Asia-Pacific Social Science Review

Volume 20 | Issue 1 Article 14

3-30-2020

Does Altruism Affect Purchase Intent of Green Products? A Moderated Mediation Analysis

Reynaldo Bautista Jr.
De La Salle University, Manila, Philippines

Rayan Dui
De La Salle University, Manila, Philippines

Luz Suplico Jeong
De La Salle University, Manila, Philippines, luz.suplico@dlsu.edu.ph

Miguel Paolo Paredes
De La Salle University, Manila, Philippines

Recommended Citation

Bautista, Reynaldo Jr.; Dui, Rayan; Jeong, Luz Suplico; and Paredes, Miguel Paolo (2020) "Does Altruism Affect Purchase Intent of Green Products? A Moderated Mediation Analysis," *Asia-Pacific Social Science Review*: Vol. 20: Iss. 1, Article 14.
DOI: https://doi.org/10.59588/2350-8329.1290
Available at: https://animorepository.dlsu.edu.ph/apssr/vol20/iss1/14

Asia-Pacific Social Science Review 20(1) 2020, pp. 159– 170

RESEARCH BRIEF

Does Altruism Affect Purchase Intent of Green Products? A Moderated Mediation Analysis

Reynaldo Bautista, Jr., Rayan Dui, Luz Suplico Jeong*, and Miguel Paolo Paredes
De La Salle University, Philippines
*luz.suplico@dlsu.edu.ph

Due to environmental problems, the issue of protecting the environment has led to researches on green consumption behavior (Semprebon, Mantovani, Demczuk, Maior, & Vilasanti, 2019). Green consumption has been defined as the tendency to preserve the environment in one's consumption behavior (Haws, Winterich, & Naylor, 2014). Studies on green consumption have considered individual characteristics, expertise, and environmental concern as antecedents to buy green products while another stream has considered social norms as determinants of buying green products (Semprebon et al., 2019). Green products are organic, environmentally-friendly, and minimally-packaged products (Khaola, Potiane, & Mokhethi, 2014). Green products have the following features: (1) It does not affect human and animal health, (2) does not harm the environment before and after usage, (3) consumes energy and other resources adequately, (4) eliminates the usage of materials which can harm the environment, and (5) should not cause unnecessary waste as a result of excessive packaging and short life cycle (Onurlubas, 2018).

Studies on green consumption imply that patronizing green products are effective in solving the negative impact of consumption on the environment (Bautista, 2019; Yadav & Pathak, 2017). The value-belief-norm (VBN) theory has been used to explain pro-social behaviors in the context of pro-environmentalism (Stern, 2000). It has been utilized in such diverse areas, such as recycling, environmental citizenships, and national parks (Han & Stoel, 2017. In ethical consumption research, the VBN posits that the driver for consumer ethical practices lies in the conjunction of conditions, beliefs, and personal norms that motivate people to behave in ways consistent with ethical consumption behavior (Jung, Kim, & Oh, 2014). Empirical studies support the claim that VBN is a strong predictor of ethical consumption (Stern, Dietz, Abel, Guagnano, & Kalof, 1999).

Studies on ethical or green consumption have influenced consumers and businesses to be aware that consumption will impact the environment (Bautista, 2019). Thus, green consumption has emerged as a topic to be investigated (Semprebon, 2019). The study of green consumption among individuals, although a global concern, is still relatively new, especially within the context of developing countries (Yadav, Khandelwal, & Tripathi, 2017). Most studies about consumers' green purchase intention have been done in the context of developed nations (Khare, 2015; Yadav & Pathak, 2017; Yadav et al., 2017). This study seeks to understand consumers' intent to buy green products in the context of a developing country. The theory of planned behavior (TPB) framework has been used to analyze the consumers' behavior in buying green products (Emekci, 2019; Kareklas, Carlson, & Muehling, 2014; Yadav & Pathak, 2017; Yazdanpanah & Forouzani, 2015). This is because the TPB has been a valid framework in studying human behavior, especially in the field of green consumption (Yadav & Pathak, 2017). Studies that used the TBP as a framework has extended the model to include

constructs such as perceived value, egoistic factors, moral attitude, health consciousness, environmental concern, moral norm, and self-identity (Kareklas et al., 2014; Onurlubas, 2018; Yadav & Pathak, 2017; Yazdanpanah & Forouzani, 2015). However, there have been few studies using the TPB framework that include (1) green values, (2) altruism as a mediating variable, and (3) willingness to pay as a moderating variable in the context of a developing country like the Philippines.

The TPB has been extended to include the following in this study: (1) green values as antecedent to attitude towards green products (GV), (2) altruism as a moderating variable between attitude towards green products and intent to buy green products (ALT), (3) willingness to pay for green products (WTP) as a moderating variable between green values and attitude towards green products, and (4) willingness to pay (WTP) for green products as a moderating variable between attitude toward green products and intent to buy green products. The value belief norm theory has also been discussed as it can explain green behavior.

Theoretical Framework & Review of Literature

Theory of Planned Behavior

Proposed by Icek Ajzen (1991), the TPB states that human behavior is affected by three factors: the belief about possible outcomes of the behavior (behavioral beliefs), beliefs about the perception of others regarding the behavior (normative beliefs), and the belief of the individual about the factors that may help or stop the performance of the behavior (control beliefs). Behavioral beliefs can have a positive or negative attitude towards the behavior, whereas normative beliefs can result in a subjective norm. Control beliefs can lead to perceived behavioral control. All these factors can lead to an intention to perform a behavior. Figure 1 shows the TPB.

Attitude (ATT)

Attitudes to purchase green products have been posited to be positively related to the intention to purchase (Ferraz, Buhamra, Laroche, & Veloso, 2017). Studies show that the more favorable attitudes were towards an object, the greater the behavior intent as supported by the theory of reasoned action (Ferraz et al., 2017). As attitude can be influenced by environmental concerns, attitude can predict the intent to buy green products (Kai & Haokai, 2016). These concerns can be exhibited through consumers' attitudes towards green products (Maichum, Parichatnon, & Peng, 2016). It is further suggested that environmental concerns are essential in predicting environmental attitudes, which could influence the purchase of eco-friendly products (Yadav & Pathak, 2016). This implies that buyers who have higher levels of environmental awareness will have a more positive attitude towards purchasing green products.

Subjective Norm (SN)

Subjective norms refer to the pressure of whether to perform a behavior or otherwise perceived from the

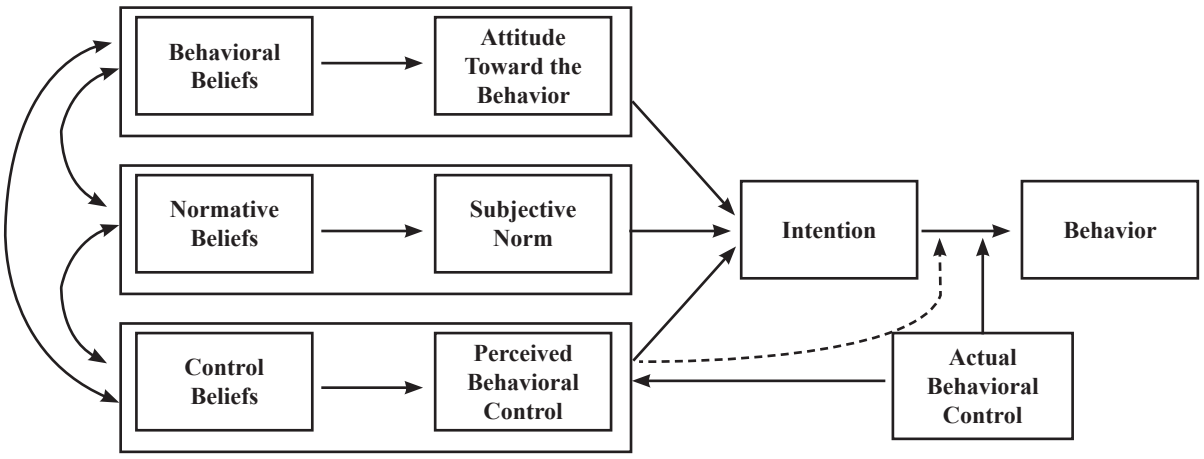

Figure 1. Theory of planned behavior (Ajzen, 1991).

social ties of an individual. This belief presents that an individual's intention to perform an act is influenced by their motivation to comply with social pressures from significant persons or groups. Subjective norms can be categorized into two aspects: that of social norms and descriptive norms. Social norms refer to the perception of other people's opinions on the individual's behavior. Descriptive norms, on the other hand, refer to the activities and behavior of other people as observed by an individual. Descriptive norms differ, in a way, from social norms wherein the individual may not have any close relation to the activities of these other people (celebrities, endorsers, among others).

The significance of the impact of subjective norms has been explored in its effect on forming an intention to purchase green food (Ham, Stanic, & Freimann, 2015). This study had the following findings using primary household shoppers in Southeast Europe as respondents: (1) descriptive norms predicted green food purchase behavior and (2) social and descriptive norms increased the variance explained in intention to buy green food (Ham et al., 2015).

Perceived Behavioral Control (PBC)

Certain factors may facilitate or impede the intention to buy green products such as time, money, and opportunity. If the attitude and subjective norms are positive in accomplishing the behavior and if the perceived behavioral control is large, there is a higher chance that the behavior will be done. Perceived behavioral control refers to an individual's perceived ease or difficulty in performing a particular behavior (Ajzen, 1991). This perception of behavioral control may be driven by the individual's impression of his or her ability and motivation to perform a particular behavior. If an individual has enough actual control over the behavior, there is a higher chance that the individual will perform the behavior when there is a chance to do so (Ajzen, 1991).

Perceived behavioral control, along with attitude and subjective norm, has been found to have a significant positive influence on the purchase of green products (Maichum et al., 2016). Maichum et al. (2016) applied the extended theory of planned behavior in investigating the purchase intention of green products in the context of Thai consumers. They hypothesized that perceived behavioral control was positively associated with purchase intention for green products (Maichum et al., 2016). Their results supported this hypothesis with PBC following attitude as the strongest predictor of purchase intention among Thai consumers.

Based on this discussion, the following hypotheses can be proposed:

H1. The consumer's attitude towards green products positively influences the intention to buy green products.

Value Belief Norm

The effect of customer orientation towards green products has been explored in different studies (Ayoun, Abdellatif, Cheikh, & Ghallab, 2015) along with attitudes towards green products (Khaola et al., 2014). There is a significant correlation between consumption attitude and consumption behaviors (Arslan, Yilmaz, & Aksoy, 2012). Attitude can predict buying behaviors (Zhao, Gao, Wu, Wang, & Zhu, 2014). Thus, to understand its impact on environmental sustainability, it is necessary for researchers to observe motives and values on which those attitudes are based (Kanchanapibul, Lacka, Wang, & Chan, 2014). Thus, we added the VBN model to provide a better understanding of this. Many studies have exhibited how sustainable education coming from various sectors may influence attitudes towards sustainable consumption (Zsoka, Szerenyi, Szechy, & Kocsis, 2013). Consumers with a positive or high attitude towards environmental concerns are sequentially more likely to be predisposed to having a higher intention to buy green products (Kim, 2011, as cited by Onurlabas, 2018).

The first element of the VBN theory is based on a person's values, which are stable and will not probably change (Stern et al., 1999). This model is an extended model of norm activation theory (NAT) developed by Schwartz (1977). The model then primarily focuses on the relationship of personal values, moral norms, and pro-environmental behavior that is established by social motivation (Akitsu & Ishihara, 2018). Stern et al. (1999) modified this model to develop a causal model in which pro-environmental behavior is predicted by personal norms. Stern et al. (1999), who was the proponent of this theoretical framework, further classified the values component to three separate domains, which he categorized into biospheric, altruistic, and egoistic. These values specifically supported environmentalism behavior. The biospheric

values originally described as traditional values and openness to change in the original model of Stern et al. (1999). Stern (2000) decided to incorporate biospheric values in a new model to have a better understanding of a person's view of the natural environment. The altruistic values, on the other hand, are concerned with the well-being of other people (Stern, 2000). Stern et al. (1999) suggested that altruistic values were important in the sphere of social movements. Lastly, the egoistic values were also concerned with environmental concern (Stern et al., 1999). Thus, the VBN model proposes a possible linkage between the individual (biospheric, altruistic, egoistic) values, environmental awareness on the consequences of this action (Schwartz, 1977, as cited by Dursun, Tumer, & Tuger, 2017), and ascription of environmental responsibility and personal norms (Stern, 2000).

The TPB and VBN are two theoretical frameworks commonly used to analyze the causal relationships among beliefs, norms, attitudes, and behaviors. The TPB model focuses more on external influences or subjective norms, whereas the VBN model focuses on internal normative factors or personal norms, as stated by the research of Anable, Lane, and Kelay (2006). The TPB model explains how behavioral intentions are predicted by perceived control, whereas the VBN states the benefit to others (altruistic behavior) over self-interest. Further, the TPB explains the personal usefulness of a given behavior, including the intention, which is predicted by perceived control over behavior, whereas the VBN emphasizes the benefit to others (altruism) over self-interest. Stern (2000) added that personal moral motives, such as personal values, beliefs, and norms, could inspire an individual to exhibit pro-environmental behaviors.

Inclusion of New Constructs

Altruism (ALT)

Altruism has been defined as a desire to benefit others for their sake rather one-self's (Batson, 2011). Altruistic attitudes have been confirmed to have a significant role in cause-related marketing (Nguyen, 2015). This posits that altruism may be regarded as a variable that affects attitude towards green products and consumer behavior (Kozlowski & Sobotko, 2017). Part of consumers' perception of what they purchase or possess is that these are representations of themselves. These possessions, which individuals currently own or are yet to own, communicate their self-perception to others. Today's consumers are driven by both egoistic and altruistic motivations that may affect their attitude towards green products and their intent to buy it (Birch, Memery, & Kanakaratne, 2018).

Legendre and Coderre (2018) analyzed the impact of two determinants of purchase intention in food labels—altruistic attribution and brand equity. Their findings showed that altruistic attribution on food labeling has a direct impact on purchase intention. In the context of food labels, the altruistic attribution communicated through labels has had various effects. Food labels that communicate altruistic attributes such as "free-range," "animal welfare," and "organic," generally have positive effects on consumer attitudes on the safety of food products, animal welfare, responsible farming, and ultimately on the purchase of green products (Legendre & Coderre, 2018).

It has been suggested that altruism can explain the relationship between attitude towards green products and intent to buy green products. Ryan (2014) hypothesized that altruism predicted the intent to buy green products. Although this was partially supported, it was not statistically significant. However, this implies that altruism may affect consumer attitudes towards green products and purchase intent.

This leads to the following hypothesis:

H2: Altruism mediates the relationship between attitude towards green products and intent to buy green products.

Green Values (GV)

The individuals' preference for green consumption is affected by consumer's values regarding pro-environmentalism or "green values" (Nascimento, Barboza, & Filho, 2019). Green values have predicted the consumer attitude and behavior towards green products (Nascimento et al., 2019). Green values represent an individual's principles regarding the importance of pro-environmentalism and sustainability. According to Nascimento et al. (2019) green values explained the individuals' motivation to engage in green consumption. The individual's green belief or value has encouraged him or her to have a positive attitude towards green products and, consequently, to buy green products (Nascimento et al., 2019).

Chen and Chang (2012) pointed out that green consumers assess a product or service through their green value system. This green value system can be a part of the consumers' consumption values (Sheth, Newman, & Gross, 1991). Sheth et al. (1991) explained that the consumption values include functional value, social value, conditional value, epistemic value and their beliefs that will ultimately influence their buying behavior. Individuals who have personal values of "benevolence and universalism" tend to focus on the "functional" value of green products (Candan & Seda, 2013).

Haws et al. (2014) stressed that stronger green values would result in an increasing preference for green products. Wu and Chen (2014) supported this finding when they suggested that green values can improve a customer's attitude toward green products. Some common assessments that were done for green values were the consumers' immeasurable value, their expectations, environmental concern, environmentally friendly, and environmental benefits (Chen & Chang, 2012). Green value is positively related with a favorable attitude towards green products and, consequently, intention to purchase green products (Rizwan et al., 2013; Chen & Chang, 2012; Chen, Chen, Chen, & Hsieh, 2012). Thus, the following hypothesis is proposed:

H3: Green values among consumers positively influence the consumers' attitude towards green products.

Green Values, Willingness to Pay and Attitude Towards Green Products

WTP is defined as the maximum amount a buyer is willing to give up to purchase any product or service presented (Acquisti & Spiekermann, 2011). Traditionally, green products are costlier than their alternatives, and consumers are not willing to settle on the utility of a traditional product (Chen & Chang, 2012). The price for these products is priced higher as the high cost is incurred in the process (from material to certification) of green products (Ling, 2013). Consumers who have green values are willing to pay extra or more for green products and services (Shen, 2012). Kang, Stein, Heo, and Lee (2012) supported this finding in their study that showed that consumers were willing to pay higher prices for green hotels.

Attitude Towards Green Products, Willingness to Pay, and Purchase Intent

Lanzini, Testa, and Iraldo (2016) emphasized that willingness to pay among consumers to purchase green products was one of the key driving factors for organizations to implement eco-friendliness for their products and services. This implies that willingness to pay can influence purchase intent. Thus, it is imperative for marketers to pay attention to understanding perceptions of consumers towards environmental concerns and the consumers' willingness to pay for green products.

WTP is the result of a trade-off between certain benefits and costs, which may affect purchase intentions. According to Ayadi and Lapeyre (2014), the result of this trade-off among consumers is that they are likely to assess both the positive and negative aspects of purchasing green products. Ayadi and Lapeyre (2014) investigated three potential factors that can have an impact. These were ecological perceived benefits, financial perceived risk, and internal reference prices. These factors may affect price-sensitive consumers, especially those from the lower-income class. Thus, there is a need for marketers to devise strategies to overcome these price barriers. Consumers are sensitive to all information contained in price offers. Having price frames may influence their perceptions of the costs of the transaction and their intention to purchase green products (Gamliel & Herstein, 2007).

Han and Stoel (2017) suggested that moral norms, self-identity, and environmental consciousness are values that display a good predictive ability to socially responsible consumer behavior or green consumption behavior. However, individual green consumption values might be different from each other (Haw et al., 2014). This is because not everyone will buy green products because of their effectiveness or costs-related factors (Luchs, Naylor, Irwin, & Raghunathan, 2010). The purchase of green products may be affected by a certain value, by more than one value, or by all values (Kao & Tu, 2015).

Manaktola and Jauhari (2007) found that although most of the Indian hotel guests preferred hotels that had green practices, they were not willing to pay extra for the green initiatives. Choi and Parsa (2007) pointed out that most of the consumers are tentative towards paying a premium for green products. Pedrini and Ferri (2014) found that the most responsible consumers were older, well-educated, and wealthy and, thus, it may be

implied that not all consumers were willing to pay for green products.

The following hypotheses are proposed:

H4. Willingness to pay can moderate the relationship between green values and attitude towards green products.

H5. Willingness to pay can moderate the relationship between attitude towards green products and intention to buy green products.

The review of related literature outlines the different variables in this research. Green values can influence attitudes towards green products. Likewise, attitudes towards green products can influence the purchase intent of green products. Altruism can mediate the relationship between attitude towards green products and intention to buy green products. Willingness to pay can moderate the relationship between green values and attitude towards green products. Similarly, willingness to pay can moderate the relationship between attitude towards green products and purchase intent.

Conceptual Framework

Figure 2 shows the study's conceptual framework.

Methods

The study's questionnaire consisted of two parts: a) demographic variables and b) close-ended questions that measured the respondents' agreement to the study's variables using a 5 point Likert scale, where 5 indicates a positive view (Strongly Agree) and 1 represents a negative view (Strongly Disagree). It was pilot-tested among 15 college students. Revisions were made after the pilot testing to improve the questionnaire (Churchill & Iacobucci, 2002).

A self-administered questionnaire was used to collect the data from four universities in Metro Manila. The respondents were comprised of college students (18–23 years). Convenience sampling was used. The researchers went to four different campuses to request college students to fill out the surveys. College students were chosen as the respondents because they have shown more concern about the environment than other age groups (Nielsen Global Research, 2014).

Statistical Analysis

To test the model of green purchase intention, t-tests, correlation, and path analysis were conducted using SMART PLS 3.0 (Ringle, Wende, & Becker, 2015).

Results

Cronbach's alpha was used to ensure scale reliability and internal consistency (Cronbach, 1951). According to Peterson (1994), an adequate Cronbach's alpha value should be at least 0.70. Robinson, Shaver, and Wrightsman (1991) that Cronbach's alpha value of at least 0.60 is desirable in social psychology research. Table 1 shows that the constructs exhibit internal consistency and reliability because the values are all higher than the set target of > 0.70 (Ketchen, 2013).

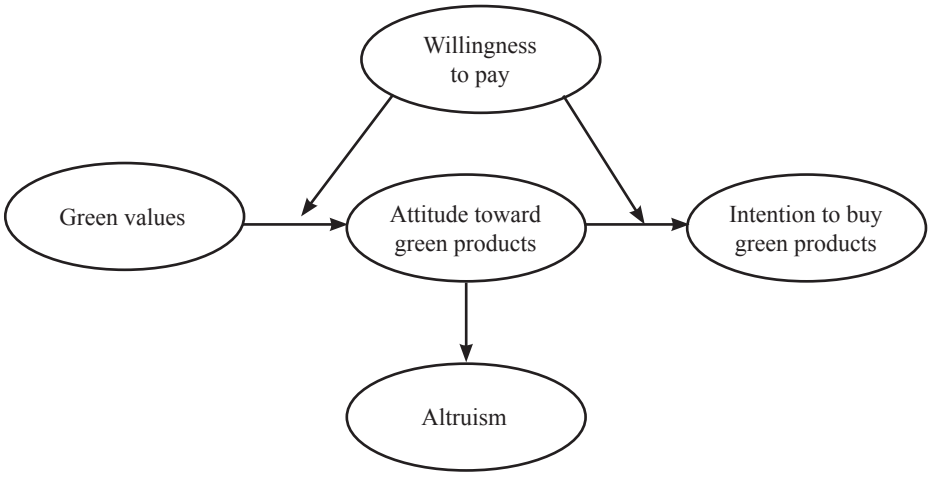

Figure 2. Proposed conceptual framework.

Item loading is the relationship between the item (question-statement) and the construct. The loading should be equal to or greater than 0.50 (Kock, 2015). Table 1 shows that all the item loadings are now above .50. This serves as validation parameters of confirmatory factor analysis (Kock, 2015).

To test for discriminant validity, heterotrait-monotrait ratio of correlations (HTMT) is used. The HTMT values that are below 0.90 imply that discriminant validity has been established between two reflective constructs (Henseler, Ringle, & Sarstedt, 2015). Table 2 shows that all the correlations are below 0.90.

Table 1

Construct Reliability, Validity, and Loadings

	ALT	ATT	GV	INT	WTP	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (EVA)
Altruism1	0.718					0.760	0.761	0.893	0.510
Altruism2	0.706								
Altruism4	0.734								
Altruism7	0.710								
Altruism9	0.702								
ArtGreenbuying1		0.767				0.808	0.815	0.873	0.632
ArtGreenbuying2		0.783							
ArtGreenbuying3		0.824							
ArtGreenbuying4		0.806							
Greenvalue1			0.736						
Greenvalue2			0.719						
Greenvalue3			0.713						
Greenvalue4			0.774						
Greenvalue5			0.719						
Greenvalue6			0.723						
Intentionbuy1				0.846		0.612	0.613	0.828	0.707
Intentionbuy2				0.836					
WillingnessPay1					0.849	0.819	0.822	0.892	0.734
WillingnessPay2					0.881				
WillingnessPay3					0.839				

Table 2

Discriminant Validity Using Heterotrait-Monotrait Ratio of Correlations (HTMT)

	ALT	ATT	GV	INT	WTP
ALT	0.480				
ATT	0.451	0.724			
GV	0.564	0.751	0.703		
INT	0.511	0.534	0.532	0.689	
WTP	0.185	0.376	0.253	0.240	0.132

Given the parameters of PLS-SEM, a blindfolding procedure was conducted to assess the predictive capability of the model (Chin,1998). Cross-validated redundancy (Q^2) estimates latent construct; therefore, it is critical in this study. A Q^2 result that is higher than 0 indicates that there is a predictive relevance in overall and generation-based models (Fornell & Cha, 1994). R squared (R^2) values for altruism, attitude, green values, and intention are found to be substantial and moderate (Cohen, 1988). The summary is shown in Table 3. It can be noted that attitude has the highest R^2 at 0.406, followed by intention at 0.366. In terms of Q^2, intention has the highest value at 0.247, followed by attitude at 0.240.

Table 3

R^2 and Cross-Validated Redundancy

	R^2	CV-Comm R^2
ALT	0.144	0.069
ATT	0.406	0.240
GV	0.196	0.097
INT	0.366	0.247

Finally, the SRMR (standardized root mean square residual) was analyzed. An SRMR value of less than 0.10 (Hu & Bentler, 1998) is acceptable. The actual SRMR is 0.084, which meets the cut-off. Another measure is the normed fit index (NFI), which results in values between 0 and 1. The closer the NFI to 1, the better the fit. The computed NFI value is 0.761, which is close to 1.

The hypothesized relationships among the constructs were analyzed using SMART PLS 3.0. Except for H5, the following hypotheses were supported (Table 4).

H1. The consumer's attitude towards green products positively influences the intention to buy green products.

H2: Altruism mediates the relationship between attitude towards green products and intent to buy green products.

H3: Green values among consumers positively influence the consumers' attitude towards green products.

H4. Willingness to pay can moderate the relationship between green values and attitude towards green products.

H5. Willingness to pay can moderate the relationship between attitude towards green products and intent to buy green products.

The study's results showed the following significant relationships:

1. ALT (altruism) mediates the relationship between ATT (attitude towards green product) and INT (intention to purchase green products) at $\alpha = 0.05$.

   This supports previous studies that show that altruism can influence the relationship between attitude towards green products and consumer behavior (Birch et al., 2018; Kozlowski & Sobotko, 2017; Legendre & Coderre, 2018). Unlike Ryan's (2014year) study, which showed that altruism was not statistically significant in predicting the intent to buy green products, these results showed that altruism is statistically significant in explaining the relationship between attitude and intent. This implies that altruism can affect consumer attitudes towards green products and purchase intent. Marketers can use altruism in their promotional materials to encourage the purchase of green products.

2. WTP (willingness to pay) moderates the relationship between GV (green values) and ATT at $\alpha = 0.05$. On the other hand, WTP does not moderate the relationship between ATT and INT.

   This study suggests that although WTP can impact ATT, WTP does not increase the chance of consumers to purchase green products. This supports studies that showed that consumers, who have green values, have a favorable attitude towards green products and services (Kang et al., 2012; Shen, 2012). However, they are not willing to pay extra for green products that are perceived to have higher prices than regular products (Chen & Chang, 2012; Ling, 2013; Manaktola & Jauhari, 2007). It also supports studies that showed that most of the consumers are tentative towards paying a premium for green products (Choi & Parsa, 2007). This tentativeness is manifested in the inconsistent trend of purchasing green products (Ha & Janda, 2012).

Table 4

Path Coefficients

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
WTPXATT → INT	–0.009	–0.009	0.014	0.63	0.530
WTPXGV → ATT	–0.069	–0.068	0.014	4.85	0.000
ATT → ALT → INT	0.047	0.048	0.009	5.11	0.000
ALT → INT	0.123	0.124	0.022	5.47	0.000
ATT → ALT	0.386	0.387	0.024	16.11	0.000
ATT → INT	0.355	0.354	0.026	13.62	0.000
GV → ATT	0.474	0.475	0.022	21.57	0.000
WTP → ATT	0.227	0.226	0.021	10.58	0.000
WTP → GV	0.443	0.443	0.021	20.70	0.000

The most responsible consumers who were willing to pay extra for green products were older, well-educated, and wealthy (Pedrini & Ferri, 2014). In contrast to this segment, the respondents in this study are young college students who rely on their parents for their allowances. The college students are not financially stable to afford green products (Bautista, 2019).

Price is still an important consideration for those who will buy green products. To overcome price barriers, especially for young consumers who are still in school, marketers can find ways to make green products affordable through discounts and longer payment terms.

3. Green values influenced attitude towards green products.

This validates studies that showed that attitude towards green products is influenced by green values (Candan & Seda, 2013; Chen & Chang, 2012; Haws et al., 2014; Nascimento et al., 2019; Rizwan et al., 2013; Wu & Chen, 2014). This implies that consumers who have green values are most likely to have favorable attitudes towards green products. Marketers of green products should target this segment.

Conclusion

Most studies show that TPB focuses on intention to buy green products (Bautista, 2019). This study used the TPB and the VBN to include GV as an antecedent to attitude towards green products. Findings show that GV is a predictor of a favorable attitude towards green products and, ultimately, intent to purchase green products. Altruism, as an additional construct, mediated the relationship between attitude towards green products and intent to purchase green products. Thus, marketers can use altruism in their promotional strategies to increase the purchase of green products. WTP moderated the relationship between GV and ATT, but it did not moderate the relationship between ATT and INT. This implies that there are still price barriers for price-sensitive consumers, such as college students in buying green products. Marketers can use strategies to make green products more affordable to this segment.

This study contributes to the few types of research on green consumption in the context of a developing country. This can be replicated in other ASEAN countries. The results can be used to encourage green consumption, which is part of the United Nations

Millennium Development Goals (Marrakech Process Secretariat: UNDESA and UNEP, 2010).

The respondents in this study were limited to college students. Future studies can target an older, educated, and wealthier segment as this may yield interesting results.

Declaration of ownership

This research is our original work.

Conflict of interest

None

Ethical clearance

This study was approved by the institution.

References

Acquisti, A., & Spiekerman, S. (2011). Do interruptions pay off? Effects of interruptive advertisements on consumers' willingness to pay. *Journal of Interactive Marketing, 25*(4), 226–240.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211.

Akitsu, Y., & Ishihara, K. (2018). An integrated model approach: Exploring the energy literacy and values of lower secondary students in Japan. *International Journal of Educational Methodology*, *4*(3), 161–186.

Anable, J., Lane, B., & Kelay, T. (2006). *An evidence-based review of public attitudes to climate change and transport behavior* (Final report). Department for Transport.

Arslan, T., Yilmaz, V., & Aksoy, H. K. (2012). Structural equation model for environmentally- conscious purchasing behavior. *International Journal of Environmental Research*, *6*(1), 323–334.

Ayadi, N., & Lapeyre, A. (2014). Consumer purchase intentions for green products: Mediating role of WTP and moderating effects of framing. *Journal of Marketing Communications*, 10.1080/13527266.2014.888574

Ayoun, S., Abdellatif, T., Cheikh, A., & Ghallab, N. (2015). Purchase intention of green product: An approach-based customer orientation. *SSRN Electronic Journal*. 10.2139/ssrn.2583517

Bautista, R., Jr. (2019). Green behavior and generation: A multi-group analysis using structural equation modeling. *Asia-Pacific Social Science Review, 19*(1), 1–16.

Batson, C. D. (2011). *Altruism in humans*. Oxford University Press.

Birch, D., Memery, J., & Kanakaratne, M. (2018). The mindful consumer: Balancing egoistic and altruistic motivations to purchase local food. *Journal of Retailing and Consumer Services*, *40*, 221–228.

Candan, B., & Seda, Y. (2013). Investigating the relationship between consumption values and personal values of green product buyers. *International Journal of Economics and Management Sciences, 2*(12), 29–40.

Chen, Y. S., & Chang, C. H. (2012). Enhance green purchase intentions: The roles of green perceived value, green perceived risk, and green trust. *Management Decision*, *50*(3), 502–520.

Chen, H. S, Chen, C. Y., Chen, H. K., & Hsieh, T. (2012). A study of relationships among green consumption attitude, perceived risk, perceived value toward hydrogen-electric motorcycle purchase intention. *AASRI Procedia*, *2*, 163–168.

Chin, W. W. (1998). The partial least squares approach for structural equation modeling. In G. A. Marcoulides (Ed.), *Methodology for business and management. Modern methods for business research* (pp. 295–336). Lawrence Erlbaum Associates Publishers.

Choi, G., & Parsa, H. G. (2007). Green practices II: Measuring restaurant managers' psychological attributes and their willingness to charge for the green practices. *Journal of Foodservice Business Research, 9*(4), 41–63.

Churchill, G. A., Jr., & Iacobucci, D. (2002). *Marketing research: Methodological foundations*. The Harcourt College Publishers.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Lawrence Erlbaum Associates.

Cronbach, L. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika, 16*(3), 297–335.

Dursun, I., Tumer, E., & Tuger, A. (2017). *Application of value-belief-norm theory to responsible post-consumption behaviors, recycling and reuse*. Paper presented at the International Congress of the New Approaches and Technologies for Sustainable Development, held in Turkey, September 21-24.

Emekci, S. (2019). Green consumption behaviors of consumers within the scope of TPB. *Journal of Consumer Marketing, 36*(3), 410–417. 10.1108/JCM-05-2018-2694

Ferraz, S., Buhamra, C., Laroche, M., & Veloso, A. (2017). Green products: A cross-cultural study of attitude, intention and purchase behavior. *Revista de Administração Mackenzie*, *18*(5), 12–38. 10.1590/1678 69712017/administracao.v18n5p12-38

Fornell, C., & Cha, J. (1994). Partial least squares. In R. P. Bagozzi (Ed.), *Advanced methods of marketing research* (pp. 52–78). Blackwell Publishers.

Gamliel, E., & Herstein, R. (2007). The effect of framing on willingness to buy private brands.

Journal of Consumer Marketing, *24*(6), 334–339. 10.1108/07363760710822918

Ha, H. Y., & Janda, S. (2012). Predicting consumer intentions to purchase energy-efficient products. *Journal of Consumer Marketing, 29*(7), 461–469.

Ham, M., Stanic, M., & Freimann, A. (2015). The role of subjective norms in forming the intention to purchase green food. *Economic Research-Ekonomska Istraživanja*, *28*(1), 738–748. 10.1080/1331677X.2015.1083875

Han, T. I., & Stoel, L. (2017), Explaining socially responsible consumer behavior: A meta-analytic review of the theory of planned behavior. *Journal of International Consumer Marketing*, *29*(2), 91–103.

Haws, K. L., Winterich, K. P., & Naylor, R. W. (2014). Seeing the world through GREEN-tinted glasses: Green consumption values and responses to environmentally friendly products. *Journal of Consumer Psychology*, *24*(3), 336–354.

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*(1), 115–135.

Hu, L., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: Sensitivity to under-parameterized model misspecification. *Methods*, *3*(4), 424–453.

Jung, H., Kim, H., & Oh. K. (2014). Green leather for ethical consumers in China and Korea: Facilitating ethical consumption with value–belief–attitude logic. *Journal of Business Ethics*, 135(3), 1–20. 10.1007/s10551-014-2475-2

Kai, C., & Haokai, L. (2016). Factors affecting consumers' green commuting. *Eurasia Journal of Mathematics, Science and Technology Education*, *12*(3), 527–538.

Kanchanapibul, M., Lacka, E., Wang, X., & Chan, H. (2014). An empirical investigation of green purchase behavior among the young generation. *Journal of Cleaner Production, 66*(1), 528–536.

Kang, K., Stein, L., Heo, C. Y., & Lee, S. (2012). Consumers' willingness to pay for green initiatives of the hotel industry. *International Journal of Hospitality Management, 31*(2), 564–572.

Kao, T. F., & Tu, Y. C. (2015). Effect of green consumption values on behavior: The influence of consumption attitude. *International Journal of Arts & Sciences, 8*(8), 119–130.

Kareklas, I., Carlson, J., & Muehling, D. (2014). I eat organic for my benefit and yours: Egoistic and altruistic considerations for purchasing organic food and their implications for advertising strategists. *Journal of Advertising*, 43(1), 18-32. 10.1080/00913367.2013.799450

Ketchen, D. (2013). A primer on partial least squares structural equation modeling. *Long Range Planning, 46*(1–2), 184–185.

Khaola, P., Potiane, B., & Mokhethi, M. (2014). Environmental concern, attitude towards green products and green purchase intentions of consumers in Lesotho. *Ethiopian Journal of Environmental Studies & Management, 7*(4), 361–370.

Khare, A. (2015). Antecedents to green buying behavior: A study on consumers in an emerging economy. *Marketing Intelligence & Planning, 33*(3), 309–329. 10.1108/MIP-05-2014-0083

Kock, N. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach, *International Journal of e-Collaboration, 11*(4), 1–10. 10.4018/ijec.2015100101

Kozlowski, W., & Sobotko, E. (2017). Role of altruistic attitudes in cause-related marketing. *Business*, *51*(2), 123-131. 10.17951/h.2017.51.2.123

Lanzini, P., Testa, F., & Iraldo, F. (2016). Factors affecting drivers' willingness to pay for biofuels: The case of Italy. *Journal of Cleaner Production, 112*(4), 2684–2692.

Legendre, S., & Coderre, F. (2018). The impact of altruistic attribution and brand equity in food label campaigns. *Journal of Product & Brand Management, 27*(6), 634–646. 10.1108/JPBM-12-2016-1381

Ling, C. Y. (2013). Consumers purchase intention of green products: An investigation of the drivers and moderating variable. *Elixir Marketing Management, 57*(A), 14503–14509.

Luchs, M., Naylor, R., Irwin, J., & Raghunathan, R. (2010). The sustainability liability: Potential negative effects of ethicality on product preference. *Journal of Marketing*, *74*(5), 18–31.

Manaktola, K., & Jauhari, V. (2007). Exploring consumer attitudes and behavior towards green practices in the lodging industry in India. *International Journal of Contemporary Hospitality Management, 19*(5), 364–377.

Maichum, K., Parichatnon, S., & Peng, K. C. (2016). Application of the extended theory of planned behavior model to investigate the purchase intention of green products among Thai consumers. *Sustainability, 8*(10), 1-20.

Marrakech Process Secretariat: UNDESA and UNEP. (2010). *Paving the way to sustainable consumption and production*. http://www.unep.fr/scp/marrakech/pdf/Marrakech%20Process%20Progress%20Report%20FINAL.pdf

Nascimento, B., Barboza, L., & Filho, E. J. (2019). Green consumption values in mobile apps. *Journal of International Consumer Marketing, 31*(1), 66–83. 10.1080/08961530.2018.1490052

Nguyen, T. (2015). Altruistic or opportunistic: Consumer perceptions of cause-related products. *Academy of Marketing Studies Journal, 19*(1), 177–196.

Nielsen Global Research. (2014). *Doing well by doing good*. https://www.nielsen.com/content/dam/nielsenglobal/

apac/docs/reports/2014/Nielsen-Global-Corporate-SocialResponsibility-Report-June-2014.pdf

Onurlubas, E. (2018). The mediating role of environmental attitude on the impact of environmental concern on green product purchasing intention. *Emerging Markets Journal*, *8*(2), 5–18.

Pedrini, M., & Ferri, L. M. (2014). Socio-demographical antecedents of responsible consumerism propensity. *International Journal of Consumer Studie*s, *38*(2), 127–138.

Peterson, R. A. (1994). A meta-analysis of Cronbach's coefficient alpha. *Journal of Consumer Research 21*(2), 381–391.

Ringle, C. M., Wende, S., & Becker, J. (2015). *SmartPLS 3*. SmartPLS. http://www.smartpls.com.

Rizwan, M., Aslam, A., Rahman, M., Ahmad, N., Sarwar, U., & Asghar, T. (2013). Impact of green marketing on purchase intention: An empirical study from Pakistan. *Asian Journal of Empirical Research, Asian Economic and Social Society, 3*(2), 87–100.

Robinson, J. P., Shaver, P. R., & Wrightsman, L. S. (1991). Criteria for scale selection and evaluation. In J. P. Robinson, P. R. Shaver, & L. S. Wrightsman (Eds.), *Measures of personality and social psychological attitudes* (pp. 1–15). Academic Press.

Ryan, T. (2014). *The role of beliefs in purchase decisions: A look at green purchase behavior and altruism*. [Unpublished doctoral dissertation]. University of Minnesota.

Schwartz, S. H. (1977). Normative influences on altruism. *Advances in Experimental Social Psychology*, *10*, 221–279.

Semprebon, E., Mantovani, D., Demczuk, R., Maior, C. S., & Vilasanti, V. (2019). Green consumption: A network analysis in marketing. *Marketing Intelligence & Planning, 37*(1), 18–32. 10.1108/MIP-12-2017-0352

Shen, J. (2012). Understanding the determinants of consumers' willingness to pay for eco-labeled products: An empirical analysis of the China environmental label. *Journal of Service Science and Management, 5*, 87–94.

Sheth, J., Newman, B. I., & Gross, B. (1991). *Consumption values and market choice.* South-Western Publishing.

Stern, P. C., Dietz, T., Abel, T., Guagnano, G. A., & Kalof, L. (1999). A value-belief-norm theory of support for social movements: The case of environmentalism. *Research in Human Ecology, 6*(2), 81–97.

Stern, P. C. (2000). New environmental theories: Toward a coherent theory of environmentally significant behavior. *Journal of Social Issues, 56*(3), 407–424.

Wu, S., & Chen, J. (2014). A model of green consumption behavior constructed by the theory of planned behavior. *International Journal of Marketing Stud*ies, *6*(5), 119–132.

Yadav, R., Khandelwal, U. & Tripathi, V. (2017). Determinants of green purchase intention: An empirical study in India. *International Journal on Customer Relations*, *5*(2), 42-54.

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*(C), 114-122.

Yadav, R., & Pathak, G. S. (2016). Young consumers' intention towards buying green products in a developing nation: Extending the theory of planned behavior. *Journal of Cleaner Production, 135*, 732–739.

Yazdanpanah, M., & Forouzani, M. (2015). Application of the theory of planned behaviour to predict Iranian students' intention to purchase organic food. *Journal of Cleaner Production, 107*, 342-352.

Zhao, H., Gao, Q., Wu, Y., Wang, Y., & Zhu, X. (2014). What affects green consumer behavior in China? A case study from Qingdao. *Journal of Cleaner Production, 63*(15) 143–151.

Zsoka, A., Szerenyi, Z., Szechy, A., & Kocsis, T. (2013). Greening due to environmental education? Environmental knowledge, attitudes, consumer behavior and everyday pro-environmental activities of Hungarian high school and university students. *Journal of Cleaner Production, 48*, 126–138.