

Research on the matching effect between advertising appeal and product type on the purchase intention of organic food

Jiayuan Zhao

Computer and Information Engineering College, Harbin University of Commerce, Harbin, China

Hong Huo and Sheng Wei

School of Management, Harbin University of Commerce, Harbin, China

Chunjia Han and Mu Yang

Department of Management, University of London, London, UK

Brij B. Gupta

Department of Computer Science and Information Engineering, Asia University, Taichung, Taiwan;

Lebanese American University, Beirut, Lebanon;

Center for Interdisciplinary Research,

University of Petroleum and Energy Studies (UPES), Dehradun, India and

UCRD, Chandigarh University, Chandigarh, India, and

Varsha Arya

Department of Business Administration, Asia University, Taichung, Taiwan;

Lebanese American University, Beirut, Lebanon;

Center for Interdisciplinary Research,

University of Petroleum and Energy Studies (UPES), Dehradun, India and

UCRD, Chandigarh University, Chandigarh, India

Abstract

Purpose – The study employs two independent experimental studies to collect data. It focuses on the matching effect between advertising appeals and product types. The Elaboration Likelihood Model serves as the theoretical framework for understanding the cognitive processing involved in consumers' responses to these advertising appeals and product combinations.

Design/methodology/approach – This paper aims to investigate the impact of advertising appeals on consumers' intentions to purchase organic food. We explored the interaction between advertising appeals (egoistic vs altruistic) and product types (virtue vs vice) and purchase intention. The goal is to provide insights that can enhance the advertising effectiveness of organic food manufacturers and retailers.



Findings – The analysis reveals significant effects on consumers' purchase intentions based on the matching of advertising appeals with product types. Specifically, when egoistic appeals align with virtuous products, there is an improvement in consumers' purchase intentions. When altruistic appeals match vice products, a positive impact on purchase intention is observed. The results suggest that the matching of advertising appeals with product types enhances processing fluency, contributing to increased purchase intention.

Originality/value – This research contributes to the field by providing nuanced insights into the interplay between advertising appeals and product types within the context of organic food. The findings highlight the importance of considering the synergy between egoistic appeals and virtuous products, as well as altruistic appeals and vice products. This understanding can be strategically employed by organic food manufacturers and retailers to optimize their advertising strategies, thereby improving their overall effectiveness in influencing consumers' purchase intentions.

Keywords Altruistic appeals, Egoistic appeals, Processing fluency, Virtue product, Vice product

Paper type Research paper

1. Introduction

Because organic food cultivation is more favorable to the ecological environment, organic food advertising appeal is unique. For example, Halxin Organic Farm's "Doing ecological agriculture, producing healthy food" and Guangxi Yixing Organic Farm's "Ecological organic, healthy and safe" Guangxi Yixing Organic Farm's "Ecological Organic, Healthy and Safe," etc. At the same time, food security is a concern (Hinge *et al.*, 2021). These advertisements focus on health and the ecological environment, i.e. egoistic appeals and altruistic appeals (Kareklas *et al.*, 2014; Yadav, 2016). In organic food consumption, existing literature has done much research on egoistic and altruistic appeals (Jaeger and Weber, 2020; Li and Cui, 2021; Yadav, 2016). Egoistic appeals are psychological appeals based on an individual's interests and needs. Advertisements in egoistic appeals usually emphasize the direct benefits of products or services to individuals, such as improving the quality of life, satisfying individual desires, and enhancing image. Altruistic appeals are psychological appeals based on an individual's concern and sense of responsibility for others, society, or the environment. Advertisements in altruistic appeals usually emphasize the social value of the product or service, its environmental nature, its contribution to society, etc., to stimulate consumers' sense of social responsibility. Egoistic and altruistic appeals affect the willingness to purchase organic food (Jaeger and Weber, 2020; Yadav, 2016). However, the effect of egoistic and altruistic appeals on the willingness to purchase organic food is still divergent. Yadav (2016) concluded that egoistic appeals have a more significant effect on the willingness to purchase organic food than altruistic appeals, while Kareklas *et al.* (2014) concluded that altruistic appeals have a more pronounced effect on the willingness to purchase than egoistic appeals. It is essential to explore further the boundary conditions influencing the effect of egoistic and altruistic appeals on the purchase intention of organic food.

Research on organic food consumption has focused on the following aspects, such as health perception (Devi *et al.*, 2023; Koswatta *et al.*, 2023; Kutnohorska and Tomsik, 2013), environmental protection awareness (Liu and Zheng, 2019; Lopez-Galan *et al.*, 2013; Nafees *et al.*, 2022; Yuan and Xiao, 2021), organic certification concern (Janssen and Hamm, 2014; Murphy *et al.*, 2022; Nie *et al.*, 2022; Wu *et al.*, 2014), price sensitivity (Chen *et al.*, 2022; Eberle *et al.*, 2023; Herrmann and Schroeck, 2011; Roediger *et al.*, 2016; Zander and Hamm, 2010), trust (Lee *et al.*, 2019; Murphy *et al.*, 2022; Teng and Wang, 2015; Truong *et al.*, 2022) and socio-cultural level (Grosplik, 2017; Li *et al.*, 2020; Maksan *et al.*, 2022). Through an in-depth exploration of these research directions, we can gain a more comprehensive understanding of the integrated impact of organic food consumption on individual health, agricultural sustainability, market economy, and social culture. Previous studies have shown that advertising appeals impact purchase intention at the time. However, these studies usually

involve different product categories, and since consumers' responses to products may vary depending on the type of product, previous conflicting conclusions about the effect of different advertising appeals on the purchase intention of organic food may be due to the nature of the different product types.

However, it is undeniable that consumers' willingness to pay for organic claims also varies between product types (van Doorn and Verhoef, 2011). The existence of preference inconsistency due to short-term and long-term utility trade-offs allows for categorizing product types into virtues and vice products (Werthenbroch, 1998). Virtues products are strongly associated with positive values such as health and environmental protection, such as organic vegetables and whole wheat bread. On the contrary, vice products refer to those products that are more strongly associated with negative values, such as hedonism and pleasure, such as organic chocolate and organic ice cream. So, is the differential effect of egoistic appeals versus altruistic appeals on purchase intentions for organic food products related to whether the product is a vice product or an indulgence? Given this, this study focuses on two questions: first, is the effect of advertising appeals on the purchase intention of organic food products affected by self-regulators and vice products? Second, what is the mechanism of action? That is the effect of matching advertising appeals (egoistic appeals vs altruistic appeals) with product type (vice products vs indulgences) on the purchase intention of organic food products and its underlying mechanism.

This paper validates the boundary conditions for how advertising appeals affect the purchase intention of organic food products by focusing on how the specific categorization of organic products (virtue products vs indulgences) affects consumers' response to (egoistic appeals vs altruistic appeals). The two experimental studies illustrate how marketers can effectively match different advertising appeals and product types when developing strategies to boost consumers' organic food consumption. This study has two main research objectives: first, to explore the effects of matching advertising claims and product types on the purchase intention of organic food products using the acceptable processing likelihood model as the theoretical basis. Second, to construct a research model with processing fluency as a mediating variable to further explore and validate the intrinsic mechanism of matching advertising appeals and product types on the purchase intention of organic food. Experiment 1 verified the effect of matching between advertising appeal and product type on the purchase intention of organic food. Experiment 2 verified that processing fluency is the intrinsic mechanism by which the matching effect between advertising appeals (altruistic appeals vs altruistic appeals) and product type (virtue products vs indulgences) affects the purchase intention of organic food products and also verified again the main effect proposed in this study. Based on the findings of existing studies, the relationship between the various constructs was tested by designing an experiment.

This study conducted in-depth research on categorizing organic food advertising appeals into egoistic and altruistic appeals. It examined the effect of matching advertising appeals with product types on purchase intention. First, this study expands the classification method of organic food advertising appeals at the level of theoretical significance, emphasizing the paradox of both egoistic and altruistic appeals in the formation of purchase intention. Second, the study complements the findings on the effectiveness of organic food advertisements by verifying the matching effect of the advertising appeal approach with the product type. Meanwhile, the study explores the mediating role of processing fluency and perceived quality in the matching effect, deepening the understanding of the mechanism of purchase intention formation. In terms of practical significance, the organic food market has received widespread attention, but how to motivate consumers to buy has become a concern for companies. This study's practical significance is that it provides guidelines for companies to design organic food advertisements. The results show that matching altruistic appeals with vice products is more likely to increase purchase intention while matching altruistic appeals

with virtue products is more likely to stimulate purchase desire. Therefore, companies should choose appropriate appeals based on product type, focusing on personal health or social responsibility to improve advertising effectiveness. This finding provides practical guidance for companies to develop more effective advertising strategies, which are expected to enhance the marketing effectiveness of organic food.

2. Literature review

2.1 Organic food advertising appeal

Advertising appeals are the promotional strategies used by business people to introduce the beneficial attributes of a product. Many existing studies have been devoted to examining the link between consumer purchase intentions and types of goods, providing an in-depth and comprehensive perspective for understanding consumer motivations and advertising appeals (Aránega *et al.*, 2022; Ferraris *et al.*, 2020; Giacosa *et al.*, 2017; Rasool *et al.*, 2021; Sharma *et al.*, 2022). In Zakowska-Biemans' study, the most important motivations for consumers in food choice are sensory factors, price, and safety (Zakowska-Biemans, 2011); Baudry's study found that consumers form different clusters, including "standard organic snackers," "unhealthy conventional food eaters," etc. These clusters are related to food choice motivations such as "health" and "safety". Baudry's study found that consumers formed different clusters, including "standard organic snackers", "unhealthy conventional food eaters", etc., and these clusters were related to food choice motivations, such as "health", "price", "innovation" (Baudry *et al.*, 2017), etc. and Zagata's study explored the motivations of consumers of organic food, and found that consumers mainly perceived organic food as a healthy food that is "free of chemicals", and emphasized on environmental protection (Zagata, 2014); Koksals's study classified the motivations for food choice into eight dimensions: "ecology", "sensory", "convenience and accessibility", "health", "weight", "mood", "price", and "religion"; Hwang's study focuses on the motivations of older consumers' willingness to purchase organic food, and finds that self-presentation and food safety are the key motivations for older consumers' purchasing of organic food (Hwang, 2016); Hwang's study focuses on the motivations of older consumers' willingness to purchase organic food, and finds that self-presentation and food safety are the key motivations for older consumers' purchasing of organic food (Aschemann-Witzel *et al.*, 2013); Kokata's study examines the motivations of organic food consumers, finding that consumers mainly view organic food as "chemical-free" and healthy food, while emphasizing environmental protection (Koksals, 2019); Aschemann-Witzel's study emphasized the commonality in health motivations between organic and functional foods (Aschemann-Witzel *et al.*, 2013); Zagata's study added nutrition, health, and risk reduction promotions to the marketing of the products, and the results showed that this was beneficial in driving sales of organic products. Iqbal's study emphasized that consumers' purchase intentions for organic foods positively correlate with their health awareness and food safety concerns (Iqbal *et al.*, 2021).

Overall, these studies can be categorized into two types of organic food advertising appeals: egoistic and altruistic. Altruistic appeals focus on the health and safety or economic attributes of the product, which are highly related to one's own economic interests and health benefits; and egoistic appeals focus on the environmental attributes of the product, which are highly related to the overall interests of the society and ecological interests (Kareklas *et al.*, 2014). Consumers' motivations for purchasing organic foods are primarily based on altruistic appeals considerations, and there is also literature that suggests that consumers will consider the altruistic appeals of organic foods and make purchases (Jaeger and Weber, 2020; Kareklas *et al.*, 2014; Yadav, 2016). However, existing studies have yet to reach a consensus on which advertising appeals strongly impact consumers' willingness to purchase organic food. For example, Yadav (2016) found that using altruistic appeals in advertisements is more critical

than altruistic appeals in influencing young Indian consumers' purchase intention of organic food. However, others have shown that altruistic appeals are more effective than egoistic appeals in organic food advertising. Jäger *et al.* (Jaeger and Weber, 2020) also concluded that altruistic appeals in organic food advertisements are more credible than egoistic appeals. The same paradoxical controversy was found in advertising in the non-organic food sector. Firstly, egoistic appeals significantly affect purchase intention more than altruistic appeals. Visser *et al.* (2015) found that in shoe advertisements, egoistic appeals have a slight advantage over altruistic appeals and that advertisements with altruistic appeals negatively affect purchase intention. Secondly, altruistic appeals affect purchase intention more than egoistic appeals. Wei *et al.* (2012) found that in comparison with egoistic appeals, altruistic appeals improve both the product's perceived quality and price fairness and positively affect purchase intention. In the above studies, researchers have proposed two main types of directions for organic food advertising appeals; however, there is no consistent conclusion as to which type of advertising appeal has a more substantial impact on consumers' willingness to buy organic food. There are some contradictions in the results of different studies, which may be influenced by factors such as geography, culture, and age. Therefore, this paper further explores these differences from the perspectives of consumer appeals and product types and analyzes in depth the responses of different target groups to advertising appeals.

2.2 Vicarious products vs virtue products

Product type categorizes products based on their performance, utility, and benefits (Werthenbroch, 1998). Preference inconsistency due to short-term and long-term utility trade-offs allows categorizing product types into virtue products (virtues) and indulgences (vices). Virtue products provide immediate gratification but imply long-term or delayed harm, and choosing them often implies self-indulgence. In contrast, vice products maximize long-term utility but give unattractive short-term gratification, and choosing them often implies successful self-control (Liu *et al.*, 2015). Different motivations for purchasing self-regulators and vice products may lead to different consumer behaviors, and it is essential to study the effects of different product types on consumer behavior (Ketron *et al.*, 2021).

Existing research on self-regulated versus indulgent products focuses on two aspects: the choice of self-regulated versus indulgent products in general consumer products. Yan *et al.* (2017) found that when there is a price promotion, consumers are more inclined to choose indulgent products compared to self-regulated products because consumers view the price promotion as a persuasive justification. After consuming indulgences, consumers would be more willing to engage in donation behaviors (Savary *et al.*, 2015). Seth *et al.* (Ketron *et al.*, 2021), in their study on the effect of figurative versus abstract representations on willingness to purchase food products, found that consumers preferred indulgences when figurative representations were used. In contrast, the effect on vice products was not significant. Cute package design can increase consumers' purchase intention for indulgences but decrease their purchase intention for vice products (Schnurr, 2019). Second, a study on the choice between autos and vice products in organic food consumption. Doom and Verhoef (van Doorn and Verhoef, 2011) found that consumers were willing to pay a premium for organic labeling of autos and were unwilling to pay a premium for organic labeling of indulgences due to perceived quality issues. Consistent with previous findings, Parker *et al.* (2021) found that organic labeling in food products was detrimental to the evaluation of vice products but that simply changing the organic labeling construct attenuated the negative evaluation of indulgences. However, it is also consistent with research showing that organic labeling enhances consumers' willingness to consume indulgences and attenuates willingness to consume vice products (Lee *et al.*, 2018).

In summary, the nature of a product type as a virtue product versus an indulgence affects consumer decision-making. Previous research on autodidacts and indulgences in organic food consumption is still in its infancy and has not focused on the relationship between the match between autodidacts, vice products, and advertising appeals on the willingness to purchase organic food. This study will focus on the effect of matching between product type (vice products vs indulgences) and advertising appeals (egoistic appeals vs altruistic appeals) on the willingness to purchase organic food.

2.3 The effect of matching role of advertising claims and product type on purchase intention of organic food products

The Fine Processing Likelihood Model is one of the basic theoretical models for studying consumer advertising information processing (Jayawardena *et al.*, 2023; Lin and Boh, 2021; Liu *et al.*, 2022). The theory suggests that consumers process advertising information via the center and edge paths. The central path means that consumers process persuasive information rationally and objectively and are usually influenced by the information about the product itself; the marginal path means that when consumers do not have the will to understand the information about the product and judge it emotionally, the consumer attitude is influenced by the information around the product.

Egoistic appeals are advertising messages that process the product through the central path (Ni *et al.*, 2022). Similarly, since virtue products focus more on long-term than short-term benefits, consumers may evaluate product information with a higher degree of involvement, i.e. process product information through the central path. Consumption of virtue products is often associated with pursuing health-related expectations (Mishra and Mishra, 2011). Self-regulating products have come to represent an ethical choice, granted that consumers purchasing self-regulating products are concerned with personal rather than social goals. Since personal motives have a more significant impact on food choices than social motives (Vermeir and Verbeke, 2006), consumers should have less need for justification when purchasing virtue products. Therefore, we argue that matching egoistic appeals with virtue products triggers a higher willingness to purchase organic food. Based on this, we propose:

H1a. When virtue products are matched with egoistic appeals, they can enhance the willingness to buy organic food.

Altruistic appeals are a marginal path (Ni *et al.*, 2022). Indulgences emphasize short-term rather than long-term outcomes (Mishra and Mishra, 2011), and consumers process product information through the edge path when choosing indulgences. When consumers cannot find a suitable reason to consume an indulgence, consumers perceive that consuming the indulgence will result in more negative than positive experiences, creating guilt (Reber *et al.*, 2004). Ways to mitigate guilt include limiting the amount of indulgences consumed, justifying indulgences by combining them with implementing good behaviors (e.g. contributing to the environment), and so on. Linking justification to the act of consuming indulgences may be more effective than the act of consuming vice products. Thus, altruistic appeals significantly impact willingness to purchase organic food in the vice product condition. Based on this, we propose:

H1b. Indulgences enhance willingness to buy organic food when matched with altruistic appeals.

2.4 Mediation of processing fluency

Processing fluency refers to the ease with which the processing process of stimulus information is perceived during an individual's decision-making process (Jiang and Hong,

2014). As one of the essential mechanisms in matching research, processing fluency significantly impacts subsequent behavioral decisions. The use of technical language in advertisements reduces consumers' willingness to buy because this language reduces their processing fluency, especially for the average consumer [Liu et al. \(2023\)](#). However, Pan's 2020 study showed that the negative impact of technical language is attenuated when consumers have relevant knowledge or when the advertisement involves a typical technical product ([Yating et al., 2020](#)). Fu explored the external stimuli and internal psychological characteristics that influence the effectiveness of green advertisements, considering the interactions of message framing, environmental attitudes, and processing fluency. It was found that for consumers with environmentally solid attitudes, benefit-oriented green advertisements more significantly influenced their attitudes toward the advertisements and products and their willingness to behave in an environmentally friendly manner. In contrast, loss-oriented advertisements more significantly influenced their attitudes toward the advertisements and products for consumers with weaker environmental attitudes. Processing fluency mediates the interaction between message framing and environmental attitudes on the effects of green advertising ([Fu and Gao, 2023](#)).

To summarize, processing fluency is also an essential internal mechanism that influences the purchase intention of organic food after matching the advertising claims with the product type. Fluent information processing enables consumers to smoothly understand organic food advertising claims and the benefits of organic food, which in turn enhances consumers' purchase intentions. As mentioned earlier, altruistic appeals in the vice products increase the individual's processing fluency, and egoistic appeals in the self-regulatory products increase the individual's processing fluency for the information. Accordingly, we propose the following hypothesis and research model (see [Figure 1](#)):

H2. Processing fluency mediates the process of matching advertising claims and product type in influencing purchase intentions for organic food.

3. Experiment 1: the effect of matching the role of advertising claims and product type on the purchase intention of organic food

3.1 Experimental design

The purpose of Experiment 1 was to test the effect of matching advertising appeals with product type on purchase intention of organic food products using a 2 (egoistic appeals vs altruistic appeals) × 2 (egoistic vs virtue products) between-groups factorial design. Experiment 1 was conducted online through the Questionnaire Star Sample Service, and subjects were randomly assigned to four scenarios of egoistic appeals/altruistic products, altruistic appeals/altruistic products, egoistic appeals/indulgences, and altruistic appeals/

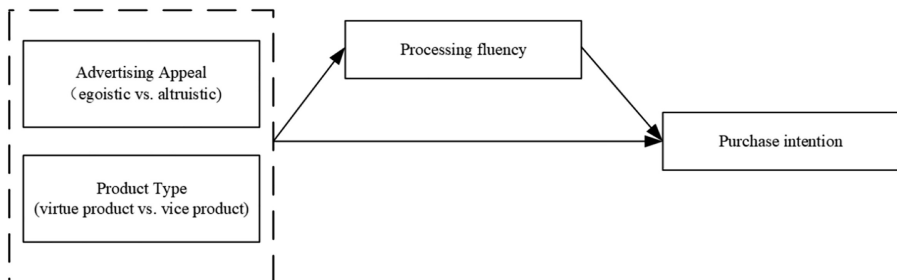


Figure 1.
Research model

Source(s): Adapted from the original work by Jiayuan Zhao (2024)

virtuous products, with 35 people in each scenario. Excluding a sample of 20 who did not pass the screening questions, 120 valid questionnaires were obtained, with 45 males and 75 females, with an average age of 32. Referring to the study by [Anghelcev et al. \(2020\)](#), organic oats and organic ice cream were chosen for Experiment 1 to represent vice products and indulgences, respectively.

3.2 Variable measurement and manipulation

3.2.1 Manipulation of advertising appeals. Subjects will read an advertising message for an organic food product. The advertisement is a print advertisement, and the content consists of text and pictures. The content of the advertisement description is adapted from the advertisement slogan of an organic food enterprise in Harbin, and in order to exclude the advertisement design from interfering with the experimental results, the print advertisements of egoistic appeals and altruistic appeals have the same conditions except that the description of the advertisement content is different. The specific description is shown in [Figure 2](#).



Organic oats are made with only certified organic ingredients. This allows you to enjoy nature's purest ingredients, giving you and your family a healthy choice.

egoistic appeal (virtue product)



The production process of organic oats is more friendly to the environment, and it minimizes environmental pollution. By choosing organic oats, you are choosing to be environmentally friendly.

altruistic appeal (virtue product)



Organic ice creams are made with only certified organic ingredients, helping you to avoid the harmful effects of artificial additives and eat healthier.

egoistic appeal (vice product)



The production process of organic ice cream is more friendly to the environment, and it minimizes environmental pollution. By choosing organic food, you are choosing environmental protection.

altruistic appeal (vice product)

Source(s): Adapted from the original work by Jiayuan Zhao (2024)

Figure 2.
Experiment 1 materials

3.2.2 Variable measurements. In [Kareklas et al.'s, \(2014\)](#) manipulation test of advertising appeals, subjects were asked to answer two questions at the end of their browsing session: "The content of the material is based on personal considerations" and "The content of the material is based on environmental protection considerations" (1 = Strongly Disagree (1 = Strongly Disagree, 7 = Strongly Agree). Measurement of willingness to buy was mainly based on the measurement scale used by [Guanghua et al. \(2019\)](#), which consisted of four test items: "I am willing to collect and learn more information about organic food," "I am willing to recommend my relatives and friends to buy organic food" "I would buy organic food if I need to" "I would introduce and recommend this organic food to my family." All of the above scales are on a seven-point Likert scale, and subjects were required to rate each test item from 1 (totally disagree) to 7 (totally agree). The Cronbach's alpha coefficient for willingness to buy was 0.712, indicating good scale reliability.

3.3 Data analysis and hypothesis testing

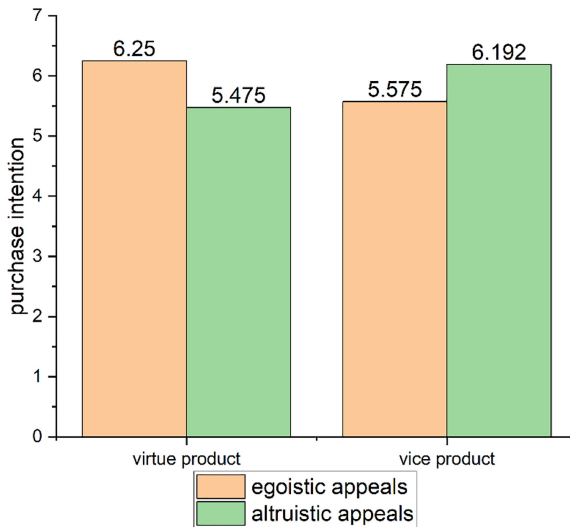
3.3.1 Manipulation tests. The independent sample *t*-test showed that the subjects in the self-interested claim group believed that the content of the advertisement was more based on personal perspective ($M_{\text{egoistic}} = 5.970$, $SD = 1.073$ vs $M_{\text{altruistic}} = 5.350$, $SD = 1.412$, $t = 2.693$, $p = 0.008 < 0.05$). The subjects in the altruistic claim group believed that the content of the advertisement was more based on environmental protection considerations ($M_{\text{egoistic}} = 4.700$, $SD = 1.608$ vs $M_{\text{altruistic}} = 6.250$, $SD = 0.751$, $t = -6.765$, $p < 0.001$), and the advertisement appeals were effectively manipulated.

3.3.2 Hypothesis testing. By ANOVA of 2 (advertising appeals: egoistic appeals vs altruistic appeals) \times 2 (product type: virtue product vs vice product), the main effect of advertising appeals was not significant ($F = 0.039$, $p > 0.05$), and the main effect of product type was not significant ($F = 0.564$, $p > 0.05$), but the interaction effects between advertising appeals and product type were significant ($F = 43.598$, $p < 0.001$). Further simple effects analysis was conducted, and in the virtue product group, subjects scored significantly higher on intention to purchase for egoistic appeals than for altruistic appeals. In the vice product group, subjects scored significantly higher on willingness to purchase for altruistic appeals than for egoistic appeals ($M_{\text{egoistic}} = 5.475$, $SD = 0.617$; $M_{\text{altruistic}} = 6.192$, $SD = 0.540$; $F = 17.26$, $p < 0.001$) (as shown in [Figure 3](#)). The experimental results support our proposed hypotheses [H1a](#) and [H1b](#).

4. Experiment 2: verification of the mediating role of processing fluency

4.1 Pre-experimentation

In order to be more in line with the actual situation of Chinese consumers, Experiment 2 did a pre-experiment before the formal experiment with the purpose of re-experimenting the selection and confirmation of the experimental materials. The standard organic food products for consumers were found by collecting literature and market research. In the pre-experiment, eight products were found: organic ice cream, organic pizza, organic yogurt, organic chocolate, organic apple, organic vegetable juice, organic oatmeal, and organic orange juice. The eight products were randomly ranked and scored from 1 (complete self-indulgences) to 7 (complete indulgences) by 50 students (average age 27, 52% male, 48% female) at a northeastern university, where self-indulgences and vice products were described as "Indulgences refer to a class of things that can provide immediate gratification but imply long term or delayed harm, and choosing such things often implies self-indulgence; whereas virtue products refer to a class of things that maximize long-term utility but lack the appeal of the short-term gratification they give, and choosing them often implies successful self-control." The mean scores regarding the various types of organic products are shown in



Source(s): Adapted from the original work by Jiayuan Zhao (2024)

Figure 3. Effect of advertising appeal and product type on purchase intention

Table 1. Finally, we chose organic chocolate as a vice product (M = 4.92) and organic apples as a self-regulator (M = 2.68) as stimulus materials for the formal experiment.

4.2 Experimental design

Experiment 2 utilized a 2 (altruistic vs egoistic appeals) × 2 (virtue products vs indulgences) between-groups factorial design and was conducted online through the Questionnaire Star Sample Service. Subjects were randomly assigned to four scenarios of egoistic appeals/self-disciplined products, altruistic appeals/virtuous products, egoistic appeals/virtuous products, and altruistic appeals/indulgent products, with 51 people in each scenario, and 24 people who did not pass the screening questions were excluded, resulting in the collection of 180 valid questionnaires. Of these, 97 were male and 83 were female, with an average age of 32.

4.3 Variable measurement and manipulation

4.3.1 Manipulation of advertising appeals. Subjects will read a print advertisement consisting of text and pictures. The content of the advertisement description was adapted from the study by Jäger et al. (Jaeger and Weber, 2020). In order to exclude the advertisement design from interfering with the experimental results, the print advertisements for egoistic appeals

Serial number	Product types	Average	Serial number	Product types	Average
1	Organic Chocolate	4.92	5	Organic Yogurt	3.30
2	Organic pizza	4.72	6	Organic Oats	2.78
3	Organic Ice Cream	4.70	7	Organic Vegetable Juice	2.72
4	Organic Orange Juice	3.54	8	Organic Apple	2.68

Table 1. Mean scores for each type of organic products

and altruistic appeals were in the same condition, except that the description of the advertisement content was different. The specific descriptions are shown in [Figure 4](#).

4.3.2 Variable measurement. The manipulation test items for advertising appeals and the measurement scale for purchase intention were consistent with Experiment 1. Processing fluency was based on the scale used by [Jin and Chen \(2023\)](#), which consisted of six items: "I find the advertisement very comfortable," "I find the advertisement very simple," "I find the advertisement easy to understand," "I find the advertisement very bad," "I find the advertisement very complicated," "I find the advertisement easy to understand," "I find the advertisement very complicated," "I find the advertisement easy to understand," and so on. "I find the advertisement very bad," "I find the advertisement very complicated," and "I find the advertisement not easy to understand" (reverse scoring). All of the above variables



Organic apples have 0 additives, 0 pollution, 0 hormones and contain more than 30% of vitamin A, vitamin C, vitamin B1, B2 and carotene, which are good for your immune system and eyesight. By buying organic apples, you are eating healthier.

egoistic appeal (virtue product)



Organic chocolate has 0 additives, 0 pollution, 0 hormones and is rich in nutritious minerals such as magnesium, calcium, phosphorus and iron, which help improve blood vessel elasticity and are beneficial to human health. By buying organic chocolate, you are eating healthier.

egoistic appeal (vice product)



Organic farming uses natural materials, reduces waste of resources, increases biodiversity, and promotes guided natural crop growth and sustainable land use. Organic production is very friendly to the environment. Buy organic apples to protect the soil and the planet.

altruistic appeal (virtue product)



Organic production uses natural materials, reduces waste of resources, increases biodiversity, and promotes guided natural crop growth and sustainable land use. Organic production is very friendly to the environment. Buy organic chocolate, protect the soil and the planet.

altruistic appeal (vice product)

Source(s): Adapted from the original work by Jiayuan Zhao (2024)

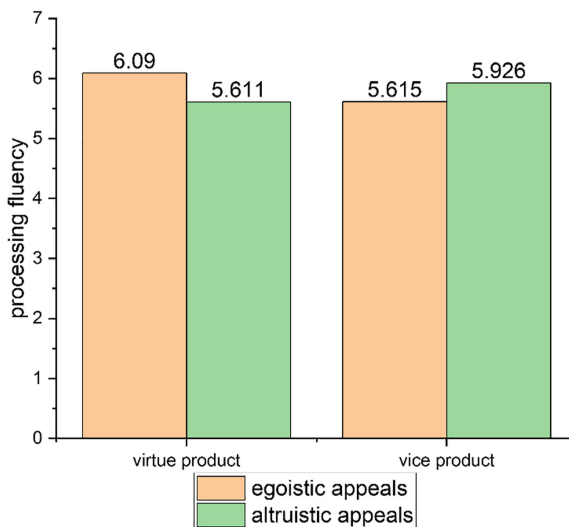
Figure 4.
Experiment 2 materials

were measured on a seven-point Likert scale, with subjects scoring each measure from 1 (completely disagree) to 7 (completely agree). The results of the reliability analysis of the Willingness to Purchase Measurement Scale were $\alpha = 0.696$, and the results of the Processing Fluency Measurement Scale were $\alpha = 0.759$. This indicates that the reliability of the scales is good.

4.4 Data analysis and hypothesis testing

4.4.1 Manipulation checks. Our manipulation of advertising appeals (egoistic appeals vs altruistic appeals) was tested to be effective: subjects in egoistic appeals perceived the material to be based more on personal perspective considerations ($M_{egoistic} = 5.39$, $M_{altruistic} = 3.50$, $F = 10.324$, $p < 0.001$) and subjects in altruistic appeals perceived the material to be based more on environmental protection considerations ($M_{egoistic} = 4.11$, $M_{altruistic} = 6.23$, $F = 32.709$, $p < 0.001$).

4.4.2 Hypothesis testing. To verify the effect of matching advertising appeals with product types on processing fluency. An ANOVA of 2 (advertising appeals: egoistic appeals vs altruistic appeals) \times 2 (product type: virtue product vs vice product) was conducted on processing fluency, and the results showed that the main effect of advertising appeals was not significant ($F = 0.567$, $p > 0.05$), the main effect of product type were not significant ($F = 0.621$, $p > 0.05$), and the interaction between advertising appeals and product type were significant ($F = 13.915$, $p < 0.001$), as shown in Figure 5. Simple effects analysis showed that subjects were more likely to process the information when the virtue product was matched with the egoistic appeals ($M_{egoistic} = 6.090$, $SD = 0.548$; $M_{altruistic} = 5.611$, $SD = 0.811$; $F = 10.208$, $p < 0.01$); whereas subjects were more likely to process the advertising information when the vice product was matched with the altruistic appeals ($M_{egoistic} = 5.615$, $SD = 0.826$; $M_{altruistic} = 5.926$, $SD = 0.611$; $F = 4.328$, $p < 0.05$) (see Figure 5 for specific effects).



Source(s): Adapted from the original work by Jiayuan Zhao (2024)

Figure 5. Effect of advertising appeal and product type on processing fluency

To verify the effect of matching advertising appeals with product type on purchase intention. An ANOVA of 2 (advertising appeals: egoistic appeals vs altruistic appeals) × 2 (product type: virtue product vs vice product) was conducted with purchase intention as the dependent variable. The results showed that the main effect of advertising appeals was not significant ($F = 1.911, p > 0.05$), and the main effect of product type was not significant ($F = 0.085, p > 0.05$). However, the interaction between advertising appeals and product type was significant ($F = 55.087, p < 0.001$). Further simple effects analysis was conducted, and in the virtue product group, subjects scored significantly higher purchase intention for egoistic appeals than for altruistic appeals ($M_{\text{egoistic}} = 6.183, SD = 0.498; M_{\text{altruistic}} = 5.722, SD = 0.427; F = 25.426, p < 0.001$). In the vice product group, subjects' purchase intention scores for altruistic appeals were significantly higher than for egoistic appeals ($M_{\text{egoistic}} = 5.639, SD = 0.634; M_{\text{altruistic}} = 6.311, SD = 0.465; F = 29.746, p < 0.001$) as shown in Figure 6, and the data again supported hypotheses H1a and H1b.

They mediated effects test for processing fluency. Referring to the mediating effects analysis proposed by Hayes (Bolin, 2014), a mediating effects test for processing fluency was conducted using Bootstrap in the Process plug-in. Since this study is matching and needs to verify the role of processing fluency in the effect of the interaction effect of advertising claims and product type on purchase intentions, Model 8 was chosen, with a sample size of 5,000 and a confidence interval of 95%. In the advertising appeals × product type → processing fluency → purchase intention path, the confidence interval of the mediation effect of processing fluency is (LLCI = 0.089, ULCI = 0.371), which does not contain 0, indicating a significant mediation effect and a mediation effect value of 0.217. Specifically, the confidence interval for the mediating effect of processing fluency in the advertising claim → processing fluency → purchase intention path is (LLCI = -0.231, ULCI = -0.047), which does not contain 0 and has an effect coefficient of -0.131 when the product type is virtue product. When the product type is a vice product, the confidence interval for the mediating effect of processing fluency in the advertising appeal → processing fluency → purchase intention path is (LLCI = 0.006,

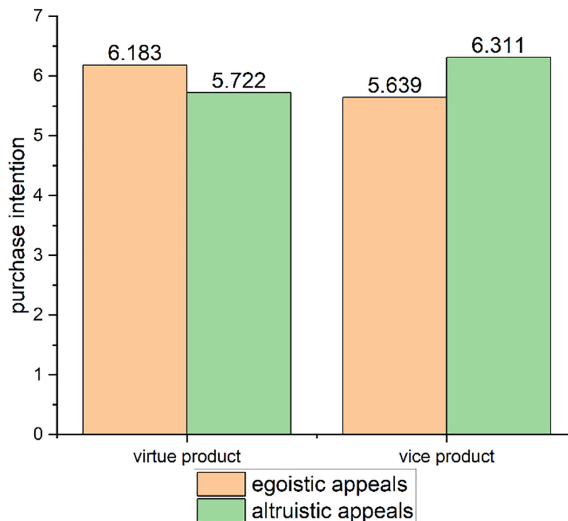


Figure 6.
Effect of advertising
appeal and product
type on purchase
intention

Source(s): Adapted from the original work by Jiayuan Zhao (2024)

ULCI = 0.184), which does not contain 0, and the effect coefficient is 0.087. It indicates that processing fluency has a mediating effect in matching product type with advertising claims to increase organic food purchase intention, as verified by H2.

5. Conclusion and implications

5.1 Research conclusions

This study examined the mechanism of the matching effect of organic food advertising appeals and product type on the purchase intention of organic food through two experimental studies. The findings of the study are as follows:

First, effectively matching advertising appeals with product types will increase organic food purchase intention. Specifically, using egoistic appeals for organic food products in the virtue product category will increase consumers' intention to purchase. Using altruistic appeals for organic foods in the vice product category will increase consumers' intention to purchase. Consumers' choice of organic food in the virtue product category is often related to health-related expectations, while egoistic appeals are mainly based on the consumer's own health needs. Therefore, virtue products can be effectively matched with egoistic appeals, generating higher purchase intentions. Consumers' choice of organic food in the vice-product category is often accompanied by guilt and a need to justify their indulgences. At the same time, altruistic appeals are mainly based on environmental considerations. So, when choosing a virtuous product, the idea of environmental protection can counteract consumers' guilt and increase their intentions to buy. The findings further explain the paradox of the effect of advertising appeals (egoistic appeals vs altruistic appeals) on organic food purchase intentions. As a result, matching the organic food advertising appeals with the product type can receive better advertising results.

Second, effectively matching advertising appeals with product types can enhance processing fluency and thus influence organic food purchase intentions. Specifically, matching egoistic appeals with virtue products will increase processing fluency, and matching altruistic appeals with vice products will increase processing fluency, thus enhancing consumers' intentions to purchase organic food. This finding explains the underlying mechanism that matching advertising appeals (egoistic appeals vs altruistic appeals) with product types (virtue product vs vice product) can produce better advertising results. It has been shown that processing fluency has a positive effect on individual judgment and evaluation (Sundar and Noseworthy, 2014). After matching the advertising appeals of organic food with the product type, consumers recognize and understand the advertising message more efficiently, the information processing fluency is high, and then consumers respond more positively to the content of the appeal conveyed in the advertisement. So, matching advertising appeals to product type improves processing fluency, generating a higher intention to buy organic food.

This paper analyzes the relationship between advertising claims, product type, and processing fluency organic food purchase intention based on the acceptable processing likelihood model, designs two sets of experiments to study its mechanism of action empirically, and analyzes the mediating role of processing fluency and perceived quality. This paper has the following two main innovations:

- (1) The innovation of research perspective. Previous research on advertising appeals based on the acceptable processing possibility model mainly focuses on green consumption, pro-social behavior, tourism marketing, and other fields. This study, however, focuses on the perspective that organic food divides advertising appeals into egoistic and altruistic appeals and divides product types into virtuous and indulgent products. Explore the effect of matching the two on the purchase intention

of organic food and provide a new way of thinking for researching organic food advertisements.

- (2) The mediating role of processing fluency in matching advertising appeals and product types on the purchase intention of organic food was explored. The intermediary mechanism between advertising appeal and product type matching on the purchase intention of organic food is clarified.

5.2 Theoretical contribution

First, this text deepens the research on the influence of advertising claims on organic food purchase intention and finds a new boundary condition for advertising appeals to influence organic food purchase intention. The existing literature suggests that the presence of moderating variables makes one advertising appeal more effective than another, but these studies have yet to reach a unified conclusion. This study concludes that the effectiveness of organic food advertising appeals depends on the type of organic products. When the type of product is a virtuous product, advertising using egoistic appeals can work more effectively, and when the type of product is a vice product, advertising using altruistic appeals can receive better advertising results. The results of the study further expand the application context of advertising appeals.

Second, the mediating role of processing fluency in matching advertising claims with product types to influence organic food purchase intention was examined, and the underlying mechanism of advertising appeals matching with product types to influence organic food purchase intention was clarified. Consumers process advertising messages with a high degree of matching more efficiently and with higher processing fluency, thus generating higher purchase intentions. When the advertising information does not match the product, it is easier for consumers to process the advertising information, and the processing fluency is lower, reducing consumers' intentions to purchase. Therefore, processing fluency is an essential intrinsic mechanism for matching advertising appeals with product types to increase purchase intentions.

5.3 Marketing implications

As environmental sustainability issues become increasingly important in business practices, companies realize the need for effective environmental marketing strategies. They are, therefore, beginning to place greater emphasis on sustainable consumption. Organic consumption as a form of sustainable consumption and how to promote organic consumption is now a key concern for companies to focus on. According to the conclusion of our research, companies should design organic product communication strategies based on product types to design organic product advertising appeals. For vice product, companies should adopt the advertising strategy of altruistic appeals. For example, for organic ice cream, many people may be reluctant to buy organic ice cream for weight loss or fitness. When the advertising campaign focuses on the environmental benefits of eating organic ice cream, these groups may find justification to buy organic ice cream for themselves, which may increase their intentions to buy. For virtue products, companies using egoistic appeals in advertising are more likely to increase the intentions to buy organic food. For example, for organic vegetables, companies can promote the benefits from a personal perspective, such as making the family eat healthier to increase consumers' intentions to purchase.

5.4 Limitations and future research perspectives

The following limitations exist in this study, and future studies could be further expanded:(1) A re-examination of the validity boundaries of egoistic and altruistic appeals in organic food.

This study focused only on the borderline role of the types of virtue and vice in the product category in the influence of advertising appeals on the purchase intention of organic food, and future studies could focus on the borderline role of social context or other factors. (2) Regarding the measurement of the dependent variable, we have used the purchase intention scale. However, according to previous studies, we know there is a paradox between intention and behavior regarding Prosocial Behaviors (e.g. organic food purchase behavior), i.e. consumers with higher organic food purchase intention do not necessarily pay actual actions in the natural purchase environment. So, future studies can further explore the validity of this finding for behavioral aspects effects. (3) This study focuses on the inconsistent findings of the effect of advertising appeals on organic food purchase intentions. However, there are other aspects regarding the antecedent influences that affect consumers' organic food purchase intentions. Future research could further expand the framework of antecedent influences on organic food purchase intentions.

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Corresponding author

Sheng Wei can be contacted at: weisheng@hrbcu.edu.cn

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