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Gray Shades of Green: Causes and Consequences of Green Skepticism

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Abstract

Consumer skepticism of corporate environmental activities is on the rise. Yet research on this timely, intriguing, and important topic is scarce for both academics and practitioners. Building on attribution theory, we develop and test a theoretically anchored model that explains the sources and consequences of green skepticism. The study findings reveal that consumers' perceptions of industry norms, corporate social responsibility, and corporate history are important factors that explain why consumers assign different motives to corporate environmental actions. In addition, the results show that while intrinsic motives exert a strong negative effect on green skepticism, extrinsic motives have no discernible effect. Furthermore, the findings indicate that green skepticism prompts consumers to seek more information about the products, sparks negative word of mouth to friends and acquaintances, and forestalls purchase intentions. The study offers several implications for corporate and public policy makers and presents fruitful research directions.

Keywords: Attribution theory; Green skepticism; Information seeking; Negative WOM; Purchase intentions; Sustainability

"Is it Green or is it not." Anonymous.

Introduction

Today, everything and everyone seems to be going green. The consumer market for green offerings is estimated to be $845 billion in 2015 (Tolliver-Nigro, 2009), and green products are virtually everywhere: green energy, green semiconductors, green technology, green architecture, green buildings, green government, green commerce, green investing, green fashion, green fabrics, green packaging, green countertops, green light bulbs, green eggs, green refrigerators, green engagement rings, green holidays, and so on. The word has also begun functioning as a verb: we can now green our cities, homes, jobs, cars, planet, and even our lives. Relatedly, a Google search on August 11, 2015, with the keywords "green products/issues" and "environmental products/issues" resulted in more than 16 million hits.

Scholars across disciplines have embraced this new reality. According to ISI Web of Science, the number of research articles in the social sciences domain examining "green marketing", "environmental issues" or "sustainability" increased tenfold from 2000 (i.e., 3,648 articles) to 2014 (i.e., 36,071 articles), a remarkable growth during the years. We uncover a similar trend using Scopus; the same search revealed 2,790 articles published until 2000, a figure that increased ten times as much by the end of 2014 (i.e., 28,125 articles). Findings suggest that a growing number of consumers desire to make green purchases (e.g., Cohn & Wolfe, 2011; Nielsen, 2014), and firms respond by developing additional eco-friendly products, spending large amounts of money on promoting them, and integrating green issues into corporate strategies (e.g., Menguc et al., 2010).

However, consumer skepticism of the corporate world is on the rise (*The Economist*, 2012), and there is widespread societal concern that firms often disseminate false and/or incomplete environmental information to mislead consumers and improve their image (Parguel et al., 2011). The emergence of 'green skepticism'—defined as the consumers'

tendency to doubt the environmental benefits or the environmental performance of a green product (Mohr et al., 1998; Obermiller et al., 2005)—is mainly attributed to the rising incidents of corporate malfeasance in general (e.g., Lehman Brothers, Enron, Arthur Andersen, Parmalat) and irresponsible environmental behavior in particular (e.g., Exxon Valdez and BP oil spills, TEPCO nuclear disaster, Union Carbide gas leak). Furthermore, as the market for green products and services continues to expand, instances of greenwashing have skyrocketed in recent years (Delmas and Burbano, 2011; TerraChoice, 2009), while global environmental regulations ensuring transparency and sustainability standards are still lacking (e.g., Chen and Chang, 2013; Laufer, 2003). Thus, a growing number of consumers question corporate motives for greening, are uncertain about green product attributes and features, and doubt their environmental benefits and performance (e.g., PR Newswire, 2011).

Yet consumer skepticism of green products has escaped adequate research attention. A review of extant literature reveals few attempts to investigate the drivers, deterrents, and consequences of green skepticism. This is surprising for at least three reasons. First, skepticism—an individual's attitude of doubt and overall propensity to question—is not only an intriguing subject that has preoccupied philosophers for more than two thousand years but also a pervasive phenomenon that occurs in a wide variety of contexts and situations (e.g., Mishler and Rose, 1997; Okasha, 2003). Second, consumer skepticism has attracted considerable research attention in the field of advertising. For example, prior studies have examined the role of skepticism in the context of advertising in general (e.g., Hardesty et al., 2002; Obermiller et al., 2005) and green advertising in particular (e.g., Do Paço and Reis, 2012; Matthes and Wonneberger, 2014). The findings of these studies lead to the conclusion that skepticism is important in explaining consumer reluctance toward advertising messages. Third, writings on the role of consumer skepticism have surfaced in the related, but distinct, context of corporate social responsibility (CSR) (Forehand and Grier, 2003; Skarmeas and

Leonidou, 2013). The results indicate that CSR practices are susceptible to the detrimental effect of skepticism and thus call for further theoretical and empirical studies on consumer skepticism, leading to a better understanding of not only positive but also negative consumer responses to marketing actions.

Green skepticism is a hot-button topic for consumers, companies, investors, governments, and society in general. Having doubts about green products may deter consumers from new or repeat green purchases in general and/or from making the most eco-friendly choice in particular (e.g., Albayrak et al., 2011), forgoing the chance to contribute to environmental sustainability and limiting market growth for green consumer goods. This in turn may impair investor confidence in eco-friendly firms, eroding the capital market for socially responsible investing (Delmas and Burbano, 2011). Furthermore, companies spend billions of dollars (in 2013 alone, Philips invested approximately $550 million in green innovation) trying to distinguish and promote their offerings as green with a view to enhancing their revenues, brands, and competitive positions in the market—practitioner surveys show willingness to spend even more (Environmental Leader, 2009). Likewise, governments spend millions of dollars in attempts to tackle the various forms of environmental degradation and run multiple schemes that promote pro-environmental behavioral change (Lacy et al., 2010). Consumer skepticism here can inhibit or diminish the effectiveness of communication campaigns (Do Paço and Reis, 2012), reducing returns—both financial and environmental—on investment.

In light of these considerations, the purpose of this research is to enhance understanding of the role of consumer skepticism in the context of green products—those that have or claim to have environmental performance improvements in their production, use, and disposal in comparison with conventional/competitive products. Our study builds on attribution theory (Kelley, 1973) to develop and test a theoretically grounded model that explains the sources and consequences of green skepticism. Attribution theory is particularly appropriate for

examining consumer skepticism because it can elucidate consumers' perceptions of the reasons a firm may take a more responsible approach to its business, how consumers assign these motives to the firm's actions, and how this cognitive process influences consumers' subsequent responses (Eberly et al., 2011; Ellen et al., 2000). The theory is also well suited to the study of green products because attributions are typically elicited in controversial and suspicion-laden contexts (Vlachos et al., 2013b), which is typically the case for environmentally friendly products (Kleiner, 1991; Peattie and Crane, 2005).

Theoretical Background

Attribution theory maintains that when confronted with an event, individuals have an inherent tendency to try to determine the locus of causality for that event (Kelley, 1971). People attribute cause to the events around them because of their innate need to understand their surroundings and explain the world, both to themselves and to other people (Jones and Davis, 1965). What types of causal inferences do people make? Prior research indicates that consumers usually ascribe two types of motives to corporate environmental actions: intrinsic and extrinsic. Intrinsic (or selfless) motives have the ultimate goal of doing good and fulfilling social obligations, while extrinsic (or self-interested) motives have the ultimate goal of increasing the actor's own welfare (Parguel et al., 2011; Vlachos et al., 2013b). These two types of motives are not opposite ends of a continuum, as consumers can assign a firm's actions to both intrinsic and extrinsic motives (Ellen et al., 2006). How do consumers develop such causal inferences? They act like naive psychologists and take into account three kinds of evidence: the consensus (i.e., how other actors behave in the same situation), distinctiveness (i.e., how the actor behaved in other similar circumstances), and consistency (i.e., whether the actor behaves in a similar manner over time) of a behavior or an event (Kelley, 1967, 1973). For example, when a consumer observes that a firm is developing and launching

environmentally friendly products, he or she might explore several possibilities to locate the causality of the event. Are competitors doing the same thing, or is this firm leading the way? Is the firm's green behavior constrained in this niche area, or is responsibility a common feature in the firm's overall approach? Is this a new strategic initiative for the firm, or is there a history behind it? By providing answers to these questions, the consumer can make intrinsic or extrinsic attributions of why a firm markets environmentally friendly products. Such causal explanations, in turn, influence the consumer's green skepticism of green products.

This study also focuses on green skepticism consequences in terms of information seeking, negative word-of-mouth (WOM) communication, and purchase intentions. All three outcomes are critical to the success or failure of a firm's attempt to market environmentally friendly products. Information serves as a basis for judgment and helps consumers become informed for decision making (Schmidt and Spreng, 1996). WOM is a powerful information source that consumers commonly view as more reliable, credible, and trustworthy than firm-initiated communications and thus can determine the prospects of any product (Allsop et al., 2007). Finally, although intentions are not always accurate predictors of future behavior, consumers tend to follow their purchase intentions (Chandon et al., 2005).

Fig. 1 presents the research model of the study. The model consists of three different groups of variables: (1) attributional formation, which includes green norms (consensus), CSR beliefs (distinctiveness), and green history (consistency); (2) attributions, which comprise intrinsic and extrinsic motives that consumers assign to companies for launching green products; and (3) attribution outcomes, which include green skepticism, information seeking, negative WOM, and purchase intentions. The model includes 11 hypotheses and investigates how the attribution formation components influence the type of attribution made and the outcomes of such attributions. A discussion of our research hypotheses follows.

…Insert Fig. 1 about here…

Research Hypotheses

Attribution Formation and Motives

Consensus refers to the degree to which other companies in the industry behave similarly to the firm being observed. In the context of green products, if the consumer observes most other companies having similar products too, consensus is high. However, if most other companies do not market green products, consensus is low. Information on whether environmental responsibility is pertinent in an industry should influence consumers' interpretation of firm behavior. When a consumer participates in a market in which environmental responsibility and green products are the exception rather than the rule, he or she is likely to infer that the firm producing green products is acting in a unique, authentic way, making this practice seem more appealing. Thus, consumers are likely to think that this behavior is in character for the firm, become convinced about its true intentions, and generate intrinsic attributions (see Vlachos et al., 2013a). By contrast, in a market in which most competitors behave in an environmentally responsible manner and green products are the norm rather than the exception, a consumer is likely to think that an emulation effect is taking place and that there is a lack of novelty and genuineness in the behavior of the firm being observed (Parguel et al., 2011). As a result, the consumer might view the firm's decision to market green products as a reaction to external pressures, rather than corresponding to its true beliefs and values, and attribute corporate behavior to extrinsic motivations.

H1. Green norms are negatively related to intrinsic motives.

H2. Green norms are positively related to extrinsic motives.

Distinctiveness refers to the degree to which the behavior of the observed firm is specific to the situation or manifests in similar situations (Parguel et al., 2011). If the firm in question behaves the same in other related contexts, distinctiveness is low; if the firm exhibits

different behavior depending on the context, distinctiveness is high. The broader area of CSR is an appropriate domain to compare with environmental sustainability product practices (Vlachos et al., 2013a). CSR reflects a firm's consideration of and response to issues beyond its economic, technical, and legal requirements (Carroll, 1999), and CSR beliefs refer to a consumer's overall assessment of the extent to which a firm is socially responsible (Du et al., 2007). When consumers hold positive CSR beliefs about a firm, they are likely to judge that the green products are not just another attempt to "jump onto the green bandwagon" but rather part of a wider, well-coordinated effort intended to address ethical and social issues. As a result, consumers are likely to view this practice as embedded in the firm's values and form intrinsic attributions. However, when consumers hold negative CSR beliefs, they might regard the firm as focusing solely and narrowly on launching green products and deem this a self-interested promotional activity—an effort to tap an upcoming market segment (e.g., Lifestyles of Health and Sustainability consumers), with a view to exploiting the environmental cause and increasing product demand. In this case, it is reasonable to presume that consumers will make attributions of extrinsic causality.

H3. CSR beliefs are positively related to intrinsic motives.

H4. CSR beliefs are negatively related to extrinsic motives.

Consistency refers to the degree to which the firm in question displays a stable, repeated behavior in the domain of interest across time (Laczniak et al., 2001). If the firm behaves the same way most of the time, consistency is high; if it behaves similarly only some of the time, consistency is low. A case in point is the Body Shop, which was positioned as an environmentally responsible firm from its very beginning and has a long, committed history in pro-environmental activities. When consumers observe that a firm with a long, positive history in environmental sustainability markets green products, they are likely to deduct that

this is a natural consequence of its continuous, persistent, and sincere interest in environmental issues (Vlachos et al., 2013a). This is because such companies have earned the right to mention their good deeds without raising suspicions about their motives in consumers' minds (Vanhamme and Grobben, 2009). It follows then that consumers should attribute intrinsic motives to corporate behavior. In contrast, chronic failure to deal with environmental issues on behalf of the firm producing green products could lead consumers to infer that this is an unusual, out-of-character behavior, deviating from standard practices. Thus, they may interpret the launching of green products as a selfish, opportunistic attempt to take advantage of current environmental developments and allied market trends (Parguel et al., 2011), eliciting self-serving attributions.

H5. Green history is positively related to intrinsic motives.

H6. Green history is negatively related to extrinsic motives.

Motives and Green Skepticism

Intrinsic attributions refer to the causal inferences people make by observing the genuine, values-driven environmental disposition of the firm (Parguel et al., 2011). Such attributions are positively received by consumers because they relate to beliefs that the firm's actions epitomize its moral, ethical, and environmental ideals and standards (Ellen et al., 2006; Vlachos et al., 2009). Intrinsic motives denote a selfless, caring, and benevolent behavior that is synchronized with the overarching philosophy of the firm to do good and/or fulfill its obligations to society (Becker-Olsen et al., 2006; Du et al., 2007). This underlying set of values conveys transparency, endows authenticity, and develops perceptions of greater sincerity in the eyes of consumers (Weiner and Peter, 1973). Ascribing firm actions to intrinsic motivations can enhance consumer evaluations of the firm and its brands (Parguel et al., 2011). In our case, green products are viewed as the outcome of the firm's true efforts to

"do good" and reduce the ecological footprint of its products. Thus, intrinsic attributions can foster confidence in the firm's green products and eradicate consumers' doubts about them.

H7. Intrinsic motives are negatively related to green skepticism.

Extrinsic attributions refer to consumers' perceptions that a firm engages in a behavior for self-interested, profiteering, and exploitation purposes (Ellen et al., 2000; Parguel et al., 2011). Consumers make such inferences about the launch of green products when they come to realize that this is an intentional effort to take advantage of, rather than serving, the environmental movement (Du et al., 2007; Vlachos et al., 2009). Self-centered motives are not reciprocal to environmental causes but seem more contradictory in terms. Furthermore, they indicate that the firm does not truly care about the environment, is preoccupied with its selfish interests, and acts in a misleading and manipulative manner (Mohr et al., 1998; Parguel et al., 2011). Therefore, inferences that self-interest, rather than environmental precaution, is the actual motive and valid end of the incumbent firm's actions should prompt consumers to question and doubt its green products.

H8. Extrinsic motives are positively related to green skepticism.

Outcomes of Green Skepticism

Information seeking refers to consumers' inclination to search for additional information related to the environmental attributes of green products (Dholakia, 2001). Although companies frequently try to inform consumers about the green nature of their offerings (e.g., eco-labels, explanations on product packaging, web pages), environmental product claims (e.g., organic, fair trade, biodegradable packaging) fall into the category of credence attributes, which consumers find difficult to assess not only before purchase but also after purchase and use (Atkinson, 2013). This problem is further complicated by recurrent

instances of greenwashing misleading consumers about the environmental benefits of a product (Delmas and Burbano, 2011).

Previous research suggests that ambiguity and lack of trust create a tendency to increase rational information search (Sinaceur, 2010). Information seeking is inextricably linked with doubts in that answers can be obtained if more information, knowledge, and evidence are available (Oleson et al., 2000). Consumers skeptical about green products question, rather than take for granted, the information provided about their environmental performance. Thus, they are likely to seek additional information about their environmental attributes (e.g., read certification and ingredient details, ask friends, access websites and discussion groups) in an attempt to enhance understanding of product features, help check product claims, and reduce risks associated with green product performance.

H9. Green skepticism is positively related to information seeking.

Negative WOM refers to interpersonal communication about green products that denigrates the object of the communication (Laczniak et al., 2001). Consumers commonly express their product opinions to share their experiences and ensure informed decision making (De Matos and Rossi, 2008). Providing negative information about products in social situations is mainly triggered by consumers' unfavorable product judgments (Herr et al., 1991). Notably, consumers with unfavorable product judgments more often engage in WOM communication than consumers with favorable product associations (Anderson, 1998). This is because negative information is often more informative and diagnostic than positive information, helping consumers distinguish low- from high-quality products (Herr et al., 1991). In addition, by voicing their doubts to friends and acquaintances, consumers can vent their frustration and attain retribution for their dissatisfaction (Chan and Wan, 2008). Thus, in the presence of green skepticism, consumers are likely to pose their questions, communicate

their doubts, share their qualms, and warn others about green products (Ferguson et al., 2011), portraying them in an overall negative light to friends and acquaintances.

H10. Green skepticism is positively related to negative WOM.

Purchase intentions refer to consumers' likelihood of buying green products (Chandran and Morwitz, 2005). Market and academic research suggests that an increasing number of consumers are interested in purchasing products that are beneficial for the environment (Kilbourne and Pickett, 2008; Yates, 2009) and willing to pay a price premium for them (Laroche et al., 2001; Nielsen, 2014). Environmental issues influence purchase decisions because consumers not only care about what they receive as part of an exchange but also perceive themselves as members of a wider community (Maignan et al., 2005). When consumers doubt the environmental qualities of green products, they are likely to evaluate them less favorably than they would if they had no such doubt (Chang, 2011). Furthermore, they are unlikely to buy them with a view to contributing to a solution to the environmental problem (Mohr et al., 1998; Pagiaslis and Krontalis, 2014). Thus, in the presence of green skepticism, consumers should exhibit reluctance in buying green products.

H11. Green skepticism is negatively related to purchase intentions.

Research Methodology

Context and Sampling

To test the conceptual model developed, we conducted an online survey among U.S. citizens. We used Amazon's Mechanical Turk (MTurk) to recruit respondents, which is considered a reliable, effective, and efficient tool for collecting quality data (Buhrmester et al., 2011). MTurk is an online crowdsourcing marketplace that allows individuals (workers) to be recruited by requesters (employers) for the execution of human intelligence tasks (HITs)

(Paolacci et al., 2010). Participants (i.e., workers) had to be 20 years old or more and live in the United States at the time of the survey. Besides those two basic criteria, no other limitations were imposed and all workers registered with MTurk were allowed to complete the questionnaire. Respondents were provided with a survey link in Qualtrics and were subsequently paid the equivalent of approximately $8 per hour for completing the questionnaire. The questionnaire took an average of eight minutes to be completed. In total, 489 questionnaires were collected, four of which were dropped on account of missing items and another seven of which were eliminated because of static or replicated answer patterns. Hence, the final sample consisted of 478 consumers.

Of the 478 respondents, the majority (57.7%) were men. Respondents varied considerably in terms of age group (21–24: 20.3%; 25–34: 41.8%; 35–44: 18.2%; 45–54: 11.9%; ≥55: 7.3%), occupation (student: 10.3%; housework: 4.6%; employed: 54.2%; unemployed: 8.4%; self-employed: 19.0%; retired: 1.9%; other: 1.7%), education (primary: 3.1%; secondary: 31.4%; university/undergraduate: 53.6%; postgraduate: 10.3%; other: 1.7%), annual household income in US$ (20,000–29,999: 18.2%; 30,000–39,999: 16.8%; 40,000–49,999: 11.9%; 50,000–59,999: 16.3%; 60,000–69,999: 7.1%; 70,000 or over: 21.3%), and eco-friendly product purchasing frequency (rarely: 24.6%; every month: 37.4%; every two weeks: 16.7%; every week 18.4%; every 2 or 3 days: 1.5%; every day: 1.3; never: 1.3%).

Questionnaire Development and Measures

To specify the conceptual domain of each construct and effectively operationalize them, we undertook a thorough review of the pertinent literature in combination with personal interviews with nine consumers. The interviews offered valuable insights into the relevance of the study constructs to understanding the phenomenon of green skepticism and the plausibility of hypothesized associations based on preliminary consumer perceptions. The

interviews also helped us adapt the existing measures identified from prior research to the specific characteristics of our research setting. This process enabled us to develop an initial draft of a structured questionnaire as the main data collection instrument. Then, three academic researchers experienced in conducting consumer research evaluated the content validity of the measures selected; they judged the extent to which each item was representative of the construct in question. Furthermore, before the execution of the main study, we carried out a large-scale pilot study with 83 postgraduate management students. The results did not reveal any problems with the questionnaire, and no changes to the research instrument were made.

To ensure meaningful findings, the questionnaire included a brief explanation of the notion of environmentally friendly products. Respondents were asked to think about an eco-friendly product they were familiar with (e.g., seen in an ad, during a recent visit to a retailer, or in a showroom) from one of the following product categories: (1) household goods, (2) baby and children's products, (3) consumer electronics and appliances, and (4) personal care products. These categories represent a variety of shopped products in which environmental attributes can be found (Cohn & Wolfe, 2011). Informants were then asked to answer the questionnaire with reference to the identified product. A brief description of our measures follows. Unless otherwise stated, the response formats for the scales ranged from (1) "strongly disagree" to (7) "strongly agree."

To measure *green norms*, we used four items adapted from Colwell and Joshi (2013) that tap consumers' perceptions of the extent to which the firm operates in a market with high environmental expectations. We operationalized *CSR beliefs* using a four-item scale from Wagner et al. (2009) that captures the extent to which consumers believe that the firm is generally socially responsible. We developed a three-item scale from Vanhamme and

Grobben (2009) to measure *green history*, with the items focusing on the firm's history in dealing with environmental practices and producing environmental products.

To measure *intrinsic* and *extrinsic motives*, we used four items in each case based on the studies of Parguel et al. (2011) and Vlachos et al. (2013b). Respondents expressed their opinion on the reasons the identified firm developed/launched the identified green product in the first place. The items of intrinsic motives focused on reasons associated with morality, genuineness, and rightness, and the extrinsic motives items centered on reasons related to competition, market demand, and publicity.

We adapted four items from Skarmeas and Leonidou (2013) to measure the extent to which the consumer is *skeptical* about the identified green product. We used a semantic differential scale with −3 to +3 as anchors. We also examined the accuracy of measuring green skepticism with a single item (i.e., "I am skeptical about whether this is an environmentally friendly product"). The correlation between the summated, multi-item skepticism scale and the single item was highly significant ($p < .01$), lending further support to the validity of the measures employed.

We operationalized *information seeking* using three items from Dholakia's (2001) study that focus on the extent to which the consumer searches for more information about the identified product's environmental attributes. We measured *negative WOM* with three items derived from Grégoire et al. (2009). The measure captures the extent to which a consumer communicates negative information about the identified green product in various social situations. We captured *purchase intentions* with four items adapted from Chandran and Morwitz (2005). Seven-point semantic differential scales were used in this case. The items used different anchors (i.e., "highly unlikely/highly likely," "highly improbable/highly probable," "highly uncertain/highly certain," and "no chance at all/very good chance") that gauge the prospect of buying the identified green product.

We included several control variables to reduce the likelihood that our results would be biased because of omitted variables and to test whether our main hypotheses would hold in the presence of important factors discussed in prior research. We operationalized *environmental knowledge* with four items based on Mostafa (2007) that measure the consumer's perceived knowledge of environmental issues. We employed a four-item semantic differential scale to measure *environmental attitude*, based on the works of Cho et al. (2013) and Fujii (2006). The items focus on the consumer's attitude toward the importance of environmental issues. We adapted a scale from Chen and Chang (2013) to measure *greenwashing*, with five items capturing the extent to which companies mislead consumers about the environmental features of their products. Finally, we took four items from Becker-Olsen et al. (2006) to measure *corporate ability*, which captures consumers' perceptions of the firm's expertise in producing and delivering its outputs.

Results

Measure Assessment

Initially, we used exploratory factor analysis to assess and purify the scales. We retained items that loaded more than .60 on a given factor and less than .30 on the remaining ones. Then, we ran confirmatory factor analysis using EQS 6.2 to assess the unidimensionality and convergent and discriminant validity of the latent constructs. The maximum likelihood estimation procedure was used. The model's chi-square was found to be significant ($\chi^2_{(1002)} = 1326.50$, $p < .001$), but this is expected considering the limitations of this statistic. However, the results of the other fit indices, namely normed fit index (NFI), non-normed fit index (NNFI), comparative fit index (CFI), incremental fit index (IFI), and root mean square error of approximation (RMSEA), show a good fit to the data observed (NFI = .93; NNFI = .98;

CFI = .98; IFI = .98; RMSEA = .026). Table 1 provides the measurement model results along with composite reliabilities (ρ) and average variance extracted (AVE) for each construct.

…Insert Table 1 about here…

The factor loadings of the items on their posited indicators all exceed .76 and have t-values greater than 19.02, thus demonstrating convergent validity (Gerbing and Anderson, 1988). We assessed discriminant validity by examining the AVE for each construct along with the shared variance between constructs (Fornell and Larcker, 1981). All AVE values were above .50, and in all cases, the shared variance between constructs exceeded the AVE per construct. In addition, the Cronbach's alpha for the study constructs ranged from .86 to .94, denoting satisfactory levels of internal consistency. Table 2 provides the inter-correlations, reliability estimates, and descriptive statistics of the study constructs.

…Insert Table 2 about here…

Common Method Bias

Because we measured the study constructs at the same time using a self-reported questionnaire, our results may be susceptible to common method bias (CMB). To minimize this possibility, we followed several procedural remedies at the design phase of the study (e.g., assuring respondents that there were no right or wrong answers, encouraging them to respond as honestly as possible, grouping construct items in sections and not in variables, employing multi-response formats) (Podsakoff et al., 2003). We also conducted two post-hoc checks to determine whether CMB was an issue in our data set. First, using Harman's single-factor test, we restricted all manifest items to load on a single latent factor. The results provided an extremely poor fit (i.e., $\chi^2_{(989)} = 11848.28$, $p < .001$; NFI = .33; NNFI = .31; CFI = .34; IFI = .35; RMSEA = .152). Second, we employed Lindell and Whitney's (2001) post-hoc marker variable approach. We used the second-smallest correlation among the study variables ($r = .011$, $p > .05$) to calculate the CMB-adjusted correlation matrix (Malhotra et al.,

2006). A comparison between the original and the CMB-adjusted correlations revealed no statistically significant differences (at $p < .05$); the pattern of significant and non-significant correlations remained the same after adjustment. Taken together, these results suggest that CMB is unlikely to be of concern in this study.

Model Estimation

After establishing confidence in the appropriateness of the study measures, we examined the structural model presented in Fig. 1. Table 3 presents the estimates obtained from EQS using a maximum likelihood estimation procedure. The goodness- and badness-of-fit indices for the structural model showed satisfactory scores ($\chi^2_{(1024)} = 1466.83$, $p < .001$; NFI = .92; NNFI = .97; CFI = .97; IFI = .97; RMSEA = .030). All hypotheses, except H8, were supported.

…Insert Table 3 about here…

At the attribution formation stage, green norms were negatively related to intrinsic motives ($\beta = -.11$, $t = -2.85$, $p < .01$) and positively associated with extrinsic motives ($\beta = .31$, $t = 5.99$, $p < .01$), in support of H1 and H2, respectively. CSR beliefs were positively linked with intrinsic motives ($\beta = .37$, $t = 7.18$, $p < .01$) and negatively associated with extrinsic motives ($\beta = -.16$, $t = -2.57$, $p < .01$), providing support for H3 and H4, respectively. As hypothesized in H5 and H6, green history was positively related to intrinsic motives ($\beta = .21$, $t = 4.67$, $p < .01$) and negatively associated with extrinsic motives ($\beta = -.18$, $t = -3.06$, $p < .01$), respectively. In terms of attribution outcomes, intrinsic motives were positively associated with green skepticism, in support of H7 ($\beta = -.28$, $t = -5.82$, $p < .01$). Contrary to H8, extrinsic motives were not significantly related to green skepticism ($\beta = -.03$, $t = -.61$, $p > .05$). Furthermore, green skepticism was positively related to information seeking ($\beta = .25$, $t = 3.83$, $p < .01$) and negative WOM ($\beta = .32$, $t = 6.00$, $p < .01$) and negatively associated with purchase intentions ($\beta = -.29$, $t = -5.67$, $p < .01$). These findings

provide support for H9, H10, and H11, respectively. Altogether, the research model predicts a substantial amount of the observed variance for intrinsic motives (51%), extrinsic motives (25%), green skepticism (47%), information seeking (10%), negative WOM (46%), and purchase intentions (48%).

Discussion

The study findings are in line with the tenets of attribution theory that people use information regarding the consensus, distinctiveness, and consistency of a behavior to form causal judgments about this behavior (Kelley, 1973). Notably, although attribution theory has attracted considerable interest in explaining consumer responses to corporate actions, scant research has examined the sources of consumer attributions (Marín et al., 2015). In the context of green products, consumers take into consideration whether green products are commonplace in the market, the overall social responsibility of the firm, and the extent to which the firm has a history in environmental sustainability. These three types of information help consumers arrive at an intrinsic or extrinsic explanation for the firm's decision to offer green products. Specifically, the results reveal that consumers infer a genuine intent by the firm to do good when they believe that green norms are not prevalent in the sector and the firm is socially responsible and has a long history in environmental product practices; these conditions also reduce attributions of extrinsic motivations. Conversely, consumers infer that profiteering is the ultimate goal of the firm when other firms in the industry behave in a similar fashion and the firm does not perform well in CSR and has a poor history in developing green products; these conditions are also detrimental to intrinsic attributions.

The origin of the term "skepticism" derives from the Greek word "skeptomai," which means to consider, to reflect, and to contemplate, and some degree of skepticism is considered healthy because it can help people make better decisions. Our findings show that

consumers discard skepticism about environmentally friendly products when they ascribe their development to a firm's sincere motivation to fulfill its social obligations. This finding reflects the importance consumers attach to a firm's role in society and indicates that consumers do believe in the power of good actions. It seems that genuine, altruistic environmental efforts can be the antidote to green skepticism. Notably, the extent to which consumers believe that a firm develops eco-friendly products to increase its own welfare has no discernible effect on their skepticism of green products. A similar pattern of results appears in Vlachos et al.'s (2009) and Parguel at al.'s (2011) works on the role of strategic and extrinsic motives in the context of CSR. A reasonably justified conjecture for this finding is that consumers recognize and accept that, except for their responsibilities to society, firms are in the business of making money and need to preserve profitability to survive. As demand for environmentally friendly products increases, sales and profits may come from this market. In this case, consumers' doubts about green products are neither raised nor resolved.

The findings also highlight the central role of green skepticism in generating several important outcomes. First, the study results reveal that green skepticism generates interest in seeking information about green products. Consumers who are unsure about the green nature of a product turn to additional information sources to confirm or disconfirm their doubts. This is in agreement with findings in other literatures. For example, in the product development literature, consumer doubts about new products result in additional information search (Sääksjärvi and Morel, 2010), whereas research in health care indicates that patients who doubt their doctors tend to search for more information about the treatments suggested to them (Bell et al., 2011). Second, our results also confirm that negative WOM communication can be a by-product of skepticism (Skarmeas and Leonidou, 2013). Consumers frequently talk to each other to convey and/or review their opinions about products, and their WOM activities exert a powerful influence on others' judgments of products (Herr et al., 1991).

Considering the vast literature on negativity dominance (Rozin and Royzman, 2001), negative WOM can have deleterious consequences for green products. Finally, the study findings unveil a negative relationship between green skepticism and purchase intentions. This result may partly explain why, despite increasing concern about environmental issues, many consumers are still reluctant to purchase green products (Öberseder et al., 2011). Consumers' doubts about the environmental benefits of green products translate into a decreased willingness to buy them.

Practical Implications

The findings have various implications for business practitioners. Managers should be cognizant of and regularly monitor consumer skepticism of green products and take this issue under consideration. Importantly, they should understand that consumers appreciate altruistic corporate actions. Intrinsically motivated firms should effectively communicate their true intentions to customers in an attempt to show and convince them that their sustainability efforts are authentic and genuine. Furthermore, business practitioners need to pay particular attention to how consumers reach causal judgments. Green product practices are more genuinely evaluated when the firm has a favorable history in environmental management, has a holistic approach with similar practices in other related sustainability domains (e.g., CSR), and operates in an industry with less environmental stringency. In contrast, companies that are relatively new to the sustainability front (i.e., absence of green history and competency in other related areas, such as CSR) and operate in an industry that treats environmental responsibility as a requirement are in a more difficult position to evoke inferences of intrinsic motivations. It follows that firms wishing to cultivate strong corporate values regarding sustainability and allay doubts about their green offerings need to signal lesser consensus and greater consistency and non-distinctiveness. To this end, they may find it advantageous to

proactively engage in environmental practices that go beyond industry norms (Menguc et al., 2010), work on improving specific ratings by embracing sustainability initiatives in general, and incrementally building a consistent green history in particular (Parguel et al., 2011).

In addition, the results revealed that skeptical consumers seek more information about green products in an attempt to dispel or corroborate their doubts. A characteristic of skeptical people is that they can change their minds when provided with clear and convincing evidence (Mohr et al., 1998). Thus, it is important that firms disclose all the information necessary to support the environmental benefits and performance of their green products, in existing (e.g., product packaging, promotional material) or additional (e.g., environmental and corporate websites) sources to achieve a truthful green positioning for their offerings. It is worth mentioning here that providing such information can eventually help the success of genuinely green products. However, doing the same for products that do not actually help the environment (in other words tend to mislead the public) can potentially generate greater green skepticism and boost further its negative consequences. Taken together, the study findings provide guidance to managers on how to be active from the beginning and impede the initial development of green skepticism and on how to tackle it, when present.

From a public policy perspective, there is a need to consider how effective green products are in terms of sustainable development and then to evaluate the actual damage that green skepticism can cause. Once the size of these effects can be established, suggestions on how to alleviate green skepticism can be evaluated by governmental officials against associated costs and benefits. For instance, public policy makers could consider the introduction of appropriate, straightforward and consistent environmental labeling so that consumers have a clear point of reference and are able to understand the environmental features of each eco-friendly product; insights from nutrition facts labels can be taken in this regard. Likewise, stricter penalties could be imposed for firms caught greenwashing with environmental claims

that are untrue, misleading, deceptive, or fraudulent. In this way, consumers might begin to allay part of their doubts about and trust more genuine environmentally friendly offerings. Both initiatives suggested require further study to ascertain their potential impact and effectiveness in limiting green skepticism.

Limitations and Further Research

Our results should be interpreted in light of certain limitations. Specifically, the study adopted a cross-sectional research design. Future studies should consider gathering longitudinal data, which can offer valuable insights into the dynamics of connectedness among the study constructs. In addition, we conducted this study within a specific country context. By their very nature, sustainability issues transcend national borders and are of great interest to various international consortia, governments, firms, and other institutions (Varadarajan, 2014). Replication of this research in other countries, with different economic, socio-cultural, and political-legal conditions, would test its external validity. In addition, researchers could take into consideration the roles of a firm's competitive positioning (green vs. non-green) (Du et al., 2007) and green strategic approach (embedded vs. peripheral) (Aguinis and Glavas, 2013) in deterring or driving consumer skepticism of green products.

Furthermore, subsequent studies could investigate how different types of causal inferences, such as egoistic-driven, values-driven, strategic-driven, and stakeholder-driven attributions (Ellen et al., 2006; Vlachos et al., 2009), influence green skepticism. Relatedly, research could build on attribution theory to explore the influences of actor–observer bias, fundamental attribution error, self-serving bias, and discounting and augmentation principles on how consumers make causal inferences. Finally, examination of green skepticism through the lenses of other theoretical frameworks, such as the theory of information economics and the theory of planned behavior, could advance theory and management practice in the field.

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Fig. 1 Research model

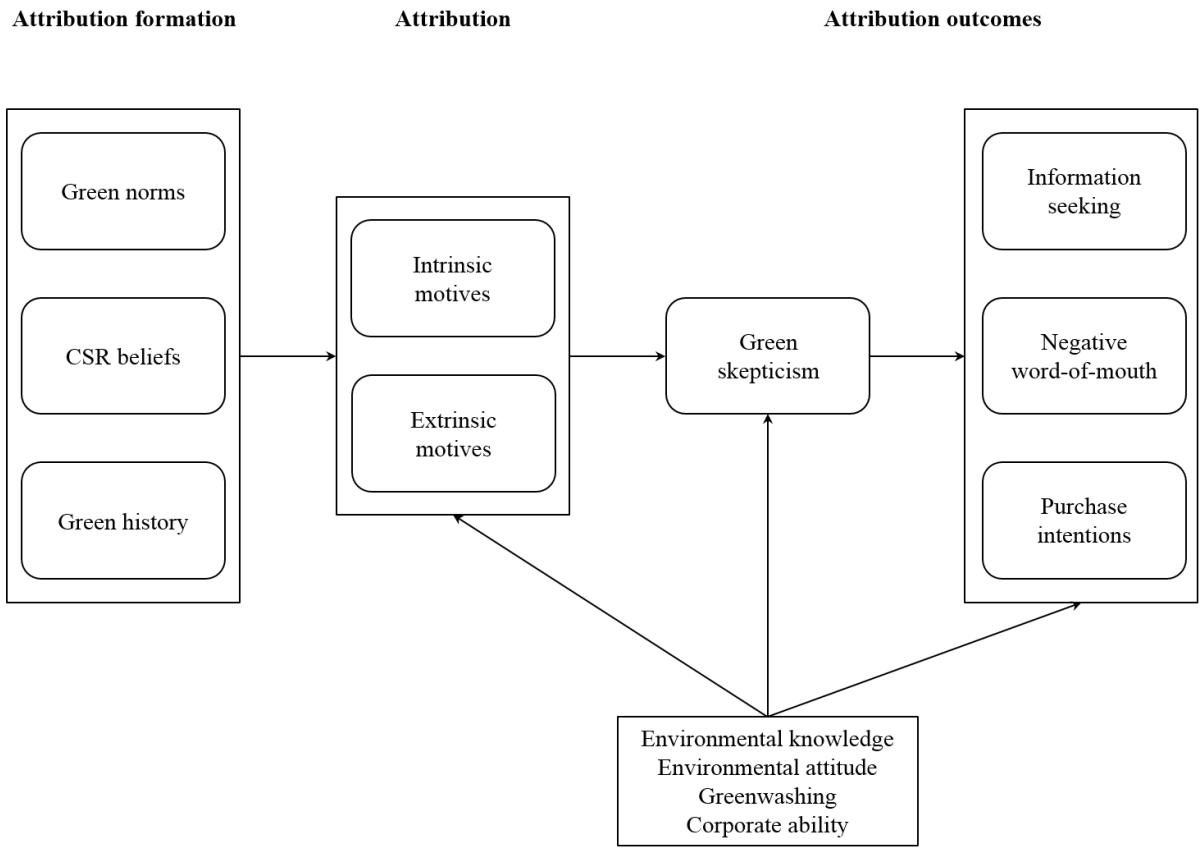

Table 1 Measurement model results

Factor and items	Standardized loading	*t*-value
Green norms (ρ = .78, AVE = .54)		
This firm operates in a market in which all companies are expected to be environmentally responsible.	.80	19.64
This firm operates in a market in which environmental responsibility is a requirement.	.86	21.52
This firm operates in a market in which all firms come up with environmentally friendlier products and services.	.81	19.91
CSR beliefs (ρ = .81, AVE = .59)		
This firm is socially responsible.	.87	22.91
This firm is concerned to improve the well-being of society.	.88	23.39
This firm follows high ethical standards.	.84	21.80
Green history (ρ = .82, AVE = .61)		
Environmentally friendly products are new additions to this firm's product portfolio. (reverse)	.88	23.63
This firm has a long history in environmental practices.	.88	23.46
This firm has been producing environmentally friendly products for many years.	.86	22.60
Intrinsic motives (ρ = .86, AVE = .60)		
Primarily because it is genuinely concerned about environmental issues.	.90	24.89
Primarily because it feels morally obligated to help the environment.	.84	22.19
Primarily because it wants to give back something to the environment.	.86	23.13
Primarily because it wants to do the right thing for the environment.	.88	23.88
Extrinsic motives (ρ = .80, AVE = .50)		
Primarily because its competitors are doing the same.	.77	18.70
Primarily because it is fashionable to do so nowadays.	.78	19.03
Primarily because it wants to make more customers.	.79	19.54
Primarily because it wants to improve its image among consumers.	.81	20.07
Green skepticism (ρ = .86, AVE = .60)		
It is doubtless/doubtful that this is an environmentally friendly product.	.87	23.33
It is certain/uncertain that this product is less damaging for the environment.	.86	22.95
It is sure/unsure that this product meets high environmental standards.	.89	24.22
It is unquestionable/questionable that this product is better for the natural environment.	.87	23.40
Information seeking (ρ = .84, AVE = .63)		
I would search for more information about this product's environmental attributes (e.g., performance, design, ingredients).	.82	21.56
I would seek information about this product's environmental attributes from additional sources (e.g., websites, discussion groups, friends).	.91	25.06
I would carefully examine all the information about this product's environmental attributes provided in the packaging (e.g., eco-labels, certifications, ingredient details).	.92	25.61
Negative WOM (ρ = .84, AVE = .64)		
I would spread negative word of mouth about this product.	.89	24.41
I would speak unfavorably about this product in social situations.	.91	25.08
If my friends were looking for a similar product, I would tell them not to try this one.	.89	24.50
Purchase intentions (ρ = .88, AVE = .65)		
If you were in the market for a product like this, how likely is it that you would buy this product?	.90	25.13
If you were in the market for a product like this, how probable is it that you would purchase this product?	.91	25.76
If you were in the market for a product like this, how certain is it that you would purchase this product?	.87	23.82
If you were in the market for a product like this, what chance is there that you would buy this product?	.91	25.72
Environmental knowledge (ρ = .83, AVE = .55)		
I know more about recycling than the average person.	.79	20.07
I understand the environmental phrases and symbols on product packages.	.81	20.51
I am very knowledgeable about environmental issues.	.87	22.89
I am confident that I know how to select products and packages that reduce the amount of waste ending up in landfills.	.84	21.89

Environmental attitude (ρ = .85, AVE = .58)		
I dislike/like the idea of environmental protection.	.86	22.88
I am unconcerned/concerned about environmental issues.	.87	23.35
I think too much/little attention is given to environmental issues.	.82	21.44
I think that environmental issues are unimportant/important.	.87	23.23
Greenwashing (ρ = .85, AVE = .53)		
Most companies mislead with words about the environmental features of their products.	.80	20.39
Most companies mislead with visuals or graphics about the environmental features of their products.	.80	20.24
Most companies provide vague or seemingly un-provable environmental claims for their products.	.81	20.62
Most companies overstate or exaggerate the environmental features of their products.	.82	21.17
Most companies leave out or hide important information about the real environmental features of their products.	.82	21.27
Corporate ability (ρ = .85, AVE = .59)		
This firm makes good products.	.93	26.13
This is an innovative firm.	.80	20.69
This firm has reliable products.	.91	25.20
This is a well-managed firm.	.78	19.80

$\chi^2_{(1002)} = 1326.50$, $p < .001$; NFI = .93; NNFI = .98; CFI = .98; IFI = .98; RMSEA = .026

Table 2 Correlation matrix, reliability estimates, and descriptive statistics [a]

Measures	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Green norms	1.00												
2. CSR beliefs	.11	1.00											
3. Green history	.07	.45	1.00										
4. Intrinsic motives	-.02	.55	.44	1.00									
5. Extrinsic motives	.21	-.22	-.21	-.32	1.00								
6. Green skepticism	.06	-.36	-.30	-.47	.10	1.00							
7. Information seeking	.10	.07	-.12	.06	.04	.15	1.00						
8. Negative WOM	.01	-.45	-.33	-.47	.17	.54	-.06	1.00					
9. Purchase intentions	.01	.35	.33	.42	-.11	-.55	-.05	-.58	1.00				
10. Environmental knowledge	.07	.27	.20	.30	-.12	-.21	-.17	-.24	.20	1.00			
11. Environmental attitude	-.05	.22	.14	.31	-.03	-.34	-.12	-.35	.33	.30	1.00		
12. Greenwashing	-.08	-.24	-.11	.26	.25	.25	.12	.28	-.26	-.02	.01	1.00	
13. Corporate ability	-.03	.29	.26	.35	.03	-.54	-.03	-.45	.53	.18	.27	-.11	1.00
α	.86	.89	.90	.92	.86	.92	.91	.92	.94	.89	.91	.90	.91
Mean	4.46	4.86	4.46	4.38	5.15	3.05	3.88	3.39	4.44	4.50	5.53	4.87	4.98
SD	1.35	1.10	1.24	1.41	1.20	1.59	1.61	1.41	1.53	1.13	1.41	1.13	1.23

[a] Correlations greater than ±.09 are significant at the .05 level; correlations greater than ±.11 are significant at the .01 level.

Table 3 Structural equation model results

Paths	Standardized loadings	*t*-values	Hypotheses
Green norms → Intrinsic motives	-.11	-2.85**	H1(–)
Green norms → Extrinsic motives	.31	5.99**	H2(+)
CSR beliefs → Intrinsic motives	.37	7.18**	H3(+)
CSR beliefs → Extrinsic motives	-.16	-2.57**	H4(–)
Green history → Intrinsic motives	.21	4.67**	H5(+)
Green history → Extrinsic motives	-.18	-3.06**	H6(–)
Intrinsic motives → Green skepticism	-.28	-5.82**	H7(–)
Extrinsic motives → Green skepticism	-.03	-.61	H8(+)
Green skepticism → Information seeking	.25	3.83**	H9(+)
Green skepticism → Negative WOM	.32	6.00**	H10(+)
Green skepticism → Purchase intentions	-.29	-5.67**	H11(–)
Covariates			
Environmental knowledge → Intrinsic motives	.13	3.04**	
Environmental knowledge → Extrinsic motives	-.11	-2.16*	
Environmental knowledge → Green skepticism	-.01	-.14	
Environmental knowledge → Information seeking	.18	3.45**	
Environmental knowledge → Negative WOM	.09	-2.07*	
Environmental knowledge → Purchase intentions	.05	1.17	
Environmental attitude → Intrinsic motives	.13	3.13**	
Environmental attitude → Extrinsic motives	.04	.75	
Environmental attitude → Green skepticism	-.16	-3.56**	
Environmental attitude → Information seeking	.17	3.05**	
Environmental attitude → Negative WOM	-.18	-3.97**	
Environmental attitude → Purchase intentions	.13	3.04**	
Greenwashing → Intrinsic motives	-.16	-3.89**	
Greenwashing → Extrinsic motives	.27	5.19**	
Greenwashing → Green skepticism	.16	3.65**	
Greenwashing → Information seeking	.06	6.34**	
Greenwashing → Negative WOM	-.12	1.15	
Greenwashing → Purchase intentions	-.16	-4.01**	
Corporate ability → Intrinsic motives	.11	2.74**	
Corporate ability → Extrinsic motives	.17	3.19**	
Corporate ability → Green skepticism	-.39	-8.91**	
Corporate ability → Information seeking	.03	.45	
Corporate ability → Negative WOM	-.22	4.62**	
Corporate ability → Purchase intentions	.36	7.54**	

$\chi^2_{(1024)} = 1466.83$, $p < .001$; NFI = .92; NNFI = .97; CFI = .97; IFI = .97; RMSEA = .030

**$p < .01$.
*$p < .05$.