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An empirical analysis of the moderating effect of consumer skepticism between social value orientations and green advertising effectiveness

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Abstract

Purpose – The purpose of this study is to add a reliable factor that can contribute theoretically and methodologically to explain prosocial and proself behaviors. The study also signifies that green advertising approaches enable the consumer to develop an intention for green purchases. The basic idea is to investigate consumer social orientations and align them with green advertising initiatives to elicit the desired response as green purchase to manifest environmentally conscious behavior.

Design/methodology/approach – The empirical analysis is based on data collection through questionnaires. Data is analyzed through structural equation modeling to assess the relationship of constructs.

Findings – The results of the study are empirically drawn through the measurement of relationships among consumer skepticism and the effectiveness of green advertising initiatives. Mediation of proself and prosocial orientation exists for public self-awareness but does not exist for benefit distance. Consumer skepticism moderates the relationship between prosocial orientation and green advertising effectiveness (GAE) but has no moderation between proself orientation and GAE.

Originality/value – The limitation of conventional prosocial theory does not explain the environmental behaviors driven by proself orientations. Hence, the addition of factors such as public awareness and social benefit distance coupled with signaling theory with foundations on theory of planned behavior and norm activation model to explain environmental conservation add an element of originality to the existing literature.

Contribution to Impact – The contribution of this study is the incorporation of social orientations as the antecedent for consumer behavior in an environmental context particularly as a response to green advertising initiatives to purchase green products. The use of theory of planned behavior in conjunction with the norm activation model and signaling theory adds to the literary bank.

Keywords Social value orientations, Prosocial, Proself, Public self-awareness, Benefit distance, Green advertising effectiveness, Consumer skepticism

Paper type Research paper

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Introduction

It has become a tradition that individuals carrying paper bags after grocery shopping or riding a bicycle to work exhibit a pro-environmental behavior that is built upon self-sacrifice for social benefit. The concern for the environment is becoming a new norm, which demands attention to the matter on an individual level through tasks and mannerism that support the cause. This is a way of life that is contributing to the new social status in developing countries, as it signifies mindful consumption and environmentally friendly purchasing that exhibits eco-responsibility and is known as conspicuous conservation (Nyilasy *et al.*, 2014). This is an eco-friendly behavior that is adopted for public display as a primary motive and conservation of the environment as a secondary one. Such behaviors are hard to explain without theories of prosocial behavior (Matthes and Wonneberger, 2014). The study delves deeper into the conflicting orientations of prosocial, i.e. self-transcendence and proselfe self-enhancement and how these have a positive relationship with green advertisements and form the intention to purchase green products (Haytko and Matulich, 2008). Theoretical underpinning suggests that consumers focused on proself-orientation purchase green products as they are driven by the public appreciation of their actions. On the other hand, consumers focused on proself-engage in green product purchase away from public awareness as the primary goal is to benefit the environment (Do Paço and Reis, 2012). Hence, consumers who have prosocial orientations are more inclined toward green advertising initiatives and purchase of green products irrespective of public awareness or distance from environmental benefits. A further focus is on consumer skepticism toward green advertising initiatives that call to environmental behaviors, attitudes and intentions (Chang, 2011). This study attempts to explore the relationship between benefit distance and public awareness with social value orientation (i.e. prosocial and proself) and their effect on green advertising effectiveness (GAE). Consumer skepticism has been introduced as a moderator between the mediators (i.e. social value orientation) and GAE. The proceeding literature review will discuss the variables in the study.

Literature review

Green advertising

Green advertising is not only limited to the labels of the products that carry environmentally friendly signs, but it is an aspect of the corporate image portrayed by organizations (Broockman and Green, 2014). This initiative is not only limited to the companies that are engaged in using resources and raw materials that are directly harmful to the environment, but almost every organization in the market is using green initiative as a tool to further their products (Hartmann *et al.*, 2016). Green markets have carved a niche for themselves in the past decade and all sectors of the economy now want a piece of that niche by adding green aspects as a part of their manufacturing processes and final products.

Consumer skepticism toward advertising

The term greenwashing has been used in the literature in the context of green marketing in recent years. This term came into being after non-credible claims by the manufacturers for environmentally friendly products caused the consumer to lose trust in them (Matthes and Wonneberger, 2014). These claims tend to saturate the market to the extent where the green claims lose their efficacy and consumers no longer feel obligated by green advertising to decide to purchase a green product (Do Paço and Reis, 2012). It goes one step further and has a negative effect on consumer buying behavior by adding mistrust and making the consumer averse to purchasing green products. The persuasion by a green advertising campaign is directly countered by the level of consumer skepticism. Consumer skepticism

has been labeled as a healthy activity that keeps organizations on their toes when it comes to making false claims about environmentally friendly products. It also makes the advertisers provide proper understandable and verifiable information to the consumer (Royne *et al.*, 2012). Advertising skepticism is a construct that is conceptualized around the belief of how advertising works in the marketplace. Similar constructs used in the studies are persuasion knowledge cynicism (Richards, 2013). The level of persuasion for the claims made in favor of the environment by the manufacturers increases the confusion in the mind of the consumer (Srivastava, 2017). This leads to skepticism on green claims of companies by the consumers, as it shows that companies are using the green tactic for marketing purposes and their claims have no real grounds. This skepticism is also a product of heightened prices for environmentally friendly products, lack of legislation and regulations for environmental protection and their application (Shin and Ki, 2019). This shows that consumer skepticism is a direct effect on persuasion by the organizations in green advertising campaigns. Research has proven effectively that skepticism does hinder the green advertising initiatives by organizations, as the more the consumer is skeptical toward the green message in advertising, the less will be their tendency to act on it (Yu, 2020). This leads to avoidance of green advertising at all, hence, resulting in a weak link between green advertising and consumer skepticism. The consensus on the relationship between ad skepticism and consumer behavior has been laudable, but in the context of green advertising, the gap still exists. Based on the discussion above, this study assumes that there is a negative relationship between consumer skepticism and green advertising, which affects the attitude and behavior of purchase. The level of consumer skepticism directly influences green product purchase behavior negatively.

Social value orientation in consumer behavior

One of the major influences on human lives is values that are abstract standards that shape the lives of people. These values give important clues to understanding the behaviors people engage in. As these values play an important role in behavior, the field of consumer marketing treats it as a valuable variable (Kilbourne, 2004). Values have been defined as enduring beliefs that yield a specific code of conduct that is preferable on the social level to an opposition code of conduct (Kong and Zhang, 2013). The bigger question in consumers about the reason for buying something is answered with underlying motivations that affect the consumer's process of decision-making. As a social entity, every individual is in the process of making decisions that not only affect their well-being but also the well-being of the society around them (Wong *et al.*, 2014). Of the main factors in social interdependent decision-making settings is the role of social values. The dimension that segregates these values start with openness to change in opposition to conservatism. This distinguishes acceptance of new and novel things like stimulation and self-direction from values of conservation such as conformity, tradition and security (Royne *et al.*, 2012). The other dimension is self-transcendence in opposition to self-enhancement, which is the separation of values such as others' interests, nature, society, benevolence and universalism from self-interest such as power and achievement (Greenet *et al.*, 2007). The earlier discussion on dimensions based on values gives rise to a specific type of predictor for environmental behavior. The individual who is self-transcendent and value the benefit of others over their own and express this through environmental activism, participatory action and rooting for change is likely to engage in environmental behavior than the individuals who are self-enhancing and inclined toward conservatism (Kong and Zhang, 2014). The bottom line is that social value orientations come into play in the presence of social dilemma situations, as there is a link between the values upheld by individuals in various contexts and

environmental conscious behaviors. Prosocial individuals try to maximize the benefits to others by engaging in environmental supporting activities and exhibiting pro-environmental behaviors and vice versa.

Public self-awareness

The environmental behaviors exhibited by consumers are assessed on a social scale founded on social norms (Yang *et al.*, 2015). This conformity results in social approval and rewards, whereas the violation results in sanctions. When the public self-awareness (PSA) and pro-environmental behaviors are discussed in the presence of social dilemmas, it becomes more evident because PSA is used to bring out the prosocial behaviors that are desirable in the public eye (Goh and Wahid, 2015). This shows that even proself-oriented individuals engage in pro-environmental behaviors when it is visible to the public eye and brings recognition (Arli *et al.*, 2018). This brings the author to the conclusion that proselfs are less likely to exhibit environmental behaviors in the presence of green advertising for green products. This situation changes drastically when PSA is introduced in the equation. The phenomenon is explainable through signaling theory and competitive altruism, which results in payoffs in the form of social status and recognition for the consumer.

Benefit distance

The benefit distance in this study is concerned with environmental benefits. These are discussed in temporal framing context that determines the outcome of benefits that might occur imminently or sometime in the future. Coupling the benefit distance with social dilemma context elucidates a short-term partnership as individuals are much more inclined toward protecting themselves than the environment around them (Balliet *et al.*, 2008). This contradicts the long-term benefits expected on individual grounds. Hence, it is proposed that individuals need to sacrifice on a personal level to yield long-term benefits on an environmental level. The encouragement of prosocial behaviors in social dilemmas can be attained when a collective threat is presented that demands prosocial behaviors on individual levels to be averted. People do not cooperate for a better collective benefit when the outcome of the collaboration is uncertain (Murphy and Ackermann, 2014). The review of literature has shown that there exists a relationship between value orientations and temporal conflicts. This assumes that proselfs are more inclined toward short-term individual benefits and overlook the long-term collective benefits in comparison to prosocial individuals.

Rationale for the study

Literature has shown that recent years have seen a dramatic increase in pro-environmental behavior in consumers by switching to eco-friendly products and paying higher prices for green products. The action of the consumer who is acting in a socially conscious manner to save the environment brings about a change on a social level through the act of making a purchase that saves the environment from harm (Gerber *et al.*, 2011). The acceptance of socially conscious consumer definition paved the way for an environmentally conscious consumer whose shopping activities are determined by the motivation to better the natural environment through purchase, usage and disposal of products. Researchers have been devising theoretical models in the field of consumer behavior and environmental psychology for the prediction of pro-environmental behaviors using a different variable that pertains to the personality, socioeconomic or demographic aspects of the consumers.

The explanation of pro-environmental behavior is also dependent on situational or contextual factors. These include social influence, rules and regulations imposed by the

government, cost-benefit analysis, etc. The most talked-about factor in the literature is the social influence (Hartmann and Apaolaza-Ibáñez, 2010). The whole premise of social norms is the observation of individuals and how other individuals behave and are perceived when they behave in similar or opposite manner (Santoso and Fitriani, 2016). The most recent studies in the literature show that social influence is the main factor that determines pro-environmental behavior in consumers (Hartmann *et al.*, 2016). Attitudinal factors are also a part of determining factors that influence pro-environmental behaviors. These are made up of attitudes, personality traits, motivations, *locus* of control, personal values and norms. Environmental attitude is the most examined component in predicting pro-environmental behavior. It has been one of the major determinants in the literature in discussions regarding individuals' environmental behaviors. It is explained as a set of beliefs that persist and lingers about a phenomenon that allows the holder of that belief to think about the phenomenon in a specific way (Broockman and Green, 2014). The gap that exists between the environmental attitude and environmental behaviors signifies the theoretical and methodological flaws in the treatment of attitude and predictors of environmental behavior.

Table 1 shows the most cited articles on green advertising with relevant variables in the Scopus database. It is apparent from the review in Table 1 that social value orientation has been considered rarely as a precursor to GAE. This is the gap the author is trying to fill with this study.

Table 2 lists the notable studies that have been undertaken between 2010 and 2020 discussing the relationships among the variables discussed.

Theoretical underpinnings and hypotheses

Theoretical models are developed for advancing the understanding of consumer environmental behavior. The theories that are incorporated in this study are the theory of planned behavior by Azjen and Fishbein (1985) and norm activation model by Schwartz and Fleishman (1978). The research on consumer environmental behavior has shown that the propensity to engage in such behavior is driven by self-interest or altruism and in some cases by a combination of both. Theory of planned behavior (TPB) assumes that a consumer's environmental behavior is solely dependent upon cost-benefit analysis, whereas Schwartz's model works under the assumption that environmental behavior is a product of moral obligations and personal values and norms.

Theory of planned behavior

According to TPB, the behavior is the outcome of intention that is formulated earlier to engage in such behavior, which is based on the choices one makes through cost-benefit analysis. A stronger intention will result in an equally likely effort to engage in such behavior (Ajzen, 2012). The intentions formed are based on attitude toward behavior, subjective norms and perceived behavioral control. Attitude determines the level of formation of intention and it could be positive or negative. Subjective norms dictate the beliefs of individuals and how their actions will be approved or disapproved by the society. Perceived behavioral control is the knowledge that one has the capacity and capability to engage in a certain behavior and it will have a significant effect on the outcome of the endeavor. Environmental consumerism is a derivative of consumer behavior and takes shape under the pretext of intention formation. Hence, TPB is a suitable theoretical basis to explain how consumers formulate intentions based on the effectiveness of green advertising.

Authors	Cited by	Findings	Key variables
(Banerjee *et al.*, 1995)	206	A majority of advertisers in the sample attempted to project a green corporate image rather than focusing on the environmental benefits of their product or service	Greenwashing, green advertising effectiveness
(Nyilasy *et al.*, 2014)	140	Results indicate that the negative effect of a firm's low performance on brand attitudes becomes stronger in the presence of green advertising compared to general corporate advertising and no advertising and vice versa	Green advertising, greenwashing
(Chang, 2011)	132	A proposed model predicts that high-effort claims induce greater levels of discomfort among ambivalent participants, which encourage them to engage in motivated processing in which they discount the believability of the ad, as well as that of the green claims	Consumer skepticism, greenwashing
(Zinkhan and Carlson, 1995)	124	Many green consumers have negative attitudes about business, and they often have negative impressions of the advertising industry	Consumer skepticism, greenwashing
(Hartmann and Apaolaza-Ibáñez, 2012)	105	In green advertising research, images of pleasant natural scenery have been classified as vague, unspecific and possibly ineffective green claims, as opposed to substantive, informational claims	Greenwashing, green claims
(D'Souza and Taghian, 2005)	105	The study shows that there are differences between the two groups in terms of their attitude toward green advertising concerning all the dimensions and the low-involved customers appear to have a stronger disregard for green advertising across all the perceptive measures towards green advertising	Consumer behavior, green advertising, green products
(Leonidou *et al.*, 2011)	97	The findings could be augmented by combining them with changes in the external environment, input from consumers about advertising effectiveness, the views of advertisers and advertising agencies and secondary data referring to the performance of the specific company/product advertised	Advertising, environmental management, green marketing;
(Chang *et al.*, 2015)	95	The findings demonstrate that congruency between loss frame and low-level construal, as well as the match between the gain frame and high-level construal, leads to more positive outcomes in consumers' attitudes and purchase intention	Green advertising effectiveness, consumer behavior
(Matthes *et al.*, 2014)	92	Findings of an experimental study using a representative sample of US consumers suggest that both the emotional and the mixed-type ads significantly affect brand attitude, mediated by attitude toward the ad	Consumer behavior, environmental concern, green advertising

(*continued*)

Table 1.
Most cited articles from Scopus database on green advertising

Authors	Cited by	Findings	Key variables
(Do Paço and Reis, 2012)	84	The results indicate that the more environmentally concerned an individual is, the more skepticism he or she will be toward green claims exhibited on packages or featured in ads	Environmental knowledge, skepticism, green advertising, social orientation
(Kilbourne, 1995)	84	To understand the greenness of an advertisement, it is useful to position it within this framework; and each type suggests a different human position concerning nature and a different political orientation	Green advertising, consumer behavior
(De Giovanni, 2014)	80	Our findings suggest that green advertising should aim to increase customers' knowledge and awareness about the return policy because collaboration is successful only when the returns' residual value is large, whereas the sharing parameter is not too high	Green advertising, reverse revenue sharing contract
(Kilbourne, 2004)	75	For meaningful change to occur over time, it is necessary to develop the theory of sustainable communication further and expand knowledge of the functioning of the dominant social paradigm of western industrial societies	Social paradigm, Green advertising, Sustainable communication
(Matthes and Wonneberger, 2014)	74	It was shown that green consumers saw more informational utility in green ads than non-green consumers did. This, in turn, decreased their green advertising skepticism. The emotional appeal of green ads, however, had no impact on green advertising skepticism	Consumer skepticism, green advertising effectiveness
(Hartmann and Apaolaza-Ibáñez, 2010)	72	Results of the study confirm the leading opinion on generalized more positive behavioral effects toward visual stimuli representing nature scenes with biosphere contents as opposed to pictures of urban environments or desert settings	Environmental psychology, green advertising, nature imagery
(Karna *et al.*, 2001)	68	Findings suggest that there is a clear environmental substance behind environmental advertising claims in this industry	Advertising, consumer behavior, marketing
(Manrai *et al.*, 1997)	66	The consumer's attitude toward the country of origin of the automobile interactively affected the product evaluation in terms of its greenness and company image in terms of its green consciousness	Green claims, consumer behavior, environmental knowledge
(Kareklas *et al.*, 2012)	61	Promotion-framed messages are more persuasive for individuals with an active independent self-view, whereas prevention-framed messages are more persuasive for individuals with an active interdependent self-view	Green advertising, green claims, consumer behavior
(Chen and Chang, 2012)	53	Guilt appeals are no more effective than non-guilt appeals when promoting an issue with low proximity to consumers with a low level of environmental consciousness	Environmental knowledge, guilt, green advertising

Table 1.

Topics	Authors
Consumer behavior	(Khandelwal and Bajpai, 2011), (Fowler and Bridges, 2012), (Kong and Zhang, 2013), (Atkinson and Rosenthal, 2014), (Martinez-Fiestas *et al.*, 2015), (Muralidharan and Sheehan, 2016), (Martin-Guay *et al.*, 2018), (Schmuck *et al.*, 2018) (do Paço *et al.*, 2019) (Grolleau *et al.*, 2019), (Song and Kim, 2019), (Medina *et al.*, 2020)
Green advertising	(Testa *et al.*, 2012), (Tu *et al.*, 2013), (Nyilasy *et al.*, 2014)(Matthes and Wonneberger, 2014)(Leonidou *et al.*, 2011)(Hartmann and Apaolaza-Ibáñez, 2012)(Yang *et al.*, 2015) (do Paço *et al.*, 2019)(Santoso and Fitriani, 2016)(Liu and Yi, 2017)(Segev *et al.*, 2016) (Schmuck *et al.*, 2018)(Hartmann *et al.*, 2016)(Alamsyah *et al.*, 2018)(Kim *et al.*, 2019)
Consumer skepticism	(Delmas and Burbano, 2011)(Bowen, 2018)(Seele and Gatti, 2017)(Du, 2015)(Zhang *et al.*, 2018)(Schmuck *et al.*, 2018)(Siano *et al.*, 2017)(de Vries *et al.*, 2015)(Akturan, 2018) (Marquis *et al.*, 2016)(Parguel *et al.*, 2015)(Szabo and Webster, 2020)(Braga Junior *et al.*, 2019)(Gatti *et al.*, 2019)
Social value orientation	(Balliet *et al.*, 2008)(Stern and Dietz, 1994)(Murphy and Ackermann, 2014)(Gärling *et al.*, 2003)(Pletzer *et al.*, 2018)(Husted *et al.*, 2015)(Jiao *et al.*, 2018b)(Joireman *et al.*, 2001)(Jiao *et al.*, 2018a)

Table 2.
Notable studies in the relevant fields of study

Norm activation model

The basic assumption of the norm activation model is that moral guidelines play a significant role in environmental behaviors exhibited by individuals. This aspect of the norm activation model refers to the personal belief system that allows a person to engage in or refrain from a specific act (De Groot and Steg, 2009). The active role of norms results in the actions that are categorized as pro-environmental behavior. The norm activation has been successful in explaining various contextual pro-environmental behaviors. Furthermore, altruistic and helping behaviors are guided by personal norms, so environmental behaviors can only be explained by personal norms. This will not be as effective in the scenario when altruistic behaviors motivated by self-interest are directed toward environmental behaviors for the consumer to be judged as pro-environmental.

Status signaling theory

The discussion of signaling theory (Spence, 1978) in the context of conspicuous consumption has been done in the literature. It simply means that individuals signal their status to the society through their ability to spend more and engage in expensive consumption (Smith and Font, 2014). Although this trend has been explored in the context of luxury goods, the trend has shifted to green luxury products as the consumers want to spend hefty amounts on usual purchases just because the green aspect is associated with them. The consumption pattern becomes highlighted and comes under the parameters of pro-environmental purchase based on signaling theory. Traditionally, a society measures the worth of its member by the amount they can give away. This is a common phenomenon that is practiced through philanthropy. Social value orientation comes into play when prosocial and proself individuals ascertain the benefits beforehand to get influenced by green advertising.

Synthesis of theories and hypotheses

The literature review on social value orientations has revealed that individuals who contribute to the common good are driven by altruistic motives (Schwartz, 2003). This is also corroborated by the norm activation model. Hence, the study hypothesized that social value orientations influence the consumer response to green advertising to make a green purchase. Integrating all the aspects discussed earlier regarding TPB, norm activation

model, status signaling theory and prosocial behavior, it can be supposed that prosocial individuals are inclined toward green advertising when it comes to making the green purchase.

Hence, based on the above discussion, the following hypotheses are formulated:

H1. Social value orientation has a positive relationship with GAE.

H1a. Proself orientation (PSE) has a positive relationship with GAE.

H1b. Prosocial orientation has a positive relationship with GAE.

H2. PSA has a positive relationship with GAE mediated by social value orientation.

H2a. PSA has a positive relationship with GAE mediated by PSE.

H2b. PSA has a positive relationship with GAE mediated by prosocial orientation.

H3. Benefit distance has a positive relationship with GAE mediated by social value orientation.

H3a. Benefit distance has a positive relationship with GAE mediated by PSE.

H3b. Benefit distance has a positive relationship with GAE mediated by prosocial orientation.

H4. Consumer skepticism moderates the relationship between social value orientation and GAE.

H4a. Consumer skepticism moderates the relationship between PSE and GAE.

H4b. Consumer skepticism moderates the relationship between prosocial orientation and GAE.

Conceptual framework

(Figure 1)

Methodology

This research is undertaken according to the guidelines of the deductive approach as the hypotheses are formulated after the review of the literature and corresponding theoretical underpinnings. This study is based on an explanatory research design that has a

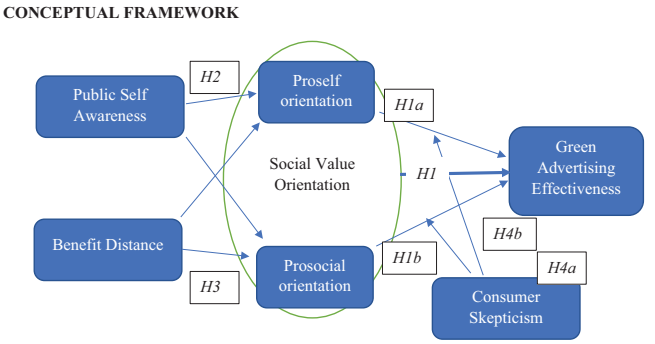

Figure 1.
Conceptual framework

streamlined process for data collection that is done based on the research question formulated after the identification of the research gap through literature review. This study restricts itself to quantitative research methods for data collection and analysis. This involves the usage of statistical tools and objective measurement of the data collected through questionnaires with the help of online platforms and printed versions (Caldas, 2003).

The research population consisted of five research universities in Malaysia, as the research and development programs in the sphere of sustainability and green initiatives are quite well established and the university–industry liaisons allow the staff and student body to interact with the organizational processes on a routine basis. This makes the population most appropriate to be able to comprehend the questions asked in the survey. The sample size as per Anderson and Gerbing (1984) deems 100–150 respondents as enough. The sample size sufficiency was fulfilled through G*power3 software with setting recommendations by Dattalo (2009) that includes the number of variables (six in this study). The formulae application yields a number of 102. Hence, the respective number of 356 questionnaires received from the population seem more than adequate for data analysis purposes.

Data collection

The distribution of the questionnaires involved a purposive sampling technique and both online and real-world distribution were undertaken to get maximum outcome. The physically distributed questionnaires were 350 in number, whereas 600 emails were sent for the online version that included the questionnaires on google docs. The final received number was 388 of which 32 were excluded for being incomplete. The remaining 356 were deemed suitable to be carried forward for data analysis. All the items in the questionnaire are adapted from existing studies. In total, the questionnaire has two sections with section one pertaining to items regarding the variables in the study, whereas section two pertains to the demographic questions regarding the respondents. All the questions in section one of the questionnaire are measured on a five-point Likert scale.

Measures

As this study considers the proself and prosocial orientations of the social value orientation concept, measures for these two dimensions were based on the Schwartz value scale constructed in 1992 (Stern *et al.*, 1998). This allowed the author to use nine items in total: five for PSE and four for prosocial orientation. Consumer skepticism items for this study were taken from Webb and Mohr (1998), which were based on the advertising skepticism scale developed by Obermiller and Spangenberg (1998). The item catered to dimensions of green claims made by the manufacturers and consumer perceptions of these claims. GAE is a dependent variable that is a combination of attitude toward advertising and brand the consequential intention to purchase the green product. Four items in total were used to measure the construct from Davis (1995) (one item), Keller (1987) (two items) and Putreyu and Lord (1994) (one item). PSA was measured with seven items from the SCSR scale presented by Carver and Scheier (2014). Benefit distance was measured with seven items taken from the CFC scale presented by Strathman *et al.* (1994). This scale allows the researcher to measure the degree to which one considers the proximate and distal consequences of their actions.

Evaluation of the outer model (measurement model)

The explanation of the proportioned variance of an indicator by the respective latent variable is known as indicator reliability. The value range is between 0 and 1. In most cases, the value equal to or greater than 0.7 constitutes adequate reliability. Several authors have suggested the removal of indicators if the outer loading value falls below 0.5, if doing so reduces the composite reliability (CR) and average variance extracted (AVE) (Hair *et al.*, 2014a, 2014b). In any case, the indicators with outer loadings below 0.40 should always be deleted (Hulland, 1999; Hair *et al.*, 2011).

Internal consistency is measured commonly with Cronbach's alpha and the acceptable range of value is between 0.6 and 0.7, whereas in several cases higher values have been acceptable but authors have suggested the upper limit to be 0.9 (Nunnally and Bernstein, 1994; Hair *et al.*, 2017).

The measurement of correlation among multiple indicators within the same construct is known as convergent validity. Assessment of convergent validity in measurement model evaluation is done with loadings, CR and AVE. The value range for AVE is 0.5 for adequacy (Henseler *et al.*, 2009). Table 3 shows the convergent validity of all the variables in the study.

Table 3.
Convergent validity

Constructs	Items	Loadings	Cronbach's alpha	Composite reliability	Average variance extracted (AVE)
Benefit distance	BD1	0.782	0.939	0.950	0.731
	BD2	0.876			
	BD3	0.857			
	BD4	0.887			
	BD5	0.854			
	BD6	0.851			
	BD7	0.874			
Consumer skepticism	CS1	0.790	0.860	0.905	0.704
	CS2	0.879			
	CS3	0.842			
	CS4	0.843			
Green advertising effectiveness	GAE1	0.899	0.905	0.934	0.778
	GAE2	0.848			
	GAE3	0.893			
	GAE4	0.887			
Public self-awareness	PSA1	0.712	0.913	0.931	0.660
	PSA2	0.870			
	PSA3	0.805			
	PSA4	0.805			
	PSA5	0.854			
	PSA6	0.874			
	PSA7	0.754			
Proself	PSE1	0.788	0.835	0.890	0.669
	PSE2	0.776			
	PSE3	0.860			
	PSE4	0.845			
Prosocial	PSO1	0.774	0.780	0.843	0.521
	PSO2	0.584			
	PSO3	0.689			
	PSO4	0.732			
	PSO5	0.808			

Discriminant validity test

The extent of differentiation among the constructs in the conceptual framework is determined by discriminant validity. Three methods are used in the literature to measure discriminant validity.

Fornell–Larcker criterion used the square root of the extracted average variances and compare them with the correlations of all other latent constructs. Methodically speaking, any latent variable must be able to explain the variance among its indicators better than any other latent variable (Fornell and Larcker, 1981). This means that the square root of each latent construct AVE must be higher than other latent construct correlations. Table 4 shows the values for the Fornell–Larcker criterion.

The second method used for discriminant validity is the Heterotrait–Monotrait ratio of correlations or commonly known as the HTMT criterion. The threshold values closer to 1 show diminishing discriminant validity. However, the upper limit of 0.90 has been indicated in the literature as an acceptable one (Gold *et al.*, 2001). Some authors have set the threshold limit of 0.85 for acceptability as well (Kline, 2011). Table 5 shows the HTMT values.

Evaluation of the inner model (structural model)

The assessment of structural relationships is preceded by an examination of collinearity to avoid biases in regression results. This involves the assessment of each set of indicators related to a specific construct. The resultant value above 5 indicates the issues with collinearity among the indicators. Some authors have also suggested the upper threshold of 3–5 (Mason and Perreault, 1991; Sarstedt *et al.*, 2019). The ideal value is supposed to be lower than 3. Table 6 below shows that collinearity is not an issue, as the values are well below the designated threshold of 3.

R^2 measures the predictive accuracy of the suggested model. The extent of variance in the endogenous construct as explained by all the exogenous constructs in the model is determined by it (Hair *et al.*, 2011). The value ranges between 0 and 1 with values closer to 1 indicating greater predictive accuracy. The commonly observed threshold for R^2 values is

Constructs	BD	CS	GAE	PRE	PRO	PSA
Benefit distance	0.855					
Consumer skepticism	0.477	0.839				
Green advertising effectiveness	0.418	0.386	0.882			
Proself	0.270	0.345	0.525	0.818		
Prosocial	0.392	0.401	0.289	0.253	0.722	
Public self-awareness	0.495	0.951	0.380	0.351	0.430	0.813

Table 4. Fornell–Larcker criteria

Constructs	BD	CS	GAE	PRE	PRO	PSA
Benefit distance	0.527					
Consumer skepticism	0.450	0.432				
Green advertising effectiveness	0.108	0.135	0.146			
Proself	0.301	0.400	0.599	0.080		
Prosocial	0.414	0.438	0.317	0.078	0.285	
Public self-awareness	0.534	1.077	0.419	0.110	0.398	0.456

Table 5. HTMT Ratio of correlations

0.25 (weak), 0.50 (moderate) and 0.75 (substantial) in the literature. This varies according to the field of research as well. Table 7 shows the R^2 values for all endogenous variables in the framework.

The effect size f^2 is the assessment of the meaningful contribution of one exogenous construct an explanation of the proceeding endogenous construct (Leguina, 2015). This calculation is done based on R^2 values through a formula, i.e. $f^2 = (R^2_{\text{included}} - R^2_{\text{excluded}})/(1 - R^2_{\text{included}})$ (R^2_{ncluded} and R^2_{excluded} are the R^2 values of the endogenous latent variable when a selected exogenous latent variable is included or excluded from the model).

The threshold for values higher than 0.02, 0.15 and 0.35 is interpreted as small, medium and large, respectively. Table 8 shows the f^2 values.

Another measure for predictive accuracy that has been suggested by authors in PLS-SEM is the Q^2 value. Values greater than 0 for endogenous constructs indicate predictive accuracy, as any value greater than 0 is meaningful. The interpretation of values of 0, 0.25 and 0.50 is done as small, medium and large, respectively (Hair *et al.*, 2019). Table 9 shows the Q^2 values.

Mediating analysis

SmartPLS allows the researcher to assess the direct and indirect relationships between the exogenous and endogenous variables. This has been considered an important step in

Table 6. Collinearity assessment VIF

	BD	CS	GAE	PRE	PRO	PSA
Benefit distance				1.324	1.324	
Consumer skepticism			1.3119			
Green advertising effectiveness						
Proself			1.1564			
Prosocial			1.2138			
Public self-awareness				1.324	1.324	

Table 7. R^2 Assessment of predictive accuracy

	R^2	R^2 adjusted
Green advertising effectiveness	0.3445	0.3374
Proself	0.1352	0.1306
Prosocial	0.2277	0.2236

Table 8. f^2 effect size

Constructs	Benefit distance	Consumer skepticism	Green advertising effectiveness	Proself	Prosocial	Public self-awareness
Benefit distance				0.0142	0.0556	
Consumer skepticism			0.0451			
Green advertising Effectiveness						
Proself			0.2402			
Prosocial			0.0124			
Public self-awareness				0.0722	0.0955	

structural analysis. The effect of the independent variable on the mediator and consequently the dependent variable constitutes and mediation (Shadish and Sweeney, 1991). As per the instruction of Hayes and Preacher (2014), the bootstrapping procedure with 5,000 samples is undertaken to get the statistics and level of significance. The outcome shows that only one indirect relationship out of four, i.e. PSE mediates the relationship between PSA and GAE, constitutes a mediation ($\beta = 0.125$; $t = 4.689$, $\alpha < 0.05$). Tables 10 and 11 show the VAF values for mediation.

The strength of the mediation computed via variance accounted for (VAF) method as suggested by Hair *et al.* (2014a, 2014b) determines the mediation to be of partial type.

Moderating effect

The moderating effect is statistically significant for proself (refer to model diagram). As the relationship is negative ($\beta = -0.105$), it means that higher consumer skepticism negatively affects the relationship between PSE and GAE. It can be said that the higher the consumer skepticism, the weaker the relationship between proself and GAE. The interaction effect exists as it is statistically significant ($p < 0.05$). Tables 12 and 13 shows the values for moderating effect (Figure 2).

Construct	Q^2
Green advertising effectiveness	0.5816
Proself	0.4322
Prosocial	0.2966

Table 9. Q^2 predictive relevance

Construct relationships	Path coefficient β	T statistics	p Values	5.00%	95.00%
BD → PSE → GAE	0.055	1.745	0.081	−0.002	0.123
PSA → PSE → GAE	0.125	4.689	0.000	0.069	0.176
BD → PSO → GAE	0.025	1.629	0.103	0.000	0.059
PSA → PSO → GAE	0.033	1.937	0.053	0.000	0.068

Table 10. Mediation

Constructs	Path	VAF	%	Type of mediation
PSA → GAE	Direct	(P12 × P23)/(P12 × P23 + P13) = 0.540	54%	Partial mediation
PSA → PSE → GAE	Indirect			

Notes: Rule of thumb to measure the variance accounted for (VAF) to determine mediation type: full mediation (VAF > 80%), partial mediation (20% < VAF > 80%); no mediation (VAF < 20%)

Table 11. VAF for Mediation analysis

Proself	Path coefficients	T statistics	p Values
Moderating effect 1 → green advertising effectiveness	−0.105	2.136	0.033

Table 12. Moderation analysis with proself orientation

The moderating effect of consumer skepticism on the relationship between PSE and GAE is negative and not statistically significant ($\beta = -0.097$, $t = 0.792$, $p > 0.05$). At a higher level of consumer skepticism, prosocial orientation fails to make a significant effect on GAE, but the lower level of consumer skepticism does make a small impact on the relationship between prosocial orientation and GAE (Figure 3).

Path coefficients

Table 14 shows the results for all the hypothetical relationships in the framework.

Table 13. Moderation analysis with prosocial orientation

Prosocial	Path coefficients	*T* statistics	*p* Values
Moderating effect 1 → green advertising effectiveness	−0.097	0.792	0.429

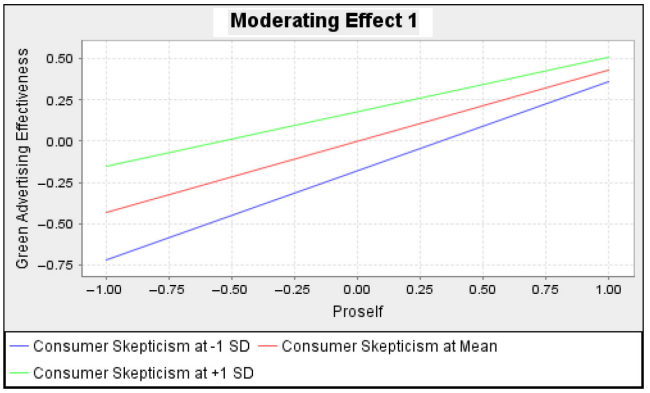

Figure 2. Moderation analysis proself orientation

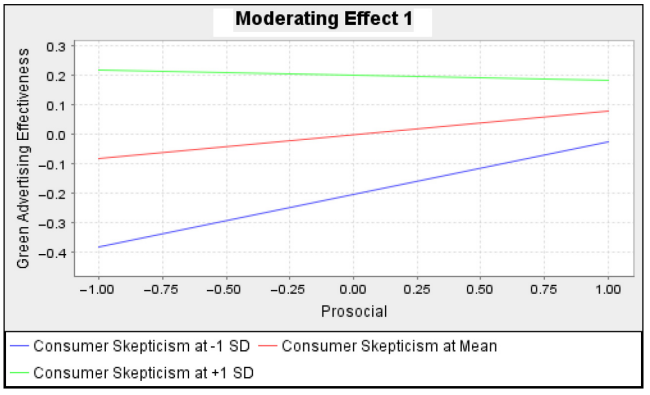

Figure 3. Moderation analysis prosocial orientation

Hypotheses	Relationship	Path coefficient β	T statistics	p Values	5.00%	95.00%	Result
H1a	Proself → green advertising effectiveness	0.431	9.497	0.000	0.334	0.522	Accepted
H1b	Prosocial → green advertising effectiveness	0.101	1.975	0.049	0.001	0.208	Accepted
H3a	Benefit distance → proself → green advertising effectiveness	0.055	1.674	0.095	0.00	0.13	Rejected
H2a	Public self-awareness → proself → green advertising effectiveness	0.124	4.356	0.000	0.06	0.18	Accepted
H3b	Benefit distance → prosocial → green advertising effectiveness	0.024	1.619	0.106	0.00	0.06	Rejected
H2b	Public self-awareness → prosocial → green advertising effectiveness	0.031	2.029	0.043	0.00	0.06	Accepted
H4b	Moderating effect → prosocial → green purchase intention	−0.097	0.792	0.429	−0.203	0.171	Rejected
H4a	Moderating effect → proself → green purchase intention	−0.105	2.136	0.033	−0.174	−0.011	Accepted

Table 14.
Path coefficients for hypothesis confirmation and rejection

Discussion and implications

The findings of the study reveal that social value orientations have a significant effect when it comes to attitudes and behavioral responses toward green advertising and the purchase of green products. The previous research has shown that prosocial individuals are inclined toward benefitting others through engaging in environmentally friendly behaviors. This is shown in the first hypothesis as prosocial individuals respond favorably to green advertising in comparison to proselfs. This suggests that the role played by morality is the key role under the norm activation model as prosocial values lead to prosocial attitudes and subsequent behaviors. The morality here is the basis for norms that arouse a feeling of obligation to perform certain acts or refrain from them (Couto *et al.*, 2016).

Theoretical implications

Theoretically speaking individuals driven by prosocial values are more inclined to purchase green products when exposed to green advertising to comply with prosocial norms to exhibit pro-environmental behaviors. The research in social dilemmas is centered on the premise that making individuals realize the threat to a common interest by making the outcome more visible and proximal is the way to elicit prosocial behaviors. Further, the explanation of the exhibition of prosocial behavior in public or private is explained by competitive altruism and costly signaling theory. These theories support predictors such as PSA and benefit distance to explain environmental behaviors. As hypotheses in this study were formulated on these assumptions, it was proven that conspicuous conservation is dependent on the level of PSA. The results conclude that the activation of PSA caused the consumers to purchase green products that can be used in public rather than in private. These findings are concurrent with the previous studies done in various contexts (Lee *et al.*, 2014; Nilsson *et al.*, 2014; Van Lange *et al.*, 2007). The environmental behaviors exhibited by consumers are within the confines of social context and dictated by social norms. The premise involves the approval and rejection of one's action on the social level. This is known as conformity (Nilsson *et al.*, 2014). Such conformity results in social rewards such as social status. Purchasing a green product exhibits that consumers are willingly adhering to a case that serves the common good at the cost of self-sacrifice for status and reputation (Karagonlar and Kuhlman, 2013). It was demonstrated that social value orientations, in response to green advertising, influence the intentions and behavior to purchase green products. This is supported by the norm activation model that suggests that prosocial are inclined toward green advertising than proselfs because they consider it a moral obligation to take sides with the green movement.

Practical implications

It has been said that human beings can be selfish and petty species in nature but still the planet can benefit from that. Although the presence of selfishness is contrary to collective well-being, the study suggests that activation of PSA can be a strategy to influence people to act in a pro-environmental manner (Grosch and Rau, 2017). As on the predictor's side, factors such as monetary status, concern for the environment and legalities do foster a sense of conservation in the consumers, but still, the social aspects are ignored. This has been shown in this study that activation of PSA as a driver of motivations on a social level can contribute to green behavior fostering. The outcomes of the data analysis suggest that associating green products with social motivation can help engage customers in purchasing them. In the traditional sense, the green marketing initiative in the form of green advertising has always been inclined to bolster the utilitarian benefits of purchasing green products (Chahal *et al.*, 2014). A shift from that perspective to the PSA sphere will help increase the

attention of proself consumers toward green products as its consumption will be seen as an act of public knowledge. Such tactics have been used before in campaigns for social causes where demarcated articles of clothing or accessories have been used to raise awareness and allow individuals to show that they are a part of a specific group that stands for that cause (Dezdar, 2017). This also allows the organizations to segment the consumers based on their social value orientations. The efforts have been made in various marketing campaigns and the environmental concern segment has been identified based on the concern for ecological preservation (Naderi and Van Steenburg, 2018). The limitation of the identified attitude in predicting the environmental behavior has been elaborated and an understanding can be developed by the marketing departments based on social value orientations, which will enable them to dig deeper into the underlying motive of the consumer and build advertising campaigns on it. This will allow them to incorporate the brand communications with the social value orientations of the consumers.

Limitations and future research

The measurement of social value orientations with consumer identification as either proselfs or prosocial needs more differentiation. As the statistical analysis of the data acquired does not allow distinctiveness to be identified at a deeper level. The significant difference in the identification of the two groups can be further enhanced by designing the study on a considerably larger scale. This would allow the inclusion and exclusion of the participants who are not proselfs or prosocial *per se* and lie somewhere on the borderline between the two constructs. This can help the researcher identify the third group with mixed orientations that will add to the exploration in the future endeavor. This study has observed the relationship among social value orientations, perceived benefit distance and PSA but this has been done on a singular level. An analysis including self and other benefits appeal will yield different results in eliciting consumer environmental behaviors. There have been studies in the literature in the context of charitable endeavors and not explored in the sphere of consumer products and general consumer goods in an environmental context (Green *et al.*, 2016). The exploration can be done specifically in the benefit that consumer yields on a personal level are the benefits to the environment that are demarcated in the green advertising campaigns. This will help identify the segmentation in consumers on a clearer level. As the effect of skepticism is generally negative on the perception of consumers regarding marketing initiatives such as green advertising, the relationship of this skepticism can be explored further with social value orientations. This can be further elaborated through the addition of variables in the mix such as types of products for which green advertising is being used, the theme of the green appeal and also the social values that are being catered to. This also takes us in the direction of consumer skepticism based on the knowledge of environmental issues and surrounding regulations and evaluations of the green claims on this basis.

Conclusion

The question asked in this study was whether social value orientations of the customers affect the green purchase decisions through influence from green advertising initiatives by the organizations? It was proven that consumers who are categorized a prosocial are more inclined toward green advertising and base their purchase decision and consumption pattern on that, whereas the proselfs are the people who also engage in this behavior of buying green but their motivations are primarily driven by PSA and social rewards like reputation. The explanation of conspicuous conservation through PSA and social value orientations is also a step beyond the conventional exploration through predictor status of

social norms, competitive altruism and status signaling. The link that is established through findings allows the practical implications by enabling the marketers by designing green advertising in a way that associated the purchase of specific products with higher social status. This will encourage proself consumers to engage more in pro-environmental behavior as it will add to PSA. This study also allows the new segmentation of consumers based on social value orientations, as the underlying motivations to purchase green products are prompted and aid in designing the marketing strategies accordingly. This will also allow the marketers to incorporate the consumer social value orientation into the product advertising to appeal to the consumers on differentiating levels and increase market share through capitalizing on the segmentation.

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