

## GREEN ADVERTISING: THE PROGRESS OF THREE DECADES (1991-2020)<sup>1</sup>

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### ABSTRACT

This paper presents an integrated review of 144 articles published on green advertising (GA) between 1991-2020. The extant literature is reviewed to aid taxonomical analysis of definitions, methodologies, and theoretical frameworks. The review suggests that the GA literature tracks the *stimuli-moderators-outcome* template of the general advertising literature. Consequently, advertising claims and appeals, consumer related factors, and product related factors are the organizing themes of the review. Emerging trends and possible research gaps for each of these three categories are identified. Based on a thorough discussion of current knowledge in the domain, detailed recommendations are presented to advance research in the field of GA.

**Keywords:** Green Advertising, Green Marketing, Taxonomical Analysis, Environmental Advertising, Sustainability Advertising

Green advertising (GA) is a very current and relevant topic, and the pace of research has picked up in the last decade (2011-2020), which includes a special issue by the *Journal of Advertising* in 2012. The domain is ripe for syntheses by the criterion laid out by Short (2009), as a number of conceptual and empirical articles have amassed. Recently, there was widespread opposition to Coca-Cola sponsoring a climate summit, as it was perceived as a major polluter. (NYT 2022). Green image of a product/company and actions consistent with that image affect bottom line positively through increased customer satisfaction (Ioannou et al 2022), which indicates that a review of academic research on GA might be timely. Agarwal and Kumar (2021) provide a review, but their focus is on bibliometric analysis. Further, because we go beyond the sample frame of web of science, our review is far more comprehensive with the inclusion of 27% more articles. We also provide a more nuanced view on several themes, including the use of theoretical frameworks. To select articles for this review, we focused only on those that directly deal with GA as defined by Iyer and Banerjee (1993) wherein “green” implies an underlying concern for preservation of the environment and a noninvasive lifestyle. If the article was about green marketing per se without significant focus on GA in particular, we excluded it.

We present a taxonomical analysis of articles published on GA in the last three decades, from 1991 to 2020. Apart from accounting for definitions, methodologies, theories employed, and context of the studies, we make two key contributions. First, we organize the review around three

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primary issues that characterize existing knowledge: *advertising claims and appeals*, *consumer related factors*, and *product related factors*. Second, we also identify emerging trends and research gaps, and point out the fruitful directions for meaningful advances in the field.

We scanned major databases related to peer-reviewed articles in marketing, advertising, business, economics, and environmental science, including EBSCO, ABI INFORM, Academic Search Complete, and JSTOR. A list of relevant keywords was used to ensure comprehensive coverage. Only English-language, peer-reviewed articles were considered. We also followed the practice of forward and backward referencing to unearth additional articles we may not have found with the database search. A corpus of 144 articles published between January 1991 and December 2020 are in the pool for this review, and a full list of the reviewed articles is available from the authors.

### CONCEPTUAL DOMAIN OF GREEN ADVERTISING

Iyer and Banerjee (1993) were among the first to use *green* in relation to advertising to imply concern for the preservation of the environment, i.e., planet earth, personal health, and animal life, and a noninvasive lifestyle. This explanation was in response to the growing confusion on the part of many consumers regarding environmental claims such as *environmentally friendly*, *degradable*, or *ozone friendly*. The above definition was seen as an effort for building the credibility of GA within both the marketing and the consumer world (Kilbourne, 1995).

**TABLE 1: Definitions of Green/GA**

<b>Authors (Year)</b>	<b>Details of Definition</b>
Iyer and Banerjee (1993)	The term "green" implies an underlying concern for the preservation of the environment and a non-invasive lifestyle. Generally targets for concern are the preservation of planet earth, personal health, and animal life. Moreover, the goal of preservation is generally accompanied by a belief that non-invasive methods have to be employed in achieving those goals. Thus, activities causing the least damage to planet earth, its environment, human and animal life are preferred.
Iyer, Banerjee, and Gulas (1994)	An ad was defined to be green if any part of the ad—headline, copy, or voiceover — referred to any aspect of the biophysical environment - atmosphere, land, water, animal life, or plant life - and there was an explicit effort to portray the sponsor or its offering as being sensitive and responsive to any aspect of the biophysical environment. This definition excludes ads that merely allude to nature more as a backdrop than in an active sense.
Shrum, McCarty, and Lowrey (1995)	The term "green" is used simply to indicate concern with the physical environment (air, water, land).

Banerjee, Gulas, and Iyer (1995)	GA is defined as any ad that meets one or more of the following criteria: <ul style="list-style-type: none"> <li>• Explicitly or implicitly addresses the relationship between a product/service and the biophysical environment.</li> <li>• Promotes a green lifestyle with or without highlighting a product/service.</li> <li>• Presents a corporate image of environmental responsibility.</li> </ul>
Kilbourne (1995)	Green is characterized as a two dimensional concept with political (reformism to radicalism) and human positional (anthropocentric to ecocentric) dimensions. There are at least five different types of green, including environmentalism, conservationism, human welfare ecology, preservationism, and ecologism.
Zinkhan and Carlson (1995)	Promotional messages that may appeal to the needs and desires of environmentally concerned consumers
Manrai, Manrai, Lascu, and Ryans (1997)	GA is defined as advertising that emphasizes the environmental friendliness of the product. Attributes such as degradability, recyclability, lower pollution etc. are considered to be environmentally friendly.
Fowler and Close (2012)	Any advertising that explicitly or implicitly promotes an awareness of environmental issues and/or suggests behaviors useful in minimizing or correcting these environmental issues. GA may be associated with either commercial for-profit enterprises or not-for-profit initiatives.

As the domain grew and more researchers started exploring the field, new definitions were proposed. Table 1 provides a list of definitions used in GA since 1993. Six out of the first seven definitions of GA highlighted concern for the environment as a central theme. While Shrum, McCarty, and Lowrey (1995) limited concern for the environment to concern with the physical environment (air, water, land), Banerjee, Gulas, and Iyer (1995) built upon the work of Iyer and Banerjee (1993). For them, concern for environment was more broad-based and included animal and plant life apart from the atmosphere, land, and water. Zinkhan and Carlson (1995) and Manrai et al. (1997), while talking about environmental concern, were less specific. Kilbourne (1995) took a more nuanced approach by proposing *green* as a two dimensional concept labeled *human positional* (position of human in nature from anthropocentric to ecocentric) and *political* (reformism to radicalism). Further, he stated that there are at least five different types of green, including environmentalism, conservationism, human welfare ecology, preservationism, and ecologism. He proposed that this framework could be used to understand the greenness of an advertisement, suggesting a different human position with respect to nature as well as a different political orientation. Furthermore he suggested the framework would be useful for defining terms such as *green*, *environmental*, and *ecological* which are often used interchangeably by scholars.

Iyer (1995) argued that the Banerjee, Gulas, and Iyer (1995) framework was a subset of Kilbourne's framework, however, that did not stop researchers from using the definition offered

by the former. The wider appeal of this definition could be attributed to its intuitive and clear conceptualization. Another notable effort was by Fowler and Close (2012), who emphasized that apart from creating awareness about environmental claims, GA should also have an educational component regarding behavior change. It is remarkable that all the definitions listed in table 1, except one, were proposed in the first five years of the evolution of GA. A relatively settled definition has enabled researchers to move forward exploring other issues related to GA.

The overall field of green issues, on the other hand, has moved beyond the focus on environmentalism to *sustainability*. While the definition of sustainability is actively being debated, there are some commonly agreed upon tenets. The most frequently cited definition is from the *Brundtland report*: “Sustainability is the ability of the current generation to meet its needs, without compromising the ability of future generations to meet theirs” (United Nations, 1987). The concept of sustainability goes beyond environmentalism or the generally accepted use of the term *green*. Bridging the gap between the existing studies of GA and the broader *sustainability* is clearly needed.

### METHODOLOGICAL TOOLS

Our observation overlaps with that of Agarwal and Kumar (2021) - the GA studies are dominated by two approaches: *content analysis* and some form of *experiments*. *Conceptual* papers are few and far between – with only a couple published in 1995 which examined the definition of GA (Kilbourne 1995) and looked at issues in GA from different regulatory agencies (Scammon and Mayer 1995). Other conceptual papers have tried to provide theoretical explanations of GA by using the dominant social paradigm (Kilbourne 2004), theory of integration propaganda (Nakajima 2001), and life cycle assessment information (Molina-Murillo and Smith 2005). A table categorizing the papers published on GA by methodologies is available from the authors.

Research on GA has focused primarily on *content* because that is usually what differentiates green ads from traditional ads. The earlier studies employed content analysis to understand different dimensions of green advertisements. After a basic understanding of the dimensions developed over the first 10 years, researchers employed content analysis less often. However, recently there has been a surge in studies using this method to look at the contexts that have not yet been examined, such as *B2B* (Leonidou et al. 2014), *cross-cultural studies* (Xue and Zhou 2012), *emerging economies* (Fernando, Sivakumaran, and Suganthi 2014), and *sustainability claims* (Cummins et al. 2014). This progression is natural as the field of GA matures and researchers begin to employ more granular levels of analysis.

It is also interesting that most content analyses in GA use samples drawn from print rather than video. Among the twenty-five papers we examined, only three (12%) contained video advertisements. In contrast, of general topic content analysis papers published in the *Journal of Advertising* in last three decades, close to 30% focused on video advertisements. VanDyke and Tedesko (2016) cover three magazines and choose three years for their analysis: 1990, 2000, and 2010. A comprehensive content analysis of GA exploring developments since the 1960s, regardless of media, is needed. Dande (2012) is a good beginning, though it covers only a single magazine.

Of the two dominant research methods, experimental studies have outpaced content analyses: since the year 2000, 13 papers used content analysis, and 56 used experimental methods. Several recent papers have used secondary data to gauge the attitudinal and financial impact of GA (Du 2015; Olsen, Slotegraaf, and Chandukala 2014; Smith et al. 2013).

Traditional advertising research has a rich heritage using qualitative methods including ethnographic research, qualitative interviews, projective techniques, focus groups, observation, and more. However, there were very few studies of GA in the initial years which used qualitative methods. Apart from McDonagh (1998), which used the social constructionist approach for proposing a theory of sustainable communication, almost all qualitative studies are recent. These include the use of case study (Jørgensen and Øystein 2015), compositional and interpretive analyses (Garland, Huising, and Struben 2013), critical method of frame analysis (Plec and Pettenger 2012), psychoanalysis of ads (Li, 2013), rhetorical analysis to examine the copy and visuals of marketing communication (Ryan 2012), ethnographic content analysis and phenomenological inquiry (Fowler and Close 2012), qualitative interviews (Chan and Chang 2013, Ryan, 2014; Hassan and Valenzhela 2016), focus group interviews (Atkinson and Kim 2015), qualitative interviews along with semiotic analysis (Oyedele and Dejong 2013), and textual analysis of advertising messages appearing in magazines (Atkinson 2014). Sometimes, a qualitative method is used to find the study context, e.g., Sarkar, Sarkar, and Yadav (2018) use focus group research to determine what products to use in a quantitative study that follows.

Certain methods suitable for studying text and images used in general advertising research or in green marketing may contribute to advancing the understanding of GA. Semiotics has been used often, but more as a philosophical reflection than an investigative tool (e.g., Peverini 2014; Salvador 2011), with Oyedele and Dejong 2013 as an exception. Literary criticism is a niche tool but can be used to decipher plots and ad-as-language-narrative. Mühlhäusler (1999) explores the role of metaphors, particularly in depicting the “naturalness” of products in GA. The study by Abidiwan-Lupo (2008) is striking as, rather than the visual and textual content of advertisements; he compared and analyzed laws related to green advertisements in the automobile industry in four countries. These approaches may hold promise for future studies.

Using technology to examine if and how GA stimuli affect the physiological responses of consumers and its implications is gaining momentum. Examples of some of these studies include eye-tracking (Hartmann, Apaolaza, and Alija 2013) and data collected using frontal theta brain waves of participants in an EEG laboratory (Lee et al. 2014).

Notably lacking in this listing of GA research methods is case methodology (with the exception of Jørgensen and Øystein 2015 and Kanso, Nelson, and Kitchen 2020). Case studies may be particularly suitable in this domain considering environmental disaster events reverberate not just nationally but globally and deeply affect the branding and bottom line of the firm in focus. Furthermore, we are not aware of any event analysis studies where landmark events such as an environmental disaster or passage of key legislation has been linked to changes in GA strategy or content.

## KEY THEMES EXAMINED

Green advertisements can be examined from the standpoint of executional elements (e.g., visuals and color) or substantive issues (e.g., types of appeals). While content analyses have studied executional elements, these serve primarily as support for environmental claims.

Examples include images of forests, wildlife, and natural vegetation. As far as substantive issues are concerned, three broad types of issues are researched in this area: advertising claims and appeals, consumer related factors, and product related factors.

### Advertising Claims and Appeals

A central question in GA is which claims and appeals are most effective in influencing consumer attitudes, beliefs, and behaviors related to the green cause. The initial studies in GA focused on environmental claims. Most studies on the subject dealt with a descriptive analysis of environmental advertising claims that lead to diverse classification schemes (Hartmann and Apaolaza-Ibañez 2009). These studies examined the extent to which GA addressed environmental issues: from simple claims of the environmental friendliness of products, to corporate image campaigns stressing the environmental credentials of large companies, to public campaigns promoting environmentally responsible behaviors (Iyer and Banerjee 1993). Table 2 provides a summary of diverse types of claim categories as specified in different studies.

**TABLE 2: GA Claims**

Claims	Authors (Year)
<ul style="list-style-type: none"> <li>Environmental claims <i>specificity</i> –concrete and tangible vs. vague and intangible claims</li> <li>Environmental claims <i>emphasis</i> – primary vs. secondary</li> </ul>	Davis (1993)
Four claim categories Product orientation, Process orientation, Image orientation, and Environmental claim	Carlson, Grove, Laczniak, and Kangun (1996); Polonsky, Carlson, Grove, and Kangun (1997); Newell, Goldsmith, and Banzhaf (1998); Segev, Fernandes, and Hong (2016)
Substantive claims and Associative claims	Carlson, Grove, Kangun, and Polonsky (1996); Chan, Leung, and Wong (2006); Hu (2012)
<ul style="list-style-type: none"> <li>Environmental claims <i>specificity</i> – intangible vs. tangible claims</li> <li>Environmental claims <i>emphasis</i> – secondary vs. primary</li> <li>Environmental claims <i>extremity/strength</i> – Extremely weak vs. extremely strong</li> </ul>	Manrai, Manrai, Lascu, and Ryans (1997)
Informational (environmental product features) claims	Hartmann and Apaolaza-Ibañez (2009)
Strong product related claims, Weak product related claims, and Cause-related marketing claims	Tucker, Rifon, Lee, and Reece (2012)

Claim focus – More focused on environmental issues vs. Less focused on environmental issues	Xie and Kronrod (2012)
Environmentally friendly claim and Great performance claim	Neese and Favia (2013)
Verbal environmental claims	Xue (2014)
Ad type - textual, visual, green certification logos, and combination of all	Sahin, Baloglu, and Topcuoglu (2020)

While *claims* are characterized by their focus on certain aspects of the brand or company (product, process etc.) and are more factual in nature, the creative execution of claims in the form of different *appeals* is perhaps a more promising area for understanding GA. A multitude of appeal strategies have been analyzed such as green appeal framing and valence. Additionally, research has examined messages with varying levels of numerical precision, promotion-focused versus prevention-focused appeals and appeals involving eco-labels. Table 3 provides a summary of different types of message appeals.

**TABLE 3: GA Message Appeals**

<b>Types of Appeals</b>	<b>Authors (Year)</b>
Ecologically responsible – Direct versus Indirect	Peterson (1991)
Message frame – Gain versus Loss	Cervellon (2012); Baek and Yoon (2017)
Green claim valence – Positive and Negative	Tu, Kao, and Tu (2013); Olsen, Slotegraaf, and Chandukala (2014)
Green/environmental appeals	Schuhwerk and Lefkoff-Hagius (1995) Royne, Martinez, Oakley, and Fox (2012); Ku, Kuo, Wu, and Wu (2012); Xie and Kronrod (2012); Kong and Zhang (2013); Tu, Kao, and Tu (2013) Kong and Zhang (2014)
Non-green message	Kong and Zhang (2013)
Guilt appeals	Chang (2012); Baek and Yoon (2017); Srivastava (2020)
Emotional – nature versus self-expression	Hu (2012)
Eco-labels	Bickart and Ruth (2012); Stokes and Turri (2015); Atkinson and Rosenthal (2014); Martino, nanere, and Dsouza (2019)
Numerical precision	Royne, Martinez, Oakley, and Fox (2012); Xie and Kronrod (2012)
Promotion-focused versus Prevention-focused appeal	Kareklas, Carlson, and Muehling (2012); Bickart and Ruth (2012)
Message assertiveness – assertive versus non-assertive	Baek, Yoon, and Kim (2015)

GA studies have primarily focused on product-oriented claims, while lately environmental claims have received more attention (Royne et al. 2012, Xie and Kronrod 2012). Very little research has examined process-oriented (e.g., eco-friendly production process, see Chan and Han

2014) and image-oriented claims (e.g., eco-friendly portrayal of a firm in an ad, Davis 1994a), presenting an unexplored opportunity for researchers.

GA research has examined appeals built on emotion as well as logic (e.g., Leonidou et al, 2014). Emotional appeals include guilt and fear appeals (Shin and Griffin, 2017). Since 2010, there seems to be a trend of focusing on what consumers are doing wrong – guilt appeal- as opposed to highlighting the product itself. This is an interesting development signaling that consumers need a more specific message to make a positive difference to the environment (Neff, Steinberg, and Zmuda 2010). Researchers are now focusing on the nuances between negative appeals like guilt and shame (e.g., Baek and Yoon 2017). Sarkar, Sarkar, and Yadav (2019) expand the emotional/functional dichotomy to include self-expressive GA appeal. Finally, it is not surprising to note a lack of studies related to appetitive emotional cues like humor and warmth in GA.

### **Consumer Related Factors**

Researchers' focus on understanding consumer related factors in GA is appropriate given the importance of individual differences in evaluating green advertisements. Since segmentation is a fundamental tactic in both marketing and advertising, this has been a focus since the early days of the field. Stewart (1994) suggested that GA may not be as different from traditional advertising as we think, and the "green consumer" could be thought of as a segment to which GA was tailored. Since then, the green marketing/advertising field has made advances to find meaningful segments even within green consumers.

Green consumers are most often segmented based on demographics, however, there is a promising case to be made for the use of psychographics (Joireman, Grégoire, and Tripp 2016), as various levels of skepticism to environmental claims lead to differing responses to GA tactics. One of the most frequently used psychographic parameters to segment consumers is their involvement with the environment. This is an important variable because involvement with environment, according to the elaboration likelihood model, might impact the response to GA. The influence of this construct has been studied more frequently than consumer knowledge about environmental issues. Involvement can be conceptualized as a stage model – is green behavior present during purchase, use, disposal, or all stages of consumption? What level of green behavior do consumers exhibit? Involvement with environmental issues could be categorized for example as using a traditional car less frequently, using a hybrid car sparingly, carpooling, or shunning car ownership altogether in favor of environmentally friendly alternatives all the time. Schmuck et al (2018) include several facets of environmental involvement - environmental concern, green product attitudes, and green purchase behavior in their study. They found that false claims enhance consumers' perceived greenwashing and harm consumers' attitudes toward ads and brands.

Hu (2012) found that low- and high-involvement consumers respond differently to hotels' environmental ads. Similar gradations of consumer behavior can be thought of in the context of product disposal (Roozen and De Pelsmacker 1998), where they found that in purchasing bottles, recyclability was the most important environmentally friendly feature. It may be worth exploring if there is a different persuasion hierarchy for high- (think-feel-do) versus low-involvement (think-do-feel) products (Vakratsas and Ambler, 1999).



The problem for green advertisers could be, similar to traditional advertising, that it is easier to implement an advertising segmentation plan based on demographics compared to psychographics. A number of GA studies gather demographics information, however, these variables are seldom part of hypotheses, as they are used most often as control variables (e.g., Sarkar, Sarkar, and Yadav 2019) or for post-hoc analyses. This could also be driven by belief among scholars that demographics are not key differentiators as GA is becoming more mainstream, though, segmentation based on some demographic variables has proved worthwhile. Fisher, Bashyal, and Bachman (2012) conducted a study examining demographic variables in green consumer purchasing behavior and concluded that while several variables matter, the most important was gender (females more likely than males to buy green products). It is interesting that earlier studies came to the same conclusion (see Roberts 1993, Grob 1995).

Yoon and Kim (2016) found that demographics variables explained only 4% variance in attitude towards GA, with gender being the only significant predictor. Kim and Yoon (2017) found age impacted some aspects of green attitude, however, their sample was limited to undergraduate students.

**TABLE 4: Consumer Related Factors**

<b>Consumer Characteristics</b>	<b>Authors (Year)</b>
Customer's motivation for environmentally-conscious behavior	Davis (1993)
Green consumers' profile	Shrum, McCarty, and Lowrey (1995); Roberts (1996)
Consumer's prior knowledge about environmental issues	Obermiller (1995); Xie and Kronrod (2012)
Consumer's involvement with environment	Schuhwerk and Lefkoff-Hagius (1995); D'Souza and Taghian (2005); Chan, Leung, and Wong (2006); Cervellon (2012); Hu (2012); Matthes, Wonneberger, and Schmuck (2014); Grimmer and Woolley (2014)
Consumer's environmental consciousness	Chang (2012); Xue (2014); Srivastava (2017)
Consumer's environmental concern	Bickart and Ruth (2012) do Paço and Reis (2012); Kong and Zhang (2013)
Consumers' environmental skepticism	do Paço and Reis (2012); Xie and Kronrod (2012); Royne Martinez, Oakley, and Fox (2012); Bailey, Mishra, and Tiamiyu (2016); Segev, Fernandes, and Hong (2016); Srivastava (2017); Mo, Liu, and Liu (2018); Luo, Sun, Shen, and Xia (2019); Yu (2020)
Consumers' ad skepticism	Kronrod and Xie (2013); Matthes and Wonneberger (2014); Shin and Ki (2017); Srivastava (2017); Yu (2020)
Self-view – Independent versus Interdependent	Kareklas, Carlson, and Muehling (2012)

Individuals with self-regulatory focus on Promotion or Prevention	Ku, Kuo, Wu, and Wu (2012)
With different purchase considerations – egoistic and altruistic	Kareklas, Carlson, and Muehling (2014); Reich and Soule (2016)
Effort investment – high versus low	Baek, Yoon, and Kim (2015)
Green Issue Proximity	Srivastava (2017)

Table 4 presents the consumer characteristics studied in GA. The scale developed by Schuhwerk and Lefkoff-Hagius (1995) is used fairly often to measure a consumer's involvement with the environment. A refined version of the NEP scale (Dunlap and Van Liere 1978) is used for measuring a related construct, environmental concern. While many companies provide truthful information, greenwashing, i.e., misleading consumers about the firm's environmental performance or the environmental benefits of a product or service, is a concern (Delmas and Burbano 2011). Therefore, consumers' environmental skepticism or ad skepticism have also been considered in GA studies as many consumers have become skeptical of GA.

Interestingly, Bailey, Mishra, and Tiarniyu (2016) proposed *GA receptivity* as a distinct construct from *GA skepticism*, and developed a scale to measure it, which was later used by Sun, Luo, Wang and Fang (2019). Segev, Fernandes, and Hong (2016) replicated the 1993 seminal study by Carlson, Grove, and Kangun and reported that unlike the original study, most green claims were deemed acceptable, indicating a trend towards more trustworthiness of GA claims.

A closer look at the different aspects of consumer-related factors examined in GA reveals that many of these factors have been used as moderators. Also, many of the researchers have tried to classify consumers into two categories – high and low – on the basis of the examined consumer-related factors. Studies that include measures of the more nuanced variability in consumer differences may help us better understand the impact of GA. A few studies (e.g.

D'Souza 2004) have tried to provide a conceptual basis for segmenting consumers with respect to GA using multiple parameters but follow up studies are lacking. Researchers also need to incorporate consumption-focused factors (e.g., past green product experience) while looking into this aspect. It is encouraging that some novel factors such as *perceived efficacy* (defined as the belief that a prescribed behavior will help solve a problem and that one is capable of engaging in that behavior) are emerging (Kim and Yoon 2017).

### Product Related Factors

More recent studies of GA have examined product related factors as evidenced from the papers published post 2012 (Table 5). The product related factors can be categorized into two broad themes. The first one considers the level of *perceived environmental harm* (neutral/friendly or harmful). This is expected as consumer's reaction to GA will be related to the damage a product could potentially cause. For products which are considered environmentally harmful (Stokes and Turri 2015), or which belong to the *vice* category (Olsen, Slotegraaf, and Chandukala 2014), advertising focusing on environmental claims enhanced their positive perception among consumers. Using an electroencephalogram (EEG), to measure consumers' reactions to

environmentally friendly products and conventional products demonstrated that consumers perceive these two product categories differently (Lee et al. 2014). Another variant in this theme examined recyclable/biodegradable vs. locally produced food as two types of environmentally friendly products (Raska, Nichols, and Shaw 2015).

**TABLE 5**  
**Product Related Factors**

<b>Categorization of Products</b>	<b>Authors (Year)</b>
Environmentally harmful vs. Environmentally neutral/friendly	Stokes and Turri (2015); Lee, Kwon, Shin, Yang, Lee, and Suh (2014); Olsen, Slotegraaf, and Chandukala (2014); Kong and Zhang (2014)
Product involvement – High and Low	D’Souza and Taghian (2005); Kong and Zhang (2013); Atkinson and Rosenthal (2014); Xue (2014); Lim, Baek, Yoon, and Kim (2019)
Green Product Typicality	Usrey, B., Palihawadana, D., Saridakis, C., and Theotokis, A. (2020)
Green Optionality	Usrey, B., Palihawadana, D., Saridakis, C., and Theotokis, A. (2020)

The second theme examines GA effects for products which are *high or low involvement*.

Usually, product involvement has been an important moderator in examining advertising effectiveness (McGrath and Mahood 2004; Chen and Leu 2011; Lim, Baek, Yoon, and Kim 2019). Similarly, green product information (Kong and Jhang 2013) as well as green visuals (Xue 2014) enhances product perceptions in the case of low involvement products. D’Souza and Taghian (2005) found that low-involvement products meant lower regard for GA.

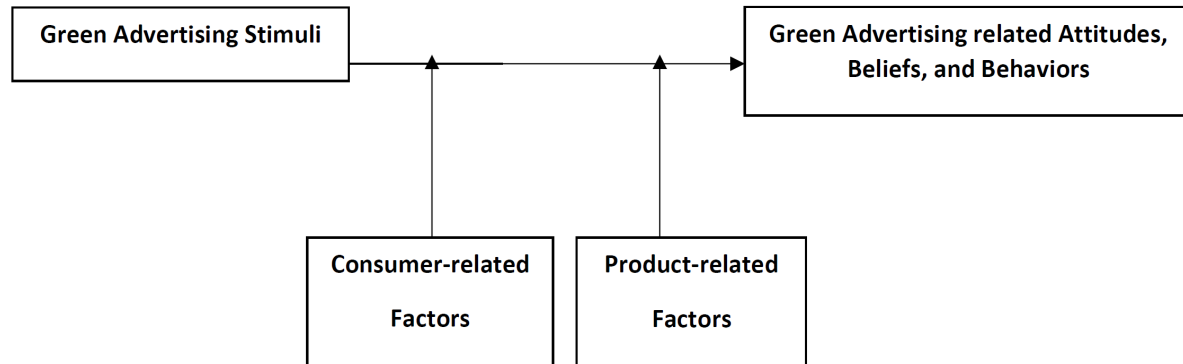
Product-related factors in GA studies have primarily focused on *goods* with limited examination of *services*. Apart from a few studies (Chan and Han 2014, Chan, Leung, and Wong 2006, Hu 2012) in the hospitality sector, there were no studies on services. We feel that this imbalance should be addressed given the prominence of the service sector in many economies.

Additionally, there are many other product classifications (i.e. regularly used versus occasionally used, utilitarian versus hedonic) where more research is required to uncover the impact of GA.

In addition to product-related factors, studies have also looked into the impact of green advertisements on consumers’ appreciation of brands. Notable among these include Chan and Han (2014) studying Ibis and Hilton; Plec and Petternger (2012) studying ExxonMobil ads from the gas industry; Garland, Huising, and Struben (2013) looking at Toyota Prius print ads; and Bodkin, Amato, and Amato (2015) studying BP’s advertising in the wake of its Deepwater Horizon oil spill. The key findings emphasize the positive influence of environmental content in the ad on brand image. They also highlight the consumer’s role in cocreating an environmentally friendly brand image. Also, if an ad has environmental content when the company actions say otherwise, consumers downrate the brand. Here opportunities exist for researchers to examine GA’s impact on different types of brands such as new versus old, large versus small, or ordinary versus luxury.

## GREEN ADVERTISING THROUGH THEORETICAL LENS

As figure 1 indicates, most GA effectiveness studies assume a template of advertising stimuli (appeal or claim types) leading to some output (greater awareness, choice, loyalty, purchase intentions), as they are moderated/mediated, or directly impacted by situational factors such as product type and consumer involvement level.



**Figure 1. An Organizing Framework of the Green Advertising Review**

This is not very different from the format used in studying traditional advertising. Indeed, the GA studies we examined seem to be an offshoot of traditional advertising, not necessarily adopting any radical departure from how traditional advertising is studied or what sort of theories are used. Process models of persuasion such as the *elaboration likelihood*, *hierarchy of effects*, and *information processing* have been the mainstays for advertising researchers for a very long time. Since GA messages aim to modify behaviors through influencing beliefs, values, and attitudes, by extension, these borrowed models also become relevant for GA.

With the preponderance of content analyses dating in the earlier days of GA, there was a paucity of theoretical frameworks. Out of the more than 25 papers appearing before 2000, only three used a theoretical framework to explain hypotheses (Obermiller 1995, Manrai et al. 1997, Schuhwerk and Lefkoff-Hagius 1995). Obermiller (1995) used contingency model and found that effectiveness of appeals depends on the relative salience of the issue, and the “sick baby appeal” is not always appropriate. The Schuhwerk and Lefkoff-Hagius (1995) study used salience literature to explain hypotheses while Manrai et al. (1997) used the halo effect model (Erickson, Johansson, and Chao 1984) and the summary construct model (Han, 1989) from the country of origin literature to explain hypotheses.

GA research work after 2000 has emphasized theoretical background for content analysis as well as other studies where hypotheses were tested. Post-2000, five studies (Grillo, Tokarczyk, and Hansen 2008, Kärnä et al. 2001, Leonidou et al. 2014, Wagner and Hansen 2002, Xue and Zhou 2012) used the Means-End Chain Conceptualization of Advertising Strategy. Among the various other studies where hypotheses were tested, a number of theoretical frameworks were used, which are listed in Table 6.

TABLE 6

**Main Theoretical Frameworks Used in GA Studies**

<b>Theoretical Frameworks</b>	<b>Authors (Year)</b>
Elaboration likelihood model (Petty, Cacioppo and Schumann 1983)	Hartmann and Apaolaza-Ibáñez (2008); Hartmann and Apaolaza-Ibáñez (2009); Hu (2012); Tucker, Rifon, Lee, and Reece (2012); Cervellon (2012) Kong and Zhang (2013); Neese and Favia (2013) Atkinson and Rosenthal (2014); Matthes, Wonneberger, and Schmuck (2014); Grimmer and Woolley (2014); Xue (2014); Xue and Muralidharan (2015); Mo, Liu and Liu (2018)
Persuasion knowledge model (Friestad and Wright 1994)	Bickart and Ruth (2012); Minton, Lee, Orth, Kim, and Kahle (2012); Xie and Kronrod (2012) Raska, Nichols, and Shaw (2015)
Product match-up theory (Kamins and Gupta, 1994)	Kong and Zhang (2014)
General model of the effects of attitude towards ad (Mackenzie and Lutz 1989)	Newell, Goldsmith, and Banzhaf (1998)
Dual-process theories (Chaiken and Trope (1999)	Spack, Board, Crighton, Kostka, and Ivory (2012); Taufique (2020)
Prospect theory (Kahneman and Tversky 1979)	Royne, Martinez, Oakley, and Fox (2012); Cervellon (2012) Tu, Kao, and Tu (2013) ; Olsen, Slotegraaf, and Chandukala (2014); Segev, Fernandes, and Wang (2015); Xue (2015); Chang, Zhang, and Xie (2015)
Theory of reasoned action (Fishbein and Ajzen 1975)	Yan, Hyllegard, and Blaesl (2012)
Theory of planned behavior (Ajzen 1985)	do Paço and Reis (2012); Akpoghiran (2013)
Brand equity framework (Keller 2003)	Benoit-Moreau and Parguel (2011)
Regulatory focus theory (Higgins 1997)	Kareklas, Carlson, and Muehling (2012); Ku, Kuo, Wu, and Wu (2012)
Cognitive dissonance theory (Festinger 1957)	Chang (2011)
Congruity theory (Mandler 1982)	Stokes and Turri (2015)
Self-construal theory (Markus and Kitayama 1991)	Kareklas, Carlson, and Muehling (2014)
Agenda-setting theory (McCombs and Shaw 1972)	Fernando, Suganthi, and Sivakumaran (2014)
Attribution theory (Heider 1944, Kelley 1973)	Nyilasy, Gangadharbatla, and Paladino (2012); Nyilasy, Gangadharbatla, and Paladino (2014)
Social influence theory (Kelman 1968)	Raska, Nichols, and Shaw (2015);
Construal level theory (Trope and Liberman 2010)	Chang, Zhang, and Xie (2015); Yang, Lu, Zhu, and Su (2015)

Savannah hypothesis (Orians 1980)	Hartmann and Apaolaza-Ibáñez (2013)
Language expectancy theory (Burgoon 1995)	Baek, Yoon, and Kim (2015)
Means-end theory (Gutman 1982)	Chen and Lee (2015)
Signaling theory (Spence 1973)	Sun, Luo, Wang and Fang (2019)
Affect–Reason–Involvement (Buck et al 2004)	Schmuck, Matthes, and Naderer (2018)
The third-person effect (Davison 1983)	Mo, Liu, and Liu (2018)
The Natural Resource-based View (Hart 1995)	Maziriri, Eugene (2020)
Health Belief Model (Lindsay & Strathman, 1997)	Kim and Yoon (2017)

The *elaboration likelihood model* (Petty, Cacioppo and Schumann 1983) is one of the most widely adopted frameworks in GA to derive hypotheses. The *persuasion knowledge model* (Friestad and Wright 1994), the *product match-up hypothesis* (Kamins and Gupta, 1994), the *general model of the effects of attitude towards the ad* (Mackenzie and Lutz 1989), *dual-process theories* (Chaiken and Trope 1999; Taufique 2020), and *language expectancy theory* (Burgoon 1995) are other theoretical explanations from the advertising and communications literature.

Other studies have used theoretical frameworks already prevalent in marketing and branding: *prospect theory*, *the theory of reasoned action*, *the theory of planned behavior*, and *brand equity* framework. Researchers in the field of GA have also borrowed heavily from psychology and social psychology for developing hypotheses, as summarized in Table 6.

Now that the conceptual domain of GA has largely been established, researchers may find it valuable to turn to some other frameworks or novel extensions thereof to explore their validity in the new context. For example, the *hierarchy of effects model* has been useful to explain the consequences of advertising, with cognition, affect, and conation as a typical sequence. One could inquire about GA as a type of lifestyle advertising, where the audience is at a specific stage of that lifestyle. It could be worthwhile to investigate if GA largely follows a different sequence such as conative, affective, cognitive, for example. In other words, someone can follow green behavior as a social norm (Peattie 2010), followed by emotional engagement due to increased exposure to green messages, before sitting down to read more on the phenomenon. Taufique (2020) reports that affect eclipses cognition when it comes to green consumer behavior. Similarly, attitude towards advertising has been a very productive area of research, and with the disfavor GA often enjoys among skeptics, theories addressing attitude/belief should be used fruitfully in more studies to gauge public perceptions of green ads (e.g., if a consumer has a belief that a product is good for the environment, but has a negative attitude toward GA due to past experience with green washing; would this decrease the belief in the product's pro- environmental impact?). Since the green movement is a social phenomenon, theories from sociology, e.g., *social practice theory* and *social judgement theory*, should also be useful in GA studies.

Nair and Ndubisi (2011) offer a comprehensive framework connecting various stakeholders in green marketing. These stakeholders can have conflicting agendas, while being

exposed to the same message. The literature on *stakeholder theory* (e.g., Freeman 1984) should be useful in understanding what is at stake in GA and how to tackle the potential conflict.

Employees are probably among the most important stakeholders. They are considered a legitimate audience (Gilly and Wolfenbarger 1998; Mitchell 2002). This should be equally or even more relevant to GA campaigns as people often have passionate positions about environmental issues in general, presenting a promising area for future research. MacIntosh et al. (2013) investigated the effect of framing of environmental messages on employees compared to customers of a ski resort, and found differential effects, which could point toward the need for more research in this line of inquiry.

*Signaling Theory* (Spence 1973) holds that when one party (consumers) has less information than the other party (marketers), they rely on cues to evaluate information. In GA, it is mostly used in conjunction with the study of eco-labels (e.g., Sun et al 2019), though it could be used in a wider context. Finally, studying communication as a holistic act rather than in its components (Lasswell 1948) could be productive especially for studying GA in the larger context of the society.

## CONTEXT OF STUDYING GREEN ADVERTISING

### Country Focus of Studies – Developed Countries vs. Emerging Economies

Most studies on GA have taken place in western countries, though similar studies in emerging economies are now gathering momentum (e.g., Mo and Liu 2018; Sarkar, Sarkar, and Yadav 2019; Yu 2020). Li (2016) opines that while GA in both USA and China forces consumers to confront their behaviors, Chinese consumer response is “hysterical” while American consumer response is “obsessive”. These studies are in a single country (e.g., Chan 2004; Rahbar and Wahid 2011) or cross-cultural (e.g., Li 2013, Xue and Zhou 2012). This line of research is at the early stage, mostly focused on Asian countries, though studies focusing on other emerging economies, e.g., Eastern Europe have appeared (Grundey and Zaharia 2008). Young consumers not only create pressure on brands to be more responsible to environmental concerns (Adnan et al 2017), but they also socialize around those themes (Muralidharan and Xue 2016). Beyond demographics, there is reason to believe that the differences in economic and cultural environments impact persuasion in GA. McCarty and Shrum (2001, P. 101), in their study of cultural factors in recycling, note that “communications aimed at changing recycling attitudes and behavior should attempt to match the focus of the benefits (individual/ inconvenience versus group/ importance) to the predominant value orientation of the target. Other research provides more support for this notion: Aaker and Maheswaran (1997) found that the extent to which people consider particular cues or information (e.g., consensus information versus attribute information) pertinent to a particular judgment varies across cultures.

Given the rapid rise in green consumerism in North America beginning in the 1970s, it is no surprise that the US was the focus for GA content analyses initially, as well as for the majority of content analysis studies overall. Although rare, there are a few content analyses of GA from other countries i.e. Finland (Kärnä et al. 2001), United Kingdom (Prothero, Peattie, and McDonagh (1997) and India (Fernando, Sivakumaran, and Suganthi 2014). Additionally, there have been

multi-country studies also (Carlson et al. 1996, Polonsky et al. 1997) including two global studies (Leonidou et al. 2011, Leonidou et al. 2014). With consumerism rapidly increasing in China and India due to fast economic growth, it seems that content analyses of GA in these regions would be appropriate as well. Xue and Zhou (2012) provide a good beginning with their study comparing US and Chinese ads. As far as experimental studies are concerned, GA in the US is well represented, with studies also done in China, Taiwan, Australia, Spain, France, and Portugal. Latin America is a notable exception: we could not locate any GA studies from this region using our parameters. Increasingly, with study methods employing new tools like Mechanical Turk for data collection (e.g., Baek and Yoon 2017), the data could be coming from consumers situated in multiple countries around the world, regardless of the controls exercised by the researchers. This is a very different situation compared to a controlled data collection in a cross-country context.

### **B2B and B2C Focus of Studies**

A general perception about green advertisements is that GA is more suitable for the B2C than the B2B context. Kotler (2011) suggests that “B2B companies are further removed from consumer pressure” (p. 134), implying there needs to be either pressure from clients or clear economic benefit for firms to pursue green marketing and advertising. However, Wagner and Hansen (2004) found that GA campaigns directed at business clients are surprisingly effective.

Indeed, even a cursory review of various magazines shows that green advertisements are targeted at both B2C as well as B2B customers. Previous research has also found that customers apply knowledge about green claims in making purchase decisions in B2C (Lee et al. 2014) as well as in B2B settings (Leonidou et al. 2014). However, our review identified only three papers which focused on the B2B context. In addition to the content analysis paper by Leonidou et al. (2014), Wong et al. (2014) examined GA issues by collecting data from businesses in Taiwan. Future studies may also focus on the impact of GA when the buyer is purchasing with other people’s money (e.g., a general contractor or an architect buying for end consumers).

### **THE PATH AHEAD – EXPLORING NEW TERRITORIES AND CONNECTIONS**

GA resides under the “p” of “promotions” in the marketing-mix framework. So far most studies have focused on GA in isolation rather than interaction with other Ps. One exception to this is Leonidou et al. (2013) who examine the impact of greening all 4 Ps on firm performance, and find that the greening of the 4Ps pays off differently. Specifically they find that “green communication”, is positively related to a firm’s return on assets. Intuitively this makes sense as the investment in GA can be construed as building up valuable assets for the firm that may keep paying, and particularly pays off in times when the firm is subject to negative publicity. As the authors themselves pointed out, we need to investigate questions from a different angle. For example, what are the drivers of customer response to the greening of different marketing mix ingredients? To what extent does the investment in GA correlate with the ability of the firm to charge above-normal prices? How do eco-labeling and other packaging communications interact with GA? Martino, Nanere, and Dsouza (2019) suggest that eco-labeling plays a more prominent role in shaping green behavior than does pro-environmental attitude. The research stream in GA has matured enough to consider its interface with other business functions as well. For example, we do not know how or how much GA impacts supply chain operations. GA can have a “return



empty bottles” campaign, but we do not know the full implications of the increased “reverse flow” of goods on the supply chain, or how the benefits and costs of increased business volume are shared and why. The strategic impact of GA can be another productive area of investigation.

### **GA and New Media**

Print and TV media dominate when it comes to studying GA. Scholars should explore other forms of mass communication, e.g., sponsorship (see Fenton 2009). The emergence of the Internet and social media has been a watershed event for advertising, and studies involving GA and new media have come up (see Fernando, Suganthi, and Sivakumaran 2014; Luck and Ginati 2013; Minton et al. 2012). Seelig, Sun, Deng, and Pal (2021) found that websites made valuable contribution to solving the challenge of framing a brand green through substantive claims.

Advertising on social media seems to be less regulated than the same on the traditional media, possibly leading to skepticism (Luo, Sun, Shen and Xia, 2019). Certain practices like consumer *co-creation of advertising* are now almost exclusively associated with social media. Given that many green products are procured through the online channels, it is imperative that advertising scholars focus on the implications of the new media for GA. The emerging research in GA will do well to account for the emerging influence strategies on social media where green marketing messages are hard to separate from the user- or creator-generated content.

### **Greenwashing and Regulation**

In the popular press, GA, unfortunately, quite frequently is criticized for its vague, misleading or unsubstantiated claims, known as greenwashing. Danciu (2014, p. 22) asserts that “The green ad claims have more potential than any other type of claims (in advertising) to mislead and deceive the consumers.” In light of increasing greenwashing concerns and in the age of voluntary code adoption, discussion of the ethical dimensions of GA is woefully incomplete. Davis (1992) advocates urgency “to develop the perspective and behaviors necessary for revision of the current norms” in environmental marketing, which is applicable to GA as well.

There is a need to investigate if consumers are aware of the nuances in various phrases used in GA. For example, fabric made from bamboo may be “biodegradable”, but it may not be “environmentally friendly” in that toxic chemicals are used in production, and air is polluted (McCormack 2010). To that end, Luo, Sun, Shen, and Xia (2019) found that green advertising skepticism affects consumers’ green purchase intention through the mediation of perceived information utility. As noted earlier, Segev, Fernandes, and Hong (2016) found that consumers perceived less greenwashing compared to what Carlson, Grove, and Kangun (1993) found in their study. They also warned against the potential misuse of third-party logos by marketers.

False claims, rather than vague claims, increase greenwashing perceptions (Schmuck, Matthes, and Naderer 2018). How consumer segments vary in their knowledge of phrases used in GA, and why, is an interesting area of exploration.

Following the example of US-based advertisers, green advertisers in other countries are increasingly adopting self-regulatory codes. While literature exists in the law journals, there is a

need to examine the driver of this movement and its impact on the types of advertising created. Insights into the effects of regulations, both from industry and governmental bodies, on green marketing in general and GA in particular are needed to shape and inform future strategies in this domain.

### LIMITATIONS

One potential limitation of this review lies in its scope: by focusing solely on studies of GA, studies related to green marketing in general were not included. These studies are undeniably useful to understanding the broader marketing strategy in which GA operates. For example, studies addressing segmentation of green consumers (e.g., Straughan and Roberts 1999) or scale development directed at identifying green consumers (Elsayed and Al-Ghais 2008) may be useful in understanding consumer reaction to GA. Similarly, packaging and labeling can be an important part of green marketing communication (Polonsky et al. 1998), though we have not included these studies in this review, unless it was used as an element to explain GA. These exclusions were necessary to keep the scope of the study manageable and to make it comparable to previous reviews. Future reviews may find interesting connections by defining the scope differently.

### CONCLUSION

GA research started as a niche area of advertising in the early 1990s and is now a substantial body of scholarly work. It has also become a vital part of the ever-increasing scholarly work on green marketing. Believing sufficient time has lapsed since the last major review of the field, we offer a comprehensive review and integration of the research published on GA from 1991 to 2020, covering thirty years.

We provided not just a review of the research, organizing themes, and summary through tables, but also highlighted the key gaps and gave suggestions on where more research is needed. In empirical studies, content analysis and experiments dominate. Researchers need to go beyond student subjects and fictitious scenarios to bring a measure of realism and external validity to their study conclusions. The qualitative research studies are prominent largely by their absence. Researchers have relied on persuasion theories from psychology to map the impact of GA elements on beliefs and attitudes of the audience. We suggest that the theories from sociology and social-psychology are underutilized and may hold promise in answering some thorny questions. Their rise calls for more studies at the interface of GA and social media. Increasing technological sophistication is pointing towards some exciting new frontiers – though more promise than concrete results has so far been shown. The interface of GA with other functions of business is virtually an unexplored area, as is the implication of new media for GA. The goal of this review is to provide a platform for conducting further investigations into these and other lines of inquiry.

As for the practical implications, there seems to be overwhelming evidence that consumers are getting increasingly more knowledgeable about environmental issues and the level of skepticism changes over time. The factors that the managers have control over – the offerings of their firm, value proposition, and messages about the environmental elements in their products affect how consumers perceive the firm, their products, and the messages themselves, implying some impact on

the bottom line. Unfortunately, there is not much guidance from academics for green advertising on tech-driven platforms like web and social media.

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