

## What drives brand love for natural products? The moderating role of household size

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### ABSTRACT

Natural products, including food, cosmetics, and other fast-moving consumer goods, are becoming increasingly popular, and their health-related benefits are widely recognized. Despite the growing awareness and use of natural products, little is known about the enablers and barriers that influence consumers' brand love toward them. The present study attempts to address this gap and better explain consumer behavior toward natural products by utilizing the stimuli-organism-response (S-O-R) theory. The study rests on the premise that certain stimuli influence the internal state of consumers (i.e., the organism), which, in turn, shape their response to products and services. This study uses health consciousness and environmental concern as the stimuli, both facilitators (natural content and regional product) and inhibitors (usage and image barriers) as the internal state of the 'organism', and brand love as the response. Based on analysis of 720 responses, the study empirically reveals that health consciousness and environmental concern significantly influence the consumers' internal state, as represented by the identified facilitators and inhibitors. Three of these, namely, regional product, image barriers, and usage barriers, are found to shape brand love for natural products. The moderating role of household size on brand love is also confirmed. The findings of the study contribute to the literature on consumer behavior and practice.

### 1. Introduction

Given the widespread awareness of sustainability issues, consumers are consciously making purchase decisions in congruence with an eco-friendly philosophy. One of the most common practices for consumers seeking to reduce their carbon footprint is the consumption of natural products (Moscato and Machin, 2018). However, as there is no legal definition of 'natural food', manufacturers can apply that label indiscriminately to their products. Generally speaking, natural products are minimally processed and free of artificial ingredients, colors, flavors, and additives (Chambers and Castro, 2018). Furthermore, these can encompass other naturally processed products, including green or organic goods (Binninger, 2017). Natural food, for instance, is typically synonymous with organic food (Kushwah et al., 2019 a,b,c; Tandon

et al., 2020 a,b,c), which has been grown, processed, and prepared to comply with specific standards. While these categorizations can be, at times, conflated, consumers' increasing preference for natural products can be attributed to several factors, such as the absence of chemicals during their production (Chambers and Castro, 2018), a number of ecological advantages (Moscato and Machin, 2018) and so on.

The recent past has witnessed significant growth in the consumption of natural products, resulting in the emergence of natural brands and specialty stores that focus exclusively on these products (Dominick et al., 2018). Furthermore, several existing retail stores have allocated more space for natural items (Dominick et al., 2018; Spaniolo and Howard, 2011). According to an estimate by Allied Market Research (2020), the global natural product market, including food and beverages, is expected to grow at a rate of 13.7% in the coming years. On the whole,

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acceptance of natural products is increasing internationally. Research into consumer behavior toward natural products has also gained momentum as scholars have explored the variables impacting natural product adoption, such as attitude (Dickson-Spillmann et al., 2011), and credibility, attractiveness, and quality (Binninger, 2017). Other studies have investigated factors such as perception, learning, motivation, and personality (Moscato and Machin, 2018), as well as brand origin and value for money (Batt and Liu, 2012). In addition, scholars have noted several issues related to the adoption and acceptance of natural products, despite the various facilitating conditions and the several personal and social benefits that they offer (Dominick et al., 2018).

Furthermore, the acceptance and adoption of natural products have remained restricted to a small segment of the population (Fernández-Ferrín et al., 2018) due to issues of availability (Bamgbade et al., 2015) and usage barriers (Moscato and Machin, 2018). However, the present understanding of this phenomenon is limited, as the extant literature has rarely focused on the obstacles to natural product acceptance. This has left firms and policymakers in the dark about why consumers are not adopting these products despite the positive conversations and known benefits surrounding them. We believe that analyzing the antecedents of brand love, a construct that has been explored extensively in varied other contexts (e.g., Bagozzi et al., 2017; Mody and Hanks, 2020; Islam and Rahman, 2016), can thus offer new insights into this slow adoption and how to counter it. Given that brand love represents consumers' positive emotions and favorable attitudes towards the brand (Mody and Hanks, 2020; Islam and Rahman, 2016), our investigation of this construct may help us diagnose why natural products are not increasing their market share as expected, despite being anecdotally favored. Better understanding of what constitutes brand love in this area can prove to be quite useful for producers, marketers, and suppliers seeking to promote natural product consumption. Notably, brand love and its antecedents have remained under-explored in the context of natural products so far.

Accordingly, this study aims to address the gap in the literature regarding a better understanding of the antecedents of brand love for natural products. Drawing upon previous findings suggesting that consumer behavior is the net outcome of various divergent forces (Islam et al., 2019) that can both increase and decrease intentions, we propose certain facilitators and inhibitors to examine the antecedents of brand love toward natural products. Further, we use the theoretical lens of the stimuli-organism-response (S-O-R) framework (Mehrabian and Russell, 1974) to model these influences. Based on an extensive review of the literature, we suggest that stimuli (S), or the external motivation to seek natural products, comes from health consciousness and environmental concern. We similarly identify natural content and regional product as facilitators and usage and image barriers as inhibitors to measure the consumer's (e.g., organism's) internal state (O). Finally, we utilize brand love to measure the response (R) to the stimuli and organism. To provide more robust insights into natural product brand love, we also consider moderating influences that may affect the strength of these underlying associations. In summary, we intend to address two main research questions (RQs): **RQ1:** What is the association between health consciousness (S), environmental concern (S), image barrier (O), usage barrier (O), natural content (O), regional products (O), and brand love (R)? **RQ2:** Does household size moderate the associations between stimuli, organism, and response variables?

We use data from 720 existing users of natural products to test the proposed research model. The findings suggest that health consciousness is positively associated with usage barriers (inhibitor), and natural content and regional product (facilitators). Similarly, environmental concern has a positive association with both image and usage barriers (inhibitors) as well as regional product (facilitator). Of the two inhibitors, only image barrier has a negative association with brand love for natural products. Regarding the facilitators, natural content alone has a positive association with brand love. In addition, the moderating effect of household size is confirmed for the association of environmental concern with usage barrier and regional product, as well as for

the association of natural content with brand love.

The present study thus makes three novel contributions. It is the first study to utilize and empirically test the S-O-R theory to explain consumer decision-making in the context of natural products. Secondly, the research focuses on India's natural product market, which is an under-explored context in a developing country. Third, rather than concentrating on purchase intentions, the study incorporates the more global, but less-studied construct of brand love instead. Overall, the study offers a comprehensive understanding of brand love for natural products. It contributes theoretically to the consumer behavior and sustainability literature and practically to managerial decision-making in the natural product arena.

## 2. Background literature

### 2.1. Stimuli-organism-response (S-O-R) theory

S-O-R theory, proposed by Mehrabian and Russell (1974), is based on environmental psychology and is primarily used to explain consumer behavior. According to this theory, several environmental factors can act as stimuli (S) that influence an organism's internal state (O), which subsequently shape their behavioral response (R). In this context, a stimulus (S) can be understood as an external or environmental factor that can influence the psychological and physical well-being of individuals (Fu et al., 2020; Tandon et al., 2020a), while organism (O) refers to their perceptions, feelings, and thinking (Zhai et al., 2019; Tandon et al., 2020a). In other words, the organism represents the internal processes and structures that mediate between external stimuli and the final response of the consumers (Chang et al., 2011). Response (R) is the outcome of the stimuli and organism (Fu et al., 2020) and indicates the inclination of the consumer in terms of approach or avoidance behavior (Bigne et al., 2020; Tandon et al., 2020a).

Previous studies have adopted S-O-R theory in several contexts. For example, it has been used in the area of hospitality and tourism while evaluating online reviews (Bigne et al., 2020) as well as in virtual reality tourism (Kim et al., 2020). In the context of information systems, the theory has been applied in assessing the social impact of the online learning environment (Zhai et al., 2019), smartphone overuse and academic performance (Fu et al., 2020), the sharing economy (Chi et al., 2020), and customer engagement (Islam and Rahman, 2017). Similarly, S-O-R theory has been recently used to understand consumers' stated buying behavior toward organic food (Tandon et al., 2020a). The present study utilizes S-O-R theory as its theoretical lens for three main reasons. First, it delineates the unidirectional cause and effect association among its components, thereby making it suitable for explaining consumers' positive as well as negative orientation toward natural products. Second, the framework utilizes external social stimuli that influence the internal state and shape the behavior that is socially driven and reflected in choices and actions. This is critical to this study as it considers the perceived cumulative and positive benefits of natural products for society as a whole. Third, it offers a grounded and parsimonious perspective to investigate the formation of brand love for such products.

### 2.2. Brand love

Brand love refers to the extent of a consumers' passionate and emotional attachment with a particular brand (Carroll and Ahuvia, 2006). It is grounded in theories of interpersonal love and encompasses passion, declaration of love, and brand attachment (Mody and Hanks, 2020), as well as loyalty and positive word-of-mouth (Carroll and Ahuvia, 2006). Although scholars have identified some similarities between brand love and satisfaction (Carroll and Ahuvia, 2006), they have acknowledged that these are two distinct constructs (Mody and Hanks, 2020).

Previous studies have examined the concept of brand love in various

contexts. For example, [Batra et al. \(2012\)](#) examined brand love across several categories, such as electronic gadgets, equipment, and clothing. They identified three key elements of brand love, namely, self-brand integration, passion, and positive emotions. In comparison, [Mody and Hanks \(2020\)](#) found that firms, such as Airbnb, leverage intrapersonal authenticity, existential authenticity, and brand authenticity to create brand love among their consumers. In a qualitative investigation among Indian consumers, [Sarkar \(2014\)](#) found that brand love existed mainly in the case of hedonic products and can lead consumers to indulge in impulse buying.

### 3. Research model and hypothesis development

The present study has conceptualized the research model by adapting S-O-R theory to the context of natural products ([Fig. 1](#)). We have used health consciousness and environmental concern as stimuli in this framework for two main reasons. First, scholars have highlighted that health consciousness and environmental concern can motivate individuals to adopt healthy lifestyles, such as the consumption of natural or organic food, which in turn, can promote sustainable behavior ([Moscato and Machin, 2018](#)). Second, consumers motivated by health and environmentalism are likely to adopt natural products. Therefore, they can be easily persuaded by external stimuli, such as government regulations or marketing communication ([Kim and Seock, 2009](#)). To measure organism, this study utilizes two variables that facilitate natural product adoption, namely, natural content and regional product. These variables have been chosen as prior studies have placed great emphasis on them ([Molinillo et al., 2020](#); [Tanner and Wölfing Kast, 2003](#)) in this context. For a more inclusive representation of consumer behavior, we have also included two inhibiting factors that capture the resistance of consumers toward natural product adoption, namely, image and usage barriers. These variables are important as they can arise in the case of any new product ([Moscato and Machin, 2018](#)), including natural ones. Thus, the study explores usage and image barriers as the inhibiting factors and natural content and regional product as the facilitating factors for impacting brand love toward natural products. Furthermore, household size is used as a moderating variable, and age, gender, educational background, and monthly household income are used as control variables. A brief description of all constructs is presented in [Table 1](#).

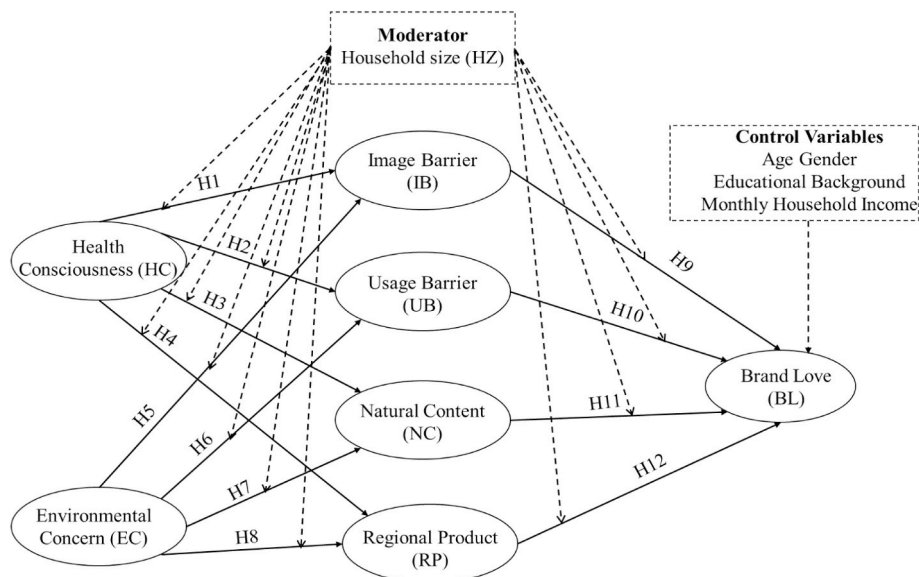
**Table 1**  
Brief description of study constructs.

S-O-R Dimension	Study constructs	Brief description	Relevant studies	
Stimuli	Health consciousness	Examines the readiness of a consumer to make decisions for the betterment of their own health	<a href="#">Bazzani et al. (2020)</a>	
	Environmental concern	Measures concern towards the environment	<a href="#">Cruz &amp; Manata (2020)</a>	
	Organism	Usage barrier (Inhibitor)	The degree to which the use of a product is inconsistent with the existing values, experiences, needs, and expectations of the consumer	<a href="#">Kushwah, Dhir, &amp; Sagar (2019a)</a>
		Image barrier (Inhibitor)	The degree to which a consumer possesses an unfavorable impression towards a brand, product, or innovation	<a href="#">Kushwah, Dhir, &amp; Sagar (2019a)</a>
Response	Natural content (Facilitator)	The presence of natural elements in the product	<a href="#">Binninger (2017)</a> , <a href="#">Molinillo et al. (2020)</a>	
	Regional product (Facilitator)	Locally produced products	<a href="#">Fernández-Ferrín et al., (2018)</a> ; <a href="#">Kneafsey et al. (2013)</a> <a href="#">Bagozzi et al. (2017)</a> ; <a href="#">Mody and Hanks (2020)</a>	
	Brand love	The degree to which a consumer is emotionally associated or attached to a given brand		

#### 3.1. Stimuli (S)

##### 3.1.1. Health consciousness

Health consciousness is an intrinsic preference or personality trait that shapes consumer behavior around health-related matters ([Bazzani et al., 2020](#)). It relies on self-focusing, which is similar to self-consciousness and supports health alertness, health monitoring, and health involvement ([Gould, 1988](#)). Previous studies have considered health consciousness as an egotistic motive in the context of natural food



**Fig. 1.** Conceptual model.

buying and consumption. For example, [Bazzani et al. \(2020\)](#) found that health consciousness is an important driver for wine drinkers, who generally prefer red wine for its clean label and natural processing. Despite the importance of health consciousness in consumers' decision-making, studies on its association with intentions have obtained inconsistent results. For example, [Hsu et al. \(2016\)](#) and [Shin and Mattila \(2019\)](#) found a positive influence of health consciousness on purchase intentions, while [Basha and Lal \(2019\)](#) and [Pino et al. \(2012\)](#) found none. We posit that the barriers consumers may have in their minds can explain this inconsistency in their intentions toward natural products.

Consumers high in health consciousness are likely to be concerned about the image of the product. As such, they are likely to be suspicious about the "naturalness" of the product and what its possible impact on their health may be ([Qasim et al., 2019](#)). This implies that consumers may have image barriers toward natural products based on doubts about their naturalness. Furthermore, consumers are more likely to have issues regarding the location, availability, and the use of natural products compared with their non-natural counterparts ([Hsu et al., 2016](#)). Given that natural products are comparatively new, consumers may have usage barriers around where to buy these products and how to use them best. Based on this discussion, we argue that health-conscious consumers will have image and usage barriers toward natural products. Hence, we propose:

**H1.** Health consciousness is positively associated with image barrier.

**H2.** Health consciousness is positively associated with usage barrier.

At the same time, health-conscious consumers may be tempted to use natural products because of the advantages they offer. As discussed above, natural content and regional product are two important motivators which can facilitate positive intention toward natural products. For example, it is essential to health-conscious consumers that consumable goods contain natural content and be free of artificial additives ([Verala and Fiszman, 2013](#)). Given health-conscious consumers' awareness (and subsequent involvement) in preventive health-related behaviors, such as physical fitness ([Michaelidou and Hassan, 2008](#)), they can be expected to prefer a healthy lifestyle and have a favorable attitude toward natural food and natural content in their diet. Also, such consumers prefer regional products as the information surrounding the natural conditions, production processes, and ingredients used in making these products are more readily available ([Fernández-Ferrín et al., 2018](#)). In light of these benefits ([Molinillo et al., 2020](#)), consumers with high health consciousness are more likely to prefer natural products that are known to have originated regionally. Therefore, we hypothesize that:

**H3.** Health consciousness is positively associated with natural content.

**H4.** Health consciousness is positively associated with regional product.

### 3.1.2. Environmental concern

Environmental concern is a collective term used for multiple aspects of pro-environmental behavior, such as environmental orientation or actual environment-related behavior. The extant literature has indicated that environmentally-concerned individuals prefer consuming natural food ([Chambers and Castro, 2018](#)) as a form of environment-conscious behavior ([Moscato and Machin, 2018](#)). However, we believe that environmental concern is a complex stimulus that can exacerbate both the inhibitors and the facilitators of natural product acceptance.

Scholars have argued that consumers with significant environmental concerns acknowledge declining environmental conditions and the severe impact of environmental degradation on human health ([Kim and Seock, 2009](#)). As such, they are likely to be concerned with the image and attributes of the products they consume ([Zabkar and Hosta, 2013](#)) and demonstrate suspicion regarding the naturalness, product category,

and manufacturing location of the products they consume. Furthermore, environmentally conscious consumers are likely to consider issues related to the use of the products ([Spaniolo and Howard, 2011](#)), potentially resulting in barriers surrounding the procurement of natural products, their availability, and usability issues. Therefore, we hypothesize:

**H5.** Environmental concern is positively associated with image barrier.

**H6.** Environmental concern is positively associated with usage barrier.

Concern for the environment is also likely to cause consumers to seek and choose products with natural content ([Zabkar and Hosta, 2013](#)). Such sustainability-minded consumers are interested as well in obtaining all the information possible about the products that they consume. As such, they tend to prefer regional or locally-produced products, for which this information is easily accessible and verifiable ([Kneafsey et al., 2013](#)). Supporting this argument, scholars have argued that highly environmentally conscious consumers with extensive experience and knowledge in the matter are more likely to choose products with natural content and regional origins ([Lin and Chang, 2012](#); [Zabkar and Hosta, 2013](#)). Moreover, previous research has revealed that environmental concern is a major driver for adopting natural products and is facilitated by natural content and regional product ([Moscato and Machin, 2018](#); [Molinillo et al., 2020](#)). Thus, we posit:

**H7.** Environmental concern is positively associated with natural content.

**H8.** Environmental concern is positively associated with regional product.

## 3.2. Organism (O)

### 3.2.1. Image barriers

Image barriers occur when consumers' perceptions are unfavorable about an industry, brand, new product, or service ([Lian and Yen, 2014](#)). Innovation resistance theory (IRT) categorizes image barriers as psychological barriers ([Ram and Sheth, 1989](#)), which can occur when any change creates a conflict between the existing rituals or perceptions and the new products or services. Every product carries an identity or image of its origins, such as country of origin, product category, or brand. This image offers external cues to consumers, which then influence their acceptance or avoidance decisions ([Kushwah et al., 2019a](#)). Previous studies have indicated that image barriers vary with age ([Lian and Yen, 2014](#)) and can be damaging to the brand as a whole ([Huang et al., 2020](#)). [Chen, Lu, and Tang \(2019\)](#) have reported similar findings, indicating that image barrier is negatively associated with satisfaction, which is an integral component of brand love. Drawing from these previous studies, we conjecture that the internal state of consumers—as represented by the inhibiting factor of image barrier—can influence their brand love for natural products. Thus, we hypothesize:

**H9.** Image barrier is negatively associated with brand love.

### 3.2.2. Usage barriers

Usage barriers refer to the intrinsic thoughts, feelings, and experiences that restrict consumers from adopting a consumption ritual ([Kushwah et al., 2019a](#)). It is an important functional barrier that occurs when a new product or innovation is inconsistent with current habits, practices, and workflows ([Ram and Sheth, 1989](#)). Several studies have accounted for usage as an essential aspect of the acceptance, adoption, or rejection of any product or service (e.g., [Kushwah et al., 2019a](#); [Talwar et al., 2020](#)).

In the current context as well, previous studies have acknowledged that consumers resist adopting and using natural products. For example, [Moscato and Machin \(2018\)](#) found that usage barriers influenced the buying behavior toward natural products. Furthermore, [van Esch et al.](#)



(2019) indicated that these barriers are negatively associated with brand attitude, an integral component of brand love (Ahuvia, 2005). Huang et al. (2020) also illustrated that usage barriers can damage brand management, thereby influencing the consumer's overall evaluation of the brand. Based on these prior findings, we posit that the internal state of consumers, as captured by usage barriers toward natural products, are likely to erode brand love for these products. Thus, we propose:

**H10.** Usage barrier is negatively associated with brand love.

### 3.2.3. Natural content

The words 'natural content' induce a largely positive association among consumers, who consider such products as inherently superior to non-natural offerings (Dickson-Spillmann et al., 2011). Previous studies have indicated that natural content is an important product attribute associated with healthiness and safety (Molinillo et al., 2020). To signal a product's natural content, firms use various cues, including the packaging and content colors, the naming of the brand to represent natural content (such as using words like pure or clear), and the use of additional certifications or labels (Lin and Chang, 2012). Researchers have further found that natural content positively influences the attitude of consumers toward products (Hsu et al., 2016), and that naturalness, as well as originality, can improve brand authenticity (Chen et al., 2019), which is positively associated with brand love (Mody et al., 2019). Drawing upon these previous findings, we posit that the internal state of consumers, as represented by the facilitating factor of natural content, enhances brand love for natural products. Thus, we hypothesize:

**H11.** Natural content is positively associated with brand love.

### 3.2.4. Regional product

Regional products are predominantly local products that may be transported to distant places for consumption (Fernández-Ferrín et al., 2018). However, previous studies have shown that the geographical proximity between consumption and production is less important in regional products than in local products (Chinnakonda and Telford, 2007). Accordingly, consumers may favor natural products more if they are regionally grown, as the origin of the product adds value in terms of the uniqueness of the culture and the methods, traditions, and geographical or natural conditions that are linked with their production (Chinnakonda and Telford, 2007). Regional products usually travel in short chains and reach consumers with specific information about their origins (Kneafsey et al., 2013). This information is communicated through protected designations or certifications on the labeling or packaging (Kneafsey et al., 2013). Furthermore, regional products are viewed positively by consumers (Di Vita et al., 2019), implying that with time and continuous product use, consumers may develop an emotional bond with the brand. This may occur as regional products bring a sense of belongingness and credibility. Thus, we posit:

**H12.** Regional product is positively associated with brand love.

### 3.3. Moderating effect of household size

This study attempts to examine the moderating influence of household size on all proposed associations by acknowledging that each member of the household contributes to brand perceptions and determines the consumption level of the household (Abraham and Harrington, 2015). Previous studies have emphasized the important role of household size in the consumption of household products. For example, Annunziata et al. (2019) found that increasing household size reduces the likelihood of buying local products. Scholars, furthermore, have argued that the difference in household size will be evident in pro-environmental (Annunziata et al., 2019) as well as regular consumption behavior (Abraham and Harrington, 2015). Thus, in line with previous studies, we expect a significant moderating role of household

size on (a) the association of health consciousness and environmental concern with inhibitors and facilitators of natural product consumption, and (b) the association of the inhibitors and facilitators of natural product consumption with brand love for natural products. Hence, we propose:

**H13a-d.** Household size moderates the association of health consciousness with inhibitors and facilitators of natural product consumption, respectively.

**H13e-h.** Household size moderates the association of environmental concern with inhibitors and facilitators of natural product consumption, respectively.

**H13i-l.** Household size moderates the association of inhibitors and facilitators of natural product consumption, each with brand love.

### 3.4. Control variables

The current study utilizes socio-demographic variables, such as age, gender, academic qualification, and household income, as control variables. Previous studies have argued that these socio-demographic variables are likely to be associated with organic product and food consumption behavior, and can also influence decision-making and favorable attitudes toward brands (Qasim et al., 2019). For instance, age, gender, and large disposable incomes have been shown to impact the consumption of natural products (Hwang, 2016). Accordingly, we test the proposed hypotheses in this study using these socio-demographic variables as controls.

## 4. Method

This section outlines the data collection process and analysis performed using the structural equation modeling (SEM) approach.

### 4.1. The survey instrument and respondent profile

This study utilized a structured questionnaire approach to collect data from respondents. Apart from demographic information, the questionnaire consisted of research items for the constructs used in this study. These were derived from multiple sources: health consciousness from Gould (1988), environmental concern from Maloney and Ward (1973), image barrier and usage barrier from Kushwah et al. (2019a), natural content from Steptoe et al. (1995), regional product from Tanner and Wölfling Kast (2003), and brand love from Carroll and Ahuvia (2006). Each item utilized a five-point Likert scale to measure responses. Before finalizing the questionnaire, we conducted a pilot study and incorporated the changes accordingly, such as removing ambiguous words and statements. The final list of measurement items is given in Table 2.

Users of Patanjali (an established natural brand in the Indian market) provided the data for the study via a pen and pencil survey. After removing the incomplete responses and outliers, we were left with a final sample of 720 responses for analysis. The respondents ranged in age from 23 to 33 years old, with a mean age of 29.01 years ( $SD = 4.15$  years). Of these, 51.11% ( $n = 368$ ) respondents were male, and the rest were female. About 78.7% of respondents earned higher than 36,000 INR per month, with 55.8% being degree-educated, 41.1% working in the private sector, 17.9% having their own business, and 16.5% in public service.

### 4.2. Data analysis

We used confirmatory factor analysis to evaluate the measurement model and confirm the reliability and validity of measures. We then examined the structural paths of the conceptual model using SEM and performed a moderation analysis. Prior to applying the two-step model,

**Table 2**  
Study measures, items, and factor loadings.

Study Measures	Measurement items	CFA	SEM
Health Consciousness (HC) Gould (1988)	HC1: I reflect on my health a lot	.68	.68
	HC2: I'm very self-conscious about my health	.77	.76
	HC3: I'm alert to changes in my health	.81	.80
	HC4: I'm usually aware of my health	.81	.80
Environmental concern (EC) Maloney & Ward (1973)	EC1: We produce too much trash from packaging in this country	.74	.74
	EC2: We have to do something immediately to reduce the amount of waste material we throw away	.80	.79
	EC3: In the future, my children will have to live in an extremely polluted environment	.70	.70
Natural Content (NC) Step toe et al. (1995)	NC1: [Brand] products contain no additives	.87	.87
	NC2: [Brand] products contain natural ingredients	.84	.84
	NC3: [Brand] products contain no artificial ingredients	.89	.89
Regional Product (RP) Tanner & Wölfing Kast (2002)	RP1: It is important for me to support local suppliers when making purchases	.80	.80
	RP2: Consumers should show solidarity with domestic suppliers	.86	.86
	RP3: It is good to support the domestic market by buying regional products	.84	.84
Image Barrier (IB) Kushwah et al. (2019a)	IB1: I have doubts about the [Brand] 's "natural" product labeling	.79	.83
	IB2: I believe that [Brand] products currently sold in the market are not really "natural"	.94	.90
Usage Barrier (UB) Kushwah et al. (2019a)	UB1: [Brand] products are not easily available	.80	.80
	UB2: [Brand] products cannot be bought from a shop close to my location	.84	.84
Brand Love (BL) Carroll & Ahuvia; (2006)	BL1: [Brand] is totally awesome	.91	.90
	BL2: I love [Brand]	.92	.91
	BL3: I am passionate about [Brand]	.91	.91
	BL4: I am very attached to [Brand]	.88	.88

[Brand] = Patanjali for the current study.

data diagnostics were performed to ascertain the suitability of the data for SEM.

#### 4.2.1. Data normalcy

Before analyzing the data, we established data normalcy to ensure that it was devoid of any missing or unengaged responses. Next, skewness and kurtosis were examined, revealing that the data lay between +3 and -3, which is well within the recommended threshold values to confirm normalcy of distribution. Lastly, we examined the multicollinearity of the data and found that the variance inflation factor was within the cut-off value of 3. In summary, the data was confirmed to be free of any issues related to multivariate assumptions and, therefore, fit to carry out further analysis.

#### 4.2.2. Common method bias (CMB)

The use of common data collection methods may cause spurious covariance among variables, which could be problematic for analysis (Podsakoff et al., 2012). Since the data for our study were collected using a single instrument, there is a possibility that CMB may be present. Consequently, we examined CMB by using Harman's single factor test, as suggested by Podsakoff et al. (2012). The results indicated that the maximum variance explained by a single factor was only 33.65%, which is below the 50% threshold value. Therefore, CMB does not affect this study.

#### 4.2.3. Validity and reliability analysis

The study performed a confirmatory factor analysis to assess the validity and reliability of the constructs. The Cronbach's alpha values, as well as the composite reliability values, were greater than the cut-off

value of 0.7 (Fornell and Larcker, 1981). The factors loadings, given in Table 2, were also above 0.7, confirming that the items used are good measures of the underlying construct (based on the recommended cut-off of 0.40 by Hair et al., 2010). The convergent validity was examined using average variance explained (AVE). For all constructs, the AVE value was greater than the threshold value of 0.5 (Table 3) and was smaller than the corresponding composite reliability values. Furthermore, the inter-construct correlation values were smaller than the square root of the AVE values of the respective constructs, thus confirming the discriminant validity (Fornell and Larcker, 1981) (Table 3). Lastly, we examined the model fit by evaluating the goodness of fit criteria values ( $\chi^2/df = 1.91$ ,  $CFI = 0.98$ ,  $TLI = 0.98$ ,  $RMSEA = 0.04$ ). These values were also within the threshold values recommended by Hair et al. (2010).

#### 4.2.4. Hypothesis testing

The path analysis results indicated a good model fit ( $\chi^2/df = 2.69$ ,  $CFI = 0.96$ ,  $TLI = 0.94$ ,  $RMSEA = 0.05$ ). Although the analysis did not support our hypothesis anticipating a positive association between health consciousness and image barrier (H1:  $\beta = -0.07$ ,  $p > 0.5$ ), the results did confirm a positive relationship between health consciousness and usage barrier (H2:  $\beta = 0.35$ ,  $p < 0.001$ ), natural content (H3:  $\beta = 0.36$ ,  $p < 0.001$ ), and regional product (H4:  $\beta = 0.29$ ,  $p < 0.001$ ). Similarly, environmental concern shared positive associations with image barrier (H5:  $\beta = 0.16$ ,  $p < 0.01$ ), usage barrier (H6:  $\beta = 0.2$ ,  $p < 0.001$ ), and regional product (H8:  $\beta = 0.24$ ,  $p < 0.001$ ), thereby revealing support for the proposed relationships. In contrast, environmental concern shared a negative association with natural content (H7:  $\beta = -0.12$ ,  $p < 0.05$ ), thereby rejecting the underlying hypothesis. As anticipated, brand love had a negative association with image barrier (H9:  $\beta = -0.11$ ,  $p < 0.001$ ), but had a positive association with usage barrier (H10:  $\beta = 0.09$ ,  $p < 0.01$ ), which was against expectations. Brand love also had the positive association with natural content (H11:  $\beta = 0.76$ ,  $p < 0.001$ ) we hypothesized. However, it had no statistically significant association with regional product (H12:  $\beta = 0.04$ ,  $p > 0.05$ ). In sum, the results indicate support for all hypotheses except for H1, H7, H10, and H12. The variance in the dependent variables explained are as follows: 4.4% for image barrier, 26.5% for usage barrier, 10.4% for natural content, 23.2% for regional product, and 65.3% for brand love (Fig. 2, Table 4).

#### 4.2.5. Moderation analysis

The study used the PROCESS macro to analyze the moderating effect of household size on all twelve proposed relationships. The findings indicate that household size moderates the relationship of environmental concern with usage barrier and regional product, respectively, and that of natural content with brand love (Table 5). Thus, out of hypotheses H13a to H13l, only H13f, 13h, and 13k were supported. Fig. 3a, b, and 3c present the moderating effect of household size.

#### 4.2.6. Control variables

The results revealed that none of the socio-demographic variables controlled for in the study, namely, age, gender, academic qualification, and household income, were found to have any statistically significant confounding influence on the dependent variable of brand love.

## 5. Discussion

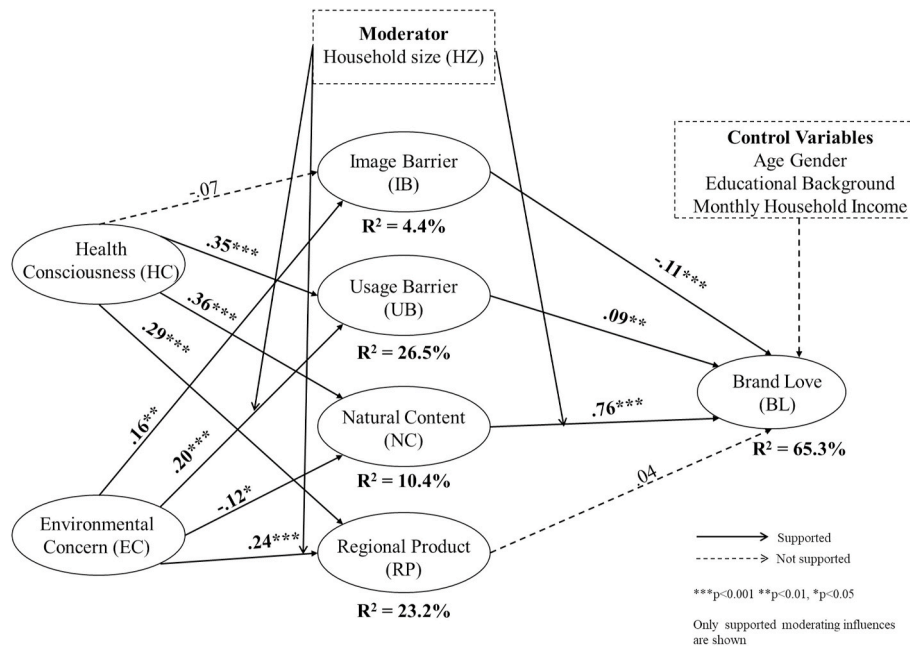
Against expectations and the findings of previous studies (e.g., Qasim et al., 2019), health consciousness was not associated with image barriers. This outcome could be due to health-conscious consumers having sufficient knowledge of natural products and the available brands (and thus have no reason to doubt the product labeling). Similarly, consumers who are aware of the contents of natural products are not likely to doubt the claims of naturalness, thereby removing the image barriers.

In comparison, health consciousness was confirmed to have a

**Table 3**  
Validity and reliability analysis.

	CR	AVE	MSV	ASV	HC	BL	IB	UB	NC	RP	EC
HC	.85	.59	.35	.14	.77						
BL	.95	.82	.66	.19	.29	.91					
IB	.86	.75	.15	.05	.04	-.38	.87				
UB	.81	.67	.21	.13	.46	.34	-.04	.82			
NC	.90	.75	.66	.20	.26	.82	-.39	.34	.87		
RP	.87	.70	.21	.14	.41	.39	-.10	.38	.46	.83	
EC	.79	.55	.35	.12	.59	.06	0.10	.42	.09	.42	.74

Note: Composite reliability = CR, Average variance extracted = AVE, Maximum shared variance = MSV, Average shared variance = ASV, Health consciousness = HC, Image barrier = IB, Usage barrier = UB, Natural content = NC, Regional product = RP, Environmental concern = EC, Brand love = BL.



**Fig. 2.** Result of hypothesis testing.

**Table 4**  
Hypotheses testing result.

Hypothesis	Path	$\beta$	Significance	Support
H1	HC → IB	-0.07	>0.05	No
H2	HC → UB	0.35	<0.001	Yes
H3	HC → NC	0.36	<0.001	Yes
H4	HC → RP	0.29	<0.001	Yes
H5	EC → IB	0.16	<0.01	Yes
H6	EC → UB	0.20	<0.001	Yes
H7	EC → NC	-0.12	<0.05	No
H8	EC → RP	0.24	<0.001	Yes
H9	IB → BL	-0.11	<0.001	Yes
H10	UB → BL	0.09	<0.01	No
H11	NC → BL	0.76	<0.001	Yes
H12	RP → BL	0.04	>0.05	No

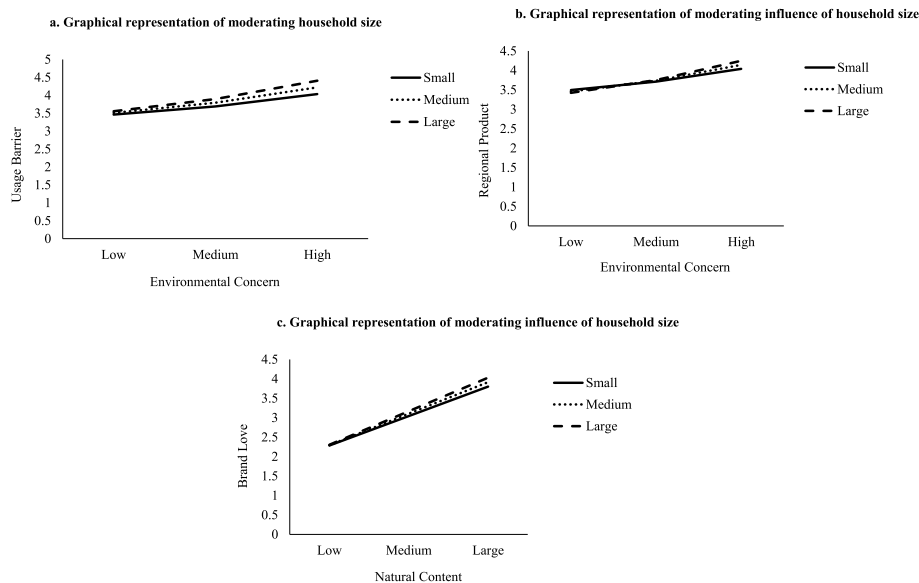
positive relationship with usage barriers, natural content, and regional product, as hypothesized in H2, H3, and H4 based on the related literature (e.g., Hsu et al., 2016; Fernández-Ferrín et al., 2018). These results imply that consumers who are self-conscious about their health will prefer natural products as they have no additives, contain natural ingredients, and help consumers support local and domestic suppliers. However, they are equally likely to have high usage barriers on account of the difficulty in finding these products in nearby locations.

The results also confirmed the associations of image barrier, usage barrier, and regional product with environmental concern (H5, H6, and H8), in line with the prior literature (e.g., Zabkar and Hosta, 2013;

**Table 5**  
Results of moderation analysis.

	Household Size					
	B	T	p	LLCI	ULCI	Moderation?
HC → IB	.03	.56	.58	-.0842	.1508	No
HC → UB	.07	1.55	.12	-.0192	.1610	No
HC → NC	-.004	-.09	.93	-.1087	.0995	No
HC → RP	.05	1.20	.23	-.0327	.1352	No
EC → IB	.07	1.23	.22	-.0447	.1928	No
EC → UB	.08	1.79	.07	-.0084	.1772	Yes
EC → NC	.03	.62	.54	-.0739	.1421	No
EC → RP	.08	1.89	.06	-.0032	.1687	Yes
IB → BL	-.02	-.67	.51	-.1001	.0494	No
UB → BL	.06	1.34	.18	-.0270	.1441	No
NC → BL	.05	1.70	.09	-.0080	.1119	Yes
RP → BL	-.02	-.48	.63	-.1259	.0763	No

Spaniolo and Howard, 2011; Molinillo et al., 2020). These findings imply that consumers worried about the deteriorating quality of the environment for future generations or who are concerned about the amount of waste generated will prefer products by domestic or regional suppliers. However, such consumers will have barriers against natural products on account of issues related to their availability in nearby locations and doubts about their being truly “natural”. In comparison, the positive association that we hypothesized between environmental concern and natural content (H7) was not supported. Rather, an



**Fig. 3.** a). Graphical representation of moderating household size. b. Graphical representation of moderating influence of household size. c). Graphical representation of moderating influence of household size.

unanticipated significant negative association was revealed instead. We speculate that this could be because consumers with high environmental concerns may perceive that natural products reduce the already depleted natural content or resources, resulting in negative purchase intentions toward them. However, this association needs to be tested further, taking possible moderating influences into account before any conclusive argument can be put forth.

Per the prior extended literature (e.g., Huang et al., 2020), H9, which proposed a negative association between image barrier and brand love, was also supported. The results imply that lack of trust in “natural” product labeling and suspicions about the “naturalness” of these products may cause health-conscious and environmentally aware consumers to have a negative image of these products, thereby eroding brand love. Furthermore, the proposed negative association between usage barrier and brand love for natural products (H10) was not supported. This finding contradicted our anticipation based on the prior extended literature (e.g., Huang et al., 2020; van Esch et al., 2019). Surprisingly, the difficulty in procuring natural products or their lack of availability at nearby retail outlets does not seem to reduce brand love for natural products. Although this result was not in line with previous findings, it is supported by the growing consumer resistance literature, wherein various barriers have been found to co-exist with positive usage intentions (e.g., Hew et al., 2019). Furthermore, the results indicate that the perceived benefits of natural products can foster brand love if it meets the consumers’ expectations, despite the barriers to using them.

H11, which proposed a positive association between natural content and brand love, was also supported, in agreement with previous findings (e.g., Mody et al., 2019). This result confirms that the absence of additives, as well as the existence of natural ingredients, can cause consumers to become passionate about the natural product brand they use and increase their attachment to it. Against expectations (e.g., Di Vita et al., 2019), the study did not find any association between regional product and brand love (H12), suggesting that consumers do not value regional products as much as they do an established brand. This finding is quite relevant for the natural products market where firms of all sizes may use attractive packaging or regional origins to mislead the buyers about the products. Accordingly, consumers may not be able to develop an emotional and passionate connection with any regional brand.

Furthermore, the results indicate that household size moderates the relationship between environmental concern and usage barriers. As consumers move from low to high environmental concern, their usage

barriers toward using natural products increase as their household size expands. It could be that consumers with larger households may live in residential areas with more facilities for children (and thus fewer commercial shopping areas), making it difficult for them to locate and procure natural products when they need them. It is also possible that larger households with children are not sure about how to use these products safely for them. The results also indicate that household size moderates the relationship between environmental concern and regional product, implying that with the increase in household size comes a higher environmental concern and a preference for natural products that support domestic suppliers. Consumers with larger households may be motivated to support local suppliers to strengthen the local economy for their children’s future. Lastly, the moderation analysis revealed that household size moderates the association between natural content and brand love. This suggests that with the increase in household size, consumers prefer to use products with natural content, resulting in a stronger emotional connection with the brand.

## 6. Implications and limitations

### 6.1. Theoretical implications

This study offers four key theoretical implications. To begin with, it is the first empirical attempt to understand brand love for natural products. Brand love is a prime and continually growing consumption phenomenon (e.g., Bagozzi et al., 2017; Mody and Hanks, 2020) that encompasses multiple dimensions beyond intentions, behavior, and satisfaction. As this construct has been under-explored in the context of natural products, we thus enrich the literature by significantly extending the scope of contemporary empirical work in this area (e.g., Dominick et al., 2018; Moscato and Machin, 2018).

Second, the study contributes to the theoretical advancement of the literature by utilizing the S–O–R theory to examine consumer behavior toward natural products. The study uses health consciousness and environmental concern as stimuli that influence the internal state of an organism (e.g., the consumer), namely, image barriers, usage barriers, natural content, and regional product, which, in turn, shape brand love. In so doing, the study proposes novel associations between these variables, which are well-researched in different contexts.

Third, to our knowledge, no prior study has explored the applicability of S–O–R theory in the context of natural products. Furthermore,



although previous studies (e.g., Bigne et al., 2020) have invoked this theory in the context of online retailing, its offline utilization is much more limited. Therefore, our study expands the applicability of the theory in two ways: (a) by extending it to a new product type (i.e., natural products), and (b) by extending it to an under-explored context (i.e., offline retailing).

Lastly, this study highlights the moderating influence of household size on the association of brand love and natural content. By doing so, the study has paved the way for future researchers to model socio-demographic variables that can better explain the behavior of natural product consumers.

### 6.2. Practical implications

The findings offer four implications for manufacturers of natural products, managers, and policymakers. First, by revealing the significant impact of health consciousness as a stimulus for usage barrier, natural content, and regional product, the study suggests that manufacturers should focus on the retail availability, natural content, and regional origin of their product. They can achieve this by providing key details on the product labels and developing a proper supply chain. Given that health consciousness stimulates consumers to look for natural content in the products they purchase, informative labels highlighting this content are likely to have a strong appeal to consumers. Furthermore, the labels should be designed in a way that reflects the regional origin of the product. This can be done by adding a few words in the regional language or by including a map on the labels.

Second, this study illustrates the significant influence of environmental concern as a stimulus for image barrier, usage barrier, and regional product. Accordingly, we suggest that manufacturers emphasize the benefits of their natural products, such as being environmentally responsible and regionally sourced. Integrated marketing communication could be used to highlight these attributes, and also address the sources of consumer resistance by way of usage and image barriers. Thus, the promotional messages should also emphasize the easy availability of these products and their reliability in terms of naturalness.

Third, by revealing that image barriers can potentially hinder brand love for natural products, the study suggests that brand managers should position their brand to address suspicions regarding the authenticity of their “natural” product labeling and brand. For example, manufacturers can approach regulatory bodies to obtain some type of seal or identification. By confirming to consumers that a competent authority has certified the product, brands can persuade consumers to use and thereby develop an emotional relationship with their products.

Lastly, as our study has revealed that natural content can enhance brand love, manufacturers should work with policymakers to generate a list of natural ingredients that are safe to use and do not degrade the environment. Once such a list has been prepared, it can be placed on the shelves of retail stores to indicate the safe, natural, and sustainable resources and practices used in making these kind of products. Such communication at the point of purchase can enhance consumer bonding with the brand, and ultimately, contribute to brand love.

### 6.3. Limitations and future scope

Although the study has offered new insights regarding brand love and consumer behavior toward natural products, it does have some limitations. First, it draws its findings from Indian consumers of natural products, meaning that the findings may not be directly applicable to other cultural contexts. Future research can address this limitation by investigating consumers from multiple cultural contexts to provide deeper insights and confirm this study’s generalizability. Second, natural product consumers may be recipients of varied stimuli beyond health consciousness and environmental concern. As such, we suggest that future studies incorporate multiple stimuli from diverse contexts, such as subjective norms and fake news. Third, the study focused

exclusively on consumers of a single brand known for its natural products. Thus, it may be difficult to generalize our findings to the entire product category. Therefore, future scholars may undertake a cross-cultural or comparative study of multiple natural product brands to provide a broader perspective. Lastly, future work could adopt a longitudinal or experimental research design to capture the changing responses of consumers and explain the mechanism behind evolving brand love for natural products.

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