935.873	110	8.508					
Total	8985.000	114						
Corrected Total	984.781	113						

a. R Squared = .050 (Adjusted R Squared = .024)

b. Computed using alpha = .05



Appendix 4 - General Linear Model Results – Environmental Awareness

Descriptive Statistics

Dependent Variable: PRODUCT_LIKING

AD TREATMENT	Median_NEPScale	Mean	Std. Deviation	N
Informational Appeal	Lower NEP	6.76	1.347	33
	Higher NEP	6.96	1.207	25
	Total	6.84	1.281	58
Emotional Appeal	Lower NEP	6.29	1.398	24
	Higher NEP	7.91	1.228	32
	Total	7.21	1.522	56
Total	Lower NEP	6.56	1.376	57
	Higher NEP	7.49	1.297	57
	Total	7.03	1.411	114

Tests of Between-Subjects Effects

Dependent Variable: PRODUCT_LIKING

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	40.223 ^a	3	13.408	7.985	<.001	.179
Intercept	5441.114	1	5441.114	3240.552	<.001	.967
TREATMENT	1.611	1	1.611	.959	.329	.009
Median_NEPScale	23.052	1	23.052	13.729	<.001	.111
TREATMENT * Median_NEPScale	13.924	1	13.924	8.293	.005	.070
Error	184.698	110	1.679			
Total	5853.000	114				
Corrected Total	224.921	113				

a. R Squared = ,179 (Adjusted R Squared = ,156)

Descriptive Statistics

Dependent Variable: PRODUCT_WTB

AD TREATMENT	Median_NEPScale	Mean	Std. Deviation	N
Informational Appeal	Lower NEP	7.27	2.035	33
	Higher NEP	7.60	2.273	25
	Total	7.41	2.128	58
Emotional Appeal	Lower NEP	6.58	2.430	24
	Higher NEP	9.22	2.446	32
	Total	8.09	2.752	56
Total	Lower NEP	6.98	2.216	57
	Higher NEP	8.51	2.487	57
	Total	7.75	2.467	114

Tests of Between-Subjects Effects

Dependent Variable: PRODUCT_WTB

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	109.775 ^a	3	36.592	6.966	<.001	.160
Intercept	6569.934	1	6569.934	1250.663	<.001	.919
TREATMENT	6.031	1	6.031	1.148	.286	.010
Median_NEPScale	61.287	1	61.287	11.667	<.001	.096
TREATMENT * Median_NEPScale	37.198	1	37.198	7.081	.009	.060
Error	577.848	110	5.253			
Total	7527.000	114				
Corrected Total	687.623	113				

a. R Squared = ,160 (Adjusted R Squared = ,137)

Descriptive Statistics

Dependent Variable: PRODUCT_WTP

AD TREATMENT	Median_NEPScale	Mean	Std. Deviation	N
Informational Appeal	Lower NEP	7.70	3.206	33
	Higher NEP	8.20	2.000	25
	Total	7.91	2.742	58
Emotional Appeal	Lower NEP	7.92	3.120	24
	Higher NEP	9.56	2.951	32
	Total	8.86	3.107	56
Total	Lower NEP	7.79	3.144	57
	Higher NEP	8.96	2.646	57
	Total	8.38	2.952	114

Tests of Between-Subjects Effects

Dependent Variable: PRODUCT_WTP

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	66.103 ^a	3	22.034	2.638	.053	.067
Intercept	7778.026	1	7778.026	931.320	<.001	.894
TREATMENT	17.479	1	17.479	2.093	.151	.019
Median_NEPScale	32.241	1	32.241	3.861	.052	.034
TREATMENT * Median_NEPScale	9.119	1	9.119	1.092	.298	.010
Error	918.678	110	8.352			
Total	8985.000	114				
Corrected Total	984.781	113				

a. R Squared = ,067 (Adjusted R Squared = ,042)

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