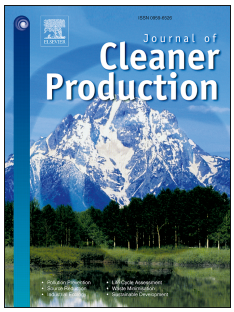

What determines a positive attitude towards natural food products? An expectancy theory approach

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What determines a positive attitude towards natural food products? An expectancy theory approach

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What determines a positive attitude towards natural food products? An expectancy theory approach

Abstract

Natural food products are becoming increasingly popular worldwide due to their health and environmental benefits. However, these products' increasing anecdotal popularity has not translated into their widespread adoption; in fact, demand for natural food products remains confined to a relatively small segment of consumers. Despite this, little is known about the facilitators and inhibitors of favourable attitude of consumers towards these products. Recognising this gap, our study employed the theoretical lens of expectancy theory to investigate these factors. Through an extensive review of the pro-environmental consumption literature, we identified four facilitating and inhibiting factors: health consciousness, environmental concern, natural content and price barrier. Our subsequent analysis of responses collected from 357 existing consumers of natural food products in the United States confirmed a statistically significant positive association of health consciousness and natural content with consumers' attitude towards natural food products and a statistically significant negative association of price barrier and attitude towards natural food products. To better understand the overall dynamics of these associations, we also examined the moderation effect of brand love and image barrier. Our results revealed that brand love moderates the association between health consciousness and attitude while image barrier moderates the association between price barrier and attitude. This study's findings make a novel contribution to research and practice related to natural food product consumption.

Keywords: Attitude; Environmental concern; Health consciousness; Natural content; Natural food products; Price barrier

1. Introduction

The term 'sustainable products' refers to products, including natural food products, that have certain positive social and/or environmental attributes (Bangsa & Schlegelmilch, 2020; Luchs et al., 2010; Xu, Jin & Fu, 2021). This understanding of sustainable products is derived from the triple bottom line framework, which suggests that sustainability can be achieved by optimising performance in three areas: environmental, social and economic (Fung, Chan, Choi & Liu, 2021). Taking this understanding into consideration, sustainable food products may be defined as products of a sustainable food system that fulfils the current food security and nutrition needs without depleting the economic, social and environmental basis which would ensure continued food security

and nutrition for generations to come (see FAO, 2018). Such food products may also be defined as products that are marginally processed and free from artificial additives (Altintzoglou, Honkanen & Whitaker, 2021; Chambers & Castro, 2018; Kumar, Dhir, et al., 2021).

Natural food products are associated with multiple advantages, including compliance with pro-environmental consumption (Kautish & Sharma, 2020; Kumar, Dhir, et al., 2021; Patnaik, Tripathy & Dash, 2021), limited use of chemicals during the production process (Chambers & Castro, 2018), ecological benefits (Kahupi, Hull, Okorie & Millette, 2021; Moscato & Machin, 2018) and health-related benefits (Kumar, Dhir, et al., 2021). Organic, natural and green products (De Medeiros, Ribeiro & Cortimiglia, 2014; Kahupi et al., 2021; Ketelsen, Janssen & Hamm, 2020) are examples of sustainable food products because they are minimally processed and produced in conformance with certain standards (Tandon et al., 2020a; 2020b). Such products are also considered healthier, safer and tastier than traditional food products (Olson, 2017). Drawing upon these existing interpretations, our study defines sustainable food products—which we call 'natural foods'—as products that contain ingredients produced using a sustainable production process. This definition of sustainable food products aligns with many prior studies (e.g. Altintzoglou, Honkanen & Whitaker, 2021; Vittersø & Tangeland, 2015). Due to these products' various advantages, the consumption of natural foods has increased noticeably. Their increased visibility is also attributable to the increasing number of firms that specialise in their production (Kumar, Dhir, et al., 2021), the emergence of speciality stores stocking them (Dominick et al., 2018) and the allocation of greater shelf space for natural products even in traditional stores (Dominick et al., 2018).

With this increase in popular interest, natural food products have also attracted the attention of academic researchers who are keen to examine not only the technical perspective but also consumers' perspectives towards natural food products. Previous studies have explored various factors associated with the consumption of natural food products, such as reasonable pricing (Dekhili & Achabou, 2013), willingness to pay a premium (Molinillo et al., 2020), perceived benefits (Marimuthu, 2019) and positive perceptions about natural food products (Moscato & Machin, 2018). However, empirical research insights into varied aspects of consumers' decision-making remain limited, and less is known about the drivers of consumers' responses to these products. This knowledge gap is quite concerning because consumers' acceptance and consumption of natural food products have not increased as anticipated based on these products' multiple benefits, which leaves businesses in a difficult spot—with products to sell but few buyers to purchase them. Furthermore, limited studies

have explored the importance of demographic variables (e.g. age) that may influence attitude towards natural products (e.g. Kautish & Sharma, 2019). Scholars have highlighted this issue, noting the low adoption rate of natural food products among consumers with certain demographic profiles (Fernández-Ferrín et al., 2018). We contend that researchers must elucidate consumers' purchase decisions with regard to natural food products to provide useful inputs for managerial actions aimed at enhancing the adoption of these products.

Towards this end, we thoroughly reviewed the existing literature on the consumption of natural food products and identified three visible research gaps. First, a limited number of studies have examined the factors that facilitate and inhibit the consumption of natural food products (e.g. Kumar, Dhir, et al., 2021; Molinillo et al., 2020). Similarly, consumers' attitude—an important and influential variable in consumer behaviour research (Kautish & Sharma, 2019; Sreen et al., 2021)—have remained almost unexplored in this context. This represents a key gap in the literature because existing scholarship has noted the impact of consumers' attitude on multiple outcome variables, such as buying behaviour (Tandon et al., 2020b), brand love (e.g. Kumar, Dhir, et al., 2021) and purchase intentions (Kautish & Sharma, 2019; Tandon et al., 2020a). Clearly, a lack of insights into the drivers of attitude towards natural food products limits the literature's managerial usefulness.

Second, although the adoption of natural food products has not increased as anticipated, indicating prevailing resistance on the consumer side, practically no studies have examined the barriers that constitute such resistance. The existence of barriers is, however, corroborated by recent studies, which have confirmed that consumers often view natural food products with scepticism, mainly due to fake news and misinformation circulating about them (e.g. Dahiya, 2020), which create doubt in consumers' minds about these products' authenticity. Taking the above discussion into consideration, we expect these products to encounter price and image barriers, which are known to affect food choices (e.g. Kushwah, Dhir, Sagar & Gupta, 2019; Kumar, Talwar, et al., 2021). However, no prior study has examined the role of these barriers in affecting natural food products' consumption. Because these barriers represent the reasons that reduce consumers' adoption of any product or service, we argue that this gap in the related literature requires urgent investigation.

Lastly, the available literature offers only a superficial understanding of the attitude of existing consumers towards natural food products. For example, hardly any studies have examined the effect of brand love, which is a key variable that captures the emotional and passionate attachment consumers may develop for a brand based on their experiences with it (Carroll & Ahuvia, 2006).

Understanding the role of brand love in existing consumers' continued usage of natural food products as a whole can help firms not only increase sales to existing customers but also attract new consumers. Thus, we contend that this gap in the underlying literature must be expeditiously addressed.

Based on the above discussion regarding the gaps in the literature on natural food product consumption and our arguments highlighting the need for these gaps to be addressed, we aim to identify the potential facilitating and inhibiting factors associated with natural food product consumption and to examine the relationships between these factors and consumers' attitude towards natural food products. By reviewing the pro-environmental consumption literature, we identified four factors that have been well-documented for their effects on consumer decision-making in varied contexts but that have remained under-investigated in the case of natural food products. These factors are health consciousness, environmental concern, the natural content of natural food products and price barrier. We propose the first three of these factors as facilitating factors. Health consciousness is related to the actions consumers take to improve their health and well-being (Kumar, Dhir, et al., 2021; Molinillo et al., 2020); environmental concerns are associated with consumers' pro-environmental actions to protect the environment (Cruz & Manata, 2020; Kumar, Dhir, et al., 2021; Molinillo et al., 2020); and natural content signifies consumers' motivation to select products based on those products' inclusion of natural elements (Molinillo et al., 2020). The fourth factor—price barrier—is the only inhibiting factor in our model, capturing consumers' negative perceptions about the pricing of natural food products. We propose to examine the association of these four factors with consumers' attitude towards natural food product consumption. We identified consumers' attitude as our outcome variable of interest because it has been recognised as an important manifestation of consumers' perspectives (e.g. Tandon et al., 2020a, 2020b; Kautish & Sharma, 2019).

Acknowledging that consumers exhibit myriad personal and individual differences that are likely to affect the strength of the associations between the facilitating/inhibiting factors and attitude towards natural food products, we propose also to consider the moderation effect of brand love and image barrier on these associations. Our choice of moderators is driven by the fact that brand love and image barrier could differ at the individual level. In addition, scholars have noted brand love (Kumar, Dhir, et al., 2021) and image barrier (Kushwah, Dhir, Sagar & Gupta, 2019; Talwar et al., 2020) as important variables in the consumption of natural food products.

We have utilised expectancy theory (Vroom, 1964) as the theoretical grounding for our propositions. This theory is suitable in the present context because it explains the motivation behind consumers' voluntary choice behaviour when multiple options are available (Abrate, Quinton & Pera, 2021; Zboja et al., 2020). Consumption of natural food products can be viewed as a voluntary activity in which consumers choose such products over other conventional food products. This choice of behaviour is guided by the facilitating/inhibiting factors outlined above (Baumann & Bonner, 2017; Weber, Lew & Mejía-Ramos, 2020). Our research objectives and our proposal to address the identified gaps can be formalised through the following research questions (**RQs**): **RQ1:** Are the identified facilitating/inhibiting factors associated with consumers' attitude towards natural food products, and if so, how? **RQ2**: How do brand love and image barrier moderate the associations between these factors and attitude towards natural food products?

We addressed these research questions by following a quantitative research design and utilising a cross-sectional survey to collect data from 357 existing consumers of natural food products in the United States. The novelty of our study derives from the following three contributions: (a) our study offers a deeper understanding of attitude, an important variable in the consumer behaviour literature that has remained less explored in the case of natural food products, (b) our study investigates the moderation effect of brand love and image barrier, which have not been investigated previously and can offer more significant insights about consumer behaviour towards natural food products and (c) our study capitalises on expectancy theory's overarching but as yet underutilised applicability to offer new insights regarding consumer behaviour in the consumption of natural food products. In sum, through this study, we aim to provide a holistic understanding of natural food products for theory and practice.

The rest of the study is structured as follows. Section 2 presents the theoretical backdrop of the study, and Section 3 follows with a discussion of the relevant literature and reasoning underlying the hypotheses' formulation. The data and methods appear in Section 4. We present the results in Section 5 and discuss them in Section 6. The study culminates with a comprehensive discussion of implications, limitations and future research directions in the concluding Section 7.

2. Background literature

2.1. Expectancy theory

Expectancy theory is a cognitive theory of motivation based on subjectively rational human behaviour (Vroom, 1964). The theory posits that people evaluate the available choices and choose the

alternative with the most desirable outcome—maximum pleasure and minimum pain—from a personal perspective (Abrate, Quinton & Pera, 2021; Zboja et al., 2020). This theory includes three core components—expectancy, instrumentality and valence, which together create a motivational force. Expectancy—the subjective belief that the ideal choice will produce a desirable outcome commensurate with the effort expended—is a cognitive evaluation influenced by personal experience and individual attributes (Baumann & Bonner, 2017; Weber, Lew & Mejía-Ramos, 2020). Instrumentality refers to the impact of behaviour on the outcome, implying that if an individual performs well, the expected outcome will occur (Baumann & Bonner, 2017; Vroom, 2005). Valence, an affective component of the theory, refers to the net result of the difference between the perceived value the individual associates with an outcome at a given time and the assumed costs incurred to take the required actions (Weber, Lew & Mejía-Ramos, 2020; Zboja et al., 2020). Valence can be either positive or negative.

Previous studies have utilised expectancy theory in various contexts, such as performance evaluations (Iqbal et al., 2019), pro-environmental behaviour (Kiatkawsin & Han, 2017), online social media usage (Behringer & Sassenberg, 2015), tourism (Abrate, Quinton & Pera, 2021), cognitive understanding (Weber, Lew & Mejía-Ramos, 2020) and consumer boycotts (Barakat & Moussa, 2017).

We contend that this theory is also suitable to model consumer behaviour towards natural food consumption for two reasons. First, although originally proposed by Vroom as an organisational behaviour theory, expectancy theory has been efficaciously employed to examine consumer behaviour in a pro-environmental context (Kiatkawsin & Han, 2017). Expectancy theory's proposition that individuals are likely to prefer certain outcomes to others (Iqbal et al., 2019) can be quite useful in understanding consumers' preferences related to the consumption of natural food products. This provides us with a basis for proposing that consumers' preferences for natural food products are formed after they have evaluated those products' benefits and costs, i.e. the four factors we have identified. Second, because the theory accommodates an extremely comprehensive decision-making process, which includes subjective beliefs, cognitive evaluations and the affective assessment of net gain/loss, it allows us to illuminate varied aspects of consumers' evaluations of natural food consumption.

2.2. Extending the theory to the present context

To examine consumers' responses to natural food products, we categorise the four proposed factors—health consciousness, environmental concern and natural content as facilitators and price barrier as an inhibitor—into the three dimensions of expectancy theory—expectancy, instrumentality and valence. First, we categorise environmental concern as the expectancy component of the theory.

This categorisation is based on the argument that consumers with a pro-environmental orientation will be ready to take actions, including the consumption of natural food products, to protect the environment (Cruz & Manata, 2020).

Second, we categorise health consciousness as the instrumentality component because it signifies consumers' actions that aim towards advancing their individual health and well-being (Bazzani et al., 2020), which can be achieved by consuming natural food products. In other words, we consider health consciousness to be an instrumentality component because it indicates that the consumption of natural food products, which offer health-related benefits (Kumar, Dhir, et al., 2021), will result in the expected outcome of improved health (Bazzani et al., 2020).

Next, we categorise natural content as the valence component. The rationale behind categorising natural content as valence is that consumers may evaluate natural food products in terms of the difference between the perceived value of a product that is free from artificial additives and safe for consumption (Molinillo et al., 2020) and the perceived costs of the product, which could be high due to naturalness of the ingredients and other inputs (Molinillo et al., 2020).

Similarly, we categorise price barrier as valence to further capture the perceived costs associated with natural food consumption. Recent studies have confirmed that price plays a role in food choices (Kumar, Talwar, et al., 2021). We theorise price barrier to capture negative valence, indicating that consumers experience dissonance when their perception that natural food products are not a good value for the money conflicts with these products' supposed benefits. This dissonance, in turn, causes consumers to have less positive attitude towards the consumption of these food products.

Finally, we propose consumers' attitude as the outcome variable impacted by the four identified antecedents. In addition, since expectancy theory focuses on individual cognitions and evaluations, we extend its basic propositions to include the moderation effects of brand love and image barrier as sources of individual differences. Finally, because scholars have acknowledged the importance of demographic variables in the consumption of natural products (e.g. Kautish & Sharma, 2019; Kumar, Dhir, et al., 2021; Sreen et al., 2021) and many prior studies have utilised demographic variables as controls to uncover their effects on the outcome variables of interest (e.g. Kumar, Murphy, et al., 2021), we also include age, gender, educational background and monthly household income as controls in our model. Figure 1 presents the research model thus conceptualised, and Table 1 describes the study variables.

Insert Figure 1 and Table 1

3. Hypotheses development

3.1. Environmental concern and attitude

Environmental concern is related to an individual's consciousness to reduce environmental damage and the associated apprehension about the impact of that damage on community or business activities (Molinillo et al., 2020). As environmental issues continue to attract increased attention, the presence of environmentally friendly products, such as organic food products (Tandon et al., 2020b), is increasing both in online marketplaces and in brick-and-mortar stores (Kim & Seock, 2009). However, the existing literature has produced some conflicting findings in this regard. On the one hand, Cheung and To (2019) revealed that environmentally conscious consumers adopt natural consumption practices due to their concern for the environment. On the other hand, Molinillo et al. (2020) countered that environmental concern might not necessarily transform into natural product consumption due to conflicts between environmental concerns and other issues, such as price. We seek clarity by examining the association of environmental concern as a factor that facilitates the consumption of natural food products by fostering positive attitude towards such products. We anticipate this association based on prior research wherein scholars have consistently confirmed that environmentally concerned consumers exhibit more favourable attitude towards organic products (e.g. Kushwah, Dhir, Sagar & Gupta, 2019). In addition to these prior findings, our supposition is also grounded in the expectation that environmentally concerned consumers are more aware of the benefits that natural food products offer, which causes them to evaluate such products more favourably. Hence, we propose the following hypothesis:

H1. Environmental concern is positively associated with attitude towards the consumption of natural food products.

3.2. Health consciousness and attitude

Health consciousness refers to the degree of consumers' readiness to take actions to improve their health (Molinillo et al., 2020). Health-conscious consumers believe that healthy products improve their well-being by naturally enhancing physiological functions and reducing the dangers of disease (Menrad, 2003). In the particular context of natural food products, scholars have argued that natural food products are generally perceived as healthier than conventional food products (Kumar, Dhir, et al., 2021). Therefore, health-conscious individuals may be eager to adopt them. Prior studies have confirmed the link between health consciousness and food choices. For instance, Kushwah, Dhir, Sagar and Gupta (2019) and Tandon et al. (2020a) revealed that health consciousness

encourages individuals to consume a variety of natural products, such as organic food. Drawing upon these findings, we anticipate that health consciousness as a facilitating factor will correlate positively with consumers' attitude towards natural food products. Our proposition is consistent with recent studies that have confirmed a positive association between health consciousness and attitude towards environmentally friendly products (e.g. Tandon et al., 2020a). In fact, research has long-established that health consciousness affects consumer attitudes (Gould, 1988) and that health-conscious consumers exhibit an increased propensity to use healthy products (Chen, 2011). In sum, we argue that health-conscious consumers are more likely to know the health-related benefits of natural food products and are thus more likely to evaluate these products positively. Hence, we hypothesise as follows:

H2. Health consciousness is positively associated with attitudes towards the consumption of natural food products.

3.3. Natural content and attitude

The presence of natural content in products impacts consumers' purchase decisions by inducing positive emotions about the product (Molinillo et al., 2020). Prior literature has confirmed that natural content is a crucial element for developing consumers' favourable dispositions towards a product. For instance, Kumar, Dhir, et al. (2021) found that natural content is associated with health consciousness, which determines brand love for natural food products. Similarly, Hsu et al. (2016) suggested that the natural content of environmentally friendly products is positively associated with consumers' attitude towards these products. Confirming the role of natural content in increasing the consumption of products, Molinillo et al. (2020) revealed that the natural content of environmentally friendly products improved the frequency of their purchase. We extrapolate these findings to speculate that consumers are likely to appreciate the natural content and associated health benefits of natural products, which encourages them to evaluate these products more favourably. Hence, we hypothesise as follow:

H3. Natural content is positively associated with attitude towards the consumption of natural food products.

3.4. Price barrier and attitude

Existing scholarship has noted the role of price in decisions related to the purchase of food products (e.g. Kumar, Talwar, et al., 2021; Krystallis & Chryssohoidis, 2005). More specifically, most studies have identified price as a barrier that may inhibit food purchase decisions. For instance,

Bryla (2016) revealed that the high price of organic food products inhibits their consumption. Other studies have also confirmed the role of high price as a barrier that adversely impacts consumers' dispositions towards products (e.g. Kumar, Talwar, et al., 2021; Zepeda & Nie, 2012). At the same time, some studies have linked price with quality (e.g. Aschemann-Witzel & Zielke, 2017). In the present context, given the fact that natural food consumption has not grown at the anticipated pace, we are inclined to speculate that such products' perceived high price could be one of the reasons behind their sluggish adoption/consumption. Therefore, we propose price as a barrier that is negatively correlated with consumers' positive attitude towards the consumption of natural food products. This expectation is consistent with the extant literature where scholars have noted a negative association between price and consumers' attitude in other contexts, such as social media-based local food distribution systems (Kumar, Talwar, et al., 2021). Aiming to advance the research on the association between price and food choices, we argue that the perception of natural food products as expensive is likely to cause consumers to evaluate such products negatively and develop a less favourable disposition towards them. Hence, we posit the following relationship:

H4. Price barrier is negatively associated with attitude towards the consumption of natural food products.

3.5. Moderation effect of brand love and image barrier

3.5.1. Brand love

Recent studies on natural products have examined brand love as an outcome variable (Kumar, Dhir, et al., 2021; Sreen et al., 2021), and studies in other contexts have acknowledged and examined the role of brand love as a moderator. For instance, Nikhashemi et al. (2019) found that brand love moderated the associations among willingness to pay higher prices, retail brand experiences and word of mouth. Aro, Suomi and Saraniemi (2018) also reported that brand love and behavioural consequences affected the association between experiences with a brand and consumers' emotions towards that brand. Despite these findings in other contexts, no study has examined the moderation effect of brand love on consumer behaviour variables in the context of natural food products. However, we expect brand love to play a similar role in the case of natural food products. In other words, we anticipate brand love to increase the strength of the positive association between the facilitating factors and attitude and to decrease the strength of the negative association between the inhibiting factors and attitude. Hence, we propose the following:

H5. Brand love positively moderates the association of (a) environmental concern, (b) health consciousness and (c) natural content with attitude towards the consumption of natural food products and negatively moderates the association of (d) price barrier with attitude towards the consumption of natural food products.

3.5.2. Image barrier

Image barrier represents the resistance that individuals develop towards a product or service if they perceive the brand, the firm offering the product or service, the industry or the country of origin negatively (Lian & Yen, 2014). In fact, image indicators for a product/service, such as brand, industry or country of origin, provide peripheral cues to help individuals decide whether to adopt or avoid that product/service. In other words, if consumers dislike these cues, they will tend to follow an avoidance approach by developing an image barrier towards that product/service (Laukkanen, 2016). Prior studies have confirmed the existence of image barriers in varied contexts, such as online banking and online shopping (e.g. Laukkanen, 2016; Lian & Yen, 2014). In addition, some studies have examined and confirmed the role of image barriers in inhibiting the consumption of natural products. For instance, Kumar, Dhir, et al. (2021) revealed the existence of a negative relationship between image barrier and brand love. Based on the previous findings discussed above, we speculate that image barrier will reduce the strength of the positive associations between the three facilitators and consumers' attitude. In a similar vein, we expect that this barrier will further strengthen the negative association between price barrier and consumers' attitude. In other words, a higher image barrier is likely to affect consumers' evaluations of natural food products negatively, and these negative evaluations will be reflected in less favourable attitude. Hence, we hypothesise as follows:

H6. Image barrier negatively moderates the association of (a) environmental concern, (b) health consciousness and (c) natural content with attitude towards the consumption of natural food products and positively moderates the association of (d) price barrier with attitude towards the consumption of natural food products.

3.6. Control variables

The extant literature has suggested that socio-demographic factors can influence consumers' behaviours and attitude towards environmentally friendly products (Hwang, 2016). For example, Hwang (2016) utilised income as a control variable while studying environmentally friendly food consumption. Larson (2018) used family income as a control variable in examining purchase intentions of environmentally friendly food. Similarly, scholars have utilised gender, age, education

and income as control variables while investigating the consumption of environmentally friendly products (Tandon et al., 2020a, 2020b). Accordingly, this study tests the proposed hypotheses while including the socio-demographic variables of education, gender, age, annual household income and household size as control variables (see Figure 1).

4. Data and methods

4.1. Questionnaire design

This study utilised a structured questionnaire approach to collect data from respondents. The demographic details, which are presented in Table 2, included information about age, gender, education, annual household income and household size. Responses to measure the study constructs were collected via relevant measurement items adapted from pre-validated scales, as outlined in Table 3. Responses for the measurement items were collected using a five-point scale where 1 indicated 'Strongly disagree' and 5 indicated 'Strongly agree'. After adapting the existing scales to the present context, we followed the recommended process for assessing the face and content validity of the preliminary questionnaire. In this regard, we sought feedback from three professors specialising in food choices. They suggested some changes in the language of the items. After duly modifying the questionnaire based on these suggestions, we conducted a pilot study with 10 respondents. We then used this feedback to further modify the language of the instruments so that it was simple and easy to understand. Changes included removing ambiguous statements and restructuring some measurement items to convey the intended meaning more clearly.

4.2. Data collection and respondent profile

The final survey instrument, which aimed to collect cross-sectional data from existing consumers of natural food products in the US, was distributed through *Prolific Academic*. After screening the data for outliers and missing information, we subjected 357 responses to further analyses. Table 2 presents the demographic details of the respondents.

Insert Table 2

4.3. Data analysis

We used covariance-based structural equation modelling (CB-SEM), which prior studies have recommended as a suitable approach to test hypotheses when the data meet the multivariate requirements (Kumar, Talwar, et al., 2021; Talwar, Talwar, et al., 2021; Talwar, Jabeen, et al., 2021). First, we assessed the measurement model generated through confirmatory factor analysis (CFA) to ensure the reliability and validity of the measures. Thereafter, we performed path analyses

in AMOS to test the proposed direct effects. Finally, we conducted moderation analyses using PROCESS macro.

5. Results

5.1. Preliminary data analysis

Before performing data analysis in SPSS AMOS, we checked whether the data were normally distributed. Skewness and kurtosis values fell well within the acceptable ranges, confirming that the data were normally distributed and fit for further analyses using CB-SEM. In addition, we examined the data for multicollinearity. All variance inflation factors (VIFs) were below 3, and all tolerance values exceeded 0.1. These values conformed with the prescribed cut-offs (Hair et al., 2010) and thus confirmed that the data in the study did not exhibit any multicollinearity issues.

We also assessed the data for common method bias (CMB). This was necessary because the use of a single, self-report questionnaire to collect data can give rise to spurious covariances among constructs and, ultimately, affect the results. We utilised two approaches to assess for CMB. First, we followed Podsakoff et al.'s (2012) approach and conducted Harman's single factor test. The findings of this test indicated that a single factor could explain a maximum of 25.97% of the variance, which is significantly below the cut-off value of 50. Second, we utilised the common latent factor technique and the CFA marker variable technique (MacKenzie & Podsakoff, 2012). Both approaches further confirmed that the data in this study were free from CMB and suitable for further analyses.

5.2. Measurement model

We performed CFA to examine the reliability and validity of the constructs. The model returned a good fit, as indicated by the values of the recommended indicators (i.e., χ^2/df = 1.96, *CFI* = 0.95, *TLI* = 0.94, *RMSEA* = 0.05; Hair et al., 2010). Next, we confirmed that the factor loadings presented in Table 3 exceeded the threshold value of 0.4 (Hair et al., 2010). Thereafter, we examined the Cronbach's alpha statistic and found that it exceeded the threshold value of 0.7 for all constructs (i.e., environmental concern = 0.80, health consciousness = 0.77, natural content = 0.86, price barrier = 0.83 and attitude = 0.87). In this way, we confirmed the model's internal consistency. Similarly, the composite reliability values for all constructs exceeded the recommended value of 0.7 (Hair et al., 2010), and the AVE values exceeded the threshold value of 0.5, confirming convergent validity (Fornell & Larcker, 1981). Table 4 presents the specific values. Next, we established discriminant

validity by confirming that all of the inter-construct correlational values were lower than the square root of the respective AVE values, as presented in Table 4.

Insert Table 3 and Table 4

5.3. Control variables

In our study, none of the socio-demographic factors used as control variables influenced the dependent variable. In other words, age, gender, educational background, annual household income and household size had no confounding effect on consumers' attitude towards natural food products.

5.4. Structural model

The recommended indicators demonstrated the structural model's good fit (i.e., $\chi^2/df = 1.88$, $CFI = 0.94$, $TLI = 0.92$, $RMSEA = 0.05$). Table 5 and Figure 2 present the results. Tests for the statistical significance of the path coefficients representing the associations between the three facilitating factors and consumers' attitude supported H2 and H3, confirming the positive associations of health consciousness (H2: $\beta = 0.31$, $p < 0.001$) and natural content (H3: $\beta = 0.40$, $p < 0.001$) with attitude towards natural food products. However, no statistically significant association appeared between environmental concern and attitude (H1: $\beta = 0.11$, $p > 0.05$). In comparison, the results supported H4 ($\beta = -0.18$, $p < 0.001$), which proposed a negative association between the sole inhibiting factor—price barrier—and attitude. The proposed research model explained 38.1% of the variance in consumers' attitude towards natural food products.

Insert Table 5 and Figure 2

5.5. Moderation analysis

We used PROCESS macro to investigate the moderation effects of brand love and image barrier on the associations between the four factors proposed above and consumers' attitude towards natural food products. We found that brand love positively moderated the association between consumers' health consciousness and attitude towards natural food products (see Table 6). Thus, H5b received support. Figure 3 graphically illustrates the moderation effect of brand love on the association between health consciousness and attitude. In comparison to its moderation effect on the above association, brand love had no moderating effect on the association between consumers' attitude towards natural food products and their environmental concern, natural content and price barrier. Thus, H5a, H5c and H5d were not supported.

Furthermore, we found that image barrier positively moderated the relationship between price barrier and attitude (see Table 6), indicating support for H6d. Figure 4 presents this moderation

effect graphically. In contrast to the above discussed moderation effect, image barrier did not exert any moderating influence on the association between attitudes and environmental concern, health consciousness and natural content. Thus, H6a–c were not supported.

Insert Table 6 and Figures 3 and 4

6. Discussion

We proposed direct and moderation hypotheses to examine consumers' attitude towards natural food products. The results of the statistical analyses indicated support for three direct associations: H2, H3 and H4. In contrast, the results did not support the positive association we anticipated in H1 based on prior studies (e.g., Chambers & Castro, 2018; Kumar, Dhir, et al., 2021). This finding implies that consumers' concerns about the impact of human actions on the environment do not cause them to think more favourably about natural food products. A potential reason for this result could be that consumers are focused on evaluating natural food products from a completely different perspective, such as health, and they simply may not think about consuming these food products to save the environment. However, additional empirical evidence is required before we can conclusively state that consumers perceive their consumption of natural food products to be completely unrelated to their efforts to address their environmental concerns.

Our results support H2, which, based on prior findings (e.g., Kumar, Dhir, et al., 2021), proposed a positive association between health consciousness and attitude towards natural food products. This result implies that consumers who spend a significant amount of time reflecting on their health are, as a result, alert to changes in their health and quite aware of their overall health condition and that these consumers, too, consider the consumption of natural food products to be good, pleasant, gratifying and satisfying. This outcome suggests that consumers perceive natural food products as good for their health—a perception that is then reflected in their positive attitude towards the consumption of these products. Another possible indication of this finding could be that consumers with greater health consciousness better understand the health advantages of natural food products and are more aware of their nutritional properties.

The findings also indicate a positive association between natural content and attitude towards the consumption of natural food products (H3). We proposed this association based on the extant literature (Chen et al., 2019; Molinillo et al., 2020). This result implies that consumers consider natural food products to be good, pleasant, gratifying and satisfying because they believe such products contain no additives, chemicals, hormone residue or artificial ingredients. A possible reason

behind this positive association could be that the absence of artificial ingredients and additives makes consumers feel that they can consume these food products without worrying about the potential side effects.

The results of the data analysis also reveal statistical support for H4. Based on the findings of previous studies (e.g., Bryla, 2016; Kumar, Talwar, et al., 2021), we had proposed a negative association between price barrier and attitude towards natural food products. Our results supporting this hypothesis suggest that consumers who perceive natural food products as not good enough for the price paid, unreasonably priced, less economical and offering less value for the money will evaluate these products more negatively.

In addition to the direct effects, we also examined the moderation effects of brand love and image barrier on the associations between the four factors and consumers' attitude towards natural food products. The results, presented in Figures 3 and 4, confirm the positive moderation effect of brand love on the association between health consciousness and attitude towards natural food products. This finding indicates that the intensities of users' brand love impact the association between health consciousness and attitude. Specifically, users with low levels of health consciousness possess a less positive attitude for varied magnitudes of brand love. In contrast, individuals with high levels of health consciousness exhibit comparatively more positive attitude. This can be taken to imply that health-conscious consumers are more emotionally and passionately connected to natural food products and that this attachment is reflected in their more positive attitude towards natural food products.

Finally, our findings confirm the moderation effect of image barrier on the negative association between price barrier and attitude towards natural food products. This indicates that compared to users with a high price barrier, users with a low-price barrier have more positive attitude for different intensities of image barrier. To be specific, individuals with a low image barrier possess a more positive attitude while those with a high image barrier exhibit less positive attitude across different magnitudes of price barriers. Thus, image barrier reinforces the negative perceptions that consumers with price barriers already have towards natural food products.

Of the eight hypothesised moderation effects, only two are supported. This indicates that consumers' food decisions are more complicated than they appear to be. Therefore, multiple studies with larger samples drawn from a diverse population are required to fully understand the complex dynamics of these decisions.

7. Conclusion

Natural food product consumption offers a way for individuals to express and address their concern for the environment, sustainability and health. However, the actual consumption of these food products shows that consumers have not yet accepted them as expected. Academic research on consumer behaviour towards natural food products has also lagged, leaving multiple aspects under-explored. In the recent past, scholars have attempted to address these gaps by focusing on some aspects of natural product consumption (e.g., Kumar, Dhir, et al., 2021; Kumar, Murphy, et al., 2021). However, various aspects of consumers' behaviour towards natural foods remain under-researched.

Taking this lack of research into consideration, our study examined consumer behaviour towards natural food products, specifically discussing the facilitating factors that can produce more positive attitude towards these products. We proposed two research questions to attain the objectives of this study and answered them by analysing responses collected from 357 existing consumers of natural food products residing in the US. To address RQ1, we investigated the associations between environmental concern, health consciousness, natural content, price barrier and attitude towards natural food products. The study's findings confirm a positive association of health consciousness and natural content with attitude towards natural food products. The results also confirm a negative association between price barrier and attitude towards natural food products. To address RQ2, we performed a moderation analysis of brand love and image barrier as moderating variables. The results reveal that brand love positively moderates the association between health consciousness and attitude towards natural food products while image barrier positively moderates the association between price barrier and attitude towards natural food products. These findings offer important and novel implications for theory and practice, which are discussed below.

7.1. Theoretical implications

This study offers three key theoretical implications. First, limited studies have examined the facilitators of consumers' positive attitude towards the consumption of natural food products. Our study addresses this gap by identifying three facilitators—environmental concern, health consciousness and natural content—and examining their association with attitude towards natural food products. Notably, despite their well-documented importance in the consumer behaviour literature, consumers' attitude themselves have remained an under-researched construct in the case of natural food products. By exploring two under-researched aspects, namely, facilitators and

consumers' attitude, our study enhances the existing understanding of consumer behaviour towards natural food products (e.g. Altintzoglou, Honkanen & Whitaker, 2021; Diaz, Schöggl, Reyes & Baumgartner, 2021; Xu, Jin & Fu, 2021). In this way, it creates a foundation for future research in the area.

Second, the study utilises expectancy theory in a novel context (Vroom, 1964, 2005). Previous scholars have acknowledged the value of expectancy theory for considering both cognitive and affective evaluations and thereby providing an improved understanding individuals' motivations in choosing particular actions or making particular decisions. Prior to our study, however, the theory had never been used in the case of natural food products. By addressing this gap, we contribute to the theoretical advancement of the area and enrich the existing literature (e.g., Abrate, Quinton & Pera, 2021; Barakat & Moussa, 2017; Iqbal et al., 2019; Kiatkawsin & Han, 2017; Weber, Lew & Mejía-Ramos, 2020).

Finally, our study adds another dimension to the literature on natural food consumption by proposing the moderation effects of brand love and image barrier on the association between the facilitators/inhibitors and attitude towards natural food products. Although the moderation effects were not confirmed for all associations, our study reinforces the importance of considering brand love as well as consumer resistance as constructs that can impact the strength of the associations between the antecedents and consequents of consumers' natural food product consumption decisions. This is quite important because scholars have shown that love towards a product or brand is a more holistic concept than satisfaction and can motivate individuals to adopt the product. Although previous studies have examined brand love in the case of natural products, they have considered it solely as an outcome variable (e.g., Kumar, Dhir, et al., 2021; Sreen et al., 2021), and the understanding of its impact on consumer behaviour towards natural food products remains limited. In addition to brand love, our study also raises the possibility of consumer resistance (represented here as image barrier) affecting the strength of the associations between the proposed facilitators and attitude towards natural food products. Image barrier is derived from the innovation resistance theory (Ram & Sheth, 1989). Although the image of natural food products as healthy, safe and reliable might play a significant role in consumer decision-making, image barrier is an under-explored construct in the area. In sum, our study encourages researchers to contemplate the potential intervening roles of brand love and image barrier, which have, thus far, been examined only as antecedents or consequents.

7.2. Practical implications

The findings of this study entail four key implications for practice. First, our result showing no statistically significant association between environmental concern and attitude indicates that, at present, consumers do not seem to assess natural food products from a broader, societal perspective. This implies that marketers and manufacturers can more effectively engage consumers by leveraging the potential benefits of natural food products not only on a personal but also on a societal level. Specifically, we suggest that managers focus on communicating the pro-environmental aspects of natural foods in addition to their other advantages. In this regard, apart from appropriate communication strategies to highlight the importance of environmental concerns and the ways in which these products address them, firms can use the labelling and packaging of these products to reinforce their greenness. Some ideas could be (a) using green-coloured labels, (b) using green-coloured packaging, (c) adding some environment-related message and/or (d) making a contribution to some environmental cause. These actions to underscore the environmental value of natural food products are likely to further improve consumers' positive attitude and, ultimately, propel them to use more natural food products.

Second, by confirming a positive association between health consciousness and attitude towards natural food products, our study identifies another factor that firms can leverage to draw potential consumers' attention and motivate existing consumers' continued consumption. Because the results of our study reveal that health-conscious consumers appreciate natural food products, firms should emphasise this aspect by highlighting the health benefits of these products' ingredients via labelling information and marketing communication. They can also collaborate with doctors to offer online consultations to consumers who purchase their natural products. This can be done, for example, by embedding a single-use coupon code in the packaging.

Third, having found an association between natural content and attitude towards natural food products, we recommend that manufacturers highlight the naturalness of the inputs used to manufacture their products and be extremely transparent about the production process. Admittedly, including too much information can make labels cumbersome and reduce their readability. Therefore, manufacturers might consider inserting a card or a pamphlet in the package containing information about the production process and raw materials used along with links to various websites where consumers can learn more. Consumers can also be made aware of the naturalness of such products' content through various other communication strategies, such as testimonials and advertisements.

Lastly, because our results indicated that price barrier—i.e. consumers' perceptions that natural food products are less reasonably priced and offer less value for the money—is negatively associated with positive attitude towards natural food products, we recommend that firms focus on (a) pricing these products attractively by settling for lower profit margins until the market size increases, (b) invest in production processes that are more efficient and cost-effective, (c) establish lean and agile supply chains to ensure that the cost of making the products available for consumption does not escalate unreasonably and (d) lobby the government to obtain tax sops so that consumers are less burdened.

7.3. Limitations and future research directions

Despite offering critical insights on consumer behaviour towards natural food products, our study has some limitations that must be mentioned. First, our findings are based on data collected from existing consumers of natural food products residing in the US, which reduces the generalisability of our results to other geographical and cultural contexts. However, the model we proposed is comprehensive and can be tested by researchers in varied settings. In fact, both comparative and replication studies have the potential to yield fruitful results.

Second, our study is based on self-report, cross-sectional data collected in a single wave. Therefore, the study does not capture the changing nature of consumer behaviour. Future studies can utilise experimental or longitudinal research designs to offer deeper insights in this regard. Third, this study makes no claim to capture all of the myriad facilitators/inhibitors that may be positively or negatively associated with consumers' attitude towards the consumption of natural food products. Here, we have identified only four factors because including too many variables could have rendered the scope of the study unmanageable. We have, however, initiated the exploration, and future studies can incorporate other relevant and contextual variables to expand our model and provide novel insights on consumer behaviour towards natural food products. For example, scholars can incorporate additional variables such as usage barriers or risk barriers (e.g. Talwar et al., 2020), which have been found to be associated with the adoption of new products/services. In addition, they may consider using variables related to labelling (e.g., Dhir et al., 2021) because information available through product labels can impact consumers' attitude and their future consumption orientation. Furthermore, researchers can extend our model and derive additional insights by including variables such as trust (e.g., Talwar, Dhir, et al., 2021). Finally, from a methodological perspective, future studies can employ a mixed-methods approach to better understand consumers'

perceptions. Because natural food products are relatively new, a qualitative study followed by empirical assessment has the potential to yield more robust results.

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Table 1: A brief description of constructs

Expectancy theory dimensions	Facilitators	Brief description	Relevant studies
Expectancy	Environmental concern	Indicates consumers' concern to protect the environment by consuming natural food products	Kushwah, Dhir, Sagar & Gupta, 2019; Kumar, Dhir, et al., 2021
Instrumentality	Health consciousness	Indicates consumers' desire to consume natural food products for health-related benefits	Molinillo et al., 2020; Kumar et al., 2021
Valence	Natural content	Signifies that the content of natural food products are derived from nature and are not artificial or chemical-based	Molinillo et al., 2020; Kumar, Dhir, et al., 2021
	Price barrier	Represents an obstacle based on the perception that the prices of natural food products exceed the value they offer	Kumar, Talwar, et al., 2021; Talwar, Dhir, et al., 2021
Moderating variable	Brand love	Refers to consumers' emotional connection and attachment to natural food products	Carroll & Ahuvia, 2006; Nikhashemi et al., 2019
	Image barrier	Represents an obstacle—originating from the attributes of the product, such as industry, country of production, brand or firm—that may hinder consumption of natural food products	Kushwah, Dhir, Sagar & Gupta, 2019; Talwar et al., 2020

Figure 1: Research model

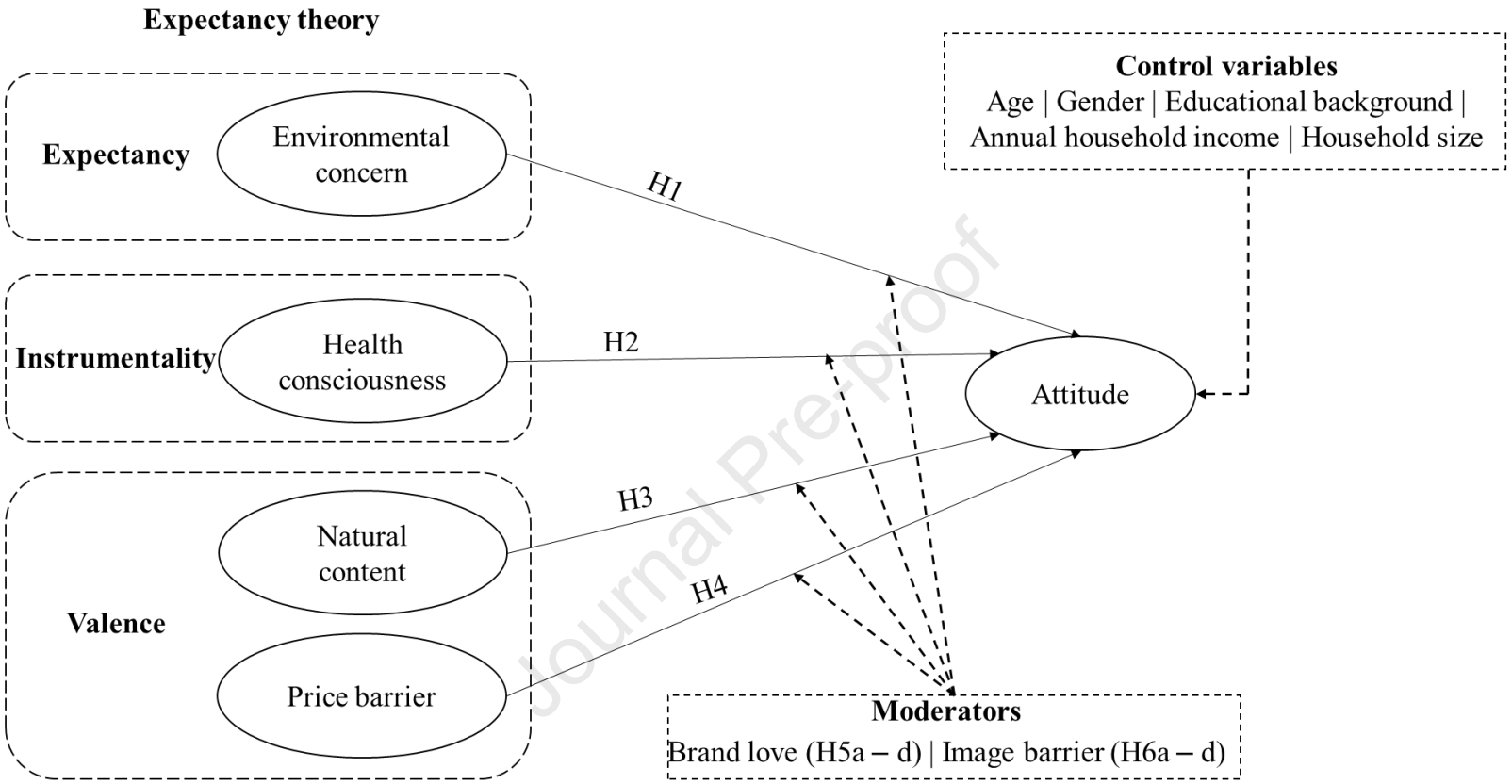


Table 2: Demographic variables

Demographic variables	**Frequency**	**Percentage**
Age		
20 years or less	44	12.3
21–25 years	164	45.9
26–30 years	71	19.9
31–35 years	30	8.4
36–40 years	24	6.7
41–45 years	7	2.0
46–50 years	9	2.5
51–55 years	4	1.1
56–60 years	4	1.1
Gender		
Male	64	17.9
Female	293	82.1
Education		
High school	52	14.6
Undergraduate	12	3.4
Graduate	209	58.5
Master's	67	18.8
Doctorate	17	4.8
Family income (Annual)		
Low income (Less than $40,000)	110	30.8
Middle income ($41,000 to $120,400)	193	54.1
High income (Less than $120,400)	554	15.1

Table 3: Factor loading of measurement items

Study measures	Measurement items	CFA	SEM
Health consciousness (HC) (Michaelidou & Hassan, 2008)	I'm alert to changes in my health	0.77	0.78
	I'm usually aware of my health	0.70	0.69
	I'm aware of the state of my health as I go through the day	0.71	0.72
Environmental concern (EC) (Mostafa, 2007)	When humans interfere with nature, it often produces disastrous consequences	0.64	0.64
	The balance of nature is very delicate and easily upset	0.51	0.50
	Humans are severely abusing the environment	0.81	0.83
	If things continue their present course, we will soon experience a major ecological catastrophe	0.86	0.85
Natural content (NC) (Steptoe et al., 1995; Kareklas et al., 2014)	I believe that natural food products contain no additives	0.85	0.85
	I believe that natural food products contain natural ingredients	0.67	0.67
	I believe that natural food products contain no artificial ingredients	0.85	0.85
	I believe that natural food products do not contain any chemical and hormone residues	0.77	0.77
Price barrier (PB) (Talwar et al., 2021)	Natural food products do not offer good products for the price paid	0.85	0.85
	Natural food products do not offer me value for my money	0.89	0.90
	Natural food products are not economical	0.59	0.58
	Natural food products are not reasonably priced	0.60	0.60
Attitude (ATT) (Sharma et al., 2021)	Consuming natural food products is pleasant	0.79	0.79
	Consuming natural food products is satisfying	0.86	0.86
	Consuming natural food products is good	0.77	0.77
	Consuming natural food products is gratifying	0.73	0.73
Image barrier (Kushwah, Dhir & Sagar, 2019)	I have doubts about natural food products' 'natural' product labelling	Moderators	
	I believe that natural food products currently sold in the market are not really 'natural'		
	I believe that natural food products are generally expensive		
	I believe that only rich people have a craze for natural food products		
Brand love (Manthiou et al., 2018; Khandeparkar & Motiani, 2018)	Natural food products are wonderful products		
	Consuming natural food products makes me feel good		
	Natural food products are totally awesome		
	I have positive feelings about natural food products		
	I feel very happy when I consume natural food products		

	I love natural food products	
	I am passionate about natural food products	
	I am very attached to natural food products	
	Consuming natural food products is delightful	

Note: CFA—Measurement model; SEM—Structural model

Table 4: Validity and reliability analysis

	CR	AVE	MSV	ASV	PB	EC	HC	NC	ATT
PB	0.83	0.56	0.12	0.06	**0.75**				
EC	0.81	0.52	0.03	0.01	-0.18	**0.72**			
HC	0.77	0.53	0.13	0.04	-0.14	0.01	**0.73**		
NC	0.87	0.62	0.22	0.07	-0.26	-0.04	0.07	**0.79**	
ATT	0.87	0.62	0.22	0.12	-0.35	0.14	0.36	0.47	**0.79**

Note: Composite reliability = CR, Average variance extracted = AVE, Maximum shared variance = MSV, Average shared variance = ASV, Attitude = ATT, Price barrier = PB, Health consciousness = HC, Natural content = NC, Environmental concern = EC

Table 5: Results of hypotheses testing

Hypothesis	Path	ß	*p*	Support
H1	Environmental concern → Attitude towards natural food products	0.11	>0.05	No
H2	Health consciousness → Attitude towards natural food products	0.31	<0.001	Yes
H3	Natural content → Attitude towards natural food products	0.40	<0.001	Yes
H4	Price barrier → Attitude towards natural food products	-0.18	<0.001	Yes

Figure 2: Results of hypotheses testing

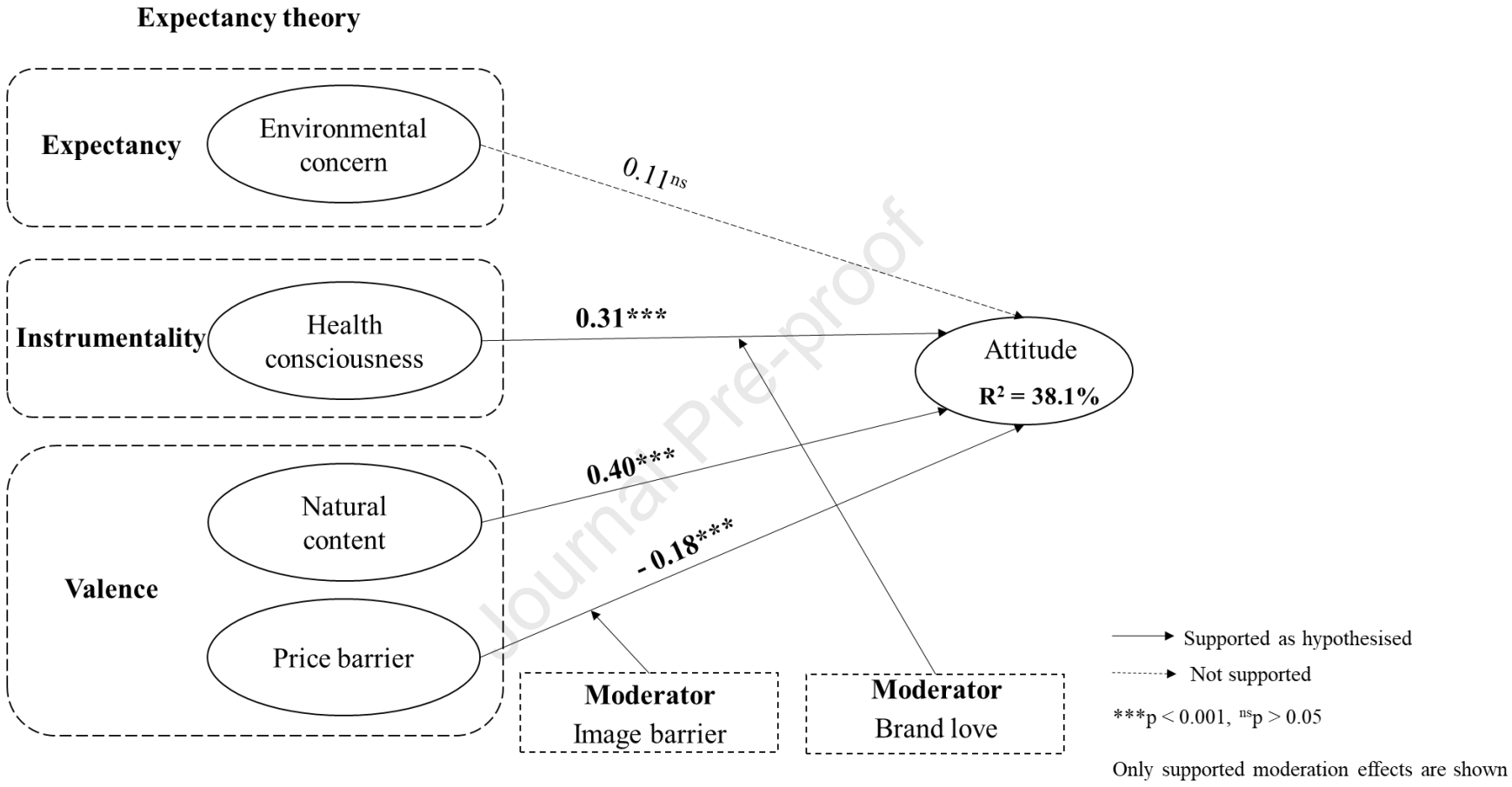


Table 6: Results of moderation analysis

Brand love						
	β	*T*	*p*	*LLCI*	*ULCI*	Moderation
EC → ATT	.05	1.16	.24	-.0317	.1237	No
HC → ATT	.06	1.76	.08	-.0072	.1298	Yes
NC → ATT	.04	1.23	.22	-.0210	.0910	No
PB → ATT	-.04	-1.49	.16	-.0900	.0152	No
Image barrier						
	β	*t*	*p*	*LLCI*	*ULCI*	Moderation
EC → ATT	.05	.75	.45	-.0833	.1865	No
HC → ATT	-.01	-.10	.92	-.1409	.1278	No
NC → ATT	.004	.09	.93	-.0895	.0978	No
PB → ATT	.10	2.34	.02	.0167	.1911	Yes

Note: Attitude = ATT, Price barrier = PB, Health consciousness = HC, Natural content = NC, Environmental concern = EC

Figure 3: Graphical representation of moderation effect of brand love

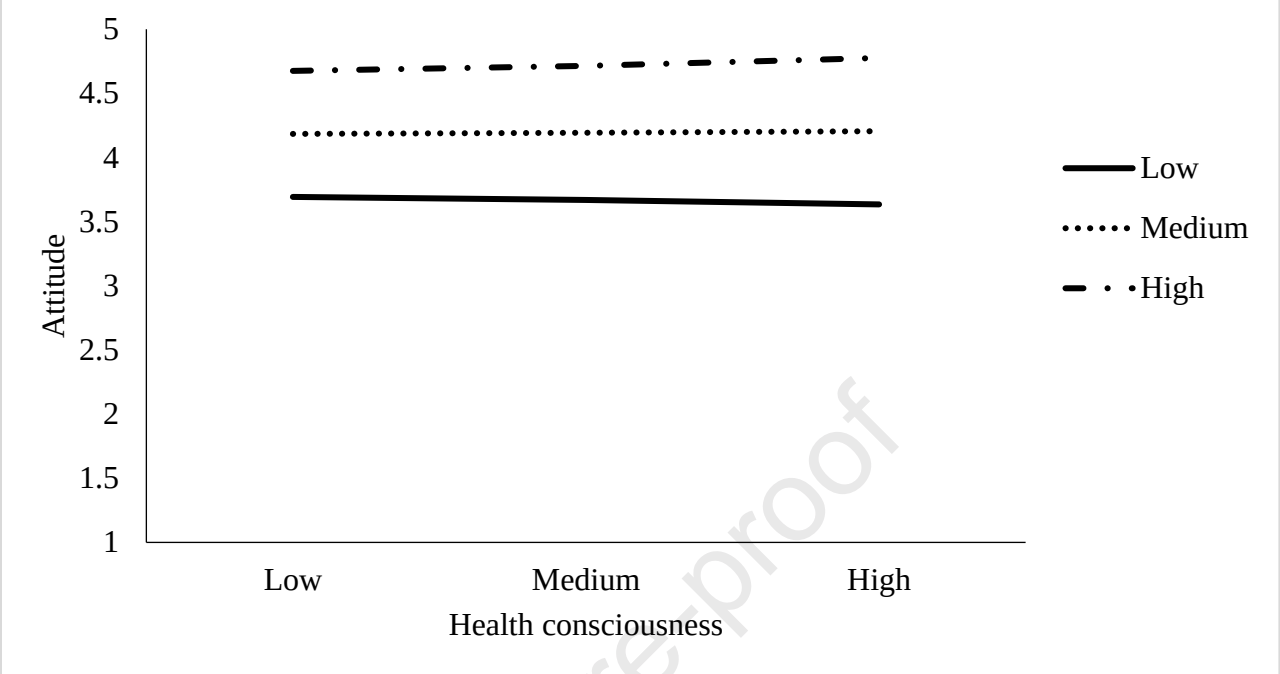
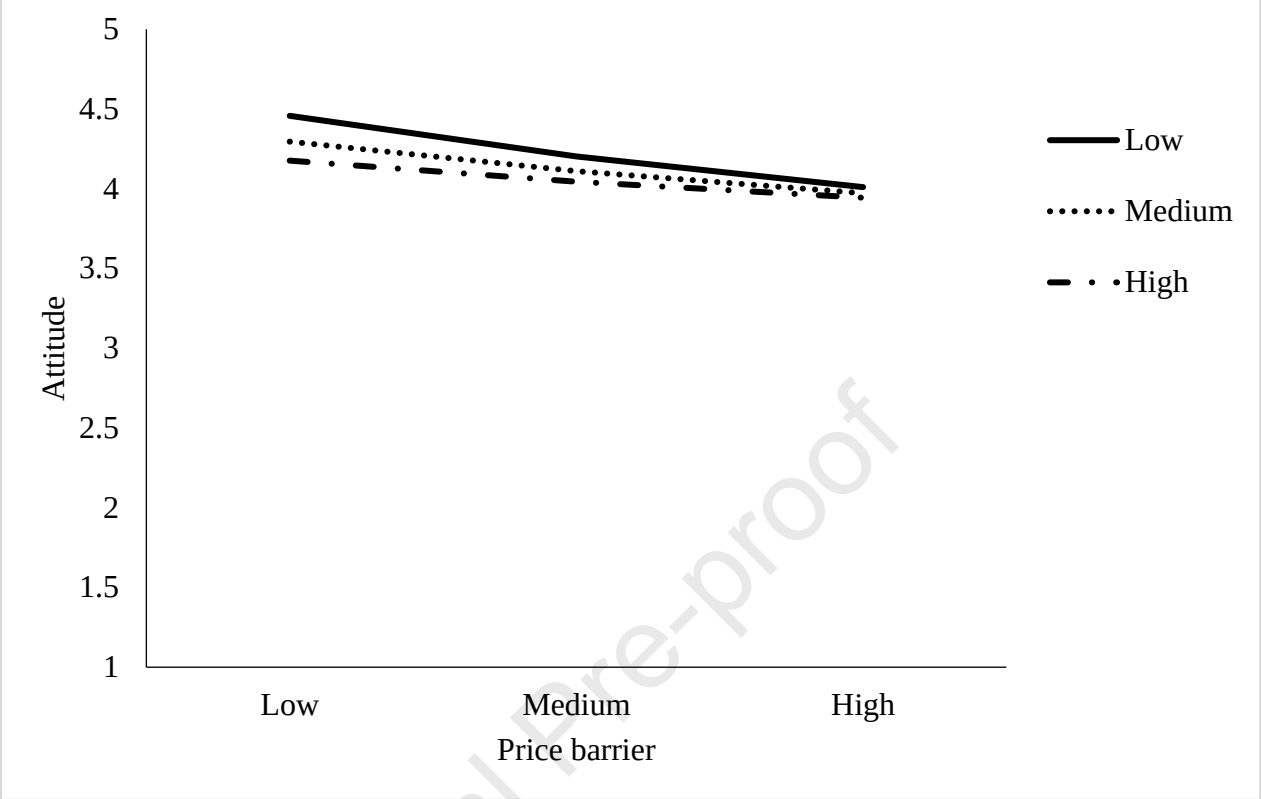


Figure 4: Graphical representation of moderation effect of image barrier



Highlights

- This study investigates attitude towards natural food products by employing expectancy theory.
- Health consciousness and natural content are positively associated with attitude towards natural food products.
- Price barrier is negatively associated with attitude towards natural food products.
- Brand love moderates the relationship between health consciousness and attitude towards natural food products.
- Image barrier moderates the association between price barrier and attitude towards natural food products.

Declaration of interests

☒ The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

☐The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: