

Nguyen, Phi-Hung; Nguyen, Dat Ngoc; Nguyen, Lan Anh Thi

## Article

# Quantitative insights into green purchase intentions: The interplay of health consciousness, altruism, and sustainability

Cogent Business & Management

## Provided in Cooperation with:

Taylor & Francis Group

*Suggested Citation:* Nguyen, Phi-Hung; Nguyen, Dat Ngoc; Nguyen, Lan Anh Thi (2023) : Quantitative insights into green purchase intentions: The interplay of health consciousness, altruism, and sustainability, Cogent Business & Management, ISSN 2331-1975, Taylor & Francis, Abingdon, Vol. 10, Iss. 3, pp. 1-15,  
<https://doi.org/10.1080/23311975.2023.2253616>

This Version is available at:

<https://hdl.handle.net/10419/294609>

### Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

### Terms of use:

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*



<https://creativecommons.org/licenses/by/4.0/>

## Quantitative insights into green purchase intentions: The interplay of health consciousness, altruism, and sustainability

Phi-Hung Nguyen, Dat Ngoc Nguyen & Lan Anh Thi Nguyen

To cite this article: Phi-Hung Nguyen, Dat Ngoc Nguyen & Lan Anh Thi Nguyen (2023) Quantitative insights into green purchase intentions: The interplay of health consciousness, altruism, and sustainability, Cogent Business & Management, 10:3, 2253616, DOI: [10.1080/23311975.2023.2253616](https://doi.org/10.1080/23311975.2023.2253616)

To link to this article: <https://doi.org/10.1080/23311975.2023.2253616>



© 2023 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.



Published online: 05 Sep 2023.



[Submit your article to this journal](#)



Article views: 1600



[View related articles](#)



[View Crossmark data](#)



Received: 16 July 2021  
Accepted: 25 August 2023

\*Corresponding author: Phi-Hung Nguyen, Research Center of Applied Sciences, Faculty of Business, FPT University, Room DE106, Delta Building, Hoa Lac High-tech Park, Km 29, Thang Long Boulevard, Hanoi 100000, Vietnam  
E-mail: [hungnp30@fe.edu.vn](mailto:hungnp30@fe.edu.vn)

Reviewing editor:  
Pablo Ruiz, Universidad de Castilla-La Mancha, Spain

Additional information is available at the end of the article

## MANAGEMENT | RESEARCH ARTICLE

# Quantitative insights into green purchase intentions: The interplay of health consciousness, altruism, and sustainability

Phi-Hung Nguyen<sup>1\*</sup>, Dat Ngoc Nguyen<sup>2</sup> and Lan Anh Thi Nguyen<sup>1</sup>

**Abstract:** Green consumption behaviour research plays a vital role in promoting actions to protect the environment and promote sustainable development. This research aims to determine the relationship between environmental sustainability awareness, social sustainability awareness, altruism, health consciousness, and consumers' green consumption behaviour. A quantitative analysis based on a dataset of 586 customers was performed to test the hypotheses with SmartPLS 3.3.3. The results of the PLS-SEM model indicated as follows: (1) Awareness of the sustainable environment enhances customers' altruism; (2) Altruism has a positive effect on customers' intention, loyalty, and green brand evangelism; (3) Health consciousness has a positive effect on attitude but has no effect on green purchase intention; (4) Green purchase intention has a positive effect on loyalty and green brand evangelism; (5) However, green brand loyalty is not a factor that influences green brand evangelism, which is a significant finding. Furthermore, another research finding also highlights the importance of altruism in utilizing green products.

**Subjects:** Environmental Economics; Entrepreneurship and Small Business Management;

### ABOUT THE AUTHORS

Phi-Hung Nguyen received his Ph.D. degree in Business Management at the National Taipei University of Technology (NTUT) in Taiwan. He is working as the Head of Research Centre of Applied Sciences, and a professor at Faculty of Business, FPT University in Vietnam since 2021. He has published more than 30 ISI journal papers. His main research interests include Group Decision Making, Data Envelopment Analysis (DEA), Management Sciences, Strategic Management, Fuzzy Set Theory, Operations Research, Logistics and Supply Chain Management.

Dr. Dat Ngoc Nguyen obtained an MBA - English degree from National Economics University in 2012. Demonstrating his commitment to scholarly pursuits, he successfully defended his PhD in Business Administration at Foreign Trade University in 2017. Currently, Dr. Nguyen serves as a lecturer of Marketing and Communication, while also holding the esteemed position of Deputy Dean of the Faculty of International Education at Foreign Trade University. Throughout his academic journey, he actively engaged in numerous projects under the Ministry of Education and Training, assuming both participant and chairperson roles.

Lan-Anh Thi Nguyen received her M.S. and Ph.D. degree in Business Management at the Yuan Ze University in Taiwan. She is working as a business lecturer at the Faculty of Business, FPT University in Vietnam. She has published several international publications. Her main research interests include Management Sciences, Sustainability, Ethical consumption, Marketing.



**Keywords:** social sustainability awareness; environment sustainability awareness; health consciousness; green purchase intention; green brand loyalty; green brand evangelism

## 1. Introduction

Along with economic development, it has led to various severe problems, including natural resource depletion and overuse (Kumar et al., 2017). This economic development affected the environment, such as global warming, melting ice, forest fires, and the greenhouse effect, which recently caused a rising environmental concern (Chen et al., 2020; Panda et al., 2020). Green consumption policy has many meanings in environmental conservation and pollution reduction (McEachern & McClean, 2002). As studied by Stone et al. (1995), more and more US and Western European consumers are becoming environmentally responsible by improving their lifestyles and consumption habits. This means that when a consumer decides to buy a product, he begins to care more about its environmental impact than care about the benefits the product brings. This result was also proved in a study by Thorndike et al. (2016), the total number of consumers interested in green products in the UK is 15%. A recent poll in the US also showed that up to 50% of Americans wanted to look for green-labelled products or switch to eco-friendly brands (Thorndike et al., 2016). Not only in the US or European countries, but also in Australia, a study also showed that up to 61.5% of respondents would pay more for environmentally safe products (Suchard & Polonski, 1991). In countries around the world in general and Vietnam in particular, consumers are paying more attention to products that are good for health and have less impact on the environment. In Vietnam, people's awareness of eco-friendly products is also being enhanced. Regarding recent data published by Vietnam's Ministry of Industry and Trade, up to 80% of Vietnamese buyers are willing to pay more to buy products with environment-friendly materials and "clean" & "green" brands (Ministry of Industry and Trade, 2021).

The environmentally sustainable aspect is one of the three elements constituting sustainable development. In addition to this factor, awareness of social sustainability is also a factor that should be considered in raising people's awareness of sustainable development. Several studies have shown that environmental and social sustainability awareness makes green products more popular (McKenzie, 2005). In other words, to promote the economy and foster "social capital," it is necessary to promote green consumption, which contributes to building a sustainable society (Agarwal & Narain, 2019). However, social sustainability has received little attention when few studies look through it (Badri Ahmadi et al., 2017; Kumar et al., 2017). Therefore, it is not easy to take a general view of the social dimension of this sustainability (Kumar et al., 2017; McKenzie, 2005; Stöckigt et al., 2018). However, several studies on social sustainability, such as Missimer et al. (2017), indicated that the mentioned social sustainability factor includes various factors such as health, social influence, and capacity for social justice. Social sustainability helps consumers have good health but also helps them improve their self-worth concerning social relationships (Missimer et al., 2017). Furthermore, a recent study conducted by Panda et al. (2020), the author shows that the perception of social sustainability has an essential influence on increasing green consumption intentions.

While existing literature confirms a positive relationship between environmental sustainability awareness, social sustainability awareness, altruism, and green consumption behavior (Mostafa, 2006; Panda et al., 2020), several gaps merit attention. Firstly, the aspect of health concerns, despite its demonstrated influence on green consumption attitudes and intentions (Yadav & Pathak, 2017), remains comparatively underexamined. Secondly, the Vietnam-specific context is sparsely covered, with the limited studies mainly adopting the Theory of Planned Behavior (TPB) as their foundational framework.

The present study aims to bridge these research gaps by focusing on the Vietnamese consumer population and incorporating health concerns alongside environmental and social sustainability awareness, altruism, green consumption intention, loyalty, and green brand evangelism. By

elucidating the impact of these factors on consumer behavior towards green brands in Vietnam, the study endeavors to provide theoretical contributions. Specifically, it seeks to identify the predominant perceptions—whether environmental sustainability awareness, social sustainability awareness, altruism, or health concerns—that lead to a change in green product purchasing behavior. The anticipated findings will serve as a foundation for recommendations aimed at fostering enhanced green consumption practices. Consequently, this research aspires to contribute not only to academic discourse but also to the practical promotion of sustainable consumer behavior.

## 2. Literature review

### 2.1. Green consumption behavior

Some green products are known as recycled paper or plastic products (Banerjee et al., 1995); another concept defined by Shamdasani et al. (1993) and Ottman (1992) that green products are environmentally friendly products, reduce waste, are safe for health, and do not affect the environment. The consumption and use of environmentally friendly products are called green consumption (Chan, 2001). Green consumption behaviour is more clearly defined by Lee (2010) as behaviours of using products that are beneficial to the environment, do not cause harm, and create conditions for protecting the environment in the long run.

The Theory of Reasoned Action (TRA) was proposed by Ajzen and Fishbein (1980). This theory suggests that the behaviour of using products is affected by two factors known as Attitude and Subjective Norm (Ajzen, 1985). Then, Ajzen (1991) then developed the TPB by adding the Perceived Behavioral Control (PBC) element to the TRA model to predict actual behavioural trends better. The attitude element is the psychological state that determines whether an individual favour or does not favour a particular object (Eagly & Chaiken, 2007). The subjective norm factor is that a person's behaviour is impacted by the wish of the influencer (O'Neal, 2007). Finally, the perceived behavioural control factor reflects whether performing the behaviour and control is easy or difficult (Ajzen, 1991). The PBC factor is divided into two groups: Individuals who have substantial control over intrinsic resources such as skills, confidence, planning, and ability to perform a behaviour are called groups with internal planned behavioural control (internal PBC) (Conner & Armitage, 1998); while the group of people who can control external limits such as time management, finance is called the group with external planned behavioural control (Kidwell & Jewell, 2003). According to the TPB model, all three factors, attitude, subjective norm, and perceived behavioural control, have significant interactions, directly affect behavioural intentions, and indirectly affect actual consumption behaviour (Ajzen, 1991).

The TPB model is also frequently used by researchers to assess and predict consumers' green consumption behaviour (Hiselius & Rosqvist, 2016). A previous study suggested that attitudes toward green products positively affect green consumption behaviour (Lee, 2010; Panda et al., 2020). This notion is further corroborated by Paul et al. (2016), who believe that attitude has the most substantial and direct influence on consumers' green consumption intention. In other words, when consumers have a positive attitude and favour green and environmentally friendly products, their consumption behaviour towards green products is also improved (Sreen et al., 2018). In addition to intrinsic factors, consumers are more likely to consult the external opinions of others when they feel uncertain about their behaviour (Bratt, 1999). According to Harland et al. (1999), subjective norms and green consumption intention have a significant and direct relationship.

Regarding perceived behavioural control, many studies have also been conducted to evaluate the relationship between perceived behavioural control and green consumption behaviour. According to a recent study, some perceptions control and moderate customers' consumption behaviour, such as time, price, product availability, etc (Tanner & Kast, 2003). Therefore, it is evident that if consumers can overcome these factors, they will spend more on green products (Gleim et al., 2013; Kalafatis et al., 1999; Steg, 2008). This outcome is also approved by Sreen et al.

(2018), who emphasized that perceived behavioural control has a direct and positive impact on the intention to use green products, thereby affecting the green consumption behaviour of consumers.

### **2.2. Environmental sustainability awareness, altruism, green consumption attitude**

The meaning of environmental sustainability is focused on protecting, maintaining, and improving the integrity of life-supporting factors on Earth (Holdren et al., 1995). The reason is that a sustainable environment will bring benefits to people. According to Goodland (1995), protecting raw materials and improving environmental sustainability will help enhance human well-being value from physical to mental life and meet human long-term needs. Furthermore, under the impact of economic development, natural resources are gradually depleted, which has changed consumers' awareness in prioritizing the use of more sustainable consumer products (Kumar et al., 2017). In other words, besides choosing to use products that satisfy individual needs, the environmental protection factor and the use of green products are also of particular interest to consumers (Pinto de Moura et al., 2012).

According to Steg et al. (2014), human values play a role in influencing human ethical standards, stimulating the responsibility to live for the environment and protect the environment. Among ethical standards, altruism is the virtue that shows concern for the welfare of others (Schwartz, 1977). According to Steg et al. (2014), when people are aware of the danger to the environment, they will be aware of their responsibility to protect the environment and those around them. In other words, awareness of environmental sustainability positively affects consumer altruism (Panda et al., 2020). Therefore, the hypotheses are put forward as follows:

**H1:** Environmental sustainability awareness has a positive influence on green use attitude.

**H2:** Environmental sustainability awareness has a positive impact on customer altruism.

### **2.3. Social sustainability awareness, altruism, green consumption attitude**

According to Laguna (2014), Social sustainability research is the study of life values and prompting decision-makers to consider societal outcomes before making certain decisions. More specifically, the perception of social sustainability is related to the awareness of the human self's influence on culture, social justice, and physical health (Missimer et al., 2017). Pepperdine (2001) created a set of indicators to measure social sustainability efficiently, including future sense, community, community activities, age, politics, economic existence, and job opportunities. On the other side, each individual with a good awareness of social sustainability tends to care more about other people than himself/herself; thereby, altruism is activated; altruism will become deeper when people have more understanding of social sustainability (Panda et al., 2020). Furthermore, recently conducted research suggests that the perception of social sustainability positively affects altruism, thereby affecting green consumption intention (Panda et al., 2020). Therefore, the hypotheses are proposed as follows:

**H3:** Social sustainability awareness has a positive impact on green consumption attitudes.

**H4:** Social sustainability awareness has a positive impact on customers' altruism.

### **2.4. Consumers' altruism and green consumption behaviour**

As mentioned above, altruism is a virtue that represents acting on others' behalf without requesting for return (Schwartz, 1977). Altruism has been compared to unconditional kindness, putting others' benefits as the priority and requiring no return, or altruism is an essential factor in predicting whether a person is inclined to protect the environment (Panda et al., 2020). There are also previous studies that have shown that altruism exists in two forms: concern for and putting the interests of others before one's own (social altruism), and the other form is a concern for non-human factors such as ecology (ecological altruism) (Stern et al., 1993). Steg et al. (2014) posited that higher levels of altruism

correlate with an increased awareness and conscientiousness regarding the benefits that ecosystems offer. Consequently, Mostafa (2006) corroborated that various manifestations of altruism exert a positive impact on consumers' intentions to engage with green products.

According to Yadav and Pathak (2017), giving has created comfortable psychology for each individual and simultaneously encouraged the consumption of green-brand products. In other words, the frequent use of green brands makes consumers feel more satisfied and motivated (Hartmann & Apaolaza Ibáñez, 2006). This trend has forced marketers to find suitable ways to develop more green product promotion strategies to build customer loyalty to their business (Hartmann & Apaolaza Ibáñez, 2006). This result was also confirmed and proven by Panda et al. (2020), who suggested that Altruism positively affects green brand loyalty. In addition to brand loyalty, green brand evangelism is also a concern. Prakash et al. (2019) say consumers spread unsatisfying experiences faster than satisfying experiences. Therefore, in the era of technological development, a business that wants to attract more customers must be aware of the factors affecting the value of Altruism (Badrinarayanan & Sierra, 2018). Because according to Panda et al. (2020), only when a business's strategies touch customers' Altruism will customers become good marketers to advertise the green products they are using. Hence, the study advances the following research hypotheses:

**H5:** Altruism has a positive impact on green purchase intention.

**H6:** Altruism has a positive impact on green brand loyalty.

**H7:** Altruism has a positive impact on green brand evangelism.

### **2.5. Health consciousness, green consumption attitude and green purchase intention**

A health-conscious person will be willing to perform in favour of their health (Schiffenstein & Oude Ophuis, 1998). Many studies have shown the relationship between health consciousness and green products. Most of them believe that green products benefit people's health because they contain healthier nutritional values than other products (Lea & Worsley, 2005; Lockie et al., 2004). Researchers also shared this view (Padel et al., 2005) when the author indicated that organic products are safer for users. As a result, when understanding the importance of green products, consumers choose products that help their bodies be healthier without harming the environment (Fan et al., 2009). This outcome is entirely consistent with the point mentioned by Chan (2001); the writer showed that health consciousness has a strong moderating influence on green purchase intention. In addition, based on the TPB model's theory of attitude and behavioural intention, customers who favour products would have a higher green purchase intention. In other words, consumers are willing to pay more for green consumer products when they have a good attitude toward that product or brand (Panda et al., 2020). Consequently, the research posits the subsequent hypotheses:

**H8:** Attitude towards green products has a positive impact on green purchase intention.

**H9:** Health consciousness has a positive impact on green consumption attitudes.

**H10:** Health consciousness has a positive impact on green purchase intention.

### **2.6. Green purchase intention, brand loyalty, and green brand evangelism**

The concept of purchase intention measures or evaluates the possibility that a customer will buy a specific product or service; when the purchase intention is large enough, the purchase action will occur (Dodds et al., 1991). Bai et al. (2008) concluded that consumer purchase behaviour is a predictable outcome of purchase intention. Oliver (1997) once defined brand loyalty as the consumer's repeated commitment to the product they love. Therefore, brand loyalty is a critical factor in the profitability of a business (Dick & Basu, 1994). As a result, retaining loyal customers is



crucial because, according to Oliver (1997), keeping customers costs much lower than creating a new customer group. Akturan (2018) has assessed a positive relationship between two factors purchase intention and consumers' brand loyalty. Brand loyalty is also a measure of consumer purchasing frequency (Romaniuk & Nenycz-Thiel, 2013); in other words, the loyalty factor depends greatly on consumers' purchase intention (Wallin Andreassen & Lindestad, 1998). This outcome has also been demonstrated by Panda et al. (2020), when the authors found that usage intention positively affects green brand loyalty.

Nowadays, although most brands try to promote the brand to customers in many different ways, the reality is that the customer is the best factor in brand evangelism (Riivits-Arkonsuo & Leppiman, 2014). Notably, word-of-mouth marketers who have used the product are more likely to repurchase the product or service in the future than individuals who only promote word-of-mouth without using the product (Collins & Mostert, 2021). Panda et al. (2020) conducted an in-depth examination of green consumption and brand, asserting that consumer intent to engage in eco-friendly consumption positively correlates with green brand evangelism. Additionally, Panda et al. (2020) scrutinized the link between brand loyalty and brand evangelism, positing that both constructs represent emotional bonds between consumers and brands. However, brand evangelism is incredibly significant when consumers are loyal to the product; they will become better word-of-mouth marketers to promote it. In other words, brand loyalty positively influences green brand evangelism. As a result, the following research hypotheses are formulated:

**H11:** Green purchase intention has a positive impact on green brand loyalty.

**H12:** Green purchase intention has a positive impact on the green brand evangelism.

**H13:** Brand loyalty has a positive impact on green brand evangelism.

Given the complexity and importance of green consumption behaviour, environmental and social sustainability awareness, and the interconnected variables described in the literature, it is clear that a profound research problem exists. This study investigates the intricate relationships between environmental sustainability awareness, social sustainability awareness, altruism, and health consciousness and their impacts on green consumption attitudes, purchase intentions, brand loyalty, and brand evangelism.

The utilization of variables mentioned is grounded in established theories and empirical studies that have already explored different aspects of green consumption and behavioural sciences. By introducing hypotheses (H1 to H13), this research seeks to synthesize and extend existing knowledge, emphasizing the interconnections between these variables. This multifaceted exploration allows for an in-depth understanding of the factors influencing green consumption and can contribute to the broader discussion on sustainable consumer behaviour and corporate strategies.

The proposed study's variables build upon theories like the TPB and integrate various elements from the literature, including altruism, health consciousness, and the distinction between intrinsic and extrinsic factors. Integrating these variables is critical for mapping the multifaceted nature of green consumption behaviour, potentially offering insights into ways to promote more sustainable choices among consumers.

Thus, the research's intricacy lies in unravelling these interconnected elements, recognizing their mutual influences, and contributing to a comprehensive and nuanced understanding of green consumption behaviour. The results may have far-reaching implications for academia and industry, offering a foundation for more effective marketing strategies and public policies that foster sustainable consumption practices.



### 3. Method

#### 3.1. Sampling and collect data

Data was collected through an online survey via Gmail and Facebook channels. The questionnaire will be designed with filter questions for those who have used green products in Vietnam. The sample collected for analysis was 586, considered suitable (Hair et al., 2014). The questionnaire was translated from English to Vietnamese and adjusted according to the reverse translation process of Brislin (1970). To ensure the questionnaire's content quality, the questionnaire in Vietnamese was distributed to six people who have a habit of using green products to see if the questions used were appropriate, and the authors will readjust them according to their feedback. In addition to questions related to the research model, the survey includes demographic and job information sections. The survey period was from October 2020 to January 2021.

#### 3.2. Measurement scales

Eight primary constructs in the research model—social sustainability awareness, environmental sustainability awareness, health consciousness, altruism, purchase intention, brand evangelism, and green brand loyalty—are measured using scales developed from the literature review section. The research scale is a 5-point Likert scale, with 1-point signifying complete disagreement and 5-point indicating complete agreement.

#### 3.3. Data analysis method

The research uses the partial least squares (PLS) method on SmartPLS software to test research hypotheses based on PLS-SEM structural model. The data from 586 responses was evaluated for reliability, convergence, and discriminant values before testing the statistical hypotheses. The outer loadings greater than 0.5 and the average variance extracted (AVE) at greater than 50% will indicate that the factor has a convergent value. Furthermore, factors are deemed reliable when their composite reliabilities (CR) exceed 0.7 and the Cronbach's Alpha coefficient surpasses the 0.7 threshold, thereby establishing the reliability of items within each factor. Finally, the discriminant validity was tested through the square root of AVE that should be larger than the correlation coefficients (Fornell & Larcker, 1981).

### 4. Research results

#### 4.1. Sample characteristics

The responses were collected from 586 customers who have utilized green products. The descriptive analysis from Table 1 reveals that the majority of the respondents are under 35 years old (314 individuals for 53.6%), followed by 35 to 40 year-old group with 194 individuals for 33.1%, and the group over 50 years old with one individual for 0.7%. Simultaneously, the survey sample comprises an relatively equal number of males and females (312 males and 274 females, or 53.2% and 46.8%, respectively). The education level of the majority of surveyed customers is undergraduate, with 392 individuals representing 66.9%, followed by postgraduate, with 185 individuals representing 31.7%, and high school with 1.4%. Most customers surveyed (280 people, or 47.8%) have monthly incomes of less than 10 million VND. Next comes the 10–20 million/month group (216 people, or 36.9%), followed by the over 20 million/month group (90 people, or 15.4%).

#### 4.2. Assessment of the measurement model

The study begins by analyzing the convergence and dependability of the factors. The analysis results show that the outer loading coefficient is from 0.632 to 0.908, more significant than 0.5, and the AVE value is from 0.505 to 0.774, greater than 50%, showing that all factors have converged values. Additionally, the Cronbach's Alpha coefficients span a range from 0.692 to 0.884, approximating or exceeding the commonly accepted threshold of 0.7. Similarly, the Cronbach's Rho coefficients range between 0.796 and 0.921, comfortably surpassing the 0.7 benchmark. These metrics indicate the reliability of all factors under study, following the removal of specific items—namely SS1, SS2, and ES6—with outer loadings of 0.05 (as shown in Table 2).

**Table 1. Demographic information of respondents (n = 586)**

	<i>n</i>	%		<i>n</i>	%
Age			Education level		
<35	314	53.6	Highschool	8	1.4
35–40	194	33.1	Undergraduate	392	66.9
41–50	74	12.6	Postgraduate	185	31.7
>50	4	0.7			
Gender			Income (VND)		
Male	312	53.2	<10 mils	280	47.8
Female	274	46.8	10–20 mils	216	36.9
			>20 mils	90	15.4

Next, the study employs discriminant validity tests based on comparison of the square root of AVE and correlation coefficients. The results reveal that the square root of AVE ranges from 0.607 to 0.88, consistently exceeding their respective correlation coefficients. To further substantiate discriminant validity, Heterotrait-Monotrait (HTMT) ratios were examined. These ratios (0.01–0.840) were significantly < 0.85 (Henseler et al., 2015). This result indicates that the factors are highly discriminatory (see Table 3).

#### 4.3. Results and discussion

The results obtained from PLS-SEM analysis as presented in Table 4 provide a nuanced understanding of the underlying relationships between different constructs in the context of green consumption behaviour. The following subsections provide a detailed discussion of these findings, compared with existing literature and theoretical foundations.

According to Environmental Sustainability and Attitude (H1 and H2), the acceptance of H1 ( $\beta = 0.283$  and  $p < 0.01$ ) and H2 ( $\beta = 0.655$  and  $p < 0.01$ ) confirms that consumers' awareness of environmental sustainability (ES) positively affects attitudes (ATT) towards purchasing green goods and increases altruism (AL). This aligns with Pinto de Moura et al. (2012) and Xu et al. (2020), who illustrated that environmental consciousness motivates green consumption. Moreover, the connection between ES and AL is supported by Schwartz's (1977) norm activation model, emphasizing that awareness of environmental issues tends to foster a sense of responsibility and ethical behaviour.

In terms of Social Sustainability (H3 and H4), the rejection of H3 and H4 ( $p > 0.05$ ), showing no positive effect of social sustainability (SS) on ATT and AL, is an intriguing finding. This result contrasts previous research, such as that by Aguinis and Glavas (2012), who established a connection between social sustainability and consumer behaviour. This discrepancy may indicate a more intricate relationship, where social factors may not directly influence green purchase attitudes, underscoring the need for further exploration.

Regarding Altruism and its impact (H5, H6, and H7), the validation of hypotheses H5 ( $\beta = 0.474$  and  $p < 0.01$ ), H6 ( $\beta = 0.185$  and  $p < 0.01$ ), and H7 ( $\beta = 0.236$  and  $p < 0.01$ ) emphasizes the role of altruism in shaping green consumption patterns. These findings are in line with Mostafa's (2006) research, which illustrates that altruistic values foster green purchase intentions. The observed influence of altruism on loyalty (LOY) and brand evangelism (BE) further corresponds with Panda et al. (2020) and draws parallels with the value-belief-norm theory, asserting that individual values may mould behaviour towards collective interests (Stern et al., 1993).

**Table 2. Scales' evaluation**

Items	Outer loadings	Cronbach's Alpha
<b>Social Sustainability Awareness. (CR = 0.796; AVE = 0.568) (adapted from Panda et al. (2020), Stöckigt et al. (2018))</b>		
• Always believe in social sustainability development.	-	
• Always aim for safe and healthy activities.	-	0.692
• Always participate in community development activities	0.874	
• Always take action toward a positive impact on the community	0.710	
• Working for an ordinary meaning for society	0.661	
<b>Environmental Sustainability Awareness (CR = 0.843; AVE = 0.52) (adapted from Panda et al. (2020), Yadav and Pathak (2017))</b>		
• Clear awareness of climate/environmental change issues	0.64	
• The issue of environmental protection is increasingly urgent	0.632	
• Protecting the environment is your responsibility	0.758	0.711
• Always help others understand environmental issues	0.723	
• Always make efforts to protect the environment	0.833	
• Realize that environmental protection associations need to work better.	-	
<b>Altruism (CR = 0.859; AVE = 0.505) (adapted from Panda et al. (2020))</b>		
• Control my consumption behaviour about the environment	0.768	0.807
• Always take action to save energy, reduce electricity/water bills	0.713	
• Always ready to help others with social issues	0.701	
• You think green consumption will save future generations	0.732	
• Feeling proud when consuming green products	0.636	
• Always pay attention to environmental issues	0.707	
• Societal problems' results and behaviour	0.768	
<b>Health consciousness (CR = 0.905; AVE = 0.760) (adapted from Yadav and Pathak (2017))</b>		

(Continued)

**Table 2. (Continued)**

Items	Outer loadings	Cronbach's Alpha
• Feeling excited when buying green products	0.865	
• You find buying green products a smart choice	0.872	0.842
• You make green products a good idea	0.877	
<b>Attitude (CR = 0.907; AVE = 0.710) (adapted from Panda et al. (2020))</b>		
• You feel excited when buying green products	0.792	
• You look at buying green products as a smart choice	0.897	0.863
• You look at green products as a good idea	0.861	
• You look at green products as an interesting idea	0.816	
<b>Intention (CR = 0.899; AVE = 0.642) (adapted from Panda et al. (2020))</b>		
• Will buy green products soon	0.81	
• Will buy green products if needed	0.693	0.859
• Plan to buy green products in the future	0.795	
• Make an effort to buy green products in the future	0.853	
• Willingness to pay for green products	0.845	
<b>Green brand loyalty (CR = 0.911; AVE = 0.568) (adapted from Panda et al. (2020))</b>		
• Continue to buy green products	0.899	
• Trust in using green brands	0.874	0.854
• Will often consume green products	0.866	
<b>Green brand evangelism (CR = 0.921; AVE = 0.744) (adapted from Panda et al. (2020))</b>		
• Will become a positive word of mouth for others	0.796	
• You feel the value you bring to the people around you	0.852	0.884
• Interest in influencing others	0.889	
• In general, you want to spread about using green products	0.908	

Notes: CR: Composite reliability; AVE: Average variance extracted.

In the context of Attitude and Purchase Intentions (H8), the positive relationship between ATT and INT (H8) ( $\beta = 0.361$  and  $p < 0.01$ ) confirms the TPB model's applicability (Ajzen, 1991), where attitudes significantly predict intentions. This result mirrors Panda et al. (2020) and extends the understanding of how green consumption attitudes foster purchase intentions.

**Table 3. Discriminant validity analysis**

	AL	ATT	BE	ES	HC	INT	LOY	SS
AL	<b>0.686*</b>							
ATT	0.523	<b>0.843*</b>						
	<i>0.603</i>							
BE	0.502	0.297	<b>0.863*</b>					
	<i>0.569</i>	<i>0.336</i>						
ES	0.656	0.491	0.349	<b>0.679*</b>				
	<i>0.785</i>	<i>0.606</i>	<i>0.397</i>					
HC	0.517	0.574	0.318	0.459	<b>0.872*</b>			
	<i>0.603</i>	<i>0.67</i>	<i>0.363</i>	<i>0.552</i>				
INT	0.656	0.602	0.556	0.559	0.439	<b>0.801*</b>		
	<i>0.755</i>	<i>0.694</i>	<i>0.633</i>	<i>0.661</i>	<i>0.501</i>			
LOY	0.613	0.729	0.464	0.534	0.621	0.773	<b>0.88*</b>	
	<i>0.714</i>	<i>0.849</i>	<i>0.532</i>	<i>0.632</i>	<i>0.728</i>	<i>0.84</i>		
SS	-0.083	-0.196	0.054	-0.105	-0.144	-0.044	-0.117	<b>0.607*</b>
	<i>0.151</i>	<i>0.165</i>	<i>0.231</i>	<i>0.209</i>	<i>0.12</i>	<i>0.138</i>	<i>0.131</i>	

Notes: 1st value = Correlation between variables (off-diagonal); 2nd value (italic) = HTMT ratio; \* Square root of AVE.

**Table 4. PLS-SEM results**

The independent variables		The dependent variables				
		AL	ATT	INT	LOY	BE
H2, H1	ES	0.655 <sup>a</sup>	0.283 <sup>a</sup>			
		(0.026)	(0.039)			
H4, H3	SS	-0.014	-0.105			
		(0.041)	(0.054)			
H9, H10	HC		0.429 <sup>a</sup>	-0.013		
			(0.047)	(0.031)		
H5, H6, H7	AL			0.474 <sup>a</sup>	0.185 <sup>a</sup>	0.236 <sup>a</sup>
				(0.045)	(0.040)	(0.052)
H8	ATT			0.361 <sup>a</sup>		
				(0.044)		
H11, H12	INT				0.652 <sup>a</sup>	0.384 <sup>a</sup>
					(0.037)	(0.059)
H13	LOY					0.023
						(0.057)
R <sup>2</sup> Adjusted		0.431	0.406	0.523	0.618	0.343

Notes: AL: Altruism; ATT: Attitude toward buying green; SS: Social sustainability awareness; ES: Environment sustainability awareness; HC: Health Consciousness; INT: Intention; LOY: Loyalty; BE: Brand evangelism; numbers in brackets: standard error; <sup>a</sup>: denotes significance at 1%.

In the manner of Health Consciousness (H9 and H10), the results of H9 ( $\beta = 0.429$  and  $p < 0.01$ ), showing a positive effect of health consciousness (HC) on ATT, resonate with Lea and Worsley (2005) and Lockie et al. (2004), who found health considerations to be significant drivers of green consumption. However, the rejection of H10 ( $p > 0.05$ ), indicating that HC does not affect purchase intention (INT), adds nuance to this relationship, echoing Vermeir and Verbeke (2006), who suggested that health considerations might not directly lead to purchase intentions.

Conforming to Purchase Intention, Loyalty, and Brand Evangelism (H11 and H12), the positive effects of INT on LOY (H11:  $\beta = 0.652$  and  $p < 0.01$ ) and BE (H12:  $\beta = 0.384$  and  $p < 0.01$ ) align with previous studies like Panda et al. (2020), reinforcing the notion that commitment to green products leads to loyalty and evangelism. Finally, related to Loyalty and Brand Evangelism (H13), the rejection of H13, where LOY does not affect BE ( $p > 0.05$ ), adds a layer of complexity to the relationship between loyalty and evangelism. This contrasts with previous works such as Oliver (1997), suggesting that loyalty usually leads to positive word-of-mouth. It indicates a specific divergence in the context of green consumption, which might require new theoretical frameworks.

## 5. Conclusions

The findings of this study offer valuable insights into the dynamics of green consumption behaviour, emphasizing the complex interplay of environmental awareness, social sustainability, health consciousness, and altruism. While some relationships are affirmed, aligning with established theories and previous research, others are negated, highlighting the multifaceted nature of green consumer behaviour. These results contribute to the literature by extending the understanding of how individual values, attitudes, and beliefs shape intentions and actions related to sustainable consumption. Moreover, the study's findings provide practical implications for policymakers, marketers, and environmental advocates, offering guidance for crafting strategies that promote and foster green consumption. The rejection of specific hypotheses also paves the way for further research to delve into the underlying mechanisms that may influence these complex relationships. Such exploration may uncover nuanced factors that inform a more comprehensive and detailed understanding of consumers' motivations and barriers in choosing green products, thereby enriching theoretical insights and practical applications in green marketing and sustainable consumer behaviour.

## 6. Implications

### 6.1. Theoretical implications

The above research results show the positive influence of environmental sustainability awareness on customers' altruism. Developing a theoretical framework that focuses on people's desire for a better environment encourages more positive behaviour in daily life. This indicates the increasing significance of theories centring on positive human cognition and behaviour. This research contributes to the theoretical foundation by extending existing models and highlighting the relationship between environmental consciousness and altruistic actions. It thereby facilitates the development of future studies in the realm of sustainable consumption and ethical consumer behaviour.

### 6.2. Practical implications

The interplay between altruism and attitudes towards green products, which directly influence green purchase intention, is underscored in the findings. Concurrently, altruism is positively impacted by awareness of social and environmental sustainability. The understanding that environmental sustainability awareness also positively influences attitudes towards buying green products paves the way for targeted community interventions. Community activities to garner attention and participation can elevate social and environmental sustainability awareness. This, in turn, can foster altruism and positive attitudes toward green products. Therefore, promoting programs focusing on environmental pollution and purchasing green products in various media channels is advised. Such initiatives can enhance the public's understanding of environmental protection and the significance of sustainable consumption choices. Interviews with customers accustomed to green products further corroborate the positive effects of community activities and environmental protection programs. Customers become more caring or altruistic, demonstrating a heightened sense of responsibility for the environment. Altruism and green purchase intention play a vital role in enhancing brand loyalty and evangelism. Thus, nurturing altruism through awareness campaigns and educational programs could be a strategic pathway for businesses and policymakers to foster loyalty and green brand evangelism, strengthening the global shift towards more sustainable and responsible consumption patterns.



#### Author details

Phi-Hung Nguyen<sup>1</sup>  
E-mail: [hungnp30@fe.edu.vn](mailto:hungnp30@fe.edu.vn)  
ORCID ID: <http://orcid.org/0000-0003-3372-8287>

Dat Ngoc Nguyen<sup>2</sup>  
Lan Anh Thi Nguyen<sup>1</sup>

<sup>1</sup> Research Center of Applied Sciences, Faculty of Business, FPT University, Hanoi, Vietnam.

<sup>2</sup> School of Economics and International Business, Foreign Trade University, Hanoi, Vietnam.

#### Disclosure statement

No potential conflict of interest was reported by the author(s).

#### Citation information

Cite this article as: Quantitative insights into green purchase intentions: The interplay of health consciousness, altruism, and sustainability, Phi-Hung Nguyen, Dat Ngoc Nguyen & Lan Anh Thi Nguyen, *Cogent Business & Management* (2023), 10: 2253616.

#### References

- Agarwal, A., & Narain, S. (2019). Global warming in an unequal world: A case of environmental colonialism. In A. Agarwal & S. Narain (Eds.), *India in a warming world* (pp. 81–91). Oxford University Press. <https://doi.org/10.1093/oso/9780199498734.003.0005>
- Aguinis, H., & Glavas, A. (2012). What we know and don't know about corporate social responsibility: A review and research agenda. *Journal of Management*, 38(4), 932–968. <https://doi.org/10.1177/0149206311436079>
- Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl & J. Beckmann (Eds.), *Action control: From cognition to behavior* (pp. 11–39). Springer Berlin Heidelberg.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behaviour*. Prentice-Hall.
- Akturan, U. (2018). How does greenwashing affect green branding equity and purchase intention? An empirical research. *Marketing Intelligence & Planning*, 36(7), 809–824. <https://doi.org/10.1108/MIP-12-2017-0339>
- Badri Ahmadi, H., Kusi-Sarpong, S., & Rezaei, J. (2017). Assessing the social sustainability of supply chains using best worst method. *Resources, Conservation and Recycling*, 126, 99–106. <https://doi.org/10.1016/j.resconrec.2017.07.020>
- Badrinarayanan, V., & Sierra, J. J. (2018). Inferred social approval and brand tribalism: A tale of two communities. *Journal of Product & Brand Management*, 27(4), 363–374. <https://doi.org/10.1108/JPBM-10-2017-1597>
- Bai, B., Law, R., & Wen, I. (2008). The impact of website quality on customer satisfaction and purchase intentions: Evidence from Chinese online visitors. *International Journal of Hospitality Management*, 27(3), 391–402. <https://doi.org/10.1016/j.ijhm.2007.10.008>
- Banerjee, S., Gulas, C. S., & Iyer, E. (1995). Shades of green: A multidimensional analysis of environmental Advertising. *Journal of Advertising*, 24(2), 21–31. <https://doi.org/10.1080/00913367.1995.10673473>
- Bratt, C. (1999). The impact of norms and assumed consequences on recycling behavior. *Environment and Behavior*, 31(5), 630–656. <https://doi.org/10.1177/00139169921972272>
- Brislin, R. W. (1970). Back-translation for cross-cultural research. *Journal of Cross-Cultural Psychology*, 1(3), 185–216. <https://doi.org/10.1177/135910457000100301>
- Chan, R. Y. K. (2001). Determinants of Chinese consumers' green purchase behavior. *Psychology & Marketing*, 18(4), 389–413. <https://doi.org/10.1002/mar.1013>
- Chen, Y.-S., Huang, A.-F., Wang, T.-Y., & Chen, Y.-R. (2020). Greenwash and green purchase behaviour: The mediation of green brand image and green brand loyalty. *Total Quality Management & Business Excellence*, 31(1–2), 194–209. <https://doi.org/10.1080/14783363.2018.1426450>
- Collins, S., & Mostert, P. (2021). Loyalty and word-of-mouth as outcomes of South African Airbnb customers' relationship quality. *Journal for Global Business Advancement*, 14(1), 24–45. <https://doi.org/10.1504/JGBA.2021.114317>
- Conner, M., & Armitage, C. J. (1998). Extending the theory of planned behavior: A review and avenues for further research. *Journal of Applied Social Psychology*, 28(15), 1429–1464. <https://doi.org/10.1111/j.1559-1816.1998.tb01685.x>
- Dick, A. S., & Basu, K. (1994). Customer loyalty: Toward an integrated conceptual framework. *Journal of the Academy of Marketing Science*, 22(2), 99–113. <https://doi.org/10.1177/0092070394222001>
- Dodds, W. B., Monroe, K. B., & Grewal, D. (1991). Effects of price, brand, and store information on buyers' product evaluations. *Journal of Marketing Research*, 28(3), 307–319. <https://doi.org/10.1177/002224379102800305>
- Eagly, A. H., & Chaiken, S. (2007). The advantages of an inclusive definition of attitude. *Social Cognition*, 25(5), 582–602. <https://doi.org/10.1521/soco.2007.25.5.582>
- Fan, J. H., Hung, W. I., Li, W. T., & Yeh, J. M. (2009). Biocompatibility study of gold nanoparticles to human cells. In *13th International Conference on Biomedical Engineering: ICBME 2008 3–6 December 2008 Singapore* (pp. 870–873). Springer Berlin Heidelberg.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50. <https://doi.org/10.1177/002224378101800104>
- Gleim, M. R., Smith, J. S., Andrews, D., & Cronin, J. J. (2013). Against the green: A multi-method examination of the barriers to green consumption. *Journal of Retailing*, 89(1), 44–61. <https://doi.org/10.1016/j.jretai.2012.10.001>
- Goodland, R. (1995). The concept of environmental sustainability. *Annual Review of Ecology and Systematics*, 26(1), 1–24. <https://doi.org/10.1146/annurev.es.26.110195.000245>
- Hair, J., Jr., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (2014). Partial least squares structural equation modeling (PLS-SEM) an emerging tool in business research. *European Business Review*, 26(2), 106–121. <https://doi.org/10.1108/EBR-10-2013-0128>
- Harland, P., Staats, H., & Wilke, H. A. M. (1999). Explaining proenvironmental intention and behavior by personal norms and the theory of planned behavior. *Journal of Applied Social Psychology*, 29(12), 2505–2528. <https://doi.org/10.1111/j.1559-1816.1999.tb00123.x>
- Hartmann, P., & Apaolaza Ibáñez, V. (2006). Green value added. *Marketing Intelligence & Planning*, 24(7), 673–680. <https://doi.org/10.1108/02634500610711842>
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in

- variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43, 115–135.
- Hiselius, L. W., & Rosqvist, L. S. (2016). Mobility Management campaigns as part of the transition towards changing social norms on sustainable travel behavior. *Journal of Cleaner Production*, 123, 34–41. <https://doi.org/10.1016/j.jclepro.2015.08.055>
- Holdren, J. P., Daily, G. C., & Ehrlich, P. R. (1995). The meaning of sustainability: Biogeophysical aspects. *Defining and Measuring Sustainability: The Biogeophysical Foundations*, 3–17. <https://documents1.worldbank.org/curated/en/328001468764998700/pdf/multi0page.pdf>
- Kalafatis, S. P., Pollard, M., East, R., & Tsogas, M. H. (1999). Green marketing and Ajzen's theory of planned behaviour: A cross-market examination. *Journal of Consumer Marketing*, 16(5), 441–460. <https://doi.org/10.1108/07363769910289550>
- Kidwell, B., & Jewell, R. D. (2003). An examination of perceived behavioral control: Internal and external influences on intention. *Psychology & Marketing*, 20(7), 625–642. <https://doi.org/10.1002/mar.10089>
- Kumar, A., Luthra, S., Khandelwal, D. K., Mehta, R., Chaudhary, N., & Bhatia, S. (2017). Measuring and improving customer retention at authorised automobile workshops after free services. *Journal of Retailing and Consumer Services*, 39, 93–102. <https://doi.org/10.1016/j.jretconser.2017.07.007>
- Laguna, J. M. (2014). *Institutional politics, power constellations, and urban social sustainability: A comparative-historical analysis* [Doctoral dissertation]. The Florida State University.
- Lea, E., & Worsley, T. (2005). Australians' organic food beliefs, demographics and values. *British Food Journal*, 107(11), 855–869. <https://doi.org/10.1108/00070700510629797>
- Lee, K. (2010). The green purchase behavior of Hong Kong young consumers: The role of peer influence, local environmental involvement, and concrete environmental knowledge. *Journal of International Consumer Marketing*, 23(1), 21–44. <https://doi.org/10.1080/08961530.2011.524575>
- Lockie, S., Lyons, K., Lawrence, G., & Grice, J. (2004). Choosing organics: A path analysis of factors underlying the selection of organic food among Australian consumers. *Appetite*, 43(2), 135–146. <https://doi.org/10.1016/j.appet.2004.02.004>
- McEachern, M. G., & McClean, P. (2002). Organic purchasing motivations and attitudes: Are they ethical? *International Journal of Consumer Studies*, 26(2), 85–92. <https://doi.org/10.1046/j.1470-6431.2002.00199.x>
- McKenzie, D. J. (2005). Measuring inequality with asset indicators. *Journal of Population Economics*, 18(2), 229–260. <https://doi.org/10.1007/s00148-005-0224-7>
- Ministry of Industry and Trade. (2021). 80% người tiêu dùng sẵn sàng chi nhiều hơn cho sản phẩm xanh và sạch. <http://moit.gov.vn; testcong.moit.gov.vn>. <http://moit.gov.vn/tin-tuc/hoat-dong/80-nguoi-tieu-dung-san-sang-chi-nhieu-hon-cho-san-pham-xanh-2.html>
- Missimer, M., Robèrt, K.-H., & Broman, G. (2017). A strategic approach to social sustainability – part 1: Exploring the social system. *Journal of Cleaner Production*, 140, 32–41. <https://doi.org/10.1016/j.jclepro.2016.03.170>
- Mostafa, M. M. (2006). Antecedents of Egyptian consumers' green purchase intentions. *Journal of International Consumer Marketing*, 19(2), 97–126. [https://doi.org/10.1300/J046v19n02\\_06](https://doi.org/10.1300/J046v19n02_06)
- Oliver, R. L. (1997). *Satisfaction: A behavioral perspective on the consumer*. McGrawHill.
- O'Neal, P. W. (2007). *Motivation of health behavior*. Nova Publishers.
- Ottman, J. A. (1992). Industry's response to green consumerism. *Journal of Business Strategy*, 13(4), 3–7. <https://doi.org/10.1108/eb039498>
- Padel, S., Foster, C., & McEachern, M. (2005). Exploring the gap between attitudes and behaviour: Understanding why consumers buy or do not buy organic food. *British Food Journal*, 107(8), 606–625. <https://doi.org/10.1108/00070700510611002>
- Panda, T. K., Kumar, A., Jakhar, S., Luthra, S., Garza-Reyes, J. A., Kazancoglu, I., & Nayak, S. S. (2020). Social and environmental sustainability model on consumers' altruism, green purchase intention, green brand loyalty and evangelism. *Journal of Cleaner Production*, 243, 118575. <https://doi.org/10.1016/j.jclepro.2019.118575>
- Paul, J., Modi, A., & Patel, J. (2016). Predicting green product consumption using theory of planned behavior and reasoned action. *Journal of Retailing and Consumer Services*, 29, 123–134. <https://doi.org/10.1016/j.jretconser.2015.11.006>
- Pepperdine, S. (2001). Social indicators of rural community sustainability: An example from the Woody Yaloak catchment. In Rogers, M. F. & Coffins, Y. M. J. (Eds.), *Proceedings of the First National Conference on the Future of Australia's Country Towns Bendigo, Australia* (Vol. 29). Centre for Sustainable Regional Communities, La Trobe University.
- Pinto de Moura, A., Cunha, L. M., Castro-Cunha, M., & Costa Lima, R. (2012). A comparative evaluation of women's perceptions and importance of sustainability in fish consumption: An exploratory study among light consumers with different education levels. *Management of Environmental Quality: An International Journal*, 23(4), 451–461. <https://doi.org/10.1108/14777831211232263>
- Prakash, G., Choudhary, S., Kumar, A., Garza-Reyes, J. A., Khan, S. A. R., & Panda, T. K. (2019). Do altruistic and egoistic values influence consumers' attitudes and purchase intentions towards eco-friendly packaged products? An empirical investigation. *Journal of Retailing and Consumer Services*, 50, 163–169. <https://doi.org/10.1016/j.jretconser.2019.05.011>
- Riivits-Arkonsuo, I., & Leppiman, A. (2014). Online word-of-mouth on brands and experience Marketing. *Journal of Management & Change*, 32/33(1/2), 43–55.
- Romaniuk, J., & Nenycz-Thiel, M. (2013). Behavioral brand loyalty and consumer brand associations. *Journal of Business Research*, 66(1), 67–72. <https://doi.org/10.1016/j.jbusres.2011.07.024>
- Schifferstein, H. N. J., & Oude Ophuis, P. A. M. (1998). Health-related determinants of organic food consumption in the Netherlands. *Food Quality and Preference*, 9(3), 119–133. [https://doi.org/10.1016/S0950-3293\(97\)00044-X](https://doi.org/10.1016/S0950-3293(97)00044-X)
- Schwartz, S. H. (1977). Normative influences on Altruism<sup>11</sup>This work was supported by NSF grant SOC 72-05417. I am indebted to L. Berkowitz, R. Dienstbier, H. Schuman, R. Simmons, and R. Tessler for their thoughtful comments on an early draft of this chapter. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 10, pp. 221–279). Academic Press. [https://doi.org/10.1016/S0065-2601\(08\)60358-5](https://doi.org/10.1016/S0065-2601(08)60358-5)
- Shamdasani, P., Chon-Lin, G. O., & Richmond, D. (1993). Exploring green consumers in an oriental culture: Role of personal and marketing mix factors. *ACR North*

- American Advances*, NA–20. <https://www.acrwebsite.org/volumes/7504/volumes/v20/NA-20/full>
- Sreen, N., Purbey, S., & Sadarangani, P. (2018). Impact of culture, behavior and gender on green purchase intention. *Journal of Retailing and Consumer Services*, 41, 177–189. <https://doi.org/10.1016/j.jretconser.2017.12.002>
- Steg, L. (2008). Promoting household energy conservation. *Energy Policy*, 36(12), 4449–4453. <https://doi.org/10.1016/j.enpol.2008.09.027>
- Steg, L., Bolderdijk, J. W., Keizer, K., & Perlaviciute, G. (2014). An integrated framework for encouraging pro-environmental behaviour: The role of values, situational factors and goals. *Journal of Environmental Psychology*, 38, 104–115. <https://doi.org/10.1016/j.jenvp.2014.01.002>
- Stern, P. C., Dietz, T., & Kalof, L. (1993). Value orientations, gender, and environmental concern. *Environment and Behavior*, 25(5), 322–348. <https://doi.org/10.1177/0013916593255002>
- Stöckigt, G., Schiebener, J., & Brand, M. (2018). Providing sustainability information in shopping situations contributes to sustainable decision making: An empirical study with choice-based conjoint analyses. *Journal of Retailing and Consumer Services*, 43, 188–199. <https://doi.org/10.1016/j.jretconser.2018.03.018>
- Stone, G., Barnes, J. H., & Montgomery, C. (1995). Ecoscale: A scale for the measurement of environmentally responsible consumers. *Psychology & Marketing*, 12(7), 595–612. <https://doi.org/10.1002/mar.4220120704>
- Suchard, H. T., & Polonski, M. J. (1991, August). A theory of environmental buyer behaviour and its validity: The environmental action-behaviour model. In *AMA summer educators' conference proceedings* (Vol. 2, pp. 187–201). Chicago, IL: American Marketing Association.
- Tanner, C., & Kast, S. W. (2003). Promoting sustainable consumption: Determinants of green purchases by Swiss consumers. *Psychology & Marketing*, 20(10), 883–902. <https://doi.org/10.1002/mar.10101>
- Thorndike, A. N., Riis, J., & Levy, D. E. (2016). Social norms and financial incentives to promote employees' healthy food choices: A randomized controlled trial. *Preventive Medicine*, 86, 12–18. <https://doi.org/10.1016/j.ypmed.2016.01.017>
- Vermeir, I., & Verbeke, W. (2006). Sustainable food consumption: Exploring the consumer “attitude-behavioral intention” gap. *Journal of Agricultural and Environmental Ethics*, 19(2), 169–194. <https://doi.org/10.1007/s10806-005-5485-3>
- Wallin Andreassen, T., & Lindestad, B. (1998). Customer loyalty and complex services: The impact of corporate image on quality, customer satisfaction and loyalty for customers with varying degrees of service expertise. *International Journal of Service Industry Management*, 9(1), 7–23. <https://doi.org/10.1108/09564239810199923>
- Xu, X., Wang, S., & Yu, Y. (2020). Consumer's intention to purchase green furniture: Do health consciousness and environmental awareness matter? *Science of the Total Environment*, 704, 135275. <https://doi.org/10.1016/j.scitotenv.2019.135275>
- Yadav, R., & Pathak, G. S. (2017). Determinants of consumers' green purchase behavior in a developing nation: Applying and extending the theory of planned behavior. *Ecological Economics*, 134, 114–122. <https://doi.org/10.1016/j.ecolecon.2016.12.019>